

Globalization Origins of Autocratic Rise: Explaining the Post-1990 Reversal

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Abstract Autocracies have recently resurged economically, challenging the prevailing view that more democratic institutions (e.g. inclusive) would favor economic development (e.g. Acemoglu et al. 2001). Why this can happen is little understood. Unlike pre-1990, autocratic regimes have been associated with better performance economically, especially in trade, a critical driver of fiscal and developmental success.¹ Instead of arguing autocratic institutions matter exogenously, I examine the role of both global trade integration, specifically through WTO expansion, and domestic reform – two major changing factors within globalization since the Cold War ended. I demonstrate that, post-1990 WTO expansion has disproportionately benefited autocracies which ironically possess weaker market-oriented institutions on average, but only after crossing certain institutional thresholds (inverted U-shape). I also show that similar domestic reforms result in greater export increases for autocracies, but only among WTO members. In other words, autocracies performed better conditional on *both* factors. Lastly, I examine the mechanisms by which heterogeneous types of autocracies operate.

1 Introduction

Since the early 1990s after the Cold War ended, economic globalization has accelerated its pace (Baldwin 2016). Global trade and financial transactions and integration significantly expanded. By

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¹In this paper, although autocracy is defined as more autocratic states in general on a continuum, my arguments and empirical evidence apply to more autocratic vs. more democratic states in a probabilistic sense.

2010, for example, the membership of GATT/WTO nearly doubled compared to 1989, expanding to include more countries in Asia, Africa, Europe and Latin America, along with the unprecedented proliferation of other smaller, regional trade agreements (e.g., RTAs and PTAs). Globalization has widened economic disparities within and between nations. This disparity has fueled public discontent and created fertile ground for populist and authoritarian leaders who exploit grievances.

Meanwhile, the once promising third-wave democratization has stalled, and scholars have worried about the instability and backsliding of both young and old democracies, as well as the proliferation of stable, competitive autocracies (Ekiert and Dasanaike 2024; Haggard and Kaufman 2016). In 2020, the VDem's liberal democracy index has retreated to the 1990-level. Although major literature predict that democracies should generate superior economic performance (Acemoglu et al. 2019; Yu 2010), however, compared to the dwindling share before the 1990s, the share of autocracies in terms of GDP and industrial output has steadily risen (see Figure 1). Many autocracies have become competitive on the export market, and in 2022, the top three trade surplus countries were: China, Russia, and Saudi Arabia.

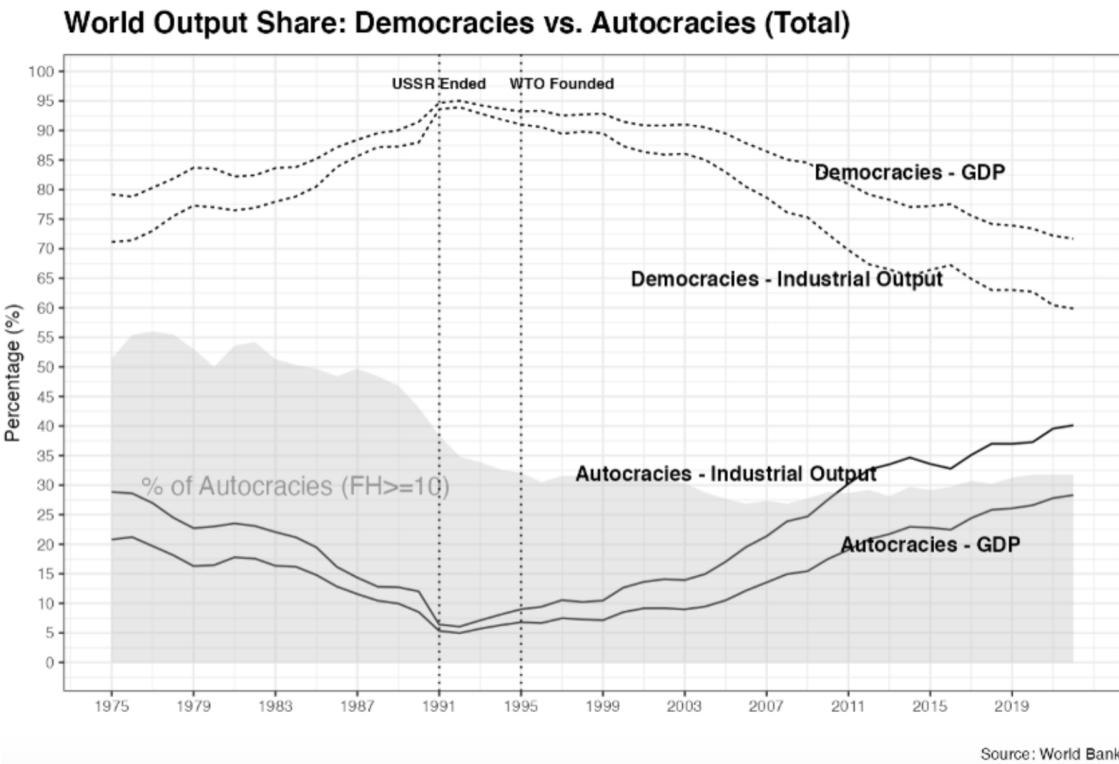


Figure 1: The Distribution of Power Change Between Democracies and Autocracies (Data: World Bank; Autocracy: Freedom House Index ≥ 10). Note: in 2020, China accounts for 62% of autocracies' GDP.

According to international relations theories by schools such as realism, constructivism, and democratic peace theory, a world of stronger autocracies will likely become more conflictual and less cooperative, which will in turn impact the global economy. Global conflicts (reported by ACLED) have steadily risen for the past two decades. A weakened democratic world not only sows unstable seeds domestically, but also provides poorer linkages and leverages facilitating democratization worldwide (Levitsky and Way 2006) while strengthened autocracies encourage autocratic drift worldwide (Ekiert and Dasanaike 2024). Furthermore, autocrats increasingly use good outcomes to redefine democracy (Oser and Hooghe 2018).

In a nutshell, the post-1990 economic globalization has gone hand-in-hand with the relative rise of autocracies and decline of democracies. But is this coincidental? Although vast scholarship has identified the merit of globalization such as lifting poverty and spreading global norms, globalization nonetheless has raised concerns (e.g., over inequality or national security) among a wide range of political spectrum. This paper seeks to explain the role of economic globalization in the rise of autocracies. I argue that although many democracies as well as autocracies have conducted market-oriented forms during the 1980/90s, autocracies may have more institutional and non-institutional advantages regarding economic performance in a globalized economy. Importantly, the expansion of economic integration that incorporated many autocracies serves as a permissive variable that enables autocracies' advantages.

The findings significantly challenge the current literature, conventional wisdom, and the original expectations of globalization that a globalized economy should strengthen a democratic world. It also complements the strand of literature that seeks to explain the effect of (domestic) political institutions on economic performance (Acemoglu et al. 2001; Acemoglu et al. 2019). I demonstrate that external factors are equally important in shaping the outcome. For example, without access to external market or conversely suffering from severe external shocks (trade or financial), the effects of domestic institutions can be largely weakened.

Autocratic regimes have leveraged globalization to modernize economically while suppressing political liberalization, creating "hybrid regimes." Consider two typical sets of autocracies: Export-oriented autocracies in East Asia such as China, Vietnam, Singapore, Taiwan, and South Korea (the latter two in the 7/80s) and the resource-rich autocratic states in the Gulf area and East Europe. The former set of autocracies emulated advanced democracies to establish similar economic institutions (e.g., market liberalization, property rights protection, and relatively equal, inclusive

economic opportunities). However, these reform took place without similar political reform. With trade integration, these countries embarked on a model heavily dependent on external demand, while their political institutions inevitably constrain domestic redistribution and thus internal demand, serving as a drag on the economies. In other words, without external demand, the effect of their domestic economic reform would be much discounted. The lack of political constraints also lead to easy rollback for economic reform (e.g., China). For the latter set of autocracies, trade integration and market access apparently provide market access especially for commodities, which, for sure, was quite limited during the Cold War era.

2 Regime Type and International Economic Performance

Comparative political scientists and economists have spent energy trying to figure out what leads to better economic performance. For example, institutions matter in economic performance. Hall and Soskice (2001) have shown “varieties of capitalism” that produce differentiated economic outcomes. A stream of scholarship has pointed out the role of external factors such as globalized economy to domestic society and development (Gourevitch 1978; Rudra 2002). The country-level performance is not only affected by domestic policies, but also by external impacts which include but are not limited to trade exposure, foreign investments, and the availability of export markets.

Overall, the existing literature is optimistic on democracy’s role on global economic policies and performance. Democracies have been found to be less protectionist (Eichengreen and Leblang 2007). Democracies also have advantages in economic growth (Acemoglu et al. 2019) and better trade performance (Yu 2010). The reasons why democracies may have advantages can be attributed to institutions such as contractability, rule of law, and the protection of intellectual property (Levchenko 2007, Rigobon and Rodrik 2004), which can result in, for example, product quality (Yu 2010).

However, autocracies may have advantages. Domestically, due to weak institutional constraints (Cox and Weingast 2015), reformed autocracies are able to form a centralized authority deploying concerted industrial policies which have been argued to be conducive to developing productive industries (Hall and Soskice 2001; Kohli 2004). For example, they can more easily divert limited resources to production sectors with less concerns over welfare redistribution. Additionally, autocracies generally have weaker labor bargaining institutions (Manger and Sattler 2015) and suppress labor costs and labor unions (Rodrik 1999), which adds to the international competitiveness of local

firms, although low consumption is unhealthy for domestic economic structure.

Moreover, due to either weaker liberal economic norms (Dailami 2000; Quinn 2000) or narrower interest groups (Eichengreen and Leblang 2008; Milner and Kubota 2005), autocracies also tend to be more protectionist. This protectionism sometimes can foster the development of domestic industries or force MNCs to set up production locally. Some studies also find that state-owned enterprises may play a favorable role in doing so (Clegg et al. 2018; Wu 2016). Because of a larger win-set (Putnam 1998), autocracies may be able to sign easier deals with multinational corporations (MNCs), which are the main players in the post-1990 global trade that rests on the global value chain (Baldwin 2016). Additionally, autocratic governments may feel more convenient or are less constrained to manipulate trade or exchange rate policies (Simmons 1997) and control financial institutions (Brune et al. 2001; Giuliano et al. 2009). In fact, due to weaker controlling capacities, Lipsky (2018) found that democracies tend to have more financial instability primarily due to their weaker control abilities. Autocratic states tend to establish special economic zones that provide concessions such as tax breaks, lower tariffs, and looser regulations which boost economic performance, without much domestic institutional reform (Allen and Ge, working paper). The notable autocracy examples include China, Vietnam, and Singapore of today, or Korea, Japan, Taiwan, Hong Kong, Thailand, Malaysia, Chile when they were in authoritarian or semi-authoritarian eras (see the discussions of developmental state (Haggard 2018)).

In sum, it is debatable whether democracies or autocracies may have more advantages regarding their global economic performance. Moreover, most of the empirical research listed above draws on data up to the early 2000s, which may miss a key global shift – post-1990 globalization that witnesses the shift of global trade from national comparative advantage to the global value chain and importantly, includes the incorporation of many autocracies.

3 The Performance Reversal

3.1 Stylized Patterns

Based on the data from the World Bank Indicators, in Figure 2, major development indicators ranging from GDP growth and fixed investments to savings and exports are regressed on polity for the period of 1990-2020. I control for GDP per capita for the sake of comparison between countries in similar development levels. I also control for year fixed effects to for within-year comparison.

More Autocratic, Better Performance (1990-2020)

(conditional on GDP per capita, with year fixed effects)

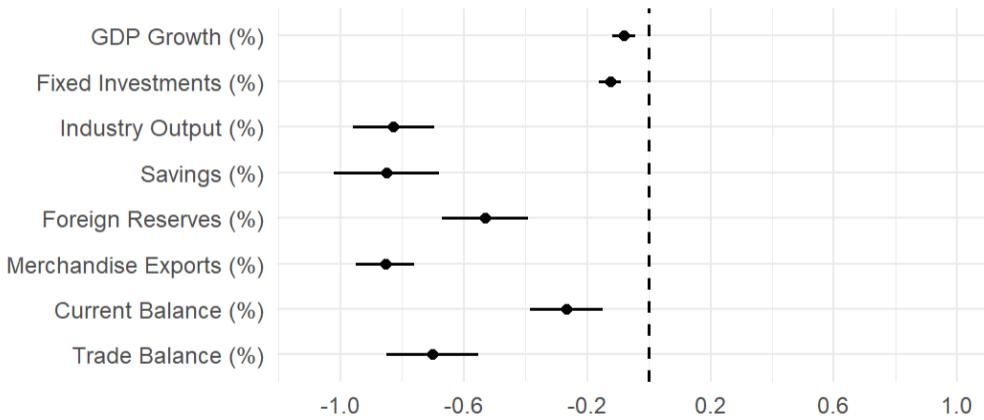


Figure 2: Regime Type and Major Economic Indicators. Note: Percentage means as a share of GDP. The coefficient means the percentage point in performance associated with one unit increase in Polity (ranging from -10 to 10).

In Figure 2, more autocratic regime types are associated with better economic performance. For example, a ten-unit decrease in polity is associated with nearly one percentage point higher in GDP growth, eight percentage points higher in industrial output (% in GDP), and nine percentage points higher in exports (% in GDP). It is clear why autocracies can rise as a result of the cumulative or compounding effects behind these statistics.

To illustrate the trends, I calculate the average values of merchandise exports, industrial output, and trade balance as shares of GDP, as well as GDP growth within both democracies and autocracies (with estimate uncertainty). All four measures show that since the 1990s, the average performance of autocracies diverge or surpass that of democracies. These patterns are similar after removing developed countries or resources-oriented countries (such as Russia and the OPEC states).

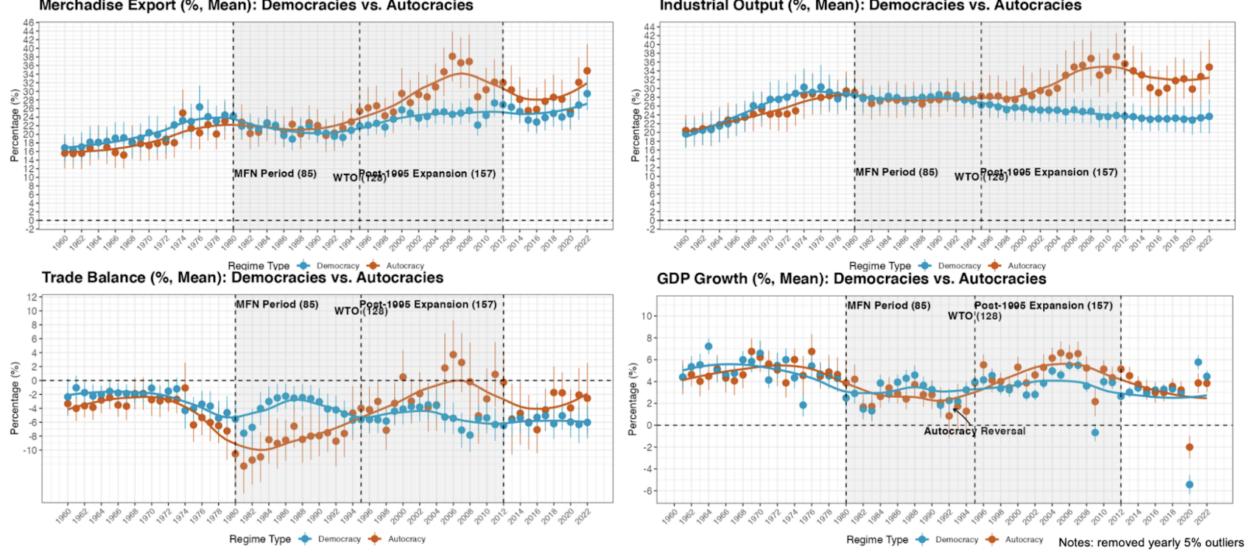


Figure 3: Average Performance of Several Indicators of Democracies and Autocracies ($FH \geq 10$).
 Note: in the Appendix, the patterns generally hold after removing developed countries, or China, or 23 OPEC countries + Russia. Estimate uncertainty of the averages are plotted.

3.2 The Prediction of Regime Type

I test whether regime type predicts (or cause after more rigorous methods are applied) the performance divergences. As my focus lies in the potential role of globalization, I focus on exports and external balances (trade balance and current account balance), which are key international economic measures. Exports have been assumed by trade theories to primarily induce the growth in productivity, income, and innovation (Bernard et al. 2018). For external balances, although short-run fluctuations hardly matter, persistent deficits can imply structural issues such as de-industrialization or financial vulnerability (see the literature on Global Imbalances). Moreover, as I have shown in another working paper, long-run external balances are correlated with a slew of development indicators such as economic growth and national debt. Many countries which run persistent surpluses have shown higher performance in development and fiscal capacity and have become global creditors (e.g., East Asia, Core Europe, and Gulf states).

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

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

First, similar to Yu (2010), by employing the gravity model, I find that prior to 1990, being

more democratic is associated with higher exports (see Table 1). I use Polity V to measure regime type. However, during the post-1990 period, being more autocratic is associated with more trade or zero effect than being more democratic is.² The models include cross-sectional, within, interaction with logged GDP (to see whether larger autocracies matter), and weighted least squares (when larger countries are assigned with larger weights). In the OLS (interaction) model, for example, by plugging in Iran's GDP in 2005 (with the logged form = 20), the effect of polity becomes negative.

²Specifically for post-1990, I look at all dyads with exporters being within the WTO to control for the WTO effect. Since many autocracies joined the WTO after 1990 and being inside the WTO is what I am interested in, there is little sense to pool together countries both in and outside of the institution. The pre-1990 model checks both inside and outside of the WTO since many autocracies were excluded. However, the result barely changes if WTO only.

	Pre-1990		Post-1990 (within WTO)		
	OLS	OLS	OLS (Within)	OLS (Interaction)	WLS (by GDP)
<i>Polity_i</i>	0.022*** (0.001)	0.003 (0.003)	-0.016*** (0.004)	0.065*** (0.014)	-0.041*** (0.001)
<i>Polity_i</i> x <i>GDP_i</i>				-0.004*** (0.001)	
<i>Polity_j</i>	0.003* (0.001)	0.003** (0.001)	0.005*** (0.001)	0.003** (0.001)	0.003*** (0.001)
<i>GDP_i</i>	1.583*** (0.048)	-1.746*** (0.139)	0.298*** (0.054)	-1.698*** (0.141)	-1.137*** (0.107)
<i>GDP_j</i>	2.058*** (0.143)	0.650*** (0.080)	0.521*** (0.090)	0.644*** (0.079)	0.065 (0.182)
<i>GDPPC_i</i>	-0.536*** (0.043)	3.051*** (0.129)	0.070 (0.063)	3.023*** (0.129)	2.154*** (0.116)
<i>GDPPC_j</i>	-1.011*** (0.137)	0.387*** (0.083)	0.526*** (0.092)	0.392*** (0.082)	0.967*** (0.185)
RTA	0.204*** (0.051)	0.282*** (0.041)	0.286*** (0.039)	0.278*** (0.041)	0.202*** (0.031)
Custom Union	0.819*** (0.111)	0.590*** (0.031)	0.662*** (0.032)	0.591*** (0.030)	-0.335*** (0.030)
Common Colonizer post-45	0.775*** (0.027)	0.998*** (0.022)	0.875*** (0.017)	0.996*** (0.022)	0.533*** (0.047)
Colonial Dep. post-45	1.724*** (0.044)	1.034*** (0.061)	1.260*** (0.048)	1.048*** (0.060)	0.982*** (0.050)
<i>Population_i</i>	-0.757*** (0.041)	2.984*** (0.124)	-0.112 (0.093)	2.955*** (0.124)	2.190*** (0.109)
<i>Population_j</i>	-1.195*** (0.139)	0.445*** (0.072)	0.596*** (0.082)	0.450*** (0.071)	0.938*** (0.180)
Distance	-0.785*** (0.025)	-1.106*** (0.011)	-1.244*** (0.015)	-1.109*** (0.011)	-0.960*** (0.013)
Common Language	0.294*** (0.023)	0.607*** (0.026)	0.685*** (0.030)	0.612*** (0.026)	0.331*** (0.020)
Common Religion	-0.059* (0.030)	-0.008 (0.032)	0.266*** (0.033)	-0.010 (0.032)	-0.025 (0.028)
Border	0.462*** (0.017)	0.806*** (0.023)	0.529*** (0.023)	0.802*** (0.022)	0.073 (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 1: Regime Type and Exports

Second, I test whether regime type is associated with external balances. As said, persistent external imbalances can indicate structural issues. In contrast, those with persistent surpluses often exhibit better development performance (e.g., Core Europe, the Gulf states, and East Asia). Surplus that contributes to reserves and sovereign funds that can be used elsewhere such as welfare programs, foreign purchases, and even geopolitical implications (e.g., China's overseas investments).

The dependent variables in my models are trade balances and current account balances, both as the share of GDP. To account for confounders, I add the controls from Chinn and Ito (2022) to account for both trade and financial explanations of balances. I employ a mixed-effect model based on Manger and Sattler (2020), as polity has significantly less variations since the late 1990s. This mixed-effect or hierarchical model captures within-country variations of covariates other than polity. Then the model regresses the country intercepts from the first stage on polity, assuming the random draw from the population (random effects).

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

$$a_{ij} = \gamma_0 + \gamma_1 POLITY_j + \eta_j$$

The results are listed below. As shown in Table 2, all models with data range of 2000-19 shows that autocracies are positively associated with current account balance (%), even after removing OPEC/Russia, rich countries, and those which joined the GATT prior to 1970. The early period (1980-2000) does not display similar patterns. In Table 3, similar models are run for trade balances (%), and the results are similar but with larger magnitudes for polity.

DV: Current Account Balance (%)							
	Period: 2000-2019						1980-2000
	Bivar OLS	Multivar OLS	Mixed Model	No OPEC/RUS	No Rich	No pre-1970 GATT	Mixed Model
Polity2	-0.291*** (0.037)	-0.157*** (0.042)	-0.157*** (0.051)	-0.106** (0.053)	-0.150*** (0.054)	-0.180** (0.080)	-0.012 (0.045)
GDP		1.600*** (0.118)	1.376*** (0.283)	1.462*** (0.291)	1.415*** (0.317)	1.746*** (0.554)	0.878*** (0.279)
GDPpc		0.969*** (0.242)	-0.195 (0.399)	-0.954** (0.427)	-0.461 (0.442)	0.126 (0.724)	0.552 (0.537)
GDP Growth		-0.122 (0.102)	-0.056* (0.031)	-0.086*** (0.032)	-0.075** (0.036)	0.012 (0.052)	-0.135*** (0.041)
Fiscal Balance (%)		0.583*** (0.058)	0.365*** (0.027)	0.299*** (0.031)	0.399*** (0.031)	0.548*** (0.044)	0.048 (0.051)
Net Foreign Asset (%)		0.355* (0.193)	0.070 (0.106)	0.076 (0.100)	0.052 (0.116)	0.049 (0.131)	0.734*** (0.263)
KaOpen		-0.285** (0.134)	-0.195 (0.166)	-0.045 (0.163)	-0.233 (0.179)	-0.157 (0.314)	-0.506*** (0.188)
Δ Private Credit (%)		-0.145*** (0.034)	-0.099*** (0.014)	-0.100*** (0.013)	-0.132*** (0.020)	-0.184*** (0.032)	-0.188*** (0.029)
Δ Terms of Trade		0.042 (0.027)	0.070*** (0.010)	0.043*** (0.014)	0.089*** (0.012)	0.053*** (0.016)	0.033** (0.014)
Population (%,<=14)		14.345*** (3.907)	19.746*** (5.269)	15.738*** (5.380)	20.549*** (6.115)	36.404*** (8.936)	-3.884 (8.634)
Population (%,>=65)		3.583 (5.693)	34.871*** (8.119)	38.056*** (8.014)	39.868*** (11.114)	49.254*** (15.643)	-7.536 (25.730)
Trade Openness		0.040*** (0.004)	0.042*** (0.006)	0.043*** (0.006)	0.031*** (0.008)	0.032*** (0.009)	0.033*** (0.007)
Year		-0.355*** (0.059)	-0.017 (0.154)	-0.014 (0.145)	-0.053 (0.047)	-0.063 (0.074)	0.203*** (0.052)
Country FE			✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Num.Obs.	2108	1294	1294	1205	1015	604	430

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

Table 2: Regressions of Current Account Balance on Polity.

DV: Trade Balance (%)							
	Period: 2000-2019						1980-2000
	Bivar OLS	Multivar OLS	Mixed Model	No OPEC/RUS	No Rich	No pre-1970 WTO	Mixed Model
Polity2	-0.410*** (0.054)	-0.278*** (0.066)	-0.211*** (0.066)	-0.112* (0.064)	-0.211*** (0.075)	-0.259** (0.109)	0.015 (0.057)
GDP		2.575*** (0.186)	1.783*** (0.466)	2.065*** (0.442)	2.442*** (0.573)	2.693** (1.134)	0.931 (0.688)
GDPpc		3.441*** (0.362)	2.231*** (0.591)	1.311** (0.587)	1.948*** (0.707)	3.167** (1.250)	-1.040 (0.975)
GDP Growth		0.037 (0.108)	-0.077** (0.036)	-0.138*** (0.037)	-0.103** (0.044)	-0.052 (0.061)	-0.175*** (0.044)
Fiscal Balance(%)		0.691*** (0.072)	0.386*** (0.031)	0.290*** (0.036)	0.430*** (0.038)	0.581*** (0.051)	0.042 (0.060)
Net Foreign Asset(%)		-0.209 (0.172)	0.141 (0.123)	0.159 (0.114)	0.122 (0.139)	0.128 (0.151)	-0.086 (0.293)
KaOpen		-0.909*** (0.245)	0.104 (0.205)	0.320 (0.195)	0.152 (0.236)	0.495 (0.409)	-0.610*** (0.223)
Δ Private Credit (%)		-0.184*** (0.048)	-0.147*** (0.016)	-0.146*** (0.015)	-0.168*** (0.025)	-0.249*** (0.037)	-0.234*** (0.031)
Δ Terms of Trade		0.087** (0.039)	0.073*** (0.012)	0.032** (0.015)	0.091*** (0.015)	0.059*** (0.018)	0.032** (0.015)
Population (%,<=14)		33.202*** (5.874)	26.246*** (6.894)	22.827*** (6.746)	35.114*** (8.496)	35.837*** (12.095)	-46.224*** (12.846)
Population (%,.=65)		7.778 (7.604)	19.703* (10.715)	21.502** (10.092)	47.244*** (16.108)	85.006*** (23.053)	-60.208 (46.059)
Trade Openness		0.071*** (0.006)	0.051*** (0.008)	0.050*** (0.007)	0.038*** (0.010)	0.011 (0.012)	0.018 (0.012)
Year		-0.772*** (0.103)	-0.159 (0.179)	-0.130 (0.166)	-0.206*** (0.061)	-0.362*** (0.097)	0.072 (0.063)
Country FE			✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Num.Obs.	2027	1294	1294	1205	1015	604	433

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

Table 3: Regressions of Trade Balance on Polity.

Later, in order to rigorously confirm the causation instead of prediction, more methods can be used such as instrumental variables (IV), panel matching, and sensitivity tests. There are several potential candidate IVs that can be used for regime type. For example, Yu (2005) uses the death penalty and Acemoglu et al. (2019) use regional democratic levels. Panel matching is another promising method that utilizes matching techniques to compare treated country-years to untreated ones (Imai et al. 2022). Moreover, at least, sensitivity tests can be used to see how large an omitted confounder has to be to overturn the effect of polity.

4 Theory: Explaining the Reversal

4.1 Why 1990? Two Changing Factors

Although more work in the empirical section is done to confirm causality, models such as gravity are legitimate in economics and political science for testing the causal effects on trade. Correlation

and prediction also matter in particular in this case. What has changed to reverse the prediction that being more democratic predict better trade performance? The reasons why the coefficient (relationship) has changed could be theoretically due to: 1) new confounder(s), or 2) mechanism change, specifically, when moderating or permissive variables change. I argue for the latter.

When viewed in retrospect, there are at least two major factors that have changed since the 1990s for countries worldwide. First, since the 1980s/1990s, many countries including both autocracies and democracies have followed the “Washington Consensus” to conduct market-oriented economic reform and trade and capital account liberalization (Quinn and Toyoda 2007). This can be seen as domestic institutional reform, primarily on economics. Second, since the fall of the Berlin Wall, the world trade system (primarily the GATT/WTO, as well as regional ones) has begun another round expansion to incorporate many autocracies (unprecedentedly) which used to participate very little in the global economy (primarily within the west hemisphere). This opened the doors for autocracies to access global markets (mostly of rich democracies) that would not have been so before.³ The economic expansion includes trade and capital flows and globalized production. Of all, trade expansion was embodied in WTO membership expansion and the proliferation of regional trade agreements (see Figure 4). What post-1990 trade differs from previously also contains a special feature that rests on the globalization of production networks – the global value chain (Baldwin 2016; also discussed in the “New New Trade Theory”).

³Although some autocracies joined at the late stage or still haven’t joined, the spillover effect from the joined ones cannot be ignored.

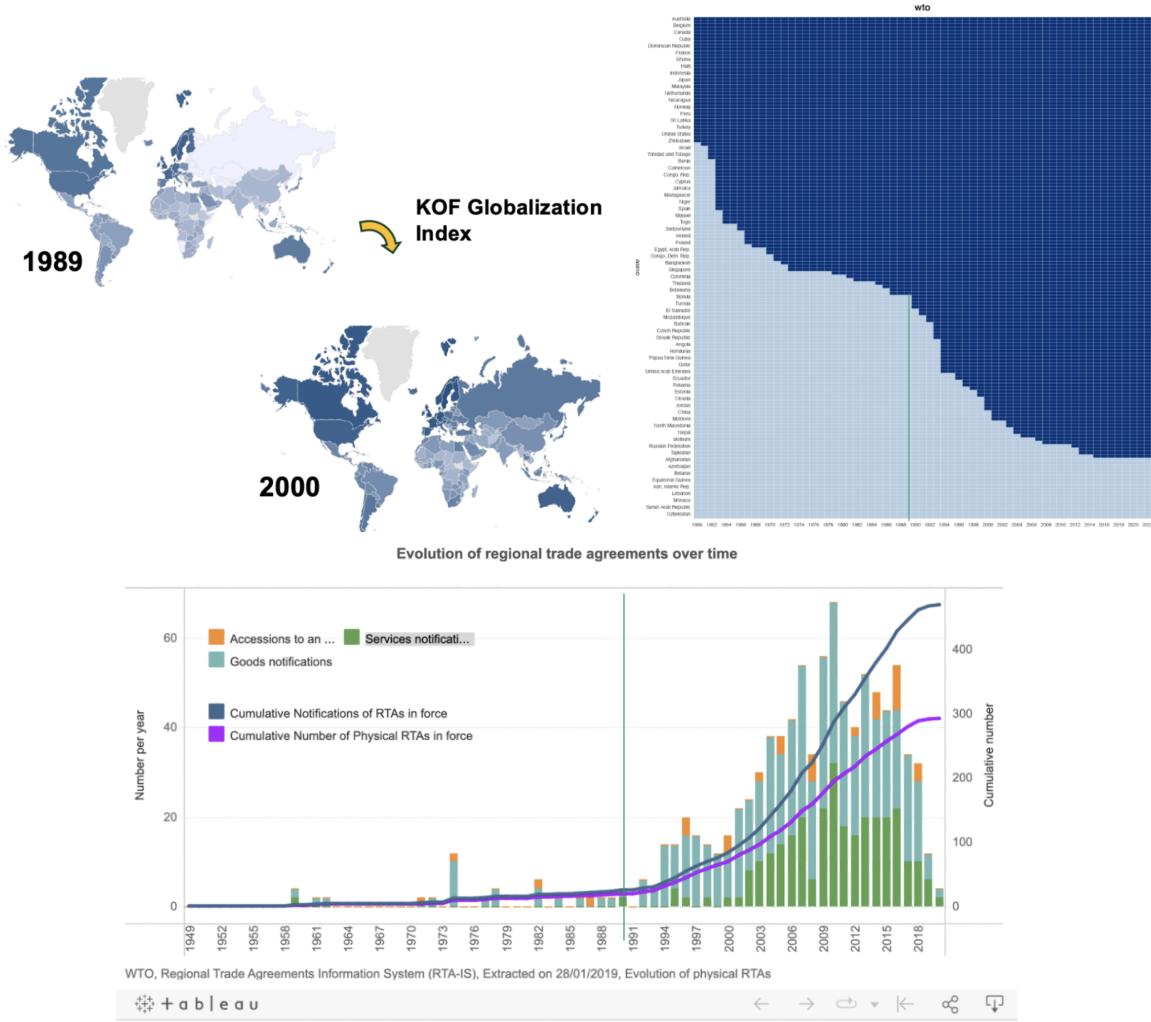


Figure 4: KOF Globalization Index; WTO Expansion; RTA Proliferation.

4.2 The Role of Domestic Reform

Starting from the mid-1980s, many countries especially in the developing world (including the communist world) began various types of market-favoring reforms. These reforms include the limitation of government power and size such as establishing rule of law and privatization of state-owned enterprises, as well as business-friendly policies, for example, property rights protection and financial/labor market deregulation. Some states extend liberalization beyond the borders – exemplified by trade and capital accounts opening. These institutional changes theoretically stimulate domestic firms to produce both manufactured goods and commodities, entrepreneurs to start a business, and multinational firms to set up productive chains in a country. consequently, a country's exports can be largely stimulated by these activities especially when multinational firms are involved.

On the other hand, if autocracies remain unreformed like they were during the Cold War,

exposure to the global trade market wouldn't help much. If Russia or North Korea joins the WTO but keeps its original planning economy, they may not be able to go as far, since firms would still have few incentives to produce locally.

4.3 The Role of Trade Integration: the WTO Expansion

Among the proliferation of varying types of trade agreements after the Cold War, 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)." ⁴ The predecessor of the WTO is the GATT, which de jure began in 1948 with 23 founding members after WW2. The WTO stipulates that a member state cannot impose discriminatory tariffs on another member, so that joining the WTO guarantees market access with lower tariffs, especially when trading with the already much liberalized advanced democratic members. Although the WTO does not necessarily demand states to lower down tariffs, over time, lowering tariffs has become the norm within the institution. After 1990, the WTO started a second major round of expansion which integrate many autocratic and young democratic countries in the former communist bloc as well as the rest of the world. Its number of members almost doubled increasing from 88 in 1985 to 164 in 2020 (see Figure 3).

Studies have found that the WTO increases trade for member states (Goldstein et al. 2007). According to the simulation of Davis and Wilf (2017), if China joined the WTO earlier, its export boom would have been earlier accordingly, showing the significance of the regime. Apart from market access, the WTO also provides an institutional guarantee for trade-related investments. For example, Carnegie (2014) has shown that the WTO solves the "hold-up" problems that hinder investments in politically dissimilar countries, implying autocracies may benefit the most from joining a democracies-dominated club. This is particularly relevant in the era of global value chain when the investment behavior of multinational corporations fundamentally shapes trade patterns (Bernard et al. 2009).

However, although free trade is conventionally regarded as beneficial for both rich and poor countries, caveats remain. Moving to equilibrium of trade liberalization from autarky based on trade models is indeed a one-time gain and the long-term effects are still debatable (Garrett 2000). States, especially after equilibrium, may adopt varying policies to alter trade patterns (e.g., strategic trade

⁴In the above prediction models, I control for regional ones such as free trade agreement, preferential trade agreement, and customs unions.

policy and mercantilism for the sectors with high startup costs and high scale effects). Although the WTO focuses on lowering trade barriers, as Wu (2016) describes, it is not equipped to deal with mercantilist practices. This can be in particular salient when trade doesn't balance contra most free trade models' assumptions, as the prices of one state's products can be artificially low without the readjustment associated with forced trade balance. As such, at least in theory, being a member of the WTO can be exploited by some to effectively practice self-benefiting policies.

That being said, trade integration may favor autocracies for a few reasons. As introduced in section 2, autocracies may have some advantages in a globalized economy such as the ease to implement industrial policies and more easily satisfy multinational firms (e.g., they account for 80% U.S. trade). Imagine two states with similar domestic market-oriented institutions such as property rights protection, thanks to less political institutional constraints, the more autocratic state can indeed possess more discretionary power to disregard labor and environmental protection, manipulate capital account and exchange rate, tilt resources from consumption and welfare to production incentives, or sign looser deals with foreign firms or markets due to its larger domestic win-set. Second, studies have found that WTO accession increased trade more for those who take longer to join due to stricter conditionality (Allee and Scalera 2012). The U.S.-dominated institution tends to set stricter examination procedures for more autocratic countries. As a result, autocracies that joined may have done more reforms to meet the institution's requirements. Additionally, once autocracies gain advantage in trade and start to export overwhelmingly, its spill-over effects can negatively impacts trading partners, especially those that are more open and are usually more democratic. The "China shock" literature unveils part of the micro-mechanism on this front. China's post-WTO effect helped to boost commodity prices which benefit many resource-rich autocracies. Furthermore, autocracies are usually associated with resource abundance. Access to broader markets can immediately boost the exports of commodities, compounded by the aforementioned advantages on resource extraction and production. Finally, autocracies may start low – during the Cold War period, many autocracies particularly those in the socialist bloc had centralized planning economies, which may have an negative impact on trade performance compared to many market-oriented democracies.⁵ Therefore, one may expect that joining the WTO which represents the significant means of enabling broad market access may favor autocracies.

⁵However, in the empirical part, I control for country-specific economic covariates.

4.4 Domestic Reform vs. Trade Integration?

In sum, the fact that a country being more autocratic conversely predicts higher exports or external balances involves two necessary factors: 1) autocracies have done domestic reforms on market economy which may have spurred the economic and export growth, and 2) autocracies are allowed to access global market especially the markets of advanced democracies, which can significantly increase their exports. Both factors are needed. This already raises the question to the argument that autocratic institutional reform (such as China, Ang 2016) may have an independent, advantageous role in developing economies without much consideration of external environment. The second factor relate primarily to the trade integration and market access, primarily with the expansion of the WTO. The conditions of liberalization and reforms required by the WTO accession also speak to the first factor.

Both domestic reform and trade integration ought to lead to trade performance increase probabilistically, whose effect magnitude and direction however, are contingent on the regime type as a *moderating variable*. Table 3 illustrates this relationship. Some characteristics associated with autocratic regimes may magnify the effects of both factors. Meanwhile, autocratic advantages need be enabled by certain levels of domestic reform and trade exposure. In other words, domestic reform and trade integration also connect regime type to trade performance understood roughly as *permissive variables*. For example, a non-reformed or autarkic autocratic regime is hardly conducive to substantial trade increase.

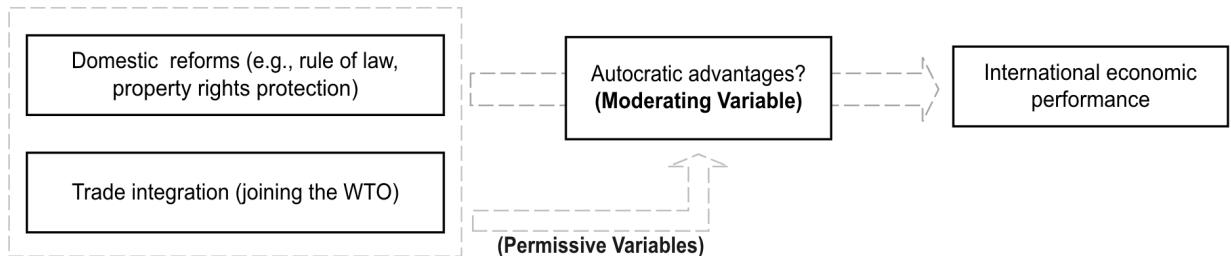


Figure 5: Illustration of determinants of International Economic Performance. Note: Both domestic reform and trade integration matter, whose effects however are moderated by certain trade-facilitating characteristics associated with more autocratic regimes.

Can we have a sense of the relative significance of domestic reform and trade integration for more autocratic states? As explained above, two changes that contrasted the pre-1990 period were

domestic reform and trade integration. The two factors should collectively work to connect regime type to trade performance. Without the other, neither domestic reform nor trade integration is likely to have substantial effect solely. Given low reforms, joining the WTO may not matter much. But without access to the global market, even a high-level market economy will find it hard to significantly increase its exports, or attract investments from multinational corporations to bring production and know-how in. This is especially true for export-oriented development models that many autocracies rely on (be it manufactured goods or commodities) and that, importantly, heavily rely on external demand. Metaphorically, joining the WTO is like opening a gateway that releases and realizes the trade performance potential of a regime, while domestic reform is like increasing one's capabilities.

However, autocratic regimes, even if done market-oriented reforms, often are weak in generating internal demand due to the lack of political institutions for inclusive redistribution, thus implying the limitation of the independent effect of the domestic institutions given the same levels of trade integration. On the other hand, joining the WTO not only provides external demand, but also exerts external pressure for continuing domestic reforms and helps to strengthen domestic institutions such as increasing contract enforcement levels of a nation and the confidence of foreign firms.

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

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Table 4: Democracies and Major Indicators of Market-Oriented Reform (Conditional on GDP per capita, 2000-2020).

More importantly, autocratic regimes that often reject substantive political reform may on average have done weaker domestic reform resulting in overall weaker domestic economic institutions than democracies. The dataset of Varieties of Democracy (V-Dem) provides two key indicators for this purpose: rule of law and property rights protection. The two forms of institutions strengthen the confidence of both domestic and international investors. In Table 4, I show the correlations of two measures of V-Dem on democracy with year fixed effects between 2000 and 2020, the rather stable, “mission-completed” post-reform period since 1990. Autocracy strongly predicts lower rule

of law and property rights protection than democracy, as well as weaker reform on trade liberalization. The former two measures are often argued to stimulate economic performance including trade performance (e.g., by institutional economic theory), which usually looks at a relatively autarkic black-box setting where most of the demand comes from internal, and higher index values suggest positive predicted effects for democracies. For example, democracies that better enforce contracts and protect property rights should incentivize production and accordingly spillover to exports, *ceteris paribus*. However, as shown earlier, when trade integration kicks in, the sign changed – autocracies have weaker post-1990 domestic institutions but better trade performance (at the absolute levels). This implies that the other factor – trade integration – likely play a significantly larger role. In other words, autocratic rise is largely contingent on trade integration.

Meanwhile, as argued, autocracies have to conduct some reforms so that their institutional levels as a permissive variable pass some thresholds. On the other hand, if their institutions are too high (e.g., close to some advanced democracies), the very institutions can constrain autocrats' discretionary hands. This brings my first set of hypotheses:

H1.1: The effect of the WTO membership on exports in the post-1990 period should be larger for autocracies than democracies on average.

H1.2: The differential effect in *H1.1* should diminish when the market-oriented institutional level is too low or too high.

To be clear, this is not to say domestic reform exerts no effect. Should China, Russia, or Vietnam never have improved contract enforcement and property rights protection from their old times, exposure to the global market may matter little. However, although autocracies have weaker average institutions, due to a myriad of autocratic advantages in international trade, we may reasonably expect that the same level of improvement in market-oriented institutions may bring more rewards to autocracies than democracies. Similar to *H1.2*, this autocratic advantage should hardly exist for those outside of the WTO. Hence come the two hypotheses:

H2.1: The effect of domestic reform on exports in the post-1990 period should be larger for autocracies than democracies on average.

H2.2: The differential effect in *H2.1* should diminish when autocracies are excluded from the

WTO.

Lastly, for the regime's effect on the absolute levels of exports, autocracies perform better (see Section 3). Again, I expect they their institutional have to presumably cross certain levels (e.g., not be like North Korea). Additionally, once autocracies' institutions are of very high levels, they may constrain many of the mentioned autocratic advantages by tying hands.

H3: The effect of autocracies on exports on average should diminish when the market-oriented institutional level is too low or too high.

4.5 Discussions on Abnormalities

Of note, not all autocracies outperform democracies. All above arguments are statistical. Countries such as Afghanistan or Pakistan by no means fall into the category of winners. Some democracies such as Poland and Germany perform quite well in international economics. There are several types of autocracies such as monarchy, personalist, and single-party. It requires further research on this.

During the Cold War period, the U.S. for example also traded with some autocracies such as Spain, Argentina, and South Korea. But this trade relationship is not comparable as being exposed to a globalized market access administered by the WTO. The WTO not only provides equal market access but also institutional guarantee for firms and investors and reform requirements especially for the geopolitically unimportant. Many autocratic states had not done meaningful market-oriented reform. The GVC had not taken off – for example, South Korea largely relied on developing indigenous supply chains (Baldwin 2016). The absolute size of autocracies were not as large to substantially shock the economies of democracies.

Would the global value chain that produces back-and-forth trade distort the use of exports as a measure? In general, democracies tend to be more economically integrated, and generate more repeatedly counted trade volumes. Examples include North America, Europe, and Southeast Asia. Autocratic states that produce manufactured goods or commodities tend to be less so integrated. Moreover, not only is export a conventional measure for international economic performance in the literature, but also we consider external balance which calculates the net value and effectively reduces the concerns of over-counting.

Although my theory is contingent on country being more autocratic rather than a dichotomy between democracy and autocracy, not all autocracies have officially joined the WTO. Although some autocracies like Iran are not officially a WTO member, and Russia became a member only until 2012, the spillover of others joining (e.g., China and others) and the buildup of a global commodity market along economic globalization matter. This second-order effect does not negate my argument that globalization facilitates autocratic rise.

What about Most Favored Nation (MFN) status? China was granted the MFN status by major western countries in the 1980s, while Vietnam and Russia were granted by the U.S. in 2001 and 2012, respectively. Some MFNs are granted as part of PTAs, for example, U.S.-Vietnam BTA (2001), which are controlled in the models as PTA. MFN is inherently a concept of WTO, and part of trade integration, and WTO membership provides much more benefits than just a MFN status from several trading partners as described above. If WTO effect captures MFN effect which happens long before WTO accession, the former's sole effect is likely underestimated.

If trade integration is the most important factor behind autocratic rise, why joining the WTO favors autocracies? Regime type becomes the moderating variable. As explained above, multiple mechanisms about regime type can be in play. This paper does not distinguish them and leaves the specific mechanisms of “mythical autocratic features” to future research.

5 Empirical Evidence

As explained, the year 1990 is roughly a watershed from multiple perspectives (e.g., global political shift, data trends, trade integration, domestic reform, and democratization progress in the 1990s), and thus I will focus on two periods: pre-1990 and post-1990.

There were in total 64 countries which joined the WTO/GATT between 1990 and 2020, and almost all were developing countries at the start (except Liechtenstein). Of them, 25 (Freedom House Index ≥ 8) or 18 ($\text{Polity} \leq 0$) were more autocratic states in 1995.⁶ These countries do not account for the majority of existing autocracies across the world, but include major autocracies such as China, Russia, Saudi Arabia, Vietnam, United Arab Emirates, Qatar, Oman, Kazakhstan, Tajikistan, Kyrgyz, Bahrain, Tunisia, Angola, Lao, Cambodia, Venezuela, and Jordan. The mainstream autocracies also account for nearly 90% of autocracies' total GDP. The spill-over effect is considerable: these WTO-benefited autocracies trade with non-WTO autocracies. For example,

⁶If we count Russia ($\text{Polity} = 3$ in 1995) as autocracy and use it as a cutoff, then we get 23 autocracies.

Russia, China, or Saudi Arabia can more freely trade with Iran 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' superior performance in exports can be detrimental for democracies running trade deficits on average in the case of trade shocks. As trade can indeed become more zero-sum given mercantilism or unbalanced trade, the spillover effects for democracies can become negative.

Importantly, the mixture of democracies and autocracies in the post-Cold War WTO joiners, as well as the mixture of WTO and non-WTO autocracies provides us sufficient observations (dyad-based) to test the differential effects distinguished by regime type and WTO membership.

5.1 The WTO Effect

Gravity Model

I first run gravity models with different specifications, the classic model used in international trade. The results are shown in Table 4. Model 2 shows that WTO overall has no effect on exports in the post-1990 period.⁷ Conditional on other country characteristics in the gravity models, joining WTO predicts increased exports before 1990, yet the effect disappears in the post-1990 period. By looking at the WTO x polity interaction term, the effect of joining the WTO on exports is larger for democracies pre-1990, but larger for autocracies post-1990. In contrast, the WTO effect on imports is larger for democracies post-1990. This suggests that in the post-1990 period, joining the WTO leads to more export increase while less import increase for autocracies compared to democracies. This may explain why autocracy predicts higher trade balances.

⁷The large sample size can safely rule out the statistical power issue.

	Export(log)		Export(log)		Import(log)	
	Pre-1990	Post-1990	Pre-1990	Post-1990	Pre-1990	Post-1990
WTO_i	0.334*** (0.044)	0.042 (0.048)	0.326*** (0.044)	0.062 (0.047)	0.074 (0.048)	-0.027 (0.048)
$WTO_i \times Polity_i$			0.011*** (0.003)	-0.018*** (0.003)	-0.003 (0.003)	0.010*** (0.003)
$Polity_i$			0.010*** (0.003)	-0.001 (0.003)	0.014*** (0.003)	-0.003 (0.003)
WTO_i	0.075 (0.048)	-0.014 (0.049)	0.067 (0.048)	-0.018 (0.048)	0.286*** (0.045)	-0.078 (0.048)
Both WTO	-0.029 (0.049)	0.197*** (0.050)	-0.016 (0.049)	0.198*** (0.049)	-0.033 (0.050)	0.237*** (0.050)
GDP_i	-0.202 (0.256)	0.233** (0.114)	-0.206 (0.256)	0.279** (0.114)	2.136*** (0.242)	0.780*** (0.201)
GDP_j	2.118*** (0.246)	1.045*** (0.198)	2.126*** (0.246)	1.043*** (0.198)	-0.210 (0.266)	0.505*** (0.123)
$GDPPC_i$	0.763*** (0.252)	0.262** (0.114)	0.755*** (0.252)	0.210* (0.115)	-1.366*** (0.237)	-0.033 (0.201)
$GDPPC_j$	-1.355*** (0.241)	-0.304 (0.197)	-1.361*** (0.241)	-0.302 (0.197)	0.781*** (0.262)	0.014 (0.122)
$Population_i$	0.219 (0.243)	0.276** (0.127)	0.226 (0.243)	0.219* (0.128)	-1.181*** (0.231)	0.191 (0.205)
$Population_j$	-1.129*** (0.235)	0.094 (0.201)	-1.139*** (0.235)	0.084 (0.201)	0.235 (0.255)	-0.065 (0.135)
PTA	0.111*** (0.029)	0.187*** (0.023)	0.111*** (0.029)	0.178*** (0.023)	0.132*** (0.029)	0.209*** (0.024)
RTA	0.558*** (0.070)	-0.004 (0.029)	0.568*** (0.070)	0.005 (0.029)	0.611*** (0.076)	0.083*** (0.031)
FTA	-0.514*** (0.073)	0.005 (0.036)	-0.520*** (0.073)	0.004 (0.036)	-0.558*** (0.080)	-0.092** (0.039)
Customs Union	-0.097 (0.144)	0.046 (0.076)	-0.109 (0.142)	0.058 (0.076)	-0.108 (0.151)	0.032 (0.075)
EU_i	0.041 (0.037)	0.166*** (0.027)	0.007 (0.036)	0.176*** (0.027)	-0.057 (0.042)	-0.572*** (0.034)
Colonial Orbit	0.622*** (0.091)	0.190*** (0.016)	0.600*** (0.091)	0.204*** (0.016)	0.577*** (0.097)	0.646*** (0.017)
Dyad FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Num.Obs.	235 341	506 363	235 341	506 363	211 521	453 363
R2	0.870	0.891	0.871	0.891	0.864	0.883

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

Table 5: The Effects of Joining the WTO.

[TODO: need to check the robustness of gravity model, see Carnegie 2014. check gravity trade missing data.]

PanelMatch

I use panel matching as a nonparametric identification strategy to estimate the effect of joining the WTO. Although PanelMatch cannot rule out unobservable confounders entirely (which can be reassured by sensitivity tests), PanelMatch offers significant advantages over traditional two-way fixed effects (TWFE) models for causal inference in panel data (Imai et al. 2022). Unlike TWFE, which relies on the strong assumption of homogeneous treatment effects and can yield biased estimates due to inappropriate comparisons, PanelMatch explicitly constructs counterfactuals by matching on pre-treatment covariates and trends. This approach ensures covariate balance, avoids biases introduced by staggered treatment adoption, and accommodates dynamic treatment effects, providing more robust and reliable causal estimates. The PanelMatch estimator is expressed as below:

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

Where D_{it} is treatment indicator (1 if treated, 0 otherwise). $Y_{i,t+F}$ 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 unit i .

Specifically, Covariate Balancing Propensity Score (CBPS) weighting is used to balance covariates.⁸ CBPS estimates propensity score such that covariates are balanced (Imai and Ratkovic 2015). Weighting methods are particularly effective in small datasets because they retain all available control units. As PanelMatch is inconvenient to handle interaction effect, for which units are roughly stratified into democracies ($\text{polity} \geq 0$) and autocracies ($\text{polity} \leq 0$).⁹ For all tests, I use export volumes (log) as the DV, similar to gravity model.

I first utilize the country-year panel dataset. The parameters allow for up to 4-year lags to search for matched sets based on similar treatment histories, while keep 1-5 year forwards for possible delayed effects, since joining the WTO may not immediately boost trade.¹⁰ Country-

⁸I 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 value 0.2.

⁹As shown in the Appendix, countries' regime type stay relatively stable before the mid-1980s and after the mid-1990s. I capture the regime types in 1970 and 2000, respectively, for the purpose of separation to maintain data integrity for a single country over years for matching.

¹⁰Longer leads and lags are refrained since it can eliminate more units which don't match. I keep four more years

level covariates are matched including GDP (log), GDP per capita (log), polity, population (log), population proportion (over 65 years old), rule-of-law index, and property-rights-protection index. I avoid controlling for possible post-treatment confounders such as natural resource rent (%) and industrial output (%).

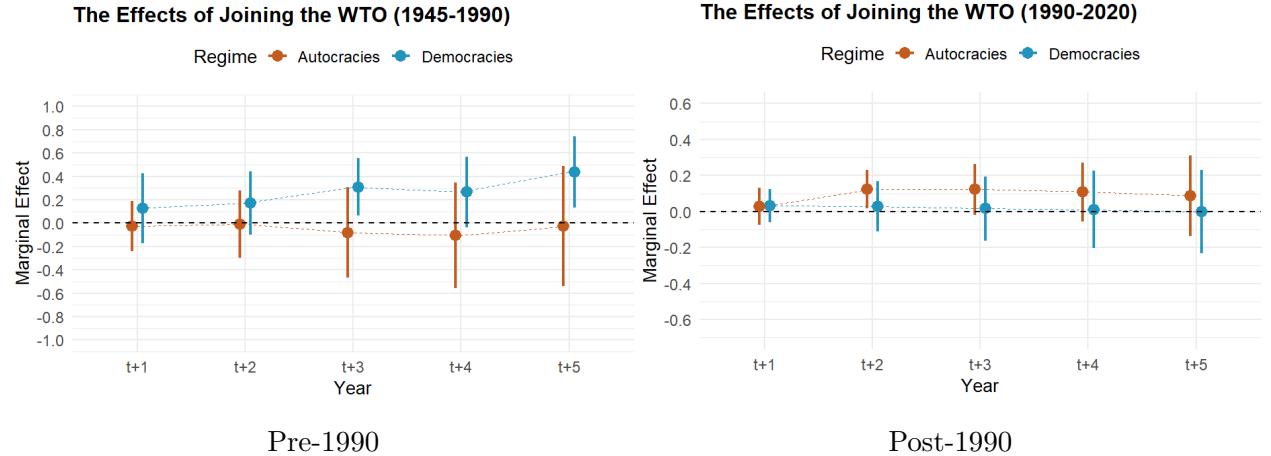


Figure 6: Effects of Joining the WTO (PanelMatch, country-year). *Note:* Democracies are those whose polity index are larger than 0.

Since the country-year panel data contains a relatively small units, which limits the length of lags and leads, I also exploit the dyad-year panel data whose overwhelmingly large sample size allows me to observe longer delay effects. 7-year leads are allowed and a whole list of dyad-level covariates are controlled including GDP (log), GDP per capita (log), population, and polity, all for both origin and destination states. Additionally controlled are destination's WTO status, colonial relationship, FTA, customs union, distance (log), and common official language.

prior to the start year of each period to allow for matching pre-treatment histories.

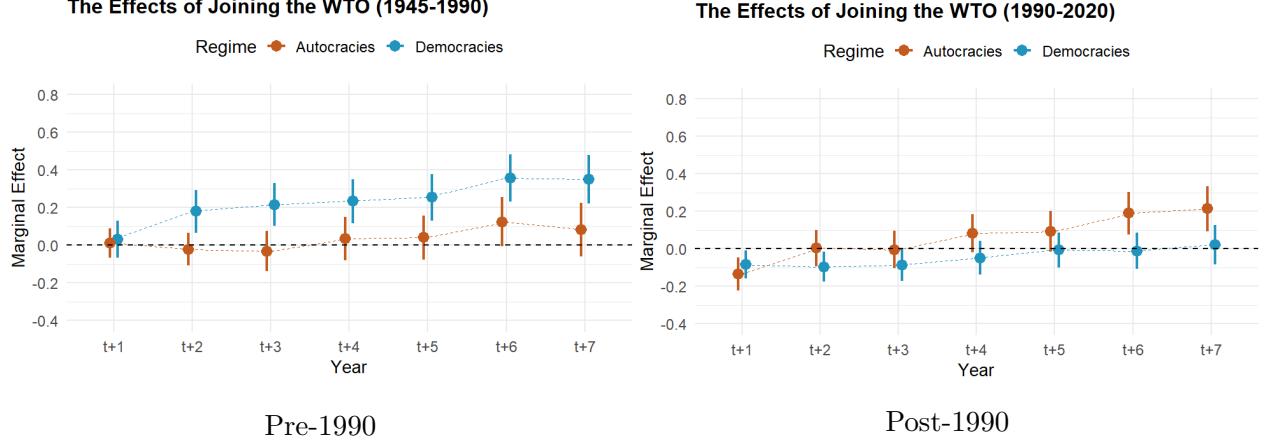


Figure 7: Effects of Joining the WTO (PanelMatch, dyad-year). *Note:* compared to the result using the country-year dataset, the relation patterns between autocracies and democracies are similar.

The results given by PanelMatch are consistent with those of gravity models. For example, gravity model reports that the effect difference between an average democracy (polity = 5) and an average autocracy (polity = -5) is 0.11 for the pre-1990 period and -0.18 for the post-1990 period. By observing the graphs plotted by PanelMatch (from t+2 to t+5, for instance), the difference is roughly 0.2-ish for the pre-1990 period and -0.12-ish for the post-1990 period. For winners of each period, Gravity models predict that the WTO effect for democracy on average is 0.37 pre-1990 while that for autocracy is 0.08 post-1990. Similarly, PanelMatch finds the two effects are 0.3-ish and 0.1-ish, respectively. In other words, PanelMatch validates the paper's hypothesis.

Sensitivity Test

Although both gravity model and PanelMatch show consistent results, they cannot rule out omitted variable bias still. In order to mitigate the concerns, I conduct sensitivity tests following Cinelli and Hazlett (2020) whose goal is to gauge how strong an omitted confounder needs to be to explain away completely the effect of the variable of interest. As Cinelli and Hazlett suggest, it's more productive to consider the relative strength by comparing the unobserved confounder to observed covariates, since the absolute strength (i.e., residual variance) can be harder to argue for/against and the strongest covariates are often identified in models. As such, I choose three covariates that arguably strongly confound the results and are significant in the models: BRI locations (bri_loc), Ideal Point score (ideal_point), and per capita GDP (gdp_pc). Figure 9 plots the sensitivity curves which represent the estimates of global imbalance given the hypothetical partial R^2 of the omitted confounders with treatment ($R^2_{D \sim Z|X}$) and outcome ($R^2_{Y \sim Z|D,X}$). In a nutshell, any omitted

confounder that nullifies the main estimates would need to be 15 times, 17 times, and 38 times as strong as bri_loc, ideal_point, and gdp_pc with both treatment and outcome.¹¹ Hence, there should be less concerns for omitted variable bias.

The “U-shape” Effect Stratified by Domestic Reform

Different levels of market-oriented institutions condition the differential effect of joining the WTO by different regimes. When institutional levels are too low, joining the trade regime hardly makes autocracies outstand. Yet, when institutional levels are high enough, institutional constraints may in turn constrain autocratic advantages in trade. We thus again expect a U-shape effect for joining the WTO.

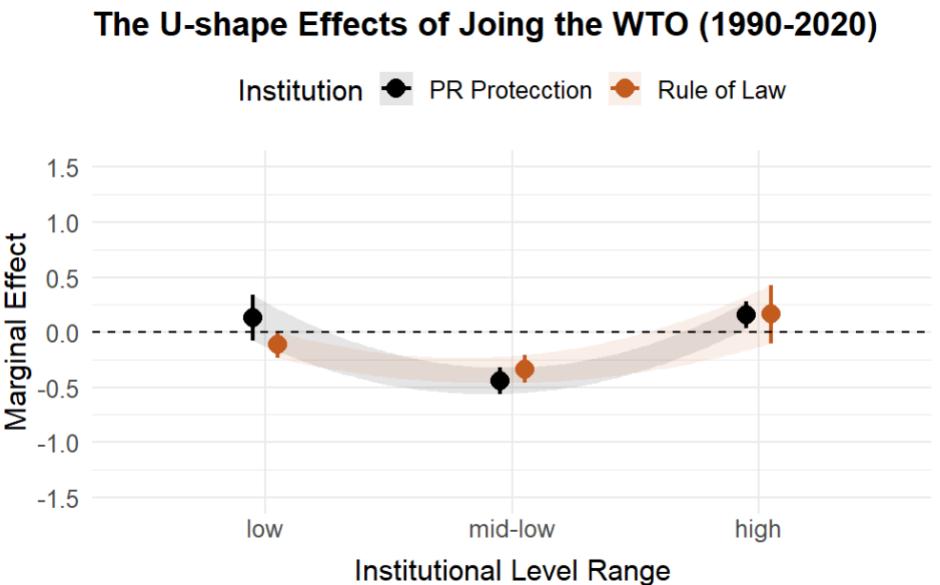


Figure 8: The Effects of Joining the WTO Conditional on Institutional Levels. Note: The y-axis means the marginal effect of the WTO conditional on polity. A positive value means the effect favors democracy.

I use the main gravity model above to estimate the effects stratified by property-rights protection and rule of law, respectively. Institutional levels are divided into three ranges from low to high.¹²

¹¹As noted by Cinelli and Hazlett, these results are conservative for multiple (possibly non-linear) omitted confounders. See Appendix of the implementation details.

¹²Since 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) isn't distorted by within-democracy variation. Robustness tests such as varied nudges in separations, continuous polity variable, and pooling only same-range autocracies/democracies get similar results. See the Appendix for details.

I ensure one country's data integrity by not omitting any dyads of the same origin country due to institution variation over years – I calculate “mean institutional levels” of a country for 10 years after joining the WTO, and only assign states into corresponding institutional ranges.¹³ As shown in Figure 8, across different ranges of institutions, autocracies outperform democracies regarding the effects of joining the WTO but not when institutions are too low or too high. Only when institutional levels sit somewhere in the middle, can autocracies best perform.

Why Autocracies Reversed the WTO Effect Post-1990?

So far, we have discussed why autocracies can perform well through the expansion of the WTO after 1990. Why did joining the WTO didn't help in the pre-1990 period? First, during the Cold War, autocracies that joined were mostly smaller and weaker, so that the joining effect for democracies were not significantly impacted. In 1975, roughly 90% of WTO GDP belongs to democracies. Autocracies were mostly friendly to the West. Second, the wave of substantive market-oriented reform had not started, neither had the spread of global value chain, mitigating the effect of membership.

5.2 The Domestic Reform Effect

As discussed, the superior economic performance of autocracies stand on ironically lower levels of domestic institutions, which theoretically limits the effect of domestic reform we shall expect. I rely on my main gravity model to test this. VDem property-rights protection index is used to proxy the level of reform outcomes. I exploit the within-dyad variation which controls for many time- and dyad- invariant confounders to test the effect of domestic reform.

As shown in Model 2 of Table 6, within dyads over years, PR protection loses significance compared to the pre-1990 period, similar to WTO membership. The most possible explanation based on this paper is that the influx of many well-performing autocracies into the global trade system may exert significant shocks to the old export logic. Model 3 interacts WTO_i with PR rights, showing that the WTO membership effect is smaller for higher institutional levels, counterintuitively. Theoretically, highly reformed states should experience greater membership effect. The negative sign suggests the limited role of domestic reform. Model 4 shows that within dyads, PR protection increase matter less for autocracies.

¹³I do not control for institution in the model to avoid post-treatment bias, but this may neglect pre-WTO institution's impact. In the Appendix, I show controlling for within-dyad institution change (including pre-WTO) barely affects results.

The Effect of Domestic Reform (1990-2020)

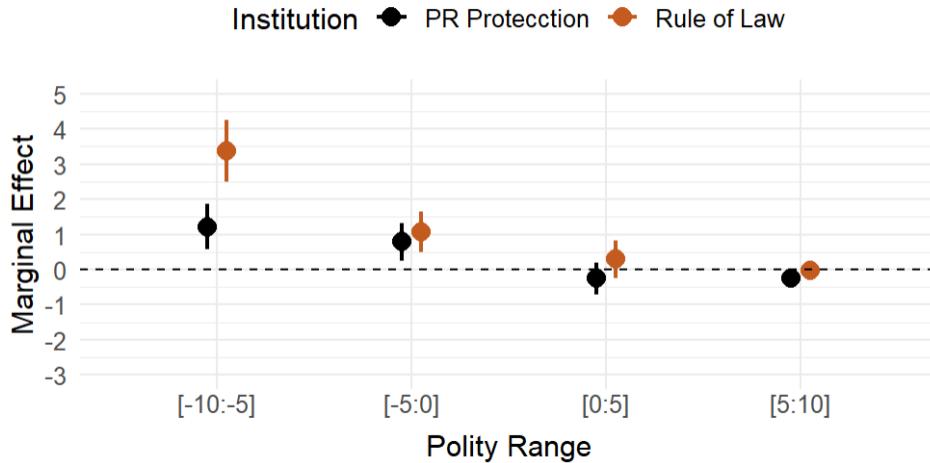


Figure 9: The Effects of Domestic reform by Polity. *Note:* The plot captures the effects of within-dyad changes of institutions across differential ranges of polity. I only include developing countries (GDP per capital lower than \$20,000 in 2000) to focus on institutional reform.

As shown in Figure 9, domestic market-oriented reform during the period of 1990-2020 increase exports, but only for autocratic states, after controlling for WTO effects.¹⁴ This result clearly suggests autocratic advantages in trade can amplify the effect of domestic reform.

WTO as the “Permissive Variable”

Just like the autocracy-boosting WTO effect has to be permitted by crossing certain institutional levels, the autocracy-biased institutional effect above hardly exists when excluded from the global trade system. As domestic reform only exerts effects for autocracies, I only focus on dyad-years with the origin state being autocratic ($\text{polity} \leq 0$ in 2000). These states are classified into those which joined the WTO some time in 1990-2020 and never-joiners.¹⁵

¹⁴Similar effects remain without controlling for WTO membership for possible post-treatment bias (see the Appendix).

¹⁵The result is similar when I define the WTO stratification all dyad-years in which the origin state is in the WTO.

The Effects of Domestic Reforms (Polity ≤ 0 , 1990-2020)

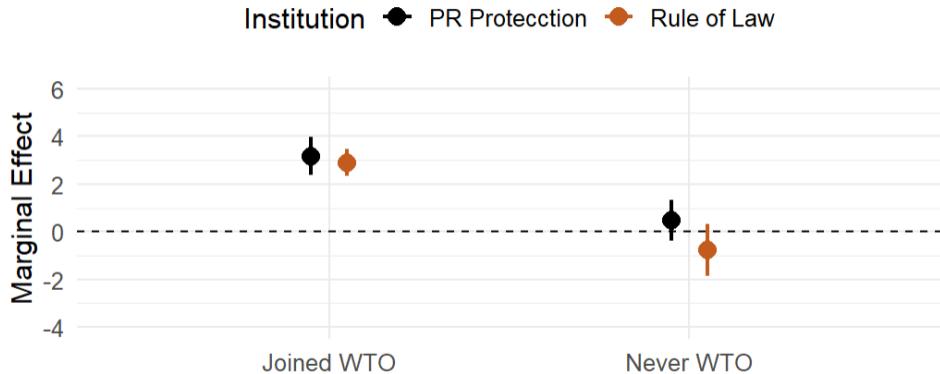


Figure 10: The Effects of Domestic reform by WTO. *Note:* The plot captures the effects of within-dyad changes of institutions for autocracies ($\text{polity} \leq 0$ in 2000). “Joined WTO” means a country joined the WTO some time within the 30-year period.

As shown in Figure 10, the WTO group of states experienced significantly higher export increase given the same amount of institutional reform increased. The result suggests my theory is correct – autocratic advantages only substantively work when states are exposed to the global trade regime.

5.3 Polity on Absolute Levels of Exports

If the two relative, temporal effects above explain the autocratic superior performance, examining absolute performance levels only makes the story truer. As shown in Section 3, regime type predicts heterogeneous absolute levels of exports. Is this prediction also moderated by institutional levels? Unlike testing the WTO effect, I now pool all dyads together only with year fixed effects and additional standard dyad covariates such as distance and common official language. Rule of law index (≥ 0.8) contains mostly advanced democracies ($\text{polity} = 9, 10$ in 2000), while Property-right protection (≥ 0.8) does contain some lower polity-level states. I thus set the up-bound as 0.8, and evenly separate 0-0.8 into four ranges, namely $\{0, 0.2, 0.4, 0.6, 0.8\}$. I then run full gravity model for each range.

The U-shape Effect of Polity on Exports (1990-2020)

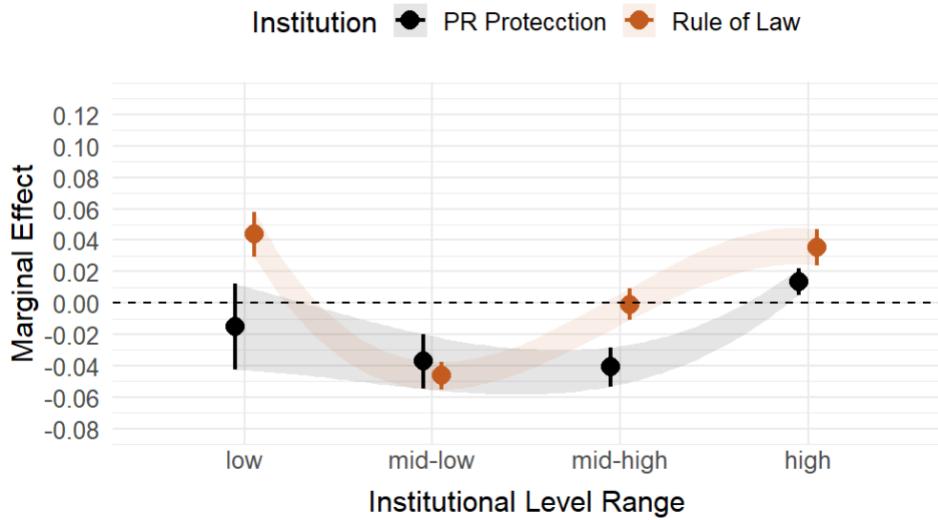


Figure 11: The Effects of Polity Conditional on Institutional Levels. Note: The smooth curves are generated using cubic spline interpolation for illustration purpose.

6 Additional Robustness Tests

- Different democracy measure: continuous, binary
- Outlier: Bootstrap, Leave-One-Out
- Delay effects of WTO and institutions
- Multiple Imputation

7 Further Unbundling Effects

As stated above, when autocracies were incorporated into the global trade regime, they may have multiple advantages regarding promoting exports. This paper does not distinguish which mechanisms are in play, and they may play a role simultaneously. It also leaves sector-level analysis to future research.

However, at least, we do see different types of autocratic regimes, which are likely to rely on heterogeneous channels.

7.1 Export

Types of Autocracies

Autocratic regimes vary in type. Geddes famously classifies these regimes as personalist, single party, and military.

7.2 External Surplus

Autocracies may be more likely to conduct mercantilist and protectionist policies. Meanwhile, autocracies are correlated with more natural resource endowment. Specifically regarding external balance, the level of capital market development can be a factor.

Mechanisms	Implications
Mercantilism	industrial share ($r = -0.47$, cross-country correlation in 2010)
Protectionism/Openness	tariff rate ($r = -0.52$); capital market openness ($r = 0.49$)
Capital Market Dev	private credit supply share ($r = 0.36$)
Resource-rich	natural resource rent share ($r = -0.56$)

Table 6: Mechanisms for External Balances

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*** (0.052)	-0.107** (0.053)	-0.162*** (0.056)	-0.157*** (0.051)	-0.113** (0.053)	-0.099* (0.054)
Industrial Output(%)		0.268*** (0.030)				0.248*** (0.036)
Tariff Rate			0.180*** (0.045)			0.210*** (0.043)
Δ Private Credit (%)				-0.099*** (0.014)		-0.113*** (0.013)
NatRes Rent (%)					0.220*** (0.031)	0.098*** (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)	-0.068 (0.066)	-0.142** (0.072)	-0.211*** (0.066)	-0.119* (0.064)	-0.013 (0.065)
Industrial Output(%)		0.640*** (0.038)				0.476*** (0.043)
Tariff Rate			0.120** (0.053)			0.186*** (0.048)
Δ Private Credit (%)				-0.147*** (0.016)		-0.159*** (0.015)
NatRes Rent (%)					0.614*** (0.036)	0.371*** (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

Table 7: Mediating Variables and External Balances.

8 Case Illustration

China - In 1978, China started marketization with a low level of exports then (6% of GDP export in 1978). Since 1980, China was granted the (Most Favored Nation) MFN status from most western countries (but there was much uncertainty, e.g., subject to annual review which hinders investors'

confidence). In 1980-1995, China recorded persistent trade deficit, borrowed huge from the World Bank, and started the EEZ/export orientated/mercantilist model. For China, joining the WTO in 2001 gave it a second boost to its already growing exports and China started to run persistent trade surplus. Meanwhile, China's industrial share in GDP increased dramatically (40% in 2020).

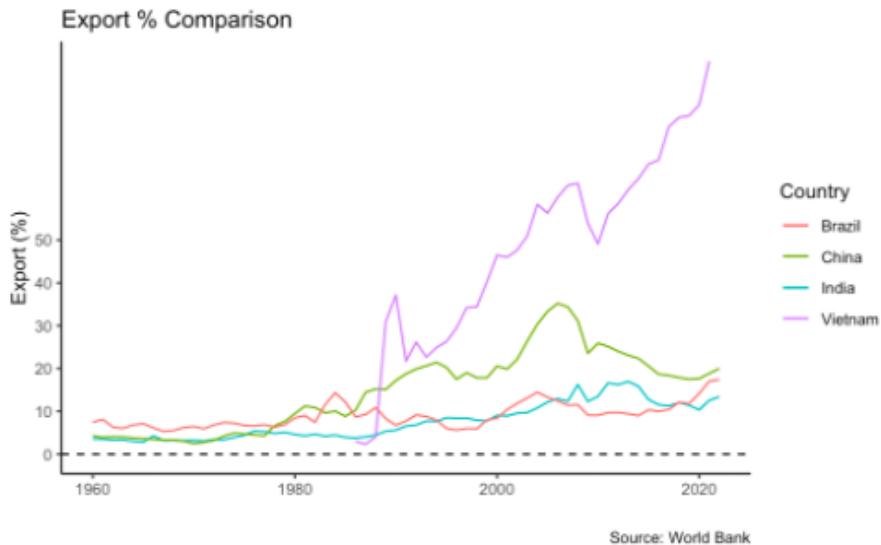


Table 5. Case Illustration: *China, Vietnam vs. India, Brazil*

Vietnam - In 1986, Vietnam's marketization started with a low level of exports (4% of GDP exp in 1988). Vietnam was in 2001 granted the MFN status from most western countries (U.S. lifted trade embargo in 1994). In 1990-2011, Vietnam had persistent trade deficit, while also starting EEZ/export orientated/mercantilist model (50% export share in 2002). Vietnam joined the WTO in 2007 and since 2012, it has run persistent trade surplus with a high industrial share (38% in 2020).

India - Unlike later joiners, India was one of the 23 GATT signatories, which didn't seem to help substantially. Yet India started marketization late in 1991 (as response to BoP crises). India's institutional characteristics resulted in low mercantilism (5.6% export share in 1990; 12% export share in 2005). The result is, from 1991 to present, it ran persistent trade deficit with a low industrial share (25% in 2020)

Brazil - Brazil was also one of the 23 GATT signatories. It started in late 1980s marketization reform, also with low mercantilism (10.9% export share in 1988; 13.3% export share in 2005). The result is, since 1990, Brazil recorded persistent current account deficit with a low industrial share (19.5% in 2020).

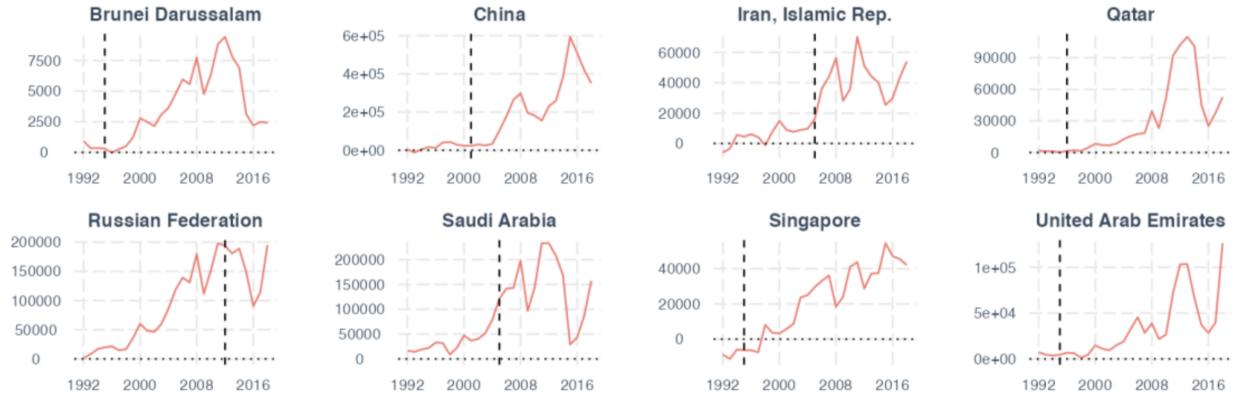


Table 3. Illustration of Export Performance of Some Autocracies. Note: Vertical dashed line indicates the year when a country joined the WTO or became an observer.

9 Conclusion

It has been under heated debate whether democratic or autocratic institutions favor economic growth. It eventually boils down to the mechanism in which economic outcomes are generated. Nonetheless, looking at domestic institutions alone misses the picture of external environment. In the age of economic integration particularly in the form of the global value chain and economic policy convergence, autocracies regimes may acquire certain advantages, although the specifics of the mechanisms are outside of this paper. For example, in a globalized setting, firms in autocracies may gain an overall competitive advantage that enable them to out-compete the rivals. Natural-resource autocracies gain unprecedented export opportunities which reinforce the regimes. China is a particularly important case, primarily because of its size that generates tremendous impacts on others.

In this article, I aim to address a puzzle why autocracy's prediction on exports and external balances reverses compared to the pre-1990 period. Although more rigorous causal methods need to be employed to better confirm causality, correlations already matter with regard to policies and the original expectations of globalization. I argue that claiming autocracies learned domestic market-oriented reform or can better develop economies solely by themselves is at best incomplete. Economic globalization that incorporates many of them into the global economic system plays an important and even permissive role that enables some of the characteristics of autocratic institutions to exploit the global market often at the cost of others. How one should judge globalization then

depends on the ends, for as Robert Keohane (1984) argues, processes and means are to be justified by ends.

10 References

To do.

Appendix

A Descriptive Data

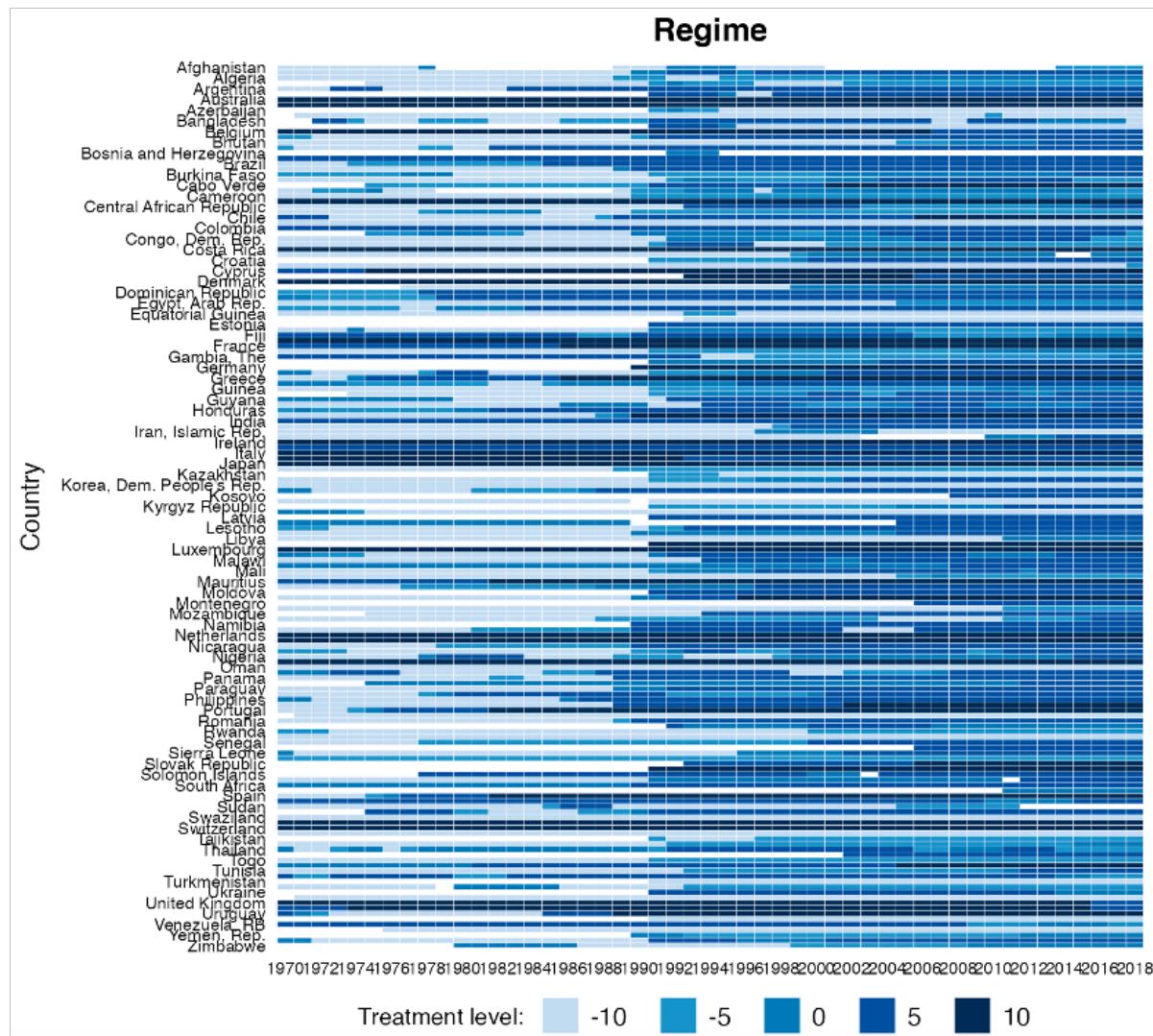


Table 8: Democratization (Polity Index)