

# Control for Covariates

## Topic 3

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- The Tested Covariates and their Relative Frequencies
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# Hypotheses testing

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The hypotheses have been computed with the use of R and similar to the analysis from Maoz.

# The Covariates

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## **Geographic closeness**

- The distance (binned)
- The logarithmic distance (binned)

## **Major powers**

- The different combinations of major powers

## **National material capability**

- The absolute national material capability (binned)
- The relative national material capability (binned)

# The Covariates

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## Trade

- The trade (binned)
- The logarithmic trade (binned)
- The trade over GDP (binned)

## Form of government

- the min/max/mean of the form of government
- the similarity between the forms of government

## IGOs

- the common membership in IGOs (binned)

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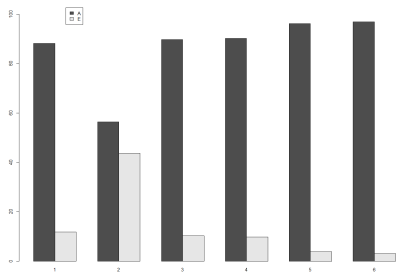
## 3 Comparison to Maoz

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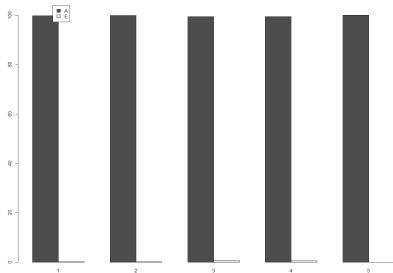
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# Geographic closeness

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Basis distance binned

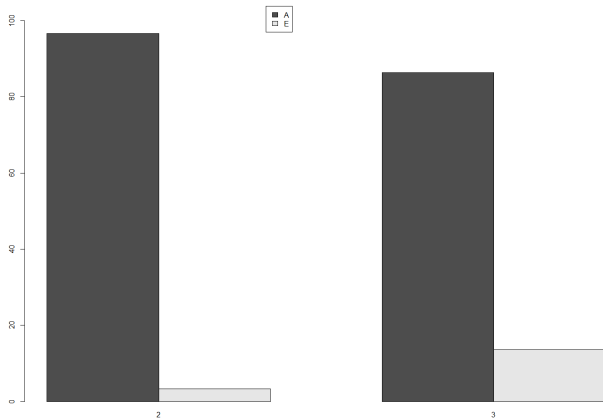


Logarithmic distance binned



# Major Powers

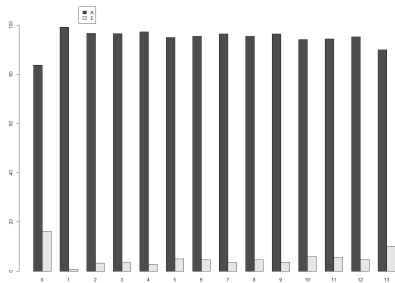
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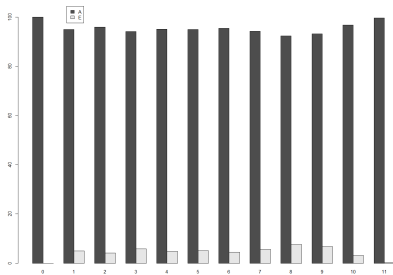
Major powers combinations

# National Material Capability

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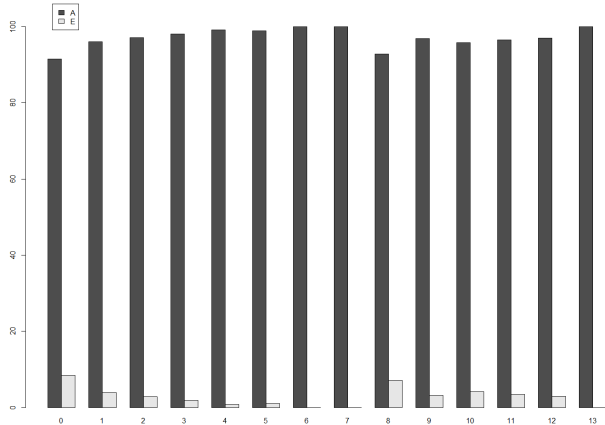
Absolute n.m.c. binned



Relative n.m.c. binned

# Trade

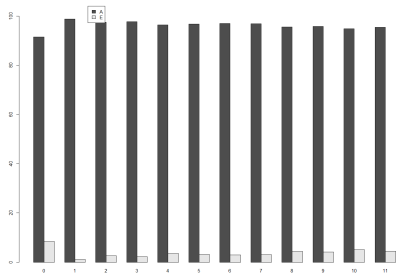
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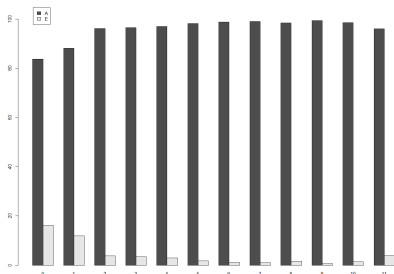
Trade binned

# Trade

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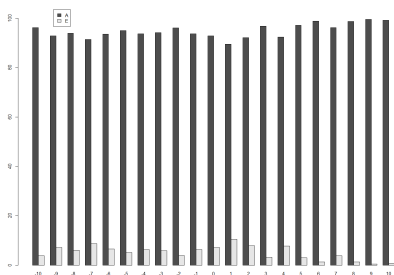
Logarithmic trade binned



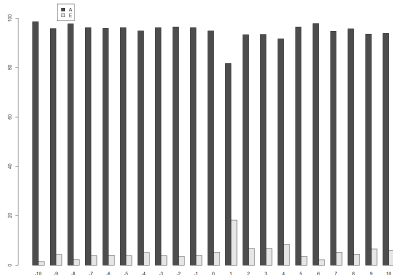
Trade over GDP binned

# Form of Government

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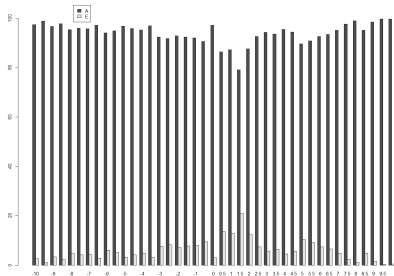
Min.



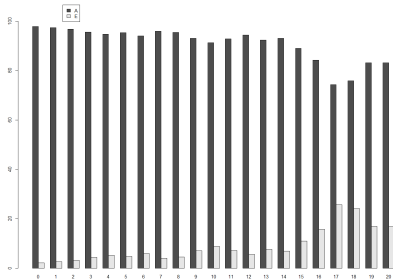
Max.

# Form of Government

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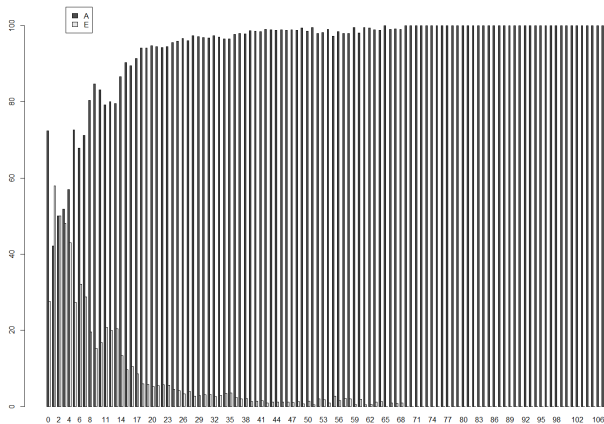
Mean.



Diff.

# IGOs

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common IGOs

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# Important

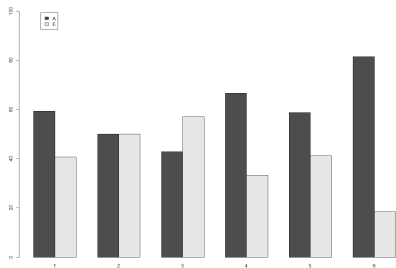
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Only the most interesting findings are shown in this section, due the high number of results.

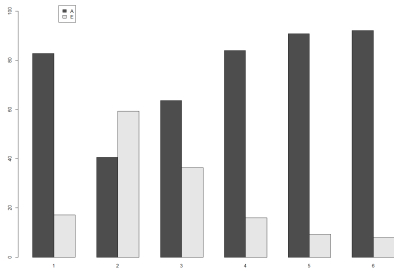
All individual results can be found in the appendix after the References.

# Distance

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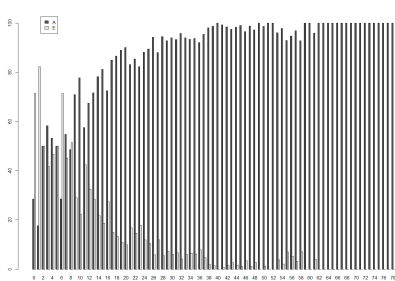
Hypotheses 1 & 2



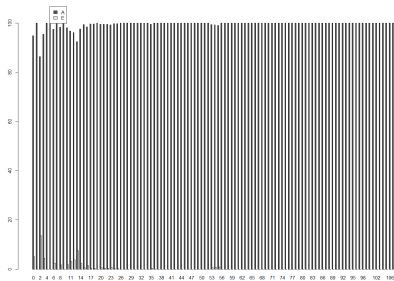
Hypotheses 3 & 4

# IGOs

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Hypotheses 3 & 4



Hypotheses 5 & 6

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# First Hypotheses

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	Dist	Log Dist	Maj. P.	Absolute NMC	Relative NMC	Trade	Log Trade
(Intercept)	-0.99*** (0.23)	-1.17*** (0.14)	-2.54*** (0.37)	-2.06*** (0.14)	-1.55*** (0.14)	-1.73*** (0.10)	-2.52*** (0.16)
AIC	1208.46	1208.44	1200.91	1166.87	1209.52	1159.04	1111.22
BIC	1218.64	1218.62	1211.09	1177.05	1219.71	1169.23	1121.40
Log Likelihood	-602.23	-602.22	-598.46	-581.43	-602.76	-577.52	-553.61
Deviance	1204.46	1204.44	1196.91	1162.87	1205.52	1155.04	1107.22
Num. obs.	1202	1202	1202	1202	1202	1202	1202

	Trade over GDP	min FoG	max FoG	Mean FoG	Sim. FoG	IGOs
(Intercept)	-1.67*** (0.10)	-1.24*** (0.07)	-1.36*** (0.09)	-1.43*** (0.08)	-0.86*** (0.10)	-2.51*** (0.15)
AIC	1192.97	1166.75	1211.15	1197.33	1159.70	1109.07
BIC	1203.16	1176.93	1221.33	1207.52	1169.89	1119.25
Log Likelihood	-594.49	-581.37	-603.57	-596.67	-577.85	-552.53
Deviance	1188.97	1162.75	1207.15	1193.33	1155.70	1105.07
Num. obs.	1202	1202	1202	1202	1202	1202

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

# Second Hypotheses

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	Dist	Log Dist	Maj. P.	Absolute NMC	Relative NMC	Trade	Log Trade
(Intercept)	-1.51*** (0.32)	-2.40*** (0.27)	-3.87*** (0.75)	-2.94*** (0.23)	-2.74*** (0.27)	-2.98*** (0.18)	-2.73*** (0.21)
AIC	397.62	410.28	415.69	416.86	415.64	416.87	413.84
BIC	407.63	420.29	425.70	426.87	425.65	426.88	423.85
Log Likelihood	-196.81	-203.14	-205.84	-206.43	-205.82	-206.43	-204.92
Deviance	393.62	406.28	411.69	412.86	411.64	412.87	409.84
Num. obs.	1102	1102	1102	1102	1102	1102	1102

	Trade over GDP	min FoG	max FoG	Mean FoG	Sim. FoG	IGOs
(Intercept)	-2.53*** (0.20)	-3.23*** (0.19)	-3.05*** (0.17)	-3.02*** (0.14)	-3.51*** (0.25)	-2.73*** (0.25)
AIC	406.28	411.75	416.98	415.19	409.48	415.06
BIC	416.29	421.76	426.99	425.20	419.48	425.07
Log Likelihood	-201.14	-203.87	-206.49	-205.59	-202.74	-205.53
Deviance	402.28	407.75	412.98	411.19	405.48	411.06
Num. obs.	1102	1102	1102	1102	1102	1102

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

# Third Hypotheses

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	Dist	Log Dist	Maj. P.	Absolute NMC	Relative NMC	Trade	Log Trade
(Intercept)	0.42*** (0.10)	0.86*** (0.04)	2.19*** (0.11)	0.23*** (0.03)	-0.06 (0.04)	-0.52*** (0.03)	-0.29*** (0.03)
AIC	14203.68	13365.54	13707.65	13855.12	14225.53	14111.93	14245.11
BIC	14218.17	13380.03	13722.14	13869.62	14240.02	14126.43	14259.60
Log Likelihood	-7099.84	-6680.77	-6851.83	-6925.56	-7110.76	-7053.97	-7120.55
Deviance	14199.68	13361.54	13703.65	13851.12	14221.53	14107.93	14241.11
Num. obs.	10375	10375	10375	10375	10375	10375	10375

	Trade over GDP	min FoG	max FoG	Mean FoG	Sim. FoG	IGOs
(Intercept)	-0.40*** (0.03)	0.03 (0.02)	-0.09*** (0.02)	-0.23*** (0.02)	0.60*** (0.03)	-2.61*** (0.06)
AIC	14204.67	13596.88	14082.98	14236.09	12726.57	11614.78
BIC	14219.17	13611.37	14097.47	14250.59	12741.07	11629.27
Log Likelihood	-7100.34	-6796.44	-7039.49	-7116.05	-6361.29	-5805.39
Deviance	14200.67	13592.88	14078.98	14232.09	12722.57	11610.78
Num. obs.	10375	10375	10375	10375	10375	10375

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

# Fourth Hypotheses

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	Dist	Log Dist	Maj. P.	Absolute NMC	Relative NMC	Trade	Log Trade
(Intercept)	-1.17*** (0.14)	-3.36*** (0.11)	-5.65*** (0.28)	-3.75*** (0.10)	-3.23*** (0.10)	-3.09*** (0.09)	-3.27*** (0.09)
AIC	2854.16	3033.53	2956.50	2997.72	3032.59	3022.66	3033.04
BIC	2868.59	3047.95	2970.92	3012.15	3047.02	3037.08	3047.46
Log Likelihood	-1425.08	-1514.76	-1476.25	-1496.86	-1514.30	-1509.33	-1514.52
Deviance	2850.16	3029.53	2952.50	2993.72	3028.59	3018.66	3029.04
Num. obs.	10028	10028	10028	10028	10028	10028	10028

	Trade over GDP	min FoG	max FoG	Mean FoG	Sim. FoG	IGOs
(Intercept)	-2.80*** (0.09)	-3.68*** (0.08)	-3.41*** (0.07)	-3.33*** (0.05)	-3.98*** (0.10)	-2.49*** (0.11)
AIC	2984.74	2971.11	3026.67	3031.30	2941.50	2967.54
BIC	2999.16	2985.53	3041.09	3045.73	2955.93	2981.96
Log Likelihood	-1490.37	-1483.55	-1511.33	-1513.65	-1468.75	-1481.77
Deviance	2980.74	2967.11	3022.67	3027.30	2937.50	2963.54
Num. obs.	10028	10028	10028	10028	10028	10028

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$



# Fifth Hypotheses

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	Dist	Log Dist	Maj. P.	Absolute NMC	Relative NMC	Trade	Log Trade
(Intercept)	2.53*** (0.10)	2.52*** (0.04)	1.96*** (0.10)	1.77*** (0.03)	1.47*** (0.03)	1.43*** (0.03)	1.47*** (0.03)
AIC	18562.07	17999.52	18666.09	18580.33	18672.03	18637.30	18663.47
BIC	18577.90	18015.36	18681.92	18596.16	18687.86	18653.13	18679.31
Log Likelihood	-9279.04	-8997.76	-9331.04	-9288.16	-9334.01	-9316.65	-9329.74
Deviance	18558.07	17995.52	18662.09	18576.33	18668.03	18633.30	18659.47
Num. obs.	20272	20272	20272	20272	20272	20272	20272

	Trade over GDP	min FoG	max FoG	Mean FoG	Sim. FoG	IGOs
(Intercept)	1.38*** (0.03)	1.70*** (0.02)	1.55*** (0.02)	1.57*** (0.02)	1.90*** (0.03)	0.11* (0.04)
AIC	18631.67	18353.37	18678.51	18592.16	18286.34	17439.46
BIC	18647.51	18369.20	18694.35	18607.99	18302.17	17455.29
Log Likelihood	-9313.84	-9174.69	-9337.26	-9294.08	-9141.17	-8717.73
Deviance	18627.67	18349.37	18674.51	18588.16	18282.34	17435.46
Num. obs.	20272	20272	20272	20272	20272	20272

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

# Sixth Hypotheses

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	Dist	Log Dist	Maj. P.	Absolute NMC	Relative NMC	Trade	Log Trade
(Intercept)	-2.07*** (0.12)	-3.80*** (0.14)	-6.12*** (0.34)	-5.02*** (0.12)	-4.40*** (0.12)	-4.39*** (0.10)	-4.93*** (0.13)
AIC	2210.94	2473.97	2476.43	2453.93	2500.74	2499.81	2478.43
BIC	2226.76	2489.79	2492.25	2469.75	2516.56	2515.63	2494.25
Log Likelihood	-1103.47	-1234.98	-1236.21	-1224.97	-1248.37	-1247.91	-1237.21
Deviance	2206.94	2469.97	2472.43	2449.93	2496.74	2495.81	2474.43
Num. obs.	20157	20157	20157	20157	20157	20157	20157

	Trade over GDP	min FoG	max FoG	Mean FoG	Sim. FoG	IGOs
(Intercept)	-3.89*** (0.11)	-4.63*** (0.08)	-4.45*** (0.07)	-4.49*** (0.07)	-4.77*** (0.10)	-3.89*** (0.15)
AIC	2464.64	2475.32	2500.22	2493.56	2477.19	2484.91
BIC	2480.46	2491.14	2516.04	2509.38	2493.01	2500.73
Log Likelihood	-1230.32	-1235.66	-1248.11	-1244.78	-1236.60	-1240.46
Deviance	2460.64	2471.32	2496.22	2489.56	2473.19	2480.91
Num. obs.	20157	20157	20157	20157	20157	20157

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

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# Comparison

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- Hypothesis 1 is close to Maoz result
- Hypothesis 2 is not fulfilled, same result as Maoz achieved
- Hypothesis 3 is similar to Maoz result
- Hypothesis 4 is similar to Maoz result
- Hypothesis 5 is in agreement to Maoz balance Hypothesis
- Hypothesis 6 is in agreement to Maoz balance Hypothesis

**Thank you for your attention**

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- Zeev Maoz, Lesley G. Terris, Ranan D. Kuperman, and Ilan Talmud (2007). What is the enemy of my enemy? Causes and consequences of imbalanced international relations, 1816-2001. *Journal of Politics*, 69(1):100-115.

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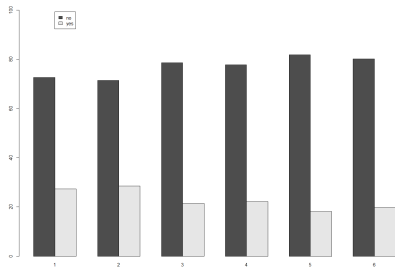
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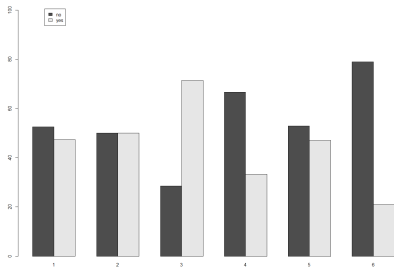


# Distance

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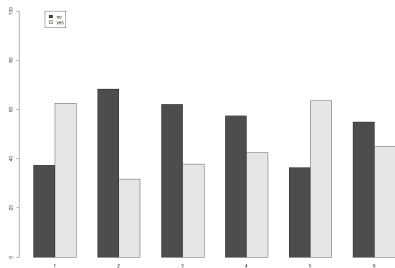
Hypotheses 1



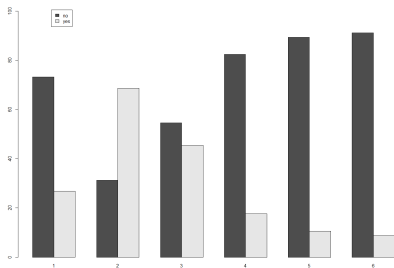
Hypotheses 2

# Distance

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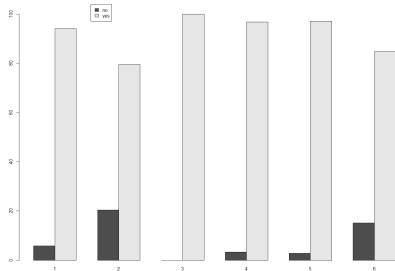
Hypotheses 3



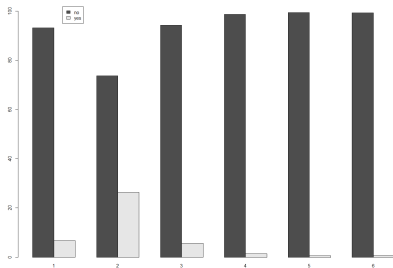
Hypotheses 4

# Distance

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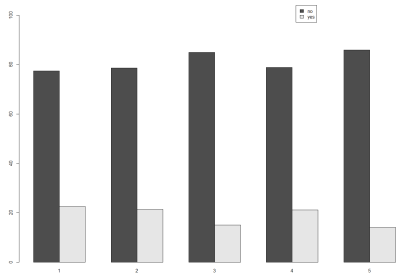
Hypotheses 5



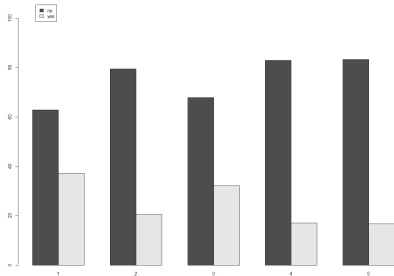
Hypotheses 6

# Log Distance

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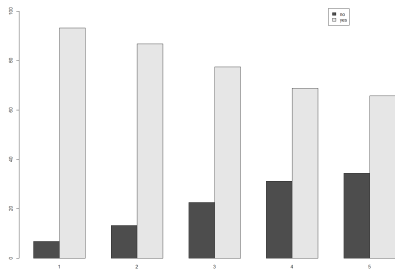
Hypotheses 1



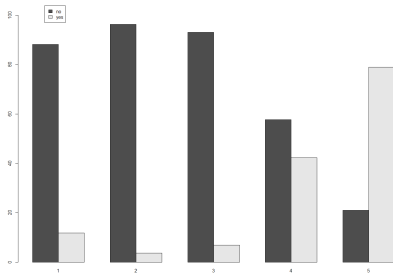
Hypotheses 2

# Log Distance

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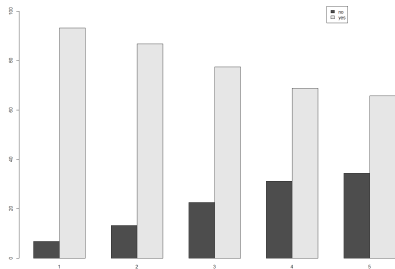
Hypotheses 3



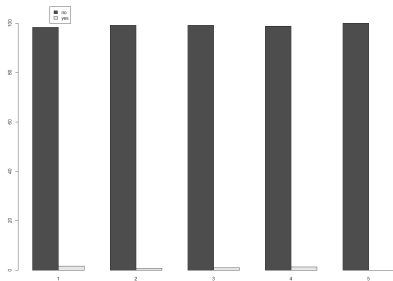
Hypotheses 4

# Log Distance

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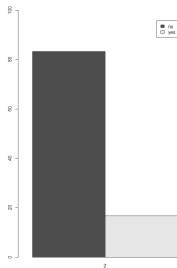
Hypotheses 5



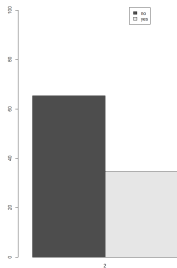
Hypotheses 6

# Major Power

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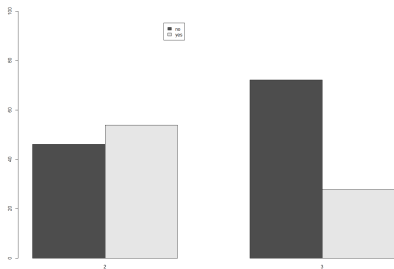
Hypotheses 1



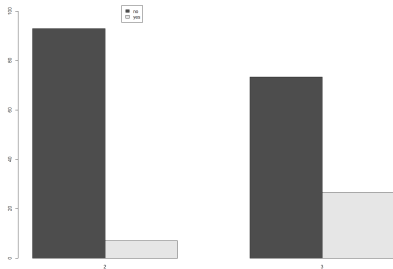
Hypotheses 2

# Major Power

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Hypotheses 3

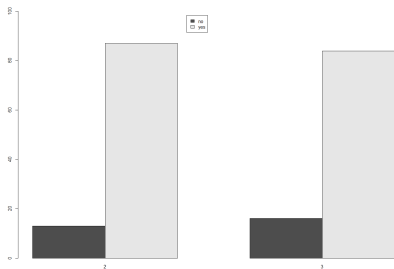


Hypotheses 4

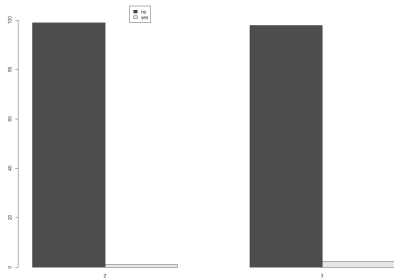


# Major Power

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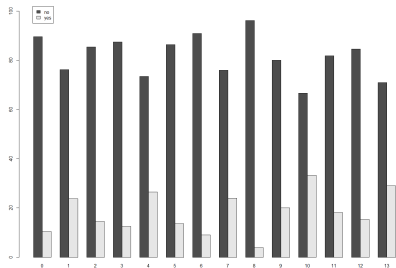
Hypotheses 5



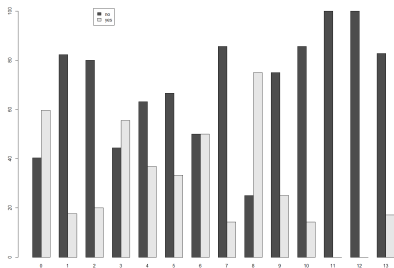
Hypotheses 6

# Absolute NMC

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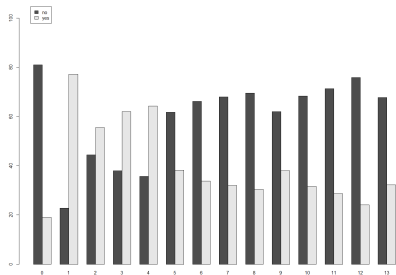
Hypotheses 1



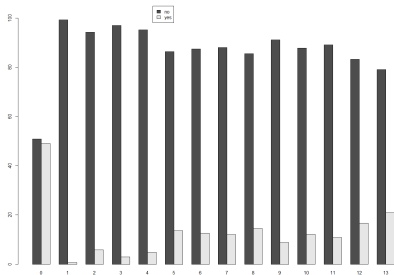
Hypotheses 2

# Absolute NMC

University of Konstanz



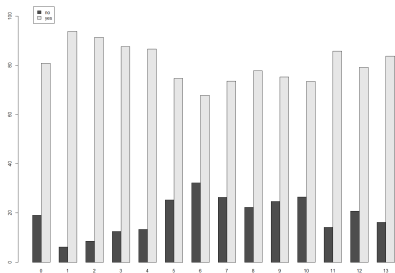
Hypotheses 3



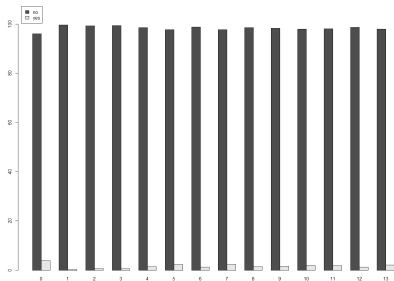
Hypotheses 4

# Absolute NMC

University of Konstanz



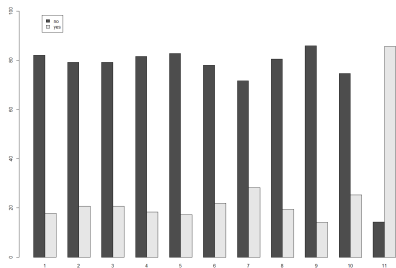
Hypotheses 5



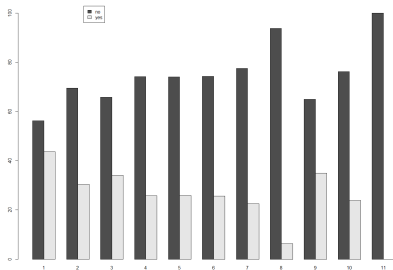
Hypotheses 6

# Relative NMC

University of Konstanz



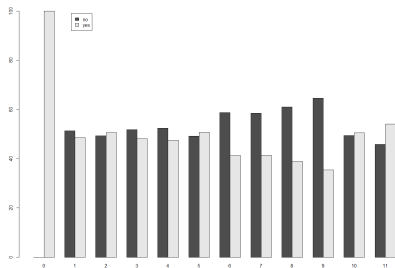
Hypotheses 1



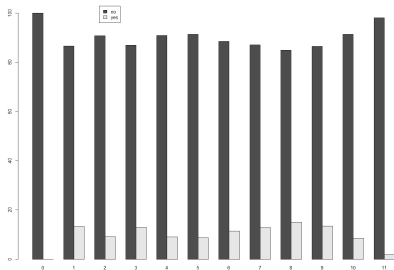
Hypotheses 2

# Relative NMC

University of Konstanz



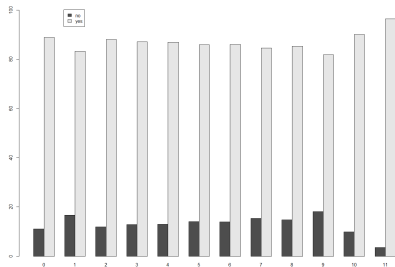
Hypotheses 3



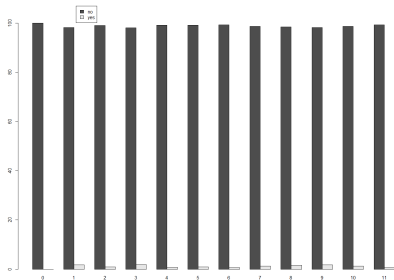
Hypotheses 4

# Relative NMC

University of Konstanz



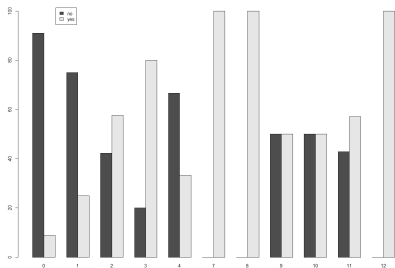
Hypotheses 5



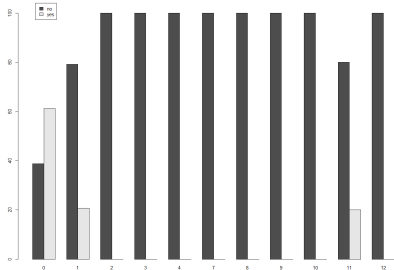
Hypotheses 6

# Trade

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Hypotheses 1

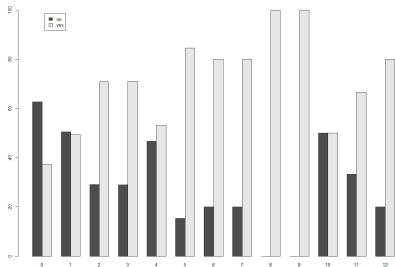


Hypotheses 2

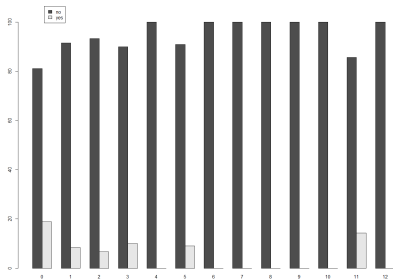


# Trade

University of Konstanz



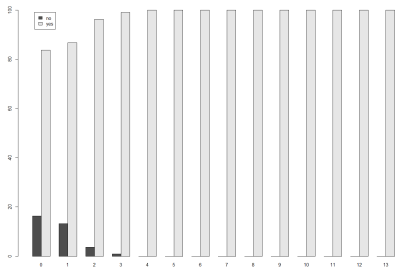
Hypotheses 3



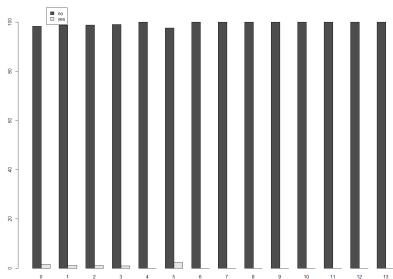
Hypotheses 4

# Trade

University of Konstanz



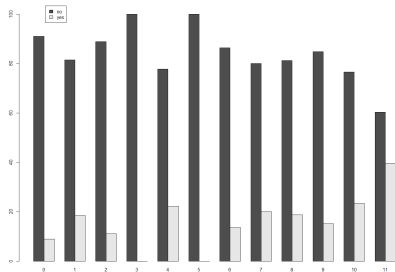
Hypotheses 5



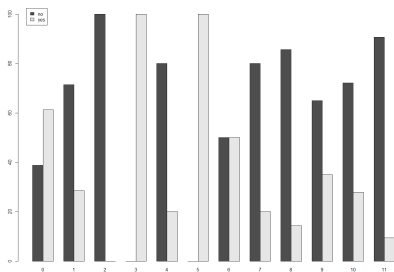
Hypotheses 6

# Log Trade

University of Konstanz



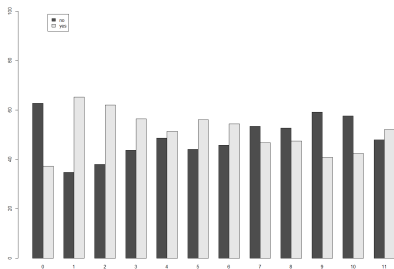
Hypotheses 1



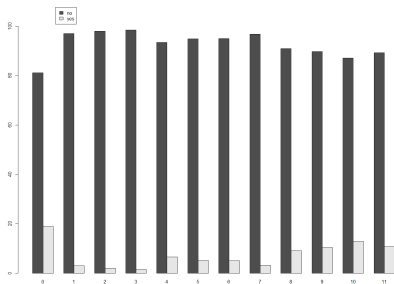
Hypotheses 2

# Log Trade

University of Konstanz



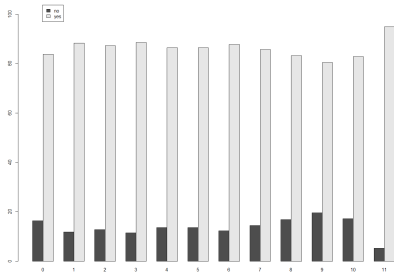
Hypotheses 3



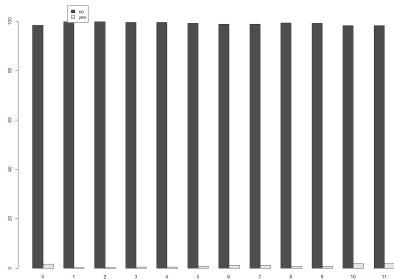
Hypotheses 4

# Log Trade

University of Konstanz



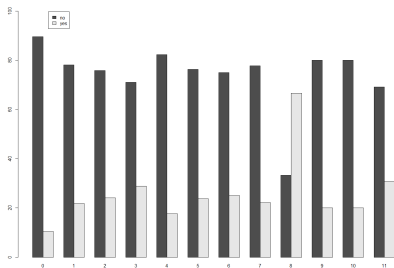
Hypotheses 5



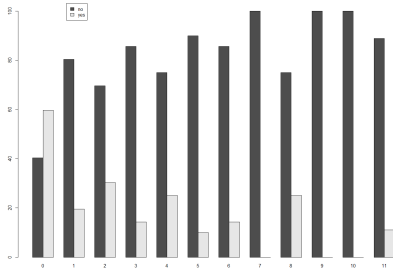
Hypotheses 6

# Trade over GDP

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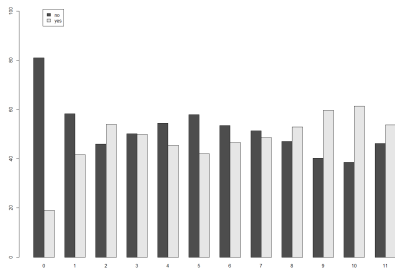
Hypotheses 1



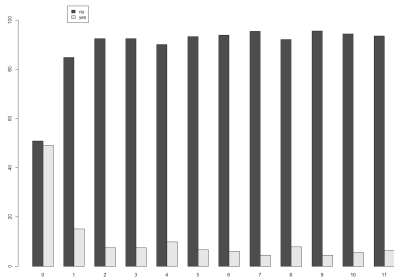
Hypotheses 2

# Trade over GDP

University of Konstanz



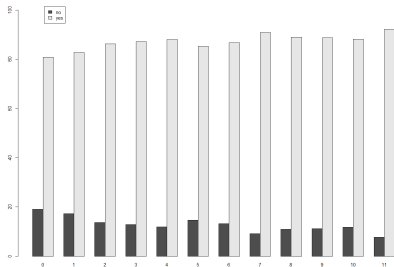
Hypotheses 3



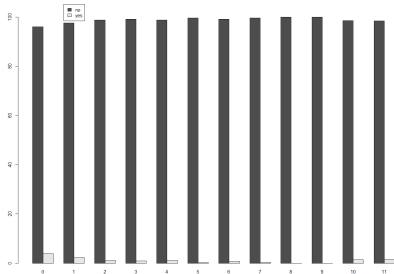
Hypotheses 4

# Trade over GDP

University of Konstanz

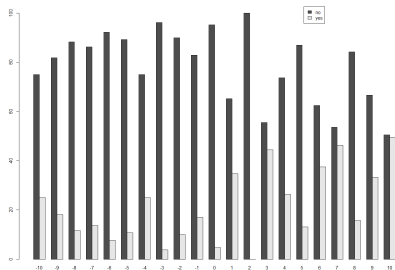


Hypotheses 5

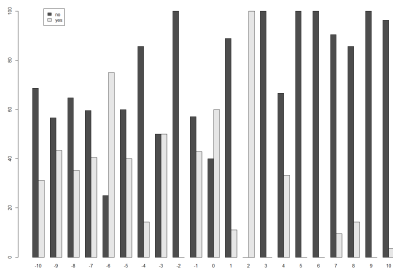


Hypotheses 6

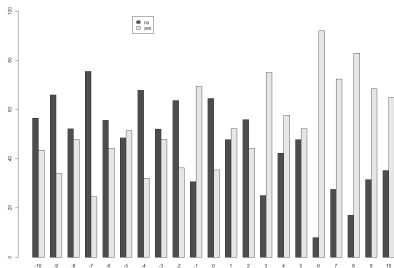




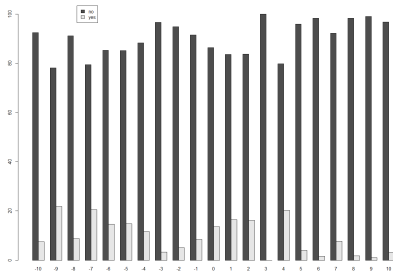
Hypotheses 1



Hypotheses 2



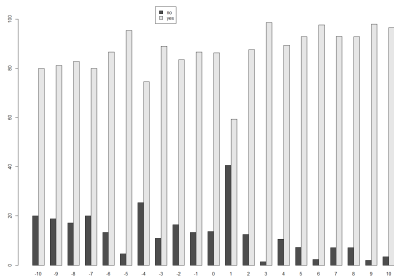
Hypotheses 3



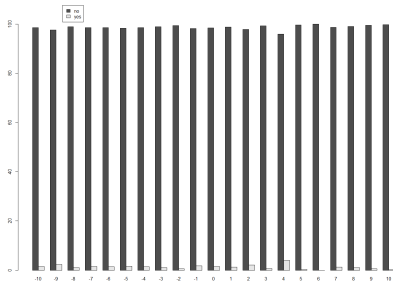
Hypotheses 4

# Min Gov

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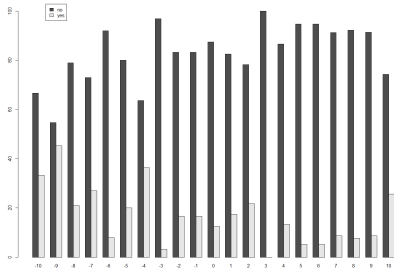
Hypotheses 5



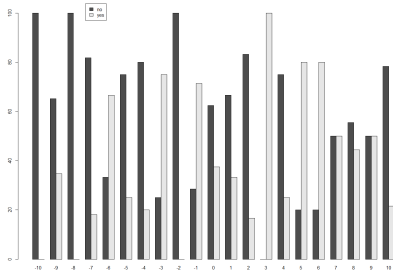
Hypotheses 6

# Max Gov

University of Konstanz



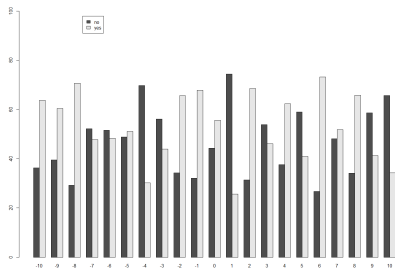
Hypotheses 1



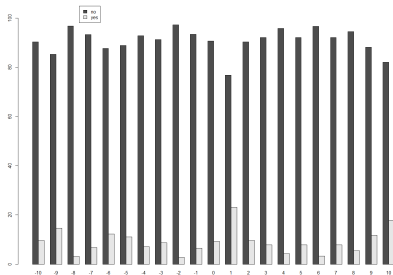
Hypotheses 2

# Max Gov

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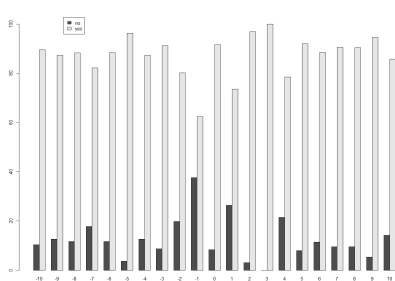
Hypotheses 3



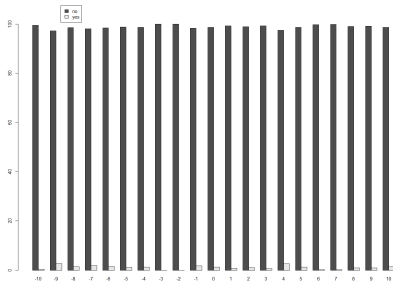
Hypotheses 4

# Max Gov

University of Konstanz



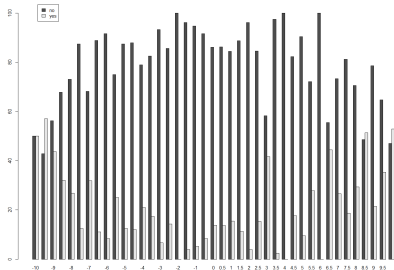
Hypotheses 5



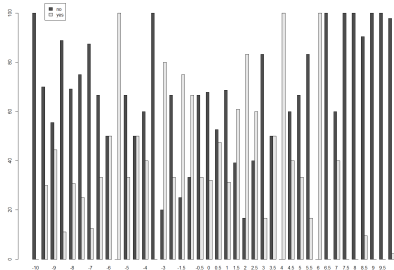
Hypotheses 6

# Mean Gov

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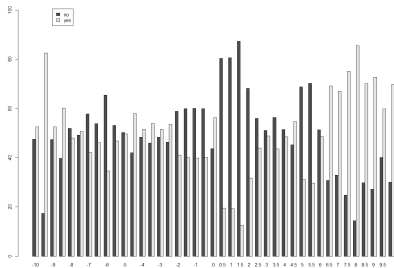
Hypotheses 1



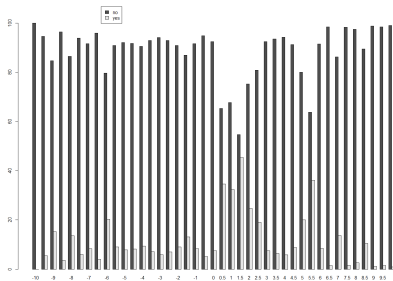
Hypotheses 2

# Mean Gov

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Hypotheses 3

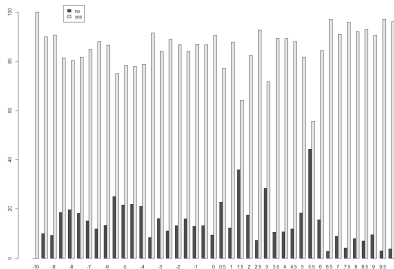


Hypotheses 4

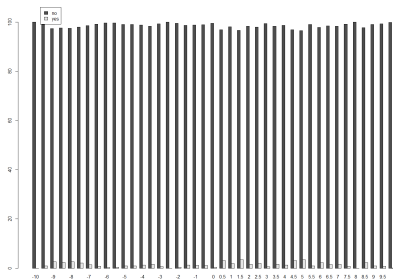


# Mean Gov

University of Konstanz



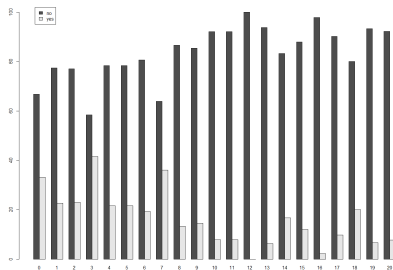
Hypotheses 5



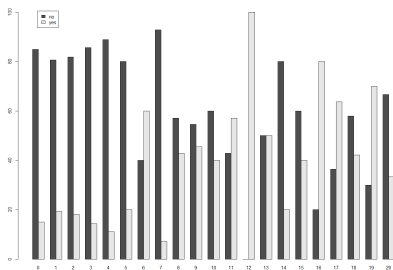
Hypotheses 6

# Gov Similarity

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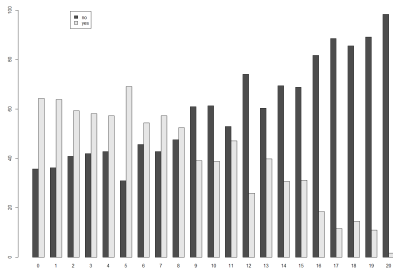
Hypotheses 1



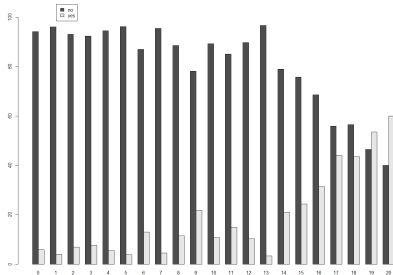
Hypotheses 2

# Gov Similarity

University of Konstanz



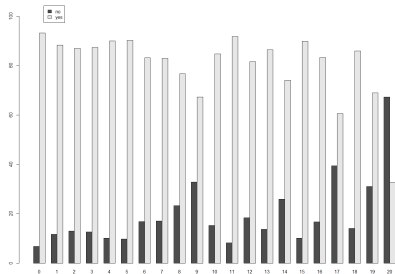
Hypotheses 3



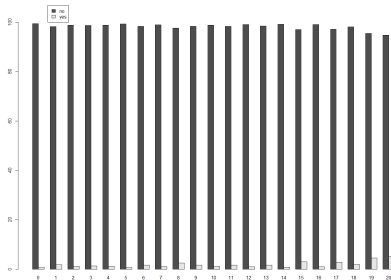
Hypotheses 4

# Gov Similarity

University of Konstanz



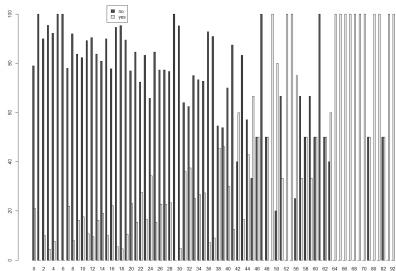
Hypotheses 5



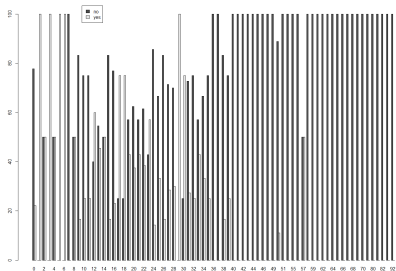
Hypotheses 6

# IGOs

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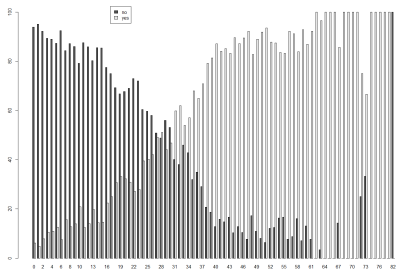
Hypotheses 1



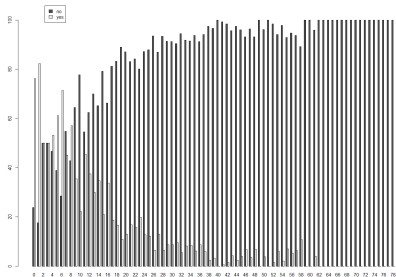
Hypotheses 2

# IGOs

University of Konstanz



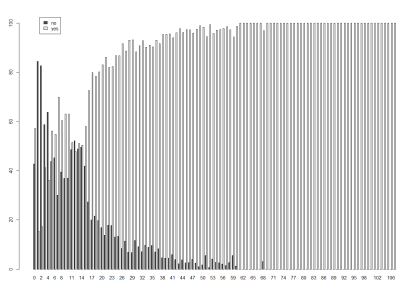
Hypotheses 3



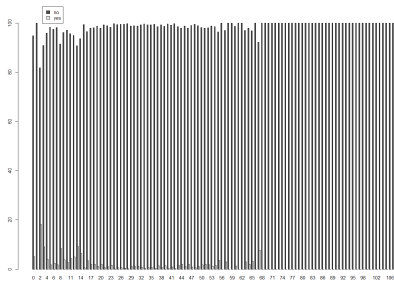
Hypotheses 4

# IGOs

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Hypotheses 5



Hypotheses 6