



# Forms of democracy, autocracy and the resource curse

---

Jesper Roine, SITE

joint work with

Anne Boschini, Stockholm University

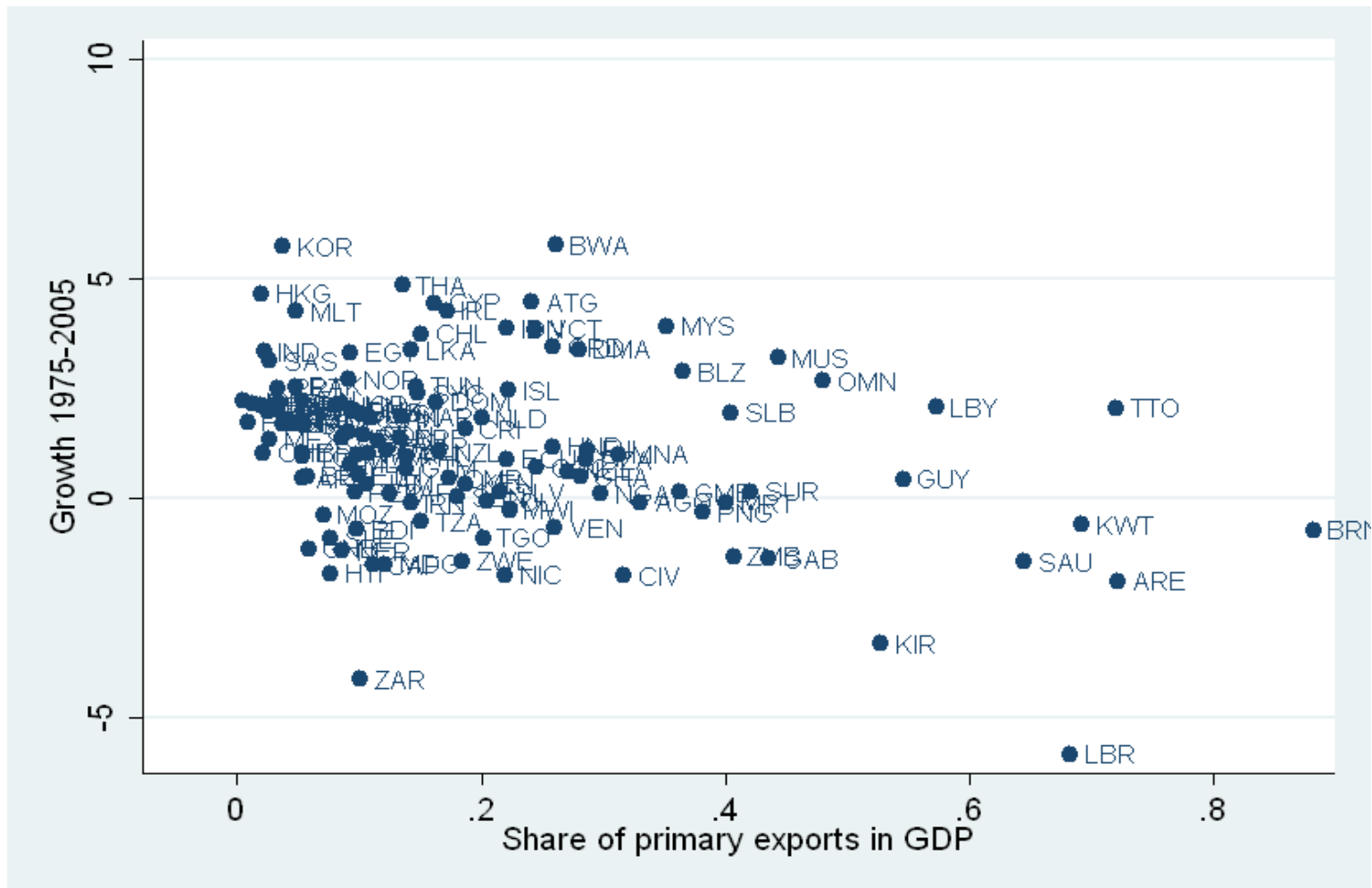
and Jan Pettersson, Stockholm University



---

SITE STOCKHOLM INSTITUTE OF  
TRANSITION ECONOMICS

# What is the resource curse?





## Is the resource curse really there?

---

- It is robust to specification (not driven by outliers or the choice of time period). In fact it is among the most robust explanatory variables in growth regressions (Doppelhofer, Miller and Sala-i-Martin, AER 2004)

However,...

- It is certainly not universally true
  - Norway, Australia, Canada, Botswana, Cyprus, Malaysia, Chile...
  - (vs. Ecuador, Venezuela, Angola, Nigeria, Sierra Leone, Papua New Guinea...)
- “The interesting question is why some resource rich economies [...] are successful while others [...] perform badly despite their immense natural wealth.” van der Ploeg (2007)



## Previous research

---

- Types of resources seem to matter
  - Point source vs diffuse (Auty (1997), Woolcock, Pritchett and Isham (2001), and Isham, Woolcock, Pritchett and Busby (2005), Bulte (2005), etc.)
- Resources negative through their effect on corruption or on institutional quality
  - Leite and Weidmann (1999), Sala-i-Martin and Subramanian (2003)
- or on democratic development
  - Effects of oil on democracy (Ross, 1999, Tsui, 2005). Point source vs diffuse over the very long-run (Engermann and Sokoloff, 2000)

Problems remain since these predict similar results for similar resources (Norway- Venezuela, both oil, Botswana – Sierra Leone, both diamonds, etc)



## More previous research

---

- Recent papers by Mehlum, Moene and Torvik (2006), and Boschini, Pettersson and Roine (2007) suggest that the interaction between resources and institutional quality matter. Resources are only problematic if institutional quality too poor.
- Boschini, Pettersson and Roine (2007) also find that some resource types matter for this interaction effect.

However...



## Some remaining problems

---

- Measures of institutional quality are (arguably) not really institutions (in the “rules of the game” sense) but equilibrium outcomes (Glaeser et al (2004), Persson (2005)).
- Possible problems of institutions being determined by natural resources
- Overall, precise mechanisms remain “obscure”...



# This research

---

- We study the interaction effects between “deeper” political arrangements and resources, distinguishing both between democratic and non-democratic states as well as between different forms of democracy (abiding the constitution more likely in democracy...)
- We address to what extent these may have been determined by natural resources.
- We also distinguish between different types of resources (which again proves to be important).
  - Andersen and Aslaksen (2007) also consider constitutions but not resource type, endogeneity, or channels.



# Basic econometric specification

---

$$growth_i = X_i' \alpha + NR_i' \delta + \beta_1 Inst_i + \beta_2 (NR_i \times Inst_i) + \varepsilon_i$$

*X* is a vector with control variables such as:

- initial level of GDP per capita
- period-average of “openness”
- period-average of investments
- dummy variables for Latin America and SSA

*NR* is a vector of natural resources (typically agri, food, fuel, and ores\_met)

*Inst* is the institutional measure (dem or aut; pres or parl, and maj or prop)

*NR x Inst* is the interaction between these

Data covers up to 141 countries over the period 1975-2005.



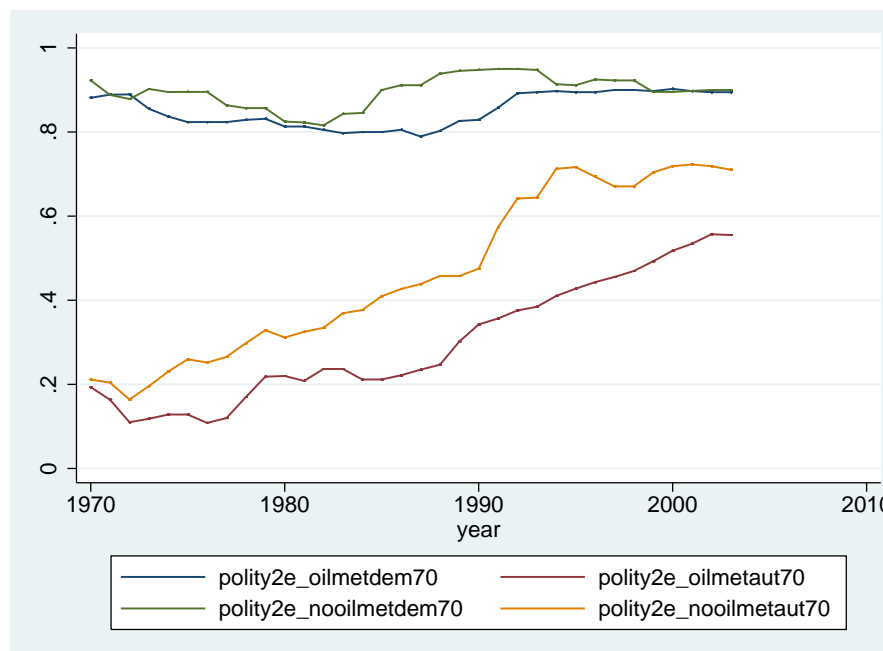
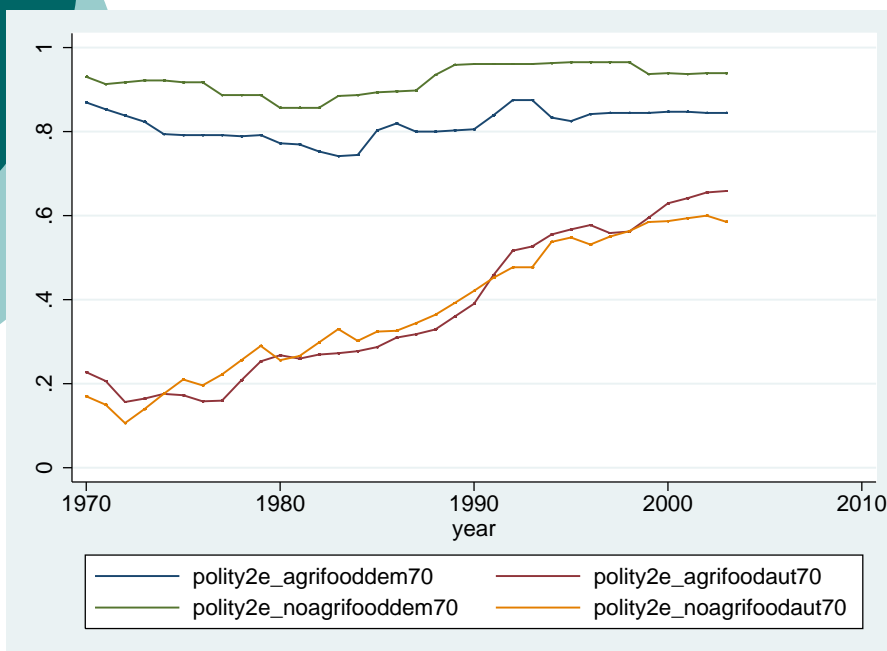
# Differences in Democratic and Autocratic states

	(1)	(2)	(3)	(4)	(5)	(6)
COEFFICIENT						
lngdppc	-0.119 (0.085)	-0.227** (0.088)	-0.130 (0.149)	-0.119 (0.085)	-0.066 (0.126)	-0.185 (0.367)
inv	0.082 (0.058)	0.153** (0.058)	0.049 (0.065)	0.082 (0.058)	0.177*** (0.044)	0.011 (0.069)
mopen	0.014*** (0.004)	0.007 (0.005)	0.015*** (0.005)	0.014*** (0.004)	0.008 (0.005)	0.018** (0.007)
ssa	-1.725*** (0.441)	-1.166 (0.934)	-2.041*** (0.410)	-1.725*** (0.441)	-0.441 (0.764)	-2.281*** (0.461)
lac	-0.547* (0.305)	-0.948* (0.512)	-0.626 (0.410)	-0.547* (0.305)	-0.725** (0.362)	0.036 (1.007)
primexpgdp	-4.784*** (1.079)	-1.502 (2.023)	-5.487*** (1.330)	-4.784*** (1.079)	-2.855 (2.005)	-5.110** (2.264)
Constant	0.751 (1.266)	0.560 (1.320)	1.515 (1.282)	0.751 (1.266)	-1.502 (1.524)	2.524 (1.779)
Observations	122	44	78	122	66	56
$R^2$	0.47	0.39	0.52	0.47	0.47	0.52



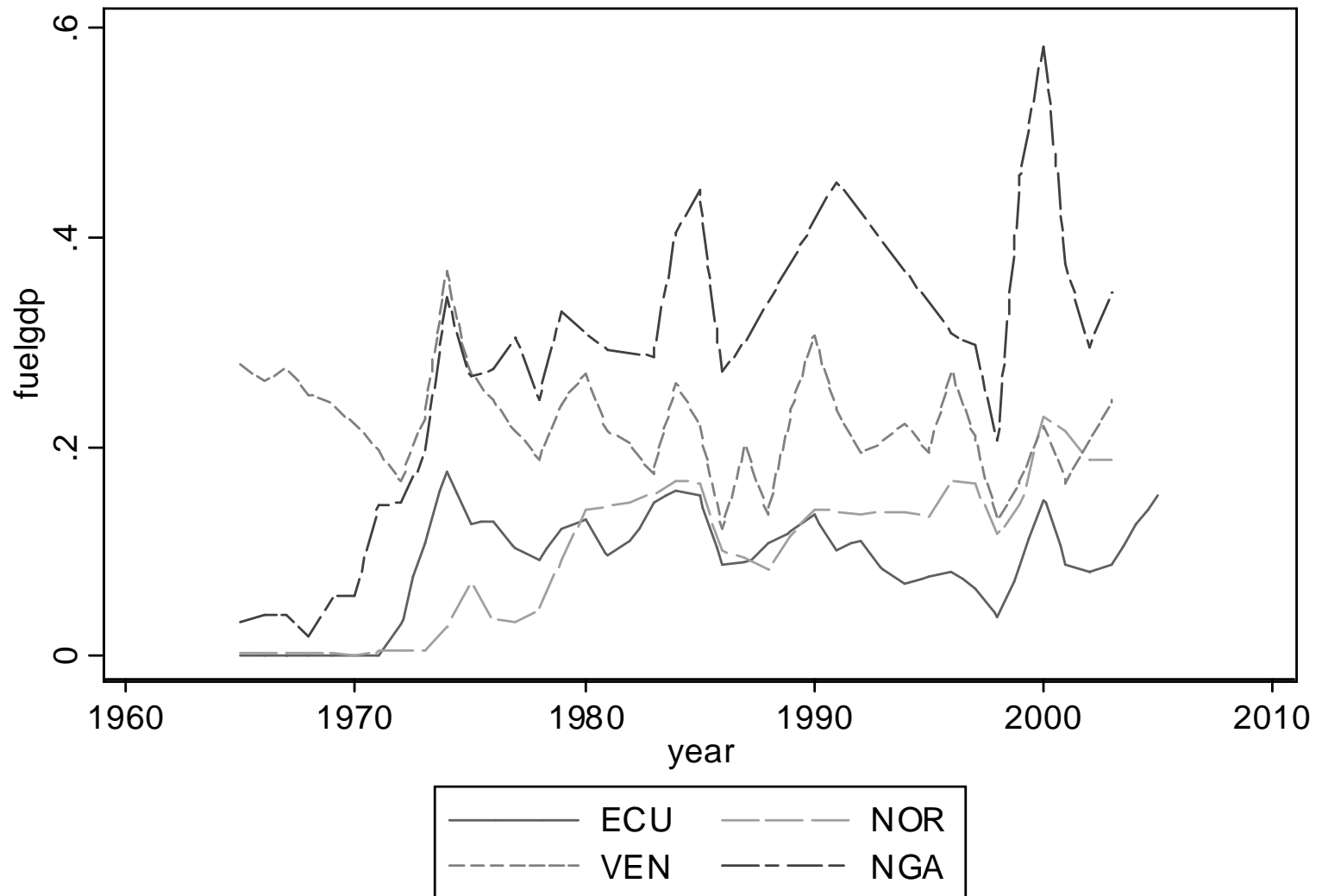
COEFFICIENT	(1)	(2)	(3)	(4)	(5)	(6)
lngdppc	-0.120 (0.084)	-0.265*** (0.077)	-0.163 (0.160)	-0.120 (0.084)	-0.149 (0.113)	-0.429 (0.393)
inv	0.089* (0.046)	0.150*** (0.052)	0.053 (0.045)	0.089* (0.046)	0.182*** (0.043)	0.024 (0.045)
mopen	0.012*** (0.003)	0.010** (0.005)	0.013*** (0.004)	0.012*** (0.003)	0.011** (0.004)	0.020*** (0.007)
ssa	-1.649*** (0.463)	-1.018 (1.129)	-1.975*** (0.361)	-1.649*** (0.463)	-0.360 (0.841)	-2.394*** (0.423)
lac	-0.691* (0.351)	-0.995* (0.525)	-0.883** (0.433)	-0.691* (0.351)	-0.778* (0.400)	-1.025 (1.098)
agrigdp	-5.656 (5.033)	-2.574 (3.693)	-11.039** (5.393)	-5.656 (5.033)	-6.875 (5.839)	-5.172 (7.618)
foodgdp	-1.535 (2.003)	-3.547 (3.365)	0.028 (2.031)	-1.535 (2.003)	-4.680* (2.488)	1.829 (3.475)
fuelgdp	-3.898*** (1.009)	-0.663 (1.646)	-4.033*** (1.027)	-3.898*** (1.009)	-1.017 (1.690)	-2.832 (1.973)
ores_metgdp	-8.750*** (2.340)	-1.286 (8.684)	-9.214*** (2.280)	-8.750*** (2.340)	-4.535 (2.848)	-9.178*** (2.610)
Constant	0.624 (1.193)	0.867 (1.321)	1.631 (1.317)	0.624 (1.193)	-0.914 (1.465)	3.412* (1.969)
Observations	122	44	78	122	66	56
$R^2$	0.54	0.41	0.61	0.54	0.50	0.65

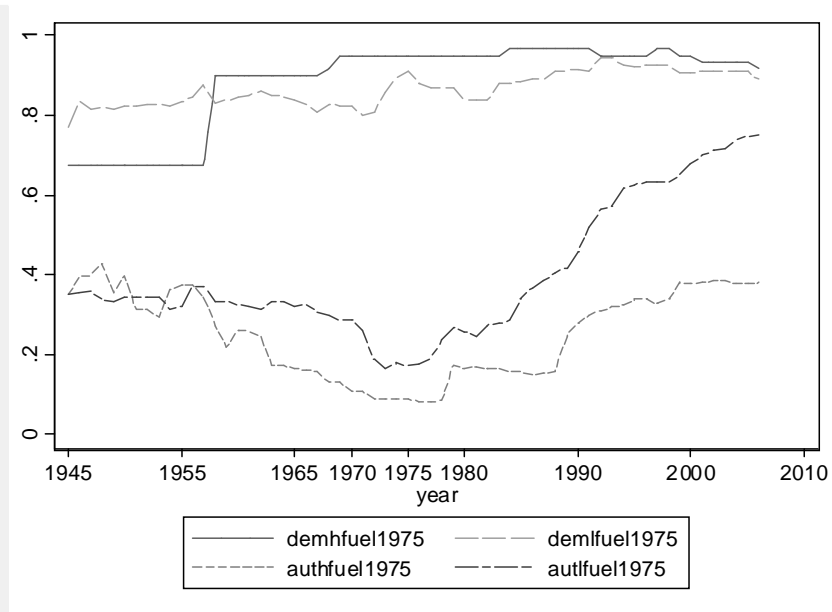
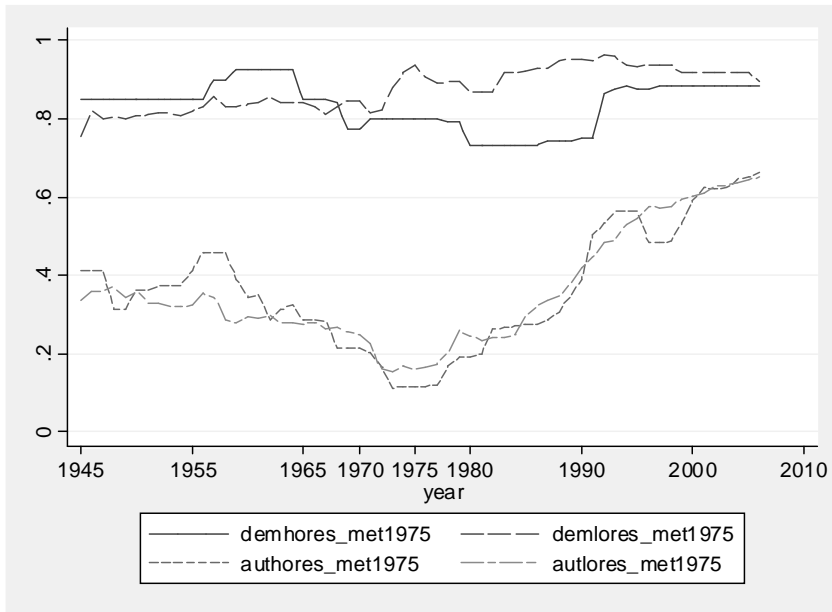
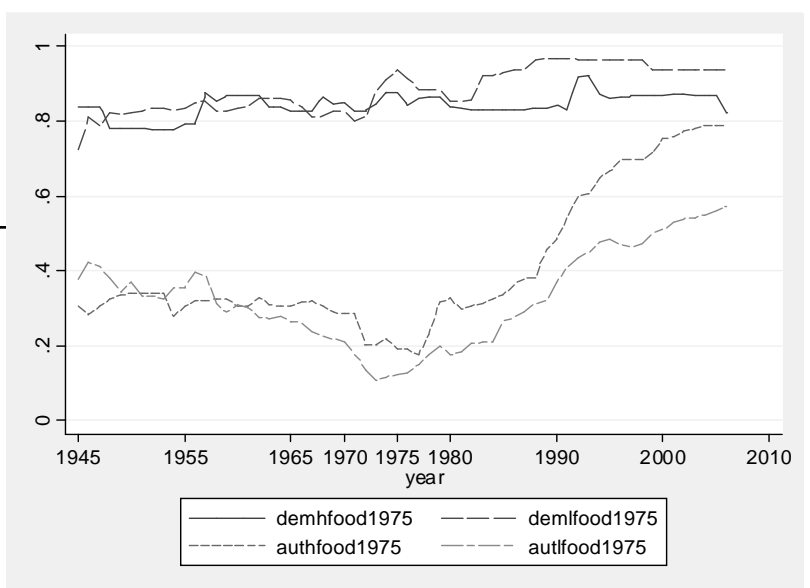
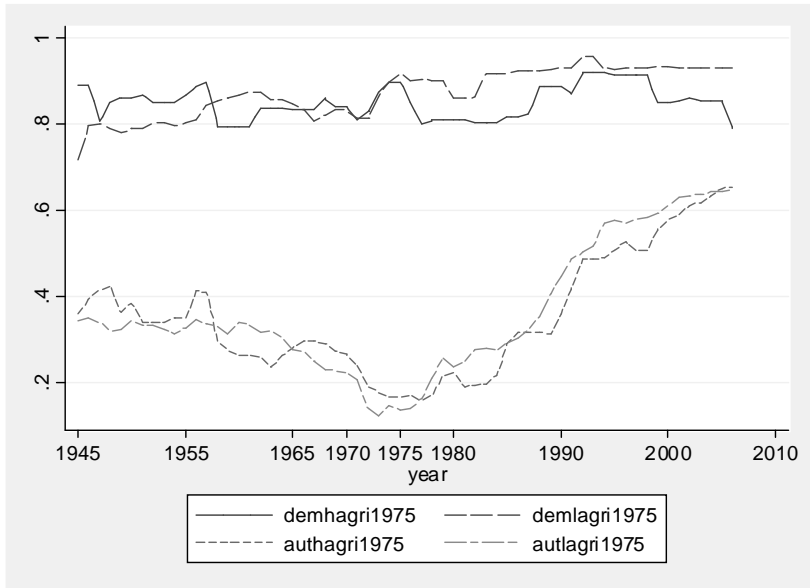
## But what about the influence of resources on democracy?



- No changes over time in agrifood countries
- No change over time in democratic (in 1970-75) oilmet countries
- Significantly slower democratization in oilmet countries

# When does oil become important?







## Results regarding Autocracy and Democracy

---

- The resource curse is most visible in non-democratic states and comes primarily from oil and ores\_met
- Partly this is due to NR making democratic development slower but there is a separate effect from resources on growth (not only effect through neg effect on dem)
- There appears to be no neg effect from resources on democracy for states which were democratic in the beginning of the period
- ...so if there is no resource curse for democracies can there be an effect from constitutions?



# Form of Democracy

---

- Persson and Tabellini (1998, 2003, 2004, etc)
  - Electoral rules: Majoritarian vs Proportional rules (pre election competition)
  - Form of government: Presidential vs Parliamentary (post election competition)
- Theoretically and empirically important differences in “structural policies” (public goods provision, targeted transfers, and - of particular interest here - political rents
  - Stiffer political competition in Maj => less rents
  - Clearer accountability in Presidential states => less rents

# Differences in Form of Democracy

	(1)	(2)	(3)	(4)
COEFFICIENT				
lngdppc	-0.098 (0.134)	-0.117 (0.120)	-0.224* (0.121)	-0.129 (0.114)
inv	0.172*** (0.053)	0.170*** (0.050)	0.136*** (0.049)	0.136*** (0.050)
mopen	0.007 (0.006)	0.007 (0.006)	0.005 (0.005)	0.008 (0.005)
inst	0.164 (0.534)	0.243 (0.386)	-0.534 (0.542)	0.420 (0.365)
primexpgdp	-2.976 (2.107)	-3.153 (2.125)	-2.567 (1.690)	-3.023 (1.918)
Constant	-1.130 (1.745)	-0.952 (1.495)	1.043 (1.637)	-0.260 (1.301)
Observations	44	44	42	42
R-squared	0.36	0.37	0.36	0.36

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

inst, in turn, is: keefer\_pres75 keefer\_maj75 tp\_pres tp\_maj





	(1)	(2)	(3)	(4)
COEFFICIENT				
lngdppc	-0.139 (0.132)	-0.117 (0.118)	-0.261** (0.113)	-0.167 (0.121)
inv	0.167*** (0.053)	0.188*** (0.044)	0.135** (0.050)	0.132** (0.051)
mopen	0.008 (0.005)	0.008* (0.004)	0.009** (0.004)	0.009* (0.005)
inst	1.653*** (0.585)	-0.663 (0.433)	0.847 (0.693)	-0.327 (0.367)
primexpgdp	-2.454 (1.892)	-7.290*** (1.974)	-1.115 (0.835)	-6.551*** (1.872)
instX1	-9.085** (3.567)	6.083*** (1.988)	-7.876*** (1.875)	5.062** (1.981)
Constant	-0.802 (1.735)	-0.884 (1.409)	0.864 (1.652)	0.556 (1.546)
Observations	44	44	42	42
R-squared	0.43	0.46	0.52	0.43

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

inst, in turn, is: keefer\_pres75 keefer\_maj75 tp\_pres tp\_maj



	(1)	(2)	(3)	(4)
COEFFICIENT				
lngdppc	-0.179 (0.120)	-0.100 (0.127)	-0.270** (0.115)	-0.148 (0.126)
inv	0.189*** (0.060)	0.157*** (0.049)	0.118** (0.048)	0.144*** (0.041)
mopen	0.009* (0.005)	0.007 (0.005)	0.008 (0.005)	0.008 (0.005)
inst	1.296*** (0.342)	-0.658 (0.667)	1.126 (0.898)	-0.147 (0.577)
agrigdp	0.444 (4.533)	-11.220 (14.962)	-2.335 (5.024)	0.396 (15.214)
instX1	-23.852* (12.679)	9.925 (16.374)	-27.305 (23.133)	-3.393 (17.232)
foodgdp	-4.584 (2.963)	-4.823 (4.103)	-2.356 (2.171)	-2.251 (3.190)
instX2	-5.345* (2.862)	1.907 (4.980)	-8.560** (3.209)	-1.583 (4.507)
fuelgdp	-0.425 (0.427)	-13.113*** (2.599)	-0.397 (0.421)	-11.412*** (1.992)
instX3	-17.793*** (1.431)	13.018*** (2.781)	-15.604*** (3.577)	11.028*** (2.164)
ores <sub>m</sub> etgdp	-7.629 (7.222)	-8.407 (8.341)	4.196 (4.525)	-13.782** (5.448)
instX4	13.017* (7.634)	13.056 (9.239)	-6.830 (6.375)	19.225*** (5.600)
Constant	-0.913 (1.636)	-0.321 (1.388)	1.345 (1.862)	-0.054 (1.475)
Observations	44	44	42	42
R-squared	0.59	0.54	0.60	0.58



## Results with respect to different forms of democracy

---

- In democracies natural resources appear to be negative ONLY in combination with a presidential democracy
- Only Fuels have negative effects in combination with Proportional electoral systems



# What does theory suggest?

---

- Presidential vs Parliamentary
  - Rents are smaller under Pres as pres is more clearly accountable. However, Pres also has more discretion
  - Interpretation of our result: If potential gains becomes large Pres has larger possibilities to divert rents from the natural resource, at least if accountability is not perfect.
  - Presidential democracies are 0.1 points lower in polity on average (this does not change much over the period)



# What does theory suggest?

---

- Majoritarian vs Proportional
  - Majoritarian systems have stiffer electoral competition inducing more targeted redistribution (only to swing district) and also less rents. (Supply of public goods also smaller)
  - Resource rents should hence be smaller for politicians under Maj, which is what we find.



# Summary of results

---

- Resource curse driven by non-democratic states

However

- In democracies there seems to be a curse when combined with a presidential system and for oil with proportional electoral system