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Deal or No Deal? Private Investment, Politics, and Policy Uncertainty*

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* *Based on joint work with Kartik Anand and Philipp König, Deutsche Bundesbank. The views expressed do not reflect the official views of the Deutsche Bundesbank or the Eurosystem.*

Motivation

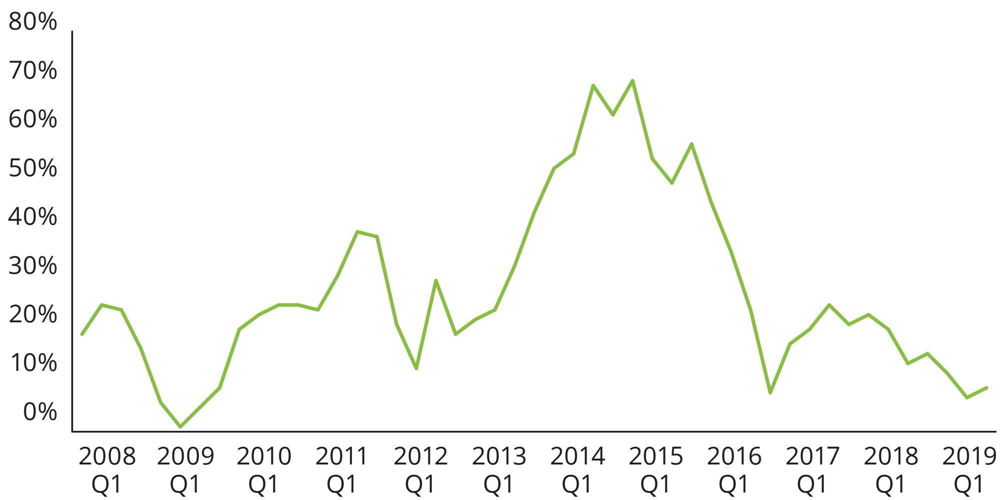
"We are getting ready to come out on 31st October
...Come what may . . .
***...Do or die. Come what may"*.**

– Boris Johnson, TalkRadio interview 25 June 2019.

Governments go to extraordinary lengths to attract corporate investment. But the uncertainties associated with changes in broader policies or national leadership matter greatly for firms' investment decisions.

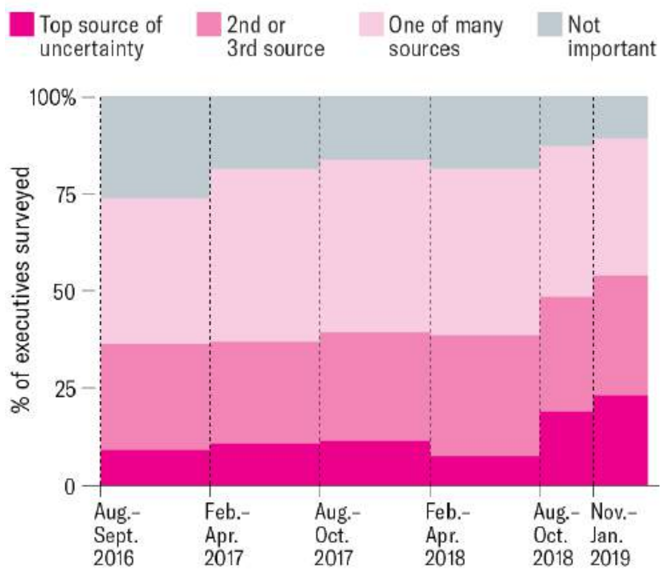
Chart 6. Corporate risk appetite

% of CFOs who think this is a good time to take greater risk onto their balance sheets



Business Uncertainty over Brexit Is Increasing

More than 50% of executives surveyed in the UK now say it's one of their top three sources of uncertainty.



Source: Analysis of recent Decision Maker Panel survey responses from around 3,000 UK business executives, by Nicholas Bloom et al. HBR

- A large empirical literature on policy uncertainty highlights implications for macroeconomic variables (Baker et al., 2016; Gulen and Ion, 2015; Hasan et al., 2019).
- **But what spurs policy uncertainty?**
  - is electoral uncertainty key to shaping investment attitudes? Politicians seeking office often do not commit to policy platforms.
  - or is it the (unpredictable) nature of the policy issue at hand?
- **Policymaking is hard**. It is not simply about selecting a policy that produces a desired outcome and implementing it.

Research questions

- How does the interaction between firms, voters, and politicians shape policy choices?
- What happens if the outcome of policy choices are largely unknown?
- What accounts for populist lurches towards **risky policies**?
- What is the role of consensus-building institutions?

Two Vignettes

Nissan and Brexit

- Nissan was attracted to the UK in 1984, attracted by government pledges of financial assistance of GBP 112 million. Its Sunderland plant in the North-East of England builds 2 cars/minute, employing 8000 workers.

- ***"The deal is tangible evidence of the benefits to the UK of membership of the European Community; Nissan has chosen the United Kingdom because it gives them access to the whole European market. If we were outside the community, it is very unlikely that Nissan would have given the United Kingdom serious consideration as a base for this substantial investment."***

  Sir Keith Joseph — memo to Mrs Thatcher, 1980

- In the June 2016 referendum, some 60% of Sunderland voters chose **leave**.

- Nissan’s concern about the damage that Brexit could cause for its UK operations is illustrated by the remarks of Nissan executive Colin Lawther:

“To produce as many cars as it does, Nissan Sunderland needs to receive and fit 5 million parts each day. Of these parts, 85% are imported, mainly from Europe…So the whole multi-billion pound operation relies on these millions of parts arriving daily with no barriers or customs delays….

….If Britain leaves without securing an agreement for continued frictionless trade – the hard-Brexit outcome – the impact will add up to around GBP 500 million per year of additional costs, which would be pretty disastrous.”

- Carlos Ghosn met Theresa May after the referendum and stated that car assembly in Sunderland would be at risk and that

"…if there are tax barriers being established on cars, you have to have a commitment for carmakers who export to Europe that there is some kind of compensation".

- The UK government responded to Ghosn (and other car makers) with sweeteners:

"I understand, of course, your worries now about uncertainties as the UK prepares to leave the EU…As a demonstration of the UK Government's commitment, we are working with your UK team on a package of support of up to GBP 80mn…

…Together with the additional GBP 80million provided for a new bridge over the Wear and Enterprise Zone extension for land adjacent to the Nissan plant from April 2017, this will continue to support a more efficient supply chain, closely attuned to Nissan's business needs. We will also ensure that Nissan's interests are fully reflected as other local infrastructure is developed…"

- Greg Clark (Secretary of State for Business, October 2016)

- On 2 May 2019, Nissan announced that it would shift SUV production from Sunderland to its Kyushu plant in Japan stating

"…the continued uncertainty around the UK's future relationship with the EU is not helping companies like ours to plan for the future."

Trump and Trade

- BMW’s Spartanburg plant in South Carolina opened in 1994, following government financial incentives of $130 million. And in 2015, South Carolina offered $200 million in state aid to Volvo. A $1.1 billion dollar plant opened in 2018.

- Following his election in 2016, Donald Trump revoked NAFTA. A new trade agreement, the USMCA, was reached on 30 September 2018. Under the new deal, cars or trucks must have 75 percent of their components manufactured in Mexico, the US, or Canada to qualify for zero tariffs. This is a substantial increase from 62.5 percent in the original NAFTA, disadvantaging European car-makers.

“If the E.U. wants to further increase their already massive tariffs and barriers on U.S. companies doing business there, we will simply apply a Tax on their Cars which freely pour into the U.S. They make it impossible for our cars (and more) to sell there. Big trade imbalance! “

- **@realDonaldTrump 9:53 AM - 3 Mar 2018.**

“Open up the barriers and get rid of your tariffs…And if you don’t do that, we’re going to tax Mercedes Benz, we’re going to tax BMW”.

(March 2018, Pennsylvania rally)

- BMW and Volvo indicated they will cut investment, production, and hiring in South Carolina if selling American-made SUVs abroad becomes too expensive.
- BMW has already stopped exporting the X3 from Spartanburg to China, and is making more of the SUVs in China and South Africa.
- Autor et al. (2017) find that between 2000-2016, US counties with a larger increase in trade exposure saw a larger increase in the share of votes won by the Republican presidential candidate. This reflected voters separating according to group identity and competing more intensely for government services (the support for which tends to divide along racial/ethnic lines).

Model

Structure – 1

- Two dates, t=*1, 2*.
- An incumbent government seeks 1 unit of capital to finance a domestic project.
- There is a large mass of risk-neutral entrepreneurs (each owning a unit of capital) who vie with each other to invest in the project.
- Entrepreneurs submit a tender to be compensated with control over a fraction, $\alpha \leq 1$, of the domestic project.
- Outside option for entrepreneurs — a foreign project that yields a control rent, $\overline{\varpi} > 0$, with certainty.

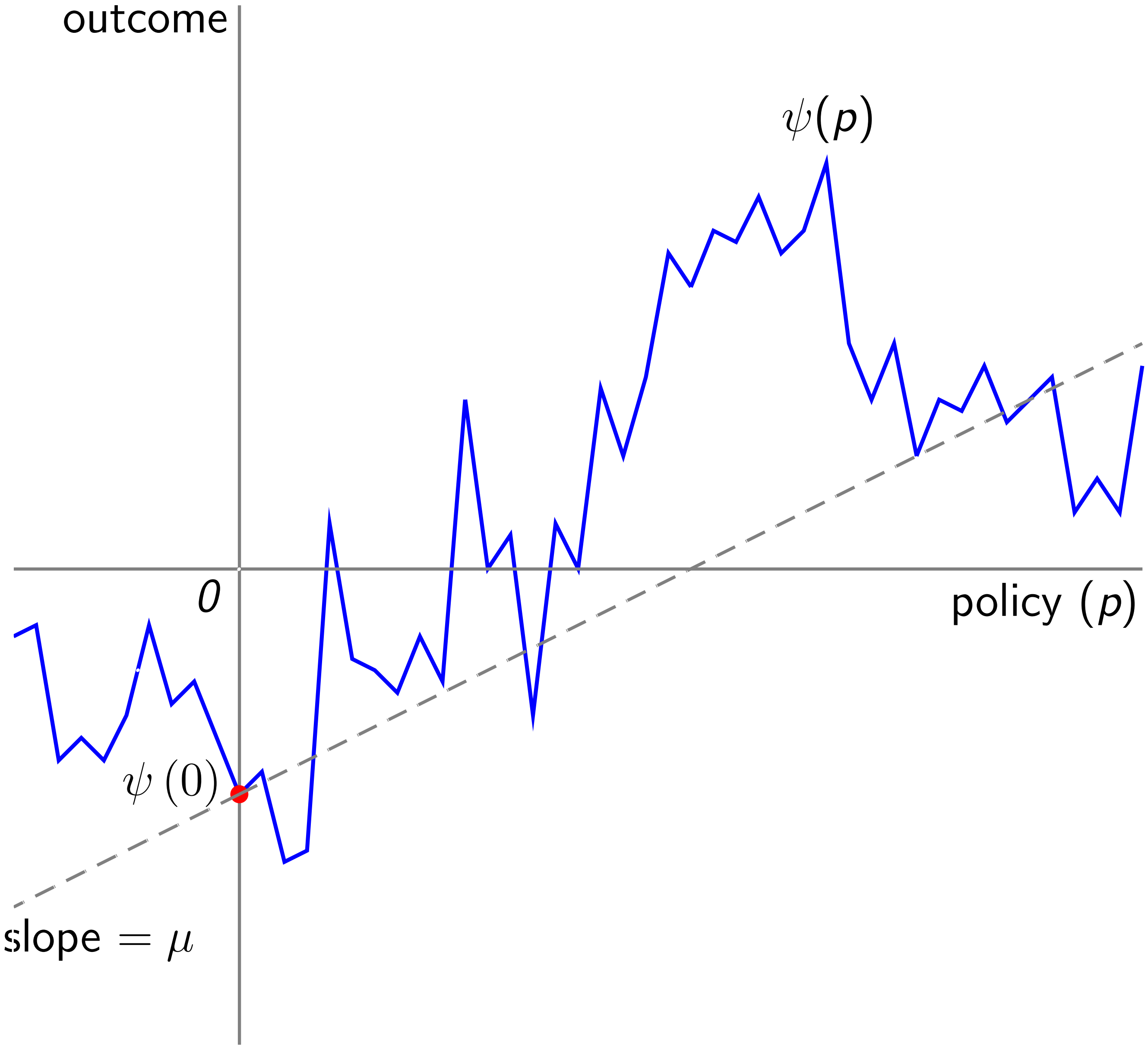
Structure – 2

- The outcome of the project is publicly observable at the end of t=2. It is shaped by **background** government policy, p (*e.g. NAFTA, leave/remain in the EU*).
- **Status-quo** policy at the start of $t=1$, before the representative entrepreneur invests, is $p=0$.
- Elections are held at the start of t=2, involving two parties L, R. Each party presents a policy platform to voters, $p_j \geq 0$.
- Once elected, party L (R) implements the policy platform it promises to voters. Parties only care about winning elections.

Structure –3

- Once the policy is implemented, it generates $\psi(p_j)$. And the government retains control over $(1-\alpha)\psi(p_j)$.
- Although the government at *t=2* honours the commitment on α with entrepreneurs struck at *t=1*, it is unable to commit to the background policy, p.
- The mapping of policies to outcomes is not perfectly known to voters, entrepreneurs or politicians. The true mapping is a realized path of a Brownian motion, with drift $\mu > 0$ and variance σ^2.
- The ratio $\dfrac{\sigma^2}{\mu}$ reflects the **unpredictability** of policy. We normalise $\mu = 1$.

Example of mapping of policies to outcomes



Structure – 4

- There is a large mass of risk-averse voters, with quadratic loss preferences

$$U_i\left(p_j\right) = -\left[(1-\alpha)\psi\left(p_j\right) - b_i\right]^2.$$

- Each voter is distinguished by their attitude towards the government's control over project output. Bliss points, $b_i > 0$, are drawn from a cumulative distribution, $F(b)$. The bliss point of the median voter is b_m

- Assume $\overline{\varpi} < \psi(0)$ so investment by the entrepreneur is feasible under the status-quo policy.

Timeline of events

$t = 0$	$t = 1$
1. Entrepreneurs submit tenders	1. Political parties select policy platforms
2. Government selects winning bid	2. Elections held; winning party forms government
3. Investment into domestic project	3. Campaigned policy implemented
	4. Project output realized; control rights shared

Results

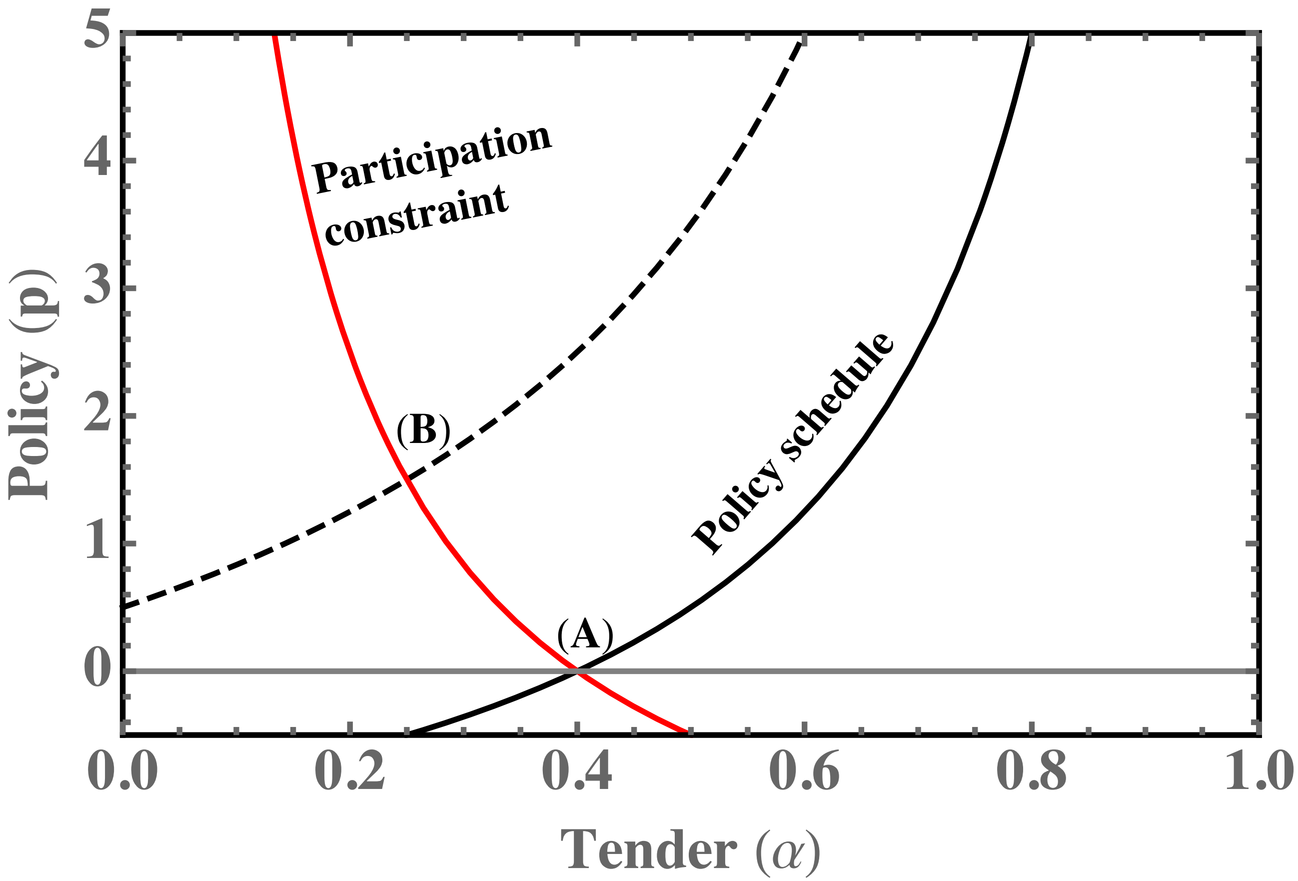
Effects of marginal policy changes

- Quadratic voter utility means that expected utility has a mean-variance form
- $$EU_i\left(p_j\right) = -\left[(1-\alpha)E\left[\psi\left(p_j\right)\right] - b_i\right]^2 - (1-\alpha)^2 V\left[\psi\left(p_j\right)\right]$$
- Two (countervailing) effects stem from a marginal increase in p_j:
  - **Satiating effect**: increase in expected output, increases government's stake and brings outcomes closer to the voter's bliss point
  - **Risk effect**: increases variance of project, which voters dislike.
- Voters vote for the party whose policy delivers higher expected utility.

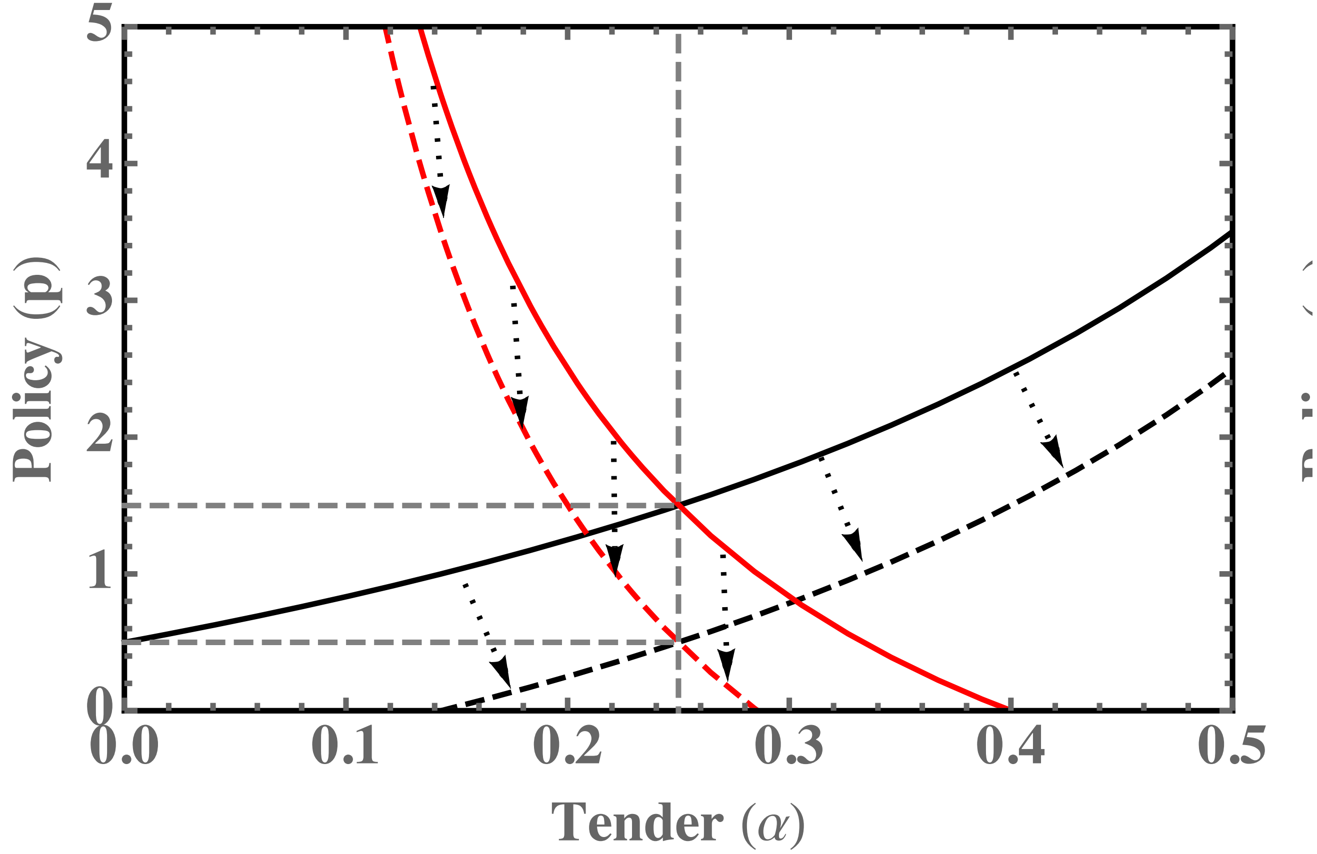
Benchmark – entirely predictable policy

- When $\sigma^2 \rightarrow 0$, voters understand the mapping from policy to outcomes. So realised output equals expected output and expected utility is "*single-peaked*" around bliss points.
- Applying the *median voter theorem*, both parties will choose policy platforms that maximise the expected utility of the median voter and obtain an equal vote share.
- At t=*1*, rational entrepreneurs form expectations over the t=2 policy choice and select their competitive tender, α, to satisfy their participation constraint.

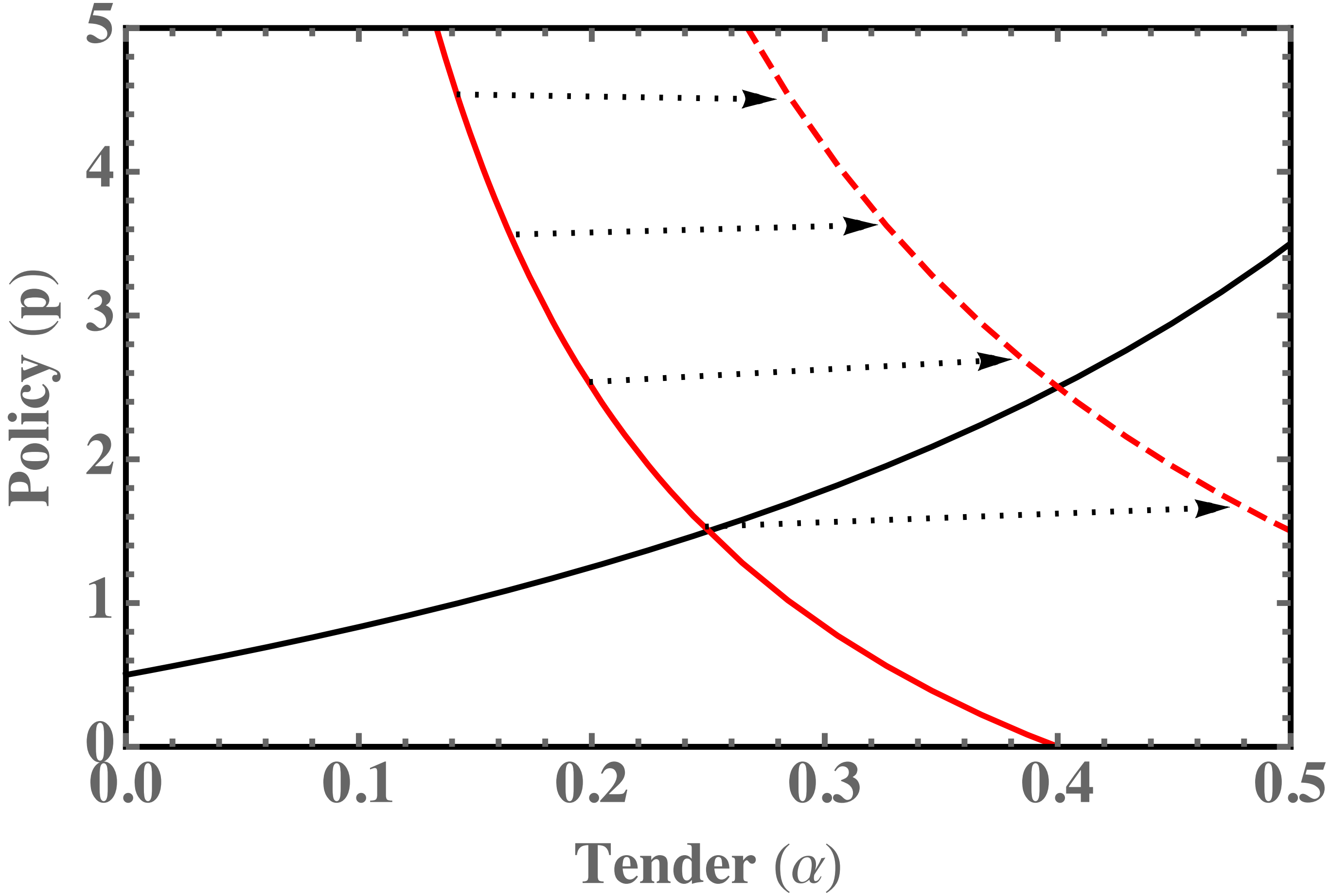
Predictable policy – equilibrium



Predictable policy – better status-quo outcomes



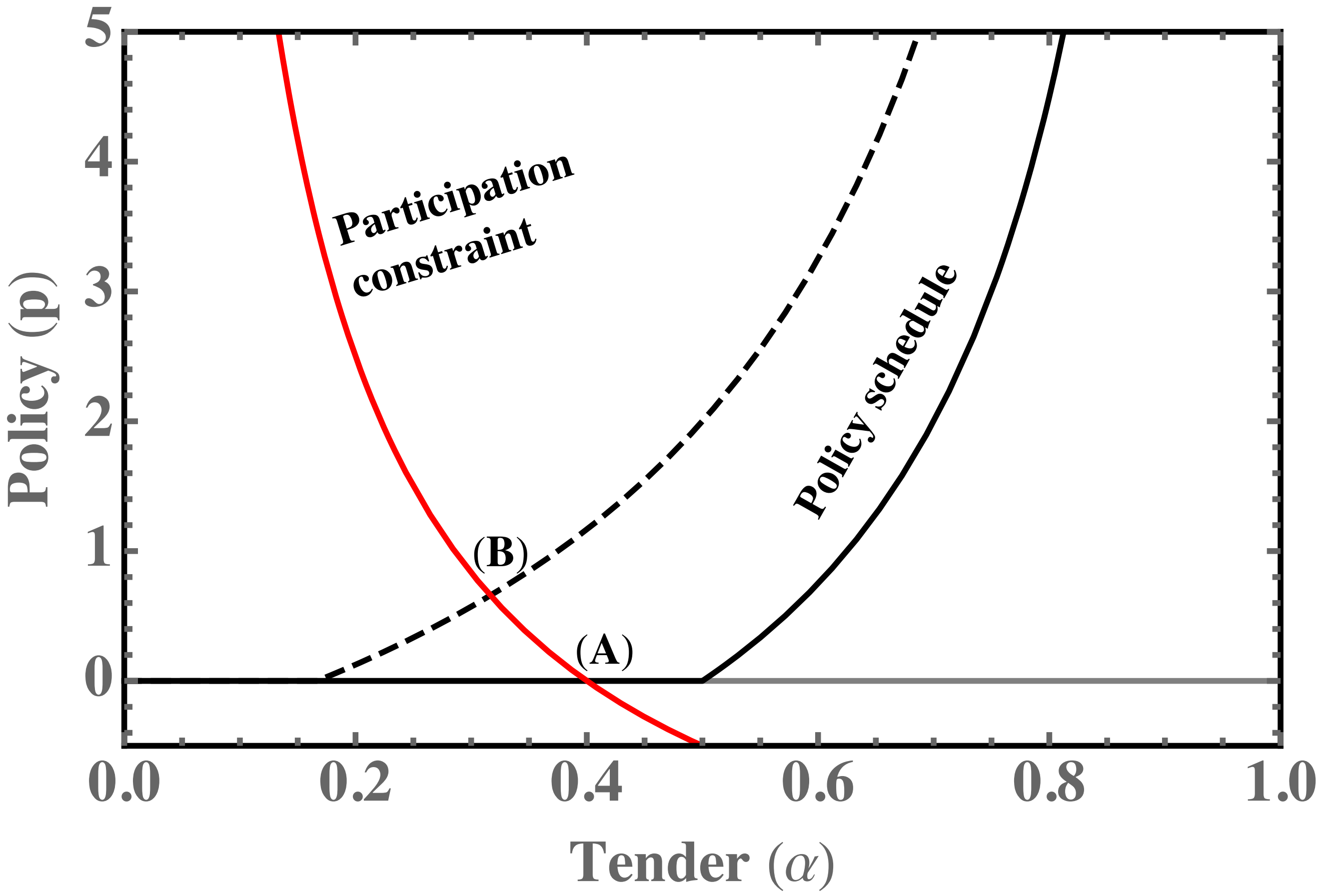
Predictable policy – a better foreign option



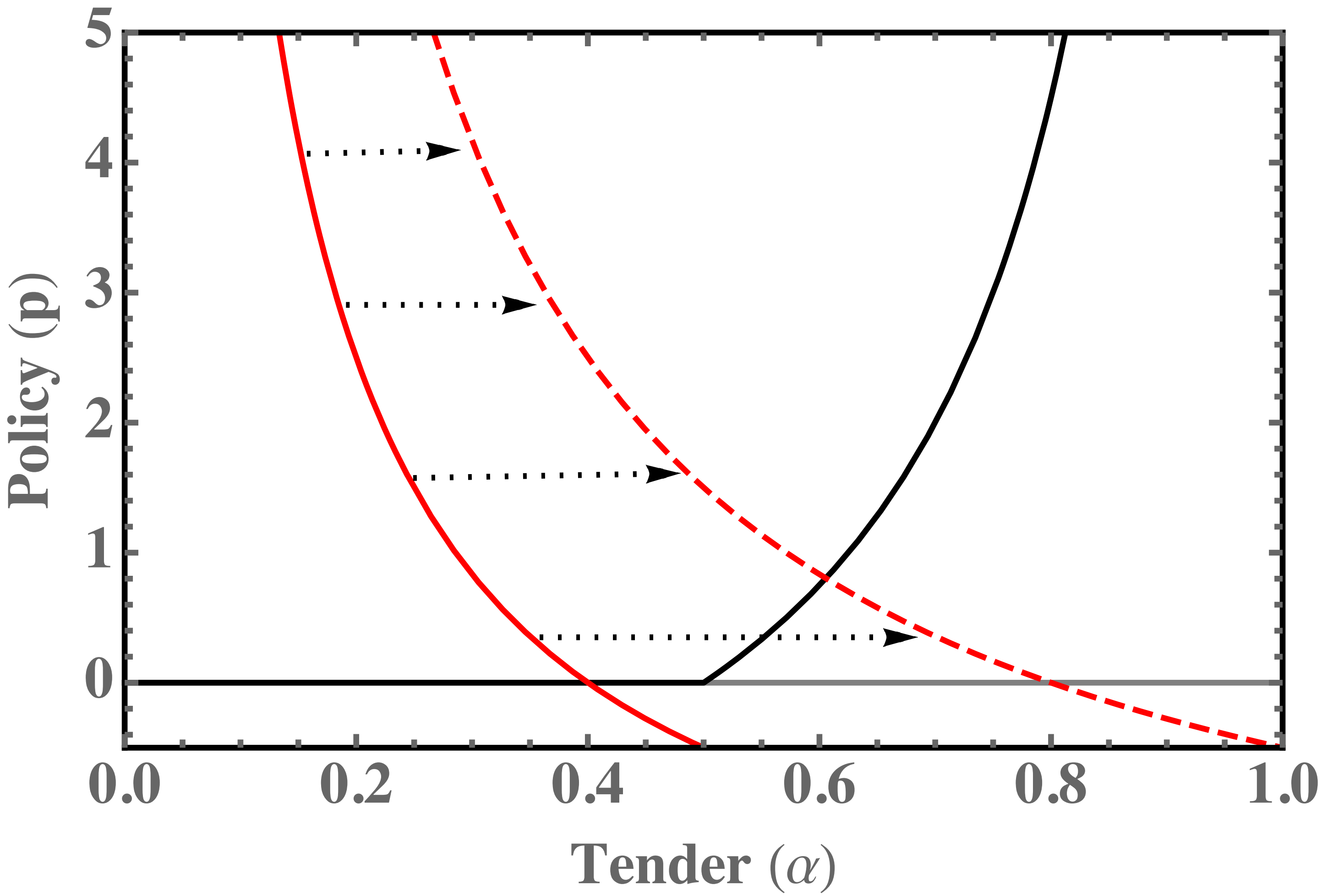
Unpredictable policy

- When $\sigma^2 > 0$, voters do not know the mapping. So policy departures from the status-quo trigger the risk effect. Aversion to change means that different voters with different bliss points might prefer the status quo.
- *There is a "**status quo voting bloc**",* $(0, F(\hat{b}))$, *with* $\hat{b} = (1-\alpha)\left[\psi(0) + \dfrac{\sigma^2}{2}\right]$. *The size of the voting bloc decreases with* α *and increases with* σ^2.

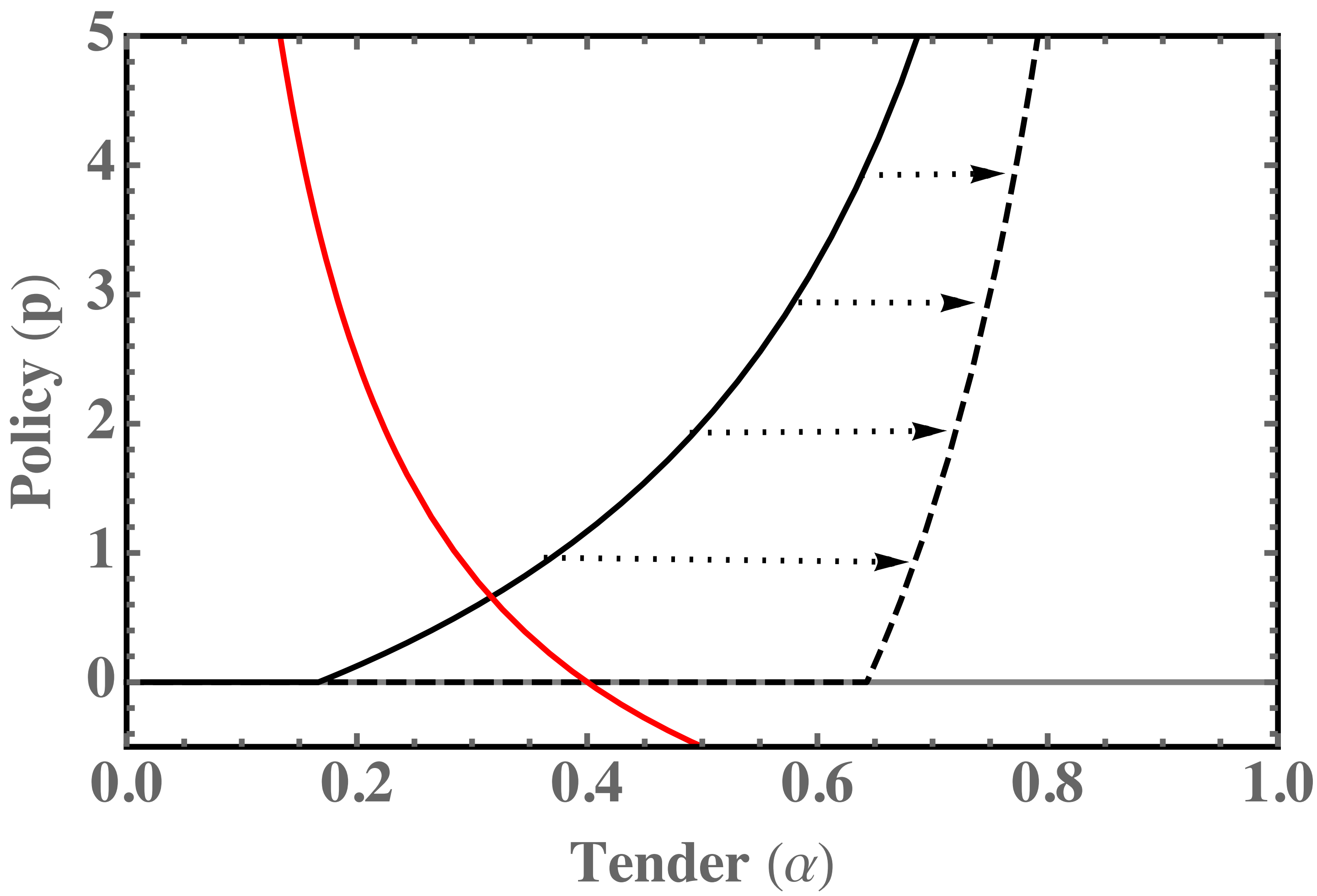
Unpredictable policy – equilibrium



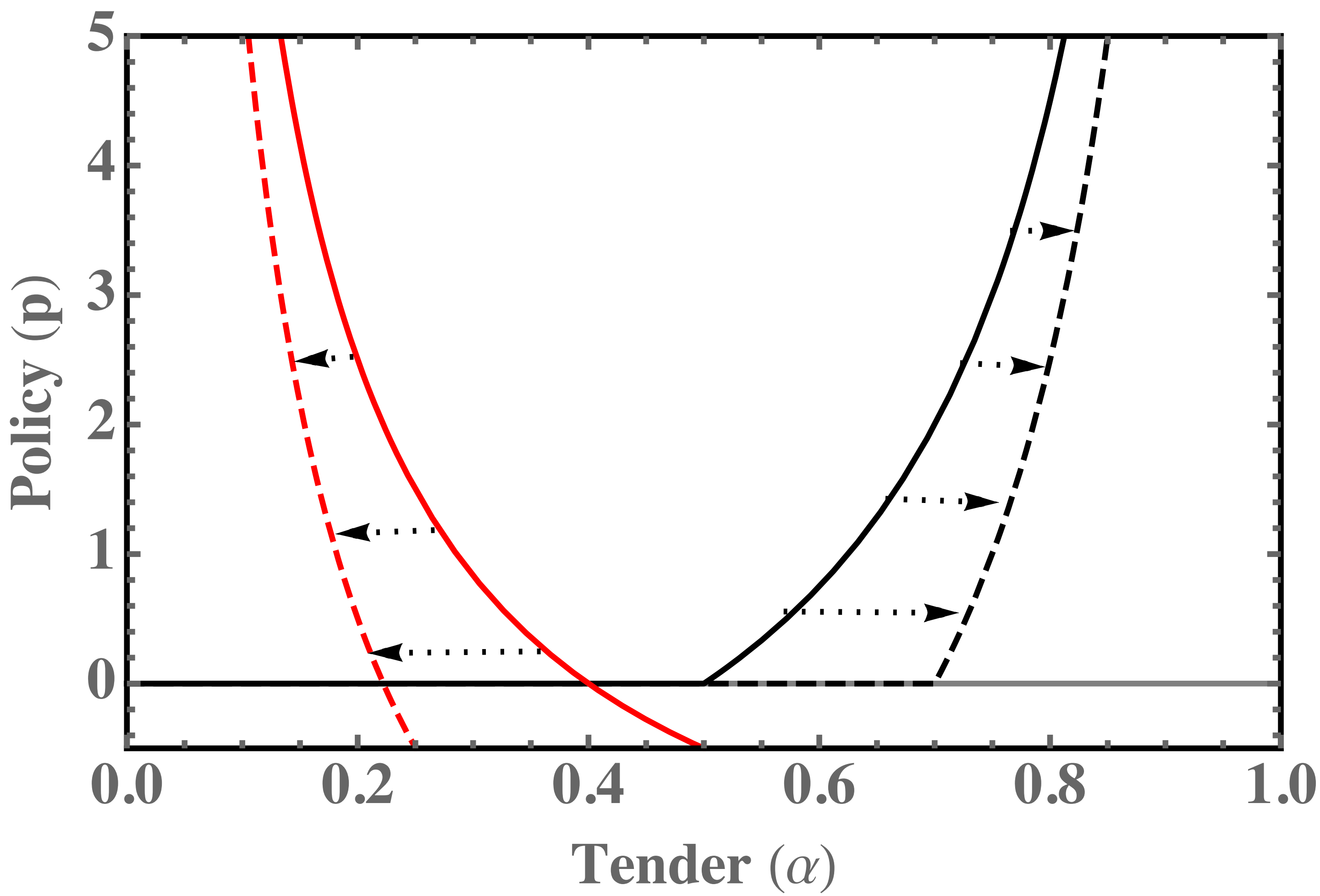
Unpredictable policy – better foreign option



Unpredictable policy – greater unpredictability



Unpredictable policy – better status quo outcome



Punchline of the core model

- With predictable policy, there is *no* voting bloc. The equilibrium outcome is also the same as one that would be chosen by a social planner.
- But once we have unpredictable policy, we have a voting bloc and a status-quo *"bias"* (e.g. Fernandez-Rodrik, 1992). The equilibrium that results is not the same as would be chosen by a social planner.

Application to Brexit

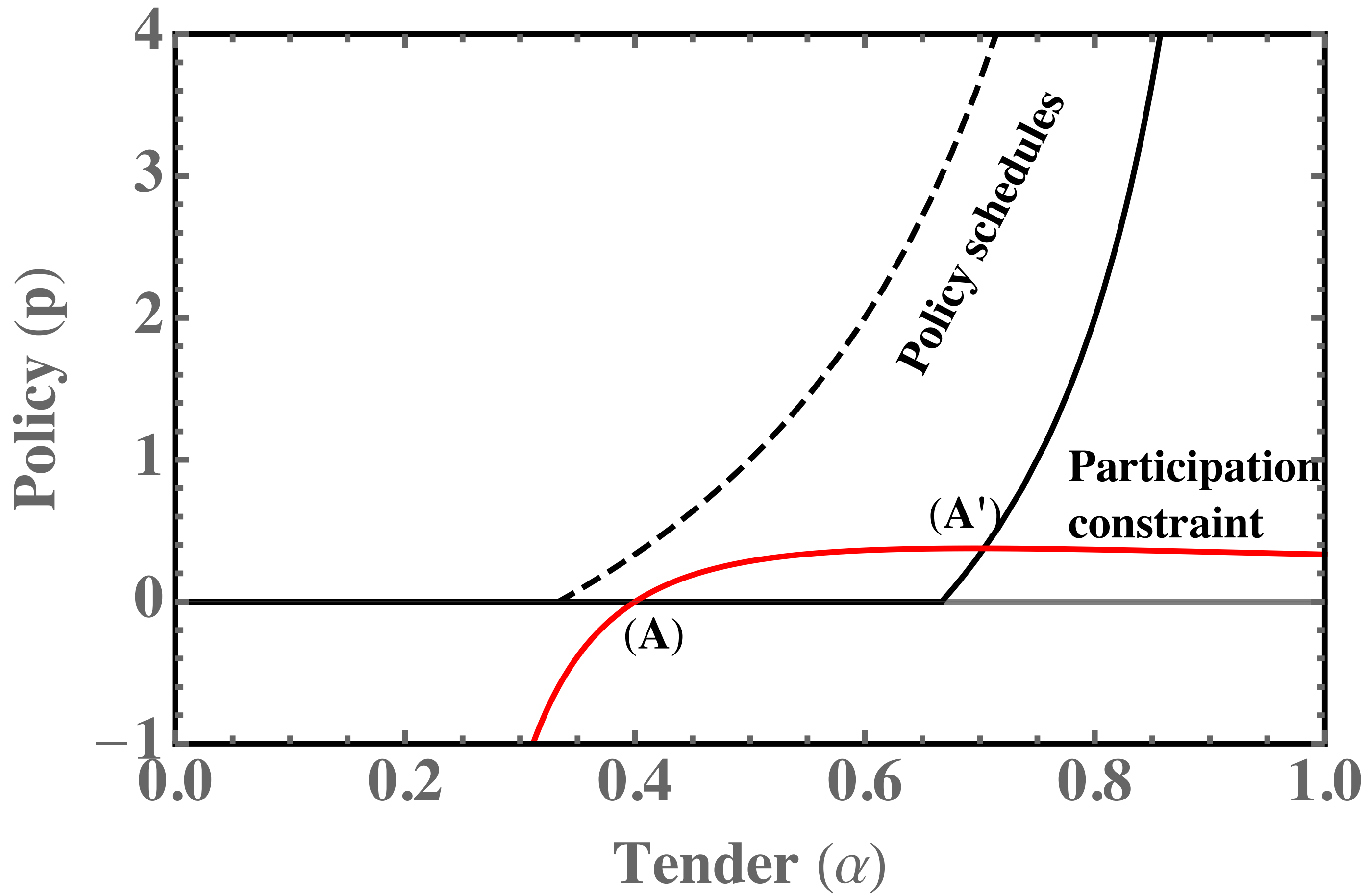
Risk averse entrepreneurs – 1

- Slide 1 showed the reduced appetite for risk amongst CFOs of UK firms. What if, like voters, entrepreneurs are also averse to changes in background policy, p?
- Entrepreneurs may be unable to hedge policy risk in financial markets.
- Suppose they have CARA utility functions of the form: $u(c) = -\exp(-\gamma c)/\gamma$, where γ is the coefficient of absolute risk aversion.

Risk-averse entrepreneurs – 2

- There is a critical level of risk aversion, below which the risk effect for the entrepreneur is small, yielding similar results to the core model.
- But if risk aversion is above this threshold, then the sweetener is increasing in the direction of the entrepreneur's expectations of the policy shift, i.e. participation constraint is upward sloping.
- Depending on their beliefs about policies, compensation sought by entrepreneurs can be substantially more.

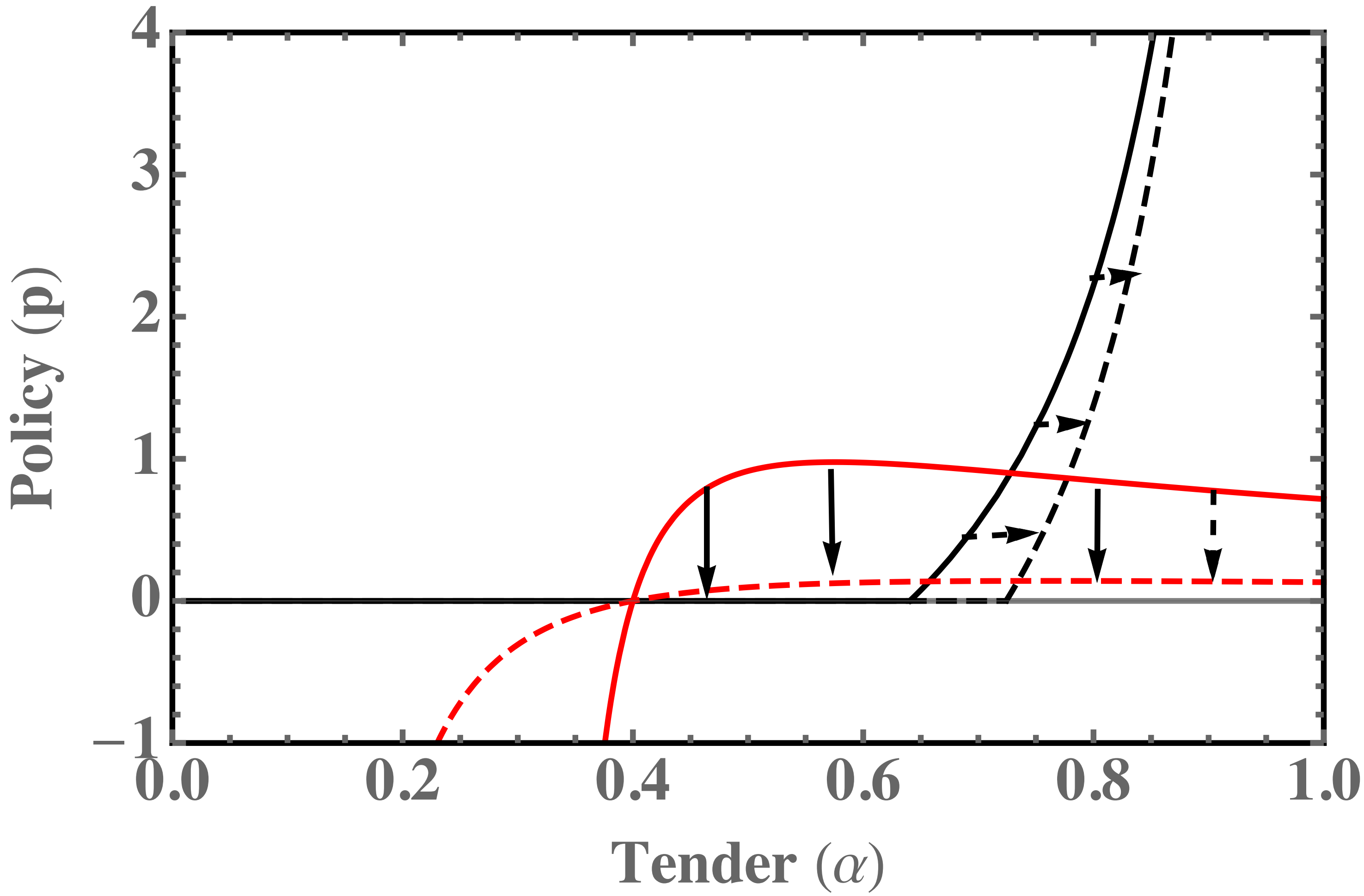
Multiple equilibria



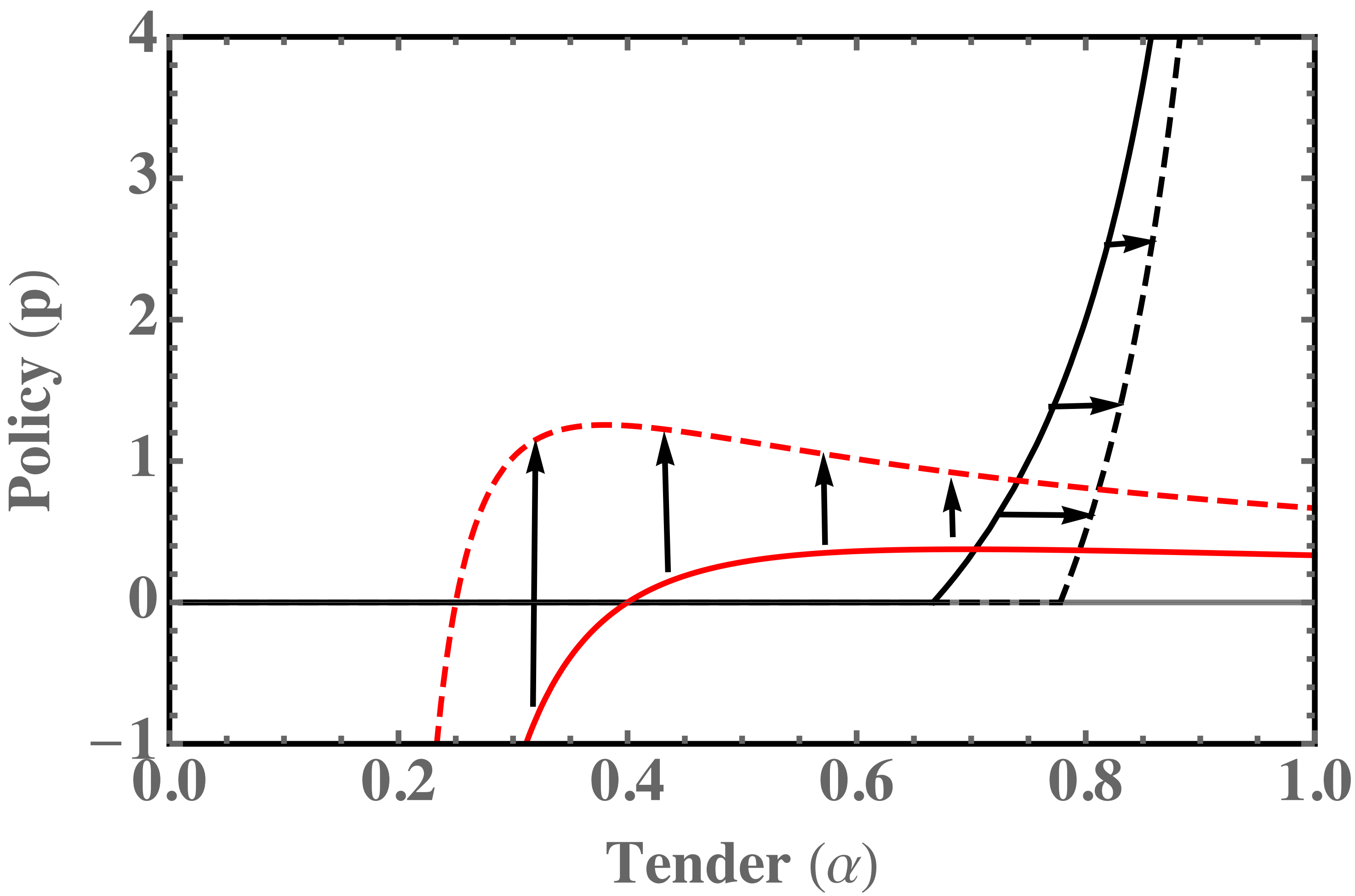
Brexit and populism

- To the extent that the median voter belongs to the voting bloc, there are two equilibria: the status quo or a *risky policy* to the right of the median. This is "*populism*" in the sense of Acemoglu et al. (2013). There is no equilibrium when the median voter is outside the voting bloc.
- The median voter is actually a part of the voting bloc (and so wants the status quo), but because of entrepreneur's expectations about future policies, which influences the subsidy they require and the government's stake, the median voter is sometimes forced to go for a risky policy platform.
- Populism emerges due to shifts in "sentiment"/expectations, which seems in concordance with episodes like Brexit.

Comparative statics – greater policy unpredictability



Comparative statics – better status quo outcomes



Commitment solution

- Policy uncertainty can be eliminated by supposing a social planner chooses the tender and policy that simultaneously satisfies the participation constraint of the entrepreneur, AND the policy that the two parties would converge on in order to attract the median voter.
- Such a ***commitment solution*** can be a reality if there is a consensus between the incumbent and the challenging parties. Thus, there is less of a role for political parties — since they agree at $t=1$ to implement the background policy at $t=2$.
- The populist equilibrium can be, thus, eliminated by a transfer of power from date 2 to date 1.

Role of institutions

- German-style grand coalitions are an example where parties compete in elections, but engage in prior consensus building. Thus, the two parties convene with the incumbent to set policy and agree on the tender.
- For the UK, the prior decision to join the EU ($p=0$)did not command bi-partisan consensus, and so may not have maximised the will of the median voter. In consequence, and with a discretionary regime, it is no surprise to find forces seeking to reverse this decision (i.e $p>0$).
- More generally, the breakdown of consensus building institutions may be paving the way for so-called populism.

Summing up

A look under the bonnet

- The incumbent wants to start a project, and entrepreneurs offer α, given their beliefs about what a future government will do. The incumbent accepts the offer and these beliefs.

- At date 2, given that α is enforceable, the only way that voters and political parties can alter the previous agreement is by changing p, the background policy.

- From the perspective of a risk-neutral entrepreneur, α and p are substitutes. So if voters demand an allocation of the pie that entails greater p, then entrepreneurs demand less compensation.

- From the perspective of the risk averse entreprenuer, α and p are complements, so the entrepreneur demands greater compensation if they expect a large p.

- Economists are often criticised for focusing on markets and governments, while neglecting politics and civil society ("The Third Pillar", Rajan, 2018).
    - Model seeks to describe the interaction between voters, firms, and politicians, and articulate how it shapes policy and state aid to industry. Takes seriously the idea that policymaking is hard.
    - Phase transitions (self-fulfilling expectations) can lead to ugly and messy shifts to a new equilibrium, akin to populism, that commands broad appeal.
    - Risk aversion of firms to policy and policy unpredictability are key ingredients for this result.
- **Future work** — ideology, political lack of commitment to voters, policy experimentation, competition from political entrepreneurs (third parties).

Thank you!