

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

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Abstract Autocracies have recently resurged economically, defying 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 that autocratic institutions matter exogenously, I examine the role of both global trade integration, specifically the 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 average market-oriented institutions, 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 through which autocracies may operate.

1 Introduction

Since the early 1990s after the Cold War ended, economic globalization has significantly accelerated its pace (Baldwin 2016; Rodrik 2011). Global trade and financial integration significantly expanded,

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¹In this paper, although autocracy is defined as a specific range of states (e.g., polity ≤ 0), my arguments and empirical evidence apply to more autocratic vs. more democratic states on a continuum or dichotomy in a probabilistic sense.

as well as the number of countries adopting liberal economic policies. By 2010, the membership of GATT/WTO nearly doubled compared to 1985, expanding more into Asia, Africa, Europe and Latin America, along with the unprecedented proliferation of other smaller, regional trade agreements (e.g., RTAs and PTAs).

Meanwhile, the once promising third-wave democratization has stalled (the shadow area in Figure 1), and scholars have worried about the instability and backsliding of both young and advanced democracies, as well as the emergence 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. At least partially, economic grievances by globalization have fueled public discontent and created fertile ground for populist and authoritarian leaders in democracies (Autor et al. 2020). By contrast, the share of autocracies in global GDP and industrial output reversed the declining trend and has since steadily risen (see Figure 1). Particularly, many autocracies have become competitive on the export market.²

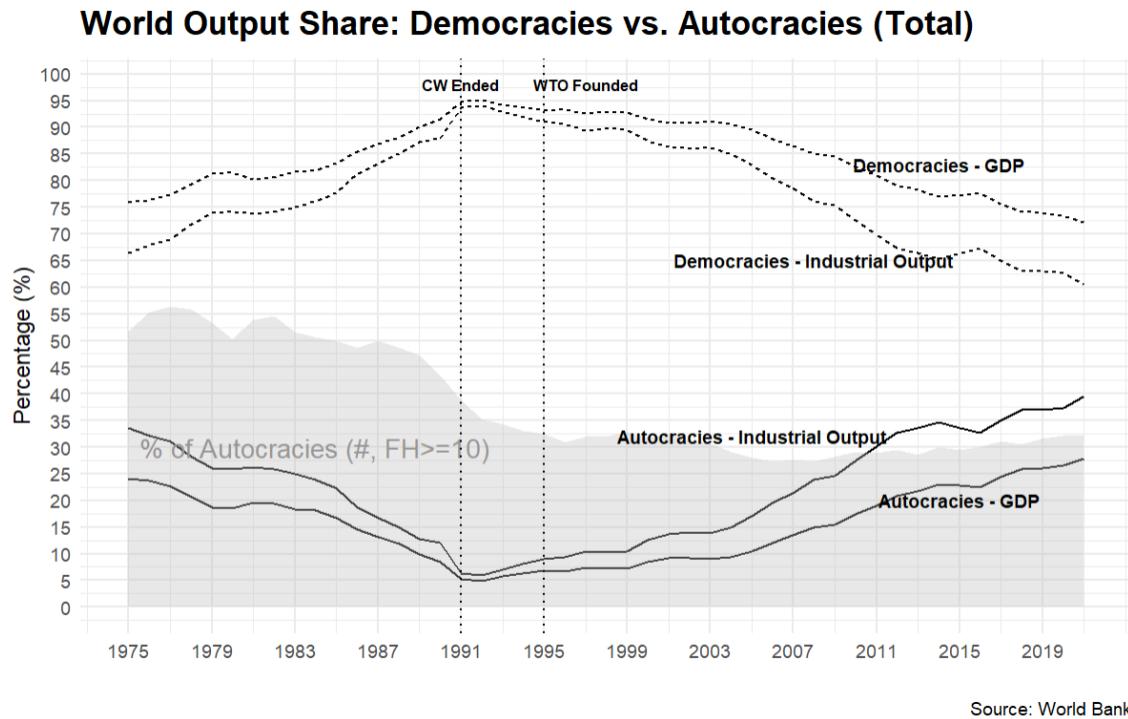


Figure 1: The Distribution of Power Change Between Democracies and Autocracies (Data: World Bank; Autocracy: Freedom House Index ≥ 10). Note: in 2020, China accounts for 62% of autocracies' GDP. The shadow area shows the proportion of autocracies in number.

In a nutshell, the post-1990 economic globalization has gone hand-in-hand with the relative rise

²In 2022, the top three trade surplus countries were: China, Russia, and Saudi Arabia. See more in Section 2

of autocracies and decline of democracies. But is this coincidental? Although vast scholarship has identified the merit of globalization for lifting poverty and spreading norms, globalization nonetheless has raised concerns over inequality or security among a wide range of political spectrum. This paper seeks to answer the question by examining 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 the new setting – an unprecedented globally integrated economy. Importantly, the necessary conditions are, these autocratic advantages have to be enabled by both conducting institutional reforms and being inside the WTO.

Consider two typical sets of autocracies: export-oriented autocracies in East Asia such as China, Vietnam, Singapore, Thailand, Malaysia, Taiwan, and South Korea (with the latter two in the 7/80s) and the resource-rich autocratic states in the Gulf area, East Europe, and Central Asia. The former set of autocracies emulated advanced democracies to establish similar economic institutions (e.g., market liberalization, property rights protection, and relatively inclusive economic opportunities). However, these reforms took place without similar political ones. With trade integration, these countries embarked on a model heavily dependent on *external demand* thanks to some autocratic characteristics we will discuss below, while their political institutions inevitably constrain domestic redistribution and thus *internal demand*. 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 of economic reforms (e.g., China). For the latter set of autocracies, trade integration and market access either through being incorporated into the global trade regime or benefiting from joiners' growth (e.g., China's demand) apparently provide market access especially for commodities, which, was quite limited during the Cold War era. Thus, autocratic regimes have leveraged globalization to modernize economically while suppressing political liberalization, creating competitive "hybrid regimes (Levitsky and Way 2006)."

The findings significantly challenge the current literature, conventional wisdom, and the original expectations of globalization that democratic institutions should be not worse than their autocratic counterparts on economic development (Acemoglu et al. 2001; Acemoglu et al. 2019), and globalization should strengthen a democratic world. I demonstrate the need to pay sufficient attention to external factors in shaping outcomes. For instance, without access to external market or conversely suffering from severe external shocks, trade or financial, the effects of domestic institutions can be

largely weakened.

The implications are multifaceted. 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. Meanwhile, an economically weakened democratic world not only sows unstable seeds domestically (Przeworski et al. 2000; Svolik 2008), but also provides poorer linkages and leverages that could facilitate democratization (Levitsky and Way 2006), while strengthened autocracies encourage autocratic drift worldwide (Ekiert and Dasanaike 2024). Good economic performance strengthen autocratic rules and norms (Wright, Frantz and Geddes 2013); interestingly, we increasingly see autocrats use good outcomes to redefine democracy (Oser and Hooghe 2018).

2 The Puzzle: Performance Divergence and Reversal

2.1 Stylized Descriptive Patterns

First, I illustrate the trends of several economic indicators including two trade measures that are directly linked to globalization. I calculate the average values of merchandise exports (% of GDP), trade balance (% of GDP), industrial output (% of GDP), and as well as GDP growth within both democracies and autocracies (with estimate uncertainty). In Figure 2, 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), or China and Vietnam.

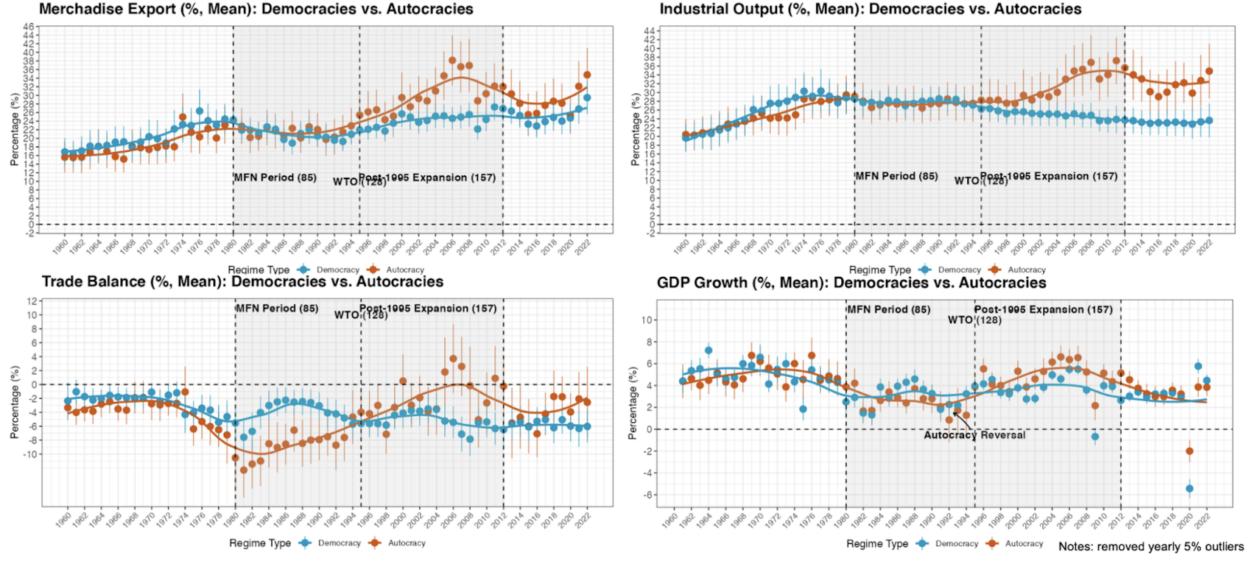


Figure 2: Average Performance of Several Indicators between Democracies and Autocracies ($FH \geq 10$). Note: in the Appendix, the patterns generally hold after removing developed countries, or China, or 23 OPEC countries + Russia. Estimate uncertainty of the averages are plotted.

Based on the data from the World Bank's World Development Indicators (WDI), I select more major development indicators, ranging from GDP growth and fixed investments to savings and exports, which are then regressed on regime type (measured by Polity V) for the period of 1990–2020.³ I control for GDP per capita for the comparison between countries of similar development levels. I also control for year fixed effects for within-year comparison.

³The pre-1990 data of these indicators are not shown due to the unacceptable missing data problem especially for the former socialist states. But the available data shows autocratic advantages were either null or significantly smaller than post-1990.

More Autocratic, Better Performance (1990-2020)

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

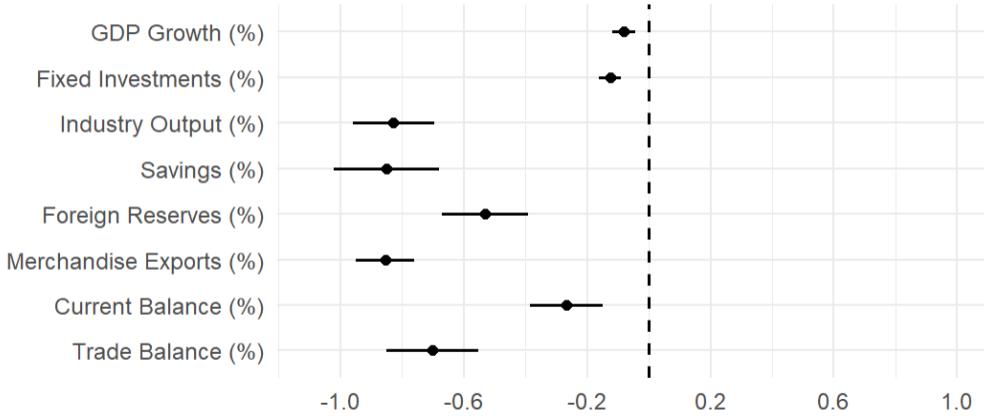


Figure 3: Regime Type and Major Economic Indicators. *Note:* Percentage means as a share of GDP. The coefficient means the percentage point in performance associated with one unit increase in Polity (ranging from -10 to 10).

In Figure 3, 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). With the cumulative or compounding effects behind these statistics, it is clear why autocracies can rise as a result.

2.2 The Prediction of Regime Type

Next, I test whether regime type predicts the above performance divergence. For the most part of this paper, I choose 1990 as a convenient empirical cutoff due to several theoretical reasons to be discussed in detail below.

Why Use Trade as the DV?

To be clear, as my focus lies in the potential role of globalization, I focus on the most direct indicators of globalization effects: exports and external balances (trade balance and current account balance), which are key international economic measures.⁴ Exports have been assumed by trade theories to generate efficiency and primarily induce growth in productivity, income, and innovation through scale (Bernard et al. 2018; Helpman and Krugman 1985), echoing the export-oriented model.

For external balances, although short-run fluctuations hardly matter, persistent deficits can

⁴Current account balance includes trade balance, net foreign income, and net transfer payments.

imply structural issues such as de-industrialization or financial vulnerability - this long-run phenomenon is in fact much more often seen, for example, Global Imbalances (Blanchard and Milesi-Ferretti 2009; Obstfeld and Rogoff 2009). Importantly, it indicates the competition or redistribution of *external demand* (Chinn and Ito 2021), especially when it aggregates to zero globally. Moreover, as I have tested in an working paper, long-run external balances are correlated with a slew of development indicators such as economic growth and national debt. Many countries running persistent surpluses have show higher performance in development and fiscal capacity and have become global creditors (e.g., East Asia, Core Europe, and Gulf states), while many don't (like many democracies). Surplus that contributes to reserves and sovereign funds can be used elsewhere such as welfare programs, foreign purchasing power, and even geopolitical projects (e.g., China or Russia's overseas spending).

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

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

First, similar to Yu (2010), by employing the gravity model that is commonly used in economics and political science and controls for a standard list of dyad-level characteristics, I find that prior to 1990, being more democratic is associated with higher exports (see Table 1). However, during the post-1990 period, being more autocratic is associated with positive or zero effect than being more democratic.⁵ The models include cross-sectional, within-origin country, interaction with origin country's logged GDP (when the prediction differs for larger autocracies), 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.

⁵Specifically 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, it's more efficient to focus on dyads where origin country is in the WTO. In contrast, 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.

	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 predicts external balances. The dependent variables in my models are trade balances and current account balances, both as the share of GDP. By observing Figure 2, I focus the most stabilized decades (2000-2020). To account for confounders, I add the controls from Chinn and Ito (2022) to account for theoretical explanations of both trade and financial for external balances (Barattieri 2014). I employ a mixed-effect model instead of a country fixed-

effect one 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 a random draw of countries from the population (random effects). The mathematical expression is listed below:

$$y_{jt} = a_{1j} + a_{2j}X_{jt} + d_t + \epsilon_{jt}$$

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

The results are listed below. As shown in Table 2, all models with the post-2000 data show that autocracy is 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.

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.

These temporally contrasting patterns of autocracies' performance – before and after 1990 – highlight intriguing puzzles about how forces – domestic or global – interact to shape outcomes. They suggest that the dynamics of regime effects are not static but evolve in response to possible changing contexts. Understanding the causes behind these shifts can shed light on broader questions of economics and politics of today.

3 Regime Type and Economic Performance

3.1 The Debate: Regime Type on Economic Performance

Political scientists and economists have spent decades trying to figure out whether democratic institutions leads to better economic performance. Admittedly, institutions matter a lot for economic performance. Even within democracies, for example, Hall and Soskice (2001) have shown that “varieties of capitalism” produce differentiated economic outcomes.

On the economic growth front, regime type's effect is at best mixed. Theoretically, democracy favors growth because of better property rights protection, political stability, public spending on education and healthcare, and the acceptance of technological innovation. But autocracy may also favor growth because of the autonomy to resist, for example, immediate consumption and over-redistribution. Empirically, it has been found no clear relationship between regime type and growth (Barro 1996; Przeworski et al. 2000). Note that the literature and the data used are mostly from the pre-2000 period where globalization has not fully materialized, so that they often don't pay enough attention to external factors. As clearly shown in Figure 3, autocracies grew faster in the post-1990 period.

On the international economic performance, however, the conclusion is more unified. The country-level performance is not only affected by domestic policies, but also by external impacts which include but are not limited to import competition, foreign investments, and the availability of export markets (Gourevitch 1978; Rudra 2002). Not only do democracies have better trade performance (Yu 2010), they also are less protectionist (Eichengreen and Leblang 2007). 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 and competitiveness (Yu 2010). Note also that the literature mostly focuses on the pre-2000 data, and their conclusion is confirmed by my prediction result in Table 1. Yet, regime's effect changed the sign to favor autocracies after 1990.

The issues with the literature includes using old data up to the early 2000s and looking at internal mechanisms within states as autarkic black-boxes, which may miss a key global shift – post-1990 globalization. Perhaps the biggest puzzle, especially for those focused on institutional causes (i.e., new institutional economics), is that even in the post-1990 period, democracies still had higher average institutional levels conditional on per capita income (e.g., PR protection and rule of law, see Table 4). Thus, democracies should still perform better. It suggests that the reversed performance might have resulted from something else.

3.2 Autocratic Advantages in the New Setting: Globalized Economy

As mentioned in the beginning, the post-1990 period witnessed dramatic global economic integration – often termed as “hyper-globalization (Rodrik 2011).” In a globalized economy where states can easily access each other’s market and firms can freely choose productive locations, autocracies may

have institutional and non-institutional advantages. The existing literature has documented from various angles – some institutional characteristics that would otherwise be a disadvantage in a relatively closed setting can indeed become advantageous, since the goal now is to compete for external demand instead of internal.

More centralized power – Autocratic states have more centralized power, unlike democracies which usually have more fragmented power. Thus, they have greater discretion to implement policies without extensive bargaining or democratic deliberations, and are able to deploy concerted industrial policies, arguably conducive to developing productive industries (Hall and Soskice 2001; Kohli 2004). This efficiency may allow them to respond quickly to global market changes and implement strategic economic policies especially under imperfect competition (e.g., strategic trade policy (Krugman 1987)). They can prioritize infrastructure projects that facilitate trade, such as ports, highways, and communication networks, enhancing their ability to compete in global markets. As the state controls more resources, some studies find that state-owned enterprises play a favorable role in this aspect (Clegg et al. 2018; Wu 2016). moreover, the relatively longevity of leadership in reformed autocracies can result in consistent and stable economic policies, providing a predictable environment for trade partners and investors (see the discussions of developmental state (Haggard 2018)).

Weaker institutional constraints – Autocracies tend to have weaker institutional constraints which include constitutions, legal frameworks, and established norms that determine how decisions are made. Such governments can more easily divert limited resources to productive sectors or prioritize infrastructure projects with less concerns over immediate consumption or redistribution. The notable autocracies include China, Vietnam, and Singapore, or Korea, Japan, Taiwan, Hong Kong, Thailand, Malaysia, Chile when they were in authoritarian or semi-authoritarian eras. Because of a larger win-set (Putnam 1998), autocracies may be able to sign easier deals with multinational corporations (MNCs), which account for the majority of global trade (Bernard et al. 2018) that rests on the global value chain (Baldwin 2016). Autocratic states are found to establish more special economic zones that provide concessions such as tax breaks, lower tariffs, and looser regulations to boost economic performance, without much institutional reforms (Allen and Ge, working paper). Additionally, autocratic governments 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, Lipsky (2018) found that democracies tend to have more financial instability, primarily due

to their weaker control abilities.

Lack of accountability – Autocrats, who are less accountable to the public, can pursue a broader set of policies, including those that might be unpopular, risky, or even repressive. Consequently, autocracies generally have weaker labor bargaining institutions (Manger and Sattler 2015) and suppress labor costs and labor unions (Rodrik 1999) – this is certainly bad for generating a healthy domestic economy and low consumption means low internal demand, but it could add to the international competitiveness of local firms and attracts MNCs which primarily focus on cost efficiency..

Mercantilist mentality – 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, apart from being nationalist and self-interested, in contrast to democracies being more economically liberal and cosmopolitan. This protectionism sometimes can foster the development of domestic industries to become competitive or force MNCs to set up production locally. Autocracies are found to import substantially less than democracies, even after controlling for official trade policies (Aidt and Gassebner 2010).

Resource endowment – Autocracies are usually associated with resource abundance, which are usually regarded as “resource curse” that impedes growth and political stability (Ross 2001). Resource needs market which is largely discounted if simply by domestic demand. Access to broader markets can immediately boost the exports of commodities, compounded by autocratic advantages on attracting investments for extraction and production, significantly enhancing the “rentier effect” that .

To clear, this is not to say autocratic characteristics are superior for economic development. Abnormality remains in probabilistic statistics. I admit that they can be weak at generating internal demand or consumption, curbing development. But they do seem to play some positive role in competing external demand. Also the caveat is that autocratic advantages may need some scope conditions to function, for example, being inside the global trade regime and having some growth-favoring institutions, which we will discuss in detail below. In contrast, in a globalized economy where democracies and autocracies compete together, the same otherwise advantageous features of democracies may well become disadvantageous for external demand competition. For example, higher demand for redistribution may impede the resources from moving to industrial sectors or infrastructures. More veto players may slow down the responses to changing markets or reduce the ability to provide better deals for foreign firms.

4 Theory: Explaining the Reversal

Despite more work in the empirical section has been done to confirm causality of regime type, models such as gravity are legitimate in economics and political science for testing the causal effects on trade. Correlation and prediction also matter particularly in this case. What has changed to reverse the prediction and to enable the “autocratic advantages?” The reasons why the coefficient changes for a different period could be at least theoretically caused by: 1) omitted variable bias, or 2) change in mechanisms – for example, there could be changes in moderating or mediating variables, or changes in meeting scope conditions, that is, autocratic advantages only work under certain conditions. I argue for the latter.

4.1 Why Post-1990? Two Changing Factors

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 reforms and trade and capital account liberalization (Quinn and Toyoda 2007). The former is about domestic institutional reforms, primarily on the economic side, while the latter is on the barriers to goods and capital flows. Second, since the fall of the Berlin Wall, the world trade system (primarily in the form of the GATT/WTO, as well as regional ones) has begun an unprecedented round of expansion to incorporate many autocracies which used to participate very little in the global economy, most of which was confined within the west hemisphere. The expansion includes significant increases in market sharing, trade and capital flows, and globalized production.⁶

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. China, for instance, selectively implemented rule of law for attracting foreign investments and enhancing regime durability (Wang 2015). Some states extend

⁶What distinguishes post-1990 trade from previously also includes 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”).

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.

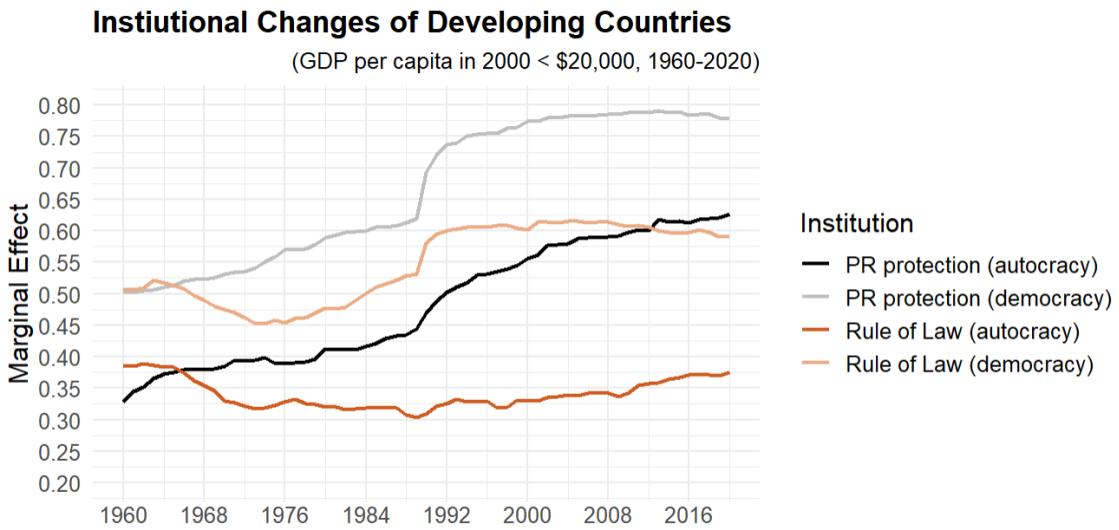


Figure 4: Average Rule of Law and Property-Rights Protection. *Note:* Autocracies/democracies are roughly divided according to polity in 1990 to ensure country-level data's temporal integrity. Although average rule of law for autocracies in 1990-2020 seems flatter than other groups, there are country-level increases/decreases across years.

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

Trade expansion after the Cold War was embodied in WTO membership expansion and the proliferation of regional trade agreements. Among varying types of trade agreements, 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).”⁷

⁷In the above prediction models, I control for regional ones such as free trade agreement, preferential trade agreement, and customs unions.

The predecessor of the WTO is the GATT, which *de jure* began in 1948 with 23 founding members after the war. The WTO stipulates that a member state cannot impose discriminatory tariffs on another member, so that joining the WTO guarantees market access with significantly lower tariffs than otherwise, especially when trading with the already much liberalized advanced democratic members. Although the WTO does not necessarily demand members to lower down tariffs, over time, reducing trade barriers has become the norm within the institution. After 1990, the WTO started a second major round of expansion which integrated many autocratic (unprecedentedly) 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 5). This opened the doors for autocracies to access global markets (mostly of rich democracies) and materialize their advantages through flows of goods and a more unified factor price system unlike during the Cold War.⁸

⁸Although some autocracies joined at the late stage or still haven't joined, the spillover effect from the joined ones cannot be ignored.

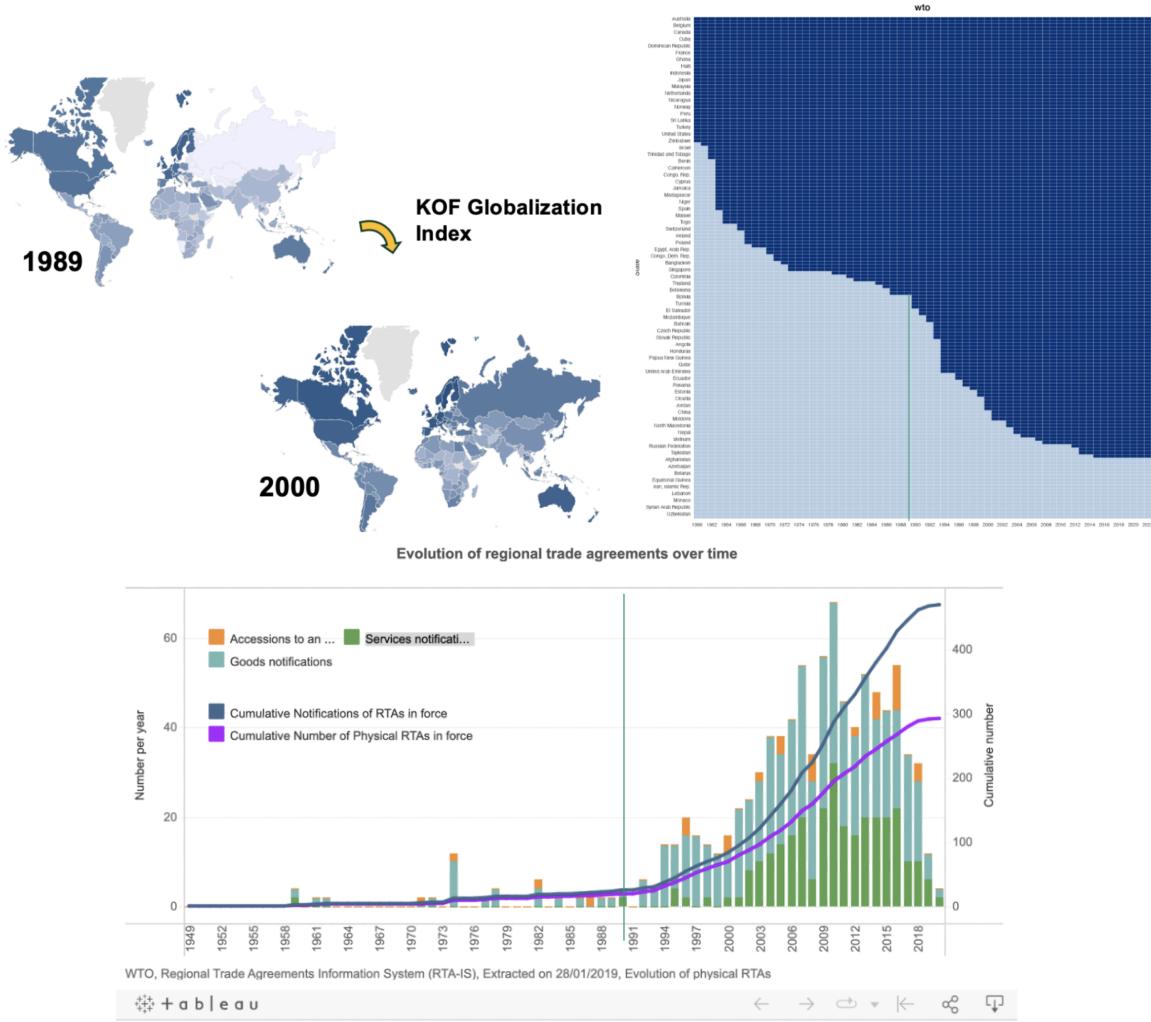


Figure 5: KOF Globalization Index; WTO Expansion; RTA Proliferation.

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 trade 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 investor confidence and 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 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.

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. 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.⁹ Therefore, one may expect that joining the WTO which represents the significant means of enabling broad market access may favor autocracies.

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

⁹However, in the empirical part, I control for country-specific economic covariates.

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 *necessary conditions*. For example, a non-reformed or autarkic autocratic regime is hardly conducive to substantial trade increase.

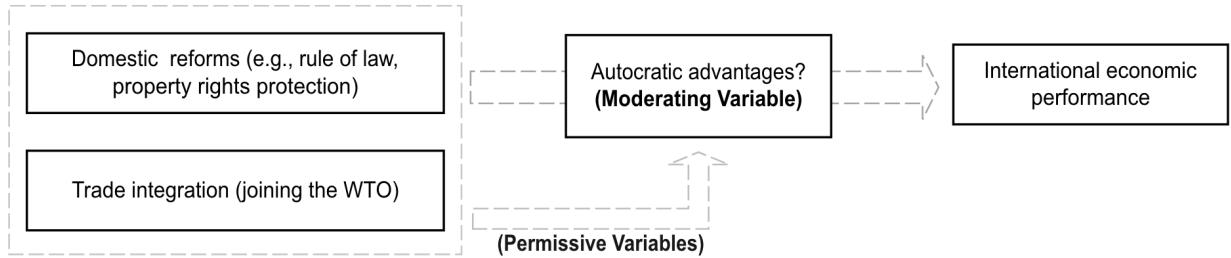


Figure 6: Illustration of determinants of International Economic Performance. Note: Both domestic reform and trade integration matter, whose effects however are moderated by certain trade-facilitating characteristics associated with more autocratic regimes.

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 au-

tarkic 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. But that also has a condition, similar to *H1.2*: this autocratic advantage should hardly exist for those that are excluded out 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, while the four hypotheses above examining the temporal incremental effects within a country may not unveil the whole story, We do observe that on the absolute levels of exports, autocracies also perform better (see Section 3). Again, I expect that their institutions have to presumably cross certain levels (e.g., not be like the old socialist era). Additionally, once autocracies' institutions are of very high levels, they may constrain many of the aforementioned autocratic advantages by tying hands.

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

4.5 Discussions on Potential 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. Geddes (1999) finds that only single-party regimes can achieve sustained development. It requires further research on this.

During the Cold War period, the U.S. for example also traded with some autocracies in Latin America or Asia. But this trade relationship is not comparable as being exposed to a globalized market 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. Moreover, WTO membership provides much more benefits than just a single MFN status by several trading partners as described above. If the estimated WTO effect captures MFN effect which happened long before the WTO accession, the former's sole effect is likely underestimated.

What about the role of global capital movements, i.e., foreign investments?

Regime type becomes the moderating variable due to multiple reasons, 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

Discussions on Choosing “1990”

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.

data trends, global political shift (CW ended), trade integration (post-CW trade deal unprecedented proliferation incl. WTO expansion), hyperglobalization, spread of GVC (logic change of globalization), domestic reform in play, and rapid democratization. watershed around early 1990s, I could choose 1994 or 1995, effects should hold. For empirical convenience.

5.1 The WTO Effect

New WTO joiners

There were in total 64 countries which joined the WTO/GATT between 1990 and 2020 – the whole universe of the data for the first part of tests, and almost all were developing countries at the start (except Liechtenstein). Of them, 25 (Freedom House Index ≥ 8) or 18 (Polity ≤ 0) were more autocratic states in 1995.¹⁰ 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 and population. And just a single China is equivalent to Vietnam x 14 or Russia x 10 or tens of smaller-sized democracies regarding the population. The spill-over effect is considerable: these WTO-benefited autocracies significantly trade with non-WTO autocracies. For example, 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.

Gravity Model

I first run gravity models with different specifications, the classic model used in international trade.

¹⁰If we count Russia (Polity = 3 in 1995) as autocracy and use it as a cutoff, then we get 23 autocracies.

	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 Obit	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.

The results are shown in Table 4. Model 2 shows that WTO overall has no effect on exports in the post-1990 period.¹¹ Conditional on other country characteristics in the gravity models, joining

¹¹The large sample size can safely rule out the statistical power issue.

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-1990.¹² 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.

[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 covari-

¹²The effect is smaller but consistent if I remove China, Vietnam, or Russia, but becomes null if all three are removed, which is still better than the pre-1990 negative sign. Note also that removing all three that account for the majority of autocracies' GDP significantly biases the sample representation.

ates.¹³ 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 ($\text{polity} \leq 0$).¹⁴ 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.¹⁵ Country-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 (%).

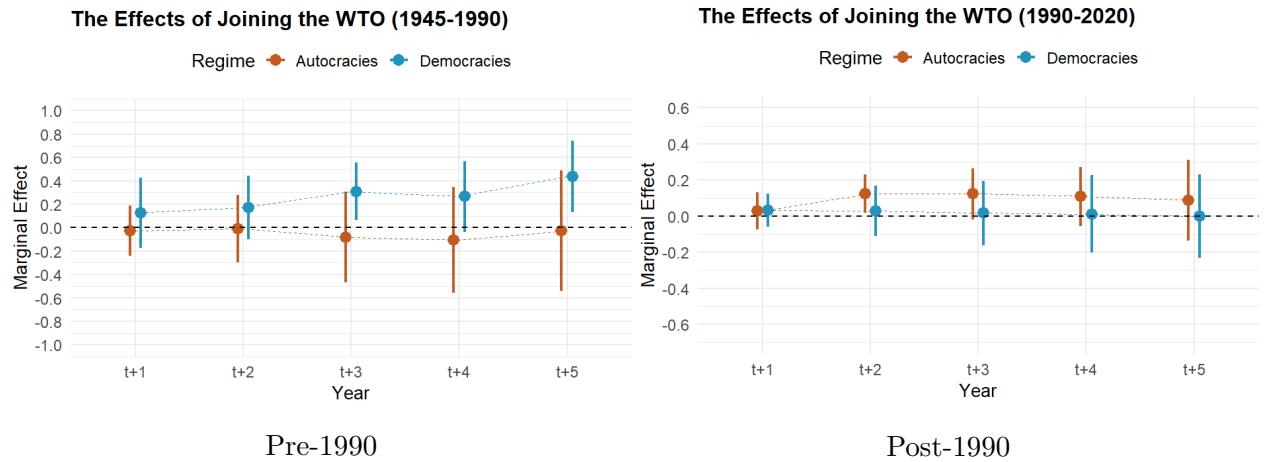


Figure 7: Effects of Joining the WTO (PanelMatch, country-year). *Note:* Democracies are those whose polity index are larger than 0.

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

¹³I 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.

¹⁴As 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.

¹⁵Longer leads and lags are refrained since it can eliminate more units which don't match. I keep four more years prior to the start year of each period to allow for matching pre-treatment histories.

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.

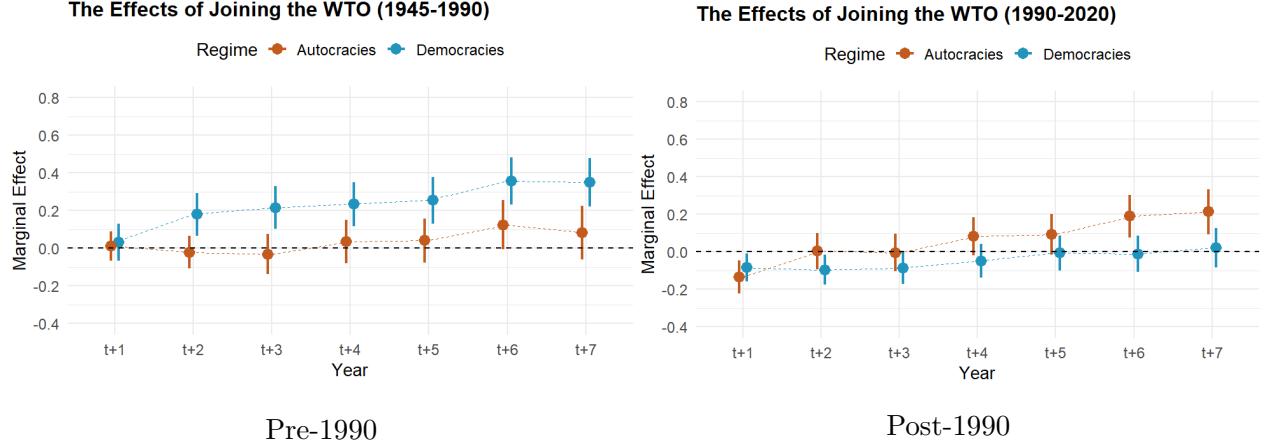


Figure 8: Effects of Joining the WTO (PanelMatch, dyad-year). *Note:* compared to the result using the country-year dataset, the relation patterns between autocracies and democracies are similar.

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.¹⁶ Hence, there should be less concerns for omitted variable bias.

U-shape Effect: Domestic Reform as Necessary Condition

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.

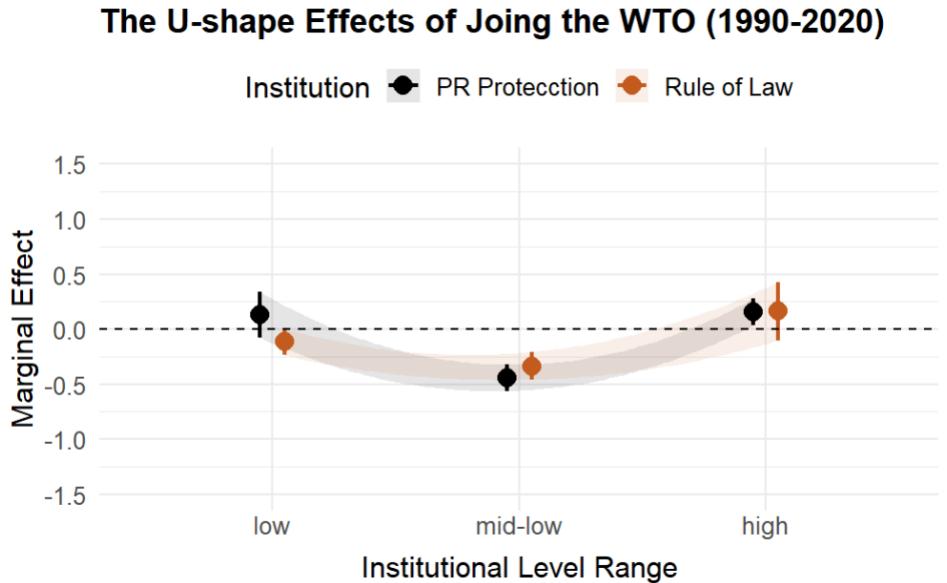


Figure 9: The Effects of Joining the WTO Conditional on Institutional Levels. Note: The y-axis means the marginal effect of the WTO conditional on polity. A positive value means the effect favors democracy.

I use the main gravity model above to estimate the effects stratified by property-rights protection

¹⁶As noted by Cinelli and Hazlett, these results are conservative for multiple (possibly non-linear) omitted confounders. See Appendix of the implementation details.

and rule of law, respectively. Institutional levels are divided into three ranges from low to high.¹⁷ 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.¹⁸ As shown in Figure 9, 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

¹⁷Since 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.

¹⁸I 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.

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.

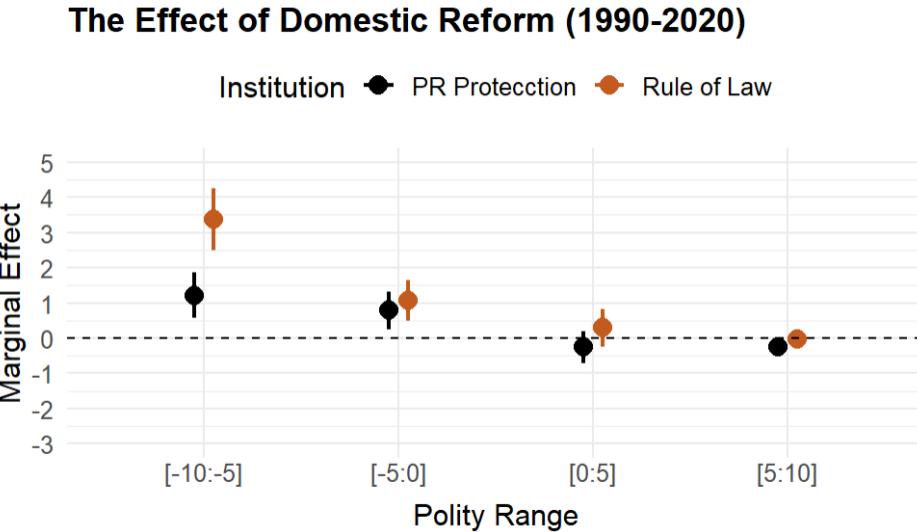


Figure 10: The Effects of Domestic reform by Polity. *Note:* The plot captures the effects of within-dyad changes of institutions across differential ranges of polity. I only include developing countries (GDP per capital lower than \$20,000 in 2000) to focus on institutional reform.

As shown in Figure 10, domestic market-oriented reform during the period of 1990-2020 increase exports, but only for autocratic states, after controlling for WTO effects.¹⁹ This result clearly suggests autocratic advantages in trade can amplify the effect of domestic reform.

WTO as the “Necessary Condition”

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 (polity ≤ 0 in 2000). These states are classified into those which joined the WTO some time in 1990-2020 and never-joiners.²⁰

¹⁹Similar effects remain without controlling for WTO membership for possible post-treatment bias (see the Appendix).

²⁰The 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)

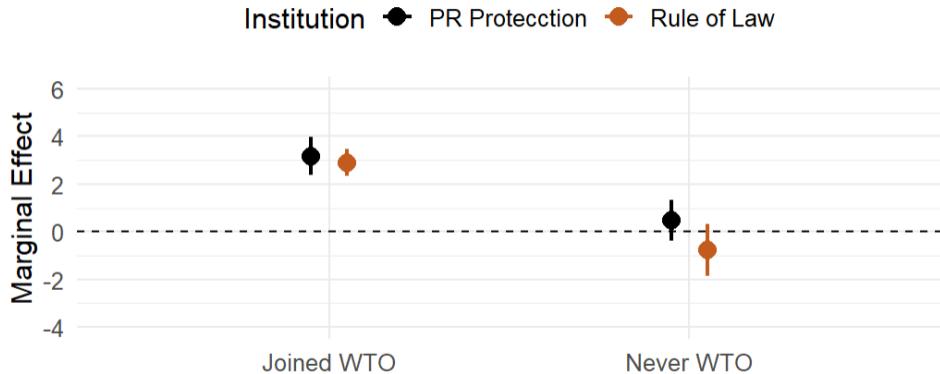


Figure 11: The Effects of Domestic reform by WTO. *Note:* The plot captures the effects of within-dyad changes of institutions for autocracies ($\text{polity} \leq 0$ in 2000). “Joined WTO” means a country joined the WTO some time within the 30-year period.

As shown in Figure 11, 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 (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)

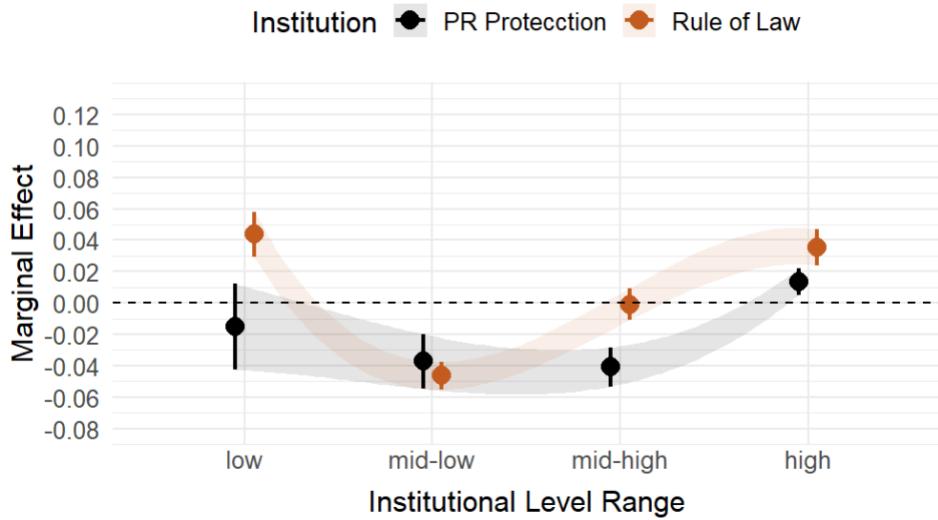


Figure 12: The Effects of Polity Conditional on Institutional Levels. Note: The smooth curves are generated using cubic spline interpolation for illustration purpose.

5.4 Additional Robustness Tests

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

5.5 Alternative Explanations

“Catching-up” Story

Is it a catching-up story where thanks to the globalizing economy and converging technologies, LDCs quickly catch up and grow faster, and many autocracies happen to be among them? The answer is no. The post-1990 WTO joiners were mostly LDCs, in which autocracies account for only one third. My models control for many country-specific covariates such as GDP per capita, GDP, and population. Furthermore, not only for relative increase or growth, but for absolute levels of economic outcomes, regime type still favors more autocratic states.

6 Testing Mechanisms

As stated above, when autocracies were incorporated into the global trade regime, they may have multiple advantages regarding trade performance. This paper argues that they may play a role simultaneously.

6.1 Exports

Increasing exports can go through quite a few channels, all else equal: higher economic institutional levels, mercantilist policies that tilt disproportionate resources to industrial sector (and related, saving rate), foreign direct investment (and related, capital account openness), infrastructure investment, and natural resource endowment.

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

Table 6: Mechanisms and Implications (Exports). *Note:* numbers are coefficients of regressing variables on polity with year fixed effects (2000-2020).

As the aforementioned tests demonstrated autocracy predict better only under certain conditions, I then focus on these dyads with the origin country having PR protection index between 0.1 and 0.7 and being inside the WTO since 2000 (a more stable starting year after transition). Table 6 presents the coefficients when I regress these variables on polity with year fixed effects. These channels have mixed significant relationship (positive or negative) with regime type except for the FDI share, and they all likely play some roles as mediating variables. Interestingly, among these countries, autocracies have lower average tariff rates.

Mediating tests are done in the Appendix, none of the channels dramatically reduces the effect of polity, suggesting each channel may work partially and perhaps for certain countries. Yet, further tests show more useful information on the mechanisms.

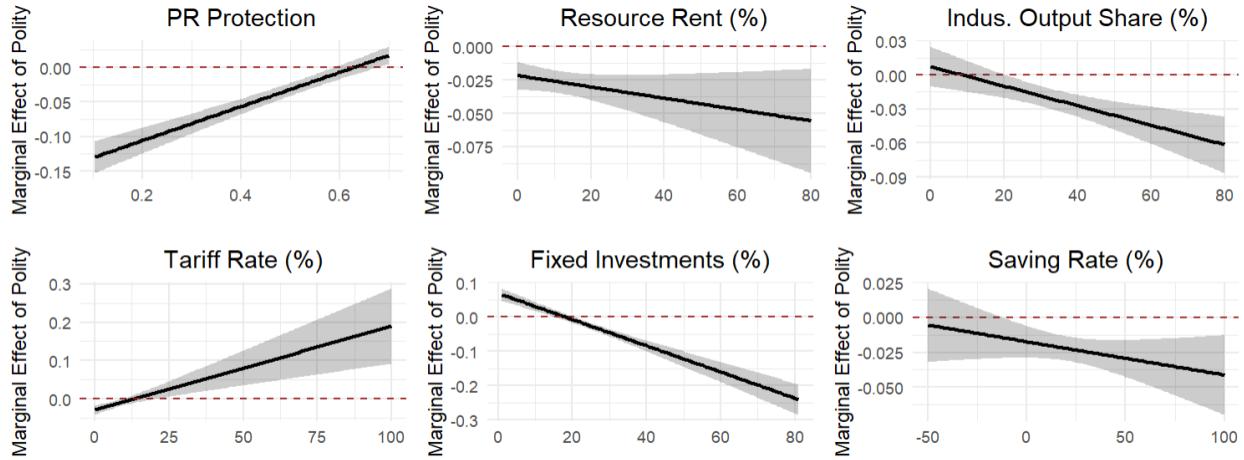


Table 7: Factors and Exports.

6.2 External Balances

External balances are different from exports regarding causes, which are generally divided into trade and financial explanations (Barattieri 2014). Autocracies may be more likely to conduct mercantilist and protectionist policies. Meanwhile, autocracies are correlated with more natural resource endowment. The level of capital market development can also be a factor.

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

Table 8: Mechanisms and Implications (External Balances). *Note:* cross-country correlation 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*** (0.052)	-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 9: Mediating Variables and External Balances.

7 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).

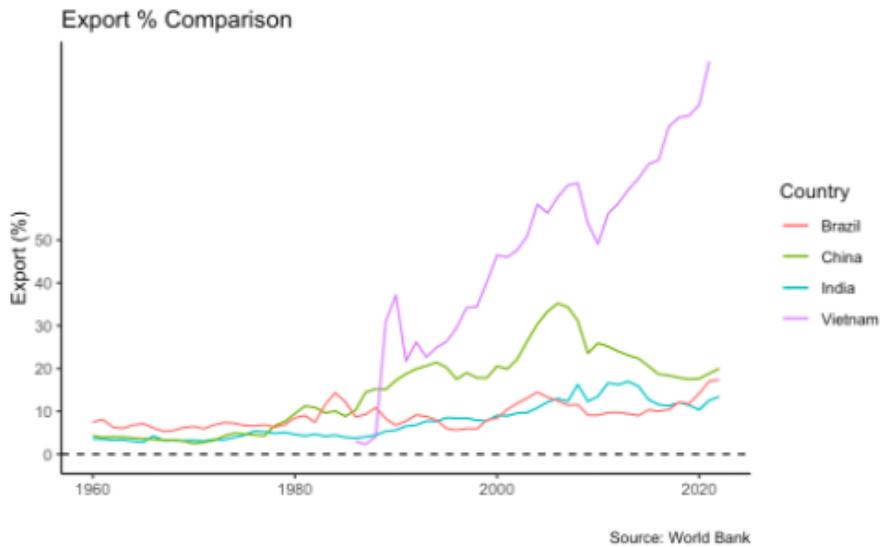


Table 5. Case Illustration: *China, Vietnam vs. India, Brazil*

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).

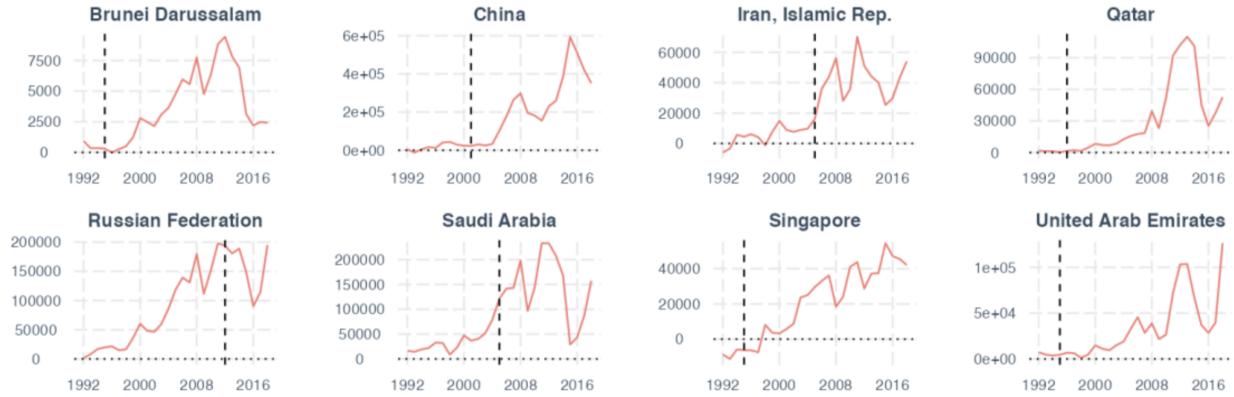


Table 3. Illustration of Export Performance of Some Autocracies. Note: Vertical dashed line indicates the year when a country joined the WTO or became an observer.

8 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.

9 References

To do.

Appendix

A Descriptive Data

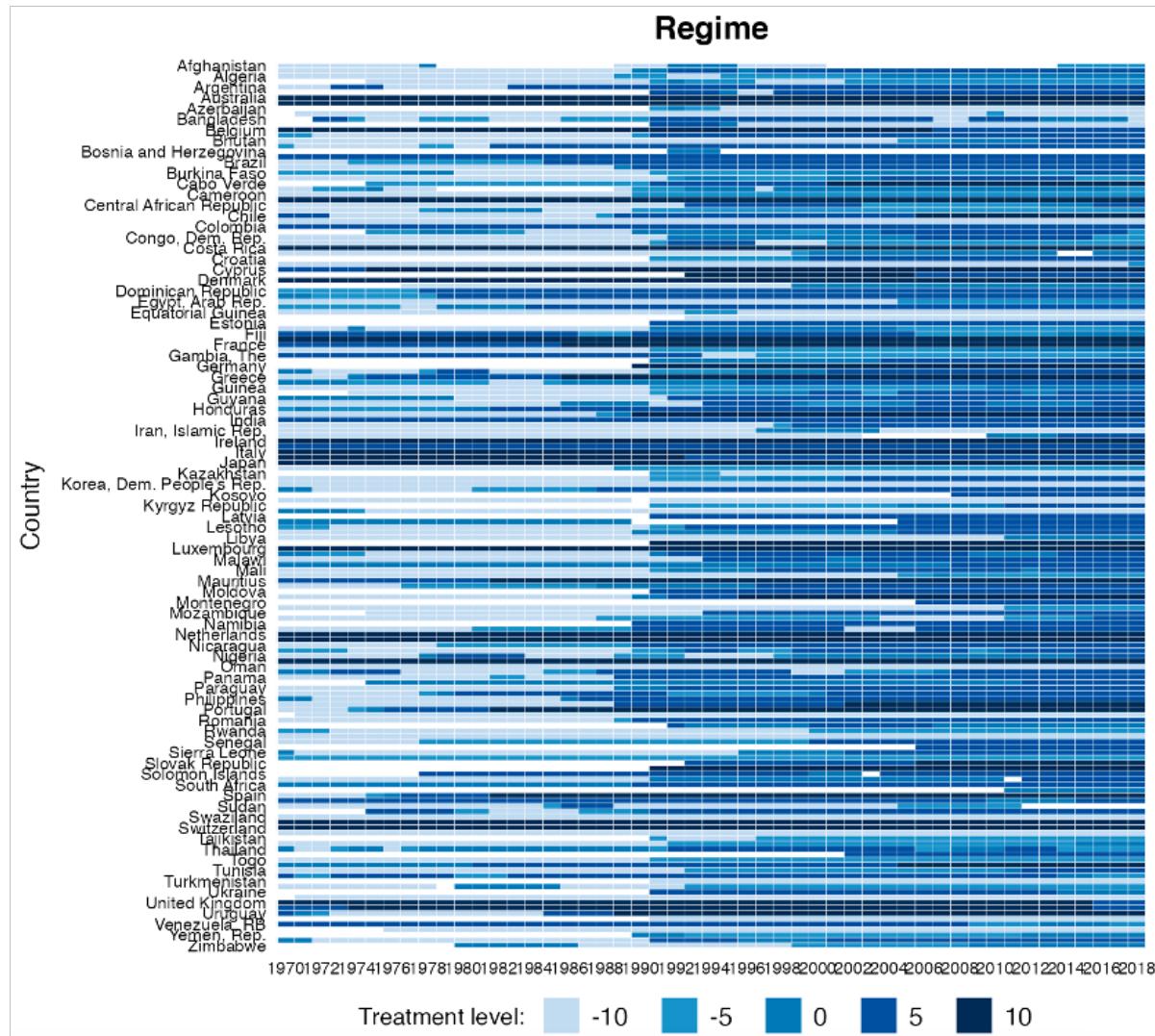


Table 10: Democratization (Polity Index)