First 500 Singular Values/Vectors

Note that all ratios are original:optimal

With Party Id

KPOP (no meanfirst)

Table 1: KPOP + MF=FALSE + W PID: Comparison of Bias bound and L1 distance by choice of b

	Bias Bound Ratio	L1 Ratio	Bias Bound Orig	Bias Bound Opt	L1 Orig	L1 Opt
b=2x	4.2835	6.3312	0.0540	0.0126	0.0416	0.0066
b=1x	2.9332	3.7698	0.0530	0.0181	0.0856	0.0227
b=.5x	4.4335	17.5196	0.0415	0.0094	0.1811	0.0103
b=.25x	2.6187	5.0790	0.0272	0.0104	0.3531	0.0695
b=.125x	1.9803	1.8948	0.0193	0.0098	0.5024	0.2651

Table 2: KPOP + MF=FALSE + W PID: Choice of b and Estimated Outcome

	Bias Bound Ratio	L1 Ratio	Est Vote Margin	Diff from Target
b=2x	4.2835	6.3312	0.0721	0.0457
b=1x	2.9332	3.7698	0.0655	0.0391
b=.5x	4.4335	17.5196	0.0464	0.0200
b=.25x	2.6187	5.0790	0.0348	0.0084
b=.125x	1.9803	1.8948	0.0544	0.0280

KPOP with meanfirst

Table 3: KPOP + MF=TRUE + W PID: Comparison of Bias bound and L1 distance by choice of b

	Bias Bound Ratio	L1 Ratio	Bias Bound Orig	Bias Bound Opt	L1 Orig	L1 Opt
b=2x	2.4180	5.4181	0.0540	0.0223	0.0416	0.0077
b=1x	2.2164	4.9226	0.0530	0.0239	0.0856	0.0174
b=.5x	4.2814	17.1382	0.0415	0.0097	0.1811	0.0106
b=.25x	2.5973	2.5365	0.0272	0.0105	34.2209	13.4913
b=.125x	1.4699	1.5145	0.0193	0.0132	0.5024	0.3317

Table 4: KPOP + MF=TRUE + W PID: Choice of b and Estimated Outcome

	Bias Bound Ratio	L1 Ratio	Est Vote Margin	Diff from Target
b=2x	2.4180	5.4181	-0.0420	-0.0684
b=1x	2.2164	4.9226	-0.0130	-0.0394
b=.5x	4.2814	17.1382	0.0409	0.0145
b=.25x	2.5973	2.5365	0.0263	-0.0001
b=.125x	1.4699	1.5145	0.0563	0.0300

Without Party Id

KPOP (no meanfirst)

Table 5: KPOP + MF=FALSE + NO PID: Comparison of Bias bound and L1 distance by choice of b

	Bias Bound Ratio	L1 Ratio	Bias Bound Orig	Bias Bound Opt	L1 Orig	L1 Opt
b=2x	6.0647	14.7920	0.0575	0.0095	0.0464	0.0031
b=1x	5.3650	14.7438	0.0575	0.0107	0.0960	0.0065
b=.5x	6.8209	27.7576	0.0471	0.0069	0.2027	0.0073
b=.25x	2.7648	5.9951	0.0340	0.0123	0.3783	0.0631
b=.125x	2.4759	3.7655	0.0273	0.0110	0.4964	0.1318
b=0.0625	2.3022	2.2673	0.0264	0.0115	0.5396	0.2380

Table 6: KPOP + MF=FALSE + NO PID: Choice of b and Estimated Outcome

	Bias Bound Ratio	L1 Ratio	Est Vote Margin	Diff from Target
b=2x	6.0647	14.7920	-0.0205	-0.0469
b=1x	5.3650	14.7438	-0.0235	-0.0499
b=.5x	6.8209	27.7576	-0.0090	-0.0354
b=.25x	2.7648	5.9951	0.0002	-0.0262
b=.125x	2.4759	3.7655	0.0238	-0.0026
b=0.0625	2.3022	2.2673	0.0248	-0.0016

KPOP with meanfirst

Table 7: KPOP + MF=TRUE + NO PID: Comparison of Bias bound and L1 distance by choice of b

	Bias Bound Ratio	L1 Ratio	Bias Bound Orig	Bias Bound Opt	L1 Orig	L1 Opt
b=2x	10.2379	62.5195	0.0575	0.0056	0.0464	0.0007
b=1x	7.4146	42.9836	0.0575	0.0078	0.0960	0.0022
b=.5x	4.8765	20.9332	0.0471	0.0097	0.2027	0.0097
b=.25x	3.1128	9.8693	0.0340	0.0109	0.3783	0.0383
b=.125x	2.3125	5.4290	0.0273	0.0118	0.4964	0.0914

Table 8: KPOP + MF=TRUE + NO PID: Choice of b and Estimated Outcome

	Bias Bound Ratio	L1 Ratio	Est Vote Margin	Diff from Target
b=2x	10.2379	62.5195	-0.0187	-0.0451
b=1x	7.4146	42.9836	-0.0214	-0.0478
b=.5x	4.8765	20.9332	-0.0187	-0.0451
b=.25x	3.1128	9.8693	-0.0115	-0.0379
b=.125x	2.3125	5.4290	-0.0044	-0.0308

Best Choice of B

MF = F + Pid

```
#best
#bb_comp: best in terms of balance on target
rownames(bb_comp)[which(abs(bb_comp$Diff_from_Target) == min(abs(bb_comp$Diff_from_Target)))]
```

```
## [1] "b=.25x"
```

```
#best in terms of bias bound ratio
rownames(bb_comp)[which(abs(bb_comp$bb_ratio) == max(abs(bb_comp$bb_ratio)))]
```

```
## [1] "b=.5x"
```

MF = T + Pid

```
#best
#bb_comp_mf: best in terms of balance on target
rownames(bb_comp_mf)[which(abs(bb_comp_mf$Diff_from_Target) == min(abs(bb_comp_mf$Diff_from_Target)))]
```

```
## [1] "b=.25x"
```

```
#best in terms of bias bound ratio
rownames(bb_comp_mf)[which(abs(bb_comp_mf$bb_ratio) == max(abs(bb_comp_mf$bb_ratio)))]
```

```
## [1] "b=.5x"
```

MF = F + No Pid

```
#best
#bb_comp_nopid: best in terms of balance on target
rownames(bb_comp_nopid)[which(abs(bb_comp_nopid$Diff_from_Target) == min(abs(bb_comp_nopid$Diff_from_Ta
```

```
## [1] "b=0.0625"
```

```
#best in terms of bias bound ratio
rownames(bb_comp_nopid)[which(abs(bb_comp_nopid$bb_ratio) == max(abs(bb_comp_nopid$bb_ratio)))]
```

```
## [1] "b=.5x"
```

MF = T + No Pid

```
#best
#bb_comp_nopid_mf: best in terms of balance on target
rownames(bb_comp_mf_nopid)[which(abs(bb_comp_mf_nopid$Diff_from_Target) == min(abs(bb_comp_mf_nopid$Dif
```

```
## [1] "b=.125x"
```

```
#best in terms of bias bound ratio
rownames(bb_comp_mf_nopid)[which(abs(bb_comp_mf_nopid$bb_ratio) == max(abs(bb_comp_mf_nopid$bb_ratio)))
```

```
## [1] "b=2x"
```