John M. Carey, Malapportionment and Ideological Bias in Chilean Electoral Districts

Appendix: Alternative Measurements and Specifications

Latin American Politics and Society **vol. 58, no. 3 (Fall 2016)**

The first set of graphs (pp.3-6) shows the linear best-fit of district-level leftism against population per seat, for:

- Pre-reform Chamber
- Post-reform Chamber
- Pre-reform Senate
- Post-reform Senate

according to each of the 3 methods for measuring district-level leftism:

1. Based on 2nd-round presidential votes, as described in the paper;

2. Based on municipal elections from 2004, 2008, and 2012, with votes for parties that participated in the the Concertacion or Nueva Mayoria coalitions coded as leftist, and votes for parties that participated in the Alianza coalition as rightist.

3. Based on municipal elections from 2004, 2008, and 2012, with party votes weighted[1] according to their left-right ideological placement in the Vote-Revealed Leftism dataset associated with Baker & Greene (2011), available at: http://spot.colorado.edu/~bakerab/data.html

The second set of graphs (pp.7-18) shows the analogous plots, with lines fitted by a loess function rather than a linear best fit.

In no case does the range of estimated district-level leftism exceed the boundaries of the 95% confidence intervals across the range of population per seat. The coefficient on a simple regression of district leftism on population per seat does not approach statistical significance under any of the three methods for measuring district leftism.

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[1] Note that, although it is nominally a measure of leftism, Baker and Greene's 20-point scale runs from low values (left) to high values (right). I invert the scale, such that higher values denote greater district leftism. The section of Stata code for producing district-level, weighted VRL is on the following page. Full Stata replication code for all analyses reported in this paper will be available on the author's website.

Stata code for district-level VRL

*Assign each party the VRL score given to it for Chamber Elections by the Baker & Greene VRL database.
gen partyideo = .
replace partyideo = 1.9 if partyacro=="P.C.Ch" | partyacro=="PCCH"
replace partyideo = 4.4 if partyacro=="PH"
replace partyideo = 4.4 if partyacro=="PRI"
replace partyideo = 5.7 if partyacro=="MAS"
replace partyideo = 5.7 if partyacro=="IGUALD"
replace partyideo = 6.2 if partyacro=="P.S." | partyacro=="PS"
replace partyideo = 7.9 if partyacro=="ECOL" | partyacro=="PEV" | partyacro=="PEVN"
replace partyideo = 7.9 if partyacro=="P.P.D." | partyacro=="PPD"
replace partyideo = 7.9 if partyacro=="PRO"
replace partyideo = 8.0 if partyacro=="P.R.SD" | partyacro=="PRSD"
replace partyideo = 10.1 if partyacro=="P.D.C." | partyacro=="PDC"
replace partyideo = 11.6 if partyacro=="Ch1"
replace partyideo = 16.3 if partyacro=="RN"
replace partyideo = 16.7 if partyacro=="ANI"
replace partyideo = 16.7 if partyacro=="PAR"
replace partyideo = 18.1 if partyacro=="U.D.I." | partyacro=="UDI"

*But note -- Baker & Greene's VRL scores, which run from 1-20, are backward, insofar as higher values are
*assigned the further RIGHT a party is, not left, as the name implies. Thus, if we want a measure of
LEFTism, we need to invert the scale. So ...

replace partyideo = 20 - partyideo if partyideo ~= .

*Create tallies of all the votes cast for leftist and rightist lists in municipal elections, by old Chamber
district.*
sort distrito

gen party_left_max = votes * 20
egen dist_vrl_denominator = sum(party_left_max), by(distrito)
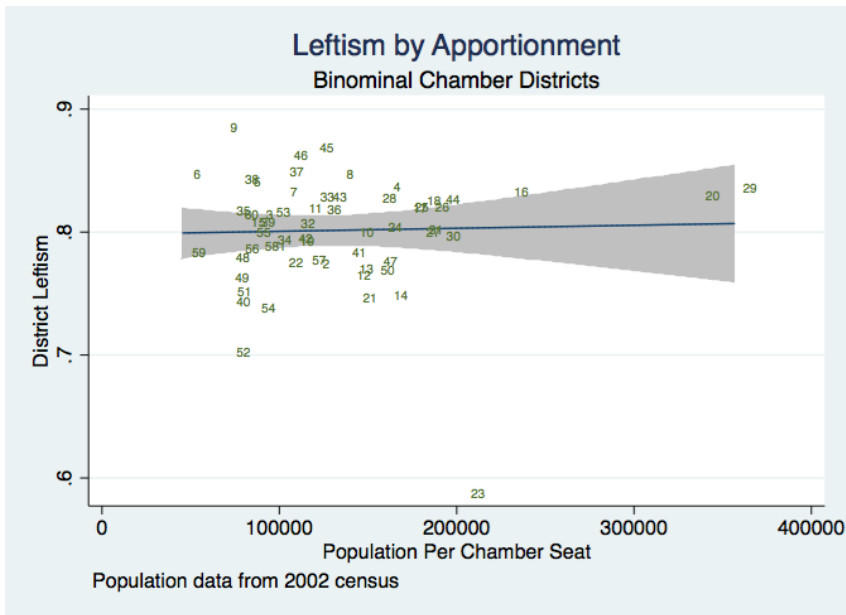
gen party_vrl = votes * partyideo
egen dist_party_vrl = sum(party_vrl), by(distrito)
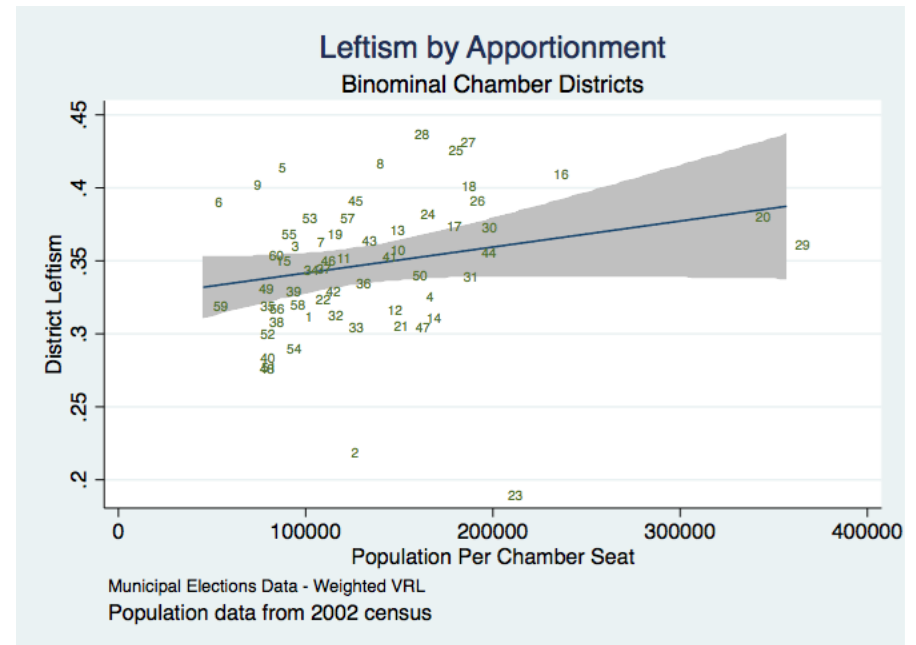
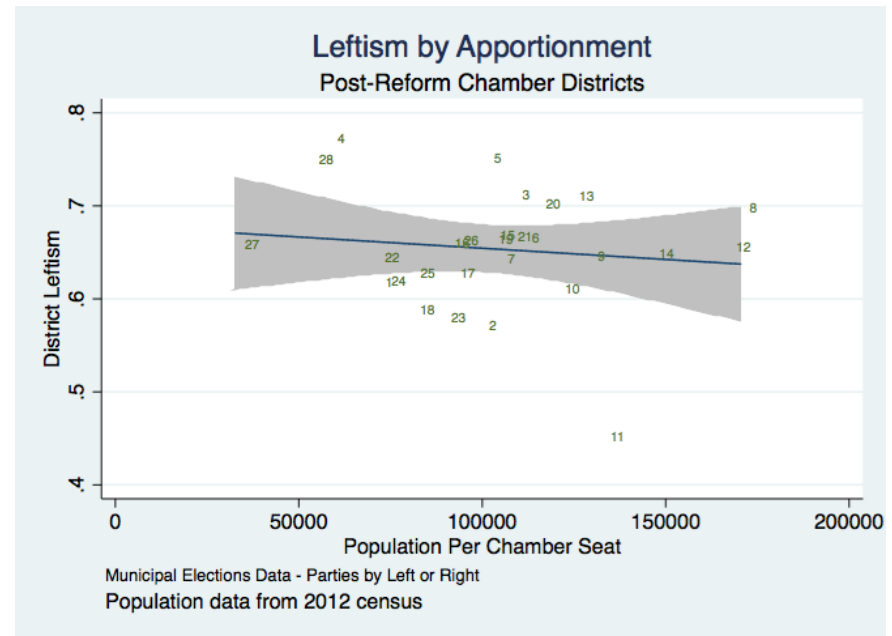gen dist_vrl = dist_party_vrl / dist_vrl_denominator

Chamber Pre-Reform
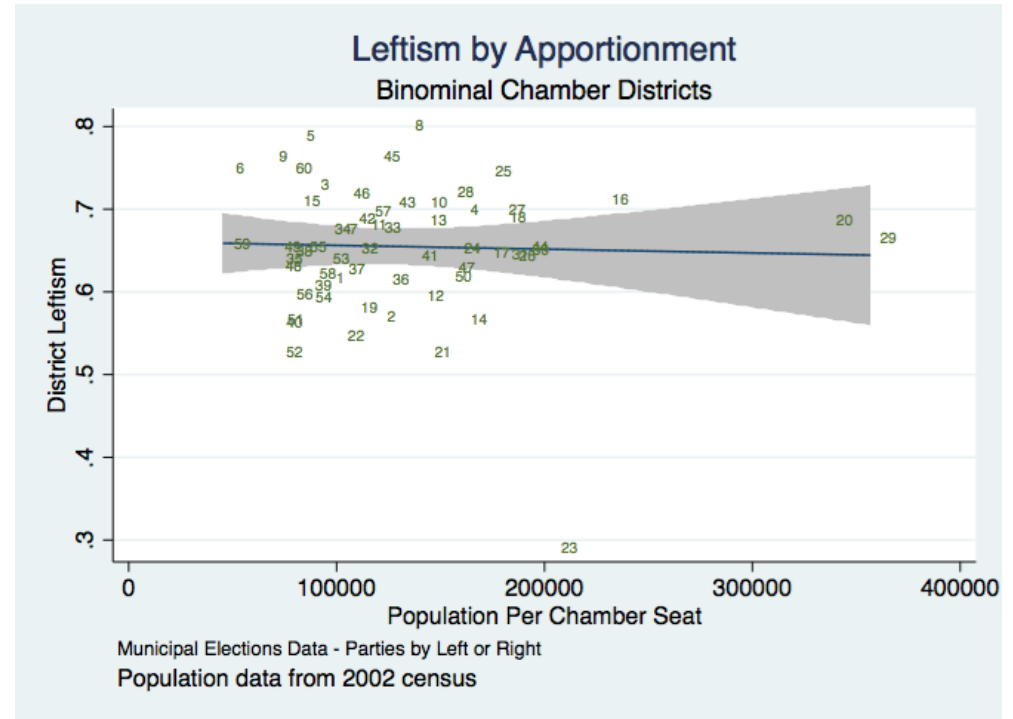
Municipal Elections – VRL Left-Right

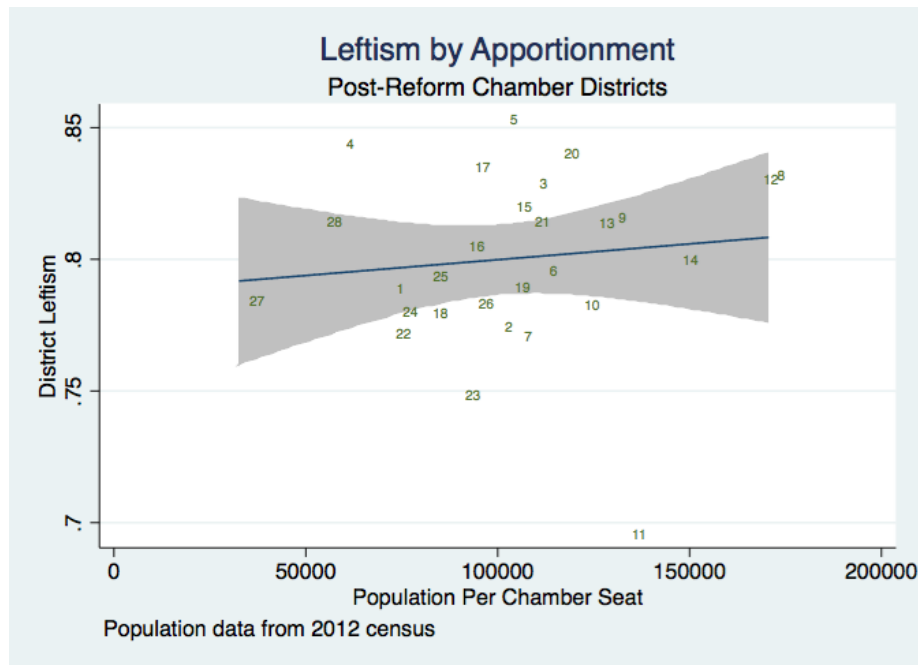Presidential 2nd-round data
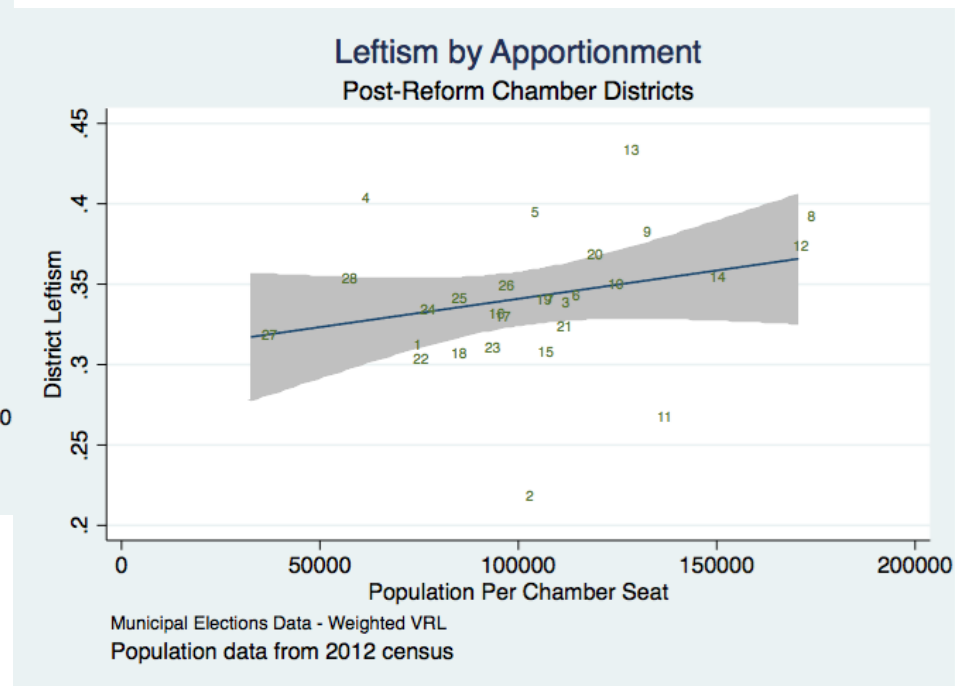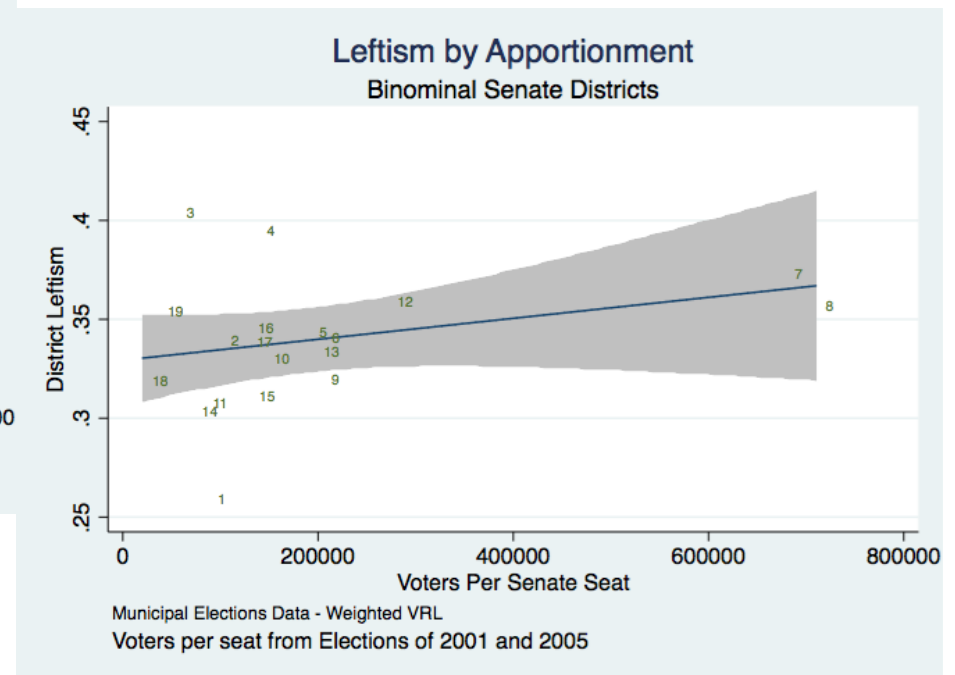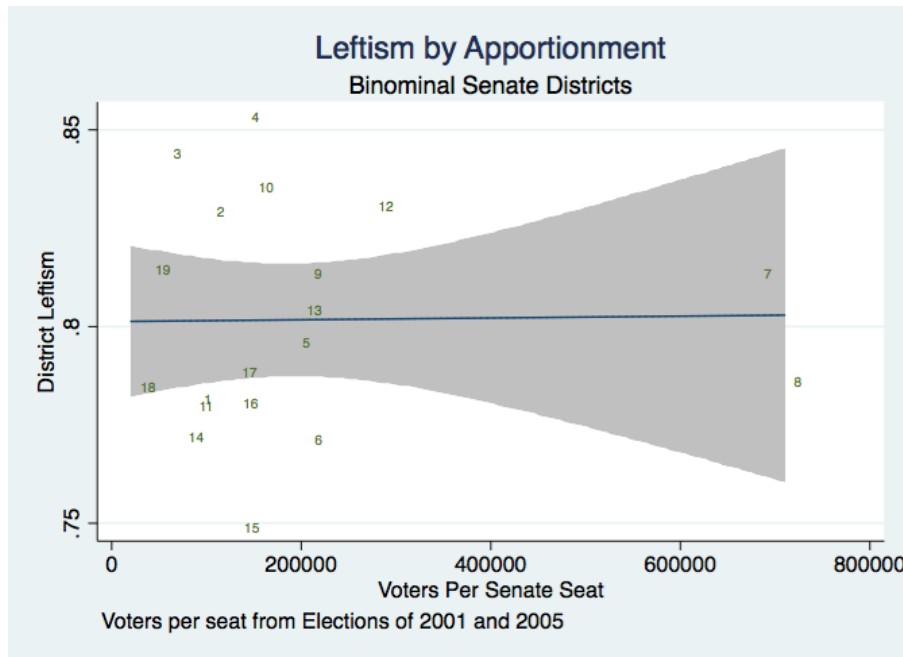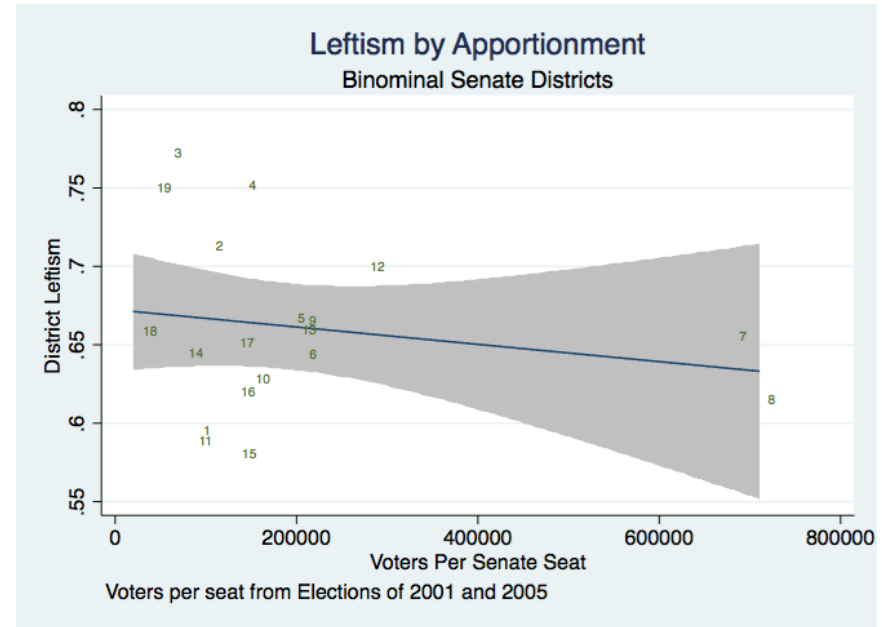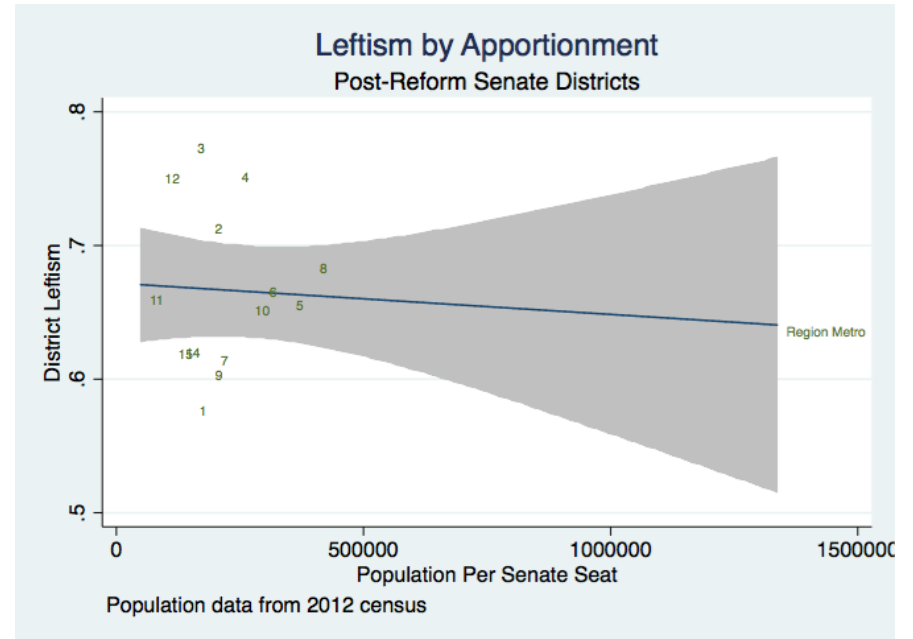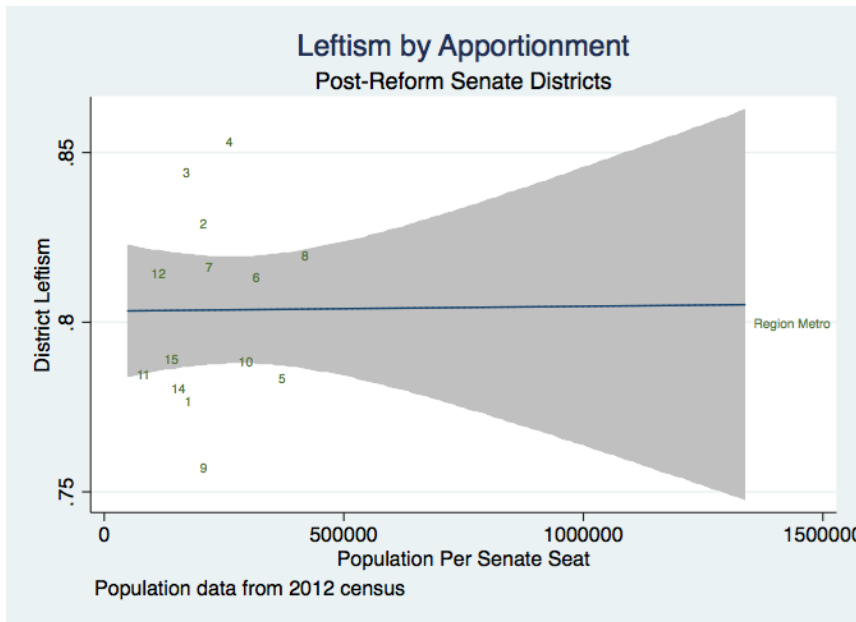
Chamber Post-Reform

Municipal Elections – VRL Left-Right

Presidential 2nd-round data

Senate Pre-Reform

Municipal Elections – VRL Left-Right

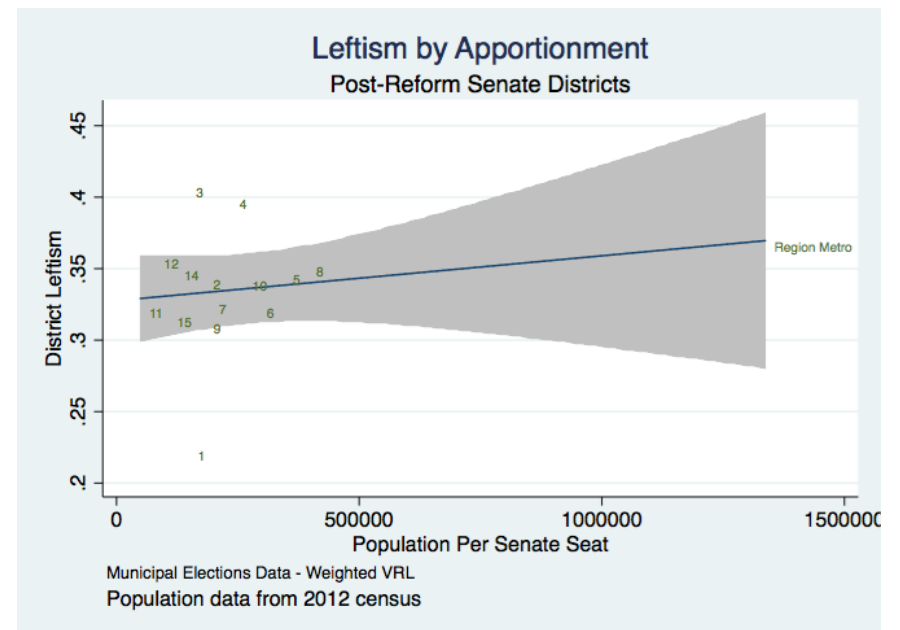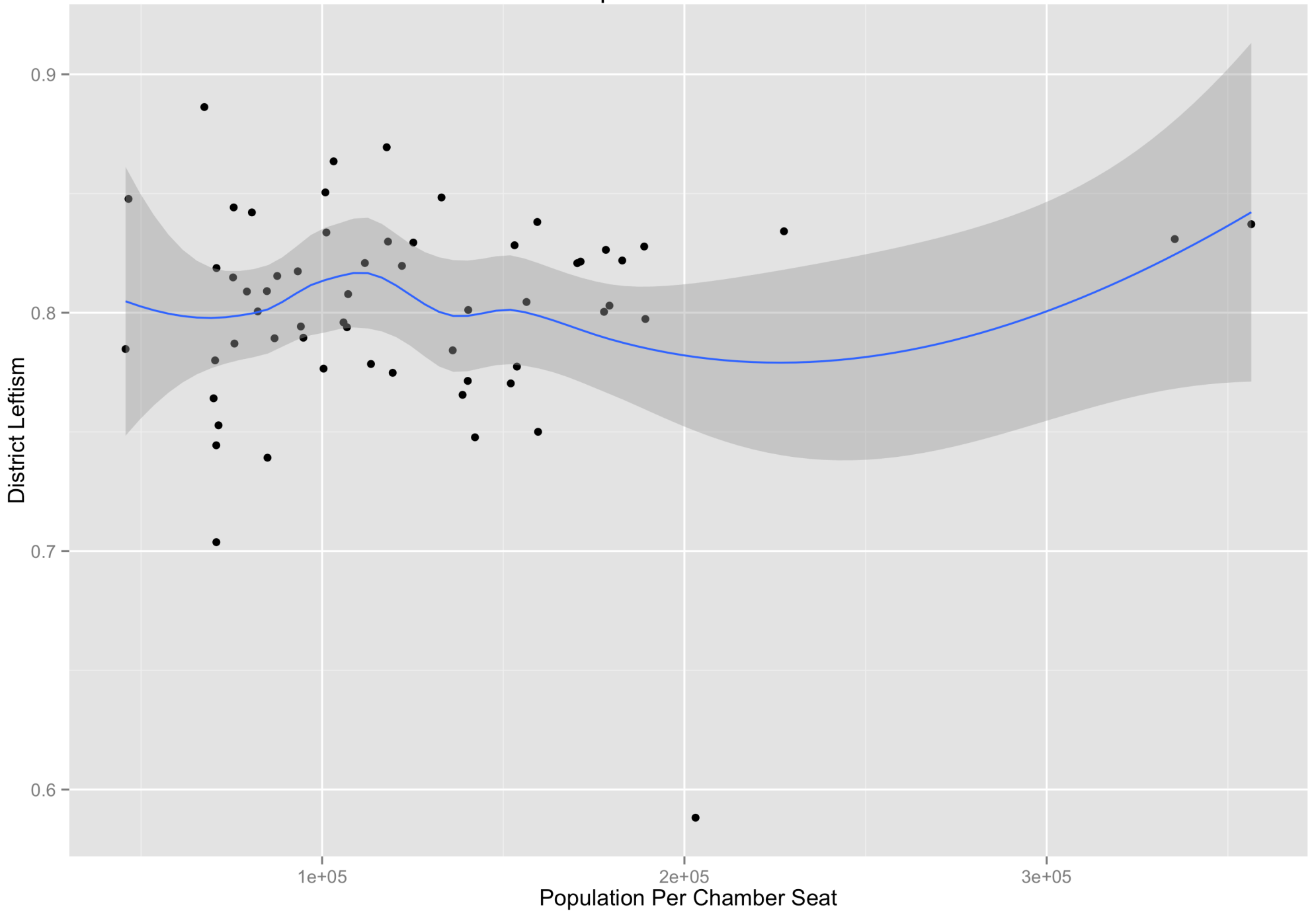

Presidential 2nd-round data
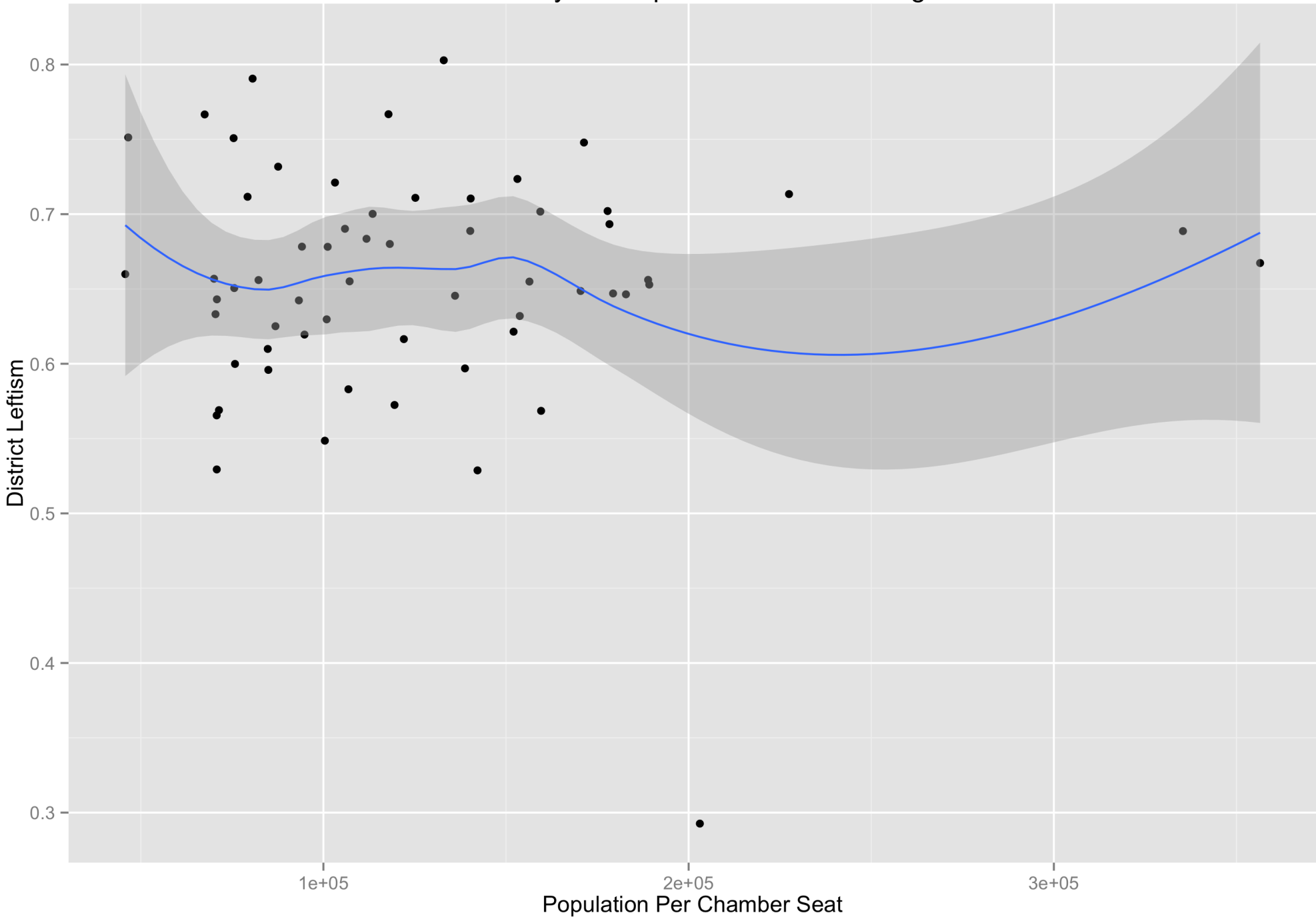
Senate Post-Reform

Municipal Elections – VRL Left-Right

Presidential 2nd-round data

Leftism by Apportionment - Chile Chamber Pre-Reform Districts
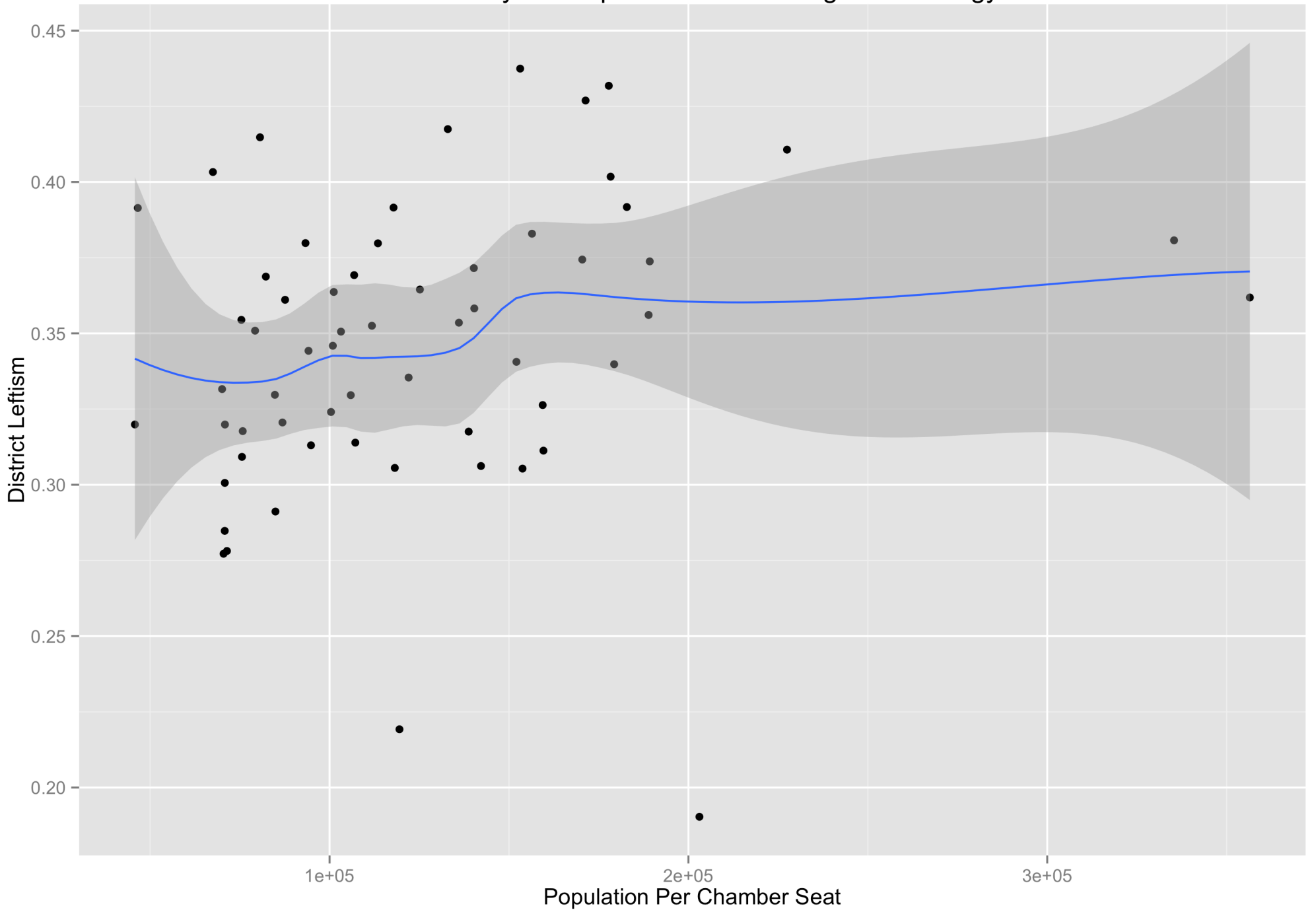Leftism from presidential 2nd-round votes
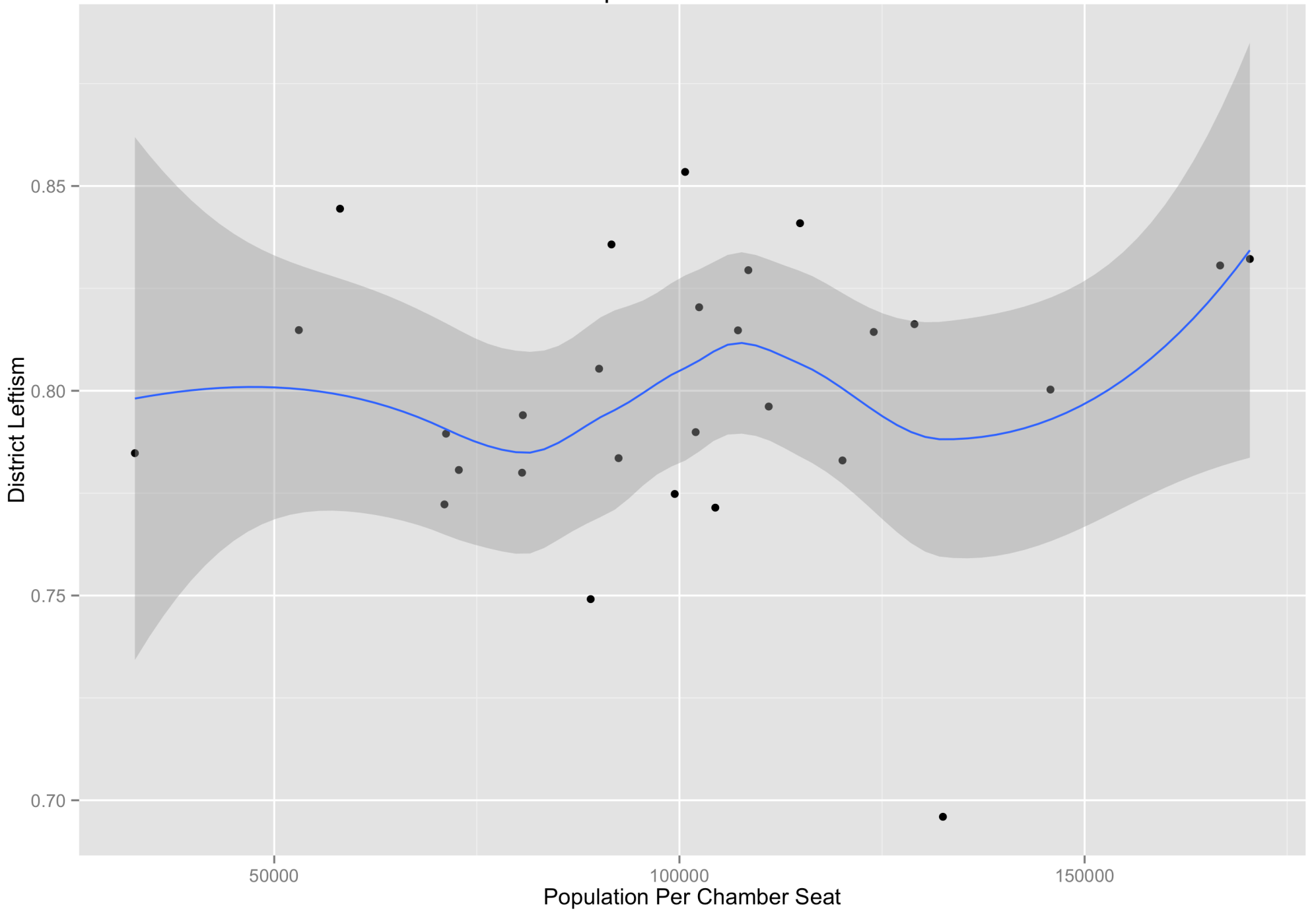
District Leftism

Population Per Chamber Seat

Leftism by Apportionment - Chile Chamber Pre-Reform Districts
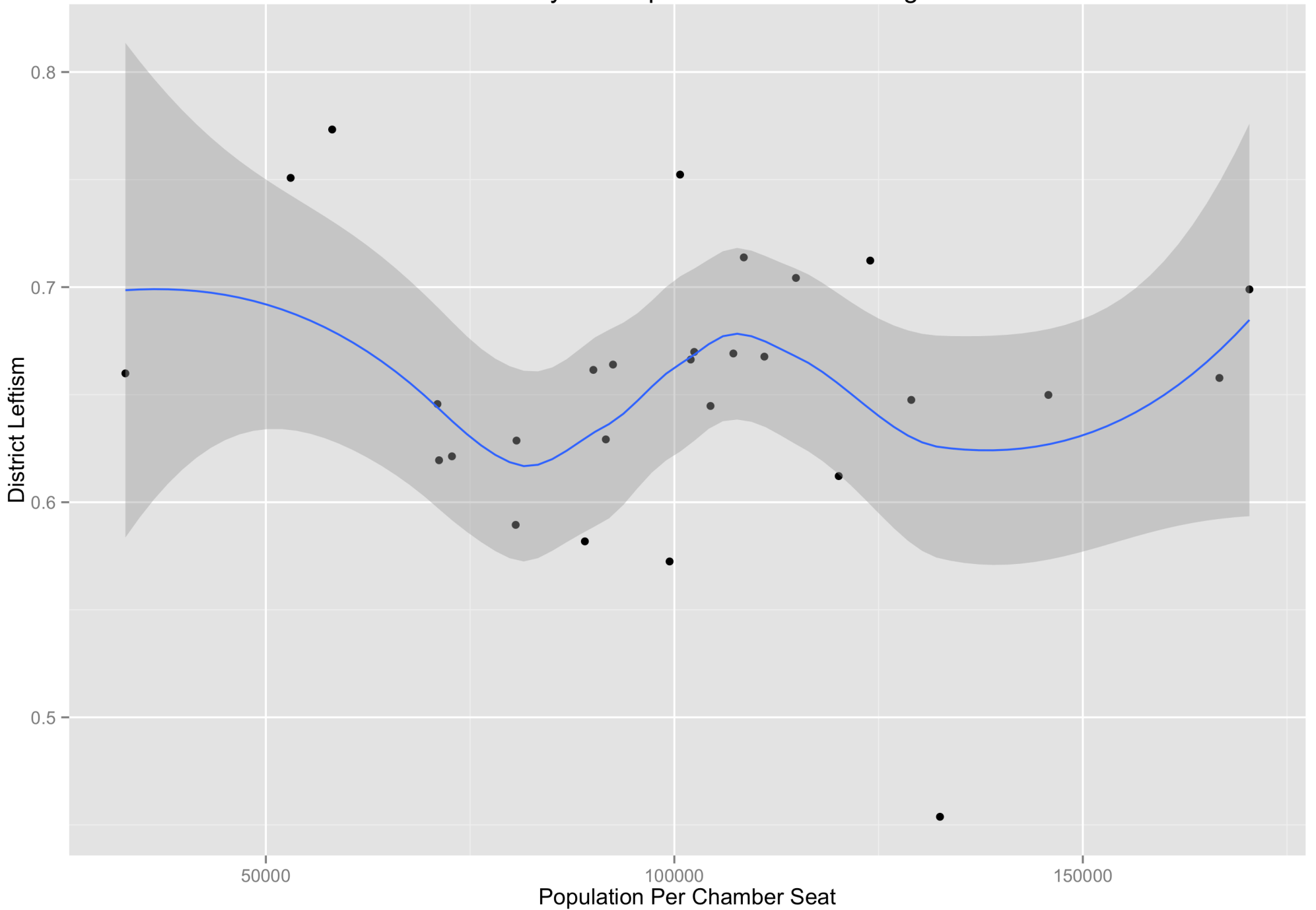Leftism by Municipal Elecs VRL Left-Right

Leftism by Apportionment - Chile Chamber Pre-Reform Districts
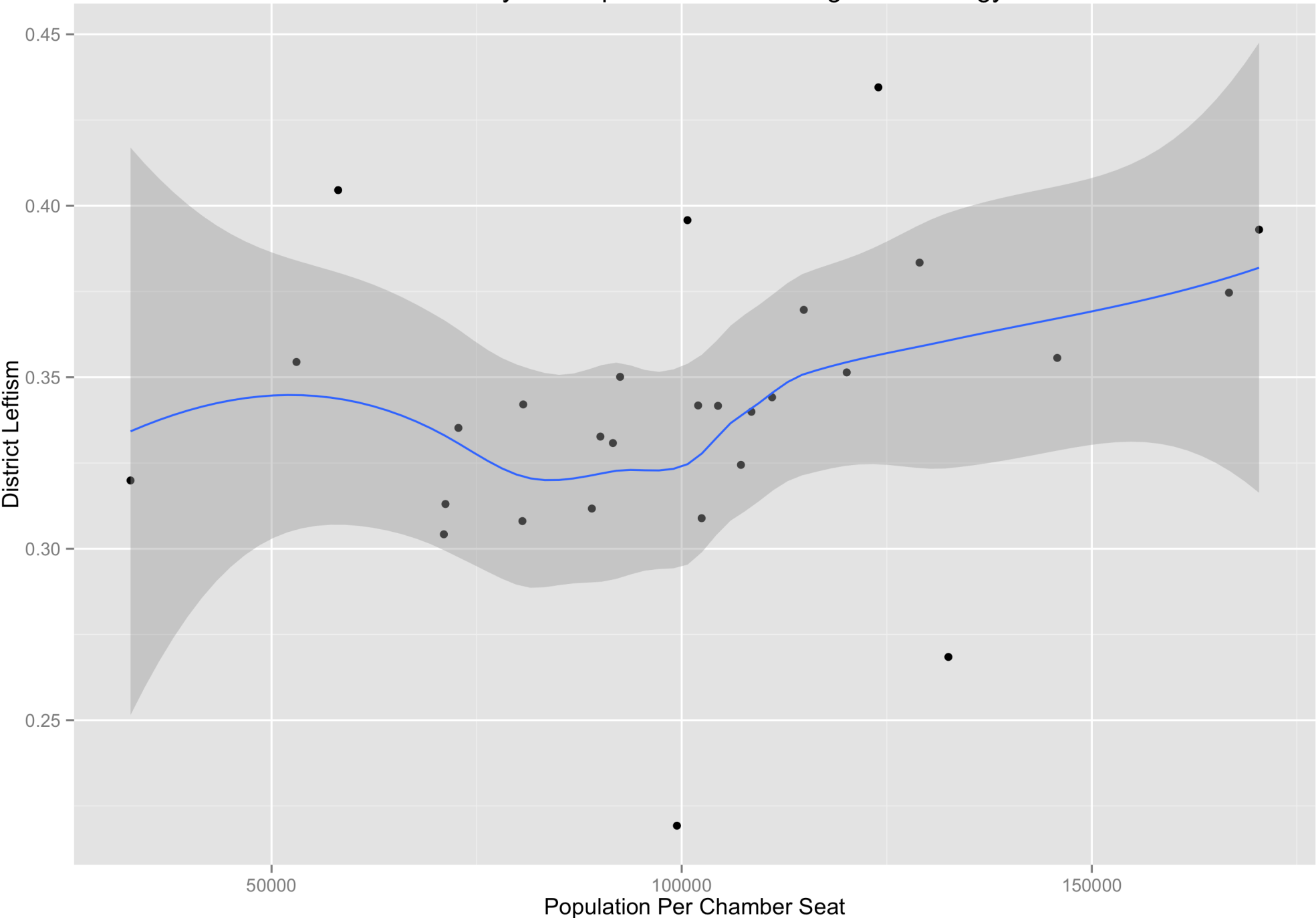Leftism by Municipal Elecs VRL Weighted Ideology

Leftism by Apportionment - Chile Chamber Post-Reform Districts
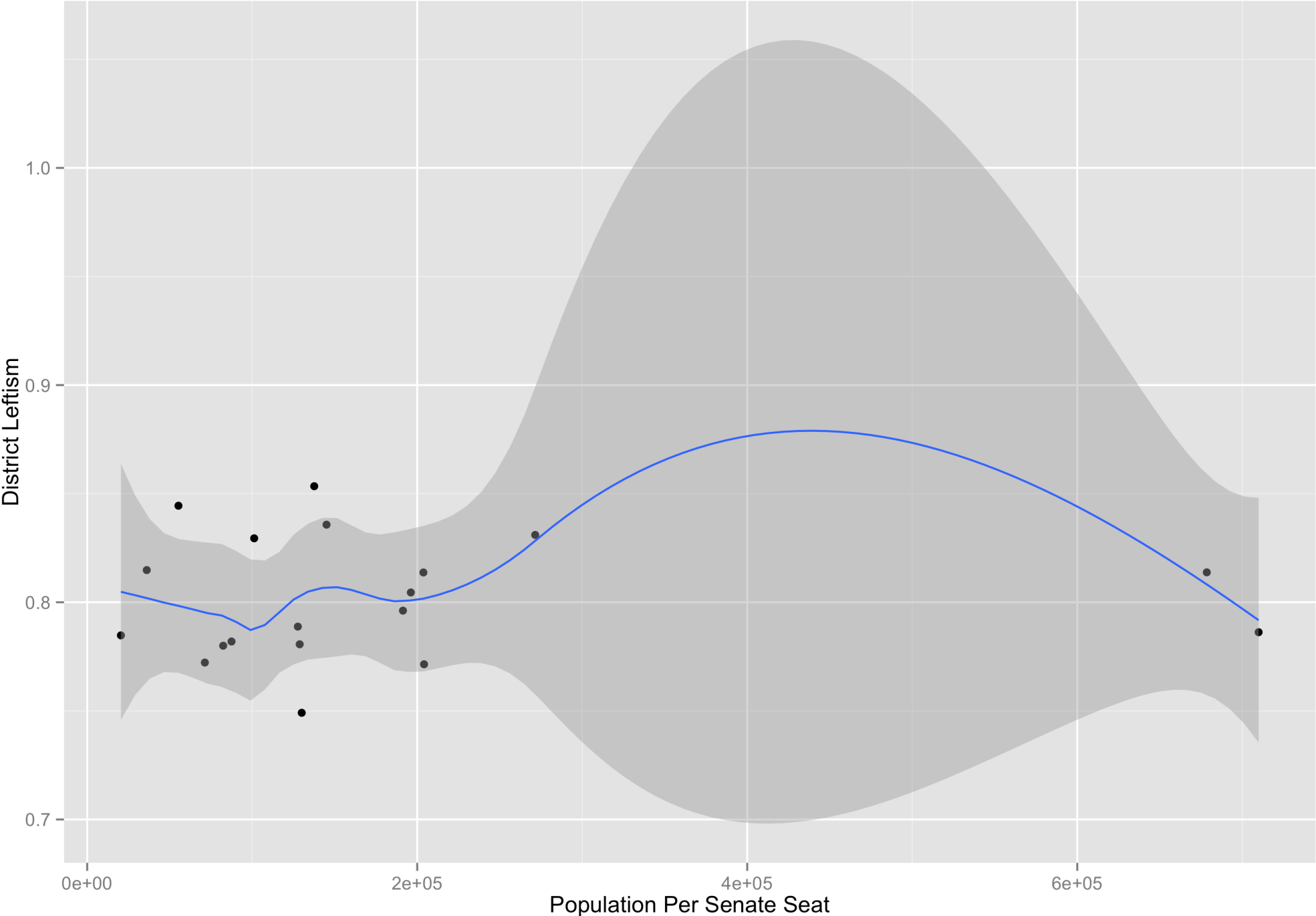Leftism from presidential 2nd-round votes

Leftism by Apportionment - Chile Chamber Post-Reform Districts
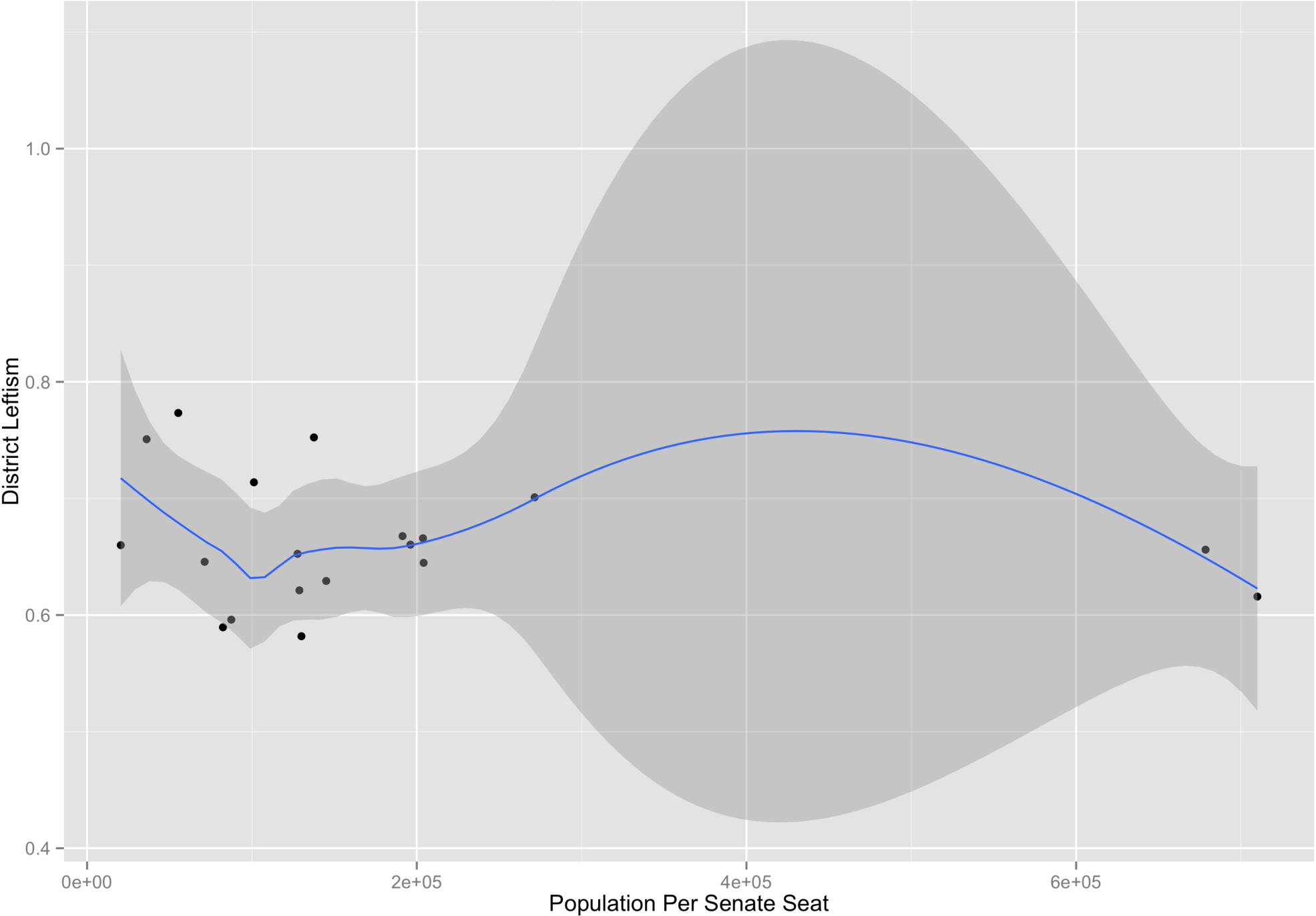Leftism by Municipal Elecs VRL Left-Right

Leftism by Apportionment - Chile Chamber Post-Reform Districts
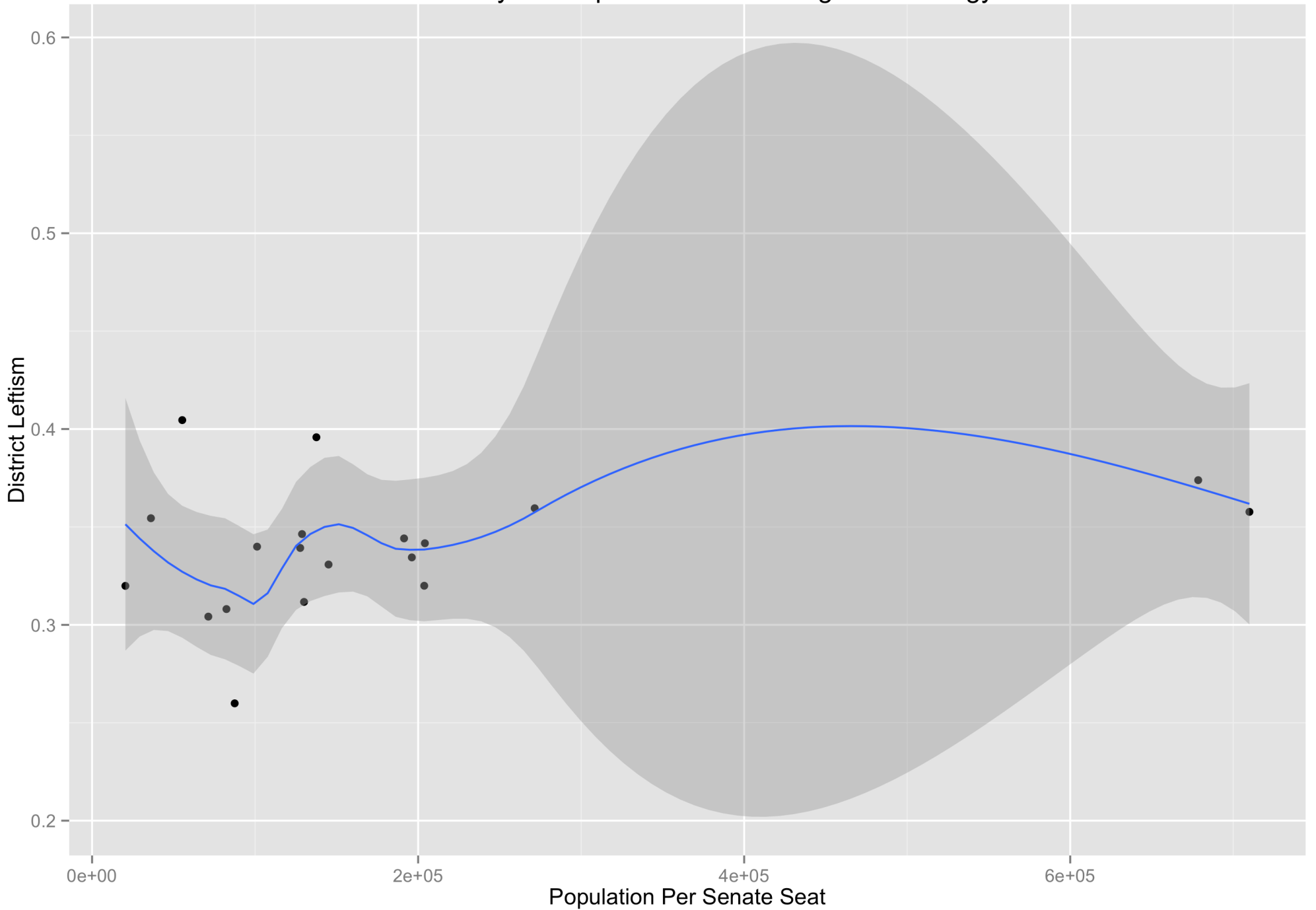Leftism by Municipal Elecs VRL Weighted Ideology

Leftism by Apportionment - Chile Senate Pre-Reform Districts
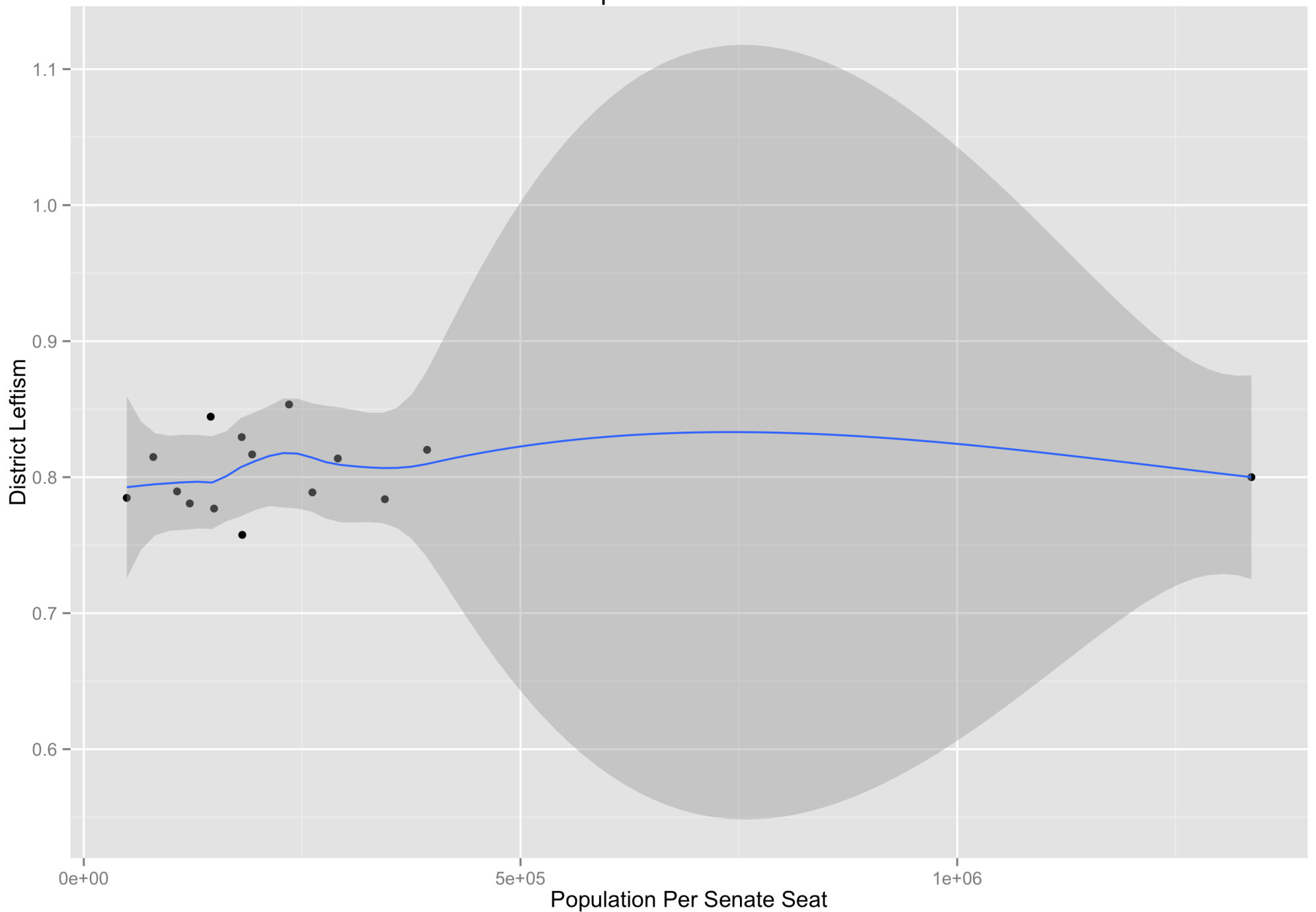Leftism from presidential 2nd-round votes

Leftism by Apportionment - Chile Senate Pre-Reform Districts
Leftism by Municipal Elecs VRL Left-Right

Leftism by Apportionment - Chile Senate Pre-Reform Districts
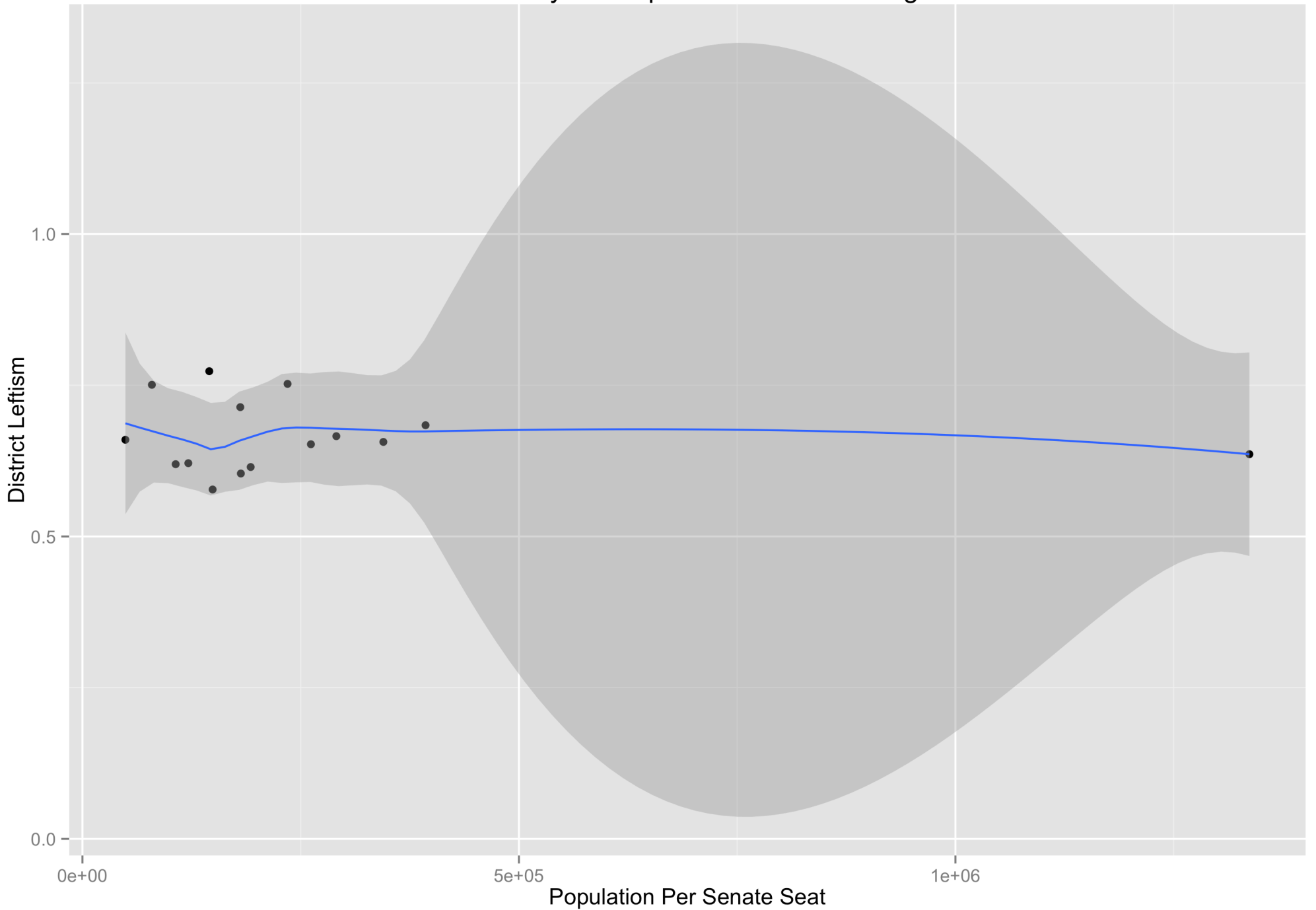Leftism by Municipal Elecs VRL Weighted Ideology

Leftism by Apportionment - Chile Senate Post-Reform Districts
Leftism from presidential 2nd-round votes

Leftism by Apportionment - Chile Senate Post-Reform Districts
Leftism by Municipal Elecs VRL Left-Right

Leftism by Apportionment - Chile Senate Post-Reform Districts
Leftism by Municipal Elecs VRL Weighted Ideology