

What Happened in Bolivia's 2019 Vote Count?

The Role of the OAS Electoral Observation Mission

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November 2019

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Acknowledgements

The authors wish to thank Mark Weisbrot, Alex Main, Dan Beeton, Jake Johnston, and Andrés Arauz for helpful comments and suggestions.

Introduction

On October 20, 2019, Bolivia held presidential and parliamentary elections. Nine presidential candidates competed in the presidential election. However, well before the electoral campaign began, polling indicated that the election was likely to be a two-way race between incumbent president Evo Morales of the Movimiento al Socialismo (MAS-IPSP), and former president Carlos Mesa of Comunidad Ciudadana (CC).

There are potentially two rounds in Bolivia's presidential elections. A candidate receiving either more than 50 percent of the vote, or at least 40 percent with a 10 percentage point lead over the runner-up in the first round, is declared the winner. If no candidate meets either of these requirements, the two candidates with the most votes must face each other in a runoff election.

On October 25, Bolivia's electoral authority, the Tribunal Supremo Electoral, or TSE, published the final official election results. Morales had obtained 2,889,359 votes, or 47.08 percent, to Mesa's 2,240,920 votes, or 36.51 percent. Morales's 648,439-vote lead gave him a 10.5 percentage point margin and therefore a first-round victory without the need for a runoff.

The MAS-IPSP also won a majority in the legislative elections. Though the MAS-IPSP lost seats in both houses, the party held on to a majority of 68 seats out of 130 in the lower house, and 21 out of 36 seats in the senate.

An Electoral Observation Mission from the Organization of American States (OAS) was sent to observe the elections.¹ According to the OAS, the mission was “composed of 92 observers, who [were to be] deployed in the 9 departments of the country to observe the process in all of its stages and throughout the country.”²

Bolivia Has Two Vote-Counting Systems, but Only One Is Legally Binding

The TSE has two vote-counting systems.³ The first is a quick count known as the Transmisión de Resultados Electorales Preliminares (TREP, hereafter referred to as the quick count). This is a system that Bolivia and several other Latin American countries have implemented following OAS

1 OAS (2019a).

2 Ibid.

3 TSE (2019) and Estado Plurinacional de Bolivia (2005).

recommendations.⁴ It was implemented for the 2019 election by a private company in conjunction with the Servicio de Registro Cívico (SERECÍ), the civil registry service, and is designed to deliver a swift — but incomplete and not definitive — result on the night of the elections to give the media an indication of the voting tendency and to inform the public. The TSE is unlikely to process 100 percent of the results in the quick count in nationwide votes due to logistical limitations and the amount processed can vary widely by geography and the type of ballot.⁵ For example, in the 2016 nationwide constitutional referendum, it processed 81.2 percent of the results before it held a press conference at about 6:15 p.m. on election night.⁶ The 2016 autonomous referendum results were released for each jurisdiction with between 66.7 and 100 percent of the results processed at 7:30 p.m. on election night.⁷ In the 2017 judicial elections, an Electoral Experts Mission of the OAS praised the performance of the quick count system for releasing the results at 80 percent at around 9:30 PM.⁸

The second vote-counting system is the official count (or *cómputo*), which is legally binding under Bolivian law. The official count is more thorough and precise and takes longer. It is the only valid vote tallying system, and the TSE uses it to determine and announce the final election results.

Once voting has concluded, individual ballots are counted in voting stations and aggregated into *actas*, or tally sheets. For the nonbinding quick count, the results from the tally sheets are sent to SERECÍ verification operators via a mobile app, along with photos of the sheets themselves. The tally sheets are then physically sent to a Departmental Electoral Tribunal (TED), where the information is verified and entered into the official count.

Each polling station has six electoral jurors. They perform a mandatory citizens' role akin to jury duty in the US judicial system. In Bolivia, 207,322 citizens were randomly selected to be jurors and trained a month before the elections.⁹ All six jurors in each polling station must sign off on the tally sheet. Representatives of political parties may also be present at the polling stations and request to approve the tally sheets. Any person or political organization is able to monitor the vote-counting process as an observer, which is encouraged by the TSE.¹⁰ Images of the tally sheets are available online to anyone who wishes to confirm that the information on the physical tally sheets matches the information entered into the system. This makes it easy to check for inconsistencies, and for any errors to be quickly corrected.

4 See OAS (2015a) and, for example, OAS (2015b).

5 Ministerio Relaciones Exteriores (2019).

6 eju.tv (2016).

7 Los Tiempos (2016) and Órgano Electoral Plurinacional (2016).

8 OAS (2017a), Columba (2017), and TSE (2017a).

9 Guarachi and Melgarejo (2019).

10 TSE (2017b).

In these elections, the results of the official count generally coincided with those of the quick count, which ended once 95.63 percent of tally sheets were counted, with Morales having a lead of 46.86 percent to Mesa's 36.72. The final official count, with 100 percent of votes counted, resulted in Morales winning the election in the first round with 47.08 percent, to Mesa's 36.51 percent.

Criticism of Bolivia's Electoral Process by the OAS Mission

On October 21, the OAS Electoral Observation Mission in Bolivia (hereafter referred to as the OAS mission, or the mission) issued an initial postelection press release, which expressed "its deep concern and surprise at the drastic and hard-to-explain change in the trend of the preliminary results [from the quick count] revealed after the closing of the polls."¹¹ In line with the quick count process in previous elections, the TSE had ended the quick count at 83.85 percent of tally sheets verified. This tally showed MAS-IPSP receiving 45.71 percent of the presidential votes, and CC receiving 37.84 percent, a difference of 7.87 percentage points. Two days later, the OAS mission issued its preliminary report on the elections, which briefly repeated the criticism that "the changes in the TREP [quick count] trend were hard to explain and did not match the other measurements available."¹²

However, the mission provided no evidence to support these statements suggesting that the quick count could be wrong or "hard to explain." The following paper analyzes the election results and finds that:

- The results from the quick count for the first 83.85 percent of the vote count are consistent with a final projected result of Morales winning the election outright with a more than 10 percentage point victory;
- Neither the OAS mission nor any other party has demonstrated that there were widespread or systematic irregularities in the elections of October 20, 2019;
- Neither the quick count nor the official count exhibit significant changes in voting trends in the final results; rather, the same well-known trend, explainable by differences in voter preferences in different geographical areas, is evident in both counts;
- The legally binding vote count — the official count — did not stop for any significant period of time;
- It is unclear how the OAS mission's objections regarding the quick count would affect the official count.

11 OAS (2019b).

12 OAS (2019c).

The Quick Count Process and the Official Count

There were other statements from the OAS, also without evidence, that appeared to cast doubt upon the result in addition to those from the mission’s first press release and preliminary report.¹³ While the TSE did suspend the verification of tally sheets in the quick count process on election night at 83.85 percent of tally sheets verified, this is consistent with what the TSE had pledged to do more than a week before the election: to publicize the result of a quick count that verified at least 80 percent of the preliminary results.¹⁴ The TSE thus followed through with this commitment, and its decision to stop the quick count was not in itself irregular or in violation of any prior commitment.¹⁵

Furthermore, it is important to emphasize that it is the official count that is legally binding, not the quick count that the OAS mission took issue with. The official count was never interrupted and was regularly updated online without any significant interruption. Any potential irregularity would have had to affect the official count and not only the quick count in order to affect the final result. It is unclear by what mechanism any widespread or systematic irregularities could occur without being quickly apparent, given the existing safeguards in the Bolivian electoral process.¹⁶ In addition to not presenting any evidence that irregularities that could have altered the vote count actually occurred, the OAS mission does not even provide a possible means by which they *could* have occurred.

The OAS Mission claims that after the interruption of the quick count, it urged the TSE to restart it and that on October 21, 23 hours after the interruption, the TSE agreed to resume that count.¹⁷ At this point, the results showed Morales approaching the 10 percentage point margin of victory that would give him an outright win. The Mission then issued its first press release in which it expressed its “deep concern and surprise at the drastic and hard-to-explain change in the trend of the preliminary results revealed after the closing of the polls.”¹⁸

But was this “change in the trend” in fact “hard to explain”?

13 See, e.g. OAS (2019d).

14 See, for example, this article from 11 days before the election, Guarachi (2019). It is important to note that although the TSE suspended the verification of tally sheets for the quick count, tally sheets continued to be imaged by electoral workers and uploaded to the storage server.

15 Ariñez (2019).

16 If the official count and the quick count are consistent, then fraud, as alleged by some observers, would most likely have to occur by altering tally sheets, which are all publicly available online. It is unclear by what mechanism this would occur because it would likely require a country-wide effort, using valid voter information, to fool or bribe jurors, official observers, and members of the CC party, all of whom would be overseeing the aggregation of ballots into tally sheets in public polling places. Furthermore, stories spread by social and traditional media alleged ballots were abandoned by electoral authorities, yet ballots are aggregated into tally sheets under this defined and easily observed process. After the aggregation process, it is the tally sheets, not the ballots, that are counted by the electoral authorities (see, for example, Youkee and Agencies, 2019).

17 OAS (2019c).

18 OAS (2019b).

Results: Consistent with Geographic Patterns in Voting

It is a general phenomenon that later-reporting areas are often politically and demographically different from earlier ones,¹⁹ and it has been noted that this is relevant to interpreting the results from a parallel vote tabulation such as a quick count.²⁰ In Bolivia's elections over the last decade and a half, votes from rural and peripheral areas of the country have tended to disproportionately favor Morales and the MAS-IPSP.²¹ Because of logistical, technological, and possibly other limitations, these votes end up being computed later in the counting process.²² This is true of both the quick and the official counts, which are both affected by the same geography and infrastructure. Rural and poorer places, which have tended to heavily favor Morales, are slower to transmit data or send tally sheets to the electoral tribunals.

The Final Quick Count Results Were Not Hard to Explain

The quick count, in this case, was no exception. The gap between Morales and Mesa widened steadily as the counting process advanced. It was a predictable and unsurprising phenomenon that need not have surprised the OAS mission.

Figure 1 shows that the MAS-IPSP margin of victory increased steadily as more votes were counted, consistent with the idea that differences in geography and infrastructure resulted in later counting of areas that favored MAS-IPSP. This trend also holds for seats in the legislative assembly.²³

19 See, for example: Kirby (2018), Warf (2006), and Rimball and Baybeck (2013).

20 Estok (2002).

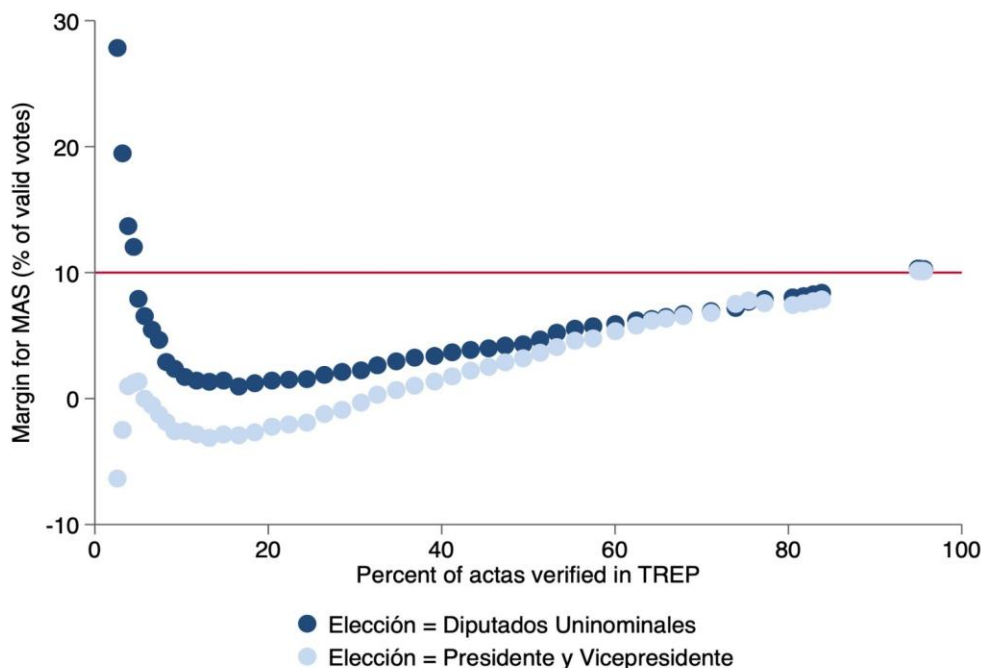
21 Oviedo Obarrio (2010).

22 Machicao and Ramos (2019).

23 At around 80 percent of tally sheets counted, there is a slight dip in the margin for MAS-IPSP due to the rapid verification of tally sheets from Santa Cruz, a CC stronghold.

FIGURE 1

The MAS-IPSP margin increased steadily through most of the quick count (TREP) as more tally sheets (*actas*) were verified



Source: Órgano Electoral Plurinacional (2019b) and authors' calculations.

The Partial Results from the Quick Count Before Suspension Predict a Result that Is Extremely Close to the Final Results

The election winner's margin of victory can be projected based on the quick count at the time of interruption at 83.85 percent. If a tally sheet is uncounted at that time, votes can be imputed for each candidate based on the number of voters eligible for that tally sheet and the votes for each candidate per eligible voter counted in the quick count at that time for the corresponding precinct. If the precinct is uncounted, corresponding votes per eligible voter for the location, the municipality, and so on to broader geographies as needed can be used.²⁴

24 Thus, it is possible to estimate the votes for each candidate coming in from Bolivian voters located in Colombia — entirely uncounted at the break — as the number of eligible voters in Colombia multiplied by the total number of votes counted for each candidate coming from countries outside of Bolivia divided by the total number of eligible voters on counted tally sheets coming from outside of Bolivia.

If the tally sheets uncounted in the quick count are in fact MAS-IPSP-heavy, this will lead us to underestimate the MAS-IPSP vote overall because a) the uncounted areas would therefore tend to vote MAS-IPSP relative to the broader geography; and b) the exclusion of the uncounted areas would drag down the estimated MAS-IPSP share for the broader geography. To illustrate, consider a random sample of ten people taken from a larger population, five with blond hair, four with brown, and one with a hat. If we know that 90 percent of people with hats have blond hair, then we should expect the population to be 59 percent blond. But if we ignore this and say only that there is a 5-in-9 chance that the tenth person is blond, then we underestimate the blondness of the population as less than 56 percent. Likewise, failing to account for the higher propensity for the uncounted areas to vote MAS-IPSP likely biases our results as conservative.

This exercise suggests that Morales’s margin of victory with complete results — based entirely on the interrupted quick count — would be 10.09 percentage points, although there is reason to believe this underestimates Morales’ margin.²⁵ It also suggests that Morales’s margin was unusually large in the yet-uncounted areas; sufficient even to increase his margin past the 10 percentage point threshold as those last votes were counted. These results are consistent with the official count results (showing Morales winning with a 10.5 percentage point margin).²⁶

The Results from the Official Count Follow a Trend Very Similar to that of the Quick Count, and Both Are Explained by Geography

Figure 2 analyzes the results from the official count. As with the quick count, the MAS-IPSP margin of victory steadily increased as more tally sheets were counted. This shows a similar dynamic, mainly that later-reporting areas disproportionately favored MAS-IPSP.

In both the official count and the quick count, results for MAS-IPSP legislative seats outperform the results for the presidential ticket early in the counting process. But as the MAS-IPSP margin increases, the gap between the results shrinks: for every 10 percentage point increase in the MAS-IPSP presidential ticket share, there is a 9.6 percentage point increase in the share for legislative seats. When CC-heavy areas are counted, the MAS-IPSP does slightly better in legislative races than in the presidential race, and likewise when areas more heavily favoring MAS-IPSP are counted, the CC does somewhat better in the legislative races than the presidential. This explains the “wedge” between legislative and presidential results seen in both counts. It is also consistent with the observation that later-reporting areas, when the “wedge” disappears, more heavily favor the MAS-IPSP.

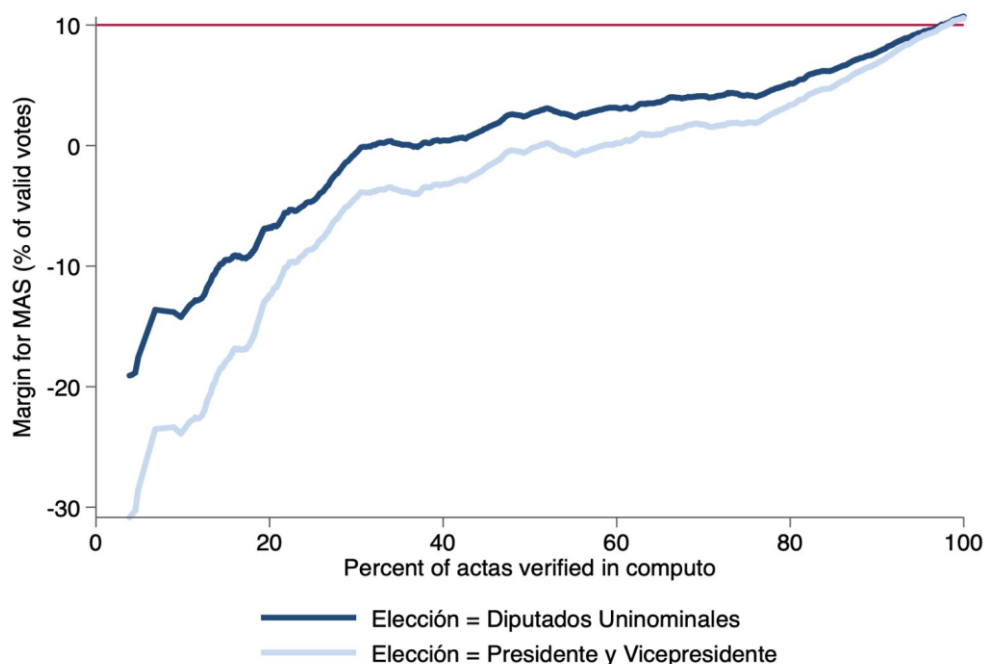
25 Ibid.

The official count shows a higher margin as reporting errors were corrected and as the quick count never reached 100 percent. It is likely that some MAS-IPSP-heavy areas were never included in that quick count. While there were errors in the quick count which cut both for and against Morales and largely canceled out, it seems the largest corrections were in his favor. For example, as originally reported, sheet 36127 showed zero votes for either Morales or Mesa, but 218 votes for other candidates (including 214 for MTS) with 237 eligible voters. On the other sheets in the precinct (36128 and 36129) with a total of 385 eligible voters, Mesa received a total of 1 vote and Morales 348, while MTS received 0. Combined with the fact that MAS-IPSP received the overwhelming majority of the legislative vote in the precinct, it is virtually certain that the reported 214 presidential votes for MTS were misreported on the sheet and instead actually cast for MAS-IPSP. Indeed, the official count gives MAS-IPSP 213 of the 218 valid votes. We do not consider such corrections in our projections from the quick count. Our estimates therefore slightly underestimate Morales’s margin in the official count.

26 More sophisticated analysis provides a range of plausible outcomes, as described in the Data Appendix.

FIGURE 2

The MAS-IPSP margin increased steadily through most of the official count (*cómputo*) as more tally sheets (*actas*) were verified



Source: Órgano Electoral Plurinacional (2019b) and authors' calculations.

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In all, these analyses confirm that the overall trends in the results from both the quick count and the official count are easily explainable and consistent with the fact that later-reporting rural areas heavily favor MAS-IPSP, especially for the presidential ticket.²⁷ In addition, and contrary to public statements from the OAS mission, an analysis of the results of the quick count up until it was suspended on election day predict an outcome that is extremely similar to the actual final results.

27 In addition, the official count and quick count share much of the same results. The final quick count verified 95.6 percent of tally sheets in the presidential race. Of those, 99.1 percent of the tally sheets were unchanged in their major-party votes from the quick count to the official count. Compared to the quick count, the CC lost 299 votes, and the MAS-IPSP lost 805 votes in the official count; the CC gained 2,593 votes and the MAS-IPSP gained 4,466 votes between the two counts for a net gain of 0.02 percent of the total vote.

Conclusion: The Politicization of the Electoral Observation Process

As shown in this paper, at the time that the reporting of the quick count results was suspended, the existing trend supported Morales winning the election outright with a more than 10 percentage point margin.

Crucially, the legally binding official vote count did not stop for any significant period of time, and the trend in results in the official count is very similar to the trend in the results of the quick count. The trends in both counts reflect well-known voting patterns that occur based on geography, and unlike claims from the OAS mission, did not change substantially over time.

The unsubstantiated doubts cast upon the vote count by the OAS mission in its first press statement and its preliminary report have been widely cited in the international and Bolivian media, repeatedly since the October 20 election.²⁸ It is clear that these unusual statements — despite the OAS to this day not having presented any evidence whatsoever to support them — have had a significant influence on media coverage and therefore on public opinion.

The Trump administration and its allies such as Senator Marco Rubio, who appears to have a strong influence on its Latin America policy agenda, have also made public statements — both before and after the allegations contained in the OAS mission’s first press release — implying that the election was stolen.²⁹ The United States supplies about 60 percent of the OAS budget.³⁰

On October 25, the Bolivian government proposed an international audit of the vote count. While initially stating that the only institution recognized by the Bolivian constitution to validate electoral results is the TSE, Morales nevertheless made it clear that he would abide by the findings of the international audit. He invited the OAS and a number of foreign governments to participate in the audit. The Bolivian government later went further and accepted the “binding” nature of the audit, on which the OAS had made its participation conditional.³¹ Carlos Mesa has rejected the audit, stating that “[w]e don't accept the audit with these unilaterally agreed terms,” demanding instead the annulment of the official results before any audit is carried out.³²

28 See, for example, Flores and Valdez (2019) or Machicao and Londoño (2019).

29 See Krygier (2019) and the Office of US Senator Marco Rubio (2019a and 2019b).

30 The United States has a quota that amounts to almost 60 percent of the funding of the OAS Regular Fund for 2019. See OAS (2019e).

31 Schipani (2019) and Sequera (2019).

32 Cárdenas (2019).

The politicization of what is normally an independent process of electoral monitoring seems inevitable when an organization that is entrusted with this monitoring — in this case the OAS — makes unsubstantiated claims that call into question the validity of an election count. This is a serious breach of the public trust, and even more dangerous in the context of the sharp political polarization and postelection political violence that has taken place in Bolivia. These unsubstantiated allegations should be retracted, and measures should be taken to insure the neutrality of electoral observation by the OAS in the future.

The OAS, in continuing its technical assistance in implementing a quick count system in Bolivia, should provide guidance to the TSE on an appropriate procedure to release and disseminate preliminary results on election night. The OAS also should arrange for an independent investigation of its Department of Electoral Cooperation and Observation; the Electoral Observation Mission that participated in this election; and any other part of the OAS that is found to have responsibility for this failure of the Electoral Observation Mission in Bolivia.

Data Appendix

Was it likely that the margin for the MAS-IPSP was going to increase as the final votes were counted? To answer this question, we repeatedly simulated the entire presidential ballot based entirely on the initial quick count data as reported on October 20, just after 7:40 p.m. local time.³³ At that time, the MAS-IPSP led the CC by a little less than 7.9 percent of the valid votes counted up to that point.

In order to project the margin for the total count, it is necessary to have some idea of what the uncounted tally sheets look like. If, for instance, the uncounted sheets are in predominantly poor and rural areas likely to be slow in reporting results, then we might expect that the MAS-IPSP margin would increase as the count proceeded.

Thus, one approach to projecting the final margin would be to estimate the number of uncounted votes for each candidate based on how urban or rural the corresponding precinct. Any number of other socioeconomic factors might be relevant, making the analysis quite complex.

In order to keep the analysis as simple as possible, if we assume simply that within any precinct the votes on different tally sheets look very similar; we can fill in uncounted tallies by examining the ones that were included in the initial quick count. Likewise, we assume that within any location, the votes at a given precinct look similar to votes at other precincts of the same location. If — based on the quick count — the location favors CC, then we should expect the vote at the uncounted precincts of that location to similarly favor CC. We can simply fill in the tallies for an uncounted precinct by picking a different precinct at random from within the same location and examining the tallies there.

Similarly, if by October 20 no tallies were reported from a particular location, we can choose at random a location within the municipality, and for each precinct within the location without data, choose at random precincts within the randomly chosen location. We may proceed to increasingly large geographies as required.

Indeed, as of the initial quick count, zero ballots were counted from Bolivian voters in Colombia. So, we may pick another foreign country from which votes were counted (e.g., Brazil). There is only one department and province within Colombia (Bogotá) to consider, so we may pick São Paulo. Again, with only one municipality, location, and precinct (the embassy), we may pick Mauá's Escola Estadual Walter Belian as a representative precinct.

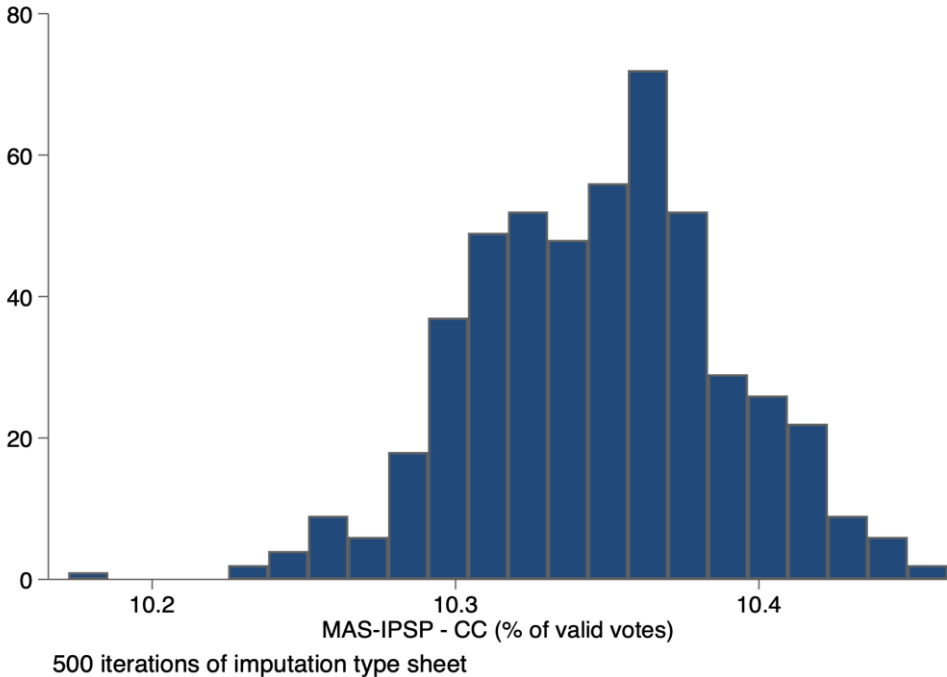
³³ Órgano Electoral Plurinacional (2019a).

Of course, the quick count in Escola Estadual Walter Belian may be very different than the actual vote at the embassy in Bogotá. Thus, once we have filled in all the missing data based on one set of random substitutes, we repeat the entire exercise with another set of random substitutes. Perhaps the second time, the vote at the embassy in Bogotá will be represented by the quick count at the embassy in Montevideo, Uruguay.

Repeating this process many times produces a range of results. Sometimes, a precinct may be misrepresented as overly favoring MAS-IPSP and other times as overly favoring CC. However, so long as our assumptions about the vote in similar geographic areas being roughly similar holds, the range of results from random substitution should reflect a reasonable range for the actual vote.

The results are robust to the way in which we use representative precincts to fill in the missing data. Perhaps the simplest way to fill in a missing tally sheet would be to pick a random sheet from the ones counted at the representative precinct and scale the votes to account for the difference in the number of eligible voters on the sheets. The results of 500 such imputations are shown in **Figure A**.

FIGURE A
500 imputations to simulate the final margin of MAS-IPSP victory in the quick count



Source: Órgano Electoral Plurinacional (2019b) and authors' calculations.

The average margin is 10.35 percent, with 80 percent of the results falling between 10.30 and 10.40 percent.

We may make use of the representative precincts in any number of ways. One way would be to employ a Bayesian-like approach by assuming that for each party on a given tally sheet there is a Poisson rate of supporters per eligible voter, with the Poisson rate gamma-distributed as implied by the votes at the representative precinct.³⁴ The gamma–Poisson simulations show an average margin of 10.34, with 80 percent of the results falling between 10.26 and 10.42 percent. Another pseudo-Bayesian approach would be to assume that the votes for any party on the tally sheet are binomial, with a beta-distributed probability of any voter casting a vote for that party.³⁵ The beta-binomial simulations show an average margin of 10.34, with 80 percent of the results falling between 10.25 and 10.43 percent.

Clearly, the exact procedure for translating the results at a representative precinct to imputing votes on actual tally sheets has little effect on the simulations. Far more critical to the simulation results is selecting geographies that are as representative as possible to the uncounted tally sheets. By contrast, an assumption that in their entirety the counted votes at the time the quick count paused would be representative of the total vote introduces a bias as soon as we recognize that the counted votes came on average from areas relatively friendly to Mesa. Accounting for geography, it is no surprise that Morales’s margin increased beyond the necessary 10 percentage points.

34 Employing an improper prior with zero pseudocounts, we have the votes for a party as $v \sim \text{Poisson}(n\lambda)$ where n is the number of eligible voters on the tally sheet, $\lambda \sim \Gamma(V, 1/N)$, V is the total votes for the party in the representative precinct, and N is the total eligible voters in the representative precinct. This approach may result in total valid votes greater than the number of eligible voters — particularly in representative precincts with high turnout. But these results will on average balance out, with simulations producing correspondingly low turnout. This methodological flaw should increase variance, creating more conservative estimates.

35 Again employing improper priors, we choose for the first party votes of $v_1 \sim \text{Binomial}(n, p_1)$ with $p_1 \sim \beta(V_1, N - V_1)$ and therefore second party votes of $v_2 \sim \text{Binomial}(n - v_1, p_2)$ with $p_2 \sim \beta(V_2, N - V_1 - V_2)$ and third-party votes of $v_3 \sim \text{Binomial}(n - v_1 - v_2, p_3)$ with $p_3 \sim \beta(V_3, N - V_1 - V_2 - V_3)$. In other words, we assume the votes are beta-binomial based on the residual voter pool after removing the previous parties’ votes. To ensure symmetric treatment, with each simulation we randomize the order of the parties (MAS-IPSP, CC, and others.) When we disaggregate the simulation results by party ordering we find that party order has no detectable effect on the results.

References

- Arauz, Andrés et al. 2019. “Bolivia’s Economic Transformation: Macroeconomic Policies, Institutional Changes and Results.” Washington, DC: Center for Economic and Policy Research, October. <http://cepr.net/publications/reports/bolivia-s-economic-transformation-macroeconomic-policies-institutional-changes-and-results>.
- Ariñez, Rubén. 2019. “Gobierno asegura en la OEA que no hubo compromiso de dar resultados del TREP al 100%.” La Razón, October 23. http://www.la-razon.com/nacional/animal_electoral/Bolivia-garantiza-defensa-compromiso-resultados_0_3244475567.html.
- Cárdenas, José Arturo. 2019. “OAS Begins Audit of Disputed Bolivia Election Results.” Agence France-Presse, October 31. <https://www.france24.com/en/20191031-oas-begins-audit-of-disputed-bolivia-election-results>.
- Columba, José Luis. 2017. “Los votos nulos superan el 50% en reporte preliminar del TSE al 80%.” La Razón, December 3. http://www.la-razon.com/nacional/animal_electoral/Votos-alcanzan-superan-preliminar-TSE_0_2831116904.html.
- eju.tv. 2016. “Datos preliminares de la página del OEP al 81,2% de los resultados.” February 22. <http://eju.tv/2016/02/datos-preliminares-la-pagina-del-oep-al-812-los-resultados/>.
- Estado Plurinacional de Bolivia. 2005. “Codigo Electoral Indice Tematico.” La Paz: Estado Plurinacional de Bolivia. <http://pdba.georgetown.edu/Electoral/Bolivia/Leyes/codigoelectoralordenado.pdf>.
- Estok, Melissa, Neil Nevitte, and Glenn Cowan. 2002. “The Quick Count and Election Observation: An NDI Guide for Civic Organizations and Political Parties.” Washington, DC: National Democratic Institute, June. https://www.ndi.org/sites/default/files/1417_elect_quickcountthdbk_0.pdf.
- Flores, Paola and Carlos Valdez. 2019. “Morales Leads in Bolivia Vote, but Seems Headed for Runoff.” Associated Press, October 20. <https://apnews.com/cb4169d97fe24b8a92053874efc60b56>.
- Guarachi, Ángel. 2019. “A dos horas del cierre de la jornada electoral, el TSE publicará 80% de los resultados preliminares.” La Razón, October 9. https://www.la-razon.com/nacional/animal_electoral/elecciones-bolivia-tse-trep-votacion-votacion-resultados-80_0_3236076395.html.
- Guarachi, Ángel and Angélica Melgarejo. 2019. “El TSE sortea 207.330 jurados para vigilar el voto en elecciones generales de octubre.” La Razón, September 20. http://www.la-razon.com/nacional/animal_electoral/Sorteo-jurados-elecciones-generales-octubre-TSE-Bolivia_0_3224677513.html.
- Kimball, David C. and Brady Baybeck. 2013. “Are All Jurisdictions Equal? Size Disparity in Election Administration.” *Election Law Journal*, 12(2), 130–145. doi:10.1089/elj.2012.0174.
- Kirby, Jen. 2018. “Why It Takes So Long to Get Election Night Results.” Vox, November 6. <https://www.vox.com/2018/11/6/18066350/midterm-elections-2018-vote-counting>.

- Krygier, Rachele. 2019. "Bolivia Election: U.S. Withholds Recognition, Morales Supporters and Opposition Clash as Sides Await OAS Audit." *The Washington Post*, October 29. https://www.washingtonpost.com/world/the_americas/bolivian-election-morales-supporters-opposition-clash-us-withholds-recognition-as-all-await-oas-audit/2019/10/29/eed045be-f9a2-11e9-9e02-1d45cb3dfa8f_story.html.
- Los Tiempos Digital. 2016. "Conteo rápido: 10 entidades le dicen Sí a su norma autonómica y 5 la rechazan." November 20. <https://www.lostiempos.com/actualidad/nacional/20161120/conteo-rapido-10-entidades-le-dicen-si-su-norma-autonomica-5-rechazan>.
- Machicao, Mónica and Daniel Ramos. 2019. "Bolivia's Morales Confident Of Election Win Despite Count Suggesting a Run-Off." *Reuters*, October 20. <https://www.reuters.com/article/us-bolivia-election/bolivias-morales-confident-of-election-win-despite-count-suggesting-a-run-off-idUSKBN1WZ0CS>.
- Machicao, Mónica and Ernesto Londoño. 2019. "Bolivia's Democracy Faces Pivotal Test as Unrest Spreads." *The New York Times*, October 31. <https://www.nytimes.com/2019/10/31/world/americas/bolivia-election-protests.html>.
- Ministerio Relaciones Exteriores. 2019. "Ministro de Justicia y Transparencia Institucional, Héctor Arce Zaconeta." La Paz: Estado Plurinacional de Bolivia. <http://www.cancilleria.gob.bo/webmre/discurso/3712>.
- Office of US Senator Marco Rubio. 2019. "Rubio Expresses Concern Following Bolivia's First Round of Elections." Washington, DC: The Office of US Senator Marco Rubio. <https://www.rubio.senate.gov/public/index.cfm/press-releases?ID=565813C3-63DD-44E2-A58E-455E6791DD19>.
- _____. 2019. "In #Bolivia all credible indications are Evo Morales failed to secure..." Twitter, October 21. <https://twitter.com/marcorubio/status/1186284033178767361>.
- Organization of American States (OAS). 2019a. "OAS to Deploy 92 Observers in its Mission to the Elections in Bolivia." October 9. https://www.oas.org/en/media_center/press_release.asp?sCodigo=E-079/19.
- _____. 2019b. "Statement of the OAS Electoral Observation Mission in Bolivia." October 21. https://www.oas.org/en/media_center/press_release.asp?sCodigo=E-085/19.
- _____. 2019c. "Preliminary Report of the Electoral Observation Mission in Bolivia." October 23. <http://www.oas.org/documents/eng/press/Preliminary-Report-EOM-Bolivia-23-10-19.pdf>.
- _____. 2019d. "Misión de Observación Electoral d OEA sigue dando seguimiento riguroso al proceso electoral en #Bolivia..." Twitter, October 20. https://twitter.com/OEA_oficial/status/1186108599954739200.
- _____. 2019e. "Regular Fund, Quota Collection, As of February 28, 2019." http://www.oas.org/saf/DFAMS/2019/02/RF_TABLE_QUOT_20190228_ENSP.pdf.
- _____. 2017a. "Preliminary Report from the Electoral Experts Mission of the Organization of American States to Bolivia." December 4. <http://www.oas.org/documents/eng/press/preliminary-report-electoral-experts-mission-bolivia-2017.pdf>.

- _____. 2015a. “Implementar un sistema de trasmisión de resultados preliminares.” <http://www.oas.org/EOMDatabase/moeRecomm.aspx?Lang=en&id=765&fc1=CBOL&fc2=N49,3,4,1&fc3=N2019,2018,2017,2016,2015,2014,2013,2012,2011,2010,2009,2008,2007,2006,2005,2004,2003,2002,2001,2000,1999,1998,1997,1996,1995,1994,1993,1992,1991,1990,1989,1987,1985,1984,1982,1980,1978,1972,1970,1968,1966,1963,1962&fc4=N2>.
- _____. 2015b. “Departamento para la Cooperación y Observación Electoral: Cooperación Técnica.” https://www.oas.org/es/sap/deco/Coop_Tecnica_proyectos.asp.
- Órgano Electoral Plurinacional. 2019a. “Actas.” <https://trep.oep.org.bo/PubResul/acta.2019.10.20.19.40.57.xlsx>.
- _____. 2019b. “Elecciones Generales Bolivia, 20 de octubre de 2019.” <https://www.oep.org.bo/elecciones-generales-2019/>.
- _____. 2016. “Referendo Autonómico 2016” <https://www.oep.org.bo/procesos-electorales-y-consultas/referendos/referendo-de-estatutos-y-cartas-organicas-2016/>.
- Oviedo Obarrio, Fernando. 2010. “Evo Morales and the Altiplano : Notes for an Electoral Geography of the Movimiento al Socialismo, 2002–2008.” *Latin American Perspectives*, 37(3), 91–106. doi:10.1177/0094582x10364035.
- Schipani, Andres. 2019. “President Evo Morales Accuses Bolivian Opposition of Plotting Coup.” *Financial Times*, October 23. <https://www.ft.com/content/8034579c-f594-11e9-b018-3ef8794b17c6>.
- Sequera, Vivian. 2019. “Bolivia Election Audit Set to Begin with Country Caught in Deadlock.” *Reuters*, October 30. <https://www.reuters.com/article/us-bolivia-election/bolivia-election-monitor-to-begin-binding-audit-on-contested-result-idUSKBN1X91IT>.
- Tribunal Supremo Electoral (TSE). 2019. “Reglamento para las Elecciones Generales 2019.” La Paz: Órgano Electoral Plurinacional. https://www.oep.org.bo/wp-content/uploads/2019/05/Reglamento_Elecciones_Generales_2019.pdf.
- _____. 2017. “En vivo: informe de los resultados preliminares...” Twitter, December 3. <https://twitter.com/TSEBolivia/status/937498288831508480>.
- Warf, B. 2006. “Voting Technologies and Residual Ballots in the 2000 and 2004 Presidential Elections.” *Political Geography*, 25(5), 530–556. doi:10.1016/j.polgeo.2006.03.001.
- Youkee, Mat, and Agencies. 2019. “Bolivia Braces for Fresh Protests as Officials Say Evo Morales Close to Victory.” *The Guardian*, October 22. <https://www.theguardian.com/world/2019/oct/21/bolivia-confusion-over-election-results-sparks-fear-and-protests>.