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Working Paper 35343
<http://www.nber.org/papers/w35343>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
June 2026, Revised July 2026

In preparation for the conference proceedings of the Centennial Celebration of the Central Bank of Chile. The paper has received financial support from the Central Bank of Chile. We thank Marios Angeletos, Kyle Bagwell, Ricardo Caballero, Joel Flynn, Bengt Holmström, Pierre-Olivier Gourinchas, and Ivan Werning for useful comments. We thank Jiulei Zhu for excellent research assistance. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

At least one co-author has disclosed additional relationships of potential relevance for this research. Further information is available online at <http://www.nber.org/papers/w35343>

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NBER Working Paper No. 35343
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JEL No. F1, F30, G1, H10, P0

ABSTRACT

Great powers, like the United States and China, use existing trade and financial linkages of their economies to the rest of the world to exert geoeconomic power. The targeted entities include both foreign governments and foreign private firms. We characterize conditions under which a hegemonic country optimally targets private entities or their government in a given targeted foreign country. An advantage of coercing private entities is that they internalize less than their own government the equilibrium consequences of acquiescing to the hegemon's coercion. This allows the hegemon to build its power by exploiting the difference between the private cost to the targeted entity of the costly actions it demands and the social value to the hegemon of those actions. Coercing the government gives up some of this advantage, but offers the ability of having the targeted government potentially influence firms in its domestic economy that the hegemon finds valuable to coerce but for which it had limited direct coercive power. The relative strength of these two channels determines the optimal mix of coercion targeted at private entities and governments.

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1 Introduction

Hegemonic countries apply geoeconomic pressure to try to change targeted foreign entities' economic or political behavior using economic threats of sanctions, export controls, tariffs, or other policies. In practice, hegemonies like the U.S. and China target both foreign firms and governments. A hegemon can often pursue similar policy objectives using either type of target. For example, if the U.S. wants to block exports of advanced lithography tools to China, it could either directly pressure the Dutch firm ASML to stop its sales to China, or it could pressure the Dutch government to impose export controls on ASML to limit the same sales. This short paper considers tradeoffs in targeting firms versus governments using economic threats, and suggests important avenues for future research.

To clarify the mechanism, suppose that the U.S. is planning to threaten implementing an export control on U.S. good sales to induce a small European country to abandon adoption of China's Huawei information technology infrastructure.¹ We posit that this technology has strong potential strategic complementarities: adoption by more firms leads the technology to be more attractive to other potential users as well. When the U.S. targets firms, it internalizes that as each (small) firm abandons the technology, the technology becomes less attractive for other firms. Each firm acquiescing to the U.S. demand of dropping the technology only considers its private cost of doing so, and does not internalize the effect on the equilibrium aggregates. This lowers other firms' outside options and allows the U.S. to coerce firms into abandoning even more of the technology.

We follow [Clayton et al. \(2026a\)](#) and define Micro power to be the maximal private cost to the targeted entity of the actions that the hegemon can demand. We define Macro Power to be the social value to the hegemon of the costly actions it demands of the targeted entities. When targeting firms, the hegemon is exploiting the difference between their perceived private costs and the social value of the actions to the hegemon.

Because the target country's government internalizes these within-country externalities, the U.S. loses part of its ability to leverage its country-level Macro Power when it targets the government. However, the U.S. can benefit from targeting the government because doing so allows the U.S. to aggregate its power at the country level. Imagine that the threat of the U.S. export controls was damaging to firms that were not planning to adopt Huawei technology anyway, but was not damaging to firms that were planning to adopt the technology. In trying to target firms directly, the U.S. faces a mismatch between the firms whose activities it wants to change, and the firms it has power over. By targeting the government, the U.S. consolidates the country into a single bargaining unit and can leverage its threat of export controls that affect one sector to induce the government to change the behavior of an unrelated sector. This power aggregation reduces misalignment between where the hegemon has power and where the hegemon wants to wield its power.

This short paper provides a simple illustrative model to highlight this tradeoff and shed light on when the hegemon would prefer to target firms or governments. Our model has a hegemonic

¹See [Farrell and Newman \(2023\)](#) for background.

country selling an input to a small open economy. The small open economy has two sectors. The first sector is entirely reliant on the hegemon’s input to produce. The second sector can use both the hegemon’s input and an alternative input, for example one sold by a geopolitical rival of the hegemon. The second sector has a strategic complementarity via an external economy of scale from using the alternative input: each firm in the sector becomes more productive in using the alternative input as sectoral use of the alternative input rises. We assume, however, that the hegemon’s country experiences a negative externality from use of the alternative input, which leads the hegemon to prefer that the small open economy make no use of the alternative input. The government of the small open economy is able to employ domestic policy tools (wedges) on use of the two inputs, for example, a subsidy on using the alternative input to capitalize on the economy of scale. The key geoeconomic game arises from the hegemon’s choice of target for power exertion. We study and compare two environments: targeting firms versus targeting governments. Both setups follow the modeling framework of [Clayton et al. \(2026a, 2024\)](#).

In the first environment, the hegemon targets firms in each of the two sectors. The hegemon threatens each firm in each sector with a loss of access to the hegemon’s input if that firm does not comply with the hegemon’s demands to that individual firm for either wedges or transfers. A demand for costly actions (wedges) by the hegemon is a demand that the target place wedges in its first order conditions determining its optimal input purchases. For example, a positive wedge demanded of a firm in sector 2 for using the alternative good is a demand that the firm uses less of the alternative. This environment focuses the model on two (representative) participation constraints: one for firms in each sector. The participation constraints characterize the limits to the hegemon’s power to demand costly actions from that sector. They highlight the hegemon’s Micro Power: the maximum private value to the targeted firm of the costly actions that the hegemon can demand taking as given all equilibrium aggregates.

In the second environment, the hegemon targets the foreign government of the same country. The hegemon threatens the foreign government with a loss of access to its inputs across all sectors of its domestic economy, and in turn demands transfers or that the government change its own domestic policy wedges. Both the hegemon’s basic economic threat (suspension of sales of its input) and the costly actions that the hegemon can demand (transfers and changes in activities) are therefore the same across the two environments, but the target of coercion differs. As a result, in this latter environment there is only a single participation constraint and it is at the government/country level.

When the hegemon targets firms, it benefits from leveraging its Macro Power coming from the failure of each firm in sector 2 to internalize that its own downscaling of the use of the alternative input reduces the attractiveness of the alternative good to other firms in sector 2. This lowers the outside option of all firms in sector 2, and builds the hegemon’s power to demand even further reductions in the use of the alternative input. However, we show that the hegemon can end up with a power mismatch: when the hegemon’s power over sector 2 is relatively low, the hegemon

entirely foregoes extracting transfers from sector 2 in order to suppress use of the alternative input as much as possible. At the same time, the hegemon’s best use of its power over sector 1 is to collect transfers. The result is that the hegemon has a higher marginal value of power over sector 2 than sector 1, meaning the hegemon would like to shift some of its power over sector 1 to sector 2.

As a consequence, when the hegemon targets the government, even though the hegemon is no longer able to capitalize on its Macro Power (i.e., the government also internalizes the external economy of scale within its domestic economy), the hegemon benefits from *slack sharing* in the participation constraints. The consolidated country-level participation constraint now captures the costs to both sectors of losing access to the hegemon’s input. The hegemon can generate slack in the government’s participation constraint by reducing its demanded transfers of sector 1, and use that slack generated to demand the government use its domestic policy wedges to reduce adoption of the alternative good by sector 2. This “slack sharing” between the two sectors allows the hegemon to deploy its power more efficiently and avoids mismatches between the firms that the hegemon has power over, and the firms that the hegemon wants to change the activities of. It rests on the notion that a government has more domestic leeway on its domestic firms than on foreign ones. Targeting the foreign government loses some power for the hegemon because the foreign government internalizes more of the effect on coercion, but at the same time it gives the hegemon power over an entity (the government) that can implement wider changes on the domestic firms than the hegemon can implement directly.

We provide an illustrative analysis of the conditions under which the hegemon prefers to target firms versus the government. We show that the hegemon prefers to target firms when either sector 1’s profitability from using the hegemon’s input is low – that is, the hegemon’s power over sector 1 is low and there is not much slack to be shared – or when sector 2’s profitability from using the hegemon’s input is high – that is, the hegemon has a large amount of power over sector 2 and the value to slack sharing is low. We provide simple comparative statics to characterize the optimal choice. The hegemon prefers to target the government when the negative externality to the hegemon from the country’s use of the alternative good is larger. Intuitively, the hegemon benefits more from slack sharing because the value of suppressing use of the alternative good is high relative to the value of transfers. Conversely, we show that when the external economy of scale is larger, the hegemon’s ability to leverage its Macro Power becomes more valuable, and the hegemon prefers to target firms. We conclude by suggesting possible future analysis for the literature.

Related Literature. We connect to the literature in political science and history on economic statecraft and great power competition, with notable contributions including [Hirschman \(1945\)](#), [Baldwin \(1985\)](#), [Kindleberger \(1973\)](#), [Krasner \(1976\)](#), [Keohane and Nye \(1977\)](#), [Waltz \(1979\)](#), [Gilpin \(1981\)](#), [Keohane \(1984\)](#), [Kennedy \(1987\)](#), [Ikenberry \(2001\)](#), [Mearsheimer \(2003\)](#), [Blackwill and Harris \(2016\)](#), [Walt \(2018\)](#), and [Farrell and Newman \(2019\)](#). We connect to the modern economics literature on geoeconomics, including [Clayton et al. \(2026a, 2024, 2025a, 2026b\)](#), [Broner et al.](#)

(2024), Kleinman et al. (2024), Thoenig (2023), Antràs and Miquel (2023), Fernández-Villaverde et al. (2024), Becko and O’Connor (2024), Liu and Yang (2024), Kooi (2024), Mattoo et al. (2024), Alekseev and Lin (2024), Pflueger and Yared (2024), Egorov et al. (2025), Meyer and Wesseler (2025), Fernández-Villaverde et al. (2025), Becko et al. (2025), Mayer et al. (2025), Bianchi et al. (2025), Garofalo et al. (2025), Matvos and Neiman (2026), Bianchi et al. (2025), Abadi et al. (2026), Cavallino et al. (2026), Fernández-Villaverde et al. (2026), and Madsen and Prat (2026).² Our mechanism of targeting the government to share slack across participation constraints builds on the foundational literature on multi-market contact (Bernheim and Whinston (1990)) and multitasking (Holmstrom and Milgrom (1991)), in which higher powered incentives are provided through multiple activities or tasks. Our mechanism around playing firms off against each other relates to the literature on contracting with externalities (Segal (1999)).

2 Model

We model two countries operating within a global economy: a hegemonic country, h , and a small open economy, s . The hegemonic country has an endowment e_h of a good, for simplicity denoted good h , that is sold at a world price of p_h . The small open economy s has two sectors: one that can only produce using the hegemon’s good, and one that can produce using both the hegemon’s good and also an alternative good a . The alternative good is sold by an unmodeled third party at a world price of p_a . There is a common final consumption good that we take as the numeraire. We take these world prices as given.³ Figure 1 illustrates the model’s economic structure.

Small Open Economy s . The small open economy has two sectors, each comprising of a unit continuum of identical firms. The first sector, denoted sector 1, is entirely reliant on the hegemon’s good for production. Firms in sector 1 produce the numeraire consumption good using a linear production function $f_1(x_{1h}) = A_{1h}x_{1h}$. To ensure finite and positive profits, we assume that $A_{1h} > p_h$ and that sector 1 faces a capacity constraint $x_{1h} \leq \bar{x}_{1h}$. The profits of a firm in sector 1 are $\Pi_1 = (A_{1h} - p_h)x_{1h}$, and we define $\bar{\Pi}_{1h} = (A_{1h} - p_h)\bar{x}_{1h}$ to be the profits of sector 1 if it operates at full capacity (using good h).

The second sector, denoted sector 2, also produces the numeraire consumption good, but can utilize both the hegemon’s good h and the alternative good a in its production. Its separable, linear production function is

$$f_2(x_{2h}, x_{2a}) = A_{2h}x_{2h} + A_{2a}(x_{2a}^*)x_{2a}.$$

We assume that sector 2’s production using good a features an external economy of scale: the productivity $A_{2a}(x_{2a}^*)$ is increasing in equilibrium sectoral use of good a , x_{2a}^* . As with sector

²Mohr and Trebesch (2024) and Clayton et al. (2025c) provide overviews of the literature.

³For example, this can arise when the marginal purchaser of each good is a firm with linear production technology in the unmodeled rest of the world.

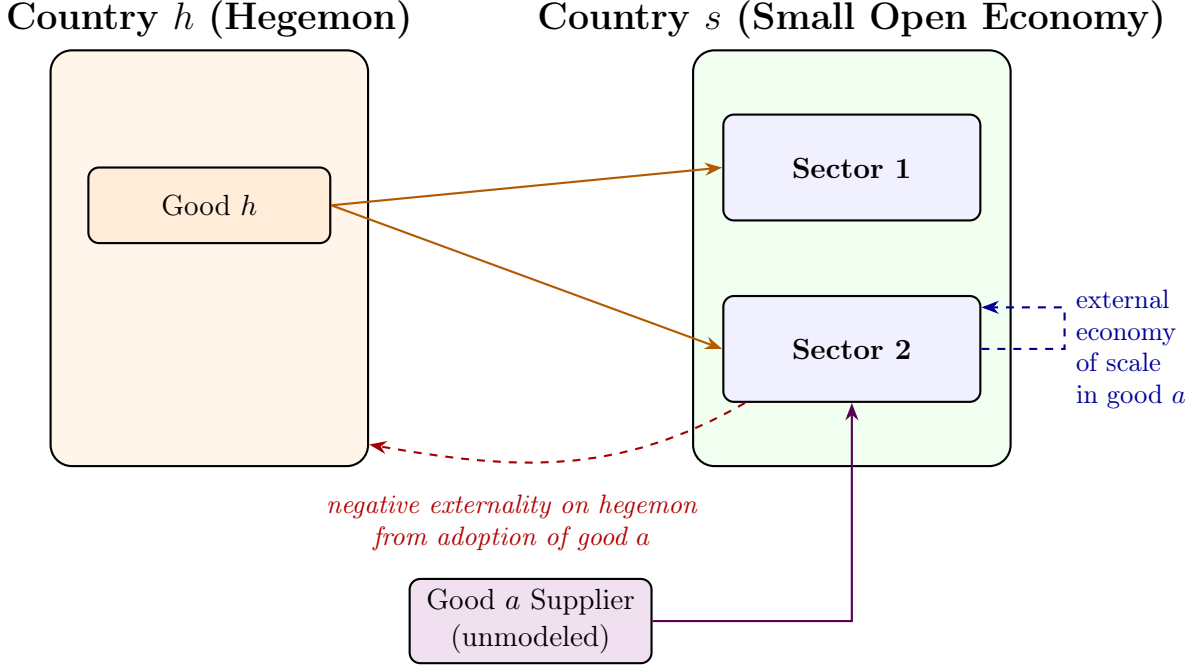


Figure 1: Economic environment

1, to ensure positive and finite profits we assume that $A_{2h} > p_h$ and $A_{2a}(0) > p_a$, and that sector 2 faces capacity constraints $x_{2h} \leq \bar{x}_{2h}$ and $x_{2a} \leq \bar{x}_{2a}$. Sector 2's total profits are $\Pi_2 = (A_{2h} - p_h)x_{2h} + (A_{2a}(x_{2a}^*) - p_a)x_{2a}$. If sector 2 operates at full capacity, its profits are $\bar{\Pi}_{2h} + \bar{\Pi}_{2a}$, where $\bar{\Pi}_{2h} = (A_{2h} - p_h)\bar{x}_{2h}$ and $\bar{\Pi}_{2a} = (A_{2a}(\bar{x}_{2a}) - p_a)\bar{x}_{2a}$.

The small open economy has a representative consumer with linear utility over the final consumption good, $u_s(c_s) = c_s$. The consumer owns the domestic firms and so faces a budget constraint $c_s \leq \Pi_1 + \Pi_2$.

Hegemon h . The hegemon's country sells its (large) endowment of e_h on world markets, and we assume that it is sufficient to supply both sectors in s if they operate at full capacity. The hegemon's consumer has linear utility $u(c_h) = c_h$ and a budget constraint $c_h \leq p_h e_h$.

We assume that the hegemon's government has preferences over both the consumption of its representative consumer and over the use of the alternative good a by the small open economy, given by $U_h(c_h, x_{2a}^*) = c_h - \delta x_{2a}^*$. For example, good a might be technology supplied by a geopolitical adversary of the hegemon that the hegemon perceives as a national security risk. This is, of course, just a convenient reduced form representation to make our main point.

The economics of our problem revolve around a preference disagreement between the hegemon and the government and firms of the small open economy. In particular, whereas the small open economy firms and government prefer that sector 2 operates at full capacity using good a (i.e., $x_{2a} = \bar{x}_{2a}$), we make assumptions so that the hegemon prefers that sector 2 make no use of good a (i.e., $x_{2a} = 0$). Formally, we assume that $A_{2a}(x_{2a}) + A'_{2a}(x_{2a})x_{2a} - p_a < \delta$ for $x_{2a} \leq \bar{x}_{2a}$, so that the

utility cost to the hegemon of an increase in x_{2a}^* always exceeds the value of the increase in sectoral profits.

2.1 Policy and Geoeconomic Game

The policy and geoeconomic game unfolds in a Beginning-End structure. In the Beginning, the government of s chooses revenue-neutral wedges $\tau_{s,1}, \tau_{s,2h}, \tau_{s,2a}$ on its firms' use of goods h and a . For each wedge the first subscript describes the entity imposing the wedge, in this case the government of s , the second subscript describes on which entity it is imposed (sector 1 or 2) and for which good's purchases (the hegemon good h or the alternative good a). In the End, production and consumption occurs.

The hegemon seeks to demand costly actions of entities in the small open economy. We allow for two types of costly actions. The first is that the hegemon can demand non-negative transfers out of each sectors' profits, which we denote $T_{h,1} \geq 0$ from sector 1 and $T_{h,2} \geq 0$ from sector 2. The second is that the hegemon can demand changes in sectoral purchases of inputs, such as sector 2's purchases of a . This paper focuses on the tradeoff to the hegemon between coercing the government of s in the Beginning for costly actions, and coercing firms in the End for costly actions. We describe these two environments below.

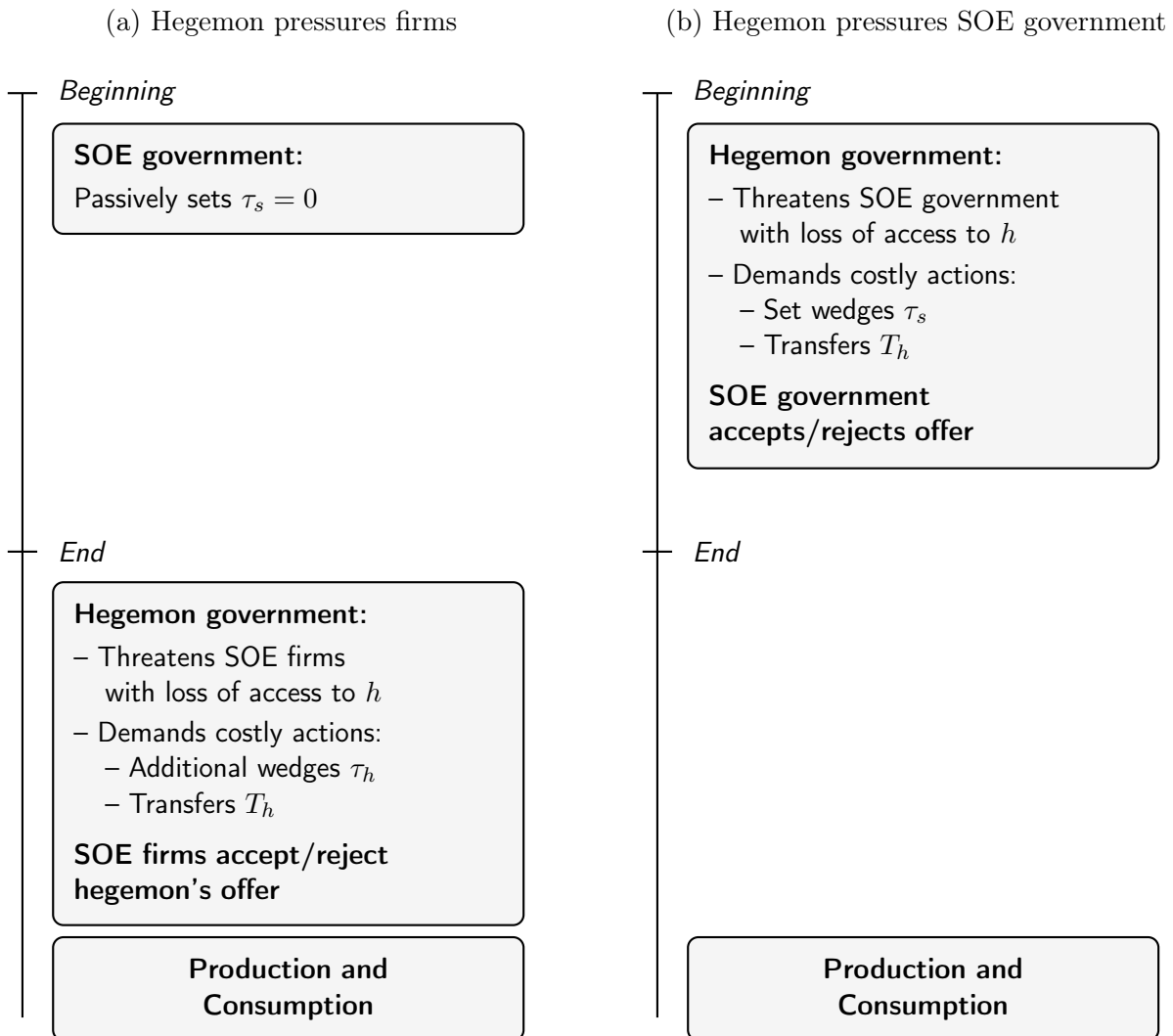
2.1.1 Coercing Firms

In the first environment, the hegemon coerces firms in the End, taking as given the wedges set by the government of s in the Beginning. A timeline of this environment is presented in Figure 2a. In this environment, in the End the hegemon offers a contract to each firm in sector $i \in \{1, 2\}$ specifying: (i) a nonnegative transfer $T_{h,i} \geq 0$ from firm i to the hegemon's representative consumer; (ii) revenue-neutral wedges $\tau_{h,i}$ on purchases of goods by firm i , with equilibrium revenues $\tau_{h,i}x_i^*$ rebated lump sum to firms in sector i that accept the contract. Note that $\tau_{h,i}$ is a vector of two wedges, with elements $\tau_{h,ih}$ and $\tau_{h,ia}$. The hegemon enforces its demands on firm i by threatening to cut off that individual firm from purchasing the hegemon's good h if that firm rejects the hegemon's contract. This means that firms in sector i that accept the hegemon's contract retain access to h even if other firms in the same sector or country reject the contract. In other words, punishment is at the level of the individual firm that is rejecting the contract.

Because the hegemon has a complete set of revenue-neutral wedges on each firm, we can employ a primal representation of the problem in which the hegemon's contract directly specifies required goods purchases x_i by firm i .⁴ We simplify the exposition by adopting this primal representation. Moreover, because there are no externalities associated with purchases of good h , the hegemon's optimal contract allows both sectors to produce at capacity out of h . Therefore, we focus on the

⁴This wedge approach, employed within the geoeconomics literature, builds on the macroprudential policy literature (Farhi and Werning (2016)), and can be thought of as demands for quantity restrictions (e.g., Clayton and Schaab (2022)).

Figure 2: Model timelines



hegemon's demand for changes in use of the alternative good a by sector 2. We denote x_{2a}^h to be the hegemon's demanded use of a by sector 2.

This environment requires an assumption on the wedges set by the government of s . Because the private sector and government of s both find it optimal for both sectors to produce at full capacity, we assume that the government of s sets $\tau_{s,1} = \tau_{s,2h} = \tau_{s,2a} = 0$. This assumption is consistent with the spirit of this environment of coercing foreign firms in the face of a passive foreign government. The assumption helps us illustrate the tradeoff we want to focus on, but is not innocuous. For example, this rules out the possibility that the government of s anticipates hegemonic coercion and pursues anti-coercion policies in advance. [Clayton et al. \(2024\)](#) study the problem of anti-coercion and economic security policies, and a fuller treatment of the problem highlighted in this short paper should allow for a government that is not fully passive to the coercion of its firms.

Participation Constraints of Firms. Because the hegemon offers a contract separately to each firm in each sector, there are two (representative) participation constraints, one for each sector. Firms, being small, do not internalize the effect of their decisions on the equilibrium productivity $A_{2a}(x_{2a}^*)$.

Each firm in sector 1 decides whether to accept or reject the hegemon's contract. If it rejects the contract, it cannot produce and obtains a value of 0. If it accepts the hegemon's contract, it produces at full scale and earns profits $\bar{\Pi}_{1h}$, but has to make the transfer payment $T_{h,1}$. The participation constraint of each firm in sector 1 is therefore

$$0 \leq \bar{\Pi}_{1h} - T_{h,1}. \quad (1)$$

The hegemon's Micro Power over each firm in sector 1 is the profits from using the hegemon's good, $\bar{\Pi}_{1h}$.

Each firm in sector 2 also decides whether to accept or reject the hegemon's contract. If it rejects the contract, it is not able to produce with good h but is able to produce at capacity using good a , and so achieves value $(A_{2a}(x_{2a}^*) - p_a)\bar{x}_{2a}$. If it accepts the hegemon's contract, then it can operate at full scale using good h , earning profits $\bar{\Pi}_{2h}$, but also has to operate at the hegemon's demanded scale x_{2a}^h and make the transfer payment $T_{h,2}$. The firm's profits when accepting are therefore $\bar{\Pi}_{2h} + (A_{2a}(x_{2a}^*) - p_a)x_{2a}^h$. The participation constraint of each firm in sector 2 is therefore

$$(A_{2a}(x_{2a}^*) - p_a)\bar{x}_{2a} \leq \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^*) - p_a)x_{2a}^h - T_{h,2}. \quad (2)$$

The hegemon's Micro Power over each firm in sector 2 is the profits from using the hegemon's good, $\bar{\Pi}_{2h}$.

Hegemon Maximization Problem. The hegemon's utility is $U_h(c_h, x_{2a}^*) = c_h - \delta x_{2a}^*$. Given transfers, the consumption of its consumer is $c_h = p_h e_h + T_{h,1} + T_{h,2}$. Substituting in, the hegemon's

objective function is

$$U_h = p_h e_h + T_{h,1} + T_{h,2} - \delta x_{2a}^*. \quad (3)$$

The hegemon chooses its demands $T_{h,1}, T_{h,2}, x_{2a}^h$ in order to maximize its objective function above, subject to firms' participation constraints (equations 1 and 2) and to the equilibrium condition $x_{2a}^h = x_{2a}^*$ (i.e., its demand for use of good a is the prevailing equilibrium use of a).

2.1.2 Coercing the Government

In the second environment, the hegemon coerces the government of s in the Beginning. A timeline of this environment is presented in Figure 2b. In this environment, in the Beginning the hegemon offers a contract to the government of s specifying: (i) nonnegative transfers $T_{h,i} \geq 0$ from firms in sector $i \in \{1, 2\}$; (ii) the policy wedges τ_s that the government of s sets in the Beginning. The hegemon enforces its demands on the government of s by threatening to cut off the entire country (i.e., both sectors 1 and 2) from purchasing the hegemon's good h if the government of s rejects the hegemon's contract. This means that all firms in country s are punished if the government of s rejects the contract.

Because the government of s has a complete set of wedges on each firm in the Beginning, the government of s is de facto able to choose the goods purchases x_i by each firm i through its choice of wedges τ_s . We can therefore once again give a primal representation to the hegemon's contract, whereby the hegemon's contract directly specifies the vector of required goods purchases x_i by firms in sector i . As in the previous environment, the absence of externalities associated with h means the hegemon's optimal contract allows both sectors to produce at capacity out of h , and therefore we focus on the hegemon's mandated use of good a by sector 2, x_{2a}^h .

Government s Participation Constraint. If the government of s rejects the hegemon's contract, then both sectors lose access to good h , but the government is able to implement its preferred allocation x_{2a}^o . Because the government of s finds it optimal for its firms to operate at full scale, then $x_{2a}^o = \bar{x}_{2a}$ and so the payoff is $c_s = \bar{\Pi}_{2a} = (A_{2a}(\bar{x}_{2a}) - p_a)\bar{x}_{2a}$. On the other hand, if the government accepts the contract, its firms are able to operate at full scale using h and earn total profits of $\bar{\Pi}_{1h} + \bar{\Pi}_{2h}$ from use of h . However, sector 2 operates at reduced scale using a , earning profits $(A_{2a}(x_{2a}^h) - p_a)x_{2a}^h$ from its use, and also makes transfer payments $T_{h,1} + T_{h,2}$. Therefore, the participation constraint of the government of s is

$$\bar{\Pi}_{2a} \leq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - T_{h,1} - T_{h,2} \quad (4)$$

The crucial difference with the earlier environment of coercing firms is that now there is a single consolidated participation constraint at the country/government level, which aggregates the Micro Power across the two sectors to Micro Power $\bar{\Pi}_{1h} + \bar{\Pi}_{2h}$ over the government. Note that we have assumed that a government does not face a domestic participation constraint with respect to its own

firms. It can freely impose the wedges τ_s without the ability of its domestic firms to reject them. In practice, this is a convenient theoretical abstraction to capture the notion that governments have many direct powers over their domestic firms compared to foreign ones. For example, they can tax or regulate the firms directly. The hegemon, by contrast, has limited (in fact no) direct powers over foreign entities and has to resort to coercion in order to induce them to change behavior, of course, particularly in western democracies, there are a number of legal and political economy constraints even in the domestic context as argued by [Clayton et al. \(2025b\)](#). We conjecture that much of the economics highlighted here would go through in a (substantially) more complex set-up with a foreign hegemon facing tighter participation constraints than a domestic government over its own firms.

Hegemon Maximization Problem. The hegemon chooses its contract to maximize its utility (equation 3) subject to the government of s 's participation constraint (equation 4) and to the equilibrium condition $x_{2a}^h = x_{2a}^*$.

3 Equilibrium Outcomes

In this section, we characterize the equilibrium outcomes in the two environments, and contrast the forces at play in the two. In Section 4, we use these results to analyze whether the hegemon is better off coercing firms or coercing the government.

3.1 Equilibrium when Coercing Firms

We characterize the outcome in the environment in which the hegemon coerces firms in the End. It is immediate that the optimal contract offered to sector 1 extracts the full profits of sector 1 as a required transfer, that is $T_{h,1} = \bar{\Pi}_{1h}$. The sector of interest, instead, is sector 2. To build intuition, we can rewrite sector 2's participation constraint (equation 2, using $x_{2a}^* = x_{2a}^h$) as

$$T_{h,2} + \underbrace{\left(\bar{\Pi}_{2a} - (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h \right)}_{\text{Demand for Activity Change}} \leq \underbrace{\bar{\Pi}_{2h}}_{\text{Direct Power from Threat}} + \underbrace{\left(A_{2a}(\bar{x}_{2a}) - A_{2a}(x_{2a}^h) \right) \bar{x}_{2a}}_{\text{Uninternalized Externality (Macro Power)}} . \quad (5)$$

The left hand side of the participation constraint specifies the two uses of power for costly actions: demands for transfers and demands for reductions in use of good a . We have rewritten the costs of demands for changes in activities to be at the sector level, that is from moving from equilibrium use $\bar{x}_{2a}$ to equilibrium use x_{2a}^h , accounting for the change in productivity.

The right hand side captures the two sources of power for the hegemon. The first is the direct power of the economic threat, which comes from the threat of losing access to good h . The second term is a manifestation of the hegemon's Macro Power, and comes from the failure of infinitesimal

firms to internalize the externality operating through the sectoral external economy of scale. When each individual firm in sector 2 accepts the hegemon's demand for lower use x_{2a}^h of good a , that individual firm does not internalize that it is also lowering the equilibrium productivity $A_{2a}(x_{2a}^*)$ of producing using good a . Since firms in sector 2 would operate at full scale at the outside option, their use of a is higher at the outside option than at the inside option. This means that the lower equilibrium productivity reduces firms' outside options relative to their inside options. The hegemon leverages its Macro Power to build its power over all firms in sector 2.

Because $\delta > A_{2a}(\bar{x}_{2a}) - p_a$, the hegemon always prefers to reduce its demanded transfer by $A_{2a}(\bar{x}_{2a}) - p_a$ if it can deter a marginal unit of production using good a by doing so. This implies that the hegemon's optimum is to demand $x_{2a}^h = 0$ if this outcome is implementable. This outcome must satisfy the participation constraint, that is the hegemon must have enough power to do so. In the case it does, the hegemon then uses any remaining power it has over sector 2 to extract transfers. On the other hand, if the hegemon does not have enough power to fully shut down production using a , the hegemon instead uses its power to shut down as much of the usage of a as possible, while foregoing the transfers. The following proposition formalizes this outcome.

Proposition 1 *The hegemon's optimal contract offered to sector 2 is*

1. If $\bar{\Pi}_{2a} \leq \bar{\Pi}_{2h} + (A_{2a}(\bar{x}_{2a}) - A_{2a}(0))\bar{x}_{2a}$, then the hegemon demands $x_{2a}^h = 0$ and a transfer payment $T_{h,2} = \bar{\Pi}_{2h} + \left(A_{2a}(\bar{x}_{2a}) - A_{2a}(0) \right) \bar{x}_{2a} - \bar{\Pi}_{2a}$.
2. If $\bar{\Pi}_{2a} > \bar{\Pi}_{2h} + (A_{2a}(\bar{x}_{2a}) - A_{2a}(0))\bar{x}_{2a}$, then the hegemon demands the lowest x_{2a}^h so that the participation constraint binds,

$$\bar{\Pi}_{2a} - (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h = \bar{\Pi}_{2h} + \left(A_{2a}(\bar{x}_{2a}) - A_{2a}(x_{2a}^h) \right) \bar{x}_{2a}$$

and does not demand a transfer payment, $T_{h,2} = 0$.

An important implication of Proposition 1 is that if the hegemon's Micro Power over sector 2 is limited and the hegemon is unable to fully shut down production using good a , then the hegemon's marginal value of power differs across sectors 1 and 2.⁵ In particular, the marginal value of Micro Power over sector 1 is equal to the marginal transfer received, that is it is equal to 1. However, the marginal value of Micro Power over sector 2 is equal to the value in the marginal reduction in use of a by that sector that can be achieved, which is greater than one because $\delta > A_{2a}(\bar{x}_{2a}) - p_a$. One way to think of this is that the hegemon would benefit from a shift in profitability whereby sector 2's profits increased to $\bar{\Pi}_{2h} + \epsilon$ while sector 1's profits decreased to $\bar{\Pi}_{1h} - \epsilon$, which would allow the hegemon to depress sector 2's use of a at the cost of a lower transfer from sector 1.

⁵Following Clayton et al. (2026a), Micro Power is the maximum slack in a firm's participation constraint that can be generated if the hegemon demands no costly actions of that firm. It represents the amount of slack the hegemon has available to draw down through demands for costly actions. The argument that follows assumes that $(A_{2a}(x_{2a}^h) - p_a)(x_{2a}^h - \bar{x}_{2a})$ is strictly increasing local to the optimum.

The observation that the marginal values of Micro Power over the two sectors differ implies that the hegemon would benefit from the ability to share its power across the two sectors, that is to use its economic threat against sector 1 in order to demand costly actions of sector 2. More generally, this difference in marginal values of Micro Power is reflected by the fact that the hegemon's Lagrange multipliers on the two sectors' participation constraints are not the same. In particular, the hegemon's Lagrange multiplier on the participation constraint of sector 2 is larger. The hegemon would benefit from redistributing slack in the participation constraint of sector 1 to create slack in the participation constraint of sector 2. The environment we study in the next section, in which the hegemon coerces the government of s , enables exactly this type of slack sharing.

3.2 Equilibrium when Coercing the Government

We next characterize the outcome of the environment in which the hegemon coerces the government of s in the Beginning. To build intuition, paralleling equation 5 we can rewrite the participation constraint (equation 4) of the government as

$$T_{h,2} + \underbrace{\left(\bar{\Pi}_{2a} - (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h \right)}_{\text{Demand for Activity Change}} \leq \bar{\Pi}_{2h} + \underbrace{\bar{\Pi}_{1h} - T_{h,1}}_{\text{Slack from Sector 1}}. \quad (6)$$

The left hand side is the same uses of power over sector 2 as in equation 5. The first term on the right hand side – the direct power coming from the threat to suspend sales of h to sector 2 – is also the same as the first term on the right hand side of equation 5. The key difference, however, is the final term on the right hand side. Because the government of s is a large player that internalizes the equilibrium productivity $A_{2a}(x_{2a}^*) = A_{2a}(x_{2a}^h)$, the hegemon is no longer able to build power by playing firms in sector 2 off against each other. That is, the government of s internalizes that if it rejects the contract, then it can operate at full capacity using good a , and as a result the equilibrium productivity would increase. Equivalently, the government of s internalizes that the demand x_{2a}^h for lower use of a also reduces equilibrium productivity. Instead, the hegemon gains the ability to demand costly actions involving sector 2 through *slack sharing* across the two sectors. That is, if the hegemon were to reduce its demanded transfer $T_{h,1}$, it would create positive profits net of transfers for sector 1. The hegemon's economic threat to the government of s takes away these profits if the government of s rejects the hegemon's contract. This creates slack in the government's participation constraint that the hegemon can use to demand that the government of s lower sector 2's use of good a . This consolidation of the hegemon's power across the two sectors allows the hegemon to use its power more efficiently, demanding costly actions from the sector from which those costly actions are most valuable to the hegemon.

As in Proposition 1, the hegemon's optimum is again to eliminate sector 2's use of good a if this outcome satisfies the government of s 's participation constraint, and to use any residual power to demand transfers. If the hegemon's power is limited, it instead uses all of its power to reduce

sector 2's use of a by as much as possible. The following proposition formalizes this outcome.

Proposition 2 *The hegemon's optimal contract offered to government s is*

1. *If $\bar{\Pi}_{2a} \leq \bar{\Pi}_{2h} + \bar{\Pi}_{1h}$, then the hegemon demands $x_{2a}^h = 0$ and total transfers $T_{h,1} + T_{h,2} = \bar{\Pi}_{2h} + \bar{\Pi}_{1h} - \bar{\Pi}_{2a}$.*
2. *If $\bar{\Pi}_{2a} > \bar{\Pi}_{2h} + \bar{\Pi}_{1h}$, then the hegemon demands the lowest x_{2a}^h so that the participation constraint binds,*

$$(A_{2a}(x_{2a}^h) - p_a)x_{2a}^h = \bar{\Pi}_{2a} - (\bar{\Pi}_{2h} + \bar{\Pi}_{1h})$$

and does not demand transfer payments, $T_{h,1} = T_{h,2} = 0$.

In contrast to the case of coercing firms (Section 3.1) in which the hegemon could face different marginal values of Micro Power over the two sectors, here the hegemon has a single marginal value of Micro Power over the entire country. As a result, the hegemon is indifferent as to whether it obtains an equal-sized increase in its Micro Power coming from profitability of sector 1 ($\uparrow \bar{\Pi}_{1h}$) or profitability of sector 2 ($\uparrow \bar{\Pi}_{2h}$). This consolidation of power at the country level manifests in a more efficient use of that power: either the hegemon collects transfers if it achieves $x_{2a}^h = 0$, or it collects no transfers from either sector. This contrasts with the case of coercing firms, in which different marginal values of Micro Power over the two sectors arose precisely when the hegemon could only collect transfers from sector 1 but was unable to achieve $x_{2a}^h = 0$. This ability to share slack and so leverage Micro Power most effectively is the key value to the hegemon from being able to pressure the government in this model.

Our mechanism of coercing the government in order to consolidate participation constraints and hence share slack relates in particular to the literature on multimarket contact (Bernheim and Whinston (1990)), in which the threat of inducing competition across multiple markets enables firms to sustain collusion. In this setting, slack is shared in incentive constraints as the threat of reverting to competition in other markets sustains collusion within each market. Our mechanism of targeting the government shares this feature of slack sharing, but also comes with the ability of the government to internalize a greater set of externalities compared with infinitesimal firms. The hegemon has to trade off the ability to share slack against the cost of dealing with a larger player in deciding whether to coerce firms or the government. In the next section, we provide a stylized analysis of under what conditions the hegemon prefers to target firms or the government.

4 Choosing Between Coercing Firms or the Government

In the previous section, we described how the hegemon's incentives and optimal contract differ depending on whether the hegemon coerces firms in the End or the government in the Beginning. In this section, we study whether the hegemon is better off targeting firms or the government.

We obtain sharp results and comparative statics by focusing on a simple parametrization of the external economy of scale. Formally, we assume that the external economy of scale only manifests when sector 2 operates at full capacity using good a , that is

$$A_{2a}(x_{2a}^*) = \begin{cases} \bar{A}, & x_{2a}^* = \bar{x}_{2a} \\ \underline{A}, & x_{2a}^* < \bar{x}_{2a} \end{cases},$$

for $0 < \underline{A} - p_a < \bar{A} - p_a < \delta$. This assumption allows us to obtain simple closed-form solutions for the hegemon's optimal contract and welfare.⁶

If the hegemon coerces firms (Section 3.1), then we can use the equilibrium contract derived in Proposition 1 to obtain the hegemon's welfare (equation 3), which is given by

$$U_h = p_h e_h + \begin{cases} \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - (\underline{A} - p_a)\bar{x}_{2a}, & \bar{\Pi}_{2h} \geq (\underline{A} - p_a)\bar{x}_{2a} \\ \bar{\Pi}_{1h} - \delta \left(\bar{x}_{2a} - \frac{1}{\underline{A} - p_a} \bar{\Pi}_{2h} \right), & \bar{\Pi}_{2h} < (\underline{A} - p_a)\bar{x}_{2a} \end{cases}$$

If sector 2's profits $\bar{\Pi}_{2h}$ from using the hegemon's good h are sufficiently high, then the hegemon has enough power to demand that sector 2 abandon use of a . In this case, the hegemon's welfare (above and beyond sales of its endowment) is equal to the transfers collected from both sectors. On the other hand, when the hegemon does not have enough power over sector 2, it collects a transfer $\bar{\Pi}_{1h}$ from sector 1, but also faces a welfare loss proportional to the amount x_{2a}^h that sector 2 is able to maintain in use of good a .

If instead the hegemon coerces the government, then substituting the equilibrium contract into the hegemon's welfare (equation 3), we have

$$U_h = p_h e_h + \begin{cases} \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \bar{\Pi}_{2a}, & \bar{\Pi}_{2h} \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \\ -\delta \frac{\bar{\Pi}_{2a} - \bar{\Pi}_{1h} - \bar{\Pi}_{2h}}{\underline{A} - p_a}, & \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \leq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} \leq \bar{\Pi}_{2a} \\ \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \delta \bar{x}_{2a}, & \bar{\Pi}_{1h} + \bar{\Pi}_{2h} < \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \end{cases}.$$

The hegemon's welfare is divided into the three regions: (i) at high profits $\bar{\Pi}_{2h}$, in which the hegemon's welfare is the transfers collected; (ii) at intermediate profits $\bar{\Pi}_{2h}$, in which the hegemon's welfare is the loss from sector 2's production using x_{2a}^h ; (iii) at low profits $\bar{\Pi}_{2h}$, in which the hegemon only demands transfers and does not depress use of a at all.⁷

To begin building intuition for the welfare comparison, if $\bar{\Pi}_{2h}$ is very large, then the hegemon can already achieve zero use of a by sector 2 with the power it has over that sector. As a result, the marginal value of Micro Power is equal across the two sectors, and there is no value to slack sharing. Accordingly, the hegemon's ability to leverage its Macro Power should lead the hegemon to prefer

⁶Because this parameterization of the external economy of scale results in an upward jump in $(A_{2a}(x_{2a}) - \delta)x_{2a}$ at $x_{2a} = \bar{x}_{2a}$, we rederive the characterization of the optimal contract of Proposition 2 for this function in the proof of Proposition 3.

⁷The third region exists because of the upward jump in A_{2a} at $\bar{x}_{2a}$.

coercing firms to coercing the government. On the other hand, if $\bar{\Pi}_{2h}$ is small but $\bar{\Pi}_{1h}$ is large, then marginal values of Micro Power are not equal across the two sectors, and there is potentially a large amount of slack that can be shared. In this case, the hegemon should benefit from sharing slack by coercing the government. The following proposition formalizes these intuitions, and provides comparative statics.

Proposition 3 *The hegemon prefers to coerce firms rather than coerce the government iff $(\bar{\Pi}_{1h}, \bar{\Pi}_{2h}) \in \Pi_h^f$, where the following hold:*

1. *The hegemon prefers to coerce firms when sector 1 has lower profits from using h or sector 2 has higher profits from using h ; that is, if $\bar{\Pi}_h \in \Pi_h^f$, $\bar{\Pi}'_{1h} \leq \bar{\Pi}_{1h}$, and $\bar{\Pi}'_{2h} \geq \bar{\Pi}_{2h}$, then $\bar{\Pi}'_h \in \Pi_h^f$.*
2. *The hegemon prefers to coerce firms when the externality from a is smaller; that is, if $\delta' \leq \delta$, then $\Pi_h^f(\delta) \subset \Pi_h^f(\delta')$.*
3. *The hegemon prefers to coerce firms when the external economy of scale is larger; that is, if $\bar{A} \leq \bar{A}'$, then $\Pi_h^f(\bar{A}) \subset \Pi_h^f(\bar{A}')$.*

Proposition 3 formalizes the intuition that the hegemon prefers to coerce firms when either the total value of slack sharing is small or when there is not a large amount of slack that can be shared. In particular, the hegemon prefers to coerce firms when the profits $\bar{\Pi}_{2h}$ are relatively high (i.e., the value of sharing slack is relatively low), or the profits $\bar{\Pi}_{1h}$ are relatively low (i.e., the amount of slack available to share is relatively low).

Proposition 3 also reveals intuitive comparative statics on the size of the region over which the hegemon prefers to coerce firms. First, as the externality δ from use of a on the hegemon's welfare becomes larger, it becomes more valuable to the hegemon to share slack across sectors so as to be able to suppress purchases of good a by sector 2. Accordingly, the hegemon's region of preference to coerce the government expands.

Second, as the external economy of scale $\bar{A}$ becomes larger, the value to the hegemon of leveraging its Macro Power, playing firms in sector 2 off against each other, increases. The hegemon is more willing to forego slack sharing in order to capitalize on this uninternalized externality. As a result, the hegemon's region of preference to coerce firms expands.

5 Extensions and Directions for Future Work

Limited Government Instruments and Political Economy. It would be interesting to consider how limited government instruments for intervention on domestic firms influence the hegemon's choice of target. For example, incomplete instruments might arise due to domestic

political economy problems or implementation frictions.⁸ For example, the government might have to employ relatively blunt instruments that imperfectly target the firms or activities associated with the externalities the hegemon is trying to target. We conjecture that incomplete government instruments could incentivize the hegemon to prefer to coerce firms, since the benefits of slack sharing would be muted by the less targeted use of that slack.

Types of Externalities. Our model features a positive externality from the external economy of scale combined with a negative externality on the hegemon. This motivates the hegemon to use its power to downscale use of a , which also worsens the outside options of firms and induces the hegemon’s power building motive (a manifestation of its Macro Power). The structure of the externality matters for the hegemon’s tradeoff. For example, if sector 2 faced an external *diseconomy* of scale instead, the sector would become less productive as it produced more. This would mean that as the hegemon reduced the sector’s utilization of the alternative good, its attractiveness would increase, and firms’ incentives to reject the hegemon’s contract would actually increase as their outside options rose. The hegemon would actually lose power from the un-internalized externality, rather than build it.⁹ An important direction for future work is to analyze how the desired targets of coercion depends on the nature and structure of externalities.

Bargaining Coalitions of Countries. Although our model features a hegemon choosing between coercing firms or a government, the mechanisms of this paper are more broadly about whether the hegemon would prefer to bilaterally coerce the individual members of a coalition, or coerce the coalition as a collective unit. For example, we might reinterpret firms in our model as small open economies (e.g., individual countries in Europe), and the government as a coalition of these countries (e.g., the European Union) that maximizes a utilitarian welfare criterion. It is important for the literature to develop theories of coalitions on both the offensive and defensive side, and to think about how the scope of these coalitions affects the outcome both through the scope of externalities internalized and through the aggregation of power.

Threatening Both Firms and the Government. Our paper takes as given that the hegemon faced a discrete choice between coercing firms or coercing the government. In practice, hegemonic countries adopt a mixture of both. It would be interesting to investigate how a hegemon should choose its targets of coercion when it has more flexible options, and when it can be desirable to stick to one target versus employ a mixture of threats against both firms and the government of the same country.

⁸The model could incorporate exogenous incompleteness or could incorporate formal models of indirect control (Padró I Miquel and Yared (2012)) or lobbying. Clayton et al. (2025b) provides further discussion on incorporating political economy considerations into geoeconomics models.

⁹This also relates to the work of Horn and Wolinsky (1988), who analyze how upstream firms merging as a bargaining unit can actually reduce the unit’s bargaining power depending on the structure of externalities across the two suppliers.

6 Conclusion

We highlight a simple tradeoff to a hegemon that is considering whether to target firms or governments in leveraging an economic threat. Targeting firms allows the hegemon to leverage its Macro Power, playing firms off against one another through equilibrium spillovers. Targeting governments allows the hegemon to aggregate its power at the country level, and leverage power over one party to induce the government to change the behavior of an unrelated party. Future work should develop richer models and empirical analyses to study what parties a hegemon should target threats to in what circumstances.

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ONLINE APPENDIX FOR
“THE TARGETS OF GEOECONOMIC COERCION”

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July 2026

A.1 Proofs

A.1.1 Proof of Proposition 1

The hegemon solves

$$\max_{T_{h,1}, T_{h,2}, x_{2a}^h} p_h e_h + T_{h,1} + T_{h,2} - \delta x_{2a}^*.$$

subject to

$$\begin{aligned} 0 &\leq \bar{\Pi}_{1h} - T_{h,1} \\ (A_{2a}(x_{2a}^*) - p_a)\bar{x}_{2a} &\leq \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^*) - p_a)x_{2a}^h - T_{h,2}. \\ x_{2a}^h &= x_{2a}^* \\ T_{h,1}, T_{h,2} &\geq 0 \end{aligned}$$

Note first that both participation constraints are relaxed by letting both sectors operate at capacity using good h , so that the hegemon indeed implements $x_{1h}^h = \bar{x}_{1h}$ and $x_{2h}^h = \bar{x}_{2h}$. Second, if either participation constraint did not bind, then the hegemon could increase the associated transfer and be strictly better off. Therefore, both participation constraints bind. We have therefore solved for the optimal contract vis-a-vis sector 1, $T_{h,1} = \bar{\Pi}_{1h} \geq 0$, and it remains only to solve for the optimal contract vis-a-vis sector 2. Here, substituting out for $T_{h,2}$ and using $x_{2a}^* = x_{2a}^h$, we have

$$\max_{x_{2a}^h} \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - (A_{2a}(x_{2a}^h) - p_a)\bar{x}_{2a} - \delta x_{2a}^h.$$

subject to

$$\bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - (A_{2a}(x_{2a}^h) - p_a)\bar{x}_{2a} \geq 0$$

Suppose, first, that transfer non-negativity constraint does not bind. Then since by assumption $\delta > A_{2a}(\bar{x}_{2a}) - p_a$ and A_{2a} is increasing, we have $x_{2a}^h = 0$ is optimal. This policy is implementable if transfer non-negativity indeed holds, that is

$$\bar{\Pi}_{2h} \geq (A_{2a}(0) - p_a)\bar{x}_{2a}$$

If instead $\bar{\Pi}_{2h} < (A_{2a}(0) - p_a)\bar{x}_{2a}$, then x_{2a}^h is defined as the smallest solution to

$$\bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - (A_{2a}(x_{2a}^h) - p_a)\bar{x}_{2a} = 0$$

A.1.2 Proof of Proposition 2

The hegemon solves

$$\max_{T_{h,1}, T_{h,2}, x_{2a}^h} p_h e_h + T_{h,1} + T_{h,2} - \delta x_{2a}^*.$$

subject to

$$\begin{aligned}\bar{\Pi}_{2a} &\leq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - T_{h,1} - T_{h,2} \\ x_{2a}^h &= x_{2a}^* \\ T_{h,1}, T_{h,2} &\geq 0\end{aligned}$$

As is the proof of Proposition 1, the participation constraint is relaxed by letting both sectors operate at capacity using good h , so that the hegemon indeed implements $x_{1h}^h = \bar{x}_{1h}$ and $x_{2h}^h = \bar{x}_{2h}$. Second, if the participation constraint did not bind, then the hegemon could increase its transfer (from either sector) and be strictly better off. Therefore, the participation constraints bind. Substituting out for $T_{h,1} + T_{h,2}$ and noting the distribution of transfers is irrelevant (as long as both are non-negative), we have using $x_{2a}^* = x_{2a}^h$ that

$$\max_{x_{2a}^h} \bar{\Pi}_{1h} + \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - \bar{\Pi}_{2a} - \delta x_{2a}^h.$$

subject to

$$\bar{\Pi}_{1h} + \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - \bar{\Pi}_{2a} \geq 0$$

Suppose, first, that transfer non-negativity constraint does not bind. Then since by assumption $\delta > A_{2a}(x_{2a}) + A'_{2a}(x_{2a})x_{2a} - p_a$, we have $x_{2a}^h = 0$ is optimal. This policy is implementable if transfer non-negativity indeed holds, that is

$$\bar{\Pi}_{2h} \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h}$$

If instead $\bar{\Pi}_{2h} < \bar{\Pi}_{2a} - \bar{\Pi}_{1h}$, then x_{2a}^h is defined as the solution to

$$\bar{\Pi}_{1h} + \bar{\Pi}_{2h} + (A_{2a}(x_{2a}^h) - p_a)x_{2a}^h - \bar{\Pi}_{2a} = 0$$

A.1.3 Proof of Proposition 3

The hegemon's welfare is given by

$$U_h = p_h e_h + T_{h,1} + T_{h,2} - \delta x_{2a}^h$$

where we used that $x_{2a}^h = x_{2a}^*$.

Welfare When Coercing Firms. When the hegemon coerces firms, we have from Proposition 1 that $T_{h,1} = \bar{\Pi}_{1h}$. Given the function form assumption, we have

$$x_{2a}^h = \begin{cases} 0, & \bar{\Pi}_{2h} \geq (\underline{A} - p_a)\bar{x}_{2a} \\ \bar{x}_{2a} - \frac{1}{\underline{A} - p_a}\bar{\Pi}_{2h}, & \bar{\Pi}_{2h} < (\underline{A} - p_a)\bar{x}_{2a} \end{cases}$$

so that the transfer from sector 2 is

$$T_{h,2} = \begin{cases} \bar{\Pi}_{2h} - (\underline{A} - p_a)\bar{x}_{2a}, & \bar{\Pi}_{2h} \geq (\underline{A} - p_a)\bar{x}_{2a} \\ 0, & \bar{\Pi}_{2h} < (\underline{A} - p_a)\bar{x}_{2a} \end{cases}$$

Therefore, the hegemon's welfare is

$$U_h = p_h e_h + \begin{cases} \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - (\underline{A} - p_a)\bar{x}_{2a}, & \bar{\Pi}_{2h} \geq (\underline{A} - p_a)\bar{x}_{2a} \\ \bar{\Pi}_{1h} - \delta \left(\bar{x}_{2a} - \frac{1}{\underline{A} - p_a} \bar{\Pi}_{2h} \right), & \bar{\Pi}_{2h} < (\underline{A} - p_a)\bar{x}_{2a} \end{cases}$$

Welfare When Coercing the Government. When the hegemon coerces the government, Proposition 2 applies conditional on the hegemon implementing $x_{2a}^h < \bar{x}$, but the upward jump in A_{2a} means we need to check whether the hegemon would prefer to implement $x_{2a}^h = \bar{x}_{2a}$ and only extract transfers. If the hegemon implements $x_{2a}^h = \bar{x}_{2a}$, then equilibrium transfers are $T_{h,1} + T_{h,2} = \bar{\Pi}_{1h} + \bar{\Pi}_{2h}$ and the hegemon's welfare is $U_h = p_h e_h + \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \delta \bar{x}_{2a}$. If the hegemon instead implements the lowest possible value $\tilde{x}_{2a}$ such that the participation constraint binds, then $\tilde{x}_{2a} = \frac{\bar{\Pi}_{2a} - (\bar{\Pi}_{1h} + \bar{\Pi}_{2h})}{\underline{A} - p_a}$. The hegemon prefers implementing this outcome over extracting transfers if $-\delta \tilde{x}_{2a} \geq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \delta \bar{x}_{2a}$, that is if $\bar{\Pi}_{1h} + \bar{\Pi}_{2h} \geq \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a}$. Therefore applying Proposition 2 above this boundary, we obtain that

$$x_{2a}^h = \begin{cases} 0, & \bar{\Pi}_{2h} \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \\ \frac{\bar{\Pi}_{2a} - \bar{\Pi}_{1h} - \bar{\Pi}_{2h}}{\underline{A} - p_a}, & \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \leq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} \leq \bar{\Pi}_{2a} \\ \bar{x}_{2a}, & \bar{\Pi}_{1h} + \bar{\Pi}_{2h} < \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \end{cases}$$

so that the total transfer is

$$T_{h,1} + T_{h,2} = \begin{cases} \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \bar{\Pi}_{2a}, & \bar{\Pi}_{2h} \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \\ 0, & \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \leq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} \leq \bar{\Pi}_{2a} \\ \bar{\Pi}_{1h} + \bar{\Pi}_{2h}, & \bar{\Pi}_{1h} + \bar{\Pi}_{2h} < \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \end{cases}$$

The hegemon's welfare is

$$U_h = p_h e_h + \begin{cases} \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \bar{\Pi}_{2a}, & \bar{\Pi}_{2h} \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \\ -\delta \frac{\bar{\Pi}_{2a} - \bar{\Pi}_{1h} - \bar{\Pi}_{2h}}{\underline{A} - p_a}, & \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \leq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} \leq \bar{\Pi}_{2a} \\ \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \delta \bar{x}_{2a}, & \bar{\Pi}_{1h} + \bar{\Pi}_{2h} < \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \end{cases}$$

Welfare Comparison: We now conduct the welfare comparison. by going through the cases.

Case 1: If $\bar{\Pi}_{2h} \geq (\underline{A} - p_a)\bar{x}_{2a}$, then because $(\underline{A} - p_a)\bar{x}_{2a} < \bar{\Pi}_{2a}$, the hegemon prefers to coerce firms.

Case 2: If $\bar{\Pi}_{2h} < (\underline{A} - p_a)\bar{x}_{2a}$, then we divide into subcases.

2(a). Suppose that $\bar{\Pi}_{2h} < \bar{\Pi}_{2a} - \bar{\Pi}_{1h}$, so that the hegemon is also constrained when it coerces the government. Consider first the intermediate region, in which the hegemon prefers to forego transfers when coercing the government. Then, the hegemon prefers to coerce firms if

$$\bar{\Pi}_{1h} - \delta \left(\bar{x}_{2a} - \frac{1}{\underline{A} - p_a} \bar{\Pi}_{2h} \right) \geq -\delta \frac{\bar{\Pi}_{2a} - \bar{\Pi}_{1h} - \bar{\Pi}_{2h}}{\underline{A} - p_a}$$

$$\bar{\Pi}_{1h} \leq \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a}$$

and otherwise prefers to coerce the government. If instead we are in the third region then the hegemon prefers to coerce firms since $\delta > \underline{A} - p_a$. Note that in the third region, the above condition

necessarily holds, so that the above condition summarizes the threshold for region 2(a).

2(b). Suppose that $\bar{\Pi}_{2h} \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h}$, so that the hegemon is unconstrained when it coerces the government. Then, the hegemon prefers to coerce firms if

$$\bar{\Pi}_{1h} - \delta \left(\bar{x}_{2a} - \frac{1}{\underline{A} - p_a} \bar{\Pi}_{2h} \right) \geq \bar{\Pi}_{1h} + \bar{\Pi}_{2h} - \bar{\Pi}_{2a}$$

$$\frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a} \leq \bar{\Pi}_{2h}$$

Note that since $\frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} < 1$, this region is potentially nonempty.

Summarizing. We therefore have a region of values $\bar{\Pi}_h = (\bar{\Pi}_{1h}, \bar{\Pi}_{2h}) \in \Pi_h^f$ such that the hegemon prefers to coerce firms if $\bar{\Pi}_h \in \Pi_h^f$. We can describe this region as

$$\Pi_h^f = \Pi_1^f \cup \Pi_{2a}^f \cup \Pi_{2b}^f$$

for

$$\Pi_1^f = \left\{ \bar{\Pi} \mid \bar{\Pi}_{2h} \geq (\underline{A} - p_a) \bar{x}_{2a} \right\}$$

$$\Pi_{2a}^f = \left\{ \bar{\Pi} \mid \bar{\Pi}_{2h} \leq \min \left\{ (\underline{A} - p_a) \bar{x}_{2a}, \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \right\}, \bar{\Pi}_{1h} \leq \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \right\}$$

$$\Pi_{2b}^f = \left\{ \bar{\Pi} \mid \max \left\{ \frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a}, \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \right\} \leq \bar{\Pi}_{2h} \leq (\underline{A} - p_a) \bar{x}_{2a} \right\}$$

We can now prove each part of the proposition.

A.1.3.1 Proof of Part (1)

Let $\bar{\Pi}_h, \bar{\Pi}_h'$ satisfy $\bar{\Pi}_h \in \Pi_h^f$, $\bar{\Pi}_{2h} \leq \bar{\Pi}_{2h}'$, and $\bar{\Pi}_{1h} \geq \bar{\Pi}_{1h}'$. We aim to show that $\bar{\Pi}_h' \in \Pi_h^f$. We break it into cases.

Case of $\bar{\Pi}_h \in \Pi_1^f$. Then $\bar{\Pi}_h' \in \Pi_1^f \subset \Pi_h^f$.

Case of $\bar{\Pi}_h \in \Pi_{2a}^f$. First if $\bar{\Pi}_{2h}'$ is in case 2(a), then $\bar{\Pi}_{1h}' \leq \bar{\Pi}_{1h} \leq \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a}$ and so $\bar{\Pi}_h' \in \Pi_{2a}^f \subset \Pi_h^f$.

If instead $\bar{\Pi}_{2h}'$ is in Case 2(b), then

$$\bar{\Pi}_{2h}' \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h}' \geq \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \geq \bar{\Pi}_{2a} - \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} = \frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a}$$

and so $\bar{\Pi}_h' \in \Pi_{2b}^f \subset \Pi_h^f$.

Case of $\bar{\Pi}_h \in \Pi_{2b}^f$. If $\bar{\Pi}_h'$ is in case 2(b), then

$$\frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a} \leq \bar{\Pi}_{2h} \leq \bar{\Pi}_{2h}'$$

and so $\bar{\Pi}'_h \in \Pi_{2b}^f \subset \Pi_h^f$.

If instead $\bar{\Pi}'_h$ is in case 2(a), then

$$\bar{\Pi}'_{1h} \leq \bar{\Pi}_{2a} - \bar{\Pi}'_{2h} \leq \bar{\Pi}_{2a} - \bar{\Pi}_{2h} \leq \bar{\Pi}_{2a} - \frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)}(\underline{A} - p_a)\bar{x}_{2a} = \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)}\bar{x}_{2a}$$

and so $\bar{\Pi}'_h \in \Pi_{2a}^f \subset \Pi_h^f$.

In sum, $\bar{\Pi}'_h \in \Pi_h^f$.

A.1.3.2 Proof of Part (2) (Comparative Static in δ)

Let $\delta' \leq \delta$. First, we have $\Pi_1^f(\delta') = \Pi_1^f(\delta)$.

Second, we have

$$\frac{\partial}{\partial \delta} \left[\delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \right] = \frac{-(\underline{A} - p_a)}{\left(\delta - (\underline{A} - p_a) \right)^2} (\bar{A} - \underline{A}) \bar{x}_{2a} < 0$$

and therefore $\Pi_{2a}^f(\delta) \subset \Pi_{2a}^f(\delta')$.

Finally, we have

$$\frac{\partial}{\partial \delta} \left[\frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a} \right] = \frac{\bar{A} - \underline{A}}{\left(\delta - (\underline{A} - p_a) \right)^2} (\underline{A} - p_a) \bar{x}_{2a} > 0$$

and therefore $\Pi_{2b}^f(\delta) \subset \Pi_{2b}^f(\delta')$.

Therefore since $\Pi_1^f(\delta') = \Pi_1^f(\delta)$, $\Pi_{2a}^f(\delta) \subset \Pi_{2a}^f(\delta')$, and $\Pi_{2b}^f(\delta) \subset \Pi_{2b}^f(\delta')$, we have $\Pi_h^f(\delta) \subset \Pi_h^f(\delta')$.

A.1.3.3 Proof of Part (3) (Comparative Static in $\bar{A}$)

Let $\bar{A} \leq \bar{A}'$. Consider a point $\bar{\Pi}_h \in \Pi_h^f(\bar{A})$.

First since $\Pi_1^f(\bar{A}) = \Pi_1^f(\bar{A}')$, if $\bar{\Pi}_h \in \Pi_1^f(\bar{A})$ then $\bar{\Pi}_h \in \Pi_1^f(\bar{A}')$.

Second, suppose $\bar{\Pi}_h \in \Pi_{2a}^f(\bar{A})$. Then,

$$\bar{\Pi}_{2h} \leq \min \left\{ (\underline{A} - p_a) \bar{x}_{2a}, \bar{\Pi}_{2a} - \bar{\Pi}_{1h} \right\} \leq \min \left\{ (\underline{A} - p_a) \bar{x}_{2a}, \bar{\Pi}'_{2a} - \bar{\Pi}_{1h} \right\}$$

$$\bar{\Pi}_{1h} \leq \delta \frac{\bar{A} - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a} \leq \delta \frac{\bar{A}' - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a}$$

and therefore $\bar{\Pi}_h \in \Pi_{2a}^f(\bar{A}')$.

Finally, suppose $\bar{\Pi}_h \in \Pi_{2b}^f(\bar{A})$. Here there are two cases.

First if $\bar{\Pi}'_{2a} - \bar{\Pi}_{1h} \leq \bar{\Pi}_{2h}$, then $\frac{\delta - (\bar{A}' - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a} \leq \frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a} \leq \bar{\Pi}_{2h}$ and therefore $\bar{\Pi}_h \in \Pi_{2b}^f(\bar{A}')$.

If instead $\bar{\Pi}_{2h} < \bar{\Pi}'_{2a} - \bar{\Pi}_{1h}$, then since $\bar{\Pi}_h \in \Pi_{2b}^f(\bar{A})$

$$\bar{\Pi}_{2h} \geq \frac{\delta - (\bar{A} - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a} \geq \frac{\delta - (\bar{A}' - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a}.$$

Therefore

$$\bar{\Pi}_{1h} < \bar{\Pi}'_{2a} - \bar{\Pi}_{2h} \leq \bar{\Pi}'_{2a} - \frac{\delta - (\bar{A}' - p_a)}{\delta - (\underline{A} - p_a)} (\underline{A} - p_a) \bar{x}_{2a} \leq \delta \frac{\bar{A}' - \underline{A}}{\delta - (\underline{A} - p_a)} \bar{x}_{2a},$$

and therefore $\bar{\Pi}_h \in \Pi_{2a}^f(\bar{A}')$.

In sum, if $\bar{\Pi}_h \in \Pi_h^f(\bar{A})$, then $\bar{\Pi}_h \in \Pi_h^f(\bar{A}')$, and therefore $\Pi_h^f(\bar{A}) \subset \Pi_h^f(\bar{A}')$.