Appendix

Contents

A Supplementary Information for Baseline Model

A.1 Summary of Notation

A.1.1 Model Setup

- $\omega \in [0, 1]$: Elite share of wealth, determined by ruler's initial choice of constraints
  - $\underline{\omega}$: Low constraints (absolutist rule)
  - $\overline{\omega}$: High constraints (delegation)
- $1 - \omega$: Ruler's share of wealth
- $\tau > 0$: Tax cost of security improvement
- $\overline{q} \in [0, 1]$: Probability the ruler is bound to provide security improvement if $\omega = \overline{\omega}$
- External threat
  - $\theta \geq 0$: Strength of external threat
  - $\pi_L(\theta) = \frac{1}{1+\theta}$: Baseline probability of resisting invasion
  - $\pi_H(\theta) = \frac{1+\Delta}{1+\Delta+\theta}$: Increased probability of resisting invasion if security improvement is provided
  - $\Delta > 0$: Increase in strength against outsider due to security improvement
- $\sigma \in (0, 1)$: Proportion of wealth kept by elite with mobile wealth in case of exit

A.1.2 Equilibrium Cutpoints

- $\hat{\theta}(\omega)$: Lowest level of external threat at which the ruler prefers to spend taxes on security after choosing constraints ω (introduced in Lemma 2)
  - $\hat{\theta}(\underline{\omega})$: Lowest level of external threat at which an absolutist ruler prefers to spend taxes on security
  - $\hat{\theta}(\overline{\omega})$: Lowest level of external threat at which a ruler who has delegated prefers to spend taxes on security
- θ^{rw}: Lowest level of external threat at which the ruler willingness condition holds (introduced in Lemma 5).

- $\theta^{ec}_{\text{refuse}}$: Highest level of external threat at which the elite credibility condition holds when the elite's outside option is to refuse (introduced in Lemma 6).

- $\theta^{ew}_{\text{refuse}}$: Lowest level of external threat at which the elite willingness condition holds when the elite's outside option is to refuse (introduced in Lemma 7).

- $\theta^{ew}_{\text{exit}}$: Least upper bound on the set of external threat levels at which the elite willingness condition fails when the elite's outside option is to exit (introduced in Lemma 8).

- $\hat{\sigma}$: Lowest level of exit option value at which the elite credibility conditions holds for all θ when the elite's outside option is to exit (introduced in Lemma 9).

- $\theta^{ec}_{\text{exit}}$: Least upper bound on the set of external threat levels at which the elite credibility condition fails when the elite's outside option is to exit and $\sigma < \hat{\sigma}$ (introduced in Lemma 9).

  - In this case, the greatest lower bound on the set of external threat levels at which elite credibility fails is $\hat{\theta}(\underline{\omega})$, the lowest level of external threat at which an absolutist ruler prefers to spend taxes on security.

A.2 Proof of Lemma 1

We begin by proving an important property of equilibria in which the ruler delegates: the elite must accept the tax along the path of play, and must reject if the ruler were to deviate to absolutist rule. In other words, the only reason for the ruler to delegate to parliament is that doing so will induce the elite to pay taxes when it would not do so otherwise.

Lemma A.1. *In any equilibrium in which the ruler chooses $\omega = \overline{\omega}$, the elite rejects the tax if $\omega = \underline{\omega}$ and accepts the tax if $\omega = \overline{\omega}$.*

Proof. To prove the first claim, consider an equilibrium in which the elite accepts the tax if $\omega = \underline{\omega}$. This implies

$$\begin{aligned}\mathbb{E}[U_R(\underline{\omega})] &= \max\left\{\pi_H(\theta)\cdot(1-\underline{\omega}), \pi_L(\theta)\cdot(1-\underline{\omega}+\tau)\right\}\\ &> \max\left\{\pi_H(\theta)\cdot(1-\overline{\omega}), \pi_L(\theta)\cdot(1-\overline{\omega}+\tau)\right\}\\ &\geq \mathbb{E}[U_R(\overline{\omega})].\end{aligned}$$

Therefore, $\omega = \underline{\omega}$ in this equilibrium.

To prove the second claim, consider an equilibrium in which the elite rejects the tax if $\omega = \overline{\omega}$. This implies

$$\begin{aligned}\mathbb{E}[U_R(\underline{\omega})] &\geq \pi_L(\theta) \cdot (1 - \underline{\omega}) \\ &> \pi_L(\theta) \cdot (1 - \overline{\omega}) \\ &= \mathbb{E}[U_R(\overline{\omega})].\end{aligned}$$

Therefore, $\omega = \underline{\omega}$ in this equilibrium. □

Lemma 1. *If the ruler willingness condition does not hold, then there is no equilibrium in which the ruler delegates to parliament.*

Proof. Consider an equilibrium in which $\omega = \overline{\omega}$. By Lemma A.1,

$$\begin{aligned}&\mathbb{E}[U_R(\underline{\omega})] = \pi_L(\theta) \cdot (1 - \underline{\omega}), \\ &\mathbb{E}[U_R(\overline{\omega})] = \max\left\{\pi_H(\theta) \cdot (1 - \overline{\omega}), \overline{q} \cdot \pi_H(\theta) \cdot (1 - \overline{\omega}) + (1 - \overline{q}) \cdot \pi_L(\theta) \cdot (1 - \overline{\omega} + \tau)\right\}.\end{aligned}$$

Therefore, the equilibrium requirement that $\mathbb{E}[U_R(\overline{\omega})] \geq \mathbb{E}[U_R(\underline{\omega})]$ is equivalent to Equation 1, the ruler willingness condition. □

A.3 Proof of Lemma 2

The result relies on the following facts about the ratio π_H/π_L.

Lemma A.2. $\frac{\pi_H}{\pi_L}$ *is strictly increasing in* θ, *and* $\lim_{\theta\to\infty} \frac{\pi_H(\theta)}{\pi_L(\theta)} = 1 + \Delta$.

Proof. To verify the first claim, we have

$$\frac{\pi_H(\theta)}{\pi_L(\theta)} = \frac{1+\Delta}{1+\Delta+\theta} \cdot (1+\theta) = 1 + \frac{\Delta\theta}{1+\Delta+\theta}$$

and thus

$$\frac{d}{d\theta}\left[\frac{\pi_H(\theta)}{\pi_L(\theta)}\right] = \frac{\Delta(1+\Delta)}{(1+\Delta+\theta)^2} > 0.$$

The second claim follows from L'Hopital's rule:

$$\lim_{\theta\to\infty} \frac{\pi_H(\theta)}{\pi_L(\theta)} = 1 + \Delta.$$ □

Lemma 2 (War threats promote security spending)**.** *Let the initial choice of* ω *be fixed. If institutional constraints do not bind, the ruler prefers to spend taxes on security if and only if* $\theta \geq \hat{\theta}(\omega)$, *where* $0 < \hat{\theta}(\underline{\omega}) < \hat{\theta}(\overline{\omega}) < \infty$.

Proof. Remember that the ruler prefers to provide security when Equation 2 holds:

$$\frac{\pi_H(\theta)}{\pi_L(\theta)} \geq \frac{1-\omega+\tau}{1-\omega}.$$

Lemma A.2 implies that there is a cutpoint above which this conditions holds and below which it fails. The claim that $\hat{\theta}(\omega) > 0$ follows from the fact that $\frac{\pi_H(0)}{\pi_L(0)} = 1 < 1 + \frac{\tau}{1-\omega}$. The claim that $\hat{\theta}(\overline{\omega})$ is finite follows from our assumption that $\Delta > \frac{\tau}{1-\overline{\omega}}$; using Lemma A.2, this implies $\lim_{\theta\to\infty} \frac{\pi_H(\theta)}{\pi_L(\theta)} > 1 + \frac{\tau}{1-\overline{\omega}}$. Finally, the claim that $\hat{\theta}(\underline{\omega}) < \hat{\theta}(\overline{\omega})$ follows because $\frac{\tau}{1-\underline{\omega}} < \frac{\tau}{1-\overline{\omega}}$. □

A.4 Proof of Lemma 3

Lemma 3. *If the elite credibility condition does not hold, then there is no equilibrium in which the ruler delegates to parliament.*

Proof. Consider an equilibrium of the game. Suppose the elite credibility condition fails; by Equation 3, this is equivalent to

$$\theta > \hat{\theta}(\underline{\omega}) \quad \text{and} \quad \mu(\theta) \cdot \underline{\omega} < \pi_H(\theta) \cdot (\underline{\omega} - \tau).$$

Because $\theta > \hat{\theta}(\underline{\omega})$, Lemma 2 implies that the ruler would choose to spend taxes on security following an initial choice of $\omega = \underline{\omega}$. Because $\mu(\theta) \cdot \underline{\omega} < \pi_H(\theta) \cdot (\underline{\omega} - \tau)$, sequential rationality implies that the elite would accept the tax demand following an initial choice of $\omega = \underline{\omega}$. Finally, then, Lemma A.1 implies $\omega \neq \overline{\omega}$ on the path of play. □

A.5 Proof of Lemma 4

Lemma 4. *If the elite willingness condition does not hold, then there is no equilibrium in which the ruler delegates to parliament.*

Proof. Consider an equilibrium of the game. Suppose the elite willingness condition fails; by Equation 4, this is equivalent to

$$\mu(\theta) \cdot \overline{\omega} > \begin{cases} [\overline{q} \cdot \pi_H(\theta) + (1-\overline{q}) \cdot \mu(\theta)] \cdot (\overline{\omega} - \tau) & \text{if } \theta < \hat{\theta}(\overline{\omega}), \\ \pi_H(\theta) \cdot (\overline{\omega} - \tau) & \text{if } \theta \geq \hat{\theta}(\overline{\omega}). \end{cases}$$

Sequential rationality then implies that the elite would reject the tax demand following an initial choice of $\omega = \overline{\omega}$.[94] Lemma A.1 then implies $\omega \neq \overline{\omega}$ on the path of play. □

[94]If $\theta = \hat{\theta}(\overline{\omega})$, then security and consumption are both best responses for the ruler following an initial choice of

A.6 Proof of Proposition 1

Proposition 1. *There is an equilibrium in which the ruler delegates to parliament if and only if ruler willingness, elite credibility, and elite willingness hold. If all three conditions hold strictly, parliamentary delegation is the unique equilibrium outcome.*

Proof. The "only if" direction follows from Lemma 1, Lemma 3, and Lemma 4. To prove the "if" direction, suppose all three conditions hold, and consider the following strategy profile:

- The ruler's initial choice of constraints is $\omega = \overline{\omega}$.
- If $\omega = \underline{\omega}$, then the elite rejects the tax demand. If the elite accepts the tax demand, then the ruler chooses security if $\theta > \hat{\theta}(\underline{\omega})$ and chooses consumption otherwise.
- If $\omega = \overline{\omega}$, then the elite accepts the tax demand. If the elite accepts the tax demand and the constraints on the ruler do not bind, then the ruler chooses security if $\theta \geq \hat{\theta}(\overline{\omega})$ and chooses consumption otherwise.

The ruler's final choices between security and consumption are best responses by construction (see Lemma 2). The elite's rejection of the tax demand in case $\omega = \underline{\omega}$ is then sequentially rational by the assumption that elite credibility holds. Its acceptance of the tax demand in case $\omega = \overline{\omega}$ is sequentially rational by the assumption that elite willingness holds. Finally, the ruler's initial choice to delegate ($\omega = \overline{\omega}$) is sequentially rational by the assumption that ruler willingness holds. To prove the uniqueness claim, observe that strict elite credibility implies that the elite rejects following $\omega = \underline{\omega}$ in all equilibria, and strict elite willingness implies that the elite accepts following $\omega = \overline{\omega}$ in all equilibria. Strict ruler willingness then implies that the ruler selects $\omega = \overline{\omega}$ in all equilibria. □

A.7 Proof of Lemma 5

Lemma 5 (War threats promote ruler willingness)**.** *The ruler willingness condition holds if and only if $\theta \geq \theta^{rw}$, where $\theta^{rw} > 0$ if and only if $\tau < \frac{\overline{\omega}-\underline{\omega}}{1-\overline{\overline{q}}}$ and where $\theta^{rw} < \infty$ if and only if $\Delta > \frac{\overline{\omega}-\underline{\omega}}{1-\overline{\overline{\omega}}}$.*

Proof. To prove that there exists a θ^{rw} such that ruler willingness holds if and only if $\theta \geq \theta^{rw}$, we must show the following: if ruler willingness holds at $\theta = \theta'$, then it also holds for any $\theta > \theta'$.[95]

$\omega = \overline{\omega}$. Failure of Equation 4 implies

$$\mu(\theta) \cdot \overline{\omega} > \pi_H(\theta) \cdot (\overline{\omega} - \tau) \geq [\overline{q} \cdot \pi_H(\theta) + (1 - \overline{q}) \cdot \pi_L(\theta)] \cdot (\overline{\omega} - \tau),$$

so the sequential rationality claim holds regardless of the ruler's final choice.

[95]By itself, this would imply that there exists a θ^{rw} such that ruler willingness holds if $\theta > \theta^{rw}$ and ruler willingness fails if $\theta < \theta^{rw}$. To strengthen this to the claim that ruler willingness holds if and only if $\theta \geq \theta^{rw}$, we need to show that ruler willingness holds at the cutpoint, $\theta = \theta^{rw}$. This follows from the fact that ruler willingness is defined by a greater-than-or-equal-to condition, and that the condition is a continuous function of θ.

We will accomplish this by proving that the inequality defining ruler willingness is monotone as a function of θ. Our subsequent proofs regarding the relationship between external threats and the elite willingness and credibility conditions (Lemma 6, Lemma 7, Lemma 8 [including Lemma A.3], and Lemma 9) follow this same basic structure.

The ruler willingness condition (Equation 1) is equivalent to

$$\max\left\{\pi_H(\theta)\cdot(1-\overline{\omega}),\ \overline{q}\cdot\pi_H(\theta)\cdot(1-\overline{\omega})+(1-\overline{q})\cdot\pi_L(\theta)\cdot(1-\overline{\omega}+\tau)\right\}\geq\pi_L(\theta)\cdot(1-\underline{\omega}),$$

which in turn is equivalent to

$$\max\left\{\frac{\pi_H(\theta)}{\pi_L(\theta)}\cdot(1-\overline{\omega}),\ \overline{q}\cdot\frac{\pi_H(\theta)}{\pi_L(\theta)}\cdot(1-\overline{\omega})+(1-\overline{q})\cdot(1-\overline{\omega}+\tau)\right\}\geq 1-\underline{\omega}. \tag{A.1}$$

The LHS of the above expression is strictly increasing in θ, proving the existence of a cutpoint θ^{rw} above which ruler willingness holds and below which it fails.

To prove that $\theta^{rw}>0$ if and only if $\tau<\frac{\overline{\omega}-\underline{\omega}}{1-\overline{q}}$, we must prove that the ruler willingness condition fails at $\theta=0$ if and only if the stated condition holds. Ruler willingness at $\theta=0$ is equivalent to

$$1-\overline{\omega}+(1-\overline{q})\cdot\tau\geq 1-\underline{\omega},$$

which in turn is equivalent to $\tau\geq\frac{\overline{\omega}-\underline{\omega}}{1-\overline{q}}$, proving the claim. Similarly, to prove that $\theta^{rw}<\infty$ if and only if $\Delta>\frac{\overline{\omega}-\underline{\omega}}{1-\overline{\omega}}$, we must prove that ruler willingness fails for all finite θ if and only if the stated condition fails. We have already shown that the LHS of Equation A.1 is strictly increasing in θ, so ruler willingness fails for all finite θ if and only if the limit of the LHS as $\theta\to\infty$ is less than or equal to the RHS. We have

$$\begin{aligned}
&\lim_{\theta\to\infty}\max\left\{\frac{\pi_H(\theta)}{\pi_L(\theta)}\cdot(1-\overline{\omega}),\overline{q}\cdot\frac{\pi_H(\theta)}{\pi_L(\theta)}\cdot(1-\overline{\omega})+(1-\overline{q})\cdot(1-\overline{\omega}+\tau)\right\}\\
&\quad=\lim_{\theta\to\infty}\left\{\frac{\pi_H(\theta)}{\pi_L(\theta)}\cdot(1-\overline{\omega})\right\}\\
&\quad=(1+\Delta)\cdot(1-\overline{\omega}),
\end{aligned}$$

where the first equality follows because the the ruler prefers to spend taxes on security when θ is sufficiently high (see Lemma 2), and the second equality follows from Lemma A.2. Therefore, ruler willingness fails for all finite θ if and only if $(1+\Delta)\cdot(1-\overline{\omega})\leq 1-\underline{\omega}$, which is equivalent to $\Delta\leq\frac{\overline{\omega}-\underline{\omega}}{1-\overline{\omega}}$. □

A.8 Proof of Lemma 6

Lemma 6 (War threats reduce immobile elite credibility)**.** *Assume the elite's outside option is to refuse. The elite credibility condition holds if and only if the external threat is weak enough:* $\theta \leq \theta^{ec}_{\text{refuse}}$*, where* $\theta^{ec}_{\text{refuse}} \geq \hat{\theta}(\underline{\omega}) > 0$*.*

Proof. By definition (Equation 3), elite credibility holds if $\theta \leq \hat{\theta}(\underline{\omega})$. For $\theta > \hat{\theta}(\underline{\omega})$, the elite credibility condition with immobile wealth is equivalent to

$$\underline{\omega} \geq \frac{\pi_H(\theta)}{\pi_L(\theta)} \cdot (\underline{\omega} - \tau).$$

If $\underline{\omega} \leq \tau$, then the claim holds trivially with $\theta^{ec}_{\text{refuse}} = \infty$. Otherwise, the RHS of the above inequality is strictly increasing in θ (per Lemma A.2), proving the existence of a (potentially infinite) cutpoint $\theta^{ec}_{\text{refuse}} \geq \hat{\theta}(\underline{\omega})$ below which elite credibility holds and above which it fails. □

A.9 Proof of Lemma 7

Lemma 7 (War threats promote immobile elite willingness)**.** *Assume the elite's outside option is to refuse. The elite willingness condition holds if and only if the external threat is strong enough:* $\theta \geq \theta^{ew}_{\text{refuse}}$*, where* $\theta^{ew}_{\text{refuse}} > 0$*.*

Proof. For an elite with immobile wealth, the willingness condition (Equation 4) is equivalent to

$$\overline{\omega} \leq \begin{cases} \left[\overline{q} \cdot \dfrac{\pi_H(\theta)}{\pi_L(\theta)} + (1 - \overline{q})\right] \cdot (\overline{\omega} - \tau) & \text{if } \theta < \hat{\theta}(\overline{\omega}), \\ \dfrac{\pi_H(\theta)}{\pi_L(\theta)} \cdot (\overline{\omega} - \tau) & \text{if } \theta \geq \hat{\theta}(\overline{\omega}). \end{cases}$$

By Lemma A.2 and the fact that $\frac{\pi_H}{\pi_L} \geq 1$, the RHS of the above expression is strictly increasing in θ, proving the existence of a cutpoint $\theta^{ew}_{\text{refuse}}$ above which elite willingness holds and below which it fails. At $\theta = 0$, the condition is equivalent to $\underline{\omega} \leq \underline{\omega} - \tau$, which does not hold, proving $\theta^{ew}_{\text{refuse}} > 0$. □

A.10 Proof of Lemma 8

To prove the lemma, we first provide a complete characterization of elite willingness when the elite's wealth is mobile.

Lemma A.3. *Assume the elite's outside option is to exit. There exist* $\tilde{\theta}^{ew}_{\text{exit}} \leq \hat{\theta}(\overline{\omega})$ *and* $\theta^{ew}_{\text{exit}} < \infty$ *such that the elite willingness condition holds if and only if* $0 \leq \theta \leq \tilde{\theta}^{ew}_{\text{exit}}$ *or* $\hat{\theta}(\overline{\omega}) \leq \theta \leq \theta^{ew}_{\text{exit}}$*. (We allow* $\tilde{\theta}^{ew}_{\text{exit}} < 0$ *and* $\theta^{ew}_{\text{exit}} < \hat{\theta}(\overline{\omega})$*, so that either or both subintervals may be empty.)*

Proof. For an elite with mobile wealth, the willingness condition (Equation 4) is equivalent to

$$\sigma \cdot \overline{\omega} \leq \begin{cases} [\overline{q} \cdot \pi_H(\theta) + (1-\overline{q}) \cdot \sigma] \cdot (\overline{\omega} - \tau) & \text{if } \theta < \hat{\theta}(\overline{\omega}), \\ \pi_H(\theta) \cdot (\overline{\omega} - \tau) & \text{if } \theta \geq \hat{\theta}(\overline{\omega}). \end{cases}$$

The RHS of this inequality is strictly decreasing on $[0, \hat{\theta}(\overline{\omega}))$, jumps discontinuously at $\theta = \hat{\theta}(\overline{\omega})$, and then strictly decreases again on $(\hat{\theta}(\overline{\omega}), \infty)$. This verifies the claim about the cutpoints $\tilde{\theta}^{ew}_{\text{exit}}$ and $\theta^{ew}_{\text{exit}}$. To prove that $\theta^{ew}_{\text{exit}} < \infty$, it suffices to observe that $\hat{\theta}(\overline{\omega}) < \infty$ (per Lemma 2) and that $\lim_{\theta \to \infty} [\pi_H(\theta) \cdot (\overline{\omega} - \tau)] = 0 < \sigma \cdot \overline{\omega}$. □

The result in the text follows as an immediate corollary.

Lemma 8 (War threats reduce mobile elite willingness)**.** *Assume the elite's outside option is to exit. The elite willingness condition holds only if the external threat is weak enough:* $\theta \leq \theta^{ew}_{\text{exit}}$*, where* $\theta^{ew}_{\text{exit}} < \infty$.

Proof. Immediate from Lemma A.3. □

A.11 Proof of Lemma 9

Lemma 9 (War threats and mobile elite credibility)**.** *Assume the elite's outside option is to exit. If* $\sigma \geq \hat{\sigma} \equiv \pi_H(\hat{\theta}(\underline{\omega})) \cdot (1 - \frac{\tau}{\underline{\omega}})$*, then the elite credibility condition holds for all* θ*. Otherwise, if* $\sigma < \hat{\sigma}$*, then the elite credibility condition holds if and only if* $\theta \notin (\hat{\theta}(\underline{\omega}), \theta^{ec}_{\text{exit}})$*, where* $\hat{\theta}(\underline{\omega}) < \theta^{ec}_{\text{exit}} < \infty$.

Proof. By definition (Equation 3), elite credibility holds if $\theta \leq \hat{\theta}(\underline{\omega})$. For $\theta > \hat{\theta}(\underline{\omega})$, the elite credibility condition with mobile wealth is equivalent to

$$\sigma \cdot \underline{\omega} \geq \pi_H(\theta) \cdot (\underline{\omega} - \tau).$$

The RHS of the above inequality is strictly decreasing in θ. Therefore, if the inequality holds at $\theta = \hat{\theta}(\underline{\omega})$, which is equivalent to $\sigma \geq \hat{\sigma}$, then elite credibility holds for all θ. Otherwise, if $\sigma < \hat{\sigma}$, then there is a cutpoint $\theta^{ec}_{\text{exit}} > \hat{\theta}(\underline{\omega})$ such that elite credibility fails if and only if $\hat{\theta}(\underline{\omega}) < \theta < \theta^{ec}_{\text{exit}}$. Finally, the claim that $\theta^{ec}_{\text{exit}} < \infty$ follows from the fact that $\lim_{\theta \to \infty} \pi_H(\theta) = 0$. □

A.12 Proof of Proposition 2

For a reminder of the substantive meaning of each cutpoint stated in this proposition (and Proposition 3 below), we refer readers to Appendix A.1.2 above.

Proposition 2 (Parliamentary equilibrium with immobile elite wealth)**.** *Assume the elite's outside option is to refuse. There is an equilibrium in which the ruler delegates to parliament if and only if the external threat is moderate:* $\max\{\theta^{rw}, \theta^{ew}_{\text{refuse}}\} \leq \theta \leq \theta^{ec}_{\text{refuse}}$. *($\theta^{rw}$ is defined in Lemma 1, $\theta^{ec}_{\text{refuse}}$ in Lemma 6, and $\theta^{ew}_{\text{refuse}}$ in Lemma 7.)*

Proof. Immediate from Proposition 1 and Lemmas 5–7. □

A.13 Proof of Proposition 3

Proposition 3 (Parliamentary equilibrium with mobile elite wealth)**.** *Assume the elite's outside option is to exit. If $\sigma \geq \hat{\sigma}$ (see Lemma 9), then there is an equilibrium in which the ruler delegates to parliament only if $\theta^{rw} \leq \theta \leq \theta^{ew}_{\text{exit}}$. Otherwise, if $\sigma < \hat{\sigma}$, then there is an equilibrium in which the ruler delegates to parliament only if $\theta^{rw} \leq \theta \leq \min\{\theta^{ew}_{\text{exit}}, \hat{\theta}(\underline{\omega})\}$ or $\max\{\theta^{rw}, \theta^{ec}_{\text{exit}}\} \leq \theta \leq \theta^{ew}_{\text{exit}}$. ($\theta^{rw}$ is defined in Lemma 1, $\hat{\theta}(\underline{\omega})$ in Lemma 2, $\theta^{ew}_{\text{exit}}$ in Lemma 8, and $\theta^{ec}_{\text{exit}}$ in Lemma 9.)*

Proof. Immediate from Proposition 1, Lemma 5, and Lemmas 9–8. □

A.14 Additional Comparative Statics for Baseline Model

A.14.1 Ruler Willingness

Remark A.1 (Comparative statics on ruler willingness)**.**

(a) Increases in $\overline{\omega} - \underline{\omega}$ undermine ruler willingness. If $\overline{\omega} - \underline{\omega} \approx 0$, then ruler willingness holds.

(b) If $\theta \leq \hat{\theta}(\overline{\omega})$, then increases in $\overline{q}$ undermine ruler willingness. Otherwise, $\overline{q}$ does not affect ruler willingness.

(c) Increases in Δ enhance ruler willingness.

Proof. Claim (a). The first condition of Equation 1 is then equivalent to

$$\overline{\omega} - \underline{\omega} \leq \left(1 - \frac{\pi_L(\theta)}{\pi_H(\theta)}\right) \cdot (1 - \underline{\omega}),$$

and the second condition is similarly equivalent to

$$\overline{\omega} - \underline{\omega} \leq \frac{\overline{q} \cdot (\pi_H(\theta) - \pi_L(\theta)) \cdot (1 - \underline{\omega}) + (1 - \overline{q}) \cdot \pi_L(\theta) \cdot \tau}{\overline{q} \cdot \pi_H(\theta) + (1 - \overline{q}) \cdot \pi_L(\theta)}.$$

As ruler willingness is equivalent to either of these conditions holding, they prove that greater $\overline{\omega} - \underline{\omega}$ undermines ruler willingness. Additionally, the RHS of each condition is positive, proving that ruler willingness is sure to hold when $\overline{\omega} - \underline{\omega} \approx 0$.

Claim (b). If $\theta \leq \hat{\theta}(\overline{\omega})$, then the LHS of Equation A.1 is strictly decreasing in $\overline{q}$. Otherwise, the LHS of Equation A.1 is constant in $\overline{q}$.

Claim (c). The claim follows immediately from the fact that the LHS of Equation A.1 is strictly increasing in Δ. □

A.14.2 Elite Credibility

Remark A.2 (Comparative statics on elite credibility)**.**

(a) Increases in τ facilitate elite credibility.

(b) Assume $\pi_H(\theta) > \mu(\theta)$.[96] Increases in $\underline{\omega}$ may facilitate or undermine elite credibility.

Proof. Claim (a). It follows from Equation 2 that $\hat{\theta}(\underline{\omega})$ increases in τ. Additionally, the RHS of the second condition in Equation 3 is strictly decreasing in τ. Both of these effects make it easier for elite credibility to hold, all else equal.

Claim (b). It follows from Equation 2 that $\hat{\theta}(\underline{\omega})$ increases in $\underline{\omega}$, which facilitates elite credibility. However, under the assumption here, the second condition in Equation 3 is equivalent to

$$\underline{\omega} \leq \frac{\pi_H(\theta) \cdot \tau}{\pi_H(\theta) - \mu(\theta)},$$

which becomes more difficult to maintain as $\underline{\omega}$ increases. □

A.14.3 Elite Willingness

Remark A.3 (Comparative statics on elite willingness)**.**

(a) Increases in τ undermine elite willingness.

(b) Assume $\pi_H(\theta) > \mu(\theta)$. If $\theta < \hat{\theta}(\overline{\omega})$, increases in $\overline{q}$ facilitate elite willingness. Otherwise, $\overline{q}$ does not affect elite willingness.

Proof. Claim (a). This holds because the RHS of Equation 4 is strictly decreasing in τ.

Claim (b). Under the stated assumption, this holds because the RHS of Equation 4 is strictly increasing in $\overline{q}$ if $\theta < \hat{\theta}(\overline{\omega})$ and constant in $\overline{q}$ otherwise. □

[96] This holds trivially if the elite's wealth is immobile.

B Extensions

B.1 Hybrid Outside Option

We consider how the incentive compatibility conditions would change for a hybrid elite, whose wealth is divided between immobile and mobile assets. Generalizing the baseline model, let $\gamma \in [0, 1]$ represent the fraction of the elite's assets that are mobile. If the elite exercises its outside option or the ruler reneges, the immobile fraction of wealth remains in the ruler's domain and is potentially subject to expropriation by the outsider, while the mobile fraction is moved outside the domain at a proportional cost of $1 - \sigma$. Altogether, the proportion of wealth that the elite retains in this case is $\mu(\theta) = (1 - \gamma) \cdot \pi_L(\theta) + \gamma \cdot \sigma$. The baseline model with immobile wealth is the special case of the hybrid model where $\gamma = 0$, while the baseline model with mobile wealth is the one where $\gamma = 1$.

We focus on the behavior of the elite conditions at extreme values of the external threat. First, we consider when there is no external threat: $\theta = 0$, so that $\pi_L(\theta) = \pi_H(\theta) = 1$. In the baseline model, we saw that elite credibility always holds in this case, regardless of whether the elite's wealth is immobile or mobile (Lemma 6 and Lemma 9). Meanwhile, elite willingness fails for an elite with immobile wealth (Lemma 7), but can sometimes hold for an elite with mobile wealth (see footnote 32). We find analogous results in the hybrid case. When there is no external threat, elite credibility holds trivially, while elite willingness holds only if the fraction of mobile wealth potentially lost by exiting is high enough relative to the tax demand.

Lemma B.1. *If $\theta = 0$ in the model with hybrid elite wealth, then elite credibility always holds, and elite willingness holds if and only if $\gamma \cdot (1 - \sigma) \geq \frac{\tau}{\overline{\omega} - (1 - \overline{q}) \cdot (\overline{\omega} - \tau)}$.*

Proof. The claim about elite credibility follows from the definition of this condition (Equation 3), as $0 \leq \hat{\theta}(\underline{\omega})$ (per Lemma 2). To prove the claim about elite willingness, first note that $\theta = 0$ implies $\mu(\theta) = 1 - \gamma \cdot (1 - \sigma)$ in the hybrid model. Elite willingness (Equation 4) is then equivalent to

$$1 - \gamma \cdot (1 - \sigma) \leq \frac{\overline{q} \cdot (\overline{\omega} - \tau)}{\overline{\omega} - (1 - \overline{q}) \cdot (\overline{\omega} - \tau)},$$

which in turn is equivalent to the condition in the lemma. □

Next, we consider the nature of the conditions when an elite with hybrid wealth faces a sizable external threat. In the baseline model with immobile wealth, a sufficiently large external threat causes elite credibility to fail and elite willingness to hold. The opposite is true in the baseline model with mobile wealth, where large threats hinder elite willingness but bolster elite credibility. In the model with hybrid wealth, the findings are similar to the baseline model with mobile wealth: elite credibility holds and elite willingness fails when the outsider is extremely strong.

Lemma B.2. *Assume $\gamma > 0$ in the model with hybrid elite wealth. For all sufficiently large θ, elite credibility holds and elite willingness fails.*

Proof. With hybrid elite wealth and $\gamma > 0$, we have

$$\lim_{\theta\to\infty} \frac{\pi_H(\theta)}{\mu(\theta)} = \lim_{\theta\to\infty} \frac{\pi_H(\theta)}{(1-\gamma)\cdot\pi_L(\theta) + \gamma\cdot\sigma} = \frac{0}{\gamma\cdot\sigma} = 0.$$

It is then immediate from Equation 3 that elite credibility holds for sufficiently large θ. Meanwhile, Equation 4 implies that elite willingness is equivalent to

$$\overline{\omega} \leq \frac{\pi_H(\theta)}{\mu(\theta)} \cdot (\overline{\omega} - \tau)$$

for all $\theta \geq \hat{\theta}(\overline{\omega})$. Therefore, elite willingness fails for sufficiently large θ. □

This result shows that a key substantive finding of our baseline analysis continues to hold when the elite's wealth is a mixture of immobile and mobile assets: strong outside threats do not promote states that are both strong and limited, as elite incentives preclude an equilibrium with delegation when θ is large.

B.2 External Threats Affect Exit Option

In this section, we extend the model to allow the value of the exit option for mobile wealth to vary with θ, the strength of external threats. As such, θ may represent not only the magnitude of a particular threat to the domestic government, but also the level of systemic conflict and thus lack of safe harbors for mobile assets.[97] In this strategic environment, the inside and outside options both become worse for an elite with mobile wealth as the war threat grows—similar to what we saw for elites with immobile wealth in the baseline model. At certain margins, an increase in threat strength may affect an elite with mobile wealth differently than in the baseline model, weakening their credibility while strengthening their willingness to fund the ruler. Nevertheless, the strategic dynamics with very strong outside threats are the same as for an elite with mobile wealth in the baseline model, so long as the elite is guaranteed to retain *some* fraction of its wealth on exiting. Even with a diminished outside option value, a mobile elite that faces a strong outside threat can credibly threaten to withhold funds from an absolutist ruler, but will be unwilling to fund a ruler who delegates. The outcome of the interaction, as in the baseline model, will be for the ruler to choose absolutism and the elite to refuse her tax demand.

[97] We thank an anonymous referee for drawing our attention to this possibility.

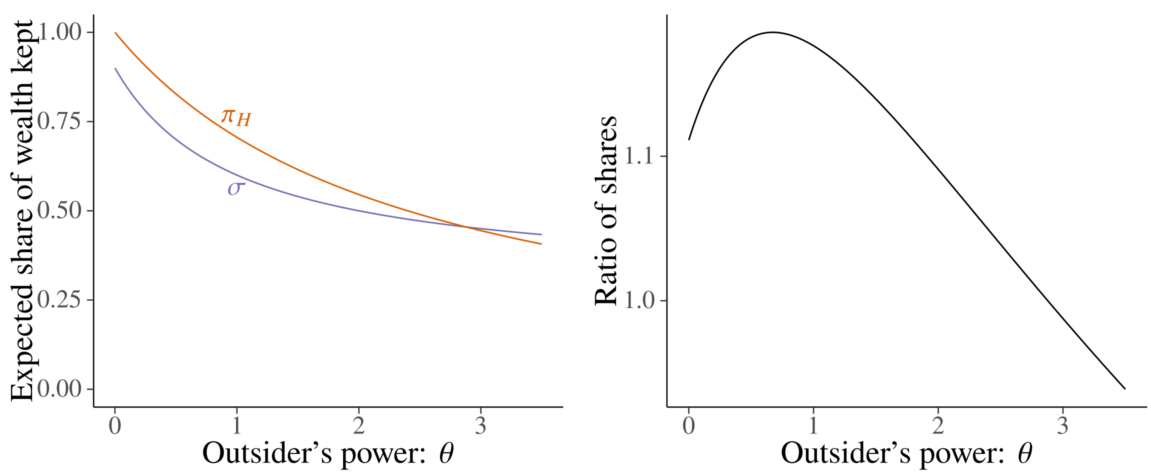
In the extended model, let $\overline{\sigma}$ and $\underline{\sigma}$ represent, respectively, the maximum and minimum fraction of wealth that the elite may retain upon exiting, where $0 < \underline{\sigma} < \overline{\sigma} < 1$.[98] We now assume that a greater external threat not only increases the chance of a successful invasion, but also reduces the extent of safe harbors available to move or hide wealth. We thus make the expected share of wealth retained upon exit a strictly decreasing function of external threat strength, denoted $\sigma(\theta)$. We parameterize the relationship between external threats and moveable wealth as follows:

$$\sigma(\theta) = \frac{\overline{\sigma} + \underline{\sigma}\theta}{1+\theta}.$$

For no external threat, we have $\sigma(0) = \overline{\sigma}$. For an arbitrarily large threats, $\lim_{\theta\to\infty} \sigma(\theta) = \underline{\sigma}$. In between, $\sigma(\theta)$ strictly decreases with θ, as illustrated in Figure B.1(a). We assume $\underline{\sigma}$ is small enough that the external threat makes a meaningful difference in the cost of exiting: $\underline{\sigma} < \frac{\Delta\overline{\sigma}}{1+\Delta}$.[99]

Figure B.1: Elite options when outside threats affect exit value.

(a) Expected share of wealth retained. (b) Ratio of shares: π_H/σ.



Parameters: $\Delta = 1.4$, $\underline{\sigma} = 0.3$, $\overline{\sigma} = 0.9$.

In the baseline model, the effect of the war threat on the elite incentive compatibility conditions is determined by its effect on the ratio $\frac{\pi_H(\theta)}{\mu(\theta)}$. For an elite with immobile wealth ($\mu(\theta) = \pi_L(\theta)$), the ratio is strictly increasing with θ, meaning a stronger outside threat reduces elite credibility while increasing elite willingness. For an elite with mobile wealth ($\mu(\theta) = \sigma$ (constant)), the ratio is instead strictly decreasing, so sufficiently strong threats enhance elite credibility while reducing elite willingness. In the present extension, where $\mu(\theta) = \sigma(\theta)$ (variable), the ratio is $\cap$-shaped. At low levels, starting from no external threat, the ratio is increasing: a marginal increase in outside

[98] We consider the limiting case $\underline{\sigma} = 0$ separately at the conclusion of this section.

[99] If instead $\underline{\sigma} \geq \frac{\Delta\overline{\sigma}}{1+\Delta}$, then $\frac{\pi_H(\theta)}{\sigma(\theta)}$ is strictly decreasing for all values of the external threat, and the effects of external threats on elite conditions are broadly similar to those in the baseline model with mobile wealth.

threat makes for a smaller proportional reduction in the home defense probability π_H than in the exit share σ. But eventually this reverses, and the reduction in security becomes dominant, as illustrated in Figure B.1(b).

Lemma B.3. *$\frac{\pi_H(\theta)}{\sigma(\theta)}$ is strictly increasing on $[0, \check{\theta})$ and strictly decreasing on $(\check{\theta}, \infty)$, where $\check{\theta} \equiv \sqrt{\frac{\Delta(\overline{\sigma}-\underline{\sigma})}{\underline{\sigma}}} - 1 > 0$.*

Proof. Taking the derivative of the ratio, we have

$$\frac{d}{d\theta}\left[\frac{\pi_H(\theta)}{\sigma(\theta)}\right] = \frac{1+\Delta}{[(1+\Delta+\theta)(\overline{\sigma}+\underline{\sigma}\theta)]^2}\left[\Delta(\overline{\sigma}-\underline{\sigma}) - \underline{\sigma}(1+\theta)^2\right], \tag{B.1}$$

which is positive for all $\theta < \check{\theta}$ and negative for all $\theta > \check{\theta}$. The claim that $\check{\theta} > 0$ follows from our assumption that $\underline{\sigma} < \frac{\Delta\overline{\sigma}}{1+\Delta}$. □

When external threats affect the value of exiting, their relationship with the elite credibility condition is subtly different than in the baseline model with mobile wealth (see Lemma 9). In both cases, elite credibility is guaranteed to hold when the outside threat is so low that an absolutist ruler would expropriate rather than provide security (i.e., $\theta < \hat{\theta}(\underline{\omega})$). The difference comes when the external threat is just above this threshold. In the baseline model with mobile wealth, once the outside threat is strong enough for an absolutist ruler to voluntarily provide security, further increases in θ strengthen elite credibility. This is because the value of funding the ruler is decreasing with θ, while the value of exiting remains constant. In the extended model, by contrast, there may be an intermediate range where the value of exiting is decreasing at a faster rate than that of relying on the ruler for security. Marginal increases in war threats now *hinder* elite credibility in this intermediate range, as the elite is pushed to rely on an absolutist ruler rather than exit. Eventually, though, the same logic kicks in as in the baseline model. When the outside threat is strong enough that the domestic regime has virtually no chance of surviving the invasion ($\pi_H(\theta) \leq \underline{\sigma}$), the elite prefers to exit, and elite credibility holds.

Lemma B.4 (Elite credibility when threats affect exit)**.** *In the model where external threats affect the exit option:*

(a) Elite credibility holds for all $\theta \leq \hat{\theta}(\underline{\omega})$.

(b) If $\hat{\theta}(\underline{\omega}) < \check{\theta}$, then increases in θ within this range make elite credibility harder to hold. Formally, there exists $\underline{\theta}^{ec}_{\text{vexit}} \in [\hat{\theta}(\underline{\omega}), \check{\theta}]$ such that elite credibility holds for $\theta \in [\hat{\theta}(\underline{\omega}), \underline{\theta}^{ec}_{\text{vexit}})$ and fails for $\theta \in (\underline{\theta}^{ec}_{\text{vexit}}, \check{\theta}]$.

(c) There exists $\overline{\theta}^{ec}_{\text{vexit}} < \infty$ such that elite credibility holds for all $\theta \geq \overline{\theta}^{ec}_{\text{vexit}}$.

Proof. Claim (a). Immediate from the definition of elite credibility (Equation 3).

Claim (b). For $\theta > \hat{\theta}(\underline{\omega})$, the elite credibility condition in this extension is equivalent to

$$\underline{\omega} \geq \frac{\pi_H(\theta)}{\sigma(\theta)} \cdot (\underline{\omega} - \tau). \tag{B.2}$$

The RHS of this expression is increasing on $[0, \check{\theta})$ per Lemma B.3, proving the claim.

Claim (c). L'Hopital's rule gives

$$\lim_{\theta\to\infty} \frac{\pi_H(\theta)}{\sigma(\theta)} = \lim_{\theta\to\infty} \left[\frac{1+\Delta}{1+\Delta+\theta} \cdot \frac{1+\theta}{\overline{\sigma}+\underline{\sigma}\theta}\right] = \lim_{\theta\to\infty} \frac{1+\Delta}{\overline{\sigma}+(1+\Delta)\underline{\sigma}+2\underline{\sigma}\theta} = 0, \tag{B.3}$$

so the claim follows from Equation B.2. □

Next, we consider how external threats affect elite willingness when the value of exiting also decreases with θ. At low levels of outside threat ($\theta < \check{\theta}$), a marginal increase in θ has a larger proportional reduction in the value of exiting than in the value of security provided by the ruler. Consequently, increases in war threats from a low level tend to promote elite willingness. This pattern runs contrary to the baseline model with mobile wealth (see Lemma 8), in which marginal increases in the outside threat hinder ruler willingness, as the value of security provided by the ruler decreases while the exit option remains constant. But once the war threat grows large enough ($\theta > \check{\theta}$), we see the same pattern in both the baseline model and the extension: further increases in the war threat hinder elite willingness. The only exception to this broad pattern, again in both models, is that elite willingness might discontinuously jump up at the cutpoint where the ruler provides security voluntarily even when constraints do not bind her *ex post* ($\theta = \hat{\theta}(\overline{\omega})$). Nevertheless, once the outside threat is strong enough, elite willingness is sure to fail.

Lemma B.5 (Elite willingness when threats affect exit)**.** *In the model where external threats affect the exit option:*

(a) Increases in θ make elite willingness easier to hold on $[0, \check{\theta})$. Formally, there exists $\underline{\theta}^{ew}_{\text{vexit}} \in [0, \check{\theta}]$ such that elite willingness fails on $[0, \underline{\theta}^{ew}_{\text{vexit}})$ and holds on $(\underline{\theta}^{ew}_{\text{vexit}}, \check{\theta}]$.

(b) Increases in θ make elite willingness harder to hold on $(\check{\theta}, \infty)$ as long as they don't change the ruler's choice to voluntarily abide. Formally, there exists $\overline{\theta}^{ew}_{\text{vexit}} > \hat{\theta}(\overline{\omega})$ such that elite willingness holds on $(\hat{\theta}(\overline{\omega}), \overline{\theta}^{ew}_{\text{vexit}})$ and fails on $(\overline{\theta}^{ew}_{\text{vexit}}, \infty)$. Additionally, if $\check{\theta} < \hat{\theta}(\overline{\omega})$, there exists $\tilde{\theta}^{ew}_{\text{vexit}} \in [\check{\theta}, \hat{\theta}(\overline{\omega})]$ such that elite willingness holds on $(\check{\theta}, \tilde{\theta}^{ew}_{\text{vexit}})$ and fails on $(\tilde{\theta}^{ew}_{\text{vexit}}, \hat{\theta}(\overline{\omega}))$.

(c) Elite willingness eventually fails: $\overline{\theta}^{ew}_{\text{vexit}} < \infty$.

Proof. Claim (a). Elite willingness (Equation 4) in this extension is equivalent to

$$\underline{\omega} \leq \begin{cases} \left[\overline{q} \cdot \dfrac{\pi_H(\theta)}{\sigma(\theta)} + (1-\overline{q})\right] \cdot (\overline{\omega} - \tau) & \text{if } \theta < \hat{\theta}(\overline{\omega}), \\ \dfrac{\pi_H(\theta)}{\sigma(\theta)} \cdot (\overline{\omega} - \tau) & \text{if } \theta \geq \hat{\theta}(\overline{\omega}). \end{cases} \tag{B.4}$$

The ratio $\frac{\pi_H}{\sigma}$ is strictly increasing on $[0, \check{\theta})$ per Lemma B.3. Because $\frac{\pi_H(0)}{\sigma(0)} = \frac{1}{\overline{\sigma}} > 1$, this implies $\frac{\pi_H}{\sigma} > 1$ throughout this range. Therefore, the RHS of Equation B.4 is strictly increasing on this range (with a discontinuous jump upward at $\theta = \hat{\theta}(\overline{\omega})$ in case $\hat{\theta}(\overline{\omega}) < \check{\theta}$), which proves the claim.

Claim (b). The ratio $\frac{\pi_H}{\sigma}$ is strictly decreasing on $(\check{\theta}, \infty)$ per Lemma B.3. Therefore, Equation B.4 is strictly decreasing on this interval, except with a discontinuous jump upward at $\theta = \hat{\theta}(\overline{\omega})$ in case $\check{\theta} < \hat{\theta}(\overline{\omega})$. The claims about cutpoints then follow from Lemma A.3, *mutatis mutandis*.

Claim (c). The claim that $\overline{\theta}^{ew}_{\text{vexit}} < \infty$ follows from combining Equation B.3 and Equation B.4. □

To conclude, we observe some important exceptions from the baseline model with mobile wealth when the value of exiting depends on outside threat strength, specifically the marginal effects of relatively low levels of threat ($\theta < \check{\theta}$). Contrary to the baseline model predictions, we see that an increase in outside threat from an initially low level might reduce a mobile elite's credible threat to withhold funds from an absolutist, while strengthening its willingness to fund a ruler who has delegated to parliament. The greater the reduction in safe harbors for wealth due to outside threats (i.e., the difference $\overline{\sigma} - \underline{\sigma}$), the greater the range in which the comparative statics of outside threats differ from the baseline model with mobile wealth. That said, the equilibrium in case of very large war threats continues to resemble the baseline setting. When θ is high enough that the worst-case scenario under exit is preferable to the best-case scenario funding the ruler ($\pi_H(\theta) \leq \underline{\sigma}$), elite credibility will hold while elite willingness will fail. The equilibrium outcome, as in the original model with mobile wealth, is that the ruler will choose absolutist rule, and the elite will exit rather than accept the tax demand. The state will be neither strong nor limited.

B.2.1 When the lower bound is zero

We now briefly consider the limiting case of $\underline{\sigma} = 0$, which substantively represents situations in which all possible outlets to move or hide mobile wealth disappear as war threats grow sufficiently strong. In this case, the logic of the extended model comes to closely resemble that of the baseline model with *immobile* wealth. When facing a dangerous outside world without any safe harbor for their wealth, the elites' least bad option will be to fund the ruler even if she does not delegate to parliament. Consequently, an increase in external threat strength will always hinder elite credibility (mirroring Lemma 6), but will strengthen elite willingness (mirroring Lemma 7). When θ is high enough, the equilibrium outcome is for the ruler to choose absolutist rule, and for the elite to accept her tax demand nonetheless.

The formal logic behind these results is a consequence of how the ratio $\frac{\pi_H(\theta)}{\sigma(\theta)}$ behaves when $\underline{\sigma} = 0$. Equation B.1 implies that the ratio is always strictly increasing in this special case. Graphically, the quantities in B.1 would closely represent their counterparts in 1. Effectively, we have $\check{\theta} = \infty$. We can then follow the logic of Lemmas B.4 and B.5 to conclude that elite credibility falters with θ, while elite willingness strengthens.

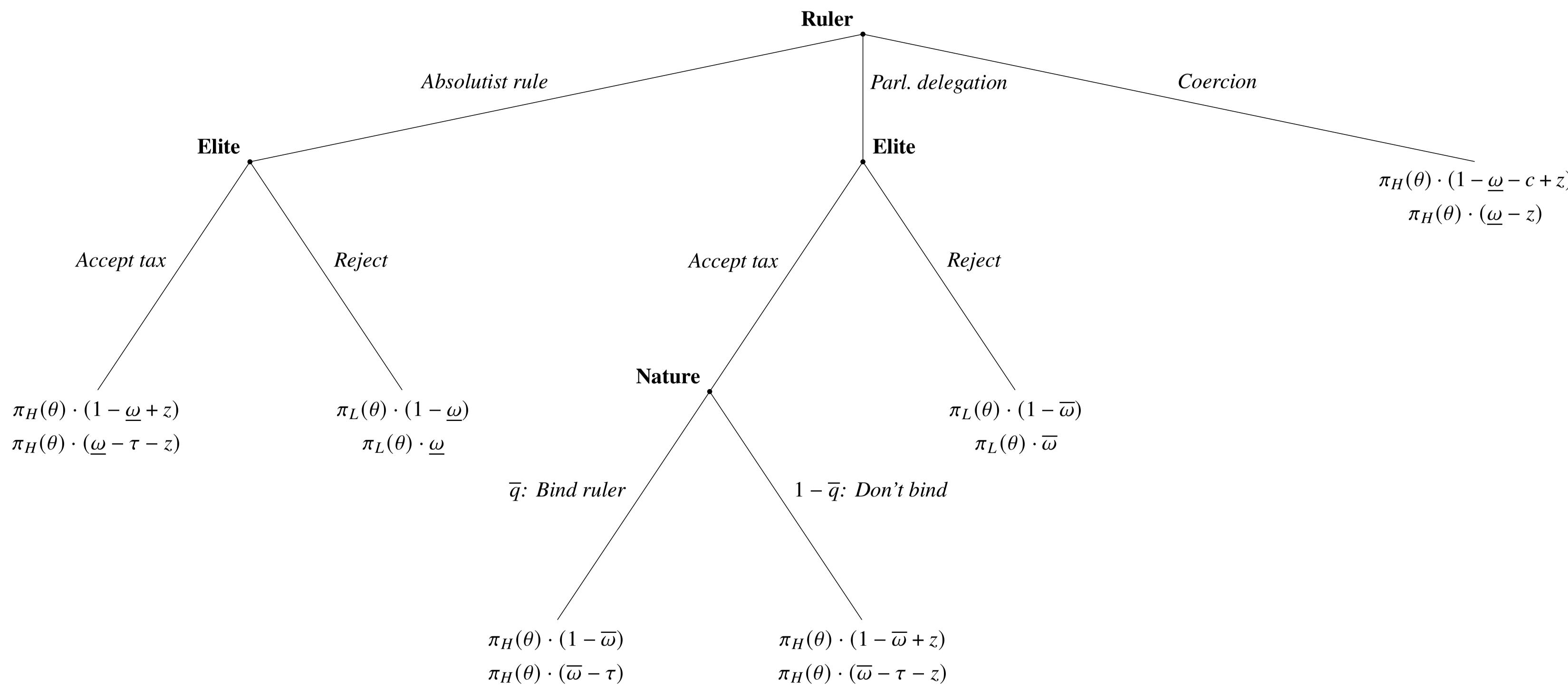
B.3 Coercion

To examine how the introduction of a coercive standing army alters the core strategic tradeoffs in bargaining between the ruler and elite, we extend the model in two ways. First, we alter the payoffs in case the ruler's tax demand is accepted to reflect the coercive use of the standing army. Unless the ruler chooses to delegate and is bound (by the Nature move) to use the monies exclusively for outside security, the ruler receives an additional transfer of z from the elite, where $0 < z < \underline{\omega} - \tau$. We think of this as additional revenue that the ruler coerces from the elite. Second, we give the ruler an additional option at the beginning of the game to fund a coercive military on her own, and thus bypass the process of bargaining with the elite. To do this, the ruler must pay an upfront cost of c. We assume that the ruler's domestic benefit from building the coercive army does not exceed its cost ($c > z$). Additionally, we assume the cost of building the coercive army exceeds what the ruler gives up by delegating to parliament ($c > \overline{\omega} - \underline{\omega}$); otherwise, there would be no parameters under which the ruler choose fiscal constraints.

The game tree for the extension appears in Figure B.2. In its construction, we implicitly assume that the ruler prefers to build the standing army and use it for coercion over either (1) building it and refraining from coercion, or (2) not building it and instead directly expropriating the tax monies. (1) always holds, and a sufficient condition for (2) is $z \geq \tau - (1 - \frac{\pi_L(\theta)}{\pi_H(\theta)})(1 - \overline{\omega})$. To ease the statement of results and ensure boundary conditions do not bind, we also assume $\Delta > \frac{\tau+z}{\underline{\omega}-\tau-z}$. This ensures finite thresholds on θ beyond which elite credibility fails and elite willingness holds.

Elite incentives change slightly when we introduce the possibility that the military buildup will be used for domestic coercion. The elite factors expected expropriation into its decision to fund the ruler, so the effective tax cost goes up by z under absolutist rule, or $(1-\overline{q})z$ if the ruler has delegated, compared to the baseline model. The increase in the effective cost of funding the ruler strengthens elite credibility but weakens elite willingness. However, there is a countervailing effect: the elite is now guaranteed greater security against the external threat whenever the ruler is funded. Overall, if the war threat is extremely weak or strong—specifically, strong enough that the ruler would have voluntarily provided security in the baseline setting—then the elite's incentives to fund the ruler

Figure B.2: Game tree for coercion extension.



are lower here than in our main model. For more moderate threats, depending on the elite's wealth and the extent of coercive expropriation, the incentive to fund the ruler may be stronger or weaker than before. Nonetheless, the basic relationship between external threat strength, elite credibility, and elite willingness remains the same as before. As the war threat θ grows, the credibility of the elite's threat to withhold funding from an absolutist ruler weakens, while the elite's willingness to fund a ruler who has delegated strengthens.

The introduction of coercion has a starker effect on the ruler's incentives, particularly when the war threat is relatively weak. When the threat is strong enough for elite credibility to fail, the ruler can get her first-best without having to pay the costs associated with delegation or *ex ante* coercion. In this case, just as in the baseline model with immobile wealth, the ruler chooses absolutist rule but receives tax funding nonetheless. If the war threat is moderate, elite credibility and willingness hold, so the ruler can get access to tax funds if and only if she delegates authority to parliament. A further reduction in the war threat may cause a failure in elite willingness (if $\overline{q}$ is low) or in ruler willingness (if $\overline{q}$ is high). The ruler then chooses either coercion, or simply to eschew any chance of funding the standing army. Conditional on ruler willingness or elite willingness failing, greater external threats and greater ruler wealth tend to push the ruler towards choosing coercion, as these are the conditions under which the benefits of the standing army are greatest relative to the fixed cost. The following result states the equilibrium outcomes as a function of external threats and the ruler's wealth.

Proposition B.1 (Equilibrium outcomes with coercion)**.** *In equilibrium in the model with a coercive standing army:*

(a) If the external threat θ is large, elite credibility fails. The ruler chooses absolutist rule, and the elite accepts the tax demand.

(b) If the external threat θ is moderate, elite credibility and elite willingness hold. If the ruler's wealth is high ($\underline{\omega}$ low), then she chooses absolutist rule, and the elite rejects the tax demand. Otherwise, if the ruler's wealth is low ($\underline{\omega}$ high), then she chooses to delegate, and the elite accepts the tax demand.

(c) If the external threat θ is small, elite willingness fails. If the ruler's wealth is high ($\underline{\omega}$ low), then she chooses coercion in this case. Otherwise, if the ruler's wealth is low ($\underline{\omega}$ high), she chooses absolutist rule, and the elite rejects the tax demand.

Proof. Claim (a). The elite credibility condition for the model with coercion is $\pi_L(\theta) \cdot \underline{\omega} \geq \pi_H(\theta) \cdot (\underline{\omega} - \tau - z)$, which is equivalent to

$$\frac{\pi_H(\theta)}{\pi_L(\theta)} \leq \frac{\underline{\omega}}{\underline{\omega} - \tau - z}.$$

The LHS of this expression strictly increases with θ, so there is a cutpoint θ_{co}^{ec} above which elite credibility fails and below which it holds. The condition holds at $\theta = 0$, so $\theta_{\text{co}}^{ec} > 0$; our assumption on Δ ensures that $\theta_{\text{co}}^{ec} < \infty$. If elite credibility fails, then the ruler prefers absolutist rule over delegation by the same logic as in the main model. The last thing to confirm is that the ruler prefers absolutist rule with an accepted tax demand over coercion, which follows from the assumption $c > z$.

Claim (b). The elite willingness condition for the model with coercion is

$$\overline{q} \cdot \pi_H(\theta) \cdot (\overline{\omega} - \tau) + (1 - \overline{q}) \cdot \pi_H(\theta) \cdot (\overline{\omega} - \tau - z) \geq \pi_L(\theta) \cdot \overline{\omega},$$

which is equivalent to

$$\frac{\pi_H(\theta)}{\pi_L(\theta)} \geq \frac{\overline{\omega}}{\overline{\omega} - \tau - (1 - \overline{q})z}. \tag{B.5}$$

The LHS of this expression strictly increases with θ, so there is a cutpoint θ_{co}^{ew} above which elite willingness holds and below which it fails. The condition fails at $\theta = 0$, so $\theta_{\text{co}}^{ew} > 0$. Moreover, we have $\theta_{\text{co}}^{ew} < \theta_{\text{co}}^{ec}$ because

$$\frac{\underline{\omega}}{\underline{\omega} - \tau - z} > \frac{\overline{\omega}}{\overline{\omega} - \tau - z} \geq \frac{\overline{\omega}}{\overline{\omega} - \tau - (1 - \overline{q})z}.$$

Combined with the proof of the previous claim, this shows that elite credibility and willingness both hold if and only if $\theta \in [\theta_{\text{co}}^{ew}, \theta_{\text{co}}^{ec}]$. The elite will thus reject the tax demand in case of absolutist rule, but accept it in case of delegation. Because $c > \overline{\omega} - \underline{\omega}$, the ruler prefers delegating and having the tax demand accepted over coercion. The condition for the ruler to prefer delegating and having the tax demand accepted over absolute rule with the tax demand rejected is $\pi_H(\theta) \cdot (1 - \overline{\omega} + (1 - \overline{q})z) \geq \pi_L(\theta) \cdot (1 - \underline{\omega})$, which is equivalent to

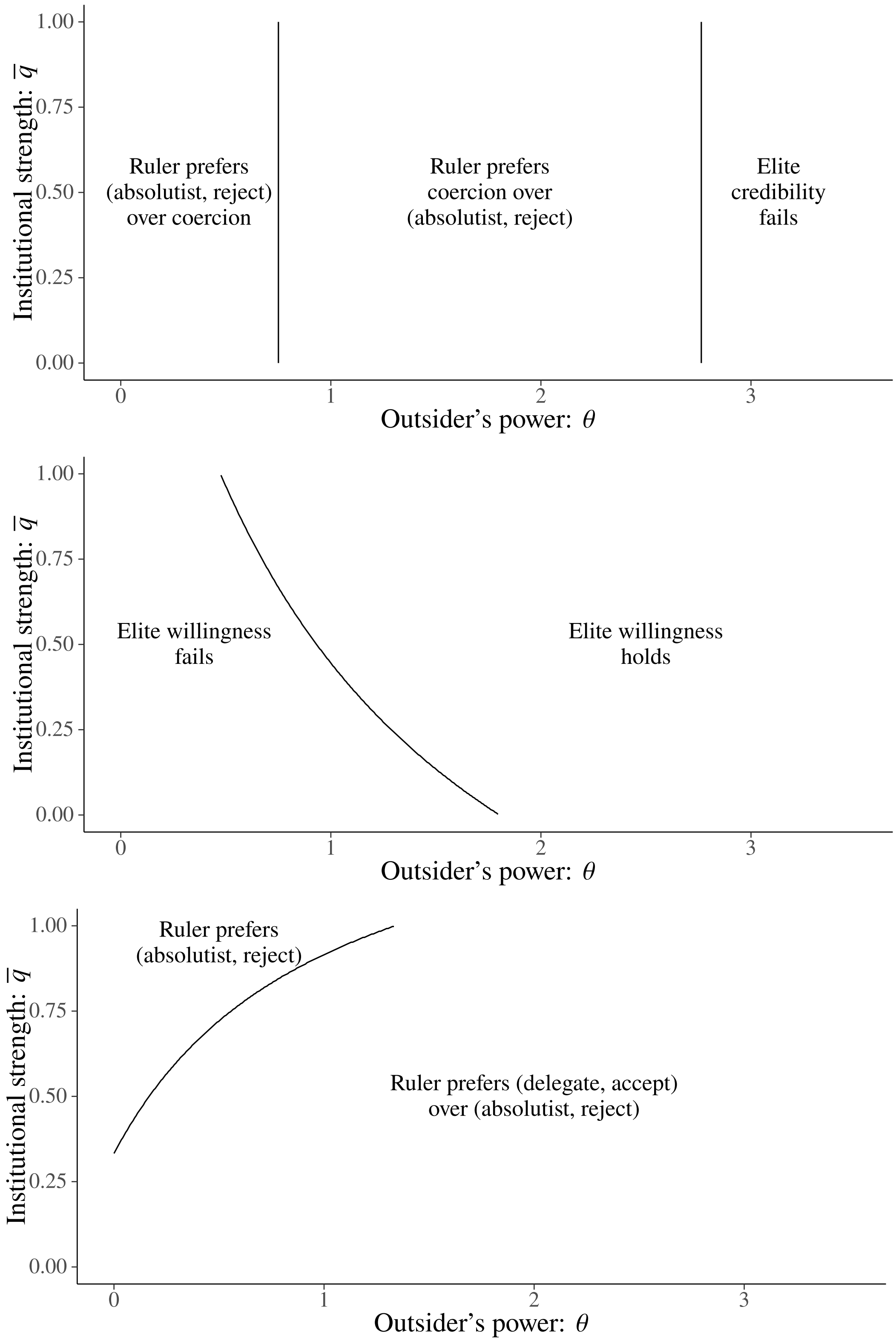
$$\underline{\omega} \geq 1 - \frac{\pi_H(\theta)}{\pi_L(\theta)}(1 - \overline{\omega} + (1 - \overline{q})z). \tag{B.6}$$

Claim (c). Per the last two parts, if $\theta < \theta_{\text{co}}^{ew}$, then elite willingness fails and elite credibility holds. This implies the elite will reject the tax demand regardless of the ruler's choice, so the ruler strictly prefers absolutist rule over delegation. The condition for the ruler to prefer absolute rule with a rejected tax demand over coercion is $\pi_L(\theta) \cdot (1 - \underline{\omega}) \geq \pi_H(\theta) \cdot (1 - \underline{\omega} - c + z)$, which is equivalent to

$$\underline{\omega} \geq 1 - \frac{\pi_H(\theta)}{\pi_H(\theta) - \pi_L(\theta)} \cdot (c - z). \quad \square \tag{B.7}$$

Figure B.3 illustrates the conditions that determine equilibrium behavior, breaking down Fig-

Figure B.3: Component conditions of Figure 9.



ure 9 from the main text into its individual components. The equilibrium outcome is (delegate, accept) if and only if all of the following hold:

- Elite credibility holds
- Elite willingness holds
- Ruler prefers (delegate, accept) over (absolutist, reject)

The incentive effects of institutional strength, $\overline{q}$, are similar to the baseline model. Conditional on elite credibility and willingness holding, delegation becomes more attractive for the ruler as institutional strength decreases. By the same token, a decrease in institutional strength makes it harder for elite willingness to hold, due to the increased likelihood of future expropriation by an empowered ruler. This incentive effect for elites is the same as in the baseline model (Remark A.3), but may have different consequences for equilibrium outcomes. If a decrease in institutional strength breaks elite willingness, then it could cause the ruler to choose coercion when she otherwise would have chosen to delegate—specifically, if the ruler's wealth is great enough to prefer coercion over eschewing the standing army, but not so great that she prefers absolutist rule even when delegation is productive. The following result formalizes the comparative statics on institutional strength in the model with coercion.

Remark B.1 (Comparative statics on $\overline{q}$ with coercion)**.** *In the model with a coercive standing army:*

(a) A decrease in the credibility of parliamentary constraints, $\overline{q}$, makes it harder for elite willingness to hold.

(b) If a decrease in $\overline{q}$ causes elite willingness to fail, this results in coercion as the equilibrium outcome only if the ruler's wealth is sufficiently high.

(c) If elite willingness and credibility hold regardless, then a decrease in $\overline{q}$ expands the conditions for the ruler to choose absolutist rule over delegation.

Proof. Claim (a) holds because the RHS of Equation B.5 is strictly decreasing in $\overline{q}$. Because Equation B.7 is not a function of $\overline{q}$, claim (b) then follows from Proposition B.1. Finally, claim (c) holds because the RHS of Equation B.6 is strictly increasing in $\overline{q}$. □

B.4 Offensive Wars

To study offensive wars and the distinct strategic tradeoffs to which they give rise, we modify the model with coercion introduced above. The players' domestic wealth is no longer subject to outside appropriation.[100] Instead, there is an external prize whose value is $\beta > 0$. We assume the ruler

[100]Consequently, the nature of elite wealth (mobile or immobile) is now immaterial for the equilibrium.

cannot pursue the war unless she receives tax funds from parliament or builds an army through coercion; otherwise, each player simply consumes their domestic endowment. If the ruler does pursue the war, she consumes the entire prize herself except in one case—when she has delegated authority to parliament, and the constraints on her turn out to be binding. In this case, the ruler and elite share the outside prize in proportion to their domestic wealth.

The game tree for this extension appears in Figure B.4. To simplify the presentation of results, we set $z = 0$ in the model with offensive wars. The results would not substantively change if building the army also resulted in a domestic transfer ($z > 0$).

The shift to offensive war significantly alters elite incentives. First, elite credibility now holds trivially, regardless of the strength of the external actor or the value of the prize. An unconstrained ruler has no incentive to share the spoils of war, so funding such a war effort is all cost and no benefit for the elite. Second, elite willingness is now inversely related to the external actor's strength. In order for the elite to receive any benefit from funding the ruler, the constraints on the ruler's ability to allocate funds must end up binding, and the state must win the war against the outside actor. A stronger opponent thus reduces the expected benefit of funding the ruler; unlike the defensive war model with immobile elite wealth, there is not an offsetting decline in expected utility from rejecting the tax demand.

We analyze the ruler's decisions primarily with respect to the value of the external prize, β. Whereas the value of preparation for a defensive war in our baseline model depends primarily on the outsider's strength θ, the value of mobilizing for an offensive war is largely a function of the territory or resources at stake.[101] If the potential spoils of war are not very valuable, then the costs of delegation or coercion to the ruler are not worth the benefits; the ruler will make no concessions to parliament and will not pursue the war. At the other extreme, if the value of the external prize is great enough, the ruler will build the military through coercion even when she could have gotten tax funds by delegating. This behavior contrasts with the defensive war setting, where the ruler chooses *ex ante* coercion only when elite willingness fails. If the potential spoils of victory are great enough, the ruler is willing to bear a greater upfront cost in order to eliminate any possibility of having to share the prize with the elite. The following result summarizes the ruler's equilibrium choice as a function of the prize value.

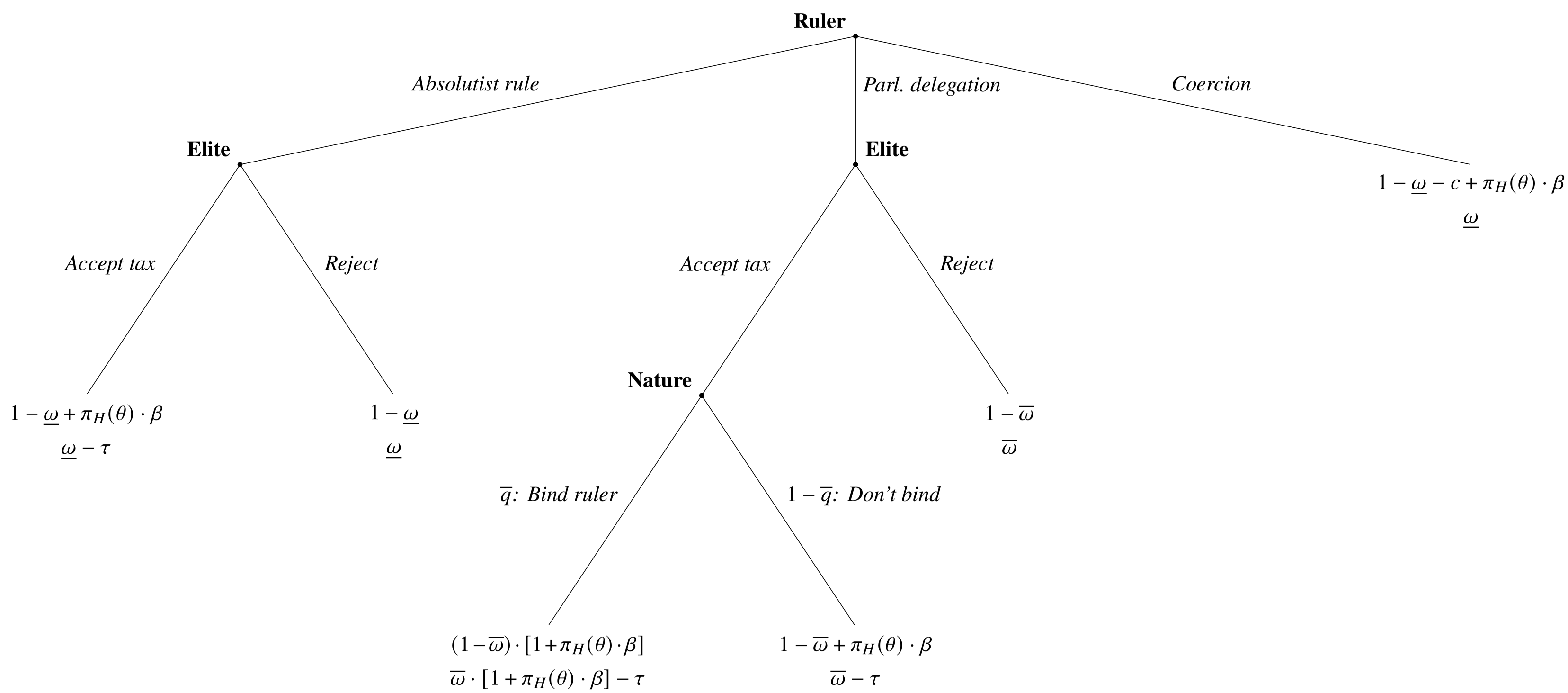
Proposition B.2. *In equilibrium in the model with offensive war:*

(a) Elite credibility always holds. Elite willingness holds if and only if the external prize β is sufficiently large.

(b) If the external prize β is small, the ruler chooses absolutist rule, and the elite rejects the tax demand.

[101] The comparative statics on θ in the model with offensive war are simply the opposite of those on β.

Figure B.4: Game tree for offensive war extension.



(c) *If the external prize β is large, the ruler chooses coercion.*

(d) *If τ and $\overline{q}$ are sufficiently small, then there is a moderate range of β at which the ruler chooses to delegate, and the elite rejects the tax demand. Otherwise, the ruler chooses absolutist rule or coercion for all values of β.*

Proof. Claim (a). Elite credibility always holds because $\underline{\omega} > \underline{\omega} - \tau$. The elite willingness condition here is $\overline{\omega} - \tau + \overline{q\omega}\beta\pi_H(\theta) \geq \overline{\omega}$, which is equivalent to

$$\beta \geq \frac{\tau}{\overline{q\omega}\pi_H(\theta)} \equiv \beta^{ew}.$$

Claim (b). This and the remaining parts of the proof rely on the following properties of equilibrium. Per the previous claim, the elite will always reject the tax demand following a choice of absolutist rule. Therefore, the ruler prefers to choose coercion over absolutist rule if and only if $1 - \underline{\omega} - c + \beta\pi_H(\theta) \geq 1 - \underline{\omega}$, which is equivalent to

$$\beta \geq \frac{c}{\pi_H(\theta)} \equiv \beta^{rca}.$$

(The rca superscript denotes that the *r*uler prefers *c*oercion over *a*bsolutism; analogous convention is used for the next two cutpoints.) If $\beta < \beta^{ew}$, then the previous claim implies that the elite will reject the tax demand following delegation as well. In this case, the ruler always prefers absolutist rule over delegation, as $1 - \underline{\omega} > 1 - \overline{\omega}$. On the other hand, if $\beta \geq \beta^{ew}$, then the elite will accept the tax demand following a choice of delegation. The ruler's expected utility from delegation in this case is $1 - \overline{\omega} + (1 - \overline{q\omega})\beta\pi_H(\theta)$. Consequently, if $\beta \geq \beta^{ew}$, then the ruler prefers delegation over absolutist rule if and only if

$$\beta \geq \frac{\overline{\omega} - \underline{\omega}}{(1 - \overline{q\omega})\pi_H(\theta)} \equiv \beta^{rda}.$$

Similarly, if $\beta \geq \beta^{ew}$, the ruler prefers coercion over delegation if and only if

$$\beta \geq \frac{c - (\overline{\omega} - \underline{\omega})}{\overline{q\omega}\pi_H(\theta)} \equiv \beta^{rcd}.$$

Altogether, we have that a sufficient condition for the ruler to prefer absolutist rule over both delegation and coercion is $\beta < \min\{\beta^{ew}, \beta^{rca}\}$, proving the claim.

Claim (c). Per the derivations in the previous part, a sufficient condition for the ruler to prefer coercion over both absolutist rule and delegation is $\beta > \max\{\beta^{ew}, \beta^{rca}, \beta^{rcd}\}$.

Claim (d). Per the derivations in part (b), the ruler prefers to choose delegation if and only if:

- Elite willingness holds: $\beta \geq \beta^{ew}$.

- The ruler prefers delegation over absolutist rule: $\beta \geq \beta^{rda}$.
- The ruler prefers delegation over coercion: $\beta \leq \beta^{rcd}$.

In order for there to be any β for which all of these conditions hold, we must have $\beta^{ew} \leq \beta^{rcd}$ and $\beta^{rda} \leq \beta^{rcd}$. The first of these conditions is equivalent to $\tau \leq c - (\overline{\omega} - \underline{\omega})$, and the second is equivalent to

$$\overline{q} \leq \frac{c - (\overline{\omega} - \underline{\omega})}{\overline{\omega} c}. \qquad \square$$

In the offensive war scenario, delegation is sustainable as an equilibrium outcome only if the prize is moderate. Even so, two additional conditions must hold in order for there to be any range of prize values for which delegation is the equilibrium outcome. First, the tax cost of funding the war effort, τ, must be small enough. Otherwise, the threshold for elite willingness will be so high that the ruler prefers coercion anytime that the elite would be willing to accept the tax demand. Second, institutional strength $\overline{q}$ must also be sufficiently small. If institutional constraints are too likely to bind, decreasing the ruler's expected winnings from an offensive war, then the ruler will always prefer either coercion or eschewing the war effort altogether over delegation. To be clear, while sufficiently low institutional strength is a necessary condition for delegation to ever be an equilibrium outcome, that does not mean decreases in $\overline{q}$ necessarily promote delegation *ceteris paribus*. Just as in the baseline model (Remark A.3), lower $\overline{q}$ makes elite willingness harder to hold. Therefore, the marginal effect of institutional strength on the likelihood of delegation depends on whether elite willingness or ruler willingness is closer to binding.

C Supplemental Empirical Information

C.1 Data Sources for Figure 10

In Figure 10, the sample of countries is the same as in Cox and Dincecco (2021), consisting of ten major territorial states in Europe: Austria, Denmark, England, France, Netherlands, Piedmont, Portugal, Prussia, Spain, and Sweden. For Panel A, we used data on taxation and spending power from three sources:

1. Stasavage (2010) provides information on taxation and spending power for all states through 1800, although mostly with approximate starting dates.

2. Cox et al. (2020) provide the first date with a parliamentary meeting for each state, which we use to revise the approximate dates from Stasavage.

3. Cox and Dincecco (2021) list periods in which parliaments had power over expenditures, which we also use as the date for the re-emergence of taxation powers if a country's parliament had previously lost those powers.

For Panel B, Abramson and Boix (2019) provide annual data through 1789 on whether a representative body was in session. We do not count as a parliamentary meeting any before the first year in which Cox et al. (2020) code participation by urban representatives.

C.2 Late Development of Parliamentary Powers Over Expenditures

In the article, we discussed changes over time in the *de facto* credibility of parliamentary constraints, $\overline{q}$. However, prior to the French Revolution, *de jure* parliamentary powers tended to be low. Even where parliaments gained powers to levy extraordinary taxes, they usually lacked any legal rights over how the monarch spent the money (except in England post-1688 and some Italian city-states). Only in the nineteenth century did parliamentary privileges become synonymous with taxation *and* expenditure powers (Cox and Dincecco 2021). We contend that external wars were relatively unimportant for these later changes. Important elements of these cases lie outside the scope conditions of a top-down approach to explaining parliamentary reforms. Instead, models based on bottom-up domestic pressure are more empirically applicable.

Various changes by the nineteenth century made highly credible parliamentary constraints feasible, $\overline{q} \approx 1$. Earlier, the generic constraint from traveling over long distances inhibited parliaments from gaining power over expenditures in larger territorial states. By contrast, approving taxes was logistically feasible because this could be done infrequently (Stasavage 2011). Later, higher rates of urbanization and emergent industrialization, as well as road, canal, and railroad networks, all made distance less of an impediment to convening parliamentary meetings. Additionally, England's early reforms provided a template for designing institutions of ministerial responsibility with credible budgets, which other countries could emulate (Cox 2016).

Despite the *possibility* of creating stringent parliamentary constraints, should we expect that a strong external threat would compel a ruler to choose this option? Certainly, it is possible to find parameter values in the model such that higher θ would push a ruler to choose $\overline{q} = 1$ over no constraints. However, even if elite credibility and willingness both hold, *ruler willingness* is less likely to hold when $\overline{q}$ (and the shift in ω) is large (Remark A.1). Given the prospect of granting so much leverage to elites in return for revenues, rulers would typically either (a) be content with a lower probability of defeating the external threat or (b) try to find alternative source of funds (e.g., coercing elites). "Absolutist rulers were trading away control rights whose value they knew well. Indeed, the right to dispense public revenues was the foundation of their power . . . Given the immense and durable value of the control rights they were trading, monarchs needed a very good reason to alienate some of that power" (Cox 2016, 150).

A more compelling theoretical mechanism to explain the nineteenth-century parliamentary resurgence is that *domestic* conditions changed. The aforementioned factors that raised $\overline{q}$ also improved prospects for broader elements of society (including capitalist elites, urban liberals, and peasants) to organize and exert pressure against regimes that refused reforms (Collier 1999). Changes in military technology also enhanced the threat from below. As militaries incorporated broader elements of society during the nineteenth century (Onorato et al. 2014), standing militaries were no longer the reliable tools of absolutism as in the earlier period. Various formal models explain how threats from politically marginalized elites (Ansell and Samuels 2014) or from the masses (Boix 2003; Acemoglu and Robinson 2006) can compel democratic reforms.

These theoretical intuitions align with empirical patterns. Major domestic disturbances led by political outsiders, rather than external wars, typically precipitated major parliamentary reforms. Four transitions occurred in 1848 (Denmark, Netherlands, Prussia, and Piedmont), a year of major domestic uprisings across Europe, and Spain's followed a rebel victory in civil war in 1876. In cases where participation in international war conceivably played a role (Austria in 1867 and France in 1870), the mechanism differed from the conventional contention that international war stimulates rulers to make domestic concessions to raise revenues. Instead, in these cases, defeat in an international war destabilized the regime and compelled a weak ruler to offer concessions to stave off domestic uprisings.

In Table C.1, we demonstrate null correlations between participation in war and parliamentary reforms in the nineteenth century. Using the same sample of countries and data sources as in Figure 10, we ran several simple panel regressions of the onset of parliamentary control over expenditures on participation in international warfare (the latter using data from Correlates of War; Sarkees and

Wayman 2010). Years are restricted from 1815 to 1901, during which time nine of ten countries in this sample adopted parliamentary control over expenditures (England is not included in the sample because of their earlier adoption). Countries are coded as a 0 on the dependent variable in any year their parliament lacks powers over expenditures, 1 in the first year of such powers, and is set to missing afterwards.

The raw frequencies suggest a role for international wars, although the correlation lacks statistical significance in all specifications. Among countries that previously lacked parliamentary control over expenditures, participants in an international war adopted such institutions in 16.0% of years, compared to only 1.8% among non-war participants (difference of 14.2%). However, this difference is not statistically significant in a basic model with country-clustered standard errors (p=0.153). When adding country and year fixed effects to the model, the difference declines in magnitude by 68%, and again is not statistically significant (p=0.644). In fact, adding to the bivariate model a fixed effect only for the year 1848 cuts the magnitude of the coefficient estimate in half. We interpret these null correlations cautiously because of the small sample size (nine countries across 411 country-years). Yet overall, this evidence supports the contention that external wars were not a primary stimulus for parliamentary reforms in the nineteenth century. As noted, even in country-years where participation in an international war and parliamentary reform coincided, domestic uprisings (or the threat thereof) was the primary stimulus.

Table C.1: External Wars and Onset of Parliamentary Expenditure Powers

	DV: Onset of parliament		
	(1)	(2)	(3)
Intnat'l war participation	0.142	0.0459	0.0746
	(0.0900)	(0.0958)	(0.0424)
1848 FE			0.449**
			(0.177)
Country-years	411	411	411
R-squared	0.044	0.418	0.182
Year FE?	NO	YES	NO

Notes: OLS models with country-clustered standard errors in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

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