

A Theoretical Foundation of the Modernization Hypothesis

D. Debowicz A. Dickson

Swansea U. U. of Strathclyde

I. MacKenzie P.G. Sekeris

U. of Queensland Montpellier B.S.

CRETE 2021, Naxos

Economic development and political regime

- ▶ Can economic development bring about 'political development' / democratization?
- ▶ Question that has preoccupied thinkers at least as far back as Aristotle
- ▶ Lipset (APSR 1959) builds on these ideas to propose the **modernization hypothesis**:
"The more well-to-do a nation, the greater the chances that it will sustain democracy" (p.75)
- ▶ What is the mechanism?
 - ▶ Socio-economic development create a combination of *industrialization, urbanization, wealth, and education* creating an 'active' middle class
 - ▶ This in turns leads to (i) democratization, and (ii) democratic stability

Economic development and political regime

- ▶ Can economic development bring about 'political development' / democratization?
- ▶ Question that has preoccupied thinkers at least as far back as Aristotle
- ▶ Lipset (APSR 1959) builds on these ideas to propose the **modernization hypothesis**:
"The more well-to-do a nation, the greater the chances that it will sustain democracy" (p.75)
- ▶ What is the mechanism?
 - ▶ Socio-economic development create a combination of *industrialization, urbanization, wealth, and education* creating an 'active' middle class
 - ▶ This in turns leads to (i) democratization, and (ii) democratic stability

Economic development and political regime

- ▶ Can economic development bring about 'political development' / democratization?
- ▶ Question that has preoccupied thinkers at least as far back as Aristotle
- ▶ Lipset (APSR 1959) builds on these ideas to propose the **modernization hypothesis**:
"The more well-to-do a nation, the greater the chances that it will sustain democracy" (p.75)
- ▶ What is the mechanism?
 - ▶ Socio-economic development create a combination of *industrialization, urbanization, wealth, and education* creating an 'active' middle class
 - ▶ This in turns leads to (i) democratization, and (ii) democratic stability

Empirical evidence - a contrasted story

- ▶ Economics and politics interact in several (complex) ways (e.g. Acemoglu and Robinson JEP 2013)
- ▶ What is the empirical relationship between economic growth/development and political institutions?
 1. Regime type \Rightarrow economic growth (Papaioannou and Siourounis EJ 2008, Acemoglu et al. JPE 2019, Colagrossi et al. EJPE 2020)
 2. **Economic growth \Rightarrow regime type:**
 - ▶ causal link: Barro (JPE 1999), Treisman (ARPS 2020)
 - ▶ 'semi-causal' link: Przeworski and Limongi (WP 1997)
 - ▶ no causal link: Acemoglu et al. (AER 2008, JME 2009)
 - ▶ re-establishment of causal link: Cervelatti et al. (AER 2014), Che et al. (JCE 2013)
 - ▶ reverse causal link: Burke and Leigh (AEJ:Macro 2010), Aidt and Jensen (EER 2014), Franck (REStat 2016)

A dearth of theory

- ▶ Two types of theories to support or disprove the modernization hypothesis
 1. Logical theories to motivate empirics:
 - ▶ Education brings 'political enlightenment' and thus democratization
 - ▶ Urbanization solves collective action problems, etc. . .
 - ▶ Income? Less clear; could be a social contract, or other forms of mediation
 2. Formal models:
 - ▶ Common element: class struggle for political power as a means to redistribute wealth
 - ▶ Acemoglu and Robinson (AER 2005): negative shocks and commitment issues
 - ▶ Kotschy and Sunde (SJE 2019): negative shocks in unequal societies lead to demo.
 - ▶ Huang (IER 2012): economic growth gives power to different groups in society and thus demo.

A dearth of theory

- ▶ Two types of theories to support or disprove the modernization hypothesis
 1. Logical theories to motivate empirics:
 - ▶ Education brings 'political enlightenment' and thus democratization
 - ▶ Urbanization solves collective action problems, etc. . .
 - ▶ Income? Less clear; could be a social contract, or other forms of mediation
 2. Formal models:
 - ▶ Common element: class struggle for political power as a means to redistribute wealth
 - ▶ Acemoglu and Robinson (AER 2005): negative shocks and commitment issues
 - ▶ Kotschy and Sunde (SJE 2019): negative shocks in unequal societies lead to demo.
 - ▶ Huang (IER 2012): economic growth gives power to different groups in society and thus demo.

A dearth of theory

- ▶ The approach of economics (and formal political science) of seeing in politics only economic questions is quite reductive
- ▶ Political scientists have had a wider understanding of 'political rights': material *vs* non-material goods (Welzel 2007, Inglehart and Welzel 2010):
 - ▶ You value political freedoms *per se*
 - ▶ Being able to express political opinions, to decide on non-economic issues (type of education, gender issues, drive left/right, guns laws etc. . .) brings you satisfaction
- ▶ To some extent thus the existing theory is incomplete

A dearth of theory

- ▶ The approach of economics (and formal political science) of seeing in politics only economic questions is quite reductive
- ▶ Political scientists have had a wider understanding of 'political rights': material *vs* non-material goods (Welzel 2007, Inglehart and Welzel 2010):
 - ▶ You value political freedoms *per se*
 - ▶ Being able to express political opinions, to decide on non-economic issues (type of education, gender issues, drive left/right, guns laws etc. . .) brings you satisfaction
- ▶ To some extent thus the existing theory is incomplete

A dearth of theory

- ▶ The approach of economics (and formal political science) of seeing in politics only economic questions is quite reductive
- ▶ Political scientists have had a wider understanding of 'political rights': material *vs* non-material goods (Welzel 2007, Inglehart and Welzel 2010):
 - ▶ You value political freedoms *per se*
 - ▶ Being able to express political opinions, to decide on non-economic issues (type of education, gender issues, drive left/right, guns laws etc. . .) brings you satisfaction
- ▶ To some extent thus the existing theory is incomplete

This paper

- ▶ We allow citizens to value both material and non-material goods
- ▶ We show that provided these goods are not independent, the effect of modernization is non-linear:
 - ▶ For low levels of economic development, further econ. dev. **reduces** political activism
 - ▶ For high levels of economic development, further econ. dev. **increases** political activism
 - ▶ Combined these findings reconcile seemingly contradictory empirical findings
- ▶ We thus posit that the link between modernization and democracy is rooted in **preferences**
- ▶ OTHER FINDINGS

The model

- ▶ A representative citizen has utility $U(m, p)$, m the material good, p the political rights
- ▶ Citizens enjoy utility from political rights per se: freedom of expression, policies on non-material matters more aligned with own preferences (type of education, gay rights, religious rights...)

$$U_1 > 0, U_{11} < 0, U_2 > 0, U_{22} < 0, U_{12} \geq 0$$

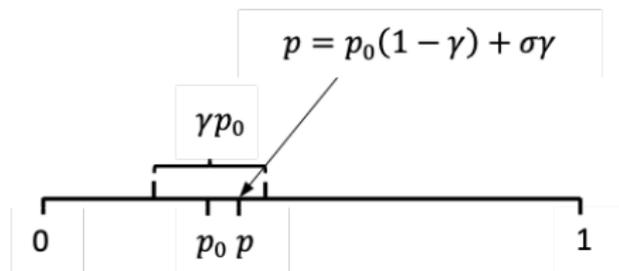
- ▶ Complementarity between m and p most natural scenario:
 - ▶ Being wealthier w/o political rights brings little satisfaction
 - ▶ Living in a perfect democracy but being poor brings little satisfaction
- ▶ We do not allow for the goods to be adverse

The model

Political rights: p

- ▶ Unit of political rights that are shared between elites and citizens (i.e. bargaining power)
- ▶ Initial rights: p_0 rights to citizens, $(1 - p_0)$ to elites
- ▶ Contestable rights γp_0 : you can increase your rights by an increment of the existing rights
- ▶ The increment is tilted in favour of the citizens as a proportion of their relative effort (protests, lobbying, ...): share of the increment accruing to citizens is $\sigma = \frac{x}{x+y}$.

The model - case where $\sigma > 1/2$



The model

Material goods: m

- ▶ Opportunity cost of lobbying/protesting/fighting: $w[e - x]$
- ▶ We also allow for political rights to influence redistribution of public wealth/allocation of public goods: pR
 - ▶ R are the public resources/rents to redistribute
 - ▶ p stands for the share controlled by the citizens
- ▶ combining all the ingredients:

Utility of the citizen

$$U = U(w[e - x] + pR, p)$$

Utility of the elites

$$V = V((1 - p)R - y) \quad \text{can be linear wlog}$$

The model - equilibrium

Consider first that $\beta = 0$

$$\frac{dV}{dx} = 0 \Rightarrow y(x) = [\gamma Rx]^2 - x$$

$$\frac{dU}{dx} = \underbrace{-wU_1}_{\text{O.C. of contest}} + \underbrace{\frac{y}{(x+y)^2} \gamma U_2}_{\text{Mgl non-mat. gain}} = 0$$

Or,

$$MRS_{mp} = \frac{y}{(y+x)^2} \frac{\gamma}{w}$$

Conditions jointly define the equilibrium: x^*, y^*, σ^*, p^*

$$p^* = p_0(1 - \gamma) + \gamma \sigma^*$$

$$\sigma^* = \left[\frac{x^*}{\gamma R} \right]^{1/2}$$

The model - equilibrium

Consider first that $\beta = 0$

$$\frac{dV}{dx} = 0 \Rightarrow y(x) = [\gamma R x]^2 - x$$

$$\frac{dU}{dx} = \underbrace{-wU_1}_{\text{O.C. of contest}} + \underbrace{\frac{y}{(x+y)^2} \gamma U_2}_{\text{Mgl non-mat. gain}} = 0$$

Or,

$$MRS_{mp} = \frac{y}{(y+x)^2} \frac{\gamma}{w}$$

Conditions jointly define the equilibrium: x^*, y^*, σ^*, p^*

$$p^* = p_0(1 - \gamma) + \gamma \sigma^*$$

$$\sigma^* = \left[\frac{x^*}{\gamma R} \right]^{1/2}$$

The model - equilibrium

Consider first that $\beta = 0$

$$\frac{dV}{dx} = 0 \Rightarrow y(x) = [\gamma R x]^2 - x$$

$$\frac{dU}{dx} = \underbrace{-wU_1}_{\text{O.C. of contest}} + \underbrace{\frac{y}{(x+y)^2} \gamma U_2}_{\text{Mgl non-mat. gain}} = 0$$

Or,

$$MRS_{mp} = \frac{y}{(y+x)^2} \frac{\gamma}{w}$$

Conditions jointly define the equilibrium: x^*, y^*, σ^*, p^*

$$p^* = p_0(1 - \gamma) + \gamma \sigma^*$$

$$\sigma^* = \left[\frac{x^*}{\gamma R} \right]^{1/2}$$

Comparative statics: the effect of **modernization**; $\nearrow w$

1. Higher O.C. of protest since producing yields a higher return: $x^* \searrow$
2. The marginal valuation of material goods drops (DMU):
 $x^* \nearrow$
3. More w maps into higher MU of p (complementarities):
 $x^* \nearrow$

Comparative statics: the effect of **modernization**; ↗ w

$$\text{sign} \left[\frac{dx^*}{dw} \right] = -\text{sign} [m^* MRS_m + MRS]$$

- ▶ $MRS > 0$: U_m/U_p increases as m/p decreases: **higher w reduces incentives to protest because of O.C.**
- ▶ $MRS_m < 0$: Higher m :
 - ▶ Reduces U_m
 - ▶ Increases U_p (complementarities)**higher w increases incentives to protest because of saturation/DMU alongside complementarities**
- ▶ Hence $\frac{dx^*}{dw} < 0$ if
 - ▶ MU of material goods drops quickly
 - ▶ m and p are highly complementary

Comparative statics: the effect of **modernization**; ↗ w

$$\text{sign} \left[\frac{dx^*}{dw} \right] = -\text{sign} [m^* MRS_m + MRS]$$

- ▶ $MRS > 0$: U_m/U_p increases as m/p decreases: **higher w reduces incentives to protest because of O.C.**
- ▶ $MRS_m < 0$: Higher m :
 - ▶ Reduces U_m
 - ▶ Increases U_p (complementarities)

higher w **increases** incentives to protest because of saturation/DMU alongside complementarities
- ▶ Hence $\frac{dx^*}{dw} < 0$ if
 - ▶ MU of material goods drops quickly
 - ▶ m and p are highly complementary

Comparative statics: the effect of **modernization**; ↗ w

$$\text{sign} \left[\frac{dx^*}{dw} \right] = -\text{sign} [m^* MRS_m + MRS]$$

- ▶ $MRS > 0$: U_m/U_p increases as m/p decreases: **higher w reduces incentives to protest because of O.C.**
- ▶ $MRS_m < 0$: Higher m :
 - ▶ Reduces U_m
 - ▶ Increases U_p (complementarities)

higher w **increases** incentives to protest because of saturation/DMU alongside complementarities
- ▶ Hence $\frac{dx^*}{dw} < 0$ if
 - ▶ MU of material goods drops quickly
 - ▶ m and p are highly complementary

Comparative statics: the effect of **modernization**; ↗ w

$$\text{sign} \left[\frac{dx^*}{dw} \right] = -\text{sign} [m^* MRS_m + MRS]$$

- ▶ $MRS > 0$: U_m/U_p increases as m/p decreases: **higher w reduces incentives to protest because of O.C.**
- ▶ $MRS_m < 0$: Higher m :
 - ▶ Reduces U_m
 - ▶ Increases U_p (complementarities)**higher w increases incentives to protest because of saturation/DMU alongside complementarities**
- ▶ Hence $\frac{dx^*}{dw} < 0$ if
 - ▶ MU of material goods drops quickly
 - ▶ m and p are highly complementary

Revisiting the foundations of the Modernization hypothesis?

- ▶ Our theory predicts that a positive effect of modernization on democratization will be observed if:
 - ▶ Utility from material goods drops quickly at the margin
 - ▶ material and non-material goods exhibit strong complementarities
- ▶ Likely to be observed in poor developing countries
- ▶ In wealthy countries, our theory predicts a reversal of the modernization hypothesis

Revisiting the foundations of the Modernization hypothesis?

- ▶ Our theory predicts that a positive effect of modernization on democratization will be observed if:
 - ▶ Utility from material goods drops quickly at the margin
 - ▶ material and non-material goods exhibit strong complementarities
- ▶ Likely to be observed in poor developing countries
- ▶ In wealthy countries, our theory predicts a reversal of the modernization hypothesis

A very rough look at the data

- ▶ Our theory predicts that a positive effect of modernization on democratization will be observed if:
 - ▶ Utility from material goods drops quickly at the margin
 - ▶ material and non-material goods exhibit strong complementarities
- ▶ Likely to be observed in poor developing countries
- ▶ In wealthy countries, our theory predicts a reversal of the modernization hypothesis

A very rough look at the data

- ▶ Our theory predicts that a positive effect of modernization on democratization will be observed if:
 - ▶ Utility from material goods drops quickly at the margin
 - ▶ material and non-material goods exhibit strong complementarities
- ▶ Likely to be observed in poor developing countries
- ▶ In wealthy countries, our theory predicts a reversal of the modernization hypothesis

Income and Democracy - Acemoglu et al. AER 2008

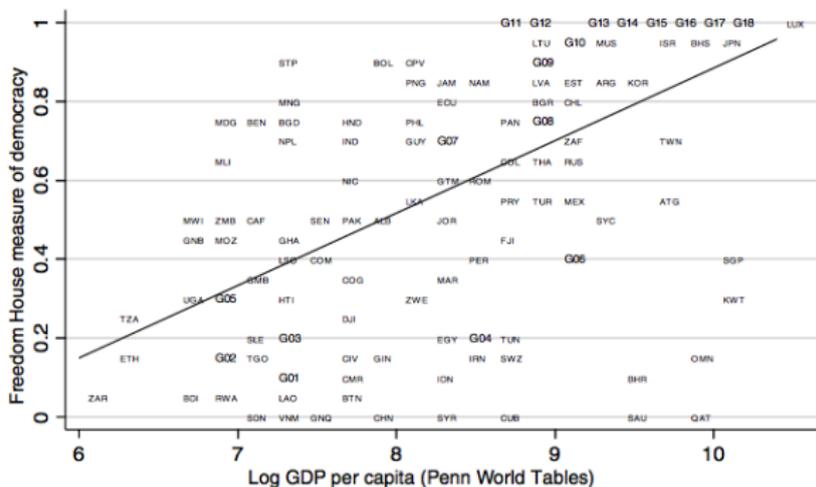


FIGURE 1. DEMOCRACY AND INCOME, 1990s

Estimations with fixed effects

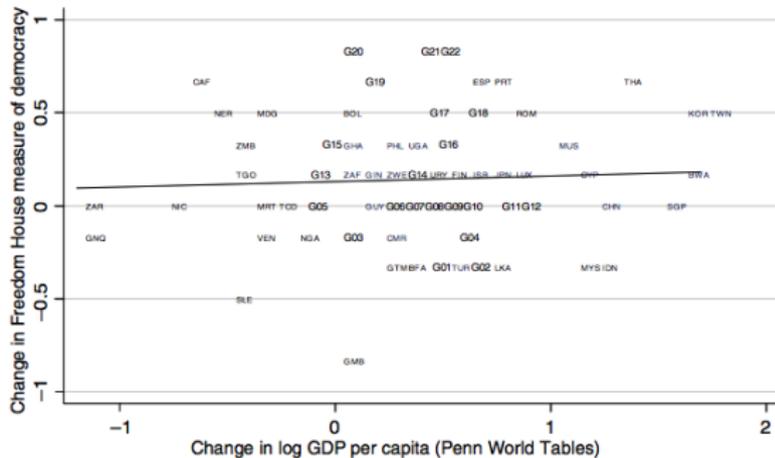


FIGURE 2. CHANGE IN DEMOCRACY AND INCOME, 1970–1995

Estimations with fixed effects

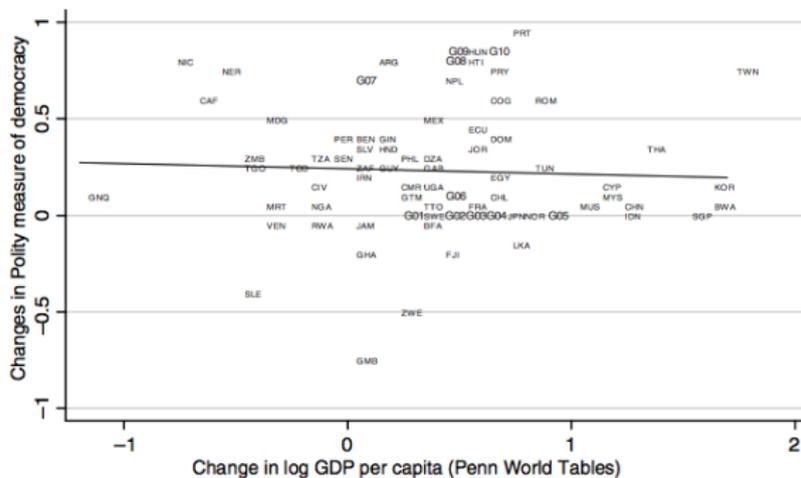


FIGURE 3. CHANGE IN DEMOCRACY AND INCOME, 1970–1995

Estimations with fixed effects

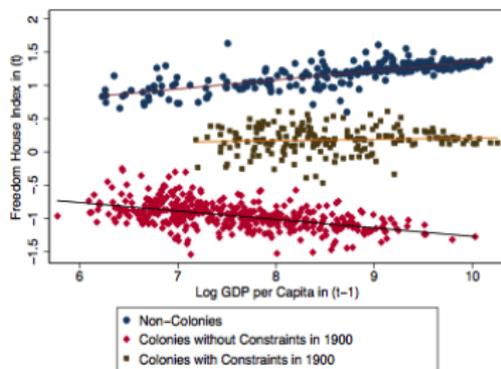
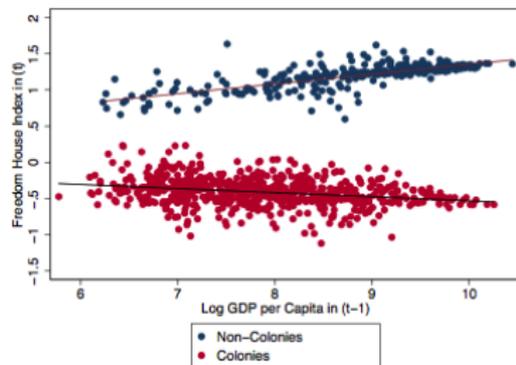
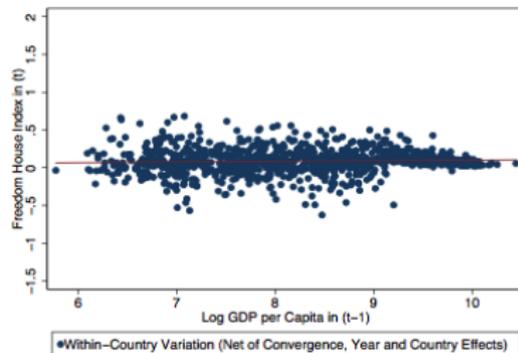
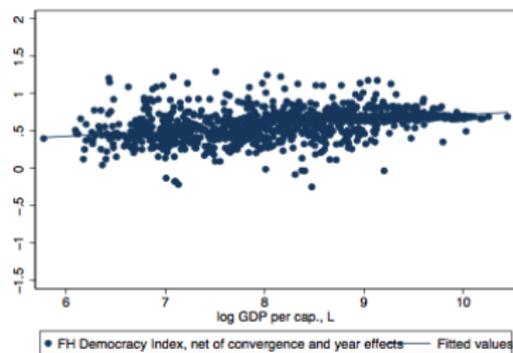


Table: Contrasting our results with Acemoglu et al. (2008)

Democracy	(F.E. OLS Acemoglu)	(F.E. OLS)	(F.E. OLS Acemoglu)	(F.E. OLS)
Democracy _{<i>t</i>-1}	0.449 (0.063)	0.371 (0.000)		
Log GDP per capita _{<i>t</i>-1}	-0.006 (0.039)	.0177 (0.078)	-0.011 (0.055)	0.032 (0.02)
(Log GDP per capita _{<i>t</i>-1}) ²		-0.006 (0.002)		-0.001 (0.014)
<i>N</i>	854	945	880	958
<i>R</i> ²	0.82	0.79	0.77	0.76

Comparative statics: the effect of **modernization**; ↗ R

- ▶ $\text{sign} \left[\frac{dx^*}{dR} \right]$ is ambiguous:
 - ▶ Same effects as when modifying w
 - ▶ Additional (strategic) effect of Elites better defending their own political rights
- ▶ We can sign $d\sigma^*/dR < 0$ though:
 - ▶ Even if x^* increases in R , y^* will increase by even more (contrast concavity to linearity)

Comparative statics: the effect of **modernization**; ↗ R

- ▶ $\text{sign} \left[\frac{dx^*}{dR} \right]$ is ambiguous:
 - ▶ Same effects as when modifying w
 - ▶ Additional (strategic) effect of Elites better defending their own political rights
- ▶ We can sign $d\sigma^* / dR < 0$ though:
 - ▶ Even if x^* increases in R , y^* will increase by even more (contrast concavity to linearity)

Comparative statics: the effect of **modernization**; $\nearrow p_0$

- ▶ $sign \left[\frac{dx^*}{dp_0} \right] < 0$:
 - ▶ You increase the “constant component” of the political rights component [resp. decrease for the Elites]
 - ▶ The MRS_{mp} goes up since all else equal p increases
 - ▶ Rate at which you substitute m for p remains unchanged
 - ▶ Hence incentives to redirect effort to production
- ▶ Since the elites' incentives reaction function is unaffected (linearity): $sign \left[\frac{d\sigma^*}{dp_0} \right] < 0$
- ▶ Observe however that $dp^* / dp_0 > 0$: direct effect dominates

Comparative statics: the effect of **modernization**; $\nearrow p_0$

- ▶ $sign \left[\frac{dx^*}{dp_0} \right] < 0$:
 - ▶ You increase the “constant component” of the political rights component [resp. decrease for the Elites]
 - ▶ The MRS_{mp} goes up since all else equal p increases
 - ▶ Rate at which you substitute m for p remains unchanged
 - ▶ Hence incentives to redirect effort to production
- ▶ Since the elites' incentives reaction function is unaffected (linearity): $sign \left[\frac{d\sigma^*}{dp_0} \right] < 0$
- ▶ Observe however that $dp^* / dp_0 > 0$: direct effect dominates

Comparative statics: the effect of **modernization**; $\nearrow p_0$

- ▶ $sign \left[\frac{dx^*}{dp_0} \right] < 0$:
 - ▶ You increase the “constant component” of the political rights component [resp. decrease for the Elites]
 - ▶ The MRS_{mp} goes up since all else equal p increases
 - ▶ Rate at which you substitute m for p remains unchanged
 - ▶ Hence incentives to redirect effort to production
- ▶ Since the elites' incentives reaction function is unaffected (linearity): $sign \left[\frac{d\sigma^*}{dp_0} \right] < 0$
- ▶ Observe however that $dp^* / dp_0 > 0$: direct effect dominates

The model - endogenizing the political claims γ

- ▶ So far we have looked at fixed increment of political rights
- ▶ How are the citizens' demands changing with economic development?
- ▶ $d\gamma^*/dw \lesseqgtr 0 \Leftrightarrow dx^*/dw \lesseqgtr 0$
- ▶ Since dx^*/dw behaves like $d\sigma^*/dw$, if σ^* increases, the citizens have incentives targeting larger concessions since they will be able to claim a larger share of these.
- ▶ Likewise, $d\gamma^*/dR < 0$ since $d\sigma^*/dR < 0$
- ▶ More rents map into lower equilibrium political rights, and thus less incentives to ask for large concessions

The model - endogenizing the political claims γ

- ▶ So far we have looked at fixed increment of political rights
- ▶ How are the citizens' demands changing with economic development?
- ▶ $d\gamma^*/dw \lesseqgtr 0 \Leftrightarrow dx^*/dw \lesseqgtr 0$
- ▶ Since dx^*/dw behaves like $d\sigma^*/dw$, if σ^* increases, the citizens have incentives targeting larger concessions since they will be able to claim a larger share of these.
- ▶ Likewise, $d\gamma^*/dR < 0$ since $d\sigma^*/dR < 0$
- ▶ More rents map into lower equilibrium political rights, and thus less incentives to ask for large concessions

The model - endogenizing the political claims γ

- ▶ So far we have looked at fixed increment of political rights
- ▶ How are the citizens' demands changing with economic development?
- ▶ $d\gamma^*/dw \lesseqgtr 0 \Leftrightarrow dx^*/dw \lesseqgtr 0$
- ▶ Since dx^*/dw behaves like $d\sigma^*/dw$, if σ^* increases, the citizens have incentives targeting larger concessions since they will be able to claim a larger share of these.
- ▶ Likewise, $d\gamma^*/dR < 0$ since $d\sigma^*/dR < 0$
- ▶ More rents map into lower equilibrium political rights, and thus less incentives to ask for large concessions

The model - allowing for $\beta > 0$; politics map into economic concessions

- ▶ Pretty much work in progress but we also find that the effect of modernization can go either way
- ▶ extra incentives to contest political rights by pushing the marginal utility of material goods down

Conclusion

- ▶ We propose a theoretical framework for thinking about the *modernization hypothesis*
- ▶ We show that the effect of economic development on democratization can be non-linear; Following improvement in economic conditions:
 - ▶ citizens invest more effort in political contestation when their incomes are low
 - ▶ citizens invest less effort in political contestation when their incomes are high
- ▶ Combined, these effects can explain why Acemoglu et al. (2008) disprove the modernization hypothesis
- ▶ Additional results:
 - ▶ More rents map into lower political rights
 - ▶ Higher initial political rights map into lower political mobilization
 - ▶ Following positive economic development, political claims increase in poorer countries and decrease in wealthy countries