The Globalization Origins of Autocratic Rise: Engaged Reformers, Autocratic Advantages, and the Post-Cold War Reversal

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Abstract Autocracies have resurged economically, challenging the prevailing view that inclusive institutions would favor growth (e.g., Acemoglu et al. 2001). How can this happen? I document autocratic rise – unlike the pre-1990 period, autocracy is correlated with better economic performance especially in trade, a key contributor to fiscal and developmental success. However, autocracy isn't inherently superior. I examine two major trade-enhancing historical transformations of globalization that met the *scope condition* for autocratic advantages in competing for *external* demand despite weak domestic consumption: (1) trade integration, particularly the expansion of WTO membership, and (2) domestic economic reform. Accordingly, I show that more authoritarian regime type leads to disproportionate benefit from both. Yet, the gains are contingent on the degrees of institutional reforms and trade engagement, respectively. Put differently, "engaged reformers" – representing over 90% of autocracies' GDP and extending beyond China and oil states – outperform. I provide robust evidence combined with sectoral patterns, mechanism analysis, and qualitative cases. The findings provide a novel explanation for the unexpected autocratic rise, while suggesting the limits of autocracy itself.

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1 Introduction

Globalization markedly accelerated its pace after the Cold War (Baldwin 2016; Rodrik 2012).[1] Among many historical transformations are global trade and finance integration and economic policy convergence (Simmons and Elkins 2004), accompanied by the optimism that economic liberalism advances democracy (Fukuyama 1989; Ikenberry 2001).

Yet, the once promising democratization has stalled (shaded area in Figure 1), and scholars are puzzled about both democratic backsliding and stable, often competitive autocracies (Diamond 2015; Ekiert and Dasanaike 2024; Haggard and Kaufman 2016).[2] Democratic backsliding is partially linked to globalization (Autor et al. 2020; Inglehart and Norris 2017; Rodrik 2017), which witnesses "autocratic rise" – many autocracies survived and reconsolidated, and in many cases, have outpaced that of democracies (Figure 1, also Section 2 for more details).[3]

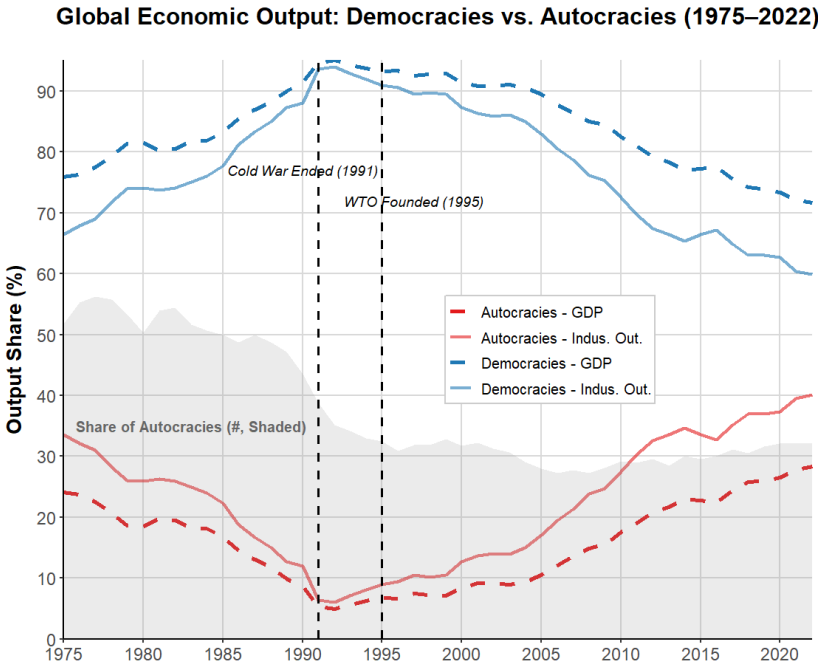

Figure 1: The Distribution of Production Between Democracies and Autocracies (World Bank). *Note*: I use a conservative measure for Autocracy (Freedom House (FH) Index $\geq$ 10), with similar patterns for using Polity V or excluding China plotted in Appendix A.5. In 2020, China accounts for 62% of autocracies' GDP. Shaded area indicates the proportion of the number of autocracies.

[1] This paper focuses on contemporary globalization since 1990, not those pre-1990 or pre-WWI.

[2] Some scholars call for "defining research programs" to understand this issue (Drezner 2022).

[3] Notably, many are competitive on th e export market. In 2022, the largest trade surplus countries were: China, Russia, and Saudi Arabia. See more in Figure A.5 and Section 2. Autocracies' share may be higher, since many run external surpluses implying currency devaluation (Figure A.5), although some doubts their growth rates (Martinez 2021). Yet, trade data is more accurate as recorded by trading partners.

Is the autocratic rise merely coincidental with globalization?[4] Despite globalization's varied merits, it begets increased controversies, with trade at the center (Stiglitz 2018). Numerous studies that examine the relationship between globalization and democratization or domestic politics (Autor et al. 2020; Milner and Mukherjee 2009; Rodrik 2012, Steinberg and Malhotra 2014) offer no answer. Traditional literature on regime type and economic performance provides mixed evidence (Acemoglu et al. 2005; Barro 1996; Chandra and Rudra 2015; Olson 1993; Przeworski et al. 2000) or no comparison (Acemoglu et al. 2019); importantly, this literature primarily focuses on domestic mechanisms without much attention to external factors – globalization that dramatically reshapes global and domestic economies.

This paper contributes to the literature by attempting to assess the historical role of globalization in autocratic rise. The Cold War era featured constrained economic exchange and regional blocs, when most developing countries, authoritarian or democratic, either were closed or practiced state-planned, inward-oriented policies such as import substitution industrialization (ISI), maintaining "trade skepticism" and eventually struggling with stagnation or crisis in the 1980/90s (Sachs and Warner 1995).[5] However, globalization changed the game – many soon embraced market-oriented reforms and outward-looking practices, and more importantly, were engaged by the West-led institutions such as the Bretton Woods ones, which strengthened their credibility, reform progress, and access to markets, capital, technology, global production networks, and idea and policy diffusion (Arias et al. 2018; Baccini and Urpelainen 2015; Baldwin 2016; Hafner-Burton and Schneider 2019). This is vital for autocracies with their non-inclusive political institutions undermining commitment credibility and internal demand (Acemoglu and Robinson 2012, see Appendix correlation).

Against this backdrop, I argue that autocratic rise is largely attributed to a special set of (more) authoritarian regime types – those that are economically *both* engaged and reformed, or "engaged reformers." Satisfying this scope condition, moreover, enables "autocratic advantages" defined as greater institutional and non-institutional advantages than their "democratic counterfactual" – to (at least) compete for *external* demand through trade, potentially extending to growth and innovation.[6] Hence, I focus on trade performance, which is closely related to globalization. Studies find that exports drive growth in income, productivity, and innovation (Bernard et al. 2018; Helpman and Krugman 1985), while external balances are linked to development and global demand distri-

[4] Although the puzzle here is about autocracy defined as a specific range of states (e.g., Polity ≤ 0 in Acemoglu et al. 2019), my theory and empirical evidence apply to regime type being continuum, dichotomy, or trichotomy.

[5] Except for some, e.g., export-oriented Asian countries and Chile, which closely align with my theory.

[6] E.g., China and Singapore.

bution.[7] Long-run export growth and external balances (1992-2015) are strongly correlated with growth ($r = 0.74$ and 0.65, respectively).[8]

Consider several examples among others:[9] Asian "economic miracles," Qatar and the UAE, post-Soviet Azerbaijan and Russia, Ben Ali's Tunisia and dos Santos's Angola, and even, arguably, Modi's India. They differ from traditionally repression-centric, economically isolated autocracies (e.g., Mao, Saddam Hussein), or "Autocracy 1.0" (Lind 2025; Yang 2024). Instead, "Autocracy 2.0" are those who emulated democracies' economic institutions while remaining politically authoritarian. Almost all these cases greatly owe their success to external demand.[10] By 2000, most post-communist countries reoriented trade to Western markets for growth (Åslund 2012) whereas China heavily depended on exports (Feenstra and Wei 2010). Albeit resource-rich, Qatar and the UAE took off only after the 1990s, actively leveraging WTO membership and heavy investments in industry and infrastructure – along with Angola to a lesser extent. Tunisia, under Ben Ali, prioritized export-led manufacturing and was the first in Africa to sign the Association Agreement with the EU, tripling exports before stagnation when democratized.

The concept of "autocratic advantage" is not new (Becker 2010; Easterly 2011), which nonetheless has been increasingly revisited recently such as willingness to sign agreements (Arias et al. 2018) or economic resilience (Lipscy 2018). Yet it lacks systematic theorization (i.e., mechanisms and scope conditions) explaining autocratic rise. Institutional characteristics affect trade patterns (Antràs 2015), even within democracies (Hall and Soskice 2001). Building on the rich literature of international economics and comparative politics combined with political economy and trade models, I argue that multiple conventionally inferior autocratic features in a closed economy, such as centralized power or weaker *ex ante* or *ex post* institutional constraints, can become advantageous in open-and-reform scenarios. This is because globalized economy shifts the development logic outward (rather than, for example, relying on ISI or domestic markets/factors) and importantly, provides

[7] External balances include current account balance and trade balance. While short-run or bilateral fluctuations hardly matter, persistent, aggregate external imbalances signal structural issues (See "global imbalances" in (Blanchard and Milesi-Ferretti 2009; Obstfeld and Rogoff 2009)) and reflect the redistribution of *global* demand (Chinn and Ito 2021), implying a spillover impact.

[8] Author's calculations based on the WDI data.

[9] Apart from dozens in East/Southeast Asia, East Europe, and the Gulf region, other notable authoritarian successes to varied degrees include: Pinochet's Chile (1980/90s); Franco's Spain (1959–74); Junta's Brazil (1968-1973); Salazar's Portugal (1950/60s); PRI's Mexico (1950s-80s); Fujimori's Peru (1993–99); dos Santos' Angola (2002–2012); Ben Ali's Tunisia (1990–2010); Kagame's Rwanda (2000–19); Botswana (1966–1980); Zenawi's Ethiopia (2004–12); Obiang's Equatorial Guinea (1996–2008); Mubarak's Egypt (1990s–05); Mohammad's Morocco (1999–08). See Table A.1 for details.

[10] Before 1990, some inward-oriented autocracies such as the USSR or Brazil had short-lived success, which also wasn't significantly better than contemporary democracies.

ample room for state to affect trade. As such, despite weak internal demand, given reformed institutions and international engagement shaping credibility, authoritarian institutions are less costly and more likely to form export competitiveness, constructed by channels active (e.g., industrial and export support, firm incentive provision, or institutional controlling on currency or capital) or passive (e.g., weak union/wage protection, limited public accountability, or low redistribution), as a substitute for inclusive political reforms, thereby reconciling observation with conventional wisdom (Acemoglu et al. 2001; North and Weingast 1989). For example, wage and welfare suppression only weakens domestic consumption unless the resulted cost competitiveness captures more external markets.[11] Conversely, limited capacity to navigate demand competition due to the constraints (e.g., redistribution, deliberation, veto players, or even international institutions) may counteract the expected advantages of democratic institutions. The theory not only explains many post-1990 autocratic successes, but also previous cases such as Korea, Taiwan, Chile, and Singapore.

I apply the "engaged reformer" theory to post-1990 globalization that brought profound changes in trade, finance, migration, governance, security, environment, culture, and norms.[12] Specifically, I focus on two major trade-enhancing transformations based on the literature – trade integration and domestic reform.[13] The two transformations closely matched the scope condition above. Robust to various identification strategies, sectoral-level evidence, mechanism analysis, qualitative cases, and competing explanations (e.g., catching-up, the 2000/10s commodity boom, importing institution), I demonstrate that both transformations significantly favored more authoritarian regimes, which also predict higher absolute trade performance. In line with my theory, moderation tests show that "autocratic advantage" is primarily confined to those who conducted sufficient institutional reforms and were admitted by the WTO – lacking which explains why no pre-1990 divergence. This provides potent evidence linking autocratic rise to globalization.

The theory thus moves beyond conventional explanations of strong leaders, state capacity, resource-endowment, or China exceptionalism (which fits the theory quite well). Former socialist (e.g., North Korea and Uzbekistan) or resource-endowed (e.g., Iran and Venezuela) countries that don't meet the scope condition underperform. It offers a fresh explanation on autocratic rise and, relatedly, democratic backsliding.[14] It also contributes to the literature on how regime type,

[11] Given know-how after engaged.

[12] See Section 5.5 for more discussions.

[13] Other factors may favor autocracies in trade to a lesser degree (e.g., bilateral investment treaties, Arias et al. 2018). See Section 5.5 for more discussion.

[14] My theory speaks to two known backsliding causes, namely, economic and external factors.

institution, and globalization relate to economic performance (Acemoglu et al. 2001; Fukuyama 1989; Ikenberry 2001; Rodrik 2012). Institution remains critical still; yet sufficient attention should be paid to external factors (i.e., globalization).[15]

International relations theories[16] suggest that a world of strong autocracies is likely more conflictual.[17] Moreover, economic weakness not only erodes domestic foundation and public trust (Przeworski et al. 2000), but also diminishes the linkages and leverages facilitating democratization (Levitsky and Way 2006). Examples from Russia's failed "shock therapy" to democratic deterioration in the U.S. and elsewhere highlight how unsatisfactory economic outcomes can lead to authoritarian tendencies (Bruff 2014). Simultaneously, strengthened autocracies exacerbate a global autocratic drift (Ekiert and Dasanaike 2024), strengthening autocratic norms worldwide (Wright, Frantz and Geddes 2013). They increasingly use outcomes to prove legitimacy and "redefine" democracy in their favor (Baturo and Tolstrup 2024; Oser and Hooghe 2018). This paper unveils one main source of their strength.

2 The Puzzle: Performance Divergence

Stylized Patterns

I document the patterns of the economic rise of autocracies in the post-1990 period. Specifically, I calculate several economic measures including those directly linked to globalization: the means of merchandise exports (% of GDP), trade balance (% of GDP), industrial output (% of GDP), and GDP growth rate of both democracy (FH < 10) and autocracy groups. In Figure 2, all four measures show that since the early 1990s, the average performance of autocracies diverges or surpasses that of democracies. These patterns are similar after removing developed countries, or resources-oriented countries (such as Russia and the OPEC states), or China (see Figure A.4).

[15] For example, excessively high investments in China or Vietnam is unlikely without global market prospects. Gulf successes may be less remarkable absent the structural change in globalized commodity markets, and globalization-driven demand, investments and technology diffusion. In fact, oil industries are capital- and technology-intensive.

[16] Such as realism, constructivism, and democratic peace theory.

[17] Coincidentally, global conflicts (reported by ACLED, see Figure A.3) have steadily risen for the past two decades.

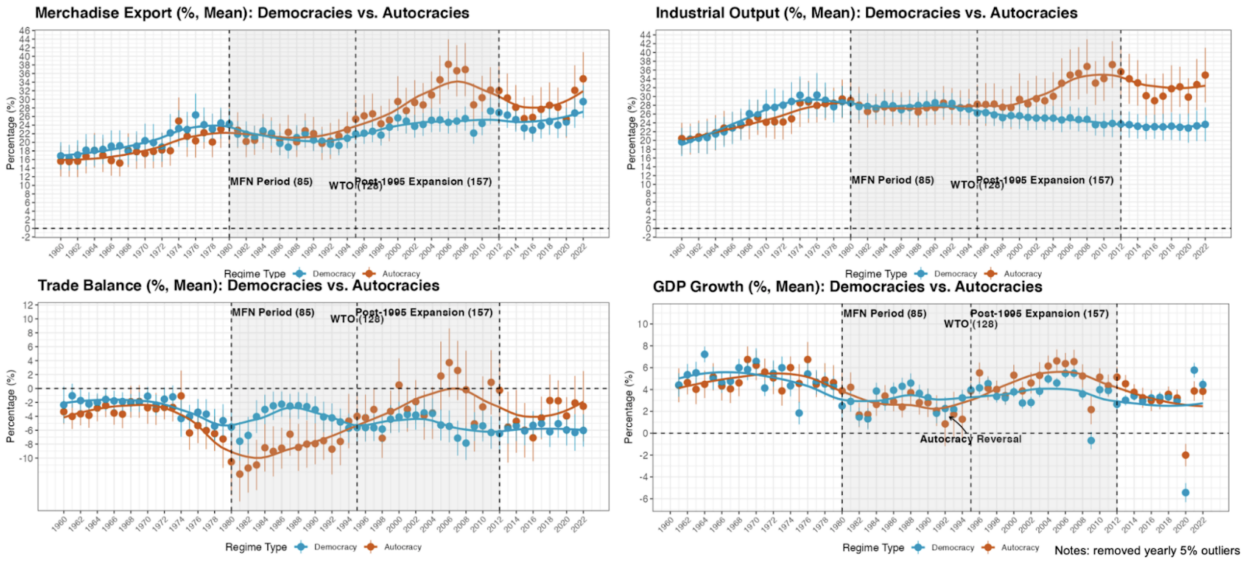

Figure 2: Mean Performance of Economic Indicators (World Bank) between Democracies and Autocracies (FH $\geq$ 10). *Note*: % means as a share of GDP and bars denote standard errors of means. 5% of yearly data is removed from tails. The patterns generally hold after removing developed countries, or China, or Russia, or OPEC countries (see Figure A.4).

Moreover, Figure 3 shows autocracy is correlated with better economic performance for all ten major economic indicators (1990-2020), except for consumption and taxation.[18] For example, a ten-unit decrease in Polity (from 5 to -5) is associated with nearly one percentage point higher in annual GDP growth, eight percentage points higher in industrial output (% in GDP), and nine percentage points higher in exports (%). These descriptive statistics unveil a story of autocratic rise.

[18]Pre-1990 data of these indicators are not shown due to missing data especially for former socialist states. However, available data shows correlations are either reversed or substantially weaker.

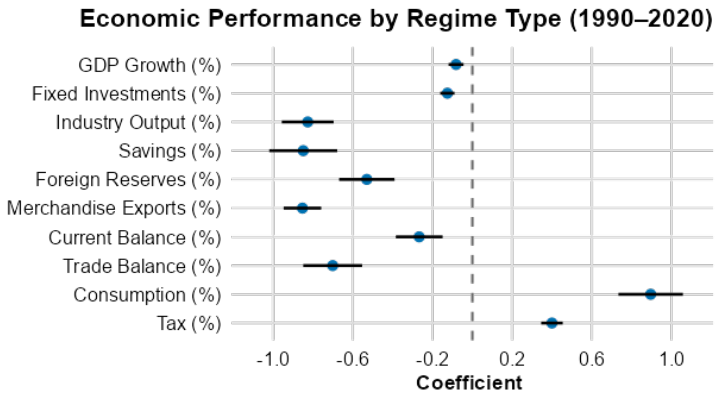

Figure 3: Regime Type and Major Economic Indicators (World Bank). *Note*: The bar plot means the percentage point change associated with one unit increase in Polity, controlling for GDP per capita and year fixed-effects for similar development-level comparisons. Correlations are robust to excluding China or OPEC states and including continent dummies and natural resource rents (%).

Connecting the Literature

The diverging patterns above highlight striking and intriguing puzzles contradicting conventional wisdom. Existing literature finds negligible effect of regime type on economic growth. Democracy theoretically fosters growth due to property rights (PR) protection (Weingast 1995), political stability (Tavares and Wacziarg 2001), investments in education and healthcare (Baum and Lake 2003), and innovation (Sah and Stiglitz 1986). Autocracy may also promote growth by, for example, resisting immediate consumption and over-redistribution (Krueger 1974). Empirical studies have found no clear relationship (Barro 1996; Przeworski et al. 2000). One exception is a recent study (Narita and Sudo 2021): using instrumental variables in the literature, it finds autocracy causes higher growth only recently (2000-20).[19] The conclusion on trade performance, however, is clearer. Not only do democracies export more (Yu 2010), they also are less protectionist (Eichengreen and Leblang 2007). These advantages are often linked to institutional factors like contract enforcement, rule of law, and PR protection (Atras 2015; Levchenko 2007; Rigobon and Rodrik 2004), which contribute to higher product quality and competitiveness.

Another influential strand of literature focuses on institutions, arguing that institutional differences shape economic outcomes (North 1990; Acemoglu et al. 2005). Among institutions which affect the incentives of market players, "of primary importance" are PR protection and rule of law within a functioning market (Acemoglu et al. 2005). Inclusive institutions – those that uphold equal participation and protection – are critical (Acemoglu et al. 2001), suggesting democracy's

[19] However, it offers limited explanation of the divergence.

advantage.

The final strand of literature examines the so-called "autocratic advantages." Scholars have long observed that autocracies' performance exhibits greater variability (Przeworski et al. 2000; Rodrik 2000). Some scholars attribute high-performing ones to "benevolent" or "visionary" leaders (Becker 2010; Easterly 2011), while others distinguish repression-only regimes from those that rely more on economic incentives and bureaucratic structure, namely Autocracy 2.0 (Lind 2025; Yang 2024). This literature often lacks clear theorization (e.g., mechanisms and scope conditions).

I contribute to the literature by incorporating external factors. Overall, a key limitation of the existing literature is the scant attention to globalization. Much of the focus has been on internal mechanisms, treating states as autonomous black-boxes. One puzzle, especially for institutional theories, is that even in the post-1990 period, democracies on average still exhibit higher institutional quality (see Table 2), nevertheless poorer performance.

3 Age of Globalization: "Autocratic Advantage" Revisited

> *"Growth at such a quick pace ... requires strong political leadership."*
>
> – Michael Spence, Nobel Economics Laureate, 2008

> *"Visionary leaders can accomplish more in autocratic than democratic governments because they need not heed legislative, judicial, or media constraints in promoting their agenda."*
>
> – Gary Becker, Nobel Economics Laureate, 2010

This section builds on the literature of international economics, political economy, and authoritarianism, arguing that authoritarian regime, once trade engaged and economically reformed, possesses "autocratic advantages" in trade. I first explain how globalized economy differs from closed ones favoring certain regimes, and then how autocratic engaged reformers acquire trade advantages.

The success of a special set of authoritarian regimes like South Korea, Chile, among others points to three necessary conditions or determinants: (1) West-like economic institutions, (2) expanded export markets, and (3) deliberate policy (often trade-enhancing).[20] Clearly, both reform and trade engagement are necessary as pre-conditions, since poor institutions or autarky limit the effects of

[20]Other factors such as history, culture and geography may matter, but arguably less central to the analysis.

trade policies. Then firms, domestic or foreign, conduct investment and export activities, while governments can facilitate the environment through infrastructure building or industry supporting. The same logic is evident even in resource-rich economies like Angola or Qatar.

These three determinants align well with the existing literature. Institutional theories emphasize the role of institutions shaping economic incentives and behavior (North 1990; Acemoglu et al. 2001). Growth theories emphasize the role of technological progress driven by policies that incentivize investments (Solow 1957; Romer 1986). Development theories such as the "developmental state" further underscore the role of state in promoting industrialization, building infrastructure, and fostering state-market synergy to address market failures (Evans 1995; Haggard 1990; Dooley et al. 2003).[21] As such, the World Bank recommends the combination of institution building and policy support to boost growth.[22]

Note that demand of expanded markets plays a crucial role in boosting output, through mechanisms such as increasing returns to scale, learning-by-exporting, and cluster effects (Harrison and Rodriguez-Clare 2010; Keynes 1936; Krugman 1979; Melitz 2003; Porter 1998). This is particularly critical for autocratic regimes inherently weak in domestic demand.[23]

3.1 New Setting: How Does Globalized Economy Differ?

How does the globalized economy favor some over others compared to closed economies that emphasize domestic factor accumulation? Understanding this lays the groundwork for discussing "autocratic advantages." The post-1990 global economy witnessed unprecedented expansion in trade and capital liberalization and globalized production, often called "hyperglobalization" (Rodrik 2011, also see Figure 4). This, I argue, resulted in two changes.

[21] Notably, while this model challenges laissez-faire neoliberalism and institution-only approaches, it requires institutional preconditions such as PR protection and contract enforcement (Antràs 2015; Haggard 1990).

[22] "Global Economic Prospect" Report, World Bank, 2024.

[23] Autocracies rely on external demand to the degree that a slowdown of exports causes social instability (Campante et al. 2023).

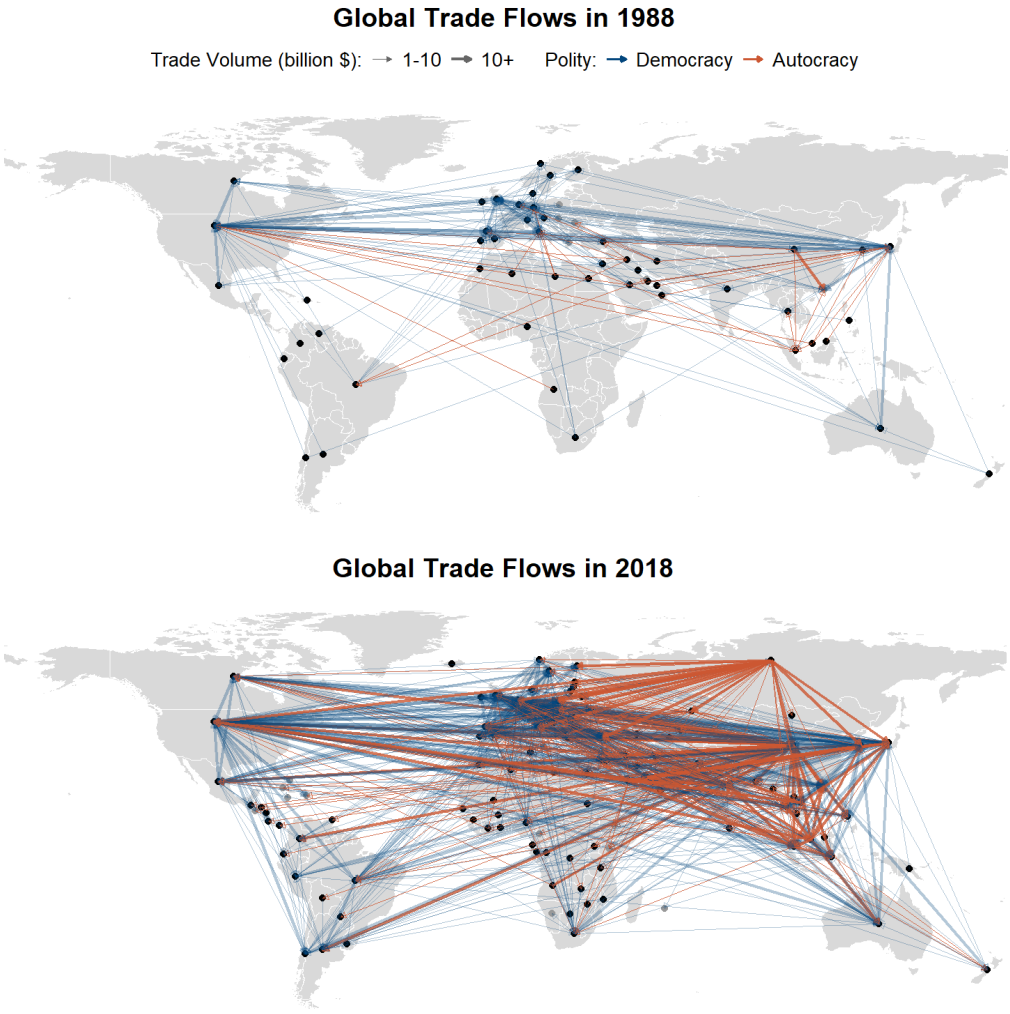

Figure 4: Global Bilateral Trade Flows (1988 vs. 2018). *Note*: For visualization and export-emphasizing purposes, the plot displays only the larger of bi-directional flows colored in exporter's Polity. For example, red lines denote export flows from autocracies (FH $\geq$ 10). Before 1990, exports are mostly dominated by democratic allies (North America, Europe, and Japan/Korea) and some oil states.

First, a globalized economy shifts the development logic outward, in contrast to earlier inward-looking approaches such as ISI. Early trade theories (e.g., the Heckscher-Ohlin model) emphasize comparative advantage leading to greater efficiency and output, while newer theories incorporate economies of scale (Krugman 1979), technology diffusion (Grossman and Helpman 1991), and globalized firms (Melitz 2003). In the post-1990 era when the global value chain (GVC) dominates global trade (Bernard et al. 2009), multinational corporations (MNCs), which seek low-cost worldwide and bring capital and technology, became all the more important. The rapid transfer of productive know-how through foreign direct investments (FDIs) enables poorer countries to export relatively

advanced products (Baldwin 2016). Taken together, trade integration combined with floating exchange rates and free capital flows has made local factor prices globally comparable, materializing a nation's competitiveness and profitability unlike in the Cold War. Moreover, expanded market access stimulates firm expansion and realizes scale advantage (Krugman 1979; Melitz 2003), which in turn drive output and innovation (Atkeson and Burstein 2010; Burstein and Melitz 2013; Grossman and Helpman 1991). These dynamics can lead to quality upgrading (Yu 2010), first-mover advantage (Krugman 1979), and long-term productivity gain (Acemoglu et al. 2017) – echoing the success of "developmental state." Within a globalized economy, these successful policies can quickly diffuse (Simmons and Elkins 2004).

Second, a globalized economy creates ample room for states to effectively practice policies enhancing trade competitiveness. The Bretton Woods or "embedded liberalism," and Cold War periods imposed more constraints on trade, capital, and exchange rate flexibility, which gave way after 1990, ushering in a more integrated economic environment. While conventionally regarded as mutually beneficial, the caveats of free trade remain. Classic trade models assume idealized conditions such as perfect competition and few frictions, which often don't hold in practice (Stiglitz 2018). Later models admit these imperfections: government intervention and trade barriers can influence trade (Krugman 1979; Melitz 2003). Furthermore, moving from autarky to open trade is a one-time gain, and the long-term effect is debatable (Garrett 2000) – governments may adopt distorting policies to alter trade patterns, e.g., non-tariff barriers or strategic trade policy (Brander and Spencer 1985). This can be more salient when a key assumption of most trade models – balanced trade (or exogenous imbalance) on which comparative advantage works – infrequently holds.[24] Institutional differences, macro-financial conditions, and policies likes currency devaluation, subsidies, and wage suppression can all create artificial advantage especially when technology converges under globalization, boosting exports through "beggar-thy-neighbor" (Antràs 2015; Corsetti et al. 2007; Jeanne 2021).[25] Eaton and Kortum (2002) similarly describe a country's export competitiveness as "technology adjusted for costs," echoed by others (Bernard et al. 2003; Melitz 2003).[26] Epifani

[24] E.g., see the discussion of global imbalances in Blanchard and Milesi-Ferretti (2009) and Obstfeld and Rogoff (2009).

[25] This can be illustrated by the Eaton-Kortum model (2002) which assumes a country i takes a random productivity draw for goods from a Fréchet distribution: $F_i(\phi) = e^{-T_i \phi^{-\theta}}$, which generates a country's comparative advantages. With currency devaluation, the devaluing country can end up acquiring competitive advantages for more goods and running surplus. Moreover, Arkolakis et al. (2018) show that MNCs choose production location l based on final unit cost: $C_{il} = \frac{\gamma_{il} w_l \tau_l}{z_l}$, where γ_{il} is the foreign production cost, w_l is local wage, τ_l is trade cost, and z_l is firm productivity which can be that of MNCs or related party or be built through within-network technology transfer.

[26] In the classic Eaton-Kortum model (2002), the proportion of country n's total expenditure imported from country

and Gancia (2017) further demonstrate that currency undervaluation leads to trade surpluses and production agglomeration.[27] Cost advantage, additionally, is enhanced by one's infrastructure, regulations, resource endowment, and even work culture. In the Appendix, a normal-form game shows that firm f_1 with lower costs and firm f_2 with higher costs will be locked in a Nash equilibrium of $<$*not produce, produce*$>$.

In sum, a globalized economy shifts development logic outward, while providing greater information and room so that states can effectively learn and practice self-interested policies. Rather than relying on domestic demand to spur entrepreneurship and accumulate capital, the focus extends to competing for external market, technology, and investment.

3.2 "Autocratic Advantages": Engaged Reformers in a Globalized Economy

How, then, do *reformed* autocracies acquire trade advantages once they participate in a globalized economy? Before the 1980s, most autocracies either were enclosed, or lacked meaningful market institutions, or followed state-led inward-looking industrialization (Sachs and Warner 1995), many of which failed (e.g., Egypt's Nasser, Ghana's Nkrumah). Since then, many had switched to liberal economic institutions and outward-looking economic policies. Governments worldwide since Reagan and Thatcher had often relied on (semi-)authoritarian measures to manage reform resistance and stabilize market-prioritized systems (Bruff 2014), where autocracies have natural advantages. Authoritarian leaders embraced changes because of legitimacy crisis, international pressure, and economic incentives (Geddes 1999; Levitsky and Way 2006; Haggard and Kaufman 2016), which can result in a more mercantilist manner.

Autocracy's institutional and non-institutional advantages in global trade and finance is largely revealed in existing literature. Rather than imposing distributional cost on domestic population (e.g., subsidizing producers), autocratic leaders can now externalize costs onto foreigners. These advantages shouldn't be conflated with old-style state-led industrialization, nor do they necessarily require active intervention – they can sometimes be passive, for example, weak labor protection. Note that all or some mechanisms below can operate simultaneously.

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i is: $\pi_{ni} = \frac{T_i(w_i d_{ni})^{-\theta}}{\sum T_h(w_h d_{nh})^{-\theta}}$, where T_i represents technology and w_i represents wage or factor cost. Given technology convergence (e.g., due to the diffusion by GVC), wage then determines production location. The Melitz model (2003) similarly specifies that firm's profit ($\pi(\phi) = [(\frac{\phi}{\phi^*})^{\sigma-1} - 1]wf$), which determines firm's entry into export market, is determined by wage w. Bernard et al. (2003) show that decreased wage increases competitiveness and the range of exports, and lowers domestic prices.

[27] Costinot et al. (2013) similarly shows that absolute productivity (accounting for costs, quality, and exchange rates) determines the production location within GVCs.

Centralized power – Autocratic states concentrate power as opposed to democracy, whose political system is more fragmented and sometimes unstable in emerging democracies (Diamond 2015). Public deliberation matters (Chandra and Rudra 2015) – centralized power in a closed or unreformed state may lead to expropriation and resource misallocation. However, in a globalized economy with external incentives and information diffusion, centralization grants reform-minded leaders greater discretion without extensive bargaining, so that they are better positioned to push for reforms, deploy concerted industry-supporting policies, and respond swiftly to changing global market (Hall and Soskice 2001; Kohli 2004). State-owned enterprises and even state media can play supportive roles in advancing trade interests (Clegg et al. 2018; Kim 2018; Wu 2016). Moreover, autocracy's relative leadership longevity can facilitate consistent and long-term economic planning (Wade 1990), creating a predictable business environment (Haggard 1990) – particularly illustrated by the "developmental state" (Haggard 1990; Rodrik 2004). On the flip side, external shocks are more resisted compared to more "hands-off" approaches in democracies (Shih 2020, also see Belarus in Section 7). Notable examples include East/Southeast Asia and Chile when they were in (semi-)authoritarian eras, as well as aggressive development projects among Gulf states. Even in democratic India, the more centralized and authoritarian Modi's regime was able to implement more trade-boosting policies.

Weak institutional constraints – Autocracies often operate with weaker *ex ante* institutional constraints, which include constitutions, legislatures, opposition parties, and norms that shape decision-making (Levitsky and Way 2010). Such governments can behave recklessly in a closed economy, but once opened up, they can more readily prioritize state interests by diverting limited resources to industrial and infrastructure projects that promote trade. Because of a larger win-set (Putnam 1995), autocracies can negotiate more favorable agreements with international organizations or MNCs (Arias et al. 2018). Additionally, autocratic states are found to establish more special economic zones offering tax breaks, lower tariffs, and looser regulations (Allen and Ge, working paper). While globalization restrains policy discretion (Jahn 2006), autocratic regimes are more flexible in manipulating trade and exchange rates (Steinberg and Malhotra 2014) and controlling financial institutions (Brune et al. 2001), allowing them to reap more benefits and remain more economically resilient. In fact, Lipscy (2018) found that democracies experience more financial instability, primarily due to their weaker controlling abilities. The same logic can extend to realms such as intellectual property-rights violation or economic espionage.

Limited accountability – Even reformed autocrats remain *ex post* less accountable (to the public). While this may impede domestic consumption, it allows them to pursue a broader range of market-favoring policies for external markets, even when unpopular, risky, or repressive (Quinn and Woolley 2001). In contrast, democracies – particularly relevant in poorer ones – are often pressured to meet immediate demands for consumption or welfare redistribution (Zakaria 1997), which can undermine market efficiency and firm incentives (Huntington 1968; Sah 1991). Similarly, authoritarian regimes can more easily impose austerity for savings that finance investments. Moreover, autocracies are by design less subject to pressure from corporatist, labor, or environmental groups, as well as the electorate in influencing policy (Krueger 1974; Rodrik 1999). With weak wage bargaining and labor rights suppression, autocratic leaders can enhance policy flexibility and cost competitiveness (Manger and Sattler 2015; Rodrik 1999). In contrast, for example, many Latin American democracies have even stricter labor regulations than most OECD countries (Feierherd 2024).

Mercantilist mentality – Mind shapes behavior. Due to weaker liberal economic norms (Dailami 2000; Quinn 2000), narrower interest groups (Eichengreen and Leblang 2008), or stronger incentives to stay in power (Baturo and Tolstrup 2024), autocracies tend to be more mercantilist and protectionist (Aidt and Gassebner 2010), apart from in-group favoritism (e.g., in public procurement, Bueno de Mesquita et al. 2005). Democracies, by contrast, tend to be more economic liberal (Milner and Kubota 2005). While conventionally unrecommended, mercantilism and protectionism can foster domestic industries or incentivize firms to produce locally, as seen in China's automobile industry and India's electronics sector under Modi. However, WTO-member autocracies with moderate reforms are associated with lower tariff rates (see Section 6, also in Hankla and Kuthy (2013)), suggesting that they are less reliant on nominal protectionism.

The list can continue, such as resource endowment that creates foundation for some autocratic countries to take off,[28] as well as historically-rooted culture and norms, particularly in former socialist economies, where production as moral imperatives is prioritized over consumption (Fitzpatrick 1999; Nove 1986). I show some evidence in Section D. Conversely, in a globalized economy where all compete together, the same otherwise laudable democratic features – such as redistribution, deliberation, and veto players – may become disadvantageous in demand competition. In sum,

[28] Although resource abundance, conventionally regarded as "resource curse" that may impede growth in a closed, unreformed economy (Ross 2001), broad access to international markets boost the export of commodities, whose benefits are further compounded by attracting investments in resource extraction and processing and enable the strategic reinvestment of rents, as exemplified by the active role of investing bureaus in Qatar and the UAE.

authoritarian engaged reformers tend to implement more trade-inducing policies to benefit trade performance, all else equal.

3.3 A Model of Engaged Reformer and Trade Facilitation

To formalize the theoretical logic, I present a two-player model in which regimes acquire their levels of trade-facilitating policies (or trade manipulation vis-à-vis free trade practices), proactive or passive (e.g., industrial policy, wage suppression, or currency devaluation) to maintain political support from selectorate (Bueno de Mesquita et al. 2003).[29] The model combines leader perception, institutional structure, and the cost and benefit of manipulation, illustrating that autocratic engaged reformers are more likely *and* easier to obtain a higher level of trade facilitation.

Setup. Consider otherwise same countries – except for regime type autocracy $R(\phi = 0)$ or democracy $R(\phi = 1)$ – choosing a level of trade manipulation $T \in [0, 1]$. I assume that unless regime is both trade engaged ($w = 1$) and reformed ($r = 1$), trade manipulation is barely effective. I assume that trade manipulation increases export performance and yields private returns $\alpha T(w = 1, r = 1)$ to the regime, but it incurs institutional and international reputation costs as follows:

$$c(\phi, T) = \rho(\phi)T + \gamma T \tag{1}$$

where institutional cost coefficient is denoted by $\rho(\phi) = \rho_0 + \rho_1\phi$ with $\rho_1 > 0$, while $\gamma > 0$ denotes positive reputation cost coefficient. Institutional costs are higher in democracies due to institutional constraints, veto players, and transparency. I assume reputation costs are the same, although democracy may perceive more.

Regime utility depends on whether it secures domestic support ($S = 1$) or not ($S = 0$). If support is secured, regime gains a normalized utility 1, and 0 otherwise. Regime's total utility is given by:

$$U_R(\phi, T) = \begin{cases} 1 + (\alpha - \rho(\phi) - \gamma)T & \text{if } S = 1 \\ 0 & \text{if } S = 0 \end{cases} \tag{2}$$

[29] Passive manipulation like disallowing labor unions also generates costs.

Selectorate receives baseline economic benefits $d(\phi)$ from the regime alone (e.g., non-export revenue-based public services) and additional trade-related gains bT. Selectorate generates costs $C^*(\phi)$ by supporting the regime. I assume $C^*(0) > C^*(1)$ because autocracies require stronger obedience absent electoral legitimacy. Also assumed is $d(0) \leq d(1)$ because democracies tend to deliver stronger baseline domestic performance due to more inclusive political institutions (Acemoglu et al. 2001). Additionally, autocratic leaders may perceive more severe consequences from losing power, as well as lower baseline benefits, which increases their perceived performance threshold required, that is, $P^*(0) > P^*(1)$.

Thus in the eyes of leaders, selectorate supports the regime if and only if total received benefits exceed the perceived regime-specific support threshold $P^*(\phi)$. This condition reflects a minimal level of economic performance threshold leaders need to keep power.

$$S = 1 \quad \textit{if and only if} \quad d(\phi) + bT \geq P^*(\phi). \tag{3}$$

Optimization. Anticipating selectorate's response, regime maximizes utility by solving:

$$\max_{T \in [0,1]} U_R(T, \phi) = \mathbb{I}[rw = 1] \cdot (1 + (\alpha - \rho(\phi) - \gamma)T) \quad \text{s.t.} \quad T \geq \frac{P^*(\phi) - d(\phi)}{b}. \tag{4}$$

If $rw = 0$, regime does not manipulate trade. The regime chooses the minimal level of T that satisfies the selectorate's support constraint. Let $T^*(\phi)$ denote the regime's equilibrium manipulation level. Since democracy faces higher institutional and reputational costs and offers leaders fewer private trade benefits, there is less incentive for them to engage in trade manipulation. Drawing on empirical evidence, it's reasonable to assume $\frac{\partial U_R}{\partial T} = (\alpha - \rho(1) - \gamma) \leq 0$. In contrast, autocratic leaders likely face lower institutional and reputational costs than trade benefits: $\frac{\partial U_R}{\partial T} = (\alpha - \rho(0) - \gamma) \geq 0$. Based on the linear function of $U_R(T)$, democracy chooses the minimum value $T^*(1) = \frac{P^*(1) - d(1)}{b}$ to ensure support, while autocracy chooses a value larger than threshold $T^*(0) \geq \frac{P^*(0) - d(0)}{b}$.

Proposition 1. Autocracy chooses a higher level of trade manipulation than democracy.

$$T^*(0) \geq \frac{P^*(0) - d(0)}{b} \geq \frac{P^*(1) - d(1)}{b} = T^*(1) \tag{5}$$

Proof. Since $P^*(0) > P^*(1)$ (higher perceived support threshold in autocracy) and $d(0) \leq d(1)$ (lower baseline domestic performance in autocracy), it follows that $P^*(0) - d(0) \geq P^*(1) - d(1)$. Dividing both sides by $b > 0$ leads to $T^*(0) \geq T^*(1)$. Thus, autocracy chooses a higher level of trade manipulation.

Proposition 2. As institutional constraints in autocracies increase (e.g., due to continued reforms), trade manipulation decreases.

Proof. If $\rho(0)$ increases, $(\alpha - \rho(0) - \gamma)$ decreases — meaning the slope of utility becomes less positive or even negative. Thus, increasing $\rho\phi$ makes trade manipulation less attractive, so less likely to choose a high $T^*(0)$. That is:

$$\frac{\partial T^*(0)}{\partial \rho(0)} < 0. \tag{6}$$

Proposition 3. If a stronger global detection of trade violation increases reputational costs (γ), trade manipulation decreases. For autocracy, total gains below zero threatens regime survival.

Proof. Reputational cost enters linearly in the slope $(\alpha - \rho(\phi) - \gamma)$. An increase in γ decreases the marginal return to manipulation for both democracies and autocracies. As γ increases, regimes may reduce manipulation to meet only the minimum support threshold. Particularly for autocracies, if $(\alpha - \rho(0) - \gamma)$ is already small, a rise in γ can shift the slope negative, making even the minimum required $T^*(0)$ insufficient to maintain selectorate support, thus threatening regime survival.

This stylized model formalizes the intuition that autocrats, facing greater perceived vulnerability and fewer institutional constraints, engage in higher levels of trade distortion. It explains why reformed autocracies may manipulate trade more aggressively – doing so not despite but because of their heightened need and lower costs to deliver tangible performance gains in lieu of democratic legitimacy.

4 "Engaged Reformers" in the Post-Cold War Globalization

Given the theory of engaged reformer, this section examines how the post-1990 globalization realized the scope condition of "autocratic advantages" and facilitated autocratic rise. Among numerous changes occurred during the post-1990 globalization, including trade, finance, migration, governance, environment, culture, and norms, two key trade-enhancing transformations are trade

integration and domestic reform, which tightly match the determinants derived from the aforementioned development literature and the scope condition of engaged reformers. Logically, if both transformations favor autocracies, it offers potent evidence linking autocratic rise to globalization. Other changes are either less relevant (e.g., migration and culture) or predicated on trade integration (e.g., export-oriented FDI). More is discussed in Section 5.5.

4.1 The Role of Trade Integration

Since the fall of the Berlin Wall, the global trade system confined within the west hemisphere had begun expansion. Trade integration served as the foundation for participating in globalized production, foreign investments, and technological diffusion, all conducive to rapid development, and was embodied in trade agreement proliferation, which expands market access (see Figure 5).[30] Of all, the WTO plays a significant and major role in facilitating trade liberalization across the globe (Bagwell and Staiger 2002), praised as the "most heralded commercial agreement in history" (Goldstein et al. 2007).[31] The WTO, or its predecessor GATT, stipulates the prohibition of discriminatory tariffs among members, thus facilitating market access with progressively lower tariffs, especially when trading with the already liberalized democracies.

[30] What distinguishes post-1990 global trade from previously also includes the spread of the global value chain (Baldwin 2016, also discussed in the "New New Trade Theory").

[31] Regional trade deals usually build on top of WTO principles of trade liberalization to address specific trade issues: e.g., sector-specific trade and dispute resolution.

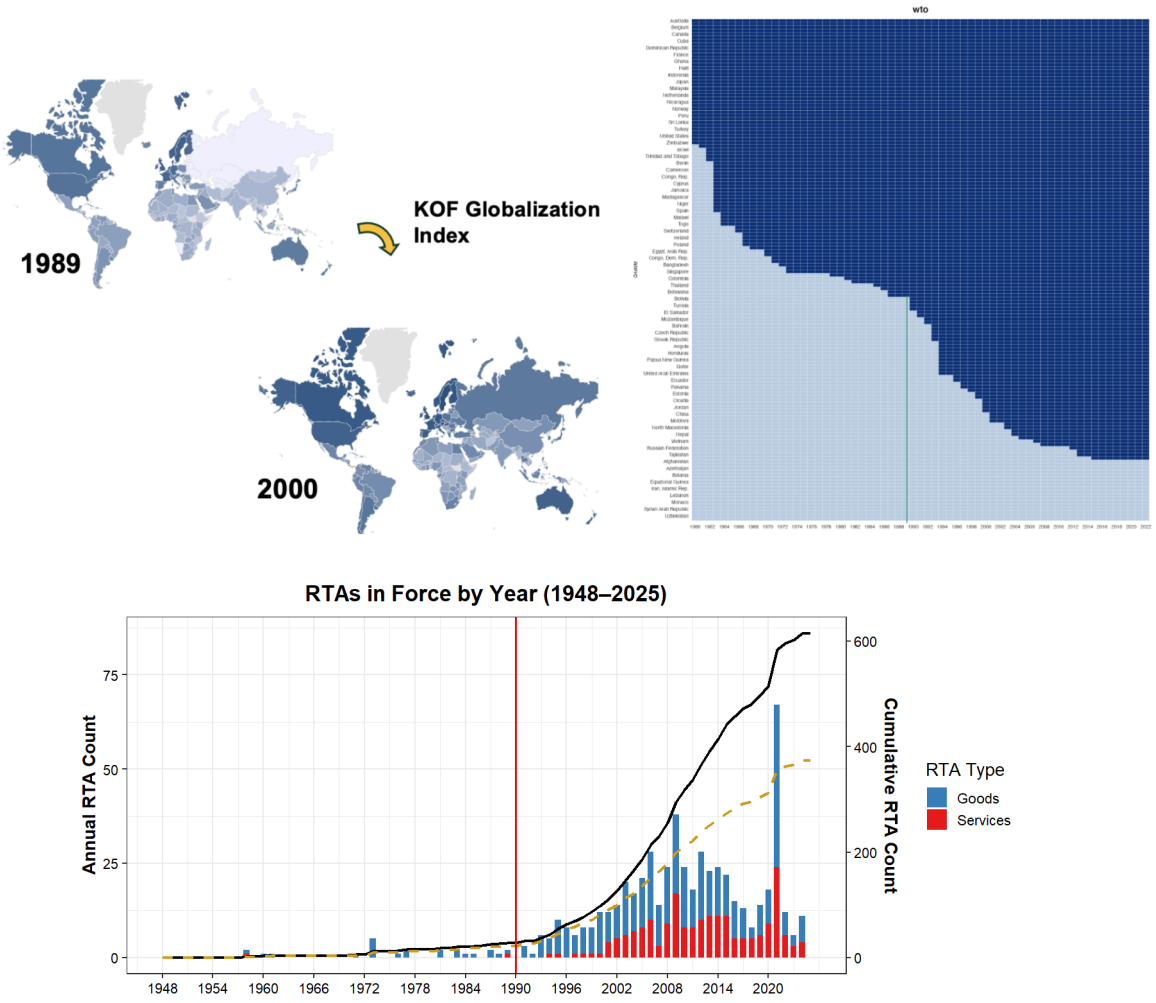


Figure 5: Post-Cold War Economic Globalization Expansion. *Note*: The figures respectively depict: KOF Globalization Index; GATT/WTO Expansion; RTA Proliferation.

After the Cold War, the WTO started an unprecedented expansion which integrated many autocratic and newly democratized countries, contrasting a quite conservative pre-1990 accession process.[32] The number of members almost doubled, increasing from 88 in 1985 to 164 in 2020. This allowed autocracies greater access to global markets, mainly from democracies, and materialized their possible advantages through trade and globally comparable factor prices unseen during the Cold War. For example, by 2000, most post-communist countries reoriented trade to and depended their growth on Western markets, especially for the most reformist (Åslund 2012). Of note, although some autocracies joined at the late stage or still haven't joined, many enjoyed "semi-engagement": for example, the MFN (Most Favored Nation) status – a WTO principle – from major western

[32]The 1950s-joiners were mostly advanced democracies such as Germany, Japan, Italy, Austria and Sweden, while the 1960s-joiners were mostly formerly colonies by "automatic accession" under Article 26:5(c). The 1970/80s saw a much stagnant accession progress.

countries,[33] PTAs and RTAs, a globalized commodity market, and the spillover from joiners – all almost impossible before 1990.

Studies have found that the WTO substantially increases trade for member states (Goldstein et al. 2007). Davis and Wilf (2017) simulate that China and Mexico's export booms would have been earlier had they joined the WTO earlier.[34] Apart from market access, the WTO also strengthens institutional credibility for trade-related investments particularly for politically dissimilar countries (Carnegie 2014), implying autocracies may benefit more from joining a democracy-dominated club. Such international institutions can also enable states to make credible commitments (Hafner-Burton and Schneider 2019), which attracts FDI along with technology (Buthe and Milner 2008). This is particularly important in the era of GVC when investor confidence of MNCs shapes trade (Bernard et al. 2018). The WTO also offers programs such as the Trade Policy Review Mechanism (TPRM) for policy learning and diffusion.

Combining "autocratic advantage," trade integration such as WTO expansion may favor autocracies for a few reasons. First, for two countries with similar domestic institutions, autocratic advantage tends to lead to more trade-promoting policies, while the WTO is unequipped to deal with such practices (Wu 2016). Second, studies have found that WTO accession increased trade or income more for those who met stricter accession conditionality (Allee and Scalera 2012; Tang and Wei 2009). The West-dominated institution tends to set stricter examination procedures for autocratic countries, which may have done more substantive reforms to meet the requirements. Additionally, once autocracies gain advantage in trade, its spill-over effects can negatively impact trading partners, especially democracies that are more open and hands-off (e.g., the "China shock"), as well as positive effects such as China's post-WTO effect that boosted commodity prices and benefited resource-rich autocracies. Finally, prior to 1990, many autocracies—including semi-reformed cases like China—faced economic strain, while others remained isolated and centrally planned. WTO accession may have offered them greater gains.[35] WTO membership may also have strengthened credibility more for autocracies.

[33] See https://1997-2001.state.gov/regions/eap/fs-mfn_treatment_970617.html.

[34] Per data, even resource-oriented countries such as the UAE and Oman experienced an immediate export boost upon WTO accession after years' weak export performance.

[35] However, in the empirical part (difference-in-differences), I control for country-specific covariates such as GDP per capita and exports.

4.2 The Role of Domestic Reform

Stable autocrats have long understood how bad excessive exaction is for survival (Olson 1993). Starting from the 1980s, under multifaceted pressure ranging from economic to ideological and witnessing successful examples elsewhere, many autocracies (as well as democracies) in the developing world have followed the "Washington Consensus," beginning various degrees of market-oriented reforms (Quinn and Toyoda 2007). These reforms include establishing rule of law and privatizing state-owned enterprises, as well as adopting business-friendly policies, for example, PR protection and financial and labor market deregulation. Some extended liberalization beyond the borders – exemplified by opening up trade and capital accounts (Milner and Mukherjee 2009). Lastly, many developing countries moved from inward-looking strategies (e.g., ISI) to more export-emphasizing or export-oriented models during the period, including autocracies already in the GATT (e.g., Egypt, Morocco), apart from later WTO-joiners.[36] Figure 8 shows the historical trends of two major institutional measures: PR protection and rule of law. The former focuses on the protection of investments from expropriation, while the later emphasizes contract enforcement and dispute settlement (Pandya 2016). These institutions foster growth (North and Weingast 1989) by stimulating domestic firms to step up production, entrepreneurs to start businesses, and multinational firms to set up productive facilities in a country (Atras 2015), greatly boosting a country's exports.

[36]For example, states choose to join the WTO hoping to increase exports (Pelc 2011). Even developed countries like Canada maintain agencies like Export Development Canada.

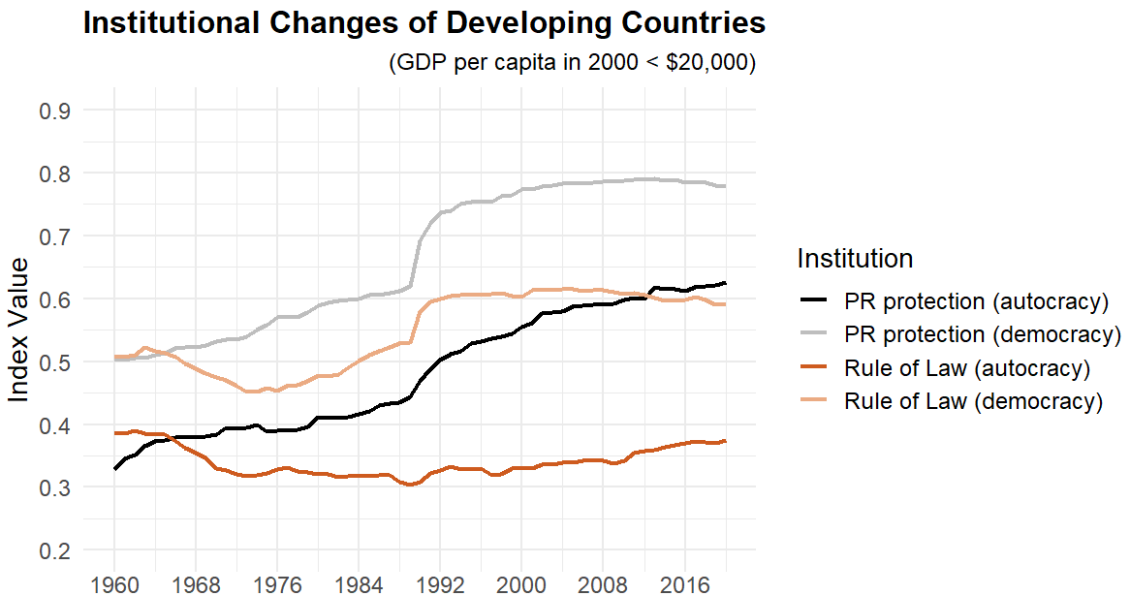


Figure 6: Average Rule of Law and Property Rights Protection. *Note*: Autocracies/democracies are roughly divided by Polity score in 1991 (when the USSR dissolved) to ensure temporal country-level data integrity. Average rule of law of autocracies seems flatter than others, yet with country-level increases/decreases.

Suffice it to say, if autocracies remain unreformed like they were before, exposure to the global trade would not help much. Even for China, had it maintained the planned economy, WTO membership may have yielded limited benefits. Turkmenistan and Azerbaijan are comparable cases: similarly rich in natural resources;[37] they share similarities in Polity score, geographical location, culture, race, population, and per capita income in the 1990s. Yet, Turkmenistan has significantly lower PR protection than Azerbaijan (0.16 vs. 0.66). While neither has joined the WTO, both were semi-engaged through MFNs and regional trade. From 1992 to the mid 2010s, their exports grew 11 and 24 times, respectively.

However, unlike democracies which usually have followed more hands-off neoliberal reforms reliant on markets (Harvey 2005), autocracies usually have done it selectively and gradually. They have been cautious in conducting political reforms. China, for instance, implemented rule of law selectively only to attract foreign investments and enhance regime durability (Wang 2015). While allowing trade flows, many autocracies have strictly controlled exchange rate and capital account policies, shielding them from external shocks (Kuzio 2020; Steinberg and Malhotra 2014). Many peg or crawl-peg their currencies which helps financial stability and facilitates mercantilist poli-

[37] Turkmenistan is slightly better: 3.8% of world's natural gas reserve and 0.04% in oil, while Azerbaijan has 0.5% of world's reserve in natural gas but higher (0.42%) in oil (U.S. EIA).

cies. Additionally, autocracies often ensure that strategic and politically sensitive sectors are state-controlled, while actively supporting industrial development. They seem to practice a version of "embedded liberalism," which fuses markets with state goals.

4.3 Combining Trade Integration and Domestic Reform

Engaged reformer by definition needs both trade integration and domestic reform (including those who already joined the GATT) to obtain trade advantages. Non-reformed WTO members are not conducive to substantial trade growth (Allee and Scalera 2012; Tang and Wei 2009), nor are economically isolated reformers. This contrasts with the literature that primarily emphasizes institutional reforms (e.g., China's adaptive institutions, Ang 2016). Moreover, the conditionality required by WTO accession and the enhanced institutional credibility contribute to the reform effect.

	In WTO (before 2015)	**Not In WTO**
Non-Poor Institution	**"Engaged Reformers"** Angola (15.2), Bahrain (5.4◊), Cambodia (21.2), Cameroon (2.6), Chad (22.6▲), China (22.9), Congo Rep. (8.6), Djibouti (10.2), Egypt (8.1), Jordan (6.2), Kazakhstan (21.5), Kuwait (9.7◊), Lao (12.7), Mauritania (5.1), Morocco (6.1), Oman (8.5), Qatar (33.6◊), Russia (8.8), Rwanda (12.2), Saudi Arabia (6.8◊), Singapore (5.1◊), Tanzania (10.1▲), Thailand (5.8), Togo (5.2), United Arab Emirates (13.3◊), Uganda (9.5▲), Vietnam (46.2▲) *Former Aut.*: Brazil, Chile, Hong Kong, Indonesia, Malaysia, Mexico, South Korea, Spain, Tunisia ...	**"Unengaged Reformers"** Afghanistan (2.9▲), Algeria (5.2), Azerbaijan (23.8▲), Belarus (12.5), Equatorial Guinea (201.2▲), Ethiopia (12.4▲), Iran (4.5), Iraq (8)
Poor Institution	**"Engaged Non-reformers"** Congo Dem. Rep. (6.3▲), Myanmar (17.8▲), Swaziland (2.7), Tajikistan (3.2), Venezuela (4.5)	**"Unengaged Non-reformers"** Cuba (3.4), Eritrea (6.9), Libya (2.8◊), North Korea (4), South Sudan (NA), Sudan (9.8), Syria (0.4), Turkmenistan (10.9), Uzbekistan (4.1), Yemen (4.6)

▲*: Average GDP per capita under $200 in 1991-1993,* ◊*: above $5,000*; Numbers in parentheses are export increase from the early 1990s to mid 2010s.

Table 1: Typology of Autocracies. *Note*: autocracies are roughly defined as those with average Polity ≤ 0 in 2000-20. Poor institution refers to institutional levels that are below the thresholds for VDem PR protection and rule of law (see Appendix B.3). Together, "engaged reformers" accounted for over 97% of autocracies' GDP in 2015.

Table 1 classifies all post-1990 autocracies into a 2x2 table by institutional levels and WTO membership. Many fall into the category of "engaged reformers," meaning they have achieved cer-

tain levels of institutions and have been accepted to the WTO.[38] As a face validation, many in this category, beyond oil states or China, seem to perform well in a globalized economy.[39] In contrast, many in three other categories underperformed. Even for the same resource-rich autocracies, Algeria, Iran, Iraq, or Venezuela (with the latter three being top-five oil reserve countries) performed worse than engaged reformers such as Qatar, Saudi Arabia, Kuwait, or Morocco.

In essence, autocratic engaged reformers adopted modern economic institutions and were incorporated into the most significant liberal trade regime, while "embedding" authoritarian characteristics into economic liberalization. They can thus perform better than their otherwise similar "democratic counterfactual." Many *democratic* engaged reformers, however, lacked eye-catching performance today, including Argentina, Brazil, Colombia, India, Indonesia, Kenya, Mexico, Nigeria, Pakistan, Peru, Philippines, South Africa, and Ukraine. 13 out of 20, or 25 out of 40 fastest growing countries (1992-2015) are autocracies, which make up only 25% of total countries.[40]

	Rule of Law	Property Rights Protection	Tariff Rate
Democracy	0.904***	0.513***	−2.391**
	(0.004)	(0.008)	(1.039)
Year FE	✓	✓	✓
Num. Obs.	3489	3489	2718

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table 2: Democracies and Major Indicators of Domestic Reform. *Note*: Indicators are regressed on regime type conditional on GDP per capita (2000-20) and year fixed-effects.

Autocracies may particularly require trade integration, because they are usually weak at fostering internal demand due to political non-inclusiveness, implying a weaker effect of domestic reform alone. On the other hand, WTO accession also contributes to the improvement of domestic institutions as mentioned. Table 2 shows the correlations between two institutions (PR protection and

[38] Based mainly on institutional levels at the bottom 20 percentile among developing countries in 2010. See Appendix for more details.

[39] Some countries, such as Cameroon, Mauritania and Togo, do not stand out (although they may still perform better than their "democratic counterfactual") for more complicated historical reasons. As Allee and Scalera (2012) point out, they were newly independent colonized countries and automatically joined the GATT; many have ostensibly similar economic institutions "copied" from former colonizers, but with few substantive reforms compared to later joiners. In total, 43 countries joined as "automatic accession" under Article 26:5(c) during the Cold War (Allee and Scalera (2012)).

[40] Based on the WDI data.

rule of law) and liberal democracy index in 2000-20 from the V-Dem datasets. Autocracy predicts lower institutional levels and higher tariff rates. In closed economies, this should predict lower performance. It implies that trade integration may be more indispensable to autocratic rise.

As for empirical prediction, first, I expect trade integration, particularly the post-1990 WTO expansion, increased trade more for autocracies on average. This leads to the first hypothesis:

H1.1: Autocracy on average should experience a larger effect of WTO accession on exports than democracy in the post-1990 period.

As explained, only engaged reformers theoretically posses autocratic advantages, so that autocracy should have outperformed only when they have conducted certain levels of institutional reform. However, if the institutional level is too high (e.g., close to that of advanced democracies), the very institution may tie autocrats' hands for leaders' exercise of power, diminishing autocratic advantages (also see Proposition 2). I thus expect a U-shape effect as follows:

H1.2: The WTO effect favoring autocracy in *H1.1* should diminish when domestic institutional level is too low or too high.

Like WTO accession, similar institutional improvement may lead to greater rewards for autocracies, as the majority of autocracies have been (semi-)engaged in trade by then.[41] Compared to semi-engagement such as MFNs, WTO membership brings more benefits, with non-members subject to higher tariffs, limited markets, and lack of institutional endorsement. Therefore, the possible autocracy-favoring reform effect should diminish for countries that are excluded from the WTO and particularly for those without even semi-engagement. Two more hypotheses are derived as follows:

H2.1: Autocracy on average should experience a larger effect of domestic reform on exports than democracy in the post-1990 period.

H2.2: The reform effect favoring autocracy in *H2.1* should diminish when excluded from trade engagement.

[41] Note that autocracies didn't particularly start much lower, with average PR protection 0.45 vs. 0.6 of democracies (see Figure 8).

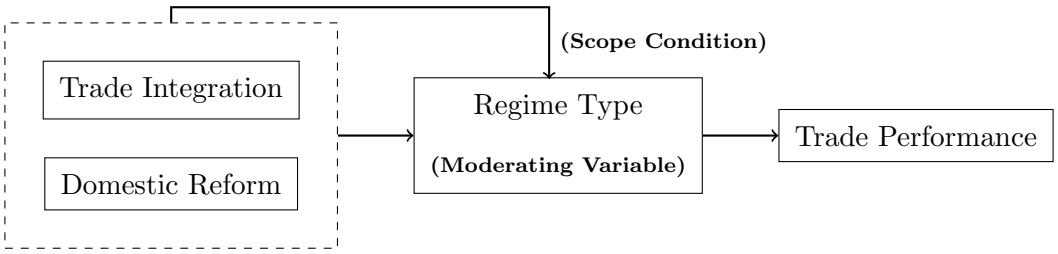


Figure 7: The Logic of "Engaged Reformer". *Note*: The effects of both domestic reform and trade integration on trade are moderated by regime type. However, for the effect to favor autocracies, it should meet the scope condition.

To summarize, as Figure 7 illustrates, trade performance is affected by both trade integration and domestic reform, whose effects are contingent on regime type as a *moderating variable*. Meanwhile, autocratic advantage needs to be enabled by crossing certain levels of two factors as the *scope condition*.

Apart from the four hypotheses above that examine the incremental effects of globalization, I expect that, similarly, autocratic engaged reformers should outperform democracies on the absolute levels of exports. The following two hypotheses test WTO membership and reform respectively:

H3.1: Among WTO members, autocracy should outperform democracy on exports at moderate institutional levels more than at other levels.

H3.2: Among countries with moderate institutional levels, autocracy should outperform democracy on exports when they are in the WTO more than outside it.

H3.1 and **H3.2** test whether or not autocratic engaged reformers outperform countries of other categories. Lastly, external balance differ from exports in that it need not necessarily require a high level of trade integration or institutional improvement, as it is determined by a special set of financial and trade factors (Barattieri 2014). One may have external surpluses due to currency devaluation, trade barriers, or suppressed consumption, all of which, however, can be facilitated by autocratic advantages. Yet, a globalized economy with an exchangeable currency system and goods and services exchange (even partial) provides the facilitating conditions more than closed ones. Thus, I expect the following hypothesis:

H4: Autocracy should predict higher external balances (current account and trade) than democ-

racy in a globalized economy than the pre-1990 period.

Formal Illustration: an Extended Trade Model

In Appendix B.1, I present an extended trade model based on the classic Eaton-Kortum (E-K) model (2002) to illustrate the predictions of the above hypotheses. The E-K model captures the determinants of bilateral trade flows such as technology, production cost, trade cost, and comparative advantage, making it particularly suitable for my case. The model is enhanced with three additional variables: institution I_i, trade engagement W_i, and autocratic advantages A_i, with proper functional forms $t(A_i, I_i)$, $c(A_i)$, and $\tau(W_i)$. Bilateral trade flow is then expressed as:

$$X_{ij} = \frac{t(A_i, I_i)\{c(A_i)\tau(W_i)\}^{-\theta}}{\sum_k t(A_k, I_k)\{c(A_k)\tau(W_k)\}^{-\theta}} Y_j \tag{7}$$

5 Empirics: Testing "Engaged Reformers"

Choosing "1990"

I empirically choose the cutoff year 1990 because of multiple reasons. From the descriptive data earlier, we clearly see an inflection point around the early 1990s. The year witnessed a dramatic global political shift – the end of Cold War. Moreover, a global economic shift often termed as "hyper-globalization" started around the same time: trade integration including an unprecedented proliferation of trade agreements, particularly the WTO, flows of goods and capital, and the rapid spread of the global value chain (Pandya 2016). Additionally, there had been a flurry of domestic reforms in play and rapid democratization. Lastly, the choice is a matter of empirical convenience. In Figure 8, I also conduct the time-rolling estimates.

5.1 The WTO Effect

New WTO joiners

Between 1990 and 2020, in total 64 countries (with over half a million trading-pairs) joined the WTO/GATT, and almost all were developing countries in 1990 (except Liechtenstein). Of them, 25 (Freedom House Index ≥ 8) or 18 (Polity ≤ 0) were autocratic states in 1992.[42] These countries do not account for the majority of existing autocracies across the world, but include major autocracies

[42] Russia's Polity = 3 in 1995.

such as China, Russia, Saudi Arabia, Vietnam, United Arab Emirates, Qatar, Oman, Kazakhstan, Tajikistan, Kyrgyz, Bahrain, Tunisia, Angola, Lao, Cambodia, Venezuela, and Jordan. They account for over 90% of autocracies' total GDP and population. Only China is equal to 14 Vietnams or 10 Russias or four U.S. in population. The spill-over effect is non-negligible: they significantly trade with non-WTO autocracies (Applebaum 2024). For example, Russia, China, or Saudi Arabia can more freely trade with Iran, Iraq, Cuba, and North Korea, while China's post-WTO rapid growth greatly contributed to the commodity boom during the 2000/10s, which benefited non-WTO autocracies (Hamilton 2009; Kilian and Hicks 2012). On the flip side, autocracies' excessive exports can be detrimental to democracies (many of which run persistent trade deficits) in the form of trade shocks.[43]

Additionally, some autocracies that are not in the WTO have been granted the MFN status by countries such as the United States or the EU: e.g., Azerbaijan, Belarus, Serbia, Turkmenistan. Others enjoy varied regional trade deals. Almost all remaining countries were granted WTO observer status.[44] Importantly, the mixture of democracies and autocracies in the joiners, as well as the mixture of WTO and non-WTO autocracies in the data provides us sufficient observations (dyad-based) to test my hypotheses.

Gravity Model

I employ multiple strategies to first test the WTO accession effect across regime types. I start by the widely used gravity model for trade regarded as "one of the most robust empirical findings (Chaney 2018)," while absorbing recent methodological improvements (Anderson and van Wincoop 2003; Carnegie 2014; Eaton and Kortum 2012; Goldstein et al. 2007; Rose 2004; Yu 2010). The model is based on strong theoretical foundations compared to ad-hoc specifications, often used to test policy or institution's effect on trade. I exploit the model to estimate how regime type moderates the WTO effect – the interaction effect of $WTO \times Polity$.[45] WTO accession ultimately affects bilateral trade flows. Theoretical and empirical evidence suggests that membership of exporter or importer should increase bilateral exports in similar directions, which sum up to aggregate patterns.[46] Contrarily, *ad-*

[43] As explained, trade can become more zero-sum under situations like mercantilism.

[44] Observers must start negotiations within five years of being observers, implying trying to meet conditionalities, and enjoy multiple benefits from the WTO, such as speaking rights and learning opportunities, as well as the possibly strengthening investors' confidence.

[45] Since post-1990 regime types vary significantly less for most countries (see Appendix), I use Polity in 2000. Other measures such as Polity average (2000-20) and real-time Polity nonetheless show consistent results. For pre-1990, only real-time Polity is used.

[46] E.g., by influencing contract enforcement, institutional reliability, technology and management knowhow transfer, and trade costs, as well as importer's trade barriers and trust in importing from exporter.

hoc country-year panel specifications suffer from omitted variable bias.[47] Nonetheless, later I employ a difference-in-differences approach using the aggregate country-year data. I specify various gravity models, including: 1) conventionally used WTO dummies *Both_WTO* and *One_WTO* in relation to the reference *Neither_WTO* (e.g., Goldstein et al. 2007; Rose 2004), 2) *Both_WTO* and *One_WTO* (exporter), 3) exporter WTO dummy, and 4) sequential WTO lagged dummies (by one/three/five years). I control for a standard set of dyad-level covariates (see Table C.4) and an augmented set of exporter, importer-year, directed-dyad, and year fixed-effects, accounting for "multilateral resistance" effects (Anderson and van Wincoop 2003). The dependent variable is $log(\text{exports} + 1)$ (Carnegie 2014). Trade data is drawn from CEPII's Gravity dataset which aggregates data sources such as IMF DOTS and UN Comtrade. The model assumes *conditional exogeneity* after controlling for covariates and fixed-effects. Given the data and treatment structure, I conservatively cluster robust standard errors by exporter-year and dyad to account for intra-country and intra-dyad error-term correlations.[48]

	Exports (FE)		Exports (FE)		Exports (FE)		Exports (FE)		Exports (CRE)	
	Pre-1990	Post-1990	Pre-1990	Post-1990	Pre-1990	Post-1990	Pre-1990	Post-1990	Pre-1990	Post-1990
One WTO	0.304***	−0.131**								
	(0.052)	(0.061)								
One WTO × *Polity*$_i$	**-0.003**	**-0.025*** **								
	(0.005)	(0.008)								
Both WTO	0.615***	0.143	0.314***	0.273***					0.309***	0.209***
	(0.084)	(0.092)	(0.046)	(0.047)					(0.015)	(0.012)
Both WTO × *Polity*$_i$	**0.007**	**-0.041*** **	**0.011*** **	**-0.033*** **					**0.012****	**-0.038*** **
	(0.006)	(0.010)	(0.004)	(0.006)					(0.001)	(0.002)
WTO$_i$ *Only*			0.306***	−0.037					0.304***	0.099***
			(0.052)	(0.065)					(0.017)	(0.017)
WTO$_i$ *Only* × *Polity*$_i$			**0.005**	**-0.037*** **					**0.004****	**-0.038*** **
			(0.005)	(0.007)					(0.001)	(0.002)
WTO_i					0.307***	0.210***	0.240***	−0.022		
					(0.042)	(0.045)	(0.049)	(0.059)		
WTO_i × *Polity*$_i$					**0.009****	**-0.033*** **	**-0.001**	**-0.003**		
					(0.004)	(0.006)	(0.006)	(0.008)		
WTO$_i$ *(3y lag)*							0.105**	0.365***		
							(0.042)	(0.051)		
WTO$_i$ *(3y lag)* × *Polity*$_i$							**0.012****	**-0.032*** **		
							(0.005)	(0.007)		
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Exporter Means									✓	✓
Dyad Means									✓	✓
Exporter FE	✓	✓	✓	✓	✓	✓	✓	✓	RE	RE
Importer-Year FE	✓	✓	✓	✓	✓	✓	✓	✓		
Dyad FE	✓	✓	✓	✓	✓	✓	✓	✓	RE	RE
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Num.Obs.	210 809	538 470	210 809	538 470	210 809	538 470	208 242	502 944	210 049	521 997
R2 Adj.	0.858	0.886	0.868	0.886	0.868	0.886	0.869	0.892	0.874	0.882
BIC	805 515.9	2 258 339.3	833 195.6	2 258 125.3	833 258.2	2 258 320.9	824 099.5	2 103 706.2	691 636.8	1 901 073.2

* p < 0.1, ** p < 0.05, *** p < 0.01

Table 3: The Effects of Joining the WTO. *Note*: Full specifications in Table C.4. Robust standard errors are clustered by exporter-year and dyad for FE models. Institutions such as PR protection is not included to avoid possible post-treatment bias of the WTO. Nonetheless, results hold with inclusion.

Table 3 display the results of various measures of WTO membership as described. Conditional

[47] For example, RTAs can have significant effects (Carnegie 2014; Rose 2004).

[48] I avoid over-clustering by country as error patterns for the same country in the 1990s may be much different from the 2010s (Yu 2010).

on other dyad characteristics, by looking at the $WTO \times Polity$ interaction terms (in bold), the effect of the WTO on exports is larger for democracies pre-1990, but larger for autocracies post-1990.[49] Regarding the magnitude, for average autocracy (Polity = -5), WTO membership on average inflates exports by 13.9%, while decreasing exports by 16.4% for average democracy (Polity = 5). One explanation for the negative effect for democracies may be that trade opening-up is subject to more import competition. The results are robust to importer type differentiation: being prior-1990 joiners or regime type, and full gravity models without country/dyad fixed-effects. Figure 8 visualizes the rolling estimates for different WTO membership measures.

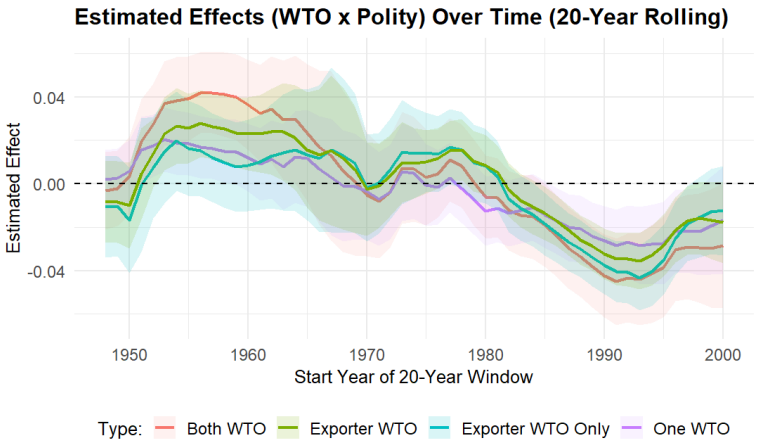


Figure 8: Rolling Estimates of Various Types of WTO Effects Moderated by Polity. *Note*: The effects are estimated by gravity models above within 20-year rolling windows from 1948 to 2020. For example, 1980 denotes the window 1980-2000.

Sensitivity Test

In order to mitigate the omitted variable bias in the gravity model, I conduct sensitivity tests following Cinelli and Hazlett (2020) whose goal is to gauge how strong an omitted confounder needs to be to completely explain away the effect of, i.e., $WTO \times Polity$. For the moderating effect, perhaps autocracies have different characteristics like population and economic size. As such, I choose covariates that may theoretically confound the WTO effect across regime type: population (log), GDP (log), and Polity. Figure C.9 plots the sensitivity contours which represent the estimates of $WTO \times Polity$ given the hypothetical partial R^2 of the omitted confounder with treatment

[49]The post-1990 interaction effect is moderately smaller if removing China-, or Russia-, or thirteen OPEC-origin dyads, but becomes close to zero if all are removed, which is nonetheless better than the pre-1990 negative effect. Note that removing all that account for the majority of autocracies' GDP (over 90% in 2015) raises representation bias. More importantly, removing all doesn't affect subsequent tests of "engaged reformer."

($R^2_{D\sim Z|\mathbf{X}}$) and outcome ($R^2_{Y\sim Z|D,\mathbf{X}}$). In a nutshell, any omitted confounder that nullifies the main estimates would need to be over 250 times and 1000 times as strong as GDP and population with both treatment and outcome, respectively.[50] A confounder needs to be over 12 times stronger than Polity itself to eliminate Polity's moderating effect. Hence, we should more confidently rule out the omitted variable bias.

Alternative Strategies

Due to the hierarchical data structure, I estimate a hierarchical correlated random-effect (CRE) model with exporter and dyad random-effects, controlling for covariates as well as the means of covariates. Although controlling for a full list of standard gravity dyad covariates including the time-invariant ones, the CRE allows arbitrary correlations between the exporter-specific and dyad-specific intercepts and predictors to mitigate the assumption violations. As shown in Column 9&10 of Table 3, the result is similar to the fixed-effects model. WTO membership inflates exports by 10.8% for average autocracy, while deflating 23.4% for average democracy.

In addition to model-based approaches, I use difference-in-differences (DiD) with matching as a nonparametric identification strategy to estimate the effect of WTO membership. Although DiD cannot completely rule out unobservable confounders entirely (which can be reassured by sensitivity tests), it offers significant advantages over traditional parametric methods, e.g., fixed-effects for panel data (Imai et al. 2022). Unlike fixed-effects, which relies on the model assumptions, DiD explicitly constructs counterfactuals by matching on pre-treatment covariates. This approach ensures comparable comparison and reduce outlier influence, providing more robust causal estimates. It also provides insight into long-term effects as WTO effect tends to grow gradually over time. The ATT (Average Treatment effect on the Treated) estimator is expressed as below:

$$\frac{1}{\sum_{i=1}^{N}\sum_{t=L+1}^{T-F} D_{it}} \sum_{i=1}^{N}\sum_{t=L+1}^{T-F} D_{it}\left\{(Y_{i,t+F}-Y_{i,t-1}) - \sum_{i'\in\mathcal{M}_{it}} w_{it}^{i'}\left(Y_{i',t+F}-Y_{i',t-1}\right)\right\}$$

Where D_{it} is treatment indicator (1 if treated). $Y_{i,t+F}$ is outcome for treated unit i at time $t+F$. $Y_{i,t-1}$ is the outcome for treated unit i at pre-treatment time $t-1$. $\mathcal{M}_{it}$ is the set of matched control units for treated unit i at time t. $w_{it}^{i'}$ is the weight for control unit i' matched to treated

[50] As noted by Cinelli and Hazlett, these results are conservative for the case of multiple (possibly non-linear) omitted confounders.

unit i.

Specifically, Covariate Balancing Propensity Score (CBPS) weighting is used to balance covariates.[51] CBPS estimates propensity score such that covariates are balanced (Imai and Ratkovic 2015). Weighting methods are particularly effective in non-large datasets because they retain all available control units. As DiD is inconvenient to handle interaction effect, units are roughly stratified into democracies (Polity ≥ 0) and autocracies (Polity ≤ 0).[52] For all tests, I use export (log) as the DV, similar to the gravity models.

I first utilize the country-year panel dataset. I set lags $L = 4$ to match pre-treatment histories, and $F = 5$ for forward effects, since joining the WTO may not immediately boost trade.[53] I focus on pre-treatment covariates that theoretically affect both WTO accession and future exports, including GDP (log), GDP per capita (log), Polity, population (log), race (white), geopolitics (NATO membership), natural resource intensity (% of GDP), industrial output intensity (% of GDP), rule of law, and lagged outcome. I avoid controlling for direct post-treatment covariates such as tariff rate, which is lowered upon WTO accession.[54]

Since the country-year panel data contains relatively few observations, which may limits the size of matched set $\mathcal{M}_{it}$, I also exploit the dyad-year panel data whose overwhelmingly large sample size allows longer delay effects.[55] I extend leads to seven years. Similar covariates to the country-year case above are matched on based on whether they may affect WTO accession and future exports. Additionally matched on are dyad FTA, customs union, distance (log), colonial relationship, and common official language, since they might also affect both treatment and outcome.[56]

[51] I choose among mahalanobis matching, propensity score matching/weighting, and CBPS matching/weighting for the best performance on balancing covariates. The standardized mean difference (SMD) of most covariates are within the threshold of the rule-of-thumb 0.2.

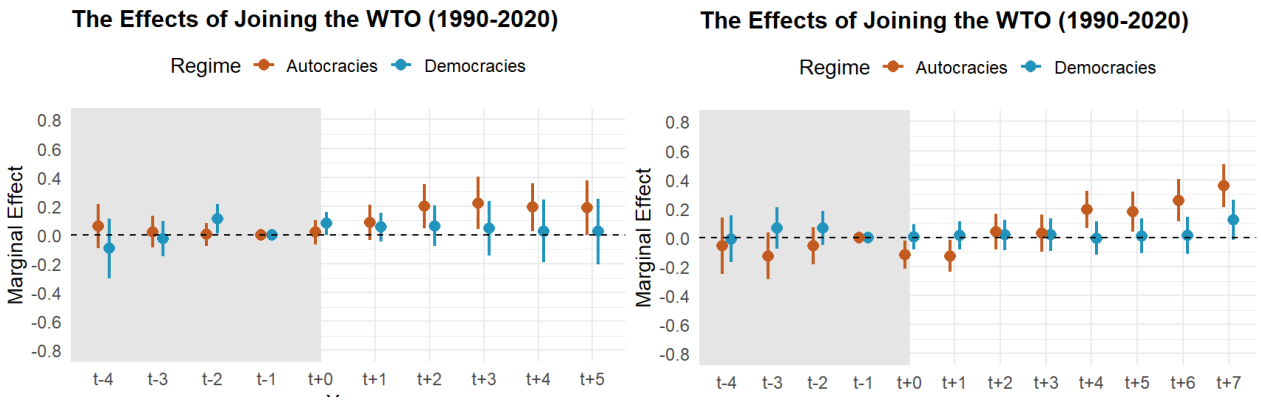
[52] As shown in the Appendix, countries' regime types stay relatively stable after the mid-1990s. I therefore capture the regime types in 2000 for the purpose of maintaining data integrity for a single country throughout the period.

[53] Longer leads and lags are refrained since it can eliminate more units that don't match. In each period, I keep four more years prior to the start year of each period to allow for sufficient pre-treatment histories.

[54] I match institution because WTO conditionality is more about trade-related liberalization and intellectual PR protection rather than conventional PR protection and rule of law (Allee and Scalera 2012). Nonetheless, results hold for no matching.

[55] I narrow destination countries to pre-1990 WTO members to for more precise estimates.

[56] In another version, I match on a standard list of gravity model's dyad-level covariates of both origin and destination states.



Country-level Dyad-level

Figure 9: Effects of Joining the WTO on Exports (Post-1990). *Note*: Autocracy: Polity $\leq$ 0. The WTO effect of autocracy is statistically significantly non-zero while that of democracy is not. Placebo periods show that parallel trends assumption hold (the shaded area, with t-1 as reference time). Standard errors are estimated with bootstrap.

Figure 9 plot the WTO effects for democracy and autocracy, respectively. After matching, the covariate balance has significantly improved (see Figure C.10). The two results of country-level and dyad-level resemble each other, showing the effect of autocracy gradually grows over time. From t+3 to t+5, autocracy's WTO effect is approximately 0.2 based on two datasets, while democracy's is insignificant. This is consistent with gravity models (Table 3), which report that the effect difference between average autocracy (Polity = -5) and average democracy (Polity = 5) is approximately 0.3 for the post-1990 period.

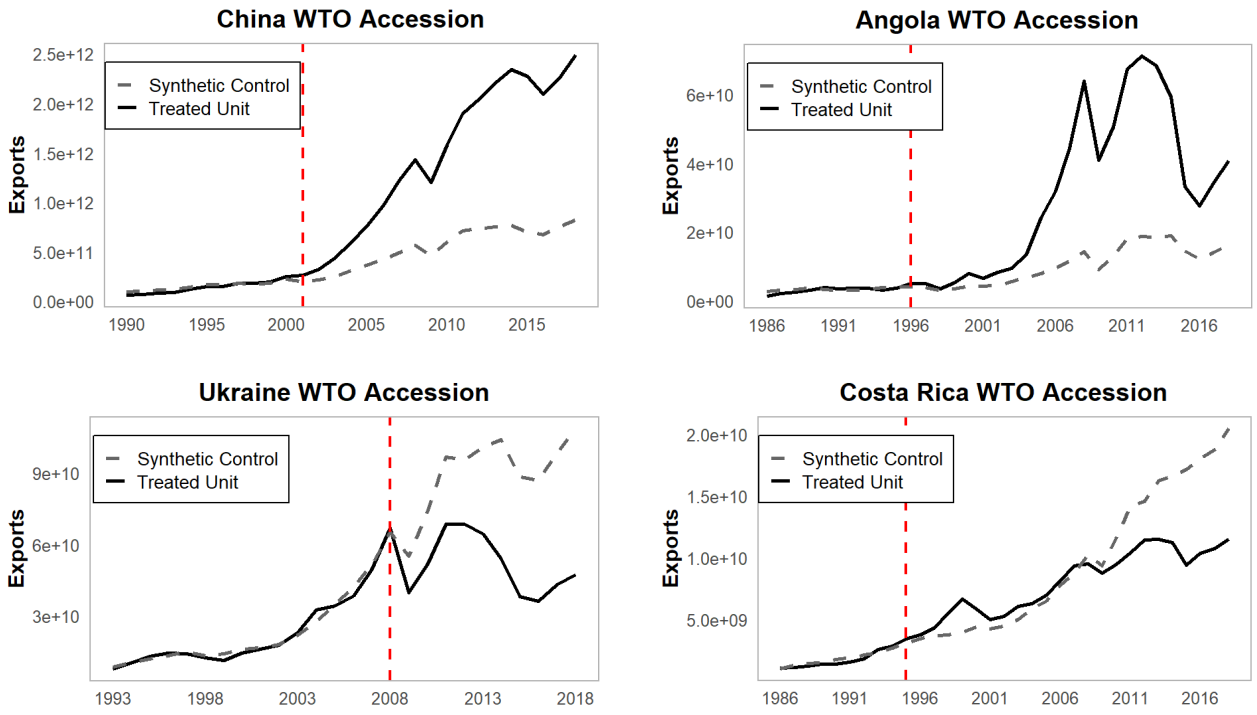


Figure 10: Examples by Synthetic Control Method. *Note*: Red dashed lines denote WTO-joining years. Covariates to predict the control unit include: GDP, GDP per capita, GDP growth, population, trade openness, Polity, PR protection, resource intensity, industrial intensity, and lagged exports.

In Figure 10, I pick China (the largest autocracy), Angola (a resource-rich African autocracy), Ukraine (a post-Soviet democracy), and Costa Rica (a development success in Latin America), as examples using synthetic control method (SCM). China, for example, compared to the control unit, had 189% and 242% more exports 10 years and 15 years after WTO accession respectively.

Domestic Reform as the Scope Condition

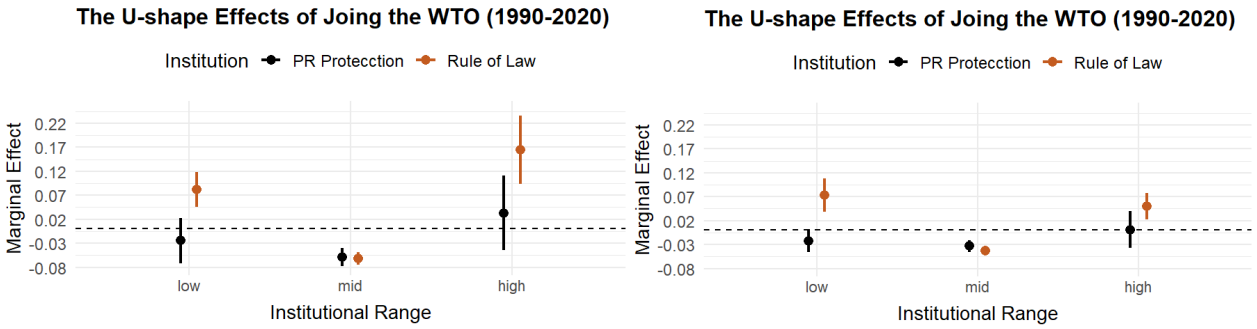
The gravity model, demonstrated sufficiently robust, will be used for the following tests. As argued in Section 4, the effect of WTO membership moderated by regime type is conditional on domestic institutions. When institutional levels are too low or too high, I don't expect autocracy outperforms democracy. I estimate the moderated effects stratified by levels of PR protection and rule of law, respectively. Institutional levels are divided into three categories: low, mid, and high.[57] I measure institutional levels by "10-year average intuitional levels" after accession, and assign dyads into the corresponding institutional categories. The idea is to test how the WTO effect moderated by regime

[57] I calculate thresholds combing lowest/highest 20 percentiles of institutions among developing countries in 2000 with minor adjustment based on real-world cases (see Appendix for details). By examining histograms in Appendix, each range contains a few autocracies and tens of thousands of dyads. The final ranges are {0, 0.35, 0.85, 1} for PR protection and {0, 0.2, 0.7, 1} for rule of law.

type varies across institutions.[58] I fit a model including a three-way interaction among post-1990 joiners:

$$Export_{ijt} = \beta WTO_{it} \times Polity_i \times Instituion10year_i + \delta \mathbf{X}_{ijt} + \gamma_{ij} + \eta_t + \epsilon_{ijt}$$

where $Instituion10year_i$ is categorical variable of post-WTO 10-year averages of institutional levels (low, mid, high) of country i, and $\mathbf{X}_{ijt}$ denotes dyad-level covariates. γ_{ij} and η_t are dyad and year fixed-effects.



(a) Exporter in WTO (b) Both in WTO

Figure 11: The Effects of Joining the WTO Conditional on Institutional Levels. Note: The y-axis means the difference of WTO effects across Polity. A positive value means the WTO favors democracy.

Figure 11 shows, as expected, autocracies outperform democracies regarding WTO effects, but not when institutions are too low or too high. It is only when institutional levels are somewhere moderate that autocratic advantages manifest. For the mid-level, for example, $WTO \times Polity$ is -0.058 and -0.062 for PR protection and rule of law, respectively, much larger than the average -0.03 magnitude (Column 4, Table 3). Robustness tests include nudges on thresholds up/down by ten percentage points, changing post-WTO institution average to 5 or 15 years, and using dichotomous Polity (see Appendix). I also run: (1) models with both-WTO variable (treatment at dyad-level), (2) correlated random-effect model, and (3) a Bayesian model, all of which get similar results (full table see Table C.5).

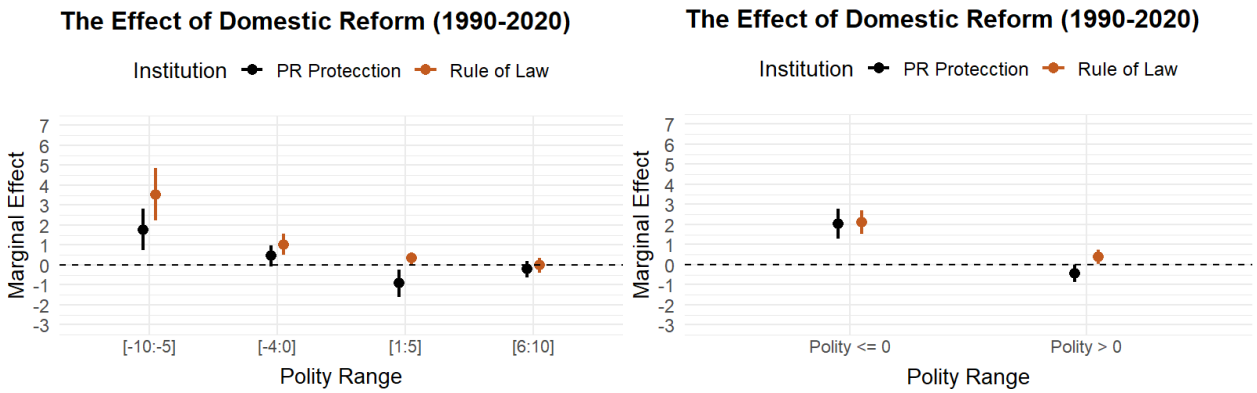
Why no pre-1990 autocratic advantages shown? Several responses are in order. Pre-1990 WTO expansion was rather conservative. During the Cold War, a limited number of autocracies that joined

[58] I do not control for institution in the model for possible post-treatment bias: institutional change may be partly affected by WTO membership. Yet, this may neglect pre-WTO institution's effect. However, controlling for institution doesn't affect results.

were smaller and weaker, so that democracies were not significantly impacted. In 1975, roughly 90% of WTO members' GDP belonged to democracies. More importantly, there had been neither substantive market-oriented reforms worldwide (or only on paper for newly some decolonized states) nor "hyper-globalization", mitigating the membership effect – In other words, the scope condition had not been sufficiently met.

5.2 The Domestic Reform Effect

I now test whether or not domestic reform favors autocracies. I also use gravity models to test the effect of domestic reform on trade. VDem's PR protection and rule of law are used to measure institutional levels. I exploit within-dyad variation with dyad and year fixed-effects which control for possible time- and dyad-invariant confounders. As reform is mostly for developing countries, I focus on those with GDP per capita below $20,000 in 2000, which results in 165 countries. For the case of post-1990 trade expansion, I also test the case of outsiders to align with my theory on post-1990 globalization: new-joiners (who joined the WTO after 1990) and never-joiners – 94 total with 30 autocracies. I assign countries into four ranges based on Polity score in 2000 as Polity is quite stable for post-1990 period. Institutions are lagged by one year.



(a) Insiders + Outsiders (b) Outsiders

Figure 12: The Effects of Domestic Reform by Polity. *Note*: (a) plots the effects of within-dyad institutional changes across ranges of Polity, for all developing countries (GDP per capital below $20,000 in 2000). (b) plots the same graph, but only for outsiders (new-joiners and never-joiners). Results are consistent for including both institutional measures.

As shown in Figure 12a, the effects of domestic reform among developing countries during the period of 1990-2020 are generally higher for more autocratic states.[59] This pattern is more

[59]I don't control for WTO membership to avoid the post-treatment bias. Similar effects remain with WTO mem-

apparent in Figure 12b, where I remove those who already joined the WTO before 1990. The likely interpretation is that the influx of many well-performing autocracies into the global trade system may exert significant stress to more hands-off, open-market democracies, with an exemplary case being the China shock. The result is consistent with the hypothesis that autocratic advantages amplify the effect of domestic reform. Admittedly, autocracies may also have increased marginal returns due to lower starting institutional levels. However, developing democracies' institutions were not significantly higher: 0.6 vs. 0.45 (autocracy) for PR protection in 1990 (see Figure 8), which cannot explain why democracy's reform effect is near zero.

Trade Integration as the Scope Condition

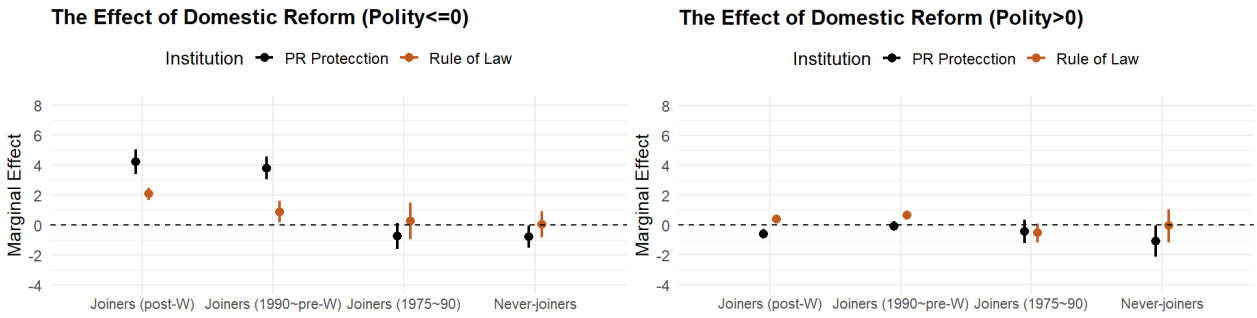
As the effect of domestic reform is only substantially positive for autocratic outsiders (Figure 12b), I focus only on the dyad-years in which exporter is an autocracy in 2000.[60] Assuming the main gravity model that controls for trade's determinants is still valid, I fit a model including an interaction term to estimate effects for two strata: joiners (post-1990 pre-WTO period) and joiners (post-WTO period), for both autocracy and democracy, respectively:

$$Export_{ijt} = \beta Institution_{i,t-1} \times Polity_i \times WTO_{it} + \delta \mathbf{X}_{ijt} + \gamma_{ij} + \eta_t + \epsilon_{ijt}$$

where $\mathbf{X}_{ijt}$ denotes dyad-level covariates. $Institution_{i,t-1} \times WTO_{it} \times Polity_i$ captures the effect of institution (lagged) moderated by WTO period classified by Polity in 2000. $\mathbf{X}_{ijt}$ denotes dyad-level covariates. I include dyad and year fixed-effects. Additionally, I estimate the non-interaction version of the model for joiners' pre-1990 reform period (1975-1989) before they were substantively engaged, and never-joiners.

bership.

[60] I include three years earlier (i.e., 1987-89) to allow for pre-wto years for those joined in the early 1990s, though no inclusion doesn't affect results.



(a) Autocracies (Polity $\leq$ 0 in 2000)

(b) Democracies

Figure 13: The Effects of Domestic Reform by Period. *Note*: Joiners are those joining the WTO after 1990. "W" denotes the WTO.

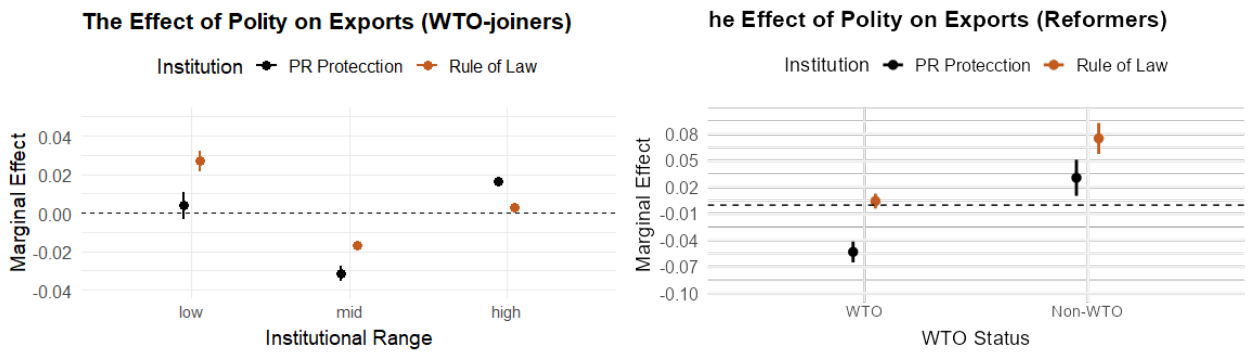
Figure 13a displays the effects of domestic reform for four categories. For PR protection, every 0.1 increase leads to 65.3% in exports for joiners' pre-WTO period, 54.3% change for joiners' post-WTO periods, and almost no change for joiners' pre-1990 period (1975-1989) and never-joiners. For rule of law, the effects are 22.2%, 13.6%, null, and null, respectively. By comparison, democracies see almost null effects for all categories (Figure 13b). Note that for joiners in the pre-WTO period (post-1990), as mentioned, many already enjoyed globalization benefits through semi-engagement, such as MFNs and PTAs, RTAs, spill-over from joiners, and future WTO prospect, so we expect positive effects compared to the non-engagement counterfactual.[61] Meanwhile, joiners' post-WTO period tend to have higher institutional level than pre-WTO period, which may have diminishing marginal returns of reforms, making the observed effect lower than that with a similar baseline as the pre-WTO period. In other words, WTO period may lead to higher effect than observed. Finally, for never-joiners, their effects are always null, although they may have other systemic differences. Overall, the results support my theory – autocratic advantages manifest conditional on the engagement by the global trade regime.

5.3 Absolute Levels of Trade Performance

Although incremental effects of WTO membership and domestic reform can explain why autocratic rise, autocratic engaged reformers should outperform in absolute levels of trade performance. I now pool all dyads together to estimate full gravity models with additional time-invariant covariates such as distance, religion, and language. My strategy is to test whether reformer perform better among WTO members and whether WTO members perform better among reformers. First, I divide all

[61] I don't use lead WTO dummies as two periods still differ substantively.

dyads with a WTO-member exporter into the same institutional categories as in WTO tests for PR protection and rule of law (lagged).[62] Then, I run the full gravity model by each category, with weighted least squares by inverse density accounting for the skewed distribution of observations across (see Appendix for details). Second, I divide dyads of moderate reformers into WTO and non-WTO categories and run the full gravity models.



(a) (b)

Figure 14: The Effect of Polity on Exports. *Note*: (a) examines all post-1990 dyads in the WTO; (b) examines all dyads with moderate institutional levels.

Figure 14a shows that for all WTO-exporter dyads with moderate institutional levels, Polity's effect on exports significantly favor autocracies, but not at low or high institutional levels. Figure 14b shows that for dyads with moderately reformed exporter, autocracy predicts more exports for WTO dyads.

Lastly, I test how regime type predicts external balances. The dependent variables are trade balances and current account balances, both as the share of GDP. By Figure 2, I focus the most stabilized decades (2000-2020). I add controls from Chinn and Ito (2021) to account for theoretical explanations of both trade and financial for external balances (Barattieri 2014). I employ a mixed-effect model based on Manger and Sattler (2020), as Polity has significantly less within-country variations since the mid-1990s. This mixed-effect hierarchical model captures within-country variations of covariates and cross-country variation of Polity by regressing country intercepts from the first stage on Polity. Below is the formal expression:

$$y_{jt} = a_{1j} + a_2 X_{jt} + d_t + \epsilon_{jt}$$

[62] I use the same bottom and top 20% quantiles adjusted by within-rage data distribution (See Appendix).

$$a_{1j} = \gamma_0 + \gamma_1 Polity_j + \eta_j$$

	DV: Current Account Balance (%)						
	FE	FE	RE	RE/No OPEC	RE/Developing	RE/WTO Post-90	1980-95
Polity	−0.212***	−0.123***	−0.146***	−0.135***	−0.139***	−0.225*	0.095*
	(0.039)	(0.043)	(0.049)	(0.049)	(0.053)	(0.119)	(0.052)
Controls		✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Country RE			✓	✓	✓	✓	✓
Num.Obs.	2704	1499	1499	1698	1469	540	290
R2 Cond.			0.759	0.757	0.691	0.755	0.605
	DV: Trade Balance (%)						
	FE	FE	RE	RE/No OPEC	RE/Developing	RE/WTO Post-90	1980-95
Polity	−0.410***	−0.480***	−0.241***	−0.179***	−0.227***	−0.268**	0.140**
	(0.050)	(0.069)	(0.056)	(0.055)	(0.064)	(0.124)	(0.057)
Controls		✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Country RE			✓	✓	✓	✓	✓
Num.Obs.	2829	1560	1560	1463	1243	551	294
R2 Cond.			0.882	0.880	0.848	0.938	0.900

* p < 0.1, ** p < 0.05, *** p < 0.01

Table 4: Regime Type's Effect on External Balance (2000-20). *Note*: full table see Table C.6.

As shown in Table 4, all models using post-2000 data show that autocracy is positively associated with current account balance, even after removing OPEC countries/Russia, developed countries, and those which joined the GATT prior to 1970. The early period (1980-2000) does not display similar patterns. Similar models are run for trade balances, and the results are similar but with larger magnitudes. This suggests that autocracies' surpluses are connected to the globalized economy.

5.4 Additional Robustness Tests

Although I have used multiple methods to confirm robustness, additional tests are conducted in the Appendix:

First, I conduct more robustness checks for all gravity models. For all gravity models, I apply sensitivity analysis. Second, I use non-continous democracy measures of Polity: binary and trinary. Third, I use alternative institutional measure other than VDem's, such as World Bank's rule of law index. Fourth, for systematic detection of outliers, I conduct a bootstrap approach by "leave-one-out." Fifth, I test longer years of lagged effects of WTO and domestic reform. Sixth, I use multiple Imputation to impute missing data.

5.5 Discussions of Potential Questions

Among other globalization changes, trade integration and institutional reforms are arguably two most important determinants to trade performance identified in the growth and development literature. Nonetheless, below I discuss several concerns.

Is it simply a story of China, Vietnam, Russia, and oil states? None of the descriptive data in Section 2 shows they are outliers. Moreover, the theory of engaged reformers and causal analysis suggest that regime type plays an important role, if not at all. Even if one insists that the theory fits better the above countries, which are major autocracies accounting for the majority of autocracies' GDP, it already answers the question of autocratic rise.

What about the commodity boom and the spillover effect? I first delete the boom years (2004-2014) and OPEC countries, and the results hold. The spillover of joiners (e.g., China and others) and the buildup of a global commodity market do matter. However, this second-order effect does not negate my argument that globalization facilitates autocratic rise. Plus, I don't observe autocratic advantages in the previous oil boom (1970/80s). Moreover, resource-rich countries without meeting the scope condition nonetheless underperformed (e.g., Venezuela, Iran, and Iraq). And for over 20 non-WTO member autocracies, the membership effect is zero. Lastly, both democracies and autocracies were affected by import shocks or commodity booms to some extent, yet democracies seem to benefit less.

What determines "engaged reformers?" Although out of this paper's scope, there were historical, economic, and ideological reasons. Autocracies adapt and vary. For example, Geddes (1999) finds that only single-party regimes can achieve sustained economic development, and Hankla and Kuthy (2013) also find single-party autocracy adopts more trade liberal policies.

How about state capacity? State capacity plays a pivotal role in economic development (Acemoglu et al. 2015; Dincecco 2017). However, conditional probability $P(\text{capacity} \mid \text{performance})$ is not $P(\text{performance} \mid \text{capacity})$. North Korea also has high state capacity. Property-rights protection and rule of law, as well as autocratic advantages, are critical components of state capacity that directly affect economic performance. In the Appendix, I test the robustness of my results by including broader measures of state capacity.

What about democracy-autocracy trade before 1990? The U.S., for example, also traded with some autocracies in Latin America and Asia. These trade relationships, compared to a globalized economy, were limited in scale and depth. The GATT expansion had been quite conservative and

the global value chain had not taken off – for example, South Korea largely relied on developing indigenous supply chains (Baldwin 2016). Economies of the engaged autocracies were not large enough to significantly impact democracies.

What about the back-and-forth trade along the GVC that double counts exports? In general, democracies tend to be more economically integrated through the GVC, with examples like the NAFTA, Eurozone, and ASEAN. Autocratic states that produce more final manufactured goods or commodities tend to be less integrated. Moreover, not only is export a conventional measure for trade performance, but we also consider external balance which calculates net exports, effectively reducing the concerns of over-counting.

What about semi-engagement like the MFN status? China was granted the MFN status by major western countries in the 1980s, while Vietnam and Russia were granted this status by the U.S. in 2001 and 2012, respectively. Some MFNs are granted as part of PTAs, for example, U.S.-Vietnam or U.S.-Lao Bilateral Trade Agreements, which are controlled for in the models. Moreover, MFN is inherently a WTO concept and semi-engagement is part of globalization. Official WTO membership provides much more benefits than a revocable MFN status. Lastly, if the estimated WTO effect absorbs the MFN effect which is years before, the former's sole effect is likely underestimated.

What about the role of foreign direct investments (FDI)? Export-oriented FDI, rather than service-oriented, directly boosts exports and has larger productivity-enhancing effects (Helpman 1984; Pandya 2016). As export-oriented FDI usually follows globalized production (Helpman 1984; Markusen 1984), it is more of a post-treatment variable: without trade engagement, investors would feel discouraged to invest in a country (Carnegie 2014). Additionally, I show a mixed correlation between FDI and regime type, with some years favoring autocracy and others not.

5.6 Alternative Explanations

"Catching-up"

Less developed countries (LDCs) may converge with developed economies by running faster (Sachs and Wernar 1994; Luo and Przeworski 2019). Yet, the performance of both regime groups were similar prior to 1990 (see Figure 2), and post-1990 WTO-joiners (in my tests) were mostly LDCs. Neither did autocracies start low. The correlation between GDP per capita (one year before WTO accession or in 1990) and Polity for post-1990 WTO-joiners is negative (r = -0.25 and -0.43) – autocracies start higher. Regime type effects also favor autocracies in absolute trade levels, controlling

for country-specific covariates including income per capita.

"Importing" Credibility

Arias et al. (2018) argue that autocracies may benefit more from joining international institutions since they import more credibility for investors. Importing institution is one way to increase performance. However, my findings show that it's the combination of institutional reform and economic engagement, and trade advantages possessed by these autocracies. That's why low-reformed autocratic joiners underperformed. Their theory also doesn't touch upon reform effects.

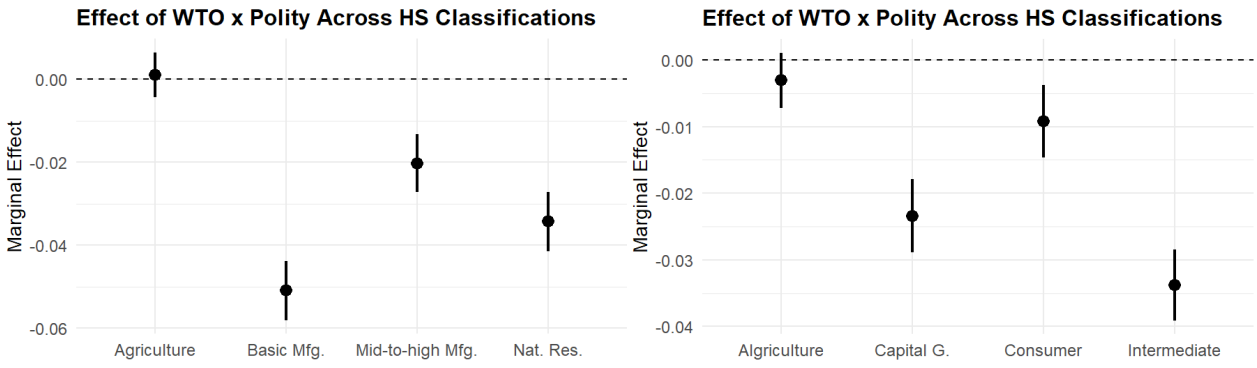
6 Mechanisms

6.1 Sectoral-level Evidence

As discussed in Section 4, autocratic advantages such as mercantilism, wage suppression, and resource endowment favor exports of manufactured and commodity goods, as well as intermediate goods which reflect GVC participation compared to primary goods. For example, China shifted millions of labors from agricultural sectors to manufacturing after WTO accession (Erten and Leight 2019). Unveiling consistent sector-level patterns helps further corroborate my theory.

The UNCTAD classifies sectors based on manufacturing factors (labor, natural resource, and technology).[63] I create four categories of product types: agriculture, natural resource, basic manufacturing, and mid-to-high manufacturing based on on manufacture types. The World Bank's WITS on the other hand, classifies Harmonized System (HS) sectors into raw materials, intermediate goods, consumer goods, and capital goods based on GVC participation. I then merge six-digit HS code into the four broad categories. I then ran sector-level gravity models with the interaction term ($WTO \times Polity \times category$) using CEPII's BACI data at the HS 2-digit level.

[63] See https://unctadstat.unctad.org/EN/Classifications/DimSitcRev3Products_Tdr_Hierarchy.pdf.



(a) (b)

Figure 15: Interaction Effect ($WTO \times Polity$) across HS Categories. *Note*: negative value means the WTO effect favors autocracy.

As shown in Figure 15, after WTO accession, autocratic advantages in exports manifest the most in basic manufacturing (Figure 15a) or intermediate goods (Figure 15b), then natural resource or capital goods. This differentiated sectoral performance underscores more detailed patterns of autocracies in leveraging WTO membership for export growth. Their advantages, as expected, started taking effect in industrial products and commodities, particularly through participating in the GVC (e.g., intermediate goods).

6.2 Mediating Analysis

When autocracies are incorporated into the global trade regime, they multifaceted advantages may simultaneously influence trade performance. Section 6.1 further reveals that autocracies benefit more from exporting manufactures and commodities than agriculture, and through the GVC integration. To understand the channels connecting regime type to trade performance, I conduct mediating analysis.

6.2.1 Exports

There are numerous channels through which exports can be affected by regime type, including but not limited to: economic institutions that protect property rights, mercantilist policies that tilt resources to the industrial sector (and relatedly, encourage savings), infrastructure investments, centralized power that responds to global market swiftly, controlling abilities resilient to external shocks, foreign direct investments (and relatedly, capital account openness), trade barriers, currency manipulation, and natural resource endowment. The combination of mechanisms may differ from

country to country.

Mechanisms	**Implications**
mercantilism/developmentalism	industrial share (-1.32, t=-24.21)
	fixed investments (-0.31, t=-8.41)
	saving rate (-1.76, t=-27.17)
	fdi share (0.01, **t=0.24**)
institutionalism	property rights protection (0.01, t=45.14)
neoliberalism	tariff rate (0.20, t=1.92)
	capital market openness (-0.006, t=4.45)
resource	natural resource rent share (-0.86, t=-10.38)

Table 5: Mechanisms and Implications (for Exports). *Note*: numbers in brackets are coefficients of regressing channels on Polity with year fixed effects (2000-2020), and t values.

As the aforementioned tests demonstrate certain autocracies outperform, I focus on the "engaged reformers" with the PR protection between 0.1 and 0.7 and being inside the WTO since 2000. Table 5 presents the coefficients when I regress various channel variables on Polity with year fixed effects. These correlations are significant with mixed signs except for the FDI share, and they potentially play some roles as the mediating variables. Interestingly, autocratic engaged reformers have lower average tariff rates.

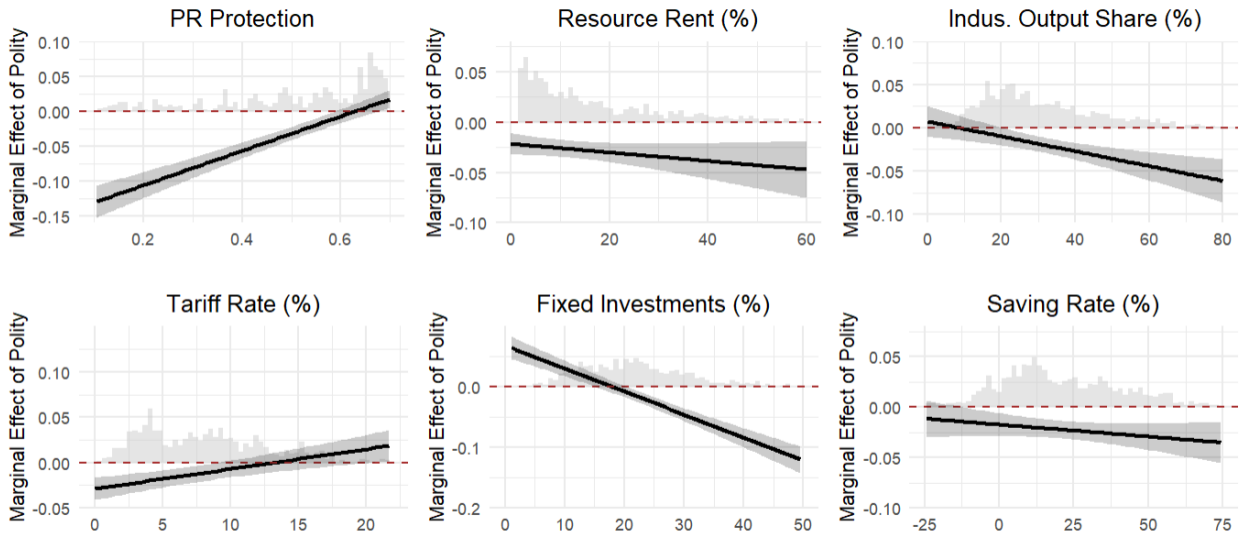


Figure 16: Channels and Exports. *Note*: the y-axis is the Polity's effect on exports.

I find that no channel variables dramatically reduces the effect of Polity in the mediating tests

(see the Appendix), suggesting each channel may only work partially or for certain countries. Yet, further tests shed more light. As plotted in Figure 16 where varied channels interact with regime type, across different levels of channel variables, Polity's effect varies. For example, for industrial output, fixed investments, and saving rate, Polity's effect on exports significantly favors autocracy when these variables are at higher values. This suggests that, at higher values, autocratic advantages may be amplified, possibly with other channels. For example, in highly industrialized autocracies, centralized power can better support firms' needs by streamlining processes and suppressing labor unions. A high level of fixed investments in infrastructure may enhance autocracies' abilities to attract FDI and more effectively support the export sector. A high saving rate (more likely imposed by autocratic leaders) may better support autocrats' policies on infrastructure building and competitive financing.

6.2.2 External Balances

External balances are systematically different from exports regarding the causes, which are generally divided into trade and financial explanations (Barattieri 2014). Overall, autocracies are more likely to conduct mercantilist and protectionist policies (unlike engaged reformers). Meanwhile, autocracies are correlated with higher natural resource endowment and lower levels of capital market development which do not cause issues like inflated currency.

Mechanisms	**Implications**
mercantilism	industrial share ($r = -0.47$)
protectionism	tariff rate ($r = -0.52$)
	capital market openness ($r = 0.49$)
capital market level	private credit supply share ($r = 0.36$)
resource	natural resource rent share ($r = -0.56$)

Table 6: Mechanisms and Implications (for External Balances). *Note*: in brackets are cross-country correlations in year 2010.

The implication that follows is that industrial output (% of GDP), tariff rate, capital market development and natural resource output (% of GDP) may be potential mediating variables.

DV: Current Account Balance (%)						
	Baseline	**Mercantilism**	**Protectionism**	**CapMkt Dev.**	**Resource**	**All**
Polity2	−0.158***	−0.107**	−0.162***	−0.157***	−0.113**	−0.099*
	(0.052)	(0.053)	(0.056)	(0.051)	(0.053)	(0.054)
Industrial Output(%)		0.268***				0.248***
		(0.030)				(0.036)
Tariff Rate			0.180***			0.210***
			(0.045)			(0.043)
Δ Private Credit (%)				−0.099***		−0.113***
				(0.014)		(0.013)
NatRes Rent (%)					0.220***	0.098***
					(0.031)	(0.035)
Controls	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Num.Obs.	1308	1293	1189	1294	1308	1162
R^2 Conditional	0.770	0.791	0.798	0.773	0.795	0.829

* p < 0.1, ** p < 0.05, *** p < 0.01

DV: Trade Balance (%)						
	Baseline	**Mercantilism**	**Protectionism**	**CapMkt Dev.**	**Resource**	**All**
Polity2	−0.202***	−0.068	−0.142**	−0.211***	−0.119*	−0.013
	(0.068)	(0.066)	(0.072)	(0.066)	(0.064)	(0.065)
Industrial Output(%)		0.640***				0.476***
		(0.038)				(0.043)
Tariff Rate			0.120**			0.186***
			(0.053)			(0.048)
Δ Private Credit (%)				−0.147***		−0.159***
				(0.016)		(0.015)
NatRes Rent (%)					0.614***	0.371***
					(0.036)	(0.040)
Controls	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Num.Obs.	1308	1293	1189	1294	1308	1162
R^2 Conditional	0.876	0.890	0.888	0.883	0.903	0.920

* p < 0.1, ** p < 0.05, *** p < 0.01

Figure 17: Mediating Variables and External Balances.

Table 17 displays the results of mediating tests again based on the mixed-effect model (Sattler and Manger 2019). Current account balances are significantly mediated by mercantilism and resource channels, whereas trade balances are significantly mediated by mercantilism, protectionism, and resource channels. All these channels can come from autocratic characteristics in Section 3.

7 Case Illustration

In this section, I examine carefully selected country pairs, allowing for micro-level insights and corroboration to my theory. I use export share of GDP as the key metric that implies trade performance, external demand dependency, or global trade participation.

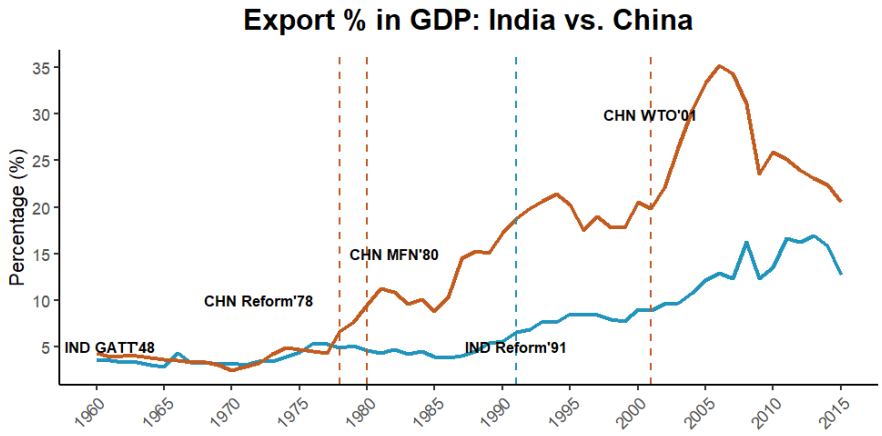


Figure 18: Exports (%): China vs. India. *Note*: source: WDI; China increasingly relied on domestic economy after 2008.

China vs. India - China and India, though not identical, share many structural similarities until the early 1980s: demographics, trade-facilitating geography like coastal proximity, resource endowments, and inward-looking, state-led economy with planning features. India, while not strictly limiting private ownership like China, kept an extensive system (License Raj) of licenses, permits, and regulations that controlled the private sector since the 1950s. For decades, both countries unsurprisingly had similar trajectories in export performance (Figure 18), but started to diverge once exposed to an environment of both engagement and reform. China fits my theory particularly well: initiating market-oriented reforms in 1978, it's in 1980 secured the MFN status from the U.S (i.e., semi-engagement) while borrowing hugely from the World Bank. Though still recording persistent trade deficits (1980-1995), China's exports immediately took off. China's WTO accession in 2001 provided another export boost, leading to sustained trade surpluses thereafter. Specifically, China's authoritarian regime enabled features such as a gradualist approach blending state control with markets and long-term planning (Lin et al. 2003), mercantilist policies, and labor rights suppression. By contrast, India's GATT signatory status didn't stimulate trade much. Despite having a higher nominal PR protection than China (0.77 vs. 0.35 in 2000), India's democratic system, though more inclusive, must navigate coalition politics, public dissent, and legal constraints, resulting

in slow decision-making and limited mercantilist practices (Groth 2006). Consequently, India's export performance diverged from China's around 1980, running persistent trade deficits. However, conforming to the theory, with Modi's more centralized and authoritarian turn, India has quickly pivoted toward a more mercantilist trade policy, particularly in electronics.[64] In only five years (2018-2023), India's electronics exports increased fivefold to $22 billion.

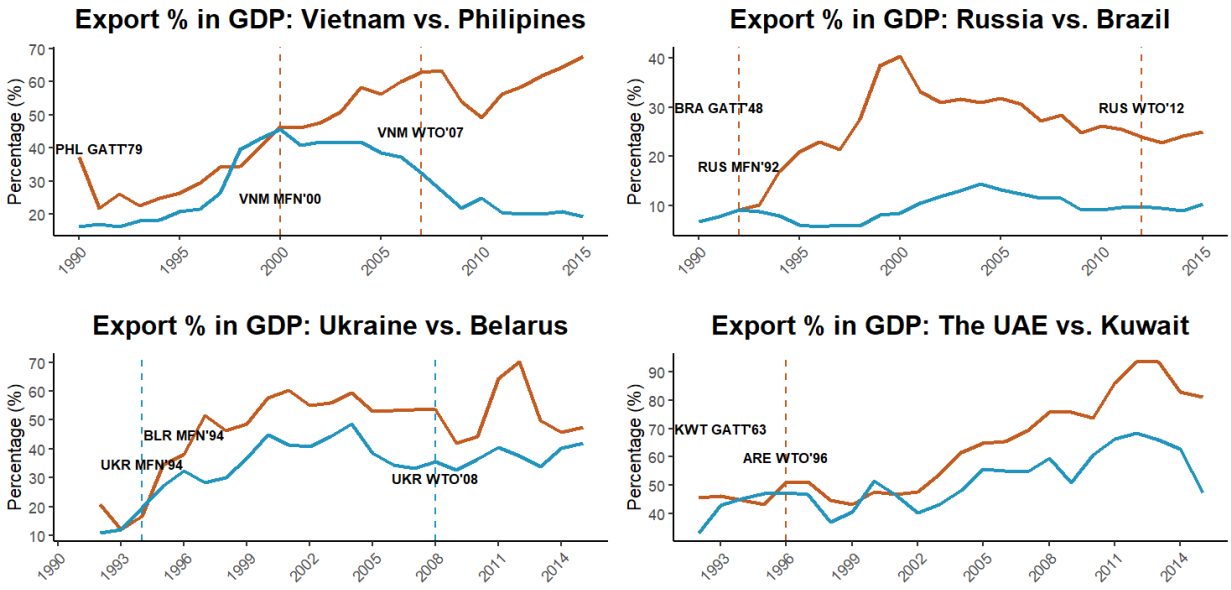


Figure 19: Exports (%): Similar Country Comparison (Post-1990). *Note*: source: WB. Red line denotes the first country.

Vietnam vs. the Philippines - Vietnam and the Philippines present another instructive comparison. In the 1980s, both countries shared similar income levels, economic structures, demographic profiles, geographic conditions, ethnic compositions, and resource endowments. Vietnam initiated economic reforms in 1986 and by 2001 had obtained the MFN status from most Western countries. Although running persistent trade deficits before 2010, Vietnam had started implementing a state-led, mercantilist development strategy modeled in part on China's. The country's ability to pursue consistent policy agendas, long-term planning, and gradual but managed liberalization has been widely attributed to its centralized political system (Kirkpatrick et al. 2001). Vietnam's WTO accession in 2007 marked a turning point, and within five years it transitioned to running sustained trade surpluses. In contrast, the more democratic Philippines witnessed elites dominating the democratic process and capturing rents, and resources being diverted away from investment in human development and infrastructure which are key to export performance (Baulch 2016).

[64] "10 Years of Make in India," Government of India, 2024.

Belarus vs. Ukraine - Belarus and Ukraine shared many similarities in the early 1990s: per capita income, political legacies, geography, resource endowments, and cultural and racial backgrounds. Both countries implemented market-oriented reforms to a similar level (0.75 vs. 0.9 in PR protection, and 0.26 vs. 0.2 in rule of law in 2000). While Belarus never joined the WTO, it was semi-engaged through channels such as the MFNs (with the U.S. and EU in the 1990s), economic spill-over from Russia, the China-Belarus industrial park, and RTAs like the EAEU (Eder 2021). Ukraine, by contrast, joined the WTO in 2008. Politically they diverged: Belarus is autocratic and Ukraine practices democracy. It turns out Belarus's centralized, state-led gradual reforms more favored industrial development (Ibid), whereas Ukraine's fragmented political system subject to interest groups, oligarchs, and "hands-off" liberalization has left it vulnerable to external shocks and underinvestment in infrastructure and industries (Kuzio 2020). Between the early 1990s and the mid-2010s, Belarus increased its exports thirteen-fold, significantly outpacing Ukraine, which saw only a five-fold increase alongside a per capita income half of Belarus'.

The UAE vs. Kuwait – While neither country is a democracy, it nonetheless pertains to my theory. Although the UAE and Kuwait share comparable resource endowments (holding 5.9% and 6.1% of global oil reserves, respectively), as well as similarities in GDP per capita during the 1990s, geographic location, population size, religion, and ethnic composition, notable institutional differences help explain their divergent performance trajectories. The UAE's federal monarchy, with its highly centralized authority across seven emirates, has led to government-led development, fast decision-making, and a flexible labor regime, enabling swift, coordinated economic policies and large-scale investments in infrastructure such as extensive transport networks which have fostered a diversified export base (Hvidt 2013). In contrast, Kuwait's constitutional emirate, with a relatively empowered parliament, often exhibits more fragmented governance and slower policy reactions and suffers from "the lack of political consensus and long-overdue reforms" (Ibid), despite its accession into the WTO (1963) much earlier than the UAE (1994).

Russia vs. Brazil - Russia and Brazil also shared some similarities: similar income levels in the early 1990s, regional resource-oriented powers with similarly vast landmass and population, and similar economic problems and market reforms in the late 1980s. In Russia's case, the implementation of "shock therapy," followed by a series of stabilization efforts and partial re-nationalization of key industries, was deeply facilitated by its centralized state and authoritarian legacy (Åslund 2012). Russia, along with many other post-Soviet states, strategically devalued its currency to stimulate

exports, maintained low taxes, limited social transfers, and suppressed wage growth (Ibid). These partly explain Russia's faster growth rate than most Central European countries that adopted the EU model, reinforcing the "old idea of authoritarian advantage" (Ibid). Consequently, Russia's exports surged in the 1990s and remained at a high level afterwards (Figure 19), while keeping current account surpluses for decades. In contrast to Russia's late WTO accession (2012), Brazil was a GATT signatory. While Brazil's energy sector is more diverse than Russia's, it also heavily relies on resource exports (World Bank). As a democracy, Brazil experienced recurrent policy instability, driven by electoral turnover and fiscal pressures to expand social spending, which in turn created an uncertain business climate and obstructed long-term structural reforms (Franko 2018). Brazil's trade policies which merely shield domestic interest groups and stricter labor regulations constrained competitiveness and innovation (Ibid; Feierherd 2024). Although Brazil enjoyed a temporary export growth during the 2000s commodity boom, its overall exports has remained substantially lower than Russia's (Figure 19), with consistently recorded current account deficits for decades.

Figure B.3 in the Appendix depicts "exports as a share of world total exports" for 20 major autocracies with time marks for MFN/WTO/WTO observer. World export shares increased for most of them after 1990.

8 Conclusion and Discussion

The debate over whether democratic or autocratic institutions better promote economic development remains unresolved. Ultimately, it hinges on the mechanisms that drive economic performance. In this article, I engage with this debate by addressing a key puzzle: why has regime type's effect on trade performance reversed compared to the pre-1990 period? To explain this divergence, I theorize "autocratic advantage" in a globalized economy, arguing that attributing autocratic economic success solely to market-oriented reforms and self-driven development is, at best, incomplete. While institutional theories of growth remain valid, external forces may counteract them. Economic globalization, which integrates many autocracies into the globalized market, is a necessary condition for autocratic advantages, allowing autocracies to out-compete for external demand – at the cost of democracies. Autocratic regimes often lack institutional mechanisms for inclusive growth, resulting in weak domestic demand (Acemoglu and Robinson 2012). Consequently, they should find growth

harder absent strong external demand.

In the era of economic globalization, particularly through the global value chain, firms in autocracies gain competitive advantages, which has implications for innovation as well, as in the case of China. Resource-rich autocracies, benefit from unprecedented export opportunities and external demand and reap revenues that reinforce their regimes. My theory provides a novel lens understanding the rise of non-resource-rich authoritarian countries like China and the Asian dragons/tigers, among others. It also answers why, after the Cold War, democracies seem to have increasingly struggled to maintain economic competitiveness and ideological appeal.

Conventional liberal proponents argue that open societies, characterized by free trade and democratic governance, foster global peace and economic prosperity. Such openness leads to interdependence among nations, reducing the likelihood of conflict. This paper demonstrates that, exposed to global competition shaped by the current trade regime, empirical evidence that autocracies thrive in trade challenges this optimistic view.

The findings also speak to the accession theory of international organization proposed by Downs et al. (2000). While the theory suggests that sequential accession allows for gradual integration and compliance with trade rules, in practice, this staggered process has been insufficient in ensuring that later-joining autocracies adhere to WTO principles. Sequential accession alone does not compel autocracies to fully liberalize their economic or political systems. As the authoritarian members thrived, the WTO's ability to function as a rule-based club has eroded, causing institutional gridlock.

The trend depicted in the paper posts a sober future for the current liberal order and democracies. Some argue that democracies should establish their own trade bloc (Friedberg 2025). Whether framed as a contest between democracy and autocracy or as new great power rivalry, my findings indicate that global market forces – shaped by the existing trade system – may continue to favor autocracies. Given this dynamic, the continued deindustralization of advanced democracies may not be surprising. The fact that economic globalization has produced this outcome is both unexpected and undesirable. Ultimately, where the global trade system and globalization should be headed hinges on its expectations and consequences; as Keohane (1984) posits, the means are justified by the ends. Future research should further explore the institutional advantages of reformed autocracies and whether democracies truly cannot compete on an equal footing.

Should countries embrace autocracy? Not really. In the current geoeconomic environment, the space for the old trade practices, especially for autocracies, is shrinking as the concerns of others

grow. If de-globalization deepens (e.g., in the form tariffs and regional trade blocs), the scope conditions that once enabled autocratic advantages may disappear, and the unintended consequences of autocratization are unpredictable, potentially backfiring on those in power. Moreover, shifting toward autocracy risks undermining domestic demand and innovation-driven growth, while also jeopardizing broader social values such as equity and individual rights.

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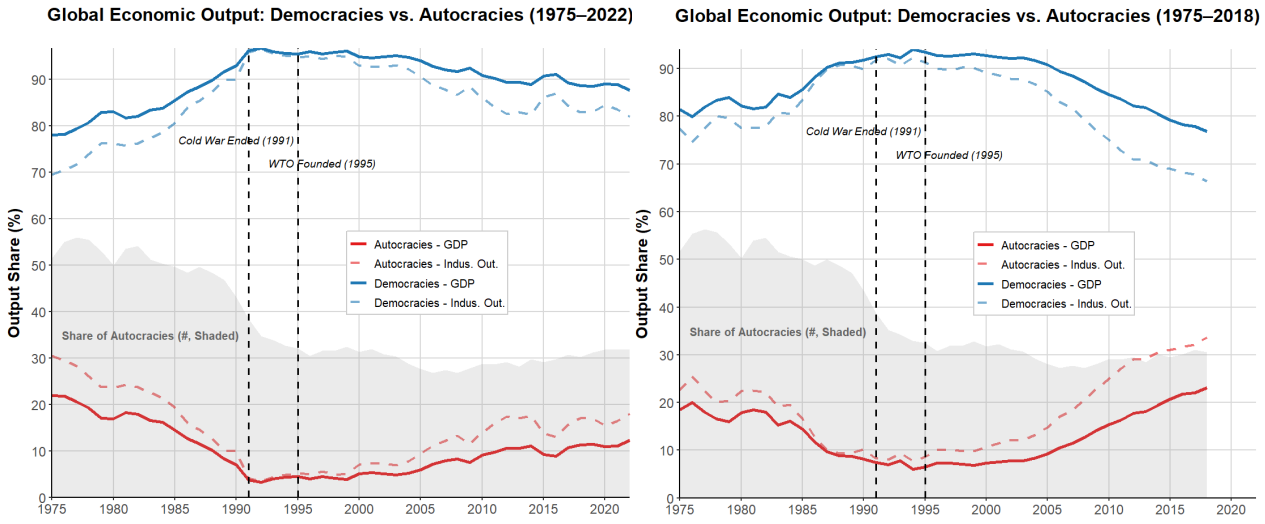
Contents of Appendix

A Data Description

This section details the data that underpin the analysis. Summary statistics, plots, and data distributions are presented to provide a more rich understanding of the story and its suitability for research questions.

A.1 Distributional Change



(a) Freedom House Index (Excl. China) (b) Polity (All)

Figure A.1: The Distribution of Power Change Between Democracies and Autocracies. *Note*: Data: World Bank. In (a), autocracy is measured by $FH \geq 10$. In (b), autocracy is measured by $Polity \leq 0$. Polity data is available until 2018.

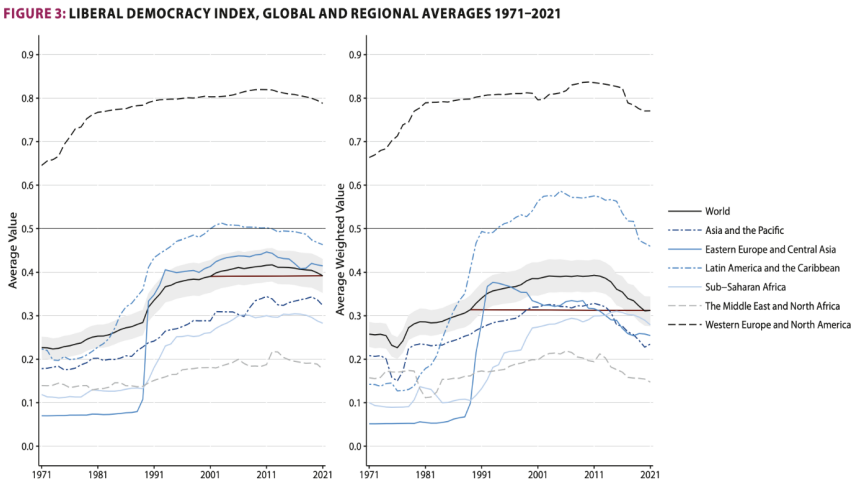


Figure A.2: VDem Global Liberal Democracy Index (Source: the Vdem Report 2021)

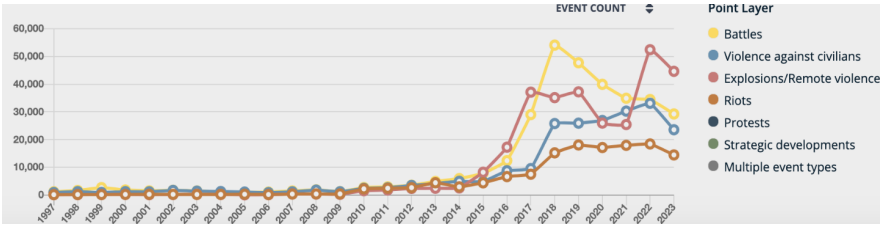


Figure A.3: The Trend of Global Conflicts (Source: ACLED).

Country/Leader	Fast Growth?	Export-Led?	Reason/Details
China (1978–2008)	Yes	Yes	Consistently high growth (10%), driven by market-oriented reform and export-led manufacturing, SEZs, and WTO entry.
Japan (1950s–1970s)	Yes	Yes	Post-war authoritarian, market-minded bureaucracy enabled export-led growth, tech upgrading, and 9% annual GDP growth.
South Korea (1962–1987)	Yes	Yes	Authoritarian state led industrial policy and export push.
Taiwan (1960s–1980s)	Yes	Yes	Under KMT authoritarianism, state-supported export sectors like electronics drove fast growth.
Singapore (1965–1990)	Yes	Yes	Semi-authoritarian regime used strategic export-oriented policy and MNC investment.
Hong Kong (1950s–1980s)	Yes	Yes	Colonial rule with modern market; booming re-export and service economy.
Malaysia (1986–2000)	Yes	Yes	Rapid growth post-1985 crisis; export-oriented industrialization (electronics, palm oil); strong FDI.
Thailand (1986–1996)	Yes	Yes	Export-led manufacturing boom before 1997 crisis; 9% annual growth driven by electronics and autos.
Indonesia (1989–1996)	Yes	Yes	Suharto-era liberalization brought export growth in textiles, natural resources before Asian financial crisis.
Vietnam (1990s–2010)	Yes	Yes	Post-Doi Moi reforms led to 6–7% growth; FDI-driven export economy in garments, electronics, and agri.
Pinochet (Chile, 1980s)	Yes	Yes	7% growth post-1985; market reform; exports quadrupled in 1985-1995
Franco (Spain, 1959–74)	Yes	Partial	average 7% growth rate; authoritarian technocrats with market reforms; GATT 1963, abandoned autarkic policies but on imports and low mercantilist policies; FDI, domestic industrialization mattered more than exports
Junta (Brazil, 1968-80)	Yes	Partial	10%+ growth rate during 'Brazilian Miracle'; market economy; state-led investment in infrastructure and industry and export promotion, exports increased ten-fold in 1968-1980
Salazar (Portugal, 1950/60s)	Yes	Yes	average 5–7% growth rate; market reform; investment in infrastructure and industry; export boom after 1960 EFTA and 1962 GATT, exports tripled in 1960-1970
PRI (Mexico, 1950s-80s)	Yes	Yes	1950-70 state-led industrialization, infra investment, and ISI; market institutions; FDI/tech absorption weaker than Spain; 1970s started export-oriented policies, exports increased thirteen-fold in 1972-82, 1986 GATT and 1994 NAFTA-led export boom.
Fujimori (Peru, 1993-2013)	Partial	Yes	Early ISI not work well; 1980/90s market reforms; post-Fujimori based on early reforms; riding on commodity boom, exports increased twelve-fold in 1993-2013.
dos Santos (Angola, 2002-12)	Yes	Yes	Market reform though limited, attracts foreign oil companies, state-led infrastructure; post-war boom largely driven by oil exports, exports increased by fourteen-fold; .
Ben Ali (Tunisia)	Yes	Yes	Growth via light manufacturing and exports to Europe, especially textiles.
Kagame (Rwanda)	Yes	Partial	7–8% annual growth, with modest export expansion and large public investment.

Botswana (1966–80)	Yes	Yes	Diamond mining accounted for most of Africa's strongest GDP growth.
Zenawi (Ethiopia)	Yes	Partial	10% growth, largely from public investment, not heavily export-based.
Obiang (Eq. Guinea)	Yes	Yes	Explosive growth from oil, nearly all of GDP tied to exports.
Mubarak (Egypt)	Partial	Partial	Growth via gas, tourism, remittances, and modest export expansion.
Mohammed VI (Morocco)	Partial	Partial	Exports grew, but tourism and domestic consumption were also key.

Table A.1: Assessment of Growth and Export Strategy in Selected Autocratic Regimes. Note: I categorize "Fast Growth" and "Export-led" by Yes, Partial, and No.

A.2 Descriptive Performance

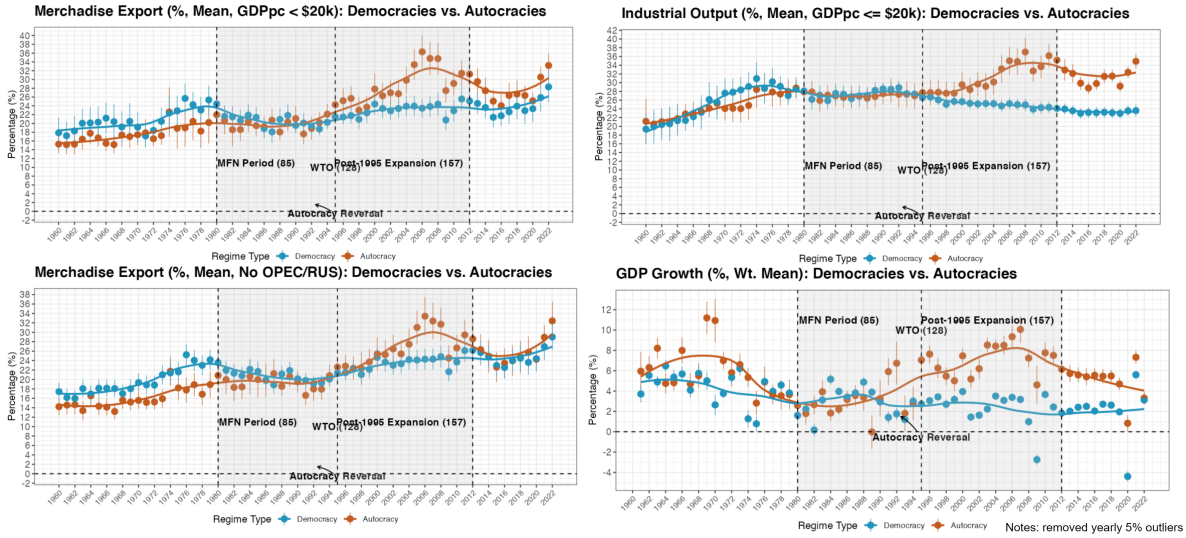
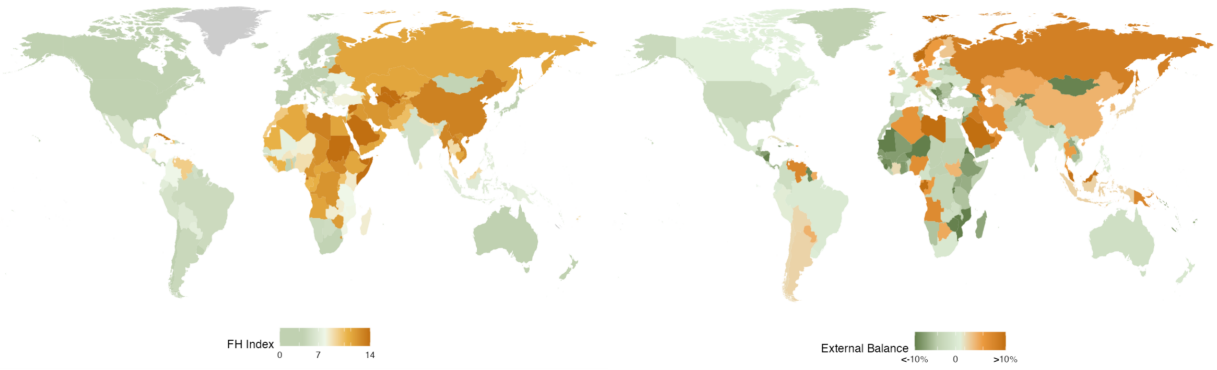


Figure A.4: Average Performance of Economic Indicators between Democracies and Autocracies (FH $\geq$ 11).



Freedom House Index | Average External Balance (% of GDP)

Figure A.5: Correlation between Regime Type and External Balance. *Note*: average external balance calculate the mean of current account balance and trade balance to include the information of both balances, since the two oftentimes do not overlap.

A.3 Panel Data of Regime Type Change

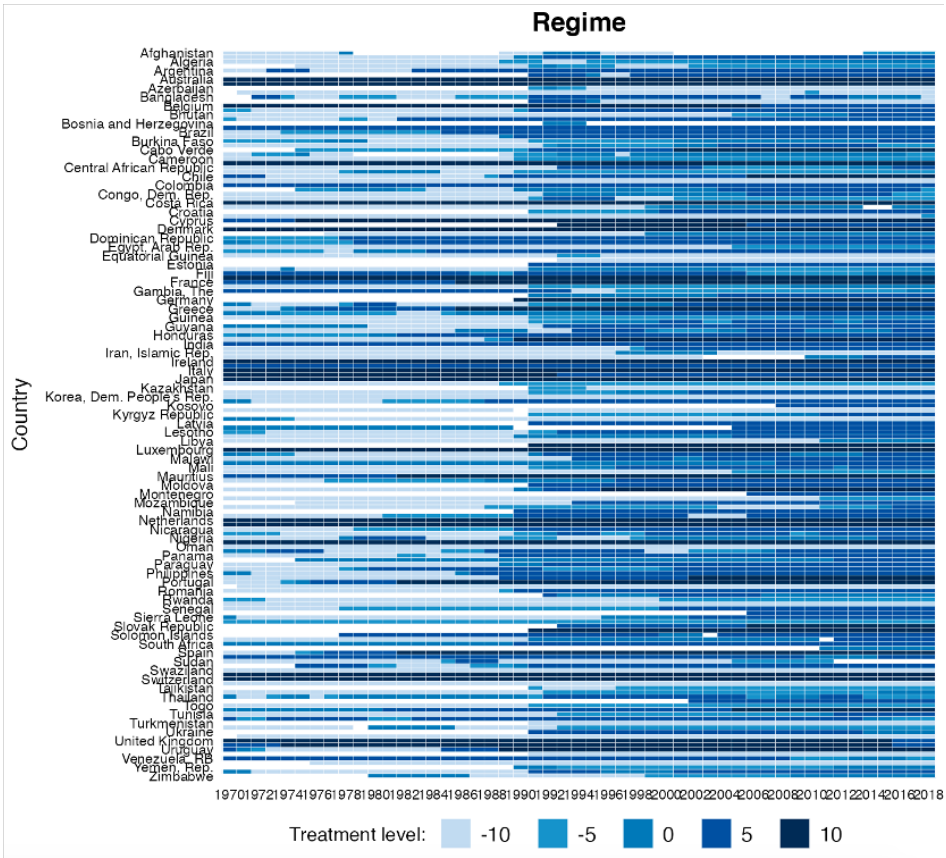


Figure A.6: Democratization (Polity Index)

A.4 KOF Globalization Index (Economic) Change

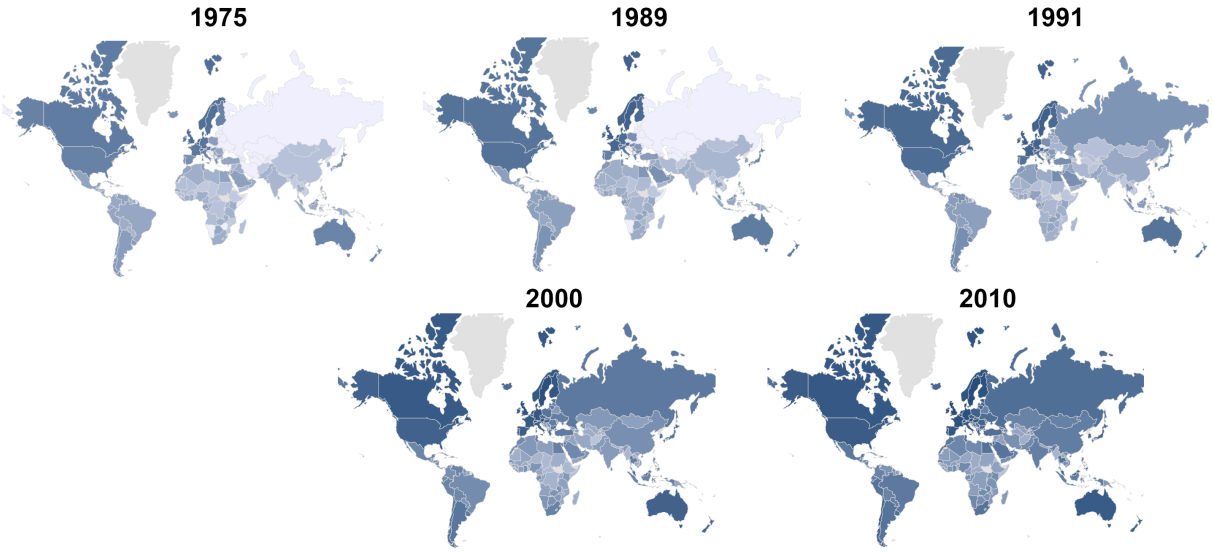


Figure A.7: KOF Globalization Index (Economic) Change. *Note*: The KOF economic index measures flows of trade, FDI and transfers, and trade and capital accounts restrictions.

A.5 WTO Membership

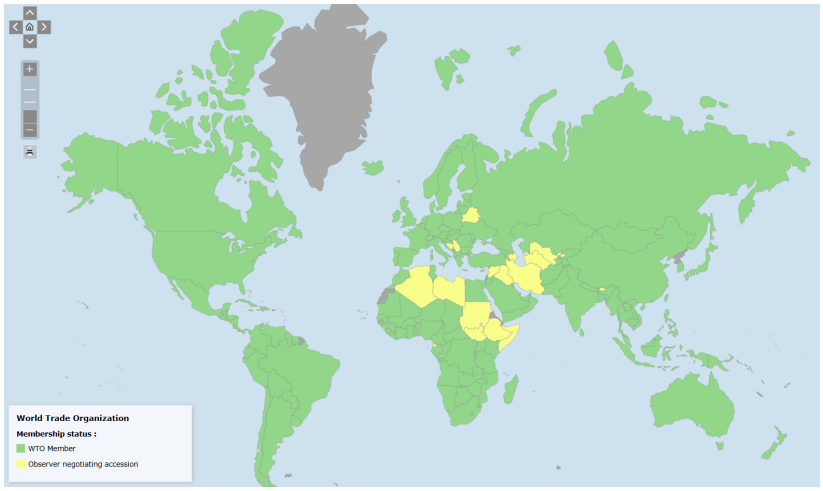


Figure A.8: The Map of WTO Members and Observers (source: WTO website)

B Theory Section

B.1 An Extended Eaton-Kortum Model

This section extends the classic Eaton-Kortum (E-K) model (Eaton and Kortum 2002) to illustrate the logic and hypotheses of this paper, since this model focuses on the determinants of bilateral trade flows. As in the paper, the trade flow from country i to j in E-K model is formally expressed as below:

$$X_{ij} = \frac{T_i(c_i\tau_{ij})^{-\theta}}{\sum_k T_k(c_k\tau_{kj})^{-\theta}} Y_j \tag{8}$$

where T_i is country i's state of technology (or absolute advantage). c_i is cost of production, and τ_{ij} is trade barrier between two countries i and j. θ denotes the heterogeneity of a country's efficiency in producing a continuum of goods drawn from a Fréchet distribution ($F_i(z) = e^{-T_i z^{-\theta}}$) – that is, the comparative advantage. X_{ij} measures the trade flow from i to j, while Y_j is the aggregate consumption of country j. Together, (1) implies that a country's exports are determined by its technology, production cost, and trade cost.

In (2) - (4), three new variables related to my paper are introduced: institution (I_i), autocratic advantage (A_i, proxied by regime type), and WTO membership (W_i). In a globalized economy, trade-related productive technology (T_i) of country i is largely affected by investments, assuming more significantly from involving the GVC. Therefore, T_i depends on institutional improvement (I_i) and autocratic advantage (A_i) to attract the GVC, conditional on crossing an institutional threshold (I^*) and possessing WTO membership ($W_i = 1$, to proxy trade engagement). Both I^* and $W_i = 1$ are needed for substantively attracting firms, domestic or multinational, to invest and innovate. In other words, if institution is too low or excluded from the global trade system, institutional improvement or autocratic advantage won't matter much. Autocratic advantages A_i, embodied in state-market synergy, magnify the effect of I_i. Technology function $t(A_i, I_i)$ can be thus formally written as:

$$t(A_i, I_i) = \begin{cases} \bar{T}_i \cdot \exp\left(\frac{\beta A_i}{1+\lambda A_i} + \gamma \frac{I_i A_i}{1+\lambda I_i^2}\right), & \text{if } I_i \geq I^* \text{ and } W_i = 1, \\ \bar{T}_i, & \text{otherwise.} \end{cases} \tag{9}$$

where $\bar{T}_i$ is the baseline technology. $\frac{\beta A_i}{1+\lambda A_i}$ models diminishing returns to A_i, while $\lambda > 0$ controls how quickly diminishing returns to A_i sets in. When A_i is small: $\frac{\beta A_i}{1+\lambda A_i} \approx \beta A_i$, so the contribution of A_i grows almost linearly. When A_i is large: $\frac{\beta A_i}{1+\lambda A_i} \to \frac{\beta}{\lambda}$, so the marginal effect of A_i diminishes significantly and possibly goes negative when A_i too high. Similarly, $\frac{I_i A_i}{1+\lambda I_i^2}$ models diminishing returns to I_i. The economic rationale behind is that excessive centralization (high A_i) may create inefficiencies or governance rigidities, while saturated institutions (high I_i) may over-complicate decision-making, reducing efficiency. A moderately autocratic regime (e.g., with some centralized control) may gain substantial benefits, but extreme autocracy may lead to inefficiencies (e.g., power abuse).

Although I_i and A_i exhibit diminishing returns, they may still interact to amplify technology – i.e., the interaction term $\gamma \frac{I_i A_i}{1+\lambda_I I_i^2}$. γ captures the interaction coefficient between I_i and A_i on (T_i). Moderate levels of I_i and A_i together create the largest gains in technology because they complement each other. For example, moderate autocratic regimes (e.g., single-party regimes) may gain disproportionately when combined with moderate to high institutions. $\frac{I_i A_i}{1+\lambda_I I_i^2}$ also captures that when I_i is high, the effect of A_i diminishes (the denominator is dominated by I_i^2), because even autocratic regimes are now more hands-tied, if not completely disabled.

As argued, production cost c_i decreases with autocratic advantage A_i, due to reasons such as labor rights suppression and disproportionate state support for industries and infrastructure. c_i is formally expressed as:

$$c(A_i) = \begin{cases} \bar{c}_i \cdot \exp(-\delta A_i), & \text{if } I_i \geq I^* \text{ and } W_i = 1, \\ \bar{c}_i, & \text{otherwise.} \end{cases} \tag{10}$$

where $\bar{c}_i$ is the baseline production cost and δ_A captures the cost-reducing effect of autocratic advantage. The term $\exp(-\delta_A A_i)$ represents an exponential decay. As A_i increases, $\exp(-\delta_A A_i)$ becomes smaller, but the rate of decrease slows down because the exponential decay flattens over A_i. The intuition is that there's a limit to how much A_i can reduce costs, as well as marginal diminishing returns. The effective productive cost reduction is also assumed to be conditioned by crossing certain I^* and $W_i = 1$, otherwise, A_i may have limited effect.

Trade cost τ_{ij} decreases with WTO membership W_i, formally as:

$$\tau(W_i) = \bar{\tau}_{ij} \cdot (1 - \varphi W_i) \tag{11}$$

where τ_{ij} is baseline trade cost, and $\lambda_w > 0$ indicates reduction in trade costs due to WTO membership (or trade engagement). Therefore, (1) takes on the form of:

$$X_{ij} = \frac{t(A_i, I_i)\{c(A_i)\tau(W_i)\}^{-\theta}}{\sum_k t(A_k, I_k)\{c(A_k)\tau(W_k)\}^{-\theta}} Y_j \tag{12}$$

Plug (2)-(4) into (5), the full trade flow formula becomes:

$$X_{ij} = \frac{\left[\bar{T}_i \cdot \exp\left(\frac{\beta A_i}{1+\lambda A_i} + \gamma \frac{I_i A_i}{1+\lambda I_i^2}\right)\right] \cdot \{[\bar{c}_i \cdot \exp(-\delta A_i)] \cdot [\bar{\tau}_{ij} \cdot (1-\varphi W_i)]\}^{-\theta}}{\sum_k T_k \cdot (c_k \tau_{kj})^{-\theta}} \cdot Y_j, \qquad \text{if } I_i \geq I^* \text{ and } W_i = 1. \tag{13}$$

From (5), it shows that if $W_i = 0$, meaning a country i is not engaged in the global trade system, trade flow from i to j is simplified to the original baseline form (6), which means neither institutional improvement nor increased autocratic advantages (proxied by more autocratic regime type) will significantly improve trade flows.

$$X_{ij} = \frac{\bar{T}_i (\bar{c}_i \bar{\tau}_{ij})^{-\theta}}{\sum_k T_k \cdot (c_k \tau_{kj})^{-\theta}} \cdot Y_j \tag{14}$$

When W_i changes from 0 to 1, trade cost decreases, so that trade flow from X_{ij} increases. An increase in autocratic advantages A_i leads to an increase in productive technology:

$$\bar{T}_i \cdot \exp\left(\frac{\beta A_i}{1+\lambda A_i} + \gamma \frac{I_i A_i}{1+\lambda I_i^2 + \varepsilon A_i}\right)$$

and a decrease in productive cost $\bar{c}_i \cdot \exp(-\delta A_i)$. Therefore, exports X_{ij} increases. This is consistent with *H1.1*.

Note that in order for productive technology to increase and productive cost to decrease, I_i has to cross certain thresholds (i.e., $I_i > I^*$), and it cannot be too high. This comes from conditions in (2) and (3) and is consistent with *H1.2*. To combine all, when W_i changes from 0 to 1 and $I_i > I^*$, (5) minus (6) becomes:

$$\Delta X_{ij} = \frac{\left[\bar{T}_i \cdot \exp\left(\frac{\beta A_i}{1+\lambda A_i} + \gamma \frac{I_i A_i}{1+\lambda I_i^2}\right)\right] \cdot \{[\bar{c}_i \cdot \exp(-\delta A_i)] \cdot [\bar{\tau}_{ij} \cdot (1-\varphi)]\}^{-\theta} - \bar{T}_i (\bar{c}_i \bar{\tau}_{ij})^{-\theta}}{\sum_k T_k \cdot (c_k \tau_{kj})^{-\theta}} \cdot Y_j \tag{15}$$

(7) formally denotes that after passing institutional thresholds I^*, an increase in A_i leads to more export increase for the same WTO accession. Put differently, autocratic WTO-joiners are expected to experience more export increase than their democratic counterparts.

Similarly, when $W_i = 0$, an increase in institution will not increase $\bar{T}_i$ or decrease $\bar{c}_i$, thus not increasing X_{ij}, as specified by (2) and (3). However, when $W_i = 1$, for a ΔI increase in institutional level while $\bar{c}_i \cdot \exp(-\delta A_i)$ and $\bar{\tau}_{ij} \cdot (1-\varphi W_i)$ keep unchanged, change in X_{ij} is expressed and simplified as:

$$\Delta X_{ij} = \frac{\left[\bar{T}_i \cdot \exp\left(\frac{\beta A_i}{1+\lambda A_i}\right) \exp\left(\frac{I_i + \Delta I}{1+\lambda (I_i+\Delta I)^2} - \frac{I_i}{1+\lambda I_i^2}\right)\right] \cdot \{[\bar{c}_i \cdot \exp(-\delta A_i)] \cdot [\bar{\tau}_{ij} \cdot (1-\varphi)]\}^{-\theta}}{\sum_k T_k \cdot (c_k \tau_{kj})^{-\theta}} \cdot Y_j \tag{16}$$

(8) also implies an increase in A_i leads to more export increase for the same institutional improvement, given crossing institutional thresholds and trade engagement which is consistent with *H2.1* and *H2.2*. In other words, more autocratic states engaged by the global trade regime should expect more gains from institutional improvement in a globalized economy. Again, when A_i may be subject to possible decreasing marginal returns.

Last, since X_{ij} denotes the absolute level of trade flow from i to j, (5) also implies that more autocratic states (larger A_i) are expected to "inflate" trade flows more conditional on other factors such as trade engagement and institutional levels. However, this is also subject to the conditions in (2) and (3). For example, for states that all have $W_i = 1$, A_i's effect may diminish when I_i doesn't cross thresholds I^* or is too high (*H3.1*). For states that all have similarly moderate institutional levels I_i, A_i's effect may diminish when $W_i = 0$ (*H3.2*).

B.2 Predictive Patterns

Prediction on Exports

$$X_{ijk} = \frac{s_{ik} Y_i Y_j}{(p_{ik})^{\sigma} \overline{y}_{ik}} \left[T_{ijk}\left(z_i, z_j\right) / P_j^k\right]^{1-\sigma} [\theta_{ik} exp(z_i)]^{\sigma-1}$$

Example of Gravity Model Incorporating Product Quality, Yu(2010)

First, similar to Yu (2010), by employing gravity model commonly used in economics and political science (Anderson and van Wincoop 2003) controlling for a standard list of dyad-level covariates, I find that prior to 1990, being more democratic is associated with higher exports (see

Table B.2). Post-1990, however, being more autocratic is associated with a positive or zero effect compared to being more democratic is.[65] The models include cross-sectional, within-exporter, interaction with exporter's logged GDP (whether the coefficient differs for larger countries), and weighted least squares (when larger countries are assigned larger weights). Using the interaction model, for example, by plugging in Iran's GDP in 2005 (the logged form = 20), the effect of Polity is negative.

	Pre-1990	Post-1990 (within WTO)			
	OLS	OLS	OLS (Within)	OLS (Interaction)	WLS (by GDP)
Polity_i	0.022***	0.003	−0.016***	0.065***	−0.041***
	(0.001)	(0.003)	(0.004)	(0.014)	(0.001)
Polity_i x *GDP_i*				−0.004***	
				(0.001)	
Polity_j	0.003*	0.003**	0.005***	0.003**	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GDP_i	1.583***	−1.746***	0.298***	−1.698***	−1.137***
	(0.048)	(0.139)	(0.054)	(0.141)	(0.107)
GDP_j	2.058***	0.650***	0.521***	0.644***	0.065
	(0.143)	(0.080)	(0.090)	(0.079)	(0.182)
GDPPC_i	−0.536***	3.051***	0.070	3.023***	2.154***
	(0.043)	(0.129)	(0.063)	(0.129)	(0.116)
GDPPC_j	−1.011***	0.387***	0.526***	0.392***	0.967***
	(0.137)	(0.083)	(0.092)	(0.082)	(0.185)
RTA	0.204***	0.282***	0.286***	0.278***	0.202***
	(0.051)	(0.041)	(0.039)	(0.041)	(0.031)
Custom Union	0.819***	0.590***	0.662***	0.591***	−0.335***
	(0.111)	(0.031)	(0.032)	(0.030)	(0.030)
Common Colnizer post-45	0.775***	0.998***	0.875***	0.996***	0.533***
	(0.027)	(0.022)	(0.017)	(0.022)	(0.047)
Colonial Dep. post-45	1.724***	1.034***	1.260***	1.048***	0.982***
	(0.044)	(0.061)	(0.048)	(0.060)	(0.050)
Population_i	−0.757***	2.984***	−0.112	2.955***	2.190***
	(0.041)	(0.124)	(0.093)	(0.124)	(0.109)
Population_j	−1.195***	0.445***	0.596***	0.450***	0.938***
	(0.139)	(0.072)	(0.082)	(0.071)	(0.180)
Distance	−0.785***	−1.106***	−1.244***	−1.109***	−0.960***
	(0.025)	(0.011)	(0.015)	(0.011)	(0.013)
Common Language	0.294***	0.607***	0.685***	0.612***	0.331***
	(0.023)	(0.026)	(0.030)	(0.026)	(0.020)
Common Religion	−0.059*	−0.008	0.266***	−0.010	−0.025
	(0.030)	(0.032)	(0.033)	(0.032)	(0.028)
Border	0.462***	0.806***	0.529***	0.802***	0.073
	(0.017)	(0.023)	(0.023)	(0.022)	(0.044)
Num.Obs.	194 716	313 566	313 566	313 566	313 580
R2 Adj.	0.629	0.709	0.759	0.709	0.801
FE	year	year	year/exporter	year	year

* p < 0.1, ** p < 0.05, *** p < 0.01

Table B.2: Regime Type and Exports

[65] For post-1990, I look at all dyads with exporter being within the WTO, since many autocracies joined the WTO after 1990 and being inside the WTO is what I am interested in. In contrast, the pre-1990 model checks both inside and outside of the WTO since most autocracies were excluded. However, the result barely changes if WTO only.

B.3 Selection of Institutional Thresholds

In 2000, the bottom 20 percentile threshold is 0.45 for PR protection and 0.2 for rule of law, respectively. I combine the institutional levels at the bottom 20 percentile among developing countries in 2000 and real cases (e.g., China's PR protection is around 0.35), so the thresholds are roughly 0.2 for rule of law and 0.35 for PR protection. Both values have to be reached. However, special cases remain. First, I slightly prioritize PR protection especially for resource-rich countries, for it is more attractive to the GVC than rule of law – as long as global investor's property rights are protected, global firms may more rely on within-GVC contract enforcement. For example, Cameroon and Chad, two resource-rich African countries have high PR protection (0.8 and 0.78) but low rule of law (below 0.1), for which I classify them as reformed. Azerbaijan (0.61, .03) and Equatorial Guinea (0.45, 0.06) are two other cases. Second, I factor in expectation. Venezuela's values for two indicators were 0.58 and 0.05 in 2010. Yet, Venezuela has experienced rapid institutional deterioration since 1997 before Hugo Chávez was elected completely reversing course when the two indicators were as high as 0.9 and 0.55, generating greatly adverse expectations for investors. Thus, Venezuela is listed as non-reformer. Yemen is another example: from the Arab Spring in 2011 to Houthi's takeover in 2015, its institutions experienced rapid deterioration.

B.4 Share of World Exports for Major Autocracies

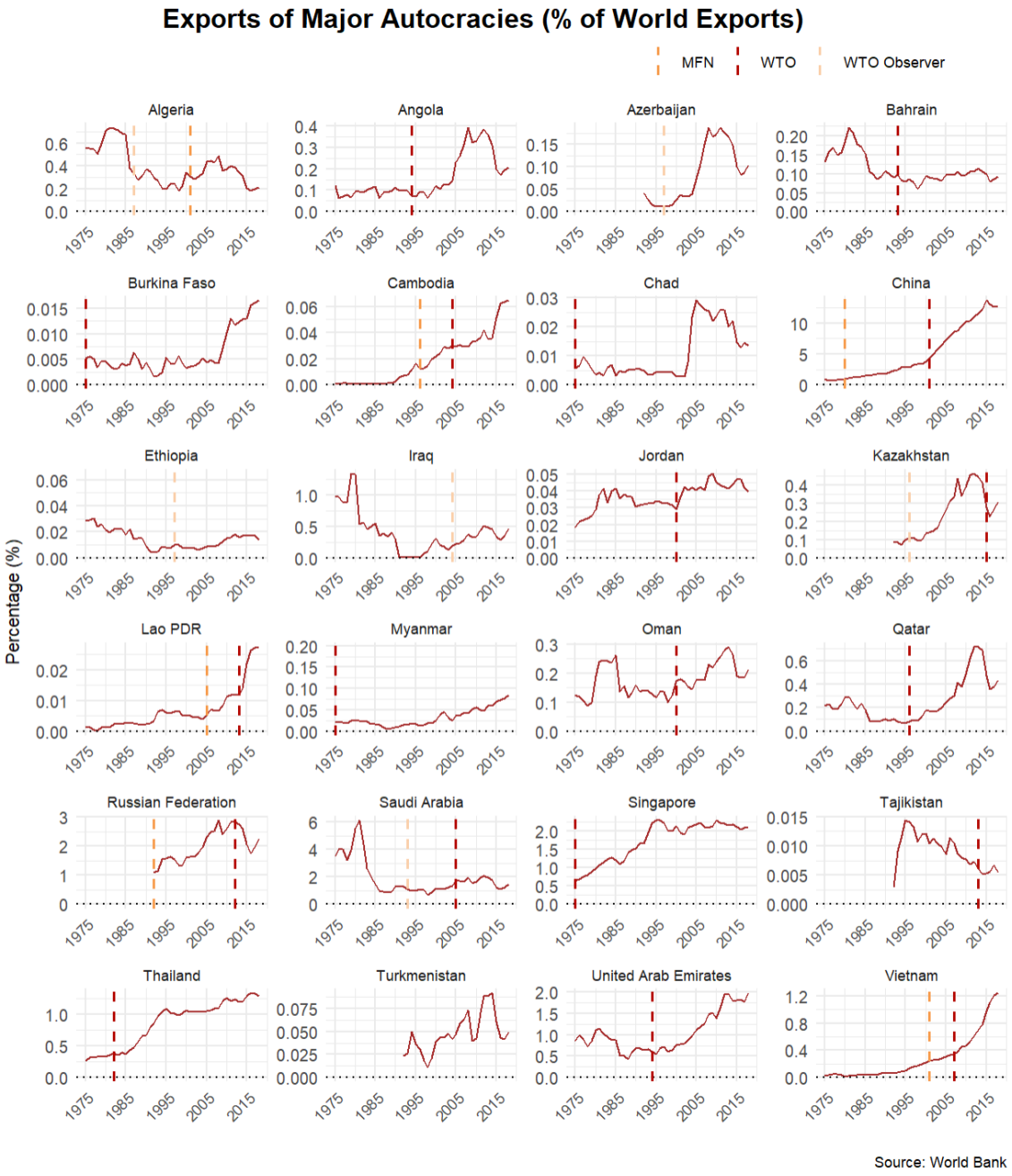
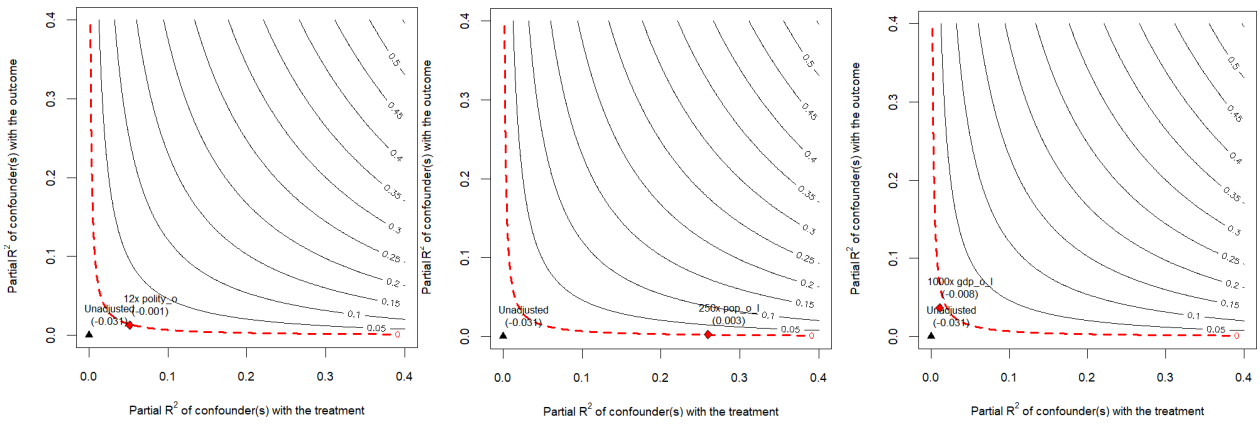


Table B.3: Share of World Exports for Major Autocracies. *Note*: For illustration purpose, vertical dashed lines begin in 1975 if MFN/WTO/Observer in effect earlier. Most autocracies' global share in exports show an increasing trend.

C Main Empirical Tests

C.1 Sensitivity Analysis



PR Protection Population(log) GDP(log)

Figure C.9: Improved Covariate Balance via CBPS Weighting, Post-1990. *Note*: overall, all covariates' balance improve significantly. The green line natural resource intensity is slightly not balanced. However, it may not be an concern as it does not significantly affect WTO accession theoretically.

C.2 WTO Effect

	Exports (FE)		Exports (FE)		Exports (FE)		Exports (FE)		Exports (CRE)	
	Pre-1990	Post-1990	Pre-1990	Post-1990	Pre-1990	Post-1990	Pre-1990	Post-1990	Pre-1990	Post-1990
One WTO	0.304***	−0.131**								
	(0.052)	(0.061)								
One WTO × Polity$_i$	**-0.003**	**-0.025*** **								
	(0.005)	(0.008)								
Both WTO	0.615***	0.143	0.314***	0.273***					0.309***	0.209***
	(0.084)	(0.092)	(0.046)	(0.047)					(0.015)	(0.012)
Both WTO × Polity$_i$	**0.007**	**-0.041*** **	**0.011*** **	**-0.033*** **					**0.012****	**-0.038*** **
	(0.006)	(0.010)	(0.004)	(0.006)					(0.001)	(0.002)
WTO$_i$ Only			0.306***	−0.037					0.304***	0.099***
			(0.052)	(0.065)					(0.017)	(0.017)
WTO$_i$ Only × Polity$_i$			**0.005**	**-0.037*** **					**0.004****	**-0.038*** **
			(0.005)	(0.007)					(0.001)	(0.002)
WTO_i					0.307***	0.210***	0.240***	−0.022		
					(0.042)	(0.045)	(0.049)	(0.059)		
WTO_i × Polity$_i$					**0.009****	**-0.033*** **	**-0.001**	**-0.003**		
					(0.008)	(0.004)	(0.006)	(0.008)		
WTO$_i$ (3y lag)							0.105**	0.365***		
							(0.042)	(0.051)		
WTO$_i$ (3y lag) × Polity$_i$							**0.012****	**-0.032*** **		
							(0.005)	(0.007)		
GDP$_i$	0.035	0.216**	−0.076	0.211**	−0.107	0.202**	−0.061	0.127	−0.213***	0.416***
	(0.096)	(0.091)	(0.091)	(0.091)	(0.091)	(0.090)	(0.093)	(0.095)	(0.081)	(0.115)
GDPPC$_i$	0.502***	0.278***	0.620***	0.285***	0.654***	0.288***	0.600***	0.282***	0.758***	0.070
	(0.088)	(0.093)	(0.085)	(0.093)	(0.084)	(0.092)	(0.086)	(0.098)	(0.079)	(0.115)
PTA	0.144***	0.191***	0.225***	0.192***	0.226***	0.193***	0.224***	0.074**	0.170***	0.191***
	(0.030)	(0.030)	(0.032)	(0.030)	(0.032)	(0.030)	(0.032)	(0.031)	(0.012)	(0.013)
RTA	0.165***	0.024	0.121***	0.024	0.127***	0.020	0.111**	0.074**	0.133***	0.005
	(0.042)	(0.031)	(0.045)	(0.031)	(0.045)	(0.031)	(0.045)	(0.031)	(0.021)	(0.015)
Customs Union	0.312**	0.088	0.233	0.096	0.242*	0.099	0.233	0.105	0.343***	0.134***
	(0.144)	(0.083)	(0.144)	(0.083)	(0.144)	(0.083)	(0.142)	(0.084)	(0.049)	(0.034)
Colonial Dependency	0.600***	1.434***	0.626***	1.440***	0.622***	1.445***	0.618***	1.345***	0.613***	1.217***
	(0.091)	(0.216)	(0.085)	(0.217)	(0.086)	(0.216)	(0.089)	(0.227)	(0.118)	(0.406)
Polity$_i$	0.013**		0.009**		0.009**		0.007*			
	(0.005)		(0.004)		(0.004)		(0.004)			
Com. Col. Post45									0.469***	0.733***
									(0.056)	(0.042)
Col. Dep. Post45									2.207***	1.736***
									(0.137)	(0.125)
Distance									−1.063***	−1.380***
									(0.021)	(0.016)
Common Language									0.196***	0.700***
									(0.045)	(0.036)
Common Religion									0.075	0.324***
									(0.063)	(0.048)
Bordered									0.658***	0.870***

									(0.091)	(0.080)
Exporter Means									✓	✓
Dyad Means									✓	✓
Exporter FE	✓	✓	✓	✓	✓	✓	✓	✓	RE	RE
Importer FE	✓	✓	✓	✓	✓	✓	✓	✓		
Dyad FE	✓	✓	✓	✓	✓	✓	✓	✓	RE	RE
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Num.Obs.	210 809	538 470	210 809	538 470	210 809	538 470	208 242	502 944	210 049	521 997
R2 Adj.	0.858	0.886	0.868	0.886	0.868	0.886	0.869	0.892	0.874	0.882
BIC	805 515.9	2 258 339.3	833 195.6	2 258 125.3	833 258.2	2 258 320.9	824 099.5	2 103 706.2	691 636.8	1 901 073.2

* p < 0.1, ** p < 0.05, *** p < 0.01

Table C.4: The Effects of Joining the WTO

	Exports (FE Model)		Exports (CRE Model)	
	PR Protection	RoL	PR Protection	RoL
WTO_i : $polity2000$	0.033	0.165***	−0.068***	0.122***
	(0.040)	(0.036)	(0.015)	(0.019)
WTO_i : $polity2000$: $inst\_prpty\_low$	−0.057		0.044**	
	(0.046)		(0.017)	
WTO_i : $polity2000$: $inst\_prpty\_mid$	−0.092**		0.009	
	(0.041)		(0.015)	
WTO_i : $polity2000$: $inst\_rule\_low$		−0.083**		−0.033*
		(0.040)		(0.020)
WTO_i : $polity2000$: $inst\_rule\_mid$		−0.226***		−0.183***
		(0.037)		(0.019)
WTO_i	−0.365	−1.265***	0.270**	−1.020***
	(0.285)	(0.307)	(0.112)	(0.152)
$Polity_i$	−0.025***	−0.025***	−0.024***	−0.024***
	(0.004)	(0.004)	(0.001)	(0.001)
$Polity_j$	−0.001	−0.001	0.004***	0.003***
	(0.003)	(0.003)	(0.001)	(0.001)
WTO_j	−0.055	−0.059	−0.110***	−0.107***
	(0.064)	(0.063)	(0.030)	(0.030)
$Both\ WTO$	0.217***	0.220***	0.268***	0.266***
	(0.065)	(0.064)	(0.031)	(0.031)
GDP_i	1.770	1.603	−0.026	−0.237
	(16.391)	(16.287)	(6.526)	(6.519)
GDP_j	1.304***	1.298***	1.393***	1.386***
	(0.243)	(0.244)	(0.171)	(0.170)
$GDPPC_i$	−1.339	−1.192	0.455	0.651
	(16.391)	(16.288)	(6.525)	(6.519)
$GDPPC_j$	−0.568**	−0.562**	−0.513***	−0.507***
	(0.242)	(0.244)	(0.171)	(0.170)
PTA	0.117***	0.111***	0.146***	0.142***
	(0.038)	(0.038)	(0.019)	(0.019)
RTA	0.067*	0.061	0.088***	0.083***
	(0.040)	(0.039)	(0.021)	(0.021)
$Customs\ Union$	−0.008	−0.019	0.067	0.058
	(0.097)	(0.097)	(0.044)	(0.044)
$Population_i$	−1.673	−1.509	0.226	0.419
	(16.390)	(16.286)	(6.526)	(6.519)
$Population_j$	−0.177	−0.192	−0.325*	−0.321*
	(0.250)	(0.251)	(0.171)	(0.170)
WTO_i : $inst\_prpty\_low$	0.086		−0.612***	
	(0.302)		(0.124)	
WTO_i : $inst\_prpty\_mid$	0.377		−0.308***	

	(0.288)		(0.111)	
$WTO\_i : inst\_rule\_low$		0.921***		0.630***
		(0.325)		(0.152)
$WTO\_i : inst\_rule\_mid$		1.325***		1.041***
		(0.302)		(0.150)
$polity2000$			0.152	−0.058
			(0.141)	(0.097)
$inst\_prpty\_catlow$			−0.266	
			(1.192)	
$inst\_prpty\_catmid$			0.165	
			(1.156)	
Common Colonizer			0.789***	0.785***
			(0.057)	(0.057)
Colonial Dep.			2.072***	2.077***
			(0.191)	(0.191)
Distance			−1.437***	−1.440***
			(0.023)	(0.023)
Common Language			0.687***	0.687***
			(0.051)	(0.051)
Common Religion			0.271***	0.273***
			(0.068)	(0.068)
Bordered			0.911***	0.912***
			(0.106)	(0.106)
$polity2000 : inst\_prpty\_catlow$			−0.043	
			(0.160)	
$polity2000 : inst\_prpty\_catmid$			−0.099	
			(0.148)	
$inst\_rule\_catlow$				−1.207
				(0.974)
$inst\_rule\_catmid$				−0.809
				(0.822)
$polity2000 : inst\_rule\_catlow$				0.066
				(0.177)
$polity2000 : inst\_rule\_catmid$				0.167
				(0.104)
Exporter Means			✓	✓
Dyad Means			✓	✓
Exporter FE	✓	✓	RE	RE
Importer FE	✓	✓		
Dyad FE	✓	✓	RE	RE
Year FE	✓	✓	✓	✓
Num.Obs.	284 345	284 345	275 914	275 914
R2	0.866	0.866		
R2 Adj.	0.858	0.858		
R2 Marg.			0.420	0.400
R2 Cond.			0.860	0.860
BIC	1 201 319.8	1 200 671.1	1 034 876.7	1 034 368.6

* p < 0.1, ** p < 0.05, *** p < 0.01

Table C.5: The Effects of Joining the WTO by Institutional Range.

	DV: Current Account Balance (%)						
	FE	FE	RE	RE/No OPEC	RE/Developing	RE/WTO Post-90	80-95

Polity	−0.212***	−0.123***	−0.146***	−0.135***	−0.139***	−0.225*	0.095*
	(0.039)	(0.043)	(0.049)	(0.049)	(0.053)	(0.119)	(0.052)
GDP (log)		1.744***	1.430***	1.427***	1.440***	1.032	0.433
		(0.129)	(0.265)	(0.271)	(0.296)	(0.707)	(0.414)
GDPPC (log)		0.787***	−0.148	−0.624	−0.385	1.229	−0.121
		(0.251)	(0.399)	(0.415)	(0.449)	(0.916)	(0.697)
GDP Growth		−0.182**	−0.118***	−0.146***	−0.127***	−0.034	−0.074
		(0.093)	(0.031)	(0.032)	(0.035)	(0.063)	(0.046)
Net Borrowing(%)		0.657***	0.475***	0.453***	0.519***	0.657***	−0.014
		(0.061)	(0.027)	(0.031)	(0.032)	(0.053)	(0.072)
Foreign Asset(%)		0.418*	0.068	0.060	0.053	−0.065	0.724**
		(0.231)	(0.119)	(0.114)	(0.128)	(0.158)	(0.301)
KA Open		−0.264*	−0.342**	−0.230	−0.382**	−0.370	−0.382
		(0.140)	(0.172)	(0.171)	(0.185)	(0.390)	(0.287)
Δ*Private Credit* (%)		−0.195***	−0.139***	−0.138***	−0.178***	−0.238***	−0.127***
		(0.038)	(0.015)	(0.014)	(0.021)	(0.041)	(0.036)
Δ*Term of Trade*		0.064**	0.085***	0.061***	0.096***	0.082***	0.031**
		(0.026)	(0.011)	(0.012)	(0.012)	(0.019)	(0.015)
Population (*under* 14, %)		15.831***	23.902***	19.920***	25.587***	55.684***	13.231
		(4.223)	(5.444)	(5.558)	(6.330)	(11.228)	(11.693)
Population (*over* 65, %)		5.094	41.690***	41.891***	49.794***	98.099***	42.435
		(6.103)	(8.405)	(8.305)	(11.467)	(21.183)	(34.278)
Trade Openness		0.041***	0.041***	0.043***	0.028***	−0.013	−0.004
		(0.005)	(0.006)	(0.006)	(0.008)	(0.015)	(0.018)
Year		−0.316***	−0.278***	0.024	−0.039	−0.118	0.299***
		(0.062)	(0.082)	(0.165)	(0.048)	(0.112)	(0.070)
Year FE	✓	✓	✓	✓	✓	✓	✓
Country RE			✓	✓	✓	✓	✓
Num.Obs.	2704	1499	1499	1698	1469	540	290
R2 Marg.			0.422	0.384	0.322	0.420	0.252
R2 Cond.			0.759	0.757	0.691	0.755	0.605
BIC	43 454.6	20 230.6					

* p < 0.1, ** p < 0.05, *** p < 0.01

Table C.6: Regime Type's Effect on Current Account Balance.

	DV: Trade Balance (%)						
	FE	FE	RE	RE/No OPEC	RE/Developing	RE/WTO Post-90	80-95
Polity	−0.410***	−0.480***	−0.241***	−0.179***	−0.227***	−0.268**	0.140**
	(0.050)	(0.069)	(0.056)	(0.055)	(0.064)	(0.124)	(0.057)
GDP (log)		2.594***	1.692***	1.896***	2.189***	0.309	0.411
		(0.183)	(0.453)	(0.442)	(0.534)	(1.587)	(0.845)
GDPPC (log)		4.872***	3.032***	2.002***	3.007***	7.007***	−2.969***
		(0.411)	(0.592)	(0.595)	(0.698)	(1.703)	(1.142)
GDP Growth		0.054	−0.070**	−0.176***	−0.092**	0.074	−0.048
		(0.102)	(0.034)	(0.035)	(0.041)	(0.067)	(0.043)
Net Borrowing (%)		0.704***	0.467***	0.376***	0.524***	0.719***	−0.082
		(0.075)	(0.031)	(0.035)	(0.037)	(0.056)	(0.073)
Foreign Asset (%)		−0.589	0.137	0.139	0.107	0.063	0.044
		(0.522)	(0.137)	(0.127)	(0.155)	(0.177)	(0.313)
KA Open		−0.746***	−0.008	0.189	0.002	0.427	−0.235
		(0.253)	(0.214)	(0.205)	(0.246)	(0.506)	(0.295)
Δ *Private Credit* (%)		−0.234***	−0.194***	−0.185***	−0.230***	−0.303***	−0.145***

		(0.055)	(0.017)	(0.016)	(0.025)	(0.046)	(0.035)
Δ *Term of Trade*		0.105***	0.094***	0.061***	0.105***	0.084***	0.032**
		(0.038)	(0.012)	(0.013)	(0.014)	(0.020)	(0.014)
Population (*under* 14, %)		32.852***	25.700***	22.400***	35.155***	29.318**	−50.296***
		(5.722)	(6.973)	(6.947)	(8.605)	(14.287)	(14.655)
Population (*over* 65, %)		−7.151	15.419	18.005*	44.023***	119.972***	14.179
		(7.680)	(10.876)	(10.555)	(16.531)	(30.229)	(56.648)
Trade Openness		0.053***	0.042***	0.041***	0.023**	−0.051***	−0.047**
		(0.007)	(0.008)	(0.007)	(0.010)	(0.018)	(0.021)
Year		−0.950***	−1.251***	−0.136	−0.236***	−0.537***	0.119
		(0.113)	−0.261	(0.185)	(0.061)	(0.138)	(0.073)
Year FE	✓	✓	✓	✓	✓	✓	✓
Country RE			✓	✓	✓	✓	✓
Num.Obs.	2829	1560	1560	1463	1243	551	294
R2 Marg.			0.447	0.436	0.347	0.341	0.252
R2 Cond.			0.882	0.880	0.848	0.938	0.900
BIC	46 158.5	22 594.1					

* p < 0.1, ** p < 0.05, *** p < 0.01

Table C.7: Regime Type's Effect on Trade Balance.

Since property-rights protection and rule of law have quite different distributions across autocratic WTO-joiners, I make sure both low and high institutional ranges contain at least some autocracies that joined the WTO during 1990-2020. The separation looks like {0, 0.3, 0.7, 1}. For each range, I compare autocracies to all democracies that joined during the same period to keep the control group the same and I dichotomize polity into a democracy dummy so that the interaction effect (WTO x polity) doesn't reflect within-democracy variation.

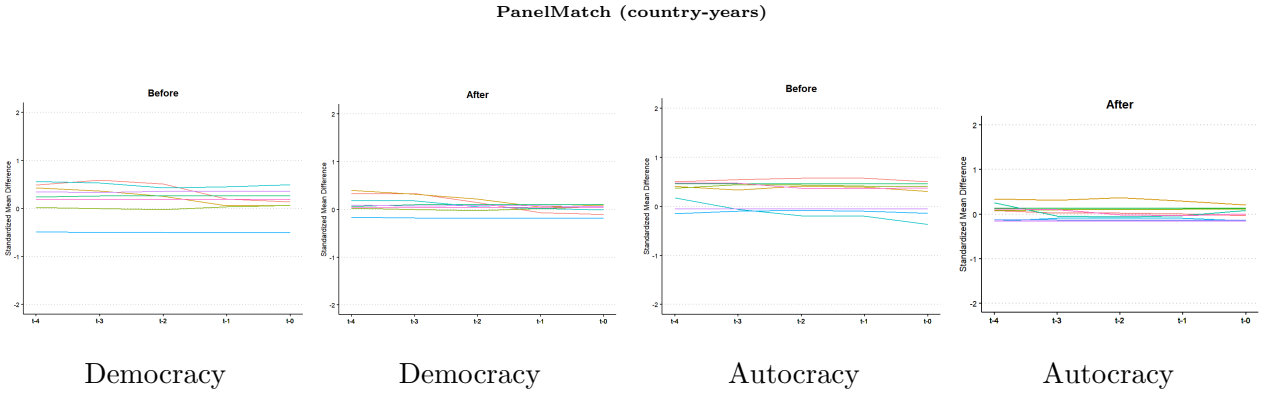


Figure C.10: Improved Covariate Balance via CBPS Weighting, Post-1990. *Note*: overall, all covariates' balance improve significantly. The green line natural resource intensity is slightly not balanced. However, it may not be an concern as it does not significantly affect WTO accession theoretically.

PanelMatch (dyad-years)

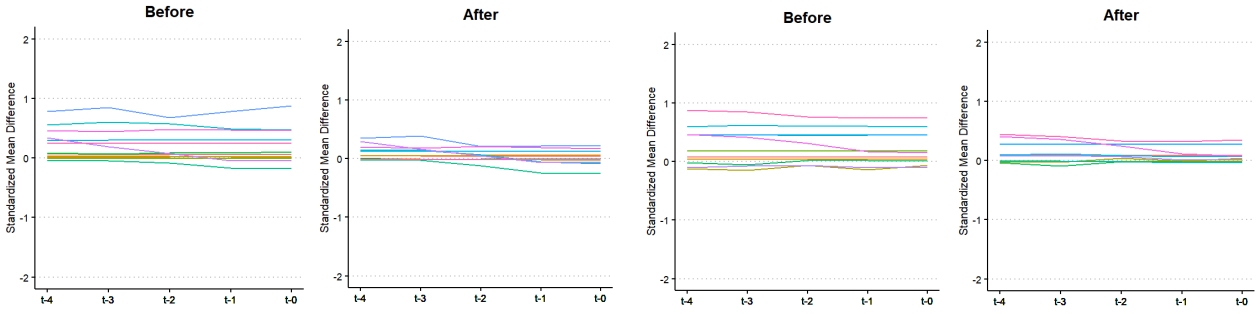
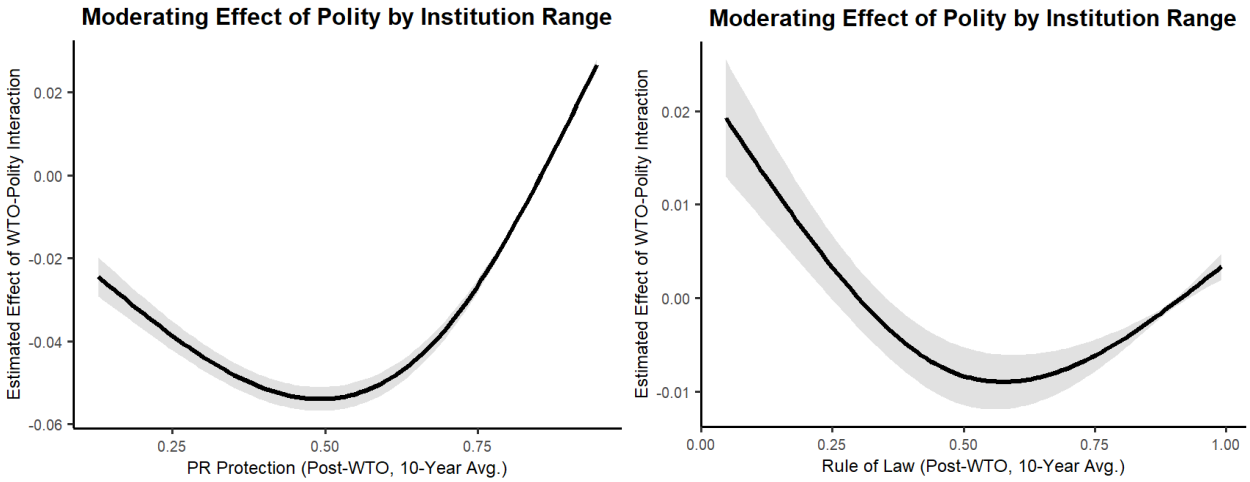


Figure C.11: Improved Covariate Balance via CBPS Weighting, Post-1990. *Note*: overall, all covariates' balance improve significantly.

C.3 Moderated WTO Effect across Institutional Range

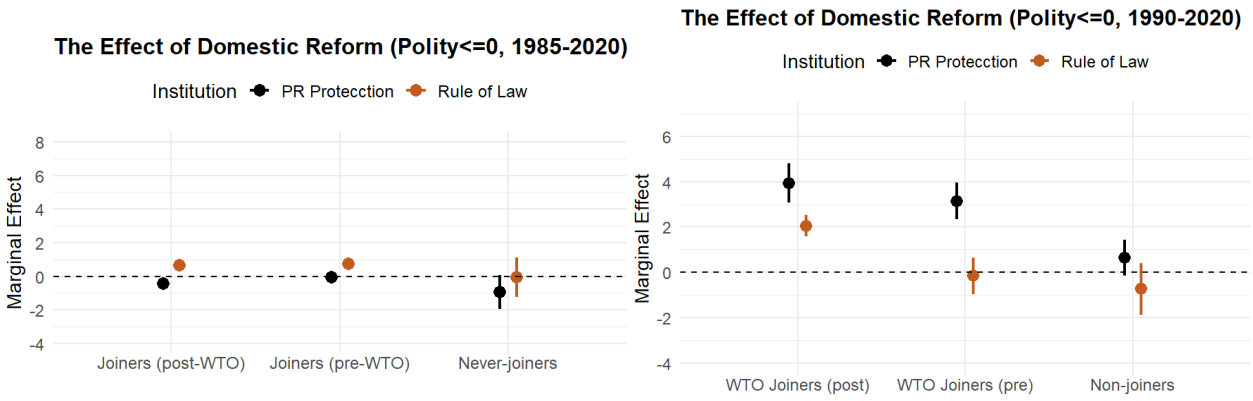
General Additive Model (GAM)



(a) (b)

Figure C.12: The Moderated Effect of Polity across Institutional Ranges (GAM).

C.4 Domestic Reform Effect



(a) (b)

Figure C.13: The Effects of Domestic Reform by WTO-related Category. *Note*: (a) plots the effects of within-dyad changes of institutions by WTO-related Category for democracies only (Polity > 0 in 2000). I only include developing countries (GDP per capital lower than \$20,000 in 2000) to focus on institutional reform. (b) plots the effects of within-dyad changes of institutions for autocracies only. "Joiner" means a country joined the WTO during 1990-2020.

D Mechanism Tests

E Robust Tests

F Qualitative Tests