Our attention now shifts to model of democratic transitions.

Many interesting theories and models of political transitions (Lipset (1959); Przeworski (1991); Linz and Stepan (1996); Myerson (2007, 2008); Mulligan and Tsui (2007), etc.)

Here I will focus on Acemoglu and Robinson (AER 2001) *A Theory of Political Transitions*.

This is in many respects the workhorse model of their 2006 book and it encompasses the model of Acemoglu and Robinson (QJE 2000) on the extension of the democratic franchise in Western Europe and many subsequent papers.
The Model

Two groups of agents: The Poor and the Rich (the Elite).

Two political states: Democracy (median voter is Poor and controls policy) and Autocracy (the Elite controls policy).

During an Autocracy the Poor can mount a revolution (storming the Bastille) and the Elite can establish a democracy.

During a Democracy the Elite can mount a coup,

Income is stochastic and the opportunity cost of coups and revolutions changes with income.

No commitment to future level of taxation is possible.
Setup

Infinite horizon. Discrete time.

Measure 1 of agents. A fraction $\lambda > 1/2$ agents are Poor ($p$), the rest is Rich ($r$).

There is an unique consumption good $y$ and a unique productive asset with total stock $h$.

At the beginning of time $t=0$ the poor owns $h^p$ and the rich $h^r > h^p$.

To parameterize income inequality in this economy we use the parameter $\theta < \lambda$ such that the share of capital owned by the poor is less than proportional to their size $h^p = h\theta / \lambda$ and $h^r = h^*(1 - \theta)/(1 - \lambda)$.

Higher $\theta$ implies lower income inequality (and vice versa).
Income accrues from production: $y_{i,t} = A_t * h^i$ for $i = p, r$ where $A_t$ indicates aggregate productivity, which follows a stochastic process:

\[
A_t = A^h = 1 \quad \text{with prob. } 1-s \\
A_t = A^l = a \quad \text{with prob. } s
\]

where $a < 1$ and indicates a period of recession and $s < 1/2$ so recession a relatively rare.

All agents maximize expected discounted consumption:

\[
E_t \sum_j \beta_j C_{i,t+j} \quad \text{for } i = p, r
\]
Disposable income is given by after-tax income plus (not-group-specific) transfers:

\[(1-\tau_t)A_t h^i + f_t\]

Also assume that there is a cost in raising taxes equal to \(c(\tau_t)A_t h\) with \(c'(0)=0, \ c'>0, \ c''>0, \ c'(1)=\infty\).

The government budget constraint is given by:

\[f_t = \lambda \tau_t A_t h^p + (1-\lambda)\tau_t A_t h^r - c(\tau_t)A_t h\]

\[= (\tau_t - c(\tau_t))A_t h\]
A revolution can be attempted in any nondemocratic period after $t = 0$. If attempted, it always succeeds.

After a revolution the share of capital owned by the poor becomes more proportional to their size $h\pi/\lambda$ with $\theta < \pi$. $m$ tells how high the returns to the revolution are.

The revolution destroys $(1 - m) > 0$ fraction of resources in the period in which happens. $m$ tells how cheap the revolution is (the higher $m$, the less the poor lose from revolution).

For the poor the return in the period of the revolution is $mA_h\pi/\lambda$ and the per period return ever after is $A_h\pi/\lambda$.

Note: the discounted net present value of a revolution is $W^p(R) = (1 - s + sa)*h\pi/\lambda*1/(1-\beta)$

For the rich the revolution is very costly: they lose everything forever. $W^r(R) = 0$. This is the disciplining device through which the poor can obtain redistribution or democratization. The rich will always try to avoid it.
A coup can be attempted in any democratic period after $t = 1$.

If attempted, the coup always succeeds.

The coup destroys $(1 - \Phi) > 0$ fraction of resources in the period in which it happens. $\Phi$ tells how cheap the coup is (the higher $\Phi$, the less the rich loses from coup).

For the poor and for the rich the return in the period of the coup is $\Phi A_i h^i$. 
Timing of the game

Sequential structure:

2. If there has been a revolution in the past, the poor receive their income, consume, and the period ends. If the state is democracy the poor picks a tax rate $\tau_t$. If the state is autocracy the rich picks a tax rate $\tau_t$.
3. In a nondemocratic regime the rich decide whether to extend the electoral franchise to the poor. In a democratic regime the rich decide whether to stage a coup. Whoever is in power now can fix a new tax rate $\tau_t$ for the period.
4. In a nondemocratic regime the poor decide whether to initiate a revolution. If there is a revolution the poor share the remaining income in the economy. If there is no revolution the tax rate $\tau_t$ gets implemented.
5. All receive their income, consume, and the period ends.

Note: the poor cannot undertake a revolution immediately after a coup (you need to start in a nondemocratic regime).
Equilibrium

Two players: Poor and Rich representative agents.

Focus on (pure strategy) Markov Perfect Equilibria: Strategies depend only on the current state and the prior actions taken within the same period. [It’s a standard way for excluding history-dependence of strategies and other complications.]

For a given level of productivity $A$, there are three possible states $S$:

$(A, D) = \text{poor in power (Democracy)}$

$(A, E) = \text{Elite in power (autocracy)}$

$(A, R) = \text{Revolution (an absorbing state)}$
Transitions

\( \rho = 0 \) \rightarrow (A, E)

\( \gamma = 0 \) \rightarrow (A, E)

\( \gamma = 1 \) \rightarrow (A, D)

Democratization

Revolution

\( \rho = 1 \) \rightarrow (A, R)

\( \xi = 0 \) \rightarrow (A, D)

\( \xi = 1 \) \rightarrow (A, E)

Coup d’etat

Revolution

Democratization
Strategies

For the rich:
\( \sigma^r(S| \tau^p) = \{ \gamma, \xi, \tau^r \} \)

\( \gamma \), in state \((A,E)\) extend the franchise \((\gamma=1)\) or not \((\gamma=0)\)
\( \xi \), in state \((A,D)\), given \(\tau^p\), stage a coup \((\xi=1)\) or not \((\xi=0)\)
\( \tau^r \) in state \((A,E)\) or in state \((A,D)\) after a coup \((\xi=1)\), fix the tax rate by the rich.

For the poor:
\( \sigma^p(S|\gamma, \tau^r) = \{ \rho, \tau^p \} \)

\( \rho \), in state \((A,E)\) initiate the revolution \((\rho=1)\) or not \((\rho=0)\)
\( \tau^p \) in state \((A,D)\) fix the tax rate by the poor.
A pure strategy Markov Perfect Equilibrium is a strategy combination $\sigma^r(S|\tau^p)$, $\sigma^p(S|\gamma,\tau^r)$ such that these strategies $\sigma^r$, $\sigma^p$ are best-responses to each other for all possible states.

See paper for a more formal definition.
Analysis: Preliminaries

Some preliminaries first.

What is the optimal tax rate $\tau^m$ the poor would set, absent the risk of a coup?

Simply maximize the per-period consumption of the poor:

$$\text{Max}\{(1-\tau_t)A_t h^p + (\tau_t - c(\tau_t))A_t h\}$$

which implies

$$c'(\tau^m) = (\lambda - \theta)/\lambda$$

using the fact that $h^p = h\theta/\lambda$. So the higher the inequality (the lower $\theta$), the higher the taxes. Notice also that in the absence of political change taxes would be constant.
Define $\delta^i(\theta) A_t$ the net amount of redistribution that a person of group $i$ receives in state $A_t$ when the tax rate is $\tau^m$.

So, $\delta^i(\theta) A_t = f^m - \tau^m * A_t h^i$

and from the budget constraint transfers are $f^m = (\tau^m - c(\tau^m)) * A_t h$

This implies net transfers to the poor: $\delta^r(\theta) < 0 < \delta^p(\theta)$
Assumptions

Assume revolutions and coups are not worthwhile in periods of economic expansion (i.e. $A_t = A^h = I$).

Assumption 1: Sufficient condition for which coups are not profitable in good times.

The cost of a coup for a rich agent in normal times (the direct loss from the coup minus taxes paid = $(1-\phi)h^r + \delta^r(\theta)$ ) is always larger than the taxes $\tau^m$ avoided forever $(-(1-s + sa)\delta^r(\theta)\beta/(1-\beta))$

That is:

$$(1-\beta)(1-\phi)h^r > -(1- \beta s(1-a)) \delta^r(\theta).$$
Assumptions

Assumption 2: Sufficient condition for which *revolutions are not profitable in good times*.

In state $(A_t,E)$ the value of a revolution is

$$V^p(A_t, R) = mA_t h\pi/\lambda + \beta W^p(R)$$

The value of never undertaking a revolution and hence never receiving any transfer from the rich from there after is:

$$V^p(A_t, E) = A_t h^p + \beta (1 - s + sa) * h^p / (1 - \beta)$$

Of course this value is a lower bound of the utility under autocracy for the poor (because occasionally there could be redistributive taxation – the rich could tax themselves and give to the poor).

So we assume that for $A_t = A^h = 1$, $V^p(1, E) > V^p(A_t, R)$

*With this assumption we know there is never going to be any revolution in good times. And this also implies the rich will never redistribute to the poor in good times.*
Analysis

We need to derive some intuitive value functions in the different states of the world.

What is the value of being in a democracy during good times \((A_i = 1)\) for agents \(i = p, r\)?

\[
V^i(1, D) = h^i + \delta^i(\theta) + \beta W^i(D)
\]

where we make use of the fact that there is never going to be a coup in good times (hence the net transfers are \(\delta^i(\theta) * 1\)) and the continuation value from next period on of being in state \(D\) is:

\[
W^i(D) = (1-s) * V^i(1, D) + s * V^i(a, D)
\]

which depends on the state of the economy next period (could be a boom or a recession).
Analysis

What is the value of being in a democracy during bad times for agents \( i = p, r, V^i(a, D) \)?

Now, here the situation is tricky for the poor. If they redistribute too much, they can trigger a coup. So they may decide to keep taxes low and transfer less to themselves in bad times just to avoid a coup by the elite.

Call this tax rate (if feasible) \( \tau^d < \tau^m \).

Suppose \( \tau^d \) prevents the coup, then

\[
V^i(a, D) = v^i(a, D| \tau^d) = a(h^i + \Delta^i(\theta, \tau^d)) + \beta W^i(D)
\]

where net transfers under the threat of a coup are \( \Delta^i(\theta, \tau^d))A_t = f^d - \tau^d * A_t h^i \).

Notice that the continuation value is still \( W^i(D) \) which tells us that if the next period the poor have good times they will increase taxes back up to \( \tau^m \) (at that point this can’t trigger a coup because times are good). The poor cannot commit to keep taxes low.
Reducing taxes in a democracy may not be enough to prevent a coup though. Let’s see what is the decision by the rich about this:

\[
V^r(a, D) = \max_\xi \{ \xi V^r(a, E) + (1-\xi)v^r(a, D | \tau^d) \}
\]

where the continuation value of a coup (\(\xi=1\)) in state \((a, D)\) is:

\[
V^i(a, E) = \phi a h^i + \beta W^i(E)
\]

which depends on the fact that the rich will be able to set taxes to zero right after the coup (recall there cannot be revolution immediately after a coup, only in the following period).

The continuation value from next period on of being in state \(E\) is:

\[
W^i(E) = (1-s)*V^i(1, E) + s *V^i(a, E)
\]
Analysis

What happens when the Elite is in power?

In a boom the rich will set taxes to zero, since there cannot be a revolution by Assumption 2, so for agents $i=p, r$:

$$V^i(1, E) = h^i + \beta W^i(E)$$

In a recession the rich will have several options:

1. They can democratize ($\gamma=1$)
2. They can decide not to democratize ($\gamma=0$) but they can raise taxes from 0 to $\tau^e$ to appease the poor and avoid a revolution ($\rho=0$).
3. A revolution may occur ($\rho=1$).

Since we start from an autocracy, if either $\gamma=0$ or $\rho=1$ then you would never observe a democracy. Since we use $V^i(a, E)$ in calculating a deviation from democracy in what follows along the equilibrium path let us focus on case 1 ($\gamma=1$).
Analysis

So if $\gamma = 1$ then for agents $i = p, r$:

$$V^i(a, E) = a(h^i + \delta^i(\theta)) + \beta W^i(D)$$

which depends on the fact that the poor will set $\tau^m$ taxes (recall there cannot be a coup immediately after a democratization, only the following period, so the poor will pick the best tax rate for them) and the continuation value from next period on of being in state $D$ is what we derived earlier.

Finally allow for:

Assumption 3: Assume revolutions are worse than democracies, so democratizations can help preventing revolutions.

$$V^p(a, R) < V^p(a, D)$$

(Excludes case 3 in previous slide)

This completes the derivation of the value functions. Let’s now look at the properties of the equilibrium.
Coup Constraint

In state \((a, D)\) the elite would prefer not to stage a coup if it is too expensive, or:

\[
V^r(a, E) < v^r(a, D|\tau^d)
\]

That is, by replacing the expressions in the previous slides:

\[
\phi ah^r + \beta W^r(E) < a(h^r + \Delta^r(\theta,\tau^d)) + \beta W^r(D)
\]

or, more intuitively,

\[
\beta(W^r(E) - W^r(D)) - a\Delta^r(\theta,\tau^d) < ah^r (1- \phi)
\]

\[\text{(18)}\]

Capturing power & reducing taxes from \(\tau^d\) to 0 < Cost of the coup.

Note: If \(a\) is large (recession not too deep) the coup is more expensive and less likely.
Consolidated Democracy

In state \((a, D)\) the elite will never stage a coup for levels of \(\phi\) low enough, such that:

\[
\beta(W^r(E) - W^r(D)) - a\Delta^r(\theta, \tau^m) < ah^r (1 - \phi)
\]  

(18)

or, more clearly,

\[
\beta(W^r(E) - W^r(D)) - a\delta^r(\theta) < ah^r (1 - \phi).
\]

_Capturing power & reducing taxes even when taxes at the maximum \(\tau^m < \text{Cost of the coup}\)_

Substituting the value functions, you get a threshold \(\phi(\theta, a, s)\):

\[
\phi(\theta, a, s) = ((1 - \beta(1 - s))a(h^r + \delta^r(\theta)) + \beta(1 - s)\delta^r(\theta))/((1 - \beta(1 - s))ah^r)
\]

For \(\phi < \phi\) coups never occur.
For $\phi < \phi$ coups never occur, so increasing $\phi$ decreases the range in which coups might occur:

1. $\frac{d\phi(\theta, a, s)}{d\theta} > 0$ more equal societies are easier to consolidate (lower need to tax the rich).

2. $\frac{d\phi(\theta, a, s)}{da} > 0$ less severe recession make consolidation easier (by increasing the opportunity cost of a coup).

3. $\frac{d\phi(\theta, a, s)}{ds} > 0$ more frequent recessions make consolidation easier (increasing the frequency at which the rich pay lower taxes makes democracy less costly to the rich).
Semi-Consolidated Democracy

In state \((a, D)\) the elite always stages a coup for levels of \(\phi\) high enough, such that:

\[
\beta(W^r(E) - W^r(D)) - a\Delta^r(\theta, 0) > ah^r(1-\phi) \quad (18)
\]

or, more clearly,

\[
\beta(W^r(E) - W^r(D)) - 0 > ah^r(1-\phi)
\]

Capturing power & reducing taxes even when taxes are at the minimum \(\tau^d = 0\) > Cost of the coup

Substituting the value functions you get a threshold \(\phi(\theta, a, s)\). For \(\phi > \phi\) coups always occur during recessions:

\[
\phi(\theta, a, s) = \frac{(1-\beta(1-s))ah^r + \beta(1-s)\delta^r(\theta))/((1-\beta(1-s))ah^r)}{(1-\beta(1-s))ah^r)
\]

For \(\phi < \phi < \phi\) the democracy is semi-consolidated, that is, in order to prevent a coup, during recessions the poor lowers taxes to a level \(0 < \tau^d < \tau^m\)

Note: During booms taxes go back up to \(\tau^m\). Even if the country remains democratic the threat of a coup influences tax policy!
Revolution Constraint

In state \((a, E)\) the poor would prefer not to start a revolution if it is not worth it, or:

\[ V^p(a, R) < v^p(a, E|\tau^e) \]

where the rich may wish to avoid revolution by conceding some redistribution \(\tau^e\)

That is:

\[ m^*ah\pi /\lambda + \beta W^p(R) < a(h^p + d^p(\theta, \tau^e)) + \beta W^p(E) \quad (19) \]

where \(d^i(\theta, \tau^e)a = f^e - \tau^e*ah^i\) and means:

\[ \text{Capturing power through the Revolution} < \text{Value of living in an autocracy for the poor} \]

Note: The elite may have the opportunity of avoiding revolutions by just increasing taxes and redistribute during recessions. However, even giving \(\tau^e = \tau^m\) may not be enough to satisfy (19). In that case they will need to democratize.
Democratizations

In state \( (a, E) \) the poor would always start a revolution if:

\[
V^p(a, R) > v^p(a, E| \tau^m)
\]

where the rich tries to avoid revolution by conceding maximum redistribution \( \tau^m \)

That is:

\[
m^* a h \lambda / \lambda + \beta W^p(R) > a(h^p + \delta^p(\theta)) + \beta W^p(E) \quad (20)
\]

Substituting the value functions you get a threshold \( m(\theta, a, s) \). For \( m > m \) a revolution is always attractive during recessions even at maximum redistribution \( \tau^m \):

\[
m(\theta, a, s) = ((1-\beta(1-s))a(h^p + \delta^p(\theta)) + \beta(1-s)h^p -(1-s+as)\beta \pi h /((1-\beta)a \pi h)
\]

In this case the rich can only democratize to avoid a revolution.
For $m < m$ the autocracy can prevent the revolution by redistributing resources during recessions, that is, in order to prevent a revolution during recessions the rich increases taxes (on themselves) to a level $0 < \tau^c < \tau^m$.

During booms taxes go back down to $0$.

Note: Even if the country remains autocratic the threat of a revolution influences tax policy!
For \( m > m \) a revolution is always attractive during recessions even at maximum redistribution, so the rich democratize during the recession to avoid a revolution (by Assumption 3).

1. \( d m(\theta, a, s)/d\theta > 0 \) more equal societies are less likely democratize and the poor are more likely to just be happy with redistribution (autocracy is not that costly the poor).

2. \( d m(\theta, a, s)/d a > 0 \) less severe recessions make societies less likely to democratize and the poor are more likely to just be happy with redistribution (by increasing the opportunity cost of a revolution).

3. \( d m(\theta, a, s)/d s > 0 \) more frequent recessions make societies less likely to democratize and the poor are more likely to just be happy with redistribution (increasing the frequency at which the rich pay higher taxes makes autocracy less costly to the poor). Frequency of recessions acts as a commitment to redistribution.
Equilibrium (under Assumptions 1-3): Proposition

1. If \( m < m(\theta, a, s) \), then society remains nondemocratic forever. *Intuition: a revolution can always be bought off by the elite and the system remains an autocracy.*

2. If \( m > m(\theta, a, s) \) and if \( \phi < \phi(\theta, a, s) \), then society democratizes the first time the state is \((a, E)\) (at the first recession) and it remains a consolidated democracy forever. *Intuition: The revolution threat forces democratization and then coups are too costly to stage even when taxes are at the maximum \( \tau^m \).*

3. If \( m > m(\theta, a, s) \) and if \( \phi(\theta, a, s) < \phi < \phi(\theta, a, s) \), then society democratizes the first time the state is \((a, E)\) (at the first recession) and it remains a semi-consolidated democracy forever. *Intuition: The revolution threat forces democratization and then coups are not too costly to stage, so taxes have to be lowered in bad times.*

4. If \( m > m(\theta, a, s) \) and if \( \phi > \phi(\theta, a, s) \), then society becomes an unconsolidated democracy the first time the state is \((a, E)\) (at the first recession) and then at every recession it continuously switches regimes. *Intuition: Democratizations follow coups.*
Empirical Implications

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Political Economy - Trebbi


Examples

1. Society remains nondemocratic forever. Several examples were the poor are bought off, like Singapore, Saudi Arabia.

2. OECD countries. Extension of the democratic franchise to Western societies.

3. Countries that, albeit formally democratic, the threat of coups still constraints redistribution. Russia (?)

4. African and Latin American countries where continuous alternating between regime types continue and are often triggered by economic downturns (Chile, Argentina).
Notes

1. Societies with high asset inequality (low $\theta$) are more likely to have both more coups and revolutions. Hence they are more likely to be in case 4 and switch back and forth between democracy and autocracy.

2. In our model the richer the country (the higher $h$) does not imply the more democratic the country. Both coup and revolution constraints are unaffected by the level of $h$ per se.

3. Higher inequality increases fiscal policy variability within each case of equilibrium.

4. Societies where distortions $c(.)$ are lower (less convex) will have higher taxes and less likely to consolidate (the rich fearing higher taxes will have more incentives to stage coups). In a sense distortions are a good commitment device against expropriation of the elite.

Note: The paper has also a very interesting second section on consolidation (not covered in the final exam). Read it.