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Navigating the Eagle and the Dragon: Africa's Independence in a Multipolar World

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Abstract: Since the end of the Cold War, Africa has navigated within a US-led Western world order. The emergence of China as a superpower has offered an alternative. This paper examines whether the growing economic presence of China in Africa strengthens the political autonomy of African nations. I examine 35 African countries between 1992-2012 and apply a shift-share IV approach leveraging China's accession into the WTO as an exogenous shock. I find no statistically significant relationship between increased economic dependence to China and Political Autonomy. The null result is explained by limited statistical power.

Keywords: Economic Dependence, Shift-Share IV, Africa, Multipolarity

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1 Introduction

The world order is no longer dictated by the US (World Economic Forum, 2024). Catalyzed by China's emergence as an economic superpower, the world is now multipolar. In his seminal work, Hirschman (1945) argued that increased economic dependence between unequal states leads weaker states to make political concessions, while Martin et al. (2008) suggests diversification among stronger states reduces dependence on any single one—allowing smaller countries to pursue their political agenda with limited economic costs. Africa, facing economic and political challenges, has historically experienced power imbalances with the West (Mkandawire et al., 1999). In 2009, China became Africa's largest trading partner. Understanding whether China represents yet another superpower requiring political concession is critical. Sovereignty is fundamental to international relations, particularly for Africa in this evolving multipolar order (CFR, 2023).

In this paper, I ask whether the emergence of China as a contesting global power has made Africa more politically independent. I use data on economic dependence and political autonomy for 35 African countries between 1992-2012 and use China's accession into the WTO as a shock. The shock-induced increase in African countries' economic dependence towards China is studied on three political autonomy measures for Africa.

Methodologically, I use a Shift-Share IV strategy to establish a causal relationship between economic dependence and political autonomy, addressing issues such as reverse causality and omitted variables. China's accession into the WTO constitutes the shift component. The share component is constructed by categorizing African countries as high- or low - dependent based on their average economic dependence on China from 1992-2001, using the median as the cutoff. My identifying assumption is that China's accession into the WTO is unrelated to unobservable characteristics of African countries and their economic dependence on China. The validity of this assumption is argued by China's accession into the WTO mainly being driven by US - China bilateral trade negotiations.

I combine data from three different sources representing 35 African countries between 1992-2012. I use one measure of economic dependence and three different measures of political autonomy. To measure economic dependence, I use a real income exposure metric from Kleinman et al. (2024). It is an elasticity quantifying how African countries' real income responds to productivity changes in China. To measure political autonomy, I use three measures of political autonomy i) UN General Assembly (UNGA) voting records, using a κ -score i.e. a similarity measure of African and Chinese voting patterns ii) Foreign Policy Autonomy as measured by the Varieties of Democracy

Institute (V-Dem), iii) Domestic Policy Autonomy also measured by V-dem.

The results indicate that increased real income exposure to China, as captured through China's accession into the WTO, had no statistically significant effect on any of the three measures of political autonomy. The statistically insignificant results are caused by imprecision, as suggested by the confidence intervals. Having conducted a leave-one-out analysis by excluding one country at a time, the imprecise estimates persist. Therefore, I rule out the issue of outliers. China's accession into the WTO is one of the most potent economic shocks studied. The applied IV-strategy provides a relevant and arguably valid instrument. However, the portion of the total variation considered exogenous is insufficient. I conclude that this null result is caused by limited statistical power.

I make three main contributions to the literature. First, I contribute to research on the relationship between economic dependence and political autonomy. Two key articles by Kleinman et al. (2024) and Flores-Mac and Kreps (2013) explore similar relationships. Using UNGA voting patterns, they ask if countries align geopolitically with China as economic dependence increases. To measure economic dependence, Kleinman et al. (2024) employs the real income exposure metric while Flores-Mac and Kreps (2013) relies on total bilateral trade - an outdated measure. Both find a positive relationship between economic dependence and geopolitical alignment. This paper advances this literature in two ways: First, I implement a robust empirical method not previously applied in this context. Second, I employ specialized measures of political autonomy, addressing the limitations of only using UNGA voting patterns.

Second, I contribute to research on competition between superpowers in multilateral organizations. The US and EU offer developing countries financial assistance for political support in UNGA and UN Security Council (Dreher et al., 2008; Kuziemko and Werker, 2006; Dreher et al., 2015; Copelovitch, 2010; Vreeland and Dreher, 2014). As China has grown so has the research examining the competition. China, like its Western counterparts, leverages financial support for foreign policy objectives (Brazys and Vadlamannati, 2021). To remain competitive, traditional institutions like the World Bank approve loans with less stringent conditions (Hernandez, 2017; Humphrey and Michaelowa, 2019). My paper contributes to this literature by adding to a growing field examining if African nations have successfully leveraged this competition to their own benefit.

Third, I contribute to the research on China's growing economic presence and its impact on African governance. Isaksson and Kotsadam (2018) found increased local corruption around Chinese project sites. Additionally, Chinese development projects have been shown to intensify ethnic favoritism by African leader prioritizing their birth region (Dreher et al., 2019). In a follow-up paper, however, they discovered that ethnic bias does not negatively affect project effectiveness (Dreher et al., 2021). This paper expands this literature by examining a different set of political outcomes that could benefit from increased Chinese economic presence on the African continent.

The rest of the paper is structured as follows: Section 2 examines the transition from unipolarity to multipolarity and its implications for Africa. Section 3 presents the theoretical framework and resulting hypotheses. Section 4 outlines the data, key variables, and descriptive statistics. Section 5 details the empirical methodology and specifications. Section 6 reviews the results, while Section 7 discusses these findings and explores potential limitations. Section 8 concludes the paper.

2 Background

In this section, I provide historical context for the reader. First, a brief summary of the world's transition from unipolar to multipolar. Second, a review of a pivotal event for the economy of China - the accession into the WTO. Finally, a description of Africa as an arena where geopolitical forces meet.

From a Unipolar World to a Multipolar One

The dissolution of the Soviet Union in December 1991 resulted in an US-led Western world featuring unrivaled US dominance across all dimensions of power. This liberal international order promoted economic liberalization and democratic expansion through institutions like the World Bank, IMF, and WTO. Democracy promotion became central to US foreign policy in former Soviet regions (Ikenberry, 2011). Yet this unipolar system proved transitory (Krauthammer, 1990). Economic and military catalysts progressively eroded US dominance, facilitating a multipolar system. The dramatic rise of China was seen as its share of global GDP rose from 4 percent in 1990 to over 18 percent in 2020, while the US share declined from 22 to 16 percent (World Bank, 2024) ¹. The 2008 financial crisis undermined Western economic credibility, while costly US wars in Afghanistan and Iraq revealed limitations to American military power (Walt, 2011; Stiglitz, 2010).

The current multipolar world features several power centers. While the US remains the most powerful nation, it now shares the stage with the European Union, China and Russia (Haass, 2008; Economy and Levi, 2014; Shambaugh, 2014). Sharing the stage has meant assuming leadership in different domains. While the EU leads climate initiatives, China have taken on infrastructure development through its Belt and Road Initiative (Hochstetler and Milkoreit, 2014). This new order has established different engagement rules for all states.

China's Accession into the WTO

China's accession into the World Trade Organization (WTO) in December 2001 fundamentally transformed both the Chinese and the global economy for decades to follow. The accession was the result of a 15-year negotiation process. The Chinese government had earlier initiated significant domestic reforms, shifting from Maoist economic isolation toward international economic engagement (Tseng and Rodlauer, 2003; Nehru et al., 1997). The negotiation process initially faced numerous challenges primarily related to the extensive involvement of the state in the economy (Qin, 2004). The most significant breakthrough came in 1999 with the formalization of a US-China bilateral agreement, described as unprecedented in its stringent requirements for a developing

¹PPP-adjusted GDP

country (Cross, 2008). Following this US agreement, negotiations with the European Union took only a single year, effectively finalizing China's accession until its formal acceptance as a WTO member in November 2001 (Tseng and Rodlauer, 2003).

Africa in a Multipolar World

Africa's role in the modern global economy has been heavily influenced by its colonial history, particularly the Berlin Conference of 1884-1885 i.e. Scramble for Africa. During this conference, European powers arbitrarily divided the African continent among themselves as colonies. The colonial period fundamentally reshaped African political, economic, and social structures (Adekeye, 2010). Although the last colony, Western Sahara, gained independence from Spain in 1976, the influence of colonial powers remained persistent. Several former colonial powers continue to exercise influence over their former colonies. One example of this is Great Britain's significant control of the Niger Delta oil region in Nigeria. France is arguable the former colonial power with the most formal influence through the CFA Franc monetary system. This is a colonial currency system created by the end of World War II with the aim of fostering economic integration among the French colonies. This system is continuously criticized for keeping concerned countries from reaching monetary sovereignty as the system is made for France to control Ndongo (2017); King (2022).

The transition from US-led Western unipolarity to increasing multipolarity has presented Africa both opportunities and challenges through new partnerships (Economist, 2019). The end of the Cold War eliminated the ability of African states to leverage superpower rivalries, restricting their strategic options (Adekeye, 2010; Mkandawire et al., 1999). Multipolarity has been most visible through China's expansion, offering financing and political non interference in exchange for commodities (Brautigam, 2009). China became Africa's largest trading partner and bilateral lender in 2009, surpassing the US and EU (China Research Initiative, 2024).

Following China, emerging powers — India, Brazil, and Turkey have increased their economic and political engagement on the continent. Policy makers believe this diversification could allow African governments to negotiate better terms with its international partners. Despite partner diversification, trade patterns remain unchanged. African nations primarily export commodities, exacerbating the *resource curse* (WITS, World Bank, 2025; ADB, 2007). The Economist famously termed this period "The New Scramble for Africa," but suggested African countries could emerge as winners. The key challenge for African states in this multipolar era involves avoiding new forms of dependency while capitalizing on diverse partnerships (Economist, 2019).

3 Theoretical Framework

In this section, the main theoretical results are developed for: i) The relationship between increased economic dependence and political alignment, and ii) How diversification of trade partners improves political autonomy for a country. The first theoretical result replicates the model in Kleinman et al. (2024), while the second result follows the intuition of the model in Martin et al. (2008).

Economic Dependence and Geopolitical Alignment

Consider a global economy that consists of countries indexed by $n, i \in \{1, \dots, N\}$. Each country has an agent that can perform political actions that are economically beneficial for some other trade partner but costly for its own utility. Now, suppose the indirect utility function of the representative agent in each country n (U_n) depends on real income (u_n) and the utility costs (v_n) of executing each political favor (ξ_{ni}) for each trade partner i :

$$\mathcal{U}_n = u_n - v_n(\xi_n^{\text{out}}), \quad \xi_n^{\text{out}} = (\xi_{n1}, \dots, \xi_{nN}). \quad (1)$$

The productivity of a trade partner i (z_i) in turn relies on fundamental factors of productivity ($\bar{z}_i$) and the political choices of all countries n (ξ_{ni}) through the function $f_i(\cdot)$:

$$z_i = \bar{z}_i f_i(\xi_i^{\text{in}}), \quad \xi_i^{\text{in}} = (\xi_{1i}, \dots, \xi_{Ni}). \quad (2)$$

According to Kleinman et al. (2024), the non-cooperative equilibrium is the following: Each country decides its political choices regarding each trade partner to maximize its indirect utility, taking as given the political actions of those trade partners. By taking the first-order condition of the indirect utility for country U_n with respect to executing political favors for others ξ_{ni} and rearranging, we get a function that informs us about what drives country n 's willingness to execute these favors. Following the authors, this function is expressed as elasticities to easier show the relation to the real income exposure measure used in this paper²:

$$\underbrace{\left(\frac{\partial \ln u_n}{\partial \ln z_i} \right)}_{\text{Real.Inc.Exp}_{ni}} \left(\frac{\partial \ln z_i}{\partial \ln \xi_{ni}} \right) \frac{u_n}{v_n} - \left(\frac{\partial \ln v_n}{\partial \ln \xi_{ni}} \right) = 0. \quad (3)$$

This function informs us that there are three factors that impact a country n 's willingness to perform costly political actions i) the elasticity of country n 's real income with

²See appendix A3 for full derivation

respect to productivity in trade partner i . This is captured by the first term. This is also what we describe as country n 's real income exposure to trade partner i , as illustrated by the pinch ii) the elasticity of trade partner i 's productivity with respect to country n 's political decisions i.e. second term in parentheses. This tells us how much country n 's political actions impact productivity in trade partner i . Finally, iii) the elasticity of country n 's utility costs with respect to its political decisions toward trade partner i i.e. third term in parentheses and simply captures marginal cost of political actions.

Keeping other things equal, given this first order condition, the more exposed a country's real income is to a trade partner's productivity growth i.e the larger the real income exposure, the greater the incentive to decide on beneficial political actions for that growing economic partner. Thus, considering this framework developed by Kleinman et al. (2024), the first hypothesis presented:

Hypothesis 1: An exogenous increase to an African country's real income exposure to China will result in that African country aligning politically with China.

Trade Partner Diversification and Political Autonomy

I now leverage another theoretical model, developed by Martin et al. (2008), to predict the relationship between diversification of trade partners and political autonomy. For the convenience of the reader, I will focus on the intuition rather than repeating the framework in its entirety.

Martin et al. (2008) examines whether increased trade between countries reduces likelihood of war. The liberal school argues that trade promotes peace, with European trade integration as a prime example—designed to prevent recurrence of World War devastation. The intuition is straightforward: trading countries have strong incentives to maintain peace since war disrupts valuable economic exchanges. Consequently, global trade should reduce war probability. However, the authors challenge this view by distinguishing between bilateral and multilateral trade. Increased bilateral trade enhances economic interdependence, raising the opportunity cost of war between trade partners. In contrast, increased multilateral trade can actually increase the likelihood of war, as countries increasingly integrated in global trade have multiple partners that can offset potential economic losses from conflict with any single country. In summary, the paper offers a nuanced perspective on the relationship between economic interdependence and war.

In this paper, war is not studied as an outcome. Nevertheless, the intuition is useful to examine the relationship between economic dependence between states and political autonomy i.e. a single country's ability to pursue its own political agenda. Using this model, I can predict if African countries have gained political autonomy as a consequence of increased diversification of trade partners through a growing dependence on China. The second hypothesis is now presented:

Hypothesis 2: An African country that has become increasingly economically dependent on China is also less dependent on any one major trade partner. The increased diversification gives the African country more political autonomy.

4 Data

In this section, I first provide a description of my measure for economic dependence, the real income exposure metric. I clarify underlying economic forces driving this measure, its advantages, and elaborate on how it is best interpreted for this paper. Second, I provide a description of my three measures of political autonomy. I clarify how they are constructed and provide historical examples to clarify how these measure move.

4.1 Measuring Economic Dependence

When measuring economic dependence between countries, previous literature has relied on simple bilateral trade metrics such as total bilateral trade, log total bilateral trade, total trade as share of GDP (Flores-Mac and Kreps, 2013; Kleinman et al., 2024). However, recent advances in quantitative international trade models now enable more sophisticated measures. In this paper, I utilize a state-of-the-art quantitative model employed by Kleinman et al. (2024) but developed by Caliendo and Parro (2015). This model yields a *real income exposure measure* — an elasticity indicating the percentage change in country n 's real income resulting from a 1 percent change in trade partner i 's productivity. This measure can be positive or negative, revealing whether country n considers trade partner i a *friend* (positive value) or an *enemy* (negative value). The real income exposure measure is however expressed in decimal form. For example, if Egypt's real income exposure to China equals 0.01, a 10 percent increase in China's productivity would increase Egypt's real income by 0.1 percent. Conversely, if the value is -0.005, a 10 percent increase in China's productivity would decrease Egypt's real income by 0.05 percent. Now, I provide an intuitive description of the economic forces captured by this measure.

There are three economic forces that this measure captures: i) *market size effect*, ii) *cross-substitution effect* iii) *cost-of-living-effect*. Imagine a simple single-sector world where goods are differentiated by the origin of the country. In this simplified story, we look at three trading countries, China, Egypt and South Africa. Now, assume China implements some domestic reform that increases their productivity. Now, as Chinese income rises, Chinese consumers buy more goods from different countries, including Egypt. This increase in demand benefits Egyptian producers, resulting in a positive effect on Egyptian real income. This is the *market size effect*. The size of this effect will depend on, among other things, the proportion of Egyptian income that comes from China. Continuing on this example, Chinese productivity growth makes their own goods cheaper. As a result, consumers in third markets such as South Africa may substitute away from Egyptian goods toward Chinese goods. This substitution

is detrimental to Egyptian producers, resulting in a negative effect on Egyptian real income. This is the *cross-substitution effect*. The magnitude of this detrimental effect will depend on factors such as trade elasticity, the extent to which Egypt and China compete in the South African market and how important these common markets are to Egypt's income. Finally, another consequence of the Chinese productivity growth is that Chinese goods become cheaper for Egyptian consumers which in turn raises the Egyptian consumers purchasing power and has a positive effect on Egyptian real income. This is the *cost-of-living-effect*. This positive effect will depend on how much Egyptian consumers spend on Chinese goods. The sign and magnitude of the net effect of these three forces decides whether Egypt considers China a friend i.e. a positive exposure measure or as an enemy i.e. negative exposure measure.

The description above was simplified to focus on intuition. In the empirical application of this paper, the measure is estimated using a state-of-the-art quantitative model. This trade model includes multiple industries and input-output linkages, hence more realistic than the simple story provided earlier. Although this exposure measure is estimated using a significantly richer specification, the measure keeps its intuitive interpretation with some logical adjustments. In a world where goods are differentiated by country and multiple sectors, the measure considers the fact that a market is no longer a single country but rather an industry within a country. Accounting for input-output linkages, the exposure measure now considers network structures of production i.e. all value-adding steps in the production process. As a result, the exposure measure reveals aspects such as hidden dependencies as well as upstream and downstream propagation. Taken together, each of these features provides a significant advantage over the simpler bilateral trade measures previously used in the literature. In appendix A4, I provide a derivation to complement the intuitive explanation presented earlier.

Now, a clarification on how the reader should interpret this measure in this context follows. Consider the empirical real income exposure values of Egypt and Djibouti toward China in 2008: 0.00091 and 0.00618 respectively. From these positive values, we can conclude that both countries view China as an economic friend. Interpreting these figures, a 1 percent increase in Chinese productivity would increase Egypt's real income by 0.00091 percent and Djibouti's by 0.00618 percent. However, contextualizing these exposure values is critical for proper understanding. First, these are local elasticities for small changes in productivity, representing immediate effects of marginal changes. Real-world productivity shocks typically remain moderate annually (2-3 percent for fast-growing economies), making these seemingly small elasticities appropriate for analyzing yearly variation. Furthermore, accumulating these effects over longer periods can be considerable. China's productivity doubtlessly grew

significantly during the 20 year period studied in this paper, suggesting significant real income effects for exposed African countries. Finally, following the recommendation of the authors, relative magnitude is more informing than absolute magnitude. Determining what constitutes a significant change in real income exposure to China is best accomplished by comparing changes across African countries over time. As such, the results section will contain a standardized measure of real income exposure, since a standard deviation is representative of the changes in the sample at hand.

The real income exposure measure data for this paper are taken from the online replication package by Kleinman et al. (2024). The underlying economic data used by the authors come from the UN COMTRADE database, which reports extensive bilateral trade data and identifies 20 tradable and non-tradable sectors. The input-output linkages are assembled by Caliendo and Parro (2015). My baseline sample consists of a balanced panel of 35 African countries over 20 years from 1992 to 2012. The number of African countries is limited to 35 for mainly two reasons. First, countries such as South Sudan, Namibia and Eritrea either did not exist or had just gained independence. Second, for some countries there were existing but incomplete data.

4.2 Measuring Political Autonomy

Political autonomy, a country's ability to pursue its own political agenda, is a difficult-to-observe concept (Herre and Arriagada, 2023). The literature commonly study UNGA voting patterns to assess countries' geopolitical positioning and political autonomy relative major economies. For instance, a small country might vote similarly to China to signal alignment but also foregoing its own political agenda (Bailey et al., 2017). While UNGA voting records are acknowledged as a measure of political autonomy, it has two key limitations. First, they are confined to a single international forum and fail to capture favor-trading across multiple forums or institutions. Second, many UNGA votes hold little importance for certain countries, meaning shifts in voting patterns may be essentially costless (Flores-Mac and Kreps, 2013). In this paper, i use a κ -score, a similarity measure based on African and Chinese UNGA voting records, as a first measure of political autonomy. Acknowledging its limitations, it is still a widely used measure and will allow me to contrast my findings to previous ones. To address the UNGA limitations, I also use two specialized measures of political autonomy from the Varieties of Democracy (V-Dem) dataset by Coppedge et al. (2025b) : *Foreign* and *Domestic Policy Autonomy*. Next, I describe each measure separately.

Political Autonomy using UNGA votes - κ score

The "kappa" κ -score is a commonly used statistical measure that assesses the similarity between countries' yearly voting patterns in the United Nations General Assembly. The underlying data is non-unanimous plenary votes in the UNGA from 1992-2012, averaging approximately 128 votes annually. Countries are recorded as either voting "no", "abstain" or "yes". The score is calculated by examining how two countries vote on resolutions and comparing their observed agreement against the expected agreement based on each country's individual voting tendencies (Bailey et al., 2017).

The κ -score ranges from -1 to +1. A score of +1 indicates perfect voting alignment between two nations, 0 indicates alignment exactly at the level expected by chance, and negative values indicate less agreement than would occur randomly. The main strength of this measure is the adjustment for chance. This is particularly important in UN voting analysis because certain countries consistently vote "yes" on most resolutions, which would naturally create high raw agreement percentages without necessarily reflecting genuine diplomatic alignment. In practice, κ -scores in UN voting data typically range from around -0.2 to 0.8, with values above 0.6 suggesting strong diplomatic alignment, values between 0.3 and 0.6 indicating moderate alignment, and values below 0.3 reflecting limited alignment (Bailey et al., 2017).

The baseline sample for the κ -score is provided by Voeten et al. (2009). It is an unbalanced panel dataset covering the same 35 African countries between 1992-2012. There are 17 missing data points distributed across various African countries and time periods. These exist because certain African countries lacked representation in the UN at specific times. Reasons for absence include country-specific priorities, resource constraints, and civil war intensification (Morse and Coggins, 2024).

Foreign and Domestic Policy Autonomy

The Varieties of Democracy (V-Dem) Research Project specialize on measuring difficult-to-observe concepts. V-Dem employs country experts — at least 25 experts per country. To address concerns about comparability across time, space, and experts, V-Dem implements a Bayesian Item-Response Theory estimation strategy developed by Marquardt et al. (2019). As both measures are identical in their structure, with the one caveat that one studies foreign policy and the other domestic policy, they are presented simultaneously.

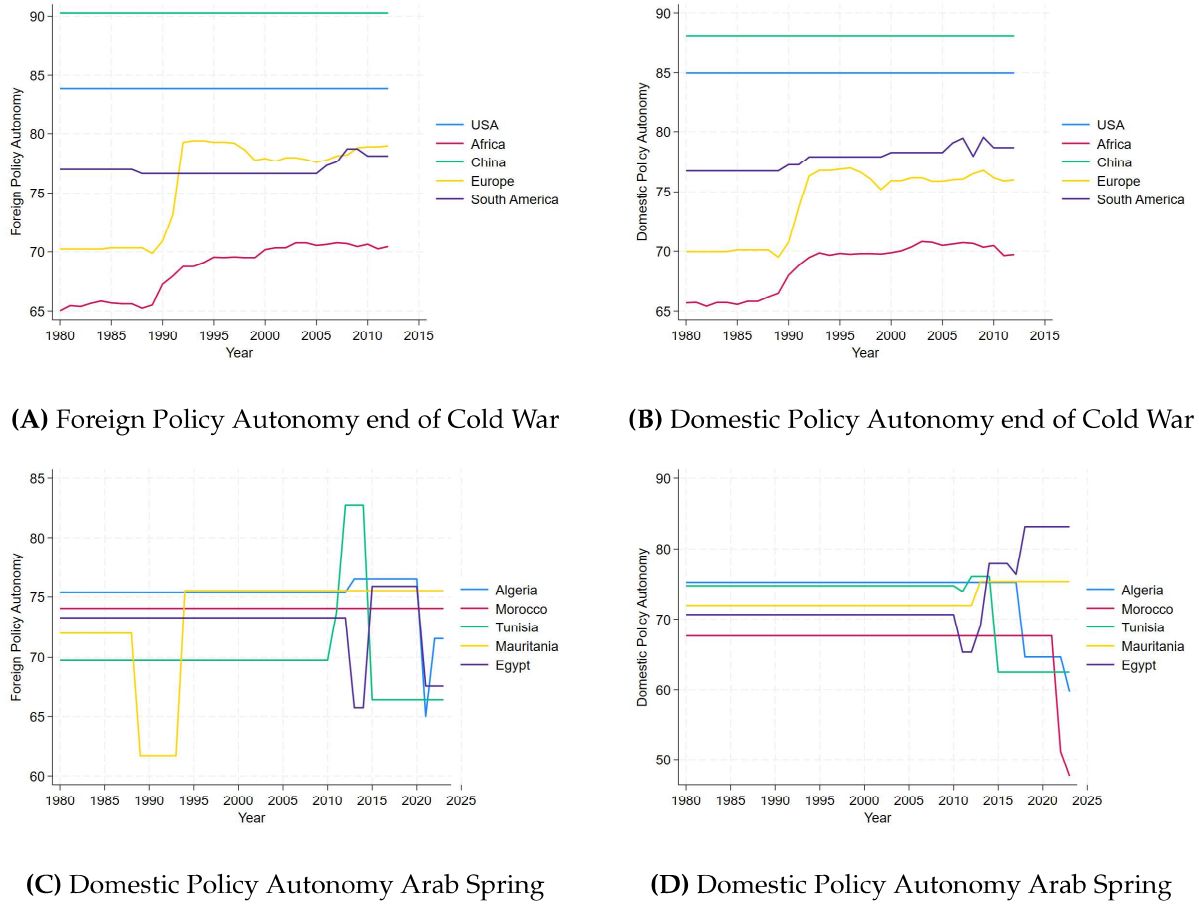
The Foreign Policy and Domestic Policy Autonomy variables measure a state's independence from external control in conducting its policies. Importantly, these measures exclude treaty-related restrictions (EU, NATO, WTO membership) since states freely negotiate entry and exit from such arrangements. Similarly, constraints from interna-

tional interdependence (like UN sanctions) aren't considered autonomy violations.

Both measures range from the values -3 to 3. A state with the value -3 is considered Non-autonomous and described as controlled by an external power, either de facto or de jure. The most common examples are colonial rule and military occupation. A value of 0 is considered Semi-autonomous and explained as an external political actor directly constraining the ability of domestic actors to pursue an independent foreign or domestic policy course in some important areas. This could be the result of well-understood rules of the game from which the subject state cannot withdraw from. Examples include former colonies or the Soviet "satellite" states in Eastern Europe. Finally, an autonomy value of 3 is considered Autonomous and is explained as domestic political actors exercise foreign or domestic policy free of the direct control of external political actors. This measure is rescaled to 0 – 100, where a value of 0 corresponds to Non-autonomous, 50 to Semi-autonomous and 100 to Autonomous (Coppedge et al., 2025a).

The autonomy measures contain landmarks centered around the values 0,50 and 100. Values in between and changes are difficult to evaluate. As recommended by V-dem, it is valuable to study these measures comparing continents and historical events. Before moving on to the next subsection, I describe how both of the measures have responded to two significant and commonly known political events - The end of the Cold War in 1989 and The Arab Spring in 2010.

Figure 1: Illustrations of known political events intended to clarify V-Dem autonomy measures



Note: Panel (A)-(B) illustrates how Foreign and Domestic Policy Autonomy changed globally by the end of the Cold War. Panel (C)-(D) illustrates how Foreign and Domestic Policy Autonomy changed among North African countries during the Arab Spring. The data is from Coppedge et al. (2025b). Author's illustration.

Panels (A) and (B) in Figure 1 informs us about how Foreign and Domestic Policy Autonomy has evolved over time for different parts of the world. In 1989, Europe experienced a geopolitical shift that was the end of the Cold War. While Europe's foreign policy autonomy rose by 10 points, its domestic policy autonomy increased by 5-7 points. This was mainly driven by former Soviet satellite states regaining practical independence. Panels (C) and (D) show the Arab Spring's tumultuous impact on North African nations. While Tunisia and Algeria decreased by 10 points overall, Egypt initially declined before recovering and improving. To summarize, using two political events, one representing a permanent shift and the other a more temporary change, we better understand how these two political autonomy measures respond.

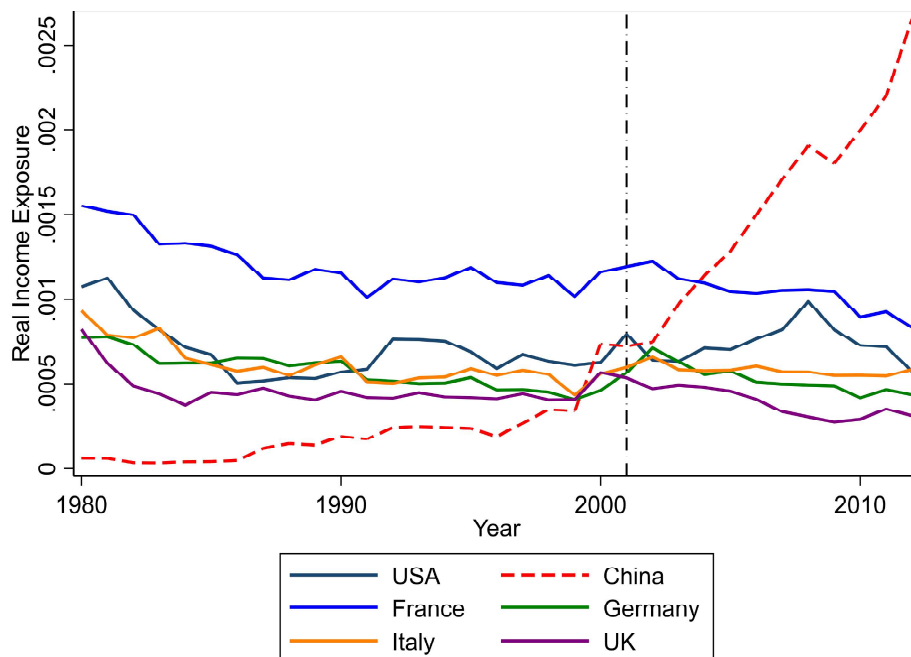
The baseline sample for the foreign and domestic policy autonomy measures are provided by Coppedge et al. (2025b). It is a balanced panel dataset for the 35 African countries examined in this paper.

4.3 Descriptive Statistics

Next I provide descriptive statistics on the real income exposure measure, tracking its development over time across the African continent. I also demonstrate how African countries' voting patterns toward China has evolved. Finally, I illustrate the development of domestic and foreign policy autonomy across Africa.

Real Income Exposure

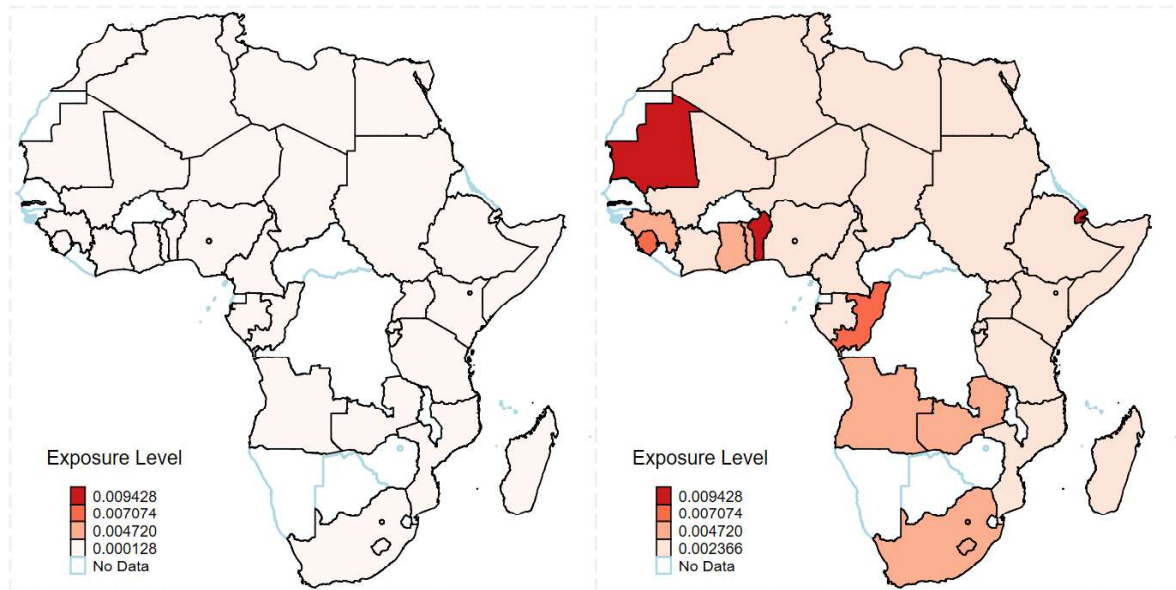
Figure 2: Africa's average real income exposure towards a selection of major economies



Note: The vertical axis indicates the real income exposure. The horizontal axis indicates the year. The data is an African average of real income exposure towards six major economies. Vertical dotted line represents the year 2001 i.e. China's WTO Accession. The data source is Kleinman et al. (2024). Author's illustration

Figure 2 illustrates Africa's real income exposure to a selection of major economies. There are three key features worth highlighting. First, African countries have historically maintained greater economic exposure to Western countries, particularly France, likely due to colonial ties. African exposure to Western economies has remained relatively stable over time. Second, Africa's economic exposure towards China was virtually nonexistent until the mid 1990's. Third, the continent's exposure to the Chinese economy increased dramatically since China's accession to the WTO in 2001. By 2012, at the end of the sample period, the African continent's economy had become more exposed to China than to the combined Western economies represented in the graph.

Figure 3: African countries real income exposure to China - 1992 and 2012.

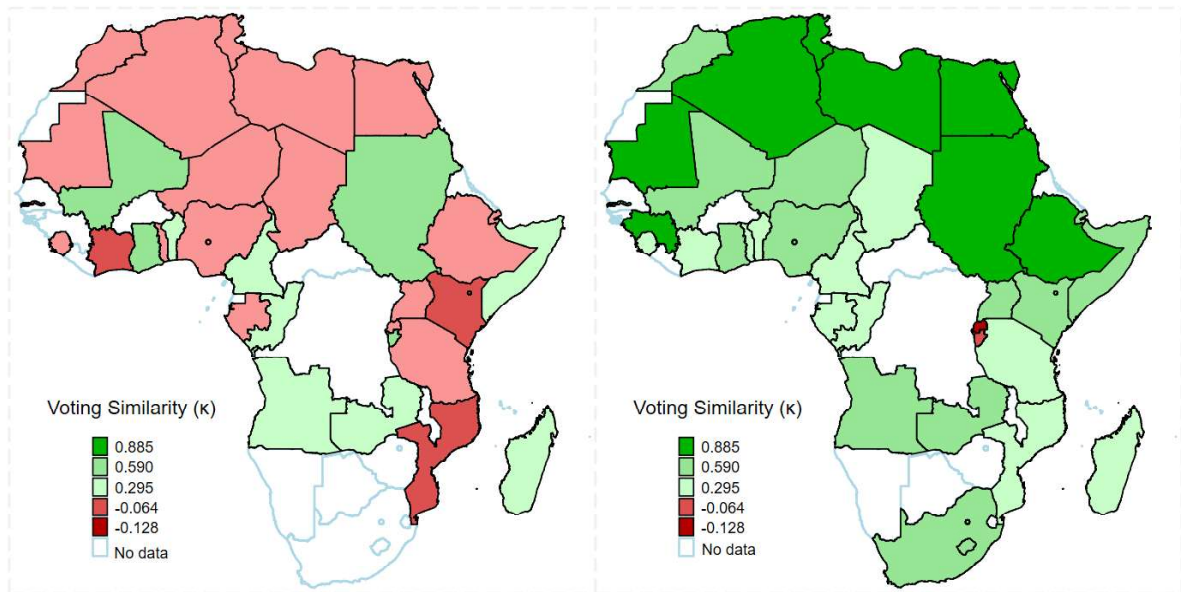


Note: The two maps indicate African countries level of real income exposure to China. The map to the left represents the start of the sample period: Year 1992. The map to the right represents the end of the sample period: Year 2012. Darker shades of red indicate more positive values i.e. more exposure to China. The years are color consistent to help the reader compare across years. The data source is Kleinman et al. (2024). Author's illustration

Figure 3 illustrates the variation in African countries' real income exposure to China over time, highlighting three key characteristics. First, the left map (Africa in 1992) shows minimal continental exposure to the Chinese economy. Second, the right map (Africa in 2012) reveals a dramatic shift, with the color scale indicating at least a ten-fold increase in overall exposure across the continent. Third, there is an increase in variation across the continent. While African nations in the south are moderately exposed, some countries in West Africa such as Mauritania, Togo, and Sierra Leone show high exposure to China.

Political Autonomy

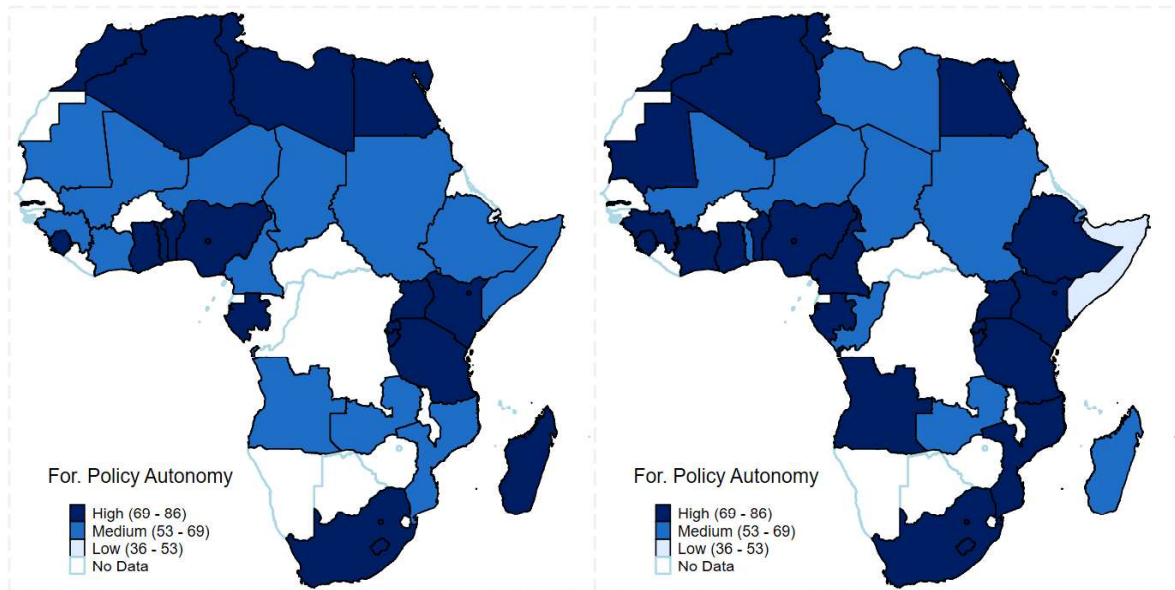
Figure 4: Africa UNGA based κ -score to China



Note: The two maps indicate African countries κ -scores to China i.e. their voting similarity to China in the UNGA. The map to the left represents the start of the sample period: Year 1992. The map to the right represents the end of the sample period: Year 2012. The color green and darker shades of it represent agreement. The color red and darker shades of it represent disagreement. The color scale is consistent over year, making it possible to compare the maps. The data source is Voeten et al. (2009). Author's illustration

Figure 4 illustrates African countries' voting alignment with China in the UN General Assembly. I would like to highlight three features. First, at the beginning of the sample period, almost half of the countries studied disagreed with China to varying degrees in UNGA votes. Second, by the end of the sample period, a clear majority of African nations had aligned their voting patterns with China. However, some countries, such as Burundi and Rwanda, continued to diverge from China's positions during that year. Third, all North African countries as well as Sudan and Ethiopia demonstrated strong alignment with China during this period, reaching κ -scores of around 0.8.

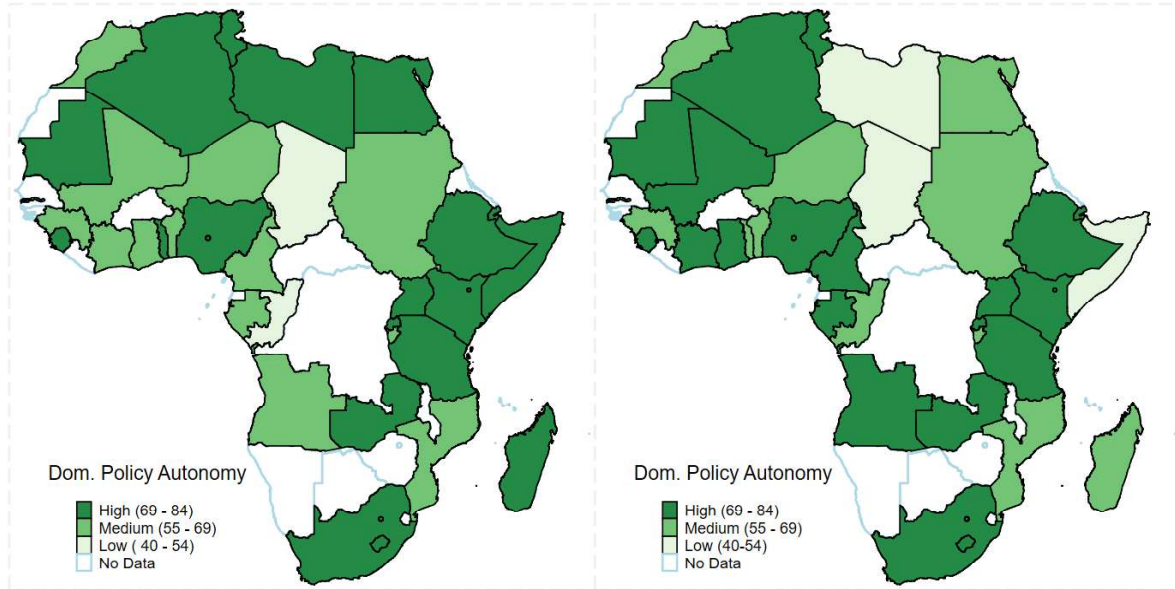
Figure 5: African Foreign Policy Autonomy



Note: The two maps indicate African countries levels of Foreign Policy Autonomy. The map to the left represents the start of the sample period: Year 1992. The map to the right represents the end of the sample period: Year 2012. The color scale is organized into continent-specific categories of Low, Medium and High. It is also consistent over year, making it possible to compare the map. The data source is Coppedge et al. (2025b). Author's illustration

Figure 5 describes African countries' foreign policy autonomy development. The continent's average foreign policy autonomy increased from 65 in 1992 to 72 in 2012. When comparing these years using continent-specific categories of Low, Medium, and High autonomy, several countries advanced from Medium to High autonomy, particularly along Africa's western, southern, and eastern coasts. There are two countries that visually moved in the opposite direction, Somalia and Libya. Events explaining these reversals could be the intensification in the Somali civil war, and the death of Libyan dictator Muammar Gaddafi in 2011.

Figure 6: African Domestic Policy Autonomy



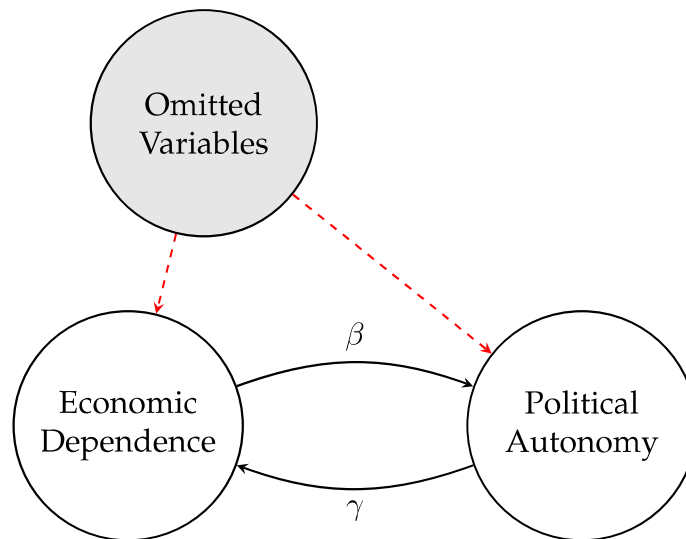
Note: The two maps indicate African countries level of Domestic Policy Autonomy. The map to the left represents the start of the sample period: Year 1992. The map to the right represents the end of the sample period: Year 2012. The color scale is organized into continent-specific categories of Low, Medium and High. It is also consistent over year, making it possible to compare the map. The data source is Coppedge et al. (2025b). Author's illustration

Figure 6 describes African countries' domestic policy autonomy development. The continent's average domestic policy autonomy increased modestly from 66 in 1992 to 70 in 2012. Visual comparison between the maps reveals insignificant changes across the continent. Some improvements are visible along the countries on the western coast, while some North African countries have gotten less autonomous. The reversal among some North African countries is likely due to the Arab spring taking place during this time. And as earlier mentioned, the reversal of Libya being caused by the death of dictator Gaddafi.

5 Method

The task of causally estimating the relationship between economic dependence and political autonomy are characterized by several difficulties as illustrated by the DAG in Figure 7 . These challenges include reverse causality, omitted variables, and measurement difficulties. Concerning reverse causality, this is best illustrated by a country deciding to diplomatically court another state in an attempt to deepen their economic ties. Omitted variables that could impact both the independent and dependent variables include, but are not limited to, historical and cultural ties, institutional similarity, or geographical proximity. The measurement difficulties relate primarily to Economic Dependence. Many studies have relied on measures of bilateral trade. However, the issue with this measure is that economic ties are characterized not only by the simple bilateral exchange but also by economic ties with other countries. To overcome these challenges, I employ a shift-share IV strategy using a real income exposure measure and China's accession into the WTO as an exogenous shock.

Figure 7: DAG



5.1 Empirical Strategy

Taking stock of the last section, several challenges were identified to causally estimate the relationship between economic dependence and political autonomy. These challenges will introduce bias in ordinary least squares estimate of the equation below.

$$Political\ Autonomy_{it} = \beta_0 + \beta_1 * RealIncExp_{it} + \varepsilon_{it}, \quad (4)$$

where $Political\ Autonomy_{it}$ refers to three measures of political autonomy used i) κ -score based on UNGA voting records ii) Domestic Policy Autonomy (V-Dem), iii) Foreign Policy Autonomy (V-dem). $RealIncExp_{it}$ is country i 's real income exposure to China at time t . ε_{it} describes the error term. The coefficient of interest is β_1 .

A step in the right direction of estimating unbiased coefficients is to include year-fixed-effects and country-fixed-effects. The motivation for including year-fixed-effects is to control for any common time-varying factors such as macroeconomic conditions e.g. dot-com bubble in late 90's or the global financial crisis in 08. Hence, these controls assures that year specific events are not driving any effects. The motivation for including country-fixed-effects is to control for any time-invariant factors that vary across countries but remain constant over time such as geographical characteristics, colonial heritage, and cultural factors. For example, it would be misguided to compare countries such as The Gambia and Ethiopia due to their vast differences in the characteristics. As such, including country-fixed-effects prohibits this from happening when estimating the coefficient of interest. The specification would now be structured as following:

$$Political\ Autonomy_{it} = \beta_0 + \beta_1 * RealIncExp_{it} + \beta_2 * TimeFE_t + \beta_3 * CountryFE_i + \varepsilon_{it}, \quad (5)$$

Where the only two additions compared to Eq. 4 are country fixed effects $CountryFE_i$ and time fixed effects $TimeFE_t$.

Even after including these controls, there is still an issue of time-varying country specific characteristics. These sit in the ε_{it} and is correlated with both $RealIncExp_{it}$ and any of the $Political\ Autonomy_{it}$ measures, causing a biased estimate. In this context of economic dependence and political autonomy, the most common example includes any bilateral relationships between an African country and China. For instance, the Cameroonian and Chinese government initiates a collaboration that increases the Cameroonian economy's exposure to China and in exchange China requires that the Cameroonian government vote for their cause in the UNGA. One could also imagine the Cameroonian government requiring the Chinese government to support their

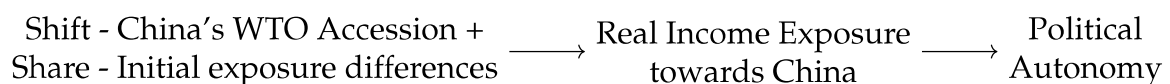
initiative in an international forum such as the ICC in exchange for securing natural resources. All of these stories of bilateral relationships between African states and China where there is an economic exchange in return for any kind of political support will bias our estimates. In order to solve this specific endogeneity issue, the solution proposed in this paper is a shift-share IV using China's accession into the WTO as a trade shock.

The shift share literature distinguishes two paths to identification. One path leverages one or many exogenous shifts while making no assumption about on the exogeneity of the shares. The second path instead focuses on share exogeneity. This paper makes use of the first path (Borusyak et al., 2025).

China's accession into the WTO is extensively studied and represents their entrance into the global economy. This is why it is considered a suitable shock. However, the whole continent was hit at the same time, hence there is no non-treated African group of countries for comparison. The shift-share approach provides me with a solution. Since the real income exposure measures changes over time and can be decomposed into some start-of-period shares (high vs low exposure group) and over-time shifts (China shock), the shift-share method allows us to study the African continent only using shocked countries.

The shift-based identification stems from a simple idea: a share-weighted average of a random shift is itself exogenous. Note well, this is true even if the shares are econometrically endogenous in the sense that units, countries in this case, with different initial levels of real income exposure levels may have systematically different unobservables (Borusyak et al., 2025). It is also the endogeneity of these shares that naturally rules out a Diff-In-Diff approach as the parallel trends assumption would presumably not hold. For instance, resource-rich countries may already have relatively better established economic links to China, while countries with strong historical ties to France might have relatively less. The important thing is that China's accession into the WTO as a trade shock hit everyone regardless of their unobservable characteristics (Borusyak et al., 2025).

Figure 8: Empirical Strategy



The intuition behind the empirical strategy used in this paper is inspired by Autor et al. (2013) and Card (2009). The former focused on the China shock and the latter formed the share component based on the notion that past developments of an economic measure predict future developments. The intuition is simple and follows: China's accession into the WTO was a shock that hit the whole African continent at the

same time. However, it is reasonable that the countries that experienced the largest increase in their real income exposure to China are also those that already had higher initial (pre 2001) levels of real income exposure towards China. As such, the variation created in the additional differences generated between those groups is believed to be exogenous.

The shift used in this paper is China's accession into the WTO in 2001 which is constructed using a dummy that is 0 before 2001 and 1 after 2001. The shares are a categorization of countries into two groups: High Exposure and Low Exposure. This is based on the 35 African countries average real income exposure to China between 1992-2001. The cutoff which decides what group a country belongs to is based on the median of all these country averages. This median is a real income exposure level of 0.000249, a country above is considered a high exposure country and below is considered a low exposure country³. The shares are constructed using a dummy that is 0 for countries categorized as low exposure and 1 for countries categorized as high exposure. Hence the shift-share instrument is an interaction between the two dummies that only turn 1 when the year is after 2001 and a country is considered to have been highly exposed to China before 2001. The empirical specifications are now presented.

5.2 Empirical Specification

First Stage

$$RealIncExp_{it} = \beta_0 + \beta_1 * HighExposure_i * WTO_t + \beta_2 * CountryFE_i + \beta_3 * TimeFE_t + \varepsilon_{it}, \quad (6)$$

where $RealIncExp_{it}$ is country i real income exposure to China at time t . $HighExposure_i$ is my shift share instrument. The share element $HighExposure_i$ is the group of countries that have a above median real income exposure to China between 1992-2001. The shift element WTO_t is a dummy variable indicating before and after 2001 i.e. China's accession into the WTO. $CountryFE_i$ represents country fixed effects. $TimeFE_t$ refers to time fixed effects. ε_{it} describes the error term.

Simple OLS and IV reduced form

$$PoliticalAutonomy_{it} = \beta_0 + \beta_1 * RealIncExp_{it} + \beta_2 * CountryFE_i + \beta_3 * TimeFE_t + \varepsilon_{it}, \quad (7)$$

where $PoliticalAutonomy_{it}$ refers to three measures of political autonomy used i) κ -

³For the full list of country averages, please see Table 4 in the Appendix

score based on UNGA voting records ii) Domestic Policy Autonomy (V-Dem), iii) Foreign Policy Autonomy (V-dem). $RealIncExp_{it}$ is country i 's real income exposure to China at time t . $CountryFE_i$ represents country fixed effects. $TimeFE_t$ refers to time fixed effects. ε_{it} describes the error term. The coefficient of interest is β_1 .

Country- and time-fixed effects are included both in the first stage and the reduced form to ensure that the estimates are consistent (Angrist and Pischke, 2009). Also, all standard errors are clustered on country level as they are the level of analysis in this paper (Abadie et al., 2022). The results will include a standardized version of the real income exposure metric i.e. *Real Inc. Exp. - Std.* As discussed in the data section, relative magnitude and changes are more informative than absolute ones. Therefore, a standardized measure is useful since one standard deviation is a representative change based on the sample at hand.

5.3 Research Design Validity

For an IV-strategy to be considered plausible, there are two conditions that need to be met: Relevance and Validity (Angrist and Pischke, 2009). The relevance condition can be formally tested for by making sure that the F-stat of the first stage regression is larger than the threshold of 10. Concerning the validity condition, this cannot be directly tested but rather requires contextual knowledge of the shock leveraged to be sure that the condition holds (Angrist and Pischke, 2009).

Relevance

Table 1: First Stage

	(1) OLS
Shift-Share Inst.	0.00123*** (0.000329)
Shift-Share Inst -Std	0.42116*** (0.112717)
Country FE	✓
Year FE	✓
Observations	735
R-squared	0.723
Kleibergen-Papp rk Wald F Stat	13.96

Standard errors clustered at the country level

Stars indicate significance at levels * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 1 shows the First Stage regression output. First and foremost, the Kleibergen-Papp F-stat is above 13.96, i.e. above the rule of 10. Hence, this instrument passes the relevance test. The coefficient of 0.00123 can be interpreted as following: The average real income exposure for the high exposure group has increased by 0.00123 units relative to the low exposure group comparing before and after China's accession into the WTO. A clarification: since the first outcome studied i.e. UNGA based κ score is estimated using 716 observations, the Kleibergen-Papp F-stat for that specific outcome is different but still relevant at 13.73. Also, a standardized version of the instrument is included for the reader to use when studying the reduced-form estimates later in the results.

Validity

The validity condition can be broken down into two sub-conditions and understood as following: i) China's accession into the WTO only affects the political autonomy measures studied through its impact on the African countries' real income exposure towards China ii) The necessary and sufficient condition for a shift-based approach is that the China shock is uncorrelated with an average of ϵ_{it} across countries and their real income exposure measure (Borusyak et al., 2025). As mentioned in the previous section, validity cannot be formally tested.

In order for the validity condition to hold, it requires contextual understanding of China's accession into the WTO. Concerning the first sub-condition, this is econometrically considered by the inclusion of year-fixed-effects in the first stage and reduced form. More specifically, the shift-share interaction term in combination with the inclusion of year-fixed-effects ensures that it is only the effect of China's accession into the WTO on real income exposure that is considered. Concerning the second sub-condition, this is a rephrasing of the endogeneity issue that motivated the use of a shift-share approach. As such, one needs to be assured that none of these Chinese-African bilateral relations had anything to do with China's accession into WTO. Crystallizing the context provided in the background section, the accession was made possible partly because of domestic policy reforms, but especially because of the bilateral agreement made between the US and China. Once that was settled, the second largest actor at that time, the EU, made an agreement with China within a year. Thus, it is plausible to believe that no single African country had any practical influence as to whether China was going to be granted membership or not.

To conclude, with the formal evidence of an instrument that passes the relevance test and plausible evidence of the instrument's exogeneity, the results are presented next.

6 Results

6.1 Main Results

Table 2: Measure i): κ -score based on African and Chinese UNGA voting records

	(1) OLS	(2) Reduced Form	(3) IV	(4) Reduced Form	(5) IV
Real Inc. Exp.	-0.0217 (11.26) [-22.91, 22.87]	0.0244 (0.059) [-0.09, 0.14.09]	20.04 (46.61) [-71.31, 111.4]		
Real Inc. Exp. - Std				0.0122 (0.0297) [-0.048, 0.072]	0.0293 (0.0681) [-0.104, 0.163]
Country FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Observations	716	716	716	716	716
R-squared	0.531	0.532	0.526	0.532	0.526
Kleibergen-Paap rk Wald F			13.73		13.73

Standard errors clustered at the country level and are in parantheses. 95% confidence interval are in brackets.

Stars indicate significance at levels * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2 illustrates the κ -score regression output. To clarify, the first row of the independent variable *Real Inc. Exp.* is the real income exposure measure in its original decimal form. The second row of independent variable *Real Inc. Exp. - Std* is the standardized version of the real income exposure measure to more easily interpret and place the coefficient in a context, as discussed earlier.

Starting with the first column, the first simple OLS coefficient can be interpreted as following: A one unit increase in a country's real income exposure towards China reduces its geopolitical alignment, i.e. κ score by 0.0217. However, as discussed earlier, this measure likely suffers from problems such as reverse causality and OVB. For that reason, there is an IV specification to address these issues. The second column, the IV coefficient, differs from its OLS counterpart by sign and magnitude. The IV coefficient can be interpreted as follows: A one unit increase in a country's real income exposure towards China increases its geopolitical alignment by 20 points. Once again, the κ -score is bounded between -1 and 1, making the IV-coefficient difficult to understand. Also, one also needs to reconsider what a reasonable change in real income exposure entails. Taking Figure 2 as inspiration, assume that a country increases its real income

exposure to China by 0.001 units, this would imply an increase by 0.02 in their alignment to China. However, assuming a representative change in real income exposure is challenging.

As a response, the Real Income Exposure Measure is standardized. Moving on to column 3 and 4, the simple OLS estimated can be interpreted as following: one standard deviation implies a decrease in political alignment with China by 0.0000317 points. Still, the issue of reverse causality and omitted variable bias remain. In the final column, the IV coefficient is interpreted as following: One standard deviation implies an increase of 0.0293 points in their κ -score towards China. Following the literature, this increasing alignment is viewed as a corresponding decrease in political autonomy.

These results have no statistical significance at any relevant threshold considering the large standard errors and the wide spanning 95% confidence interval. To better understand what countries represent the upper and lower bound for IV estimate in column 4, we can make use of Figure 3 and Figure 4, together with the map of Africa in Figure 10 in the Appendix. Several of the North African nations make proper examples representing the upper bound of 0.163. As one can observe by comparing the maps in Figure 3, Algeria is one of the countries that become moderately exposed to China by 2012. Following Algeria in Figure 4, it is observed how it goes from being disaligned with China to highly aligned. To illustrate the lower bound of -0.104, the same exercise can be performed, but instead focusing on the two small neighboring states of Burundi and Rwanda that have both increased their exposure to China but nevertheless distanced themselves from China.

Table 3: Measure ii): Foreign Policy Autonomy (V-Dem)

	(1)	(2)	(3)
	OLS	Reduced Form	IV
Real Inc. Exp. - Std	1.295**	0.314	0.747
	(0.622)	(0.785)	(1.706)
	[0.0310,2.558]	[-1.280, 1.910]	[-2.598,4.091]
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Observations	735	735	735
R-squared	0.884	0.877	0.044
Kleibergen-Paap rk Wald F			13.96

Standard errors clustered at the country level and are in parantheses. 95% confidence interval are in brackets. Stars indicate significance at levels * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3 illustrates the Foreign Policy Autonomy outcome. To clarify, all specifications in Table 3 are estimated with the standardized version of the Real Income Exposure measure, *Real. Inc. Exp. - Std.* In the first column, the simple OLS coefficient is interpreted as following: a one standard deviation increase in a country's real income exposure to China implies 1.295 point increase in their Foreign Policy Autonomy. As discussed in the methodology section, the OLS coefficients probably suffer from bias and therefore turn to the IV specification in column 3. The IV coefficient in column 2 can be interpreted as following: a one standard deviation increase in a country's real income exposure to China implies a 0.747 point increase in their Foreign Policy Autonomy.

This result has no statistical significance at any relevant threshold considering the large standard errors and resulting wide 95% confidence interval. To better understand which countries represent the upper and lower bounds for the IV estimate in column 3, we can use of Figure 3 and Figure 5. The southwestern state of Angola illustrates the upper bound of 4.091. As one can observe by comparing the maps in Figure 3, Angola had become considerably exposed to China by 2012. Following Angola in Figure 5, it is observed how they become highly autonomous in their foreign policy. To illustrate the lower bound of -2.598, the same exercise can be performed but instead focus on the small western state of Togo that has substantially increased their exposure to China but nevertheless became less autonomous over time.

Table 4: Measure iii): Domestic Policy Autonomy (V-Dem)

	(1) OLS	(2) Reduced Form	(3) IV
Real Inc. Exp. - Std	0.422 (0.557) [-0.710,1.554]	0.087 (0.766) [-1.471,1.645]	0.207 (1.722) [-3.168,3.582]
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Observations	735	735	735
R-squared	0.884	0.860	0.044
Kleibergen-Paap rk Wald F			13.96

Standard errors clustered at the country level and are in parantheses. 95% confidence interval are in brackets.

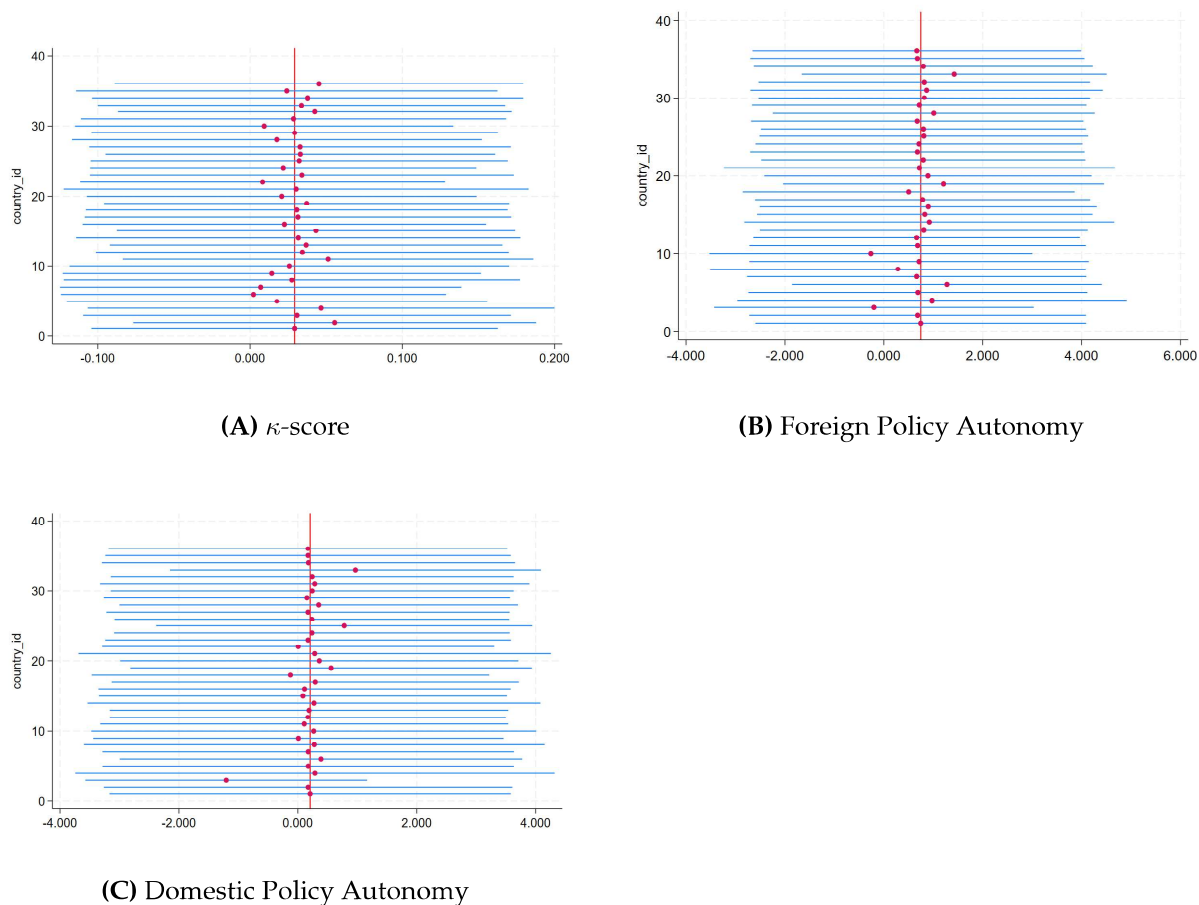
Stars indicate significance at levels * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4 illustrates the Domestic Policy Autonomy outcome. In the first column, the simple OLS coefficient is interpreted as following: a one standard deviation increase in a country's real income exposure to China implies a 0.422 increase in Domestic Policy Autonomy. Turning to the IV specification in column 3. The IV coefficient is interpreted as following: A one standard deviation increase in a country's real income exposure to China implies a 0.207 points increase in their Domestic Policy Autonomy.

To better understand the span of the confidence interval for the IV-estimate in column 3, we use Figure 3 and Figure 6. Angola is again a representative state for the upper bound of 3.582. It is a country that was considerably exposed to China in 2012 and developed to become highly autonomous in their domestic policy. To illustrate the lower bound of -3.168, the same exercise can be done using Togo which has substantially increased their exposure to China but nevertheless become less autonomous over time.

6.2 Leave One Out Analysis

Figure 9: *Leave-One-Out Analysis* across the three measures of political autonomy



Note: The panels (A)-(C) are leave-one-out analysis outcomes for three measures of Political Autonomy. These are ran using the regressions with the standardized real income exposure variable. (A) κ -score, (B) Foreign Policy Autonomy and (C) Domestic Policy Autonomy. The red line in all panels represent the respective point estimate. The blue lines represent 95% confidence interval Author's illustration

I conduct a *leave-one-out analysis* to test the persistence of the imprecise estimates and to better understand the underlying drivers. This analysis is conducted using the standardized real income exposure measure. Figure 9 illustrates the outcome of the analysis. For all three panels, the overall wide confidence intervals indicate that the imprecision is persistent and not driven by any one country. In Panel (A) κ -score, no single point estimate is negative, although several are practically zero. In Panel (B) Foreign Policy Autonomy, the point estimate is negative at two instances. The two countries excluded are Angola and Djibouti. Finally in Panel (C) Domestic Policy Autonomy, the point estimate is negative at one instance and that is when Angola is excluded. The largest and positive point estimate is when Togo is excluded. All of the aforementioned countries have been mentioned earlier in the main results section as

representative of upper and lower bounds. It is therefore a natural outcome that the point estimate shifts when those countries are excluded. To conclude, the leave-on-out analysis informs us that the imprecise estimates are not driven by any one country.

7 Discussion

The first and most important implication from the main results is that it is a null result across all measures of political autonomy. There was no statistical significance at any relevant threshold. The results are now cautiously discussed in the context of relevant literature and further analyzed.

The literature studying the relationship between economic dependence and UNGA voting patterns find a positive relationship i.e. increasing economic dependence towards a country is associated with aligning with them in the UN (Kleinman et al., 2024; Flores-Mac and Kreps, 2013; Dreher et al., 2008). Specifically, the papers examining China's growing influence find that African countries are driving the results. However, since the IV estimate in Table 2 is insignificant, regardless of its sign and magnitude, it cannot be related to previous findings any further.

Concerning the Foreign and Domestic Policy Autonomy measures, there is little research done using these two in a similar context. I am therefore unable to directly relate to previous findings. However, the intended discussion was centered around the seemingly opposing *Hypothesis 1* and *Hypothesis 2*. As both are well-studied theoretical results, these measures were to potentially point to a difference in bilateral and multilateral dynamics. However, the insignificant IV-estimates in Table 3 naturally limits the possibilities for this paper to discuss any such differences in dynamics.

The wide-ranging confidence intervals in the main results helps me draw the conclusion that this null result is caused by imprecision. Having conducted a *Leave-One-Out Analysis* excluding one country at a time, the estimates presented in Figure 9 remain insignificant across all measures. Thus, any outliers are not driving the null result either. As such, I infer that the main explanatory factor is a lack of statistical power to detect a true effect resulting from a small effective sample size (Riis-Vestergaard, 2023).

A discussion of all the factors that have impacted this paper's chances at sufficient statistical power follows. Starting with the favorable aspects, there were only 35 countries to begin with due to data availability, a hard limit but a tolerable amount. Second, previous literature had pointed to Africa as the continent driving their significant effects (Kleinman et al., 2024; Flores-Mac and Kreps, 2013). Third, China's accession into the WTO is considered one of the most powerful trade shocks studied (Autor et al., 2013). Moving on to the less favorable aspects. The theoretical framework helps me to create a prior belief before the results. However, I will anticipate heterogeneous effects between different countries. This was visually confirmed in Panel (B) and (C) Figure 9, as some point estimates changed sign. Continuing, the Foreign and Domestic Policy Autonomy measures appear rigid and mainly responsive to significant historical

events and perhaps not as much to incremental changes.

Considering the conditions above as given, I now turn to the power-related consequences from the chosen method. The empirical strategy employed to causally estimate the relationship required country- and year-fixed effects, two sets of controls that consume a lot of variation. This is indicated by how the R-squared increases comparing columns with and without fixed effects in Table 5 and Table 6. The extensive number of controls in combination with an instrumental variable leaves only a small portion of the total variation in the explanatory variable to use for analysis. The shift-share IV passed the relevance test which is the formal requirement. In hindsight, it is understandable that a larger sample size was needed to causally estimate the relationship between economic dependence and political autonomy using this method.

This paper leverages the historical setting where African countries are navigating in a US-led Western world order. China's emergence as a competing power is then presented as an alternative for African countries beyond the traditional Western ones. The perfect setting reflecting this shift would be all African countries now having a well-balanced mix of economic dependencies towards traditional trade partners and new ones i.e. China. Figure 2 provides visual confirmation that Western countries remain economically relevant to African countries during the sample period. However, it could still be the case that some African countries have become overly dependent on China. These countries are thus unable to leverage trade partners against each other and become trapped in detrimental forms of dependencies. Econometrically, this could risk obscuring the true effect. To solve for this issue would require an economic dependence measure that explicitly considers trade partner balance whilst maintaining all the beneficial features of the real income exposure measure. To the best of my knowledge, there is no such readily available measure. This is no trivial task and therefore I leave it for future researchers to examine further.

8 Conclusion and Future Research

In their article, *The New Scramble for Africa*, The Economist elegantly captured how Africa had become the arena for a rising multipolar world order. But this time, African nations could be the winners of the scramble. As argued in the article, if the African leaders were able to carefully navigate these forces, the gains could be immense. It has yet been established if this was the outcome. In this paper, my aim was to contribute with empirical evidence to that prediction. Having examined 35 African countries over a 20 year period, the results in this paper fail to assess this prediction. Considering the current events in Africa where countries are cutting their Western ties and instead choosing China and Russia, this question remains essential for researchers and policy makers to better understand.

For future research, here are suggestions on how to further this field and potentially overcome power-related obstacles. First, previous literature has approached this topic by examining the world and gaining a larger sample size. But, to secure more power while maintaining a development perspective, a global south approach could perhaps be fitting. Second, to obtain a measure of political autonomy with sufficient variation proved to be a non-obvious task. As such, leveraging public opinion on the matter through large opinion polls such as Afrobarometer could be useful. Third, the method used in this paper is arguably valid. However, the amount of controls required to assure validity naturally limits remaining variation. Therefore, an instrument that does not rely as heavily on the inclusion of controls would be favorable.

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A1. Map of Africa

Figure 10: Map of Africa



A2. Additional Descriptive and Result Tables

Table 5: African Countries and Their Average Exposure Values between 1992-2001

Country	Average Exposure
Chad	0.0000271
Tunisia	0.0000276
Somalia	0.0000285
Libya	0.0000429
Burundi	0.0000569
Algeria	0.0000828
Uganda	0.0000840
Rwanda	0.0001037
Ethiopia	0.0001129
Morocco	0.0001131
Egypt	0.0001408
Cameroon	0.0001486
Niger	0.0001545
Zambia	0.0001737
Sierra Leone	0.0001820
Kenya	0.0002055
Cote d'Ivoire	0.0002381
Nigeria i.e Median	0.0002490
Gabon	0.0002577
Guinea	0.0002750
Mozambique	0.0002765
Tanzania	0.0002822
Madagascar	0.0002921
South Africa	0.0003249
Ghana	0.0003252
Mali	0.0003363
Mauritania	0.0003693
Sudan	0.0004899
Congo	0.0005257
Mauritius	0.0005552
Angola	0.0005810
Djibouti	0.0011527
Togo	0.0011616
Benin	0.0012931
Gambia	0.0018480

Table 6: Measure i): κ -score based on African and Chinese UNGA voting records. Including all specifications

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	IV	OLS	OLS	IV
Real Inc. Exp.	-4.670 [-28.82,19.48]	-0.0217 [-22.91,22.87]	20.04 [-71.31,111.4]			
Real Inc. Exp. - Std				-0.00682 [-0.0421,0.0285]	-0.0000317 [-0.0335,0.0334]	0.0293 [-0.104,0.163]
Country FE		✓	✓		✓	✓
Year FE		✓	✓		✓	✓
Observations	716	716	716	716	716	716
R-squared	0.000891	0.531	0.526	0.000891	0.531	0.526
Kleibergen-Paap rk Wald F			13.73			13.73

Standard errors clustered at the country level and are in parantheses. 95% confidence interval are in brackets.

Stars indicate significance at levels * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Measure ii) and iii): Foreign and Domestic Policy Autonomy (V-Dem) . Including all specifications

	(1) OLS - For	(2) OLS - For	(3) IV - For	(4) OLS - Dom	(5) OLS - Dom	(6) IV - Dom
Real Inc. Exp. - Std	0.313 [-1.315,1.941]	1.295** [0.0310,2.558]	0.747 [-2.598,4.091]	-0.384 [-2.212,1.443]	0.422 [-0.710,1.554]	0.207 [-3.168,3.582]
Country FE		✓	✓		✓	✓
Year FE		✓	✓		✓	✓
Observations	735	735	735	735	735	735
R-squared	0.00121	0.884	0.0444	0.00177	0.861	0.00363
Kleibergen-Paap rk Wald F			13.96			13.96

Standard errors clustered at the country level and are in parantheses. 95% confidence interval are in brackets.

Stars indicate significance at levels * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A3. First Order Condition Derivation

Consider a global economy that consists of countries indexed by $n, i \in \{1, \dots, N\}$. Each country has an agent that can perform political actions that are economically beneficial for some other trade partner but costly for its own utility. Now, suppose the indirect utility function of the representative agent in each country n (U_n) real income (u_n) that in turn depends and the utility costs (v_n) of executing each political favor (ξ_{ni}) for each trade partner i :

$$\mathcal{U}_n = u_n - v_n(\xi_n^{\text{out}}), \quad \xi_n^{\text{out}} = (\xi_{n1}, \dots, \xi_{nN}). \quad (8)$$

The productivity of a trade partner i (z_i) in turn relies on fundamental factors of productivity ($\bar{z}_i$) and the political choices of all countries n (ξ_{ni}) through the function $f_i(\cdot)$:

$$z_i = \bar{z}_i f_i(\xi_i^{\text{in}}), \quad \xi_i^{\text{in}} = (\xi_{1i}, \dots, \xi_{Ni}). \quad (9)$$

First-Order Condition Taking the derivative with respect to ξ_{ni} :

$$\frac{\partial u_n}{\partial \xi_{ni}} - \frac{\partial v_n}{\partial \xi_{ni}} = 0 \quad (10)$$

Since u_n depends on z_i which depends on ξ_{ni} , using chain rule:

$$\frac{\partial u_n}{\partial \xi_{ni}} = \frac{\partial u_n}{\partial z_i} \cdot \frac{\partial z_i}{\partial \xi_{ni}} \quad (11)$$

Express in terms of elasticities:

$$\frac{\partial u_n}{\partial z_i} \cdot \frac{\partial z_i}{\partial \xi_{ni}} = \frac{\partial \ln u_n}{\partial \ln z_i} \cdot \frac{\partial \ln z_i}{\partial \ln \xi_{ni}} \cdot \frac{u_n}{v_n} \cdot v_n \quad (12)$$

Rearranging the first-order condition:

$$\underbrace{\left(\frac{\partial \ln u_n}{\partial \ln z_i} \right) \left(\frac{\partial \ln z_i}{\partial \ln \xi_{ni}} \right) \frac{u_n}{v_n}}_{U_{ni}} - \left(\frac{\partial \ln v_n}{\partial \ln \xi_{ni}} \right) = 0. \quad (13)$$

where $U_{ni} = \frac{\partial \ln u_n}{\partial \ln z_i}$ is the real income exposure.

A4. Complementary Note for Intuition Behind Real Income Exposure

As this paper only utilizes the computed real income exposure values by Kleinman et al. (2024), there is no added value in fully deriving the measure. For the interested reader however, I urge you to read the paper by Kleinman et al. (2024) and Caliendo and Parro (2015), they do a thorough job of this. However, for the interested reader that wants to gain a better understanding of how the underlying economic forces described in the Data section can be estimated, I have put together a short explanatory note. This derivation follows Kleinman et al. (2024) closely in deriving the real income exposure measure using the single sector Armington model.

Real Income Exposure – To clarify for the reader: For vectors, I use boldface lowercase letters and for matrices, I use boldface uppercase letters. For elements in the vectors and matrices, I use nonbold, lowercase letters.

We start with assumptions that characterize each country. First, every country has an exogenous supply of workers l_n who are each endowed with one unit of labor and this unit is supplied inelastically. Goods in a country are produced using labor and, if needed, intermediate inputs. Any two countries' goods can be traded between them, they are subject to iceberg bilateral trade costs, $\tau_{ni} \geq 1$, such that at least one unit of good must be shipped from country i for one unit to arrive in country n . This implies that the trade costs reduces the effective value of a good sent from one country to another. Every country is characterized by a Hicks-neutral productivity shifter $z_n \geq 0$, meaning that the country produces output efficiently given its inputs. Differences in z_n between countries imply different levels of efficiency e.g. technology. We denote the wage, nominal income per capita, by w_n and the consumption price index, CPI, by p_n such that $u_n = w_n/p_n$ corresponds to real income per capita. Real income per capita is also considered to represent the indirect utility function for the representative consumer (Kleinman et al., 2024). We define the real income exposure measure as the matrix U that satisfies the following vector equation:

$$d \ln u = U d \ln z \quad (14)$$

Where $d \ln z$ is the $N \times 1$ vector of log changes in productivity in each country; $d \ln u$ is the $N \times 1$ vector of log changes in real income per capita ($d \ln u_n$) induced by these log changes in productivity ($d \ln z_n$); and U is a $N \times N$ matrix, where element $U_{ni} = \frac{d \ln u_n}{d \ln z_i}$ captures the elasticity of real income in country n with respect to productivity growth in country i .

The matrix U contains the global network of bilateral exposure of real income per capita to productivity shocks. Elements in U can be positive which is interpreted as

country i viewing country n as a friend, or negative implying that the opposite i.e. country i view country n as an enemy. The view on the relationship between countries are not necessarily mutual i.e. one party could view it as positive while the other view it as negative.

In order to actually measure exposure, We need a trade model that considers all the necessary elements described above. Using the equations provided from the trade models, We can estimate the real income exposure using economic data. This can be done with a large class of constant elasticity trade models. We will do this using a single-sector Armington trade model in which goods are differentiated by country of origin (Kleinman et al., 2024).

We start with the indirect utility function of the representative consumer i.e. real income per capita and the goods market clearing condition. The goods market clearing condition states that a country's income is equal to the expenditure on the goods produced by that country.

$$u_n = \frac{w_n}{P_n} \quad (15)$$

$$w_i \ell_i = \sum_{n=1}^N s_{ni} w_n \ell_n. \quad (16)$$

Totally differentiating the indirect utility function and the goods market clearing condition while holding bilateral trade costs and endowments constant, We obtain the following expressions.

$$d \ln w_i = \sum_{n=1}^N t_{in} \left[d \ln w_n + \theta \left(\sum_{h=1}^N s_{nh} [d \ln w_h - d \ln z_h] - [d \ln w_i - d \ln z_i] \right) \right] \quad (17)$$

$$d \ln u_n = d \ln w_n - \sum_{i=1}^N s_{ni} (d \ln w_i - d \ln z_i). \quad (18)$$

Where s_{ni} is the share of expenditure of importer n on exporter i ; $t_{in} = \frac{s_{ni} w_n \ell_n}{w_i \ell_i}$ is the share of income of exporter i from importer n ; $\theta = \sigma - 1 > 0$ is the elasticity of trade with respect to trade costs, where $\sigma > 1$ is the elasticity of substitution.

Collecting these comparative statics for all country pairs i.e. every exposed country i (rows) and each shocked country k (columns), We arrange the following matrix repre-

sensation of this linear system of equations:

$$d \ln \mathbf{w} = \mathbf{T} d \ln \mathbf{w} + \theta \cdot \mathbf{M} \times (d \ln \mathbf{w} - d \ln \mathbf{z}) \quad (19)$$

$$d \ln \mathbf{u} = d \ln \mathbf{w} - \mathbf{S}(d \ln \mathbf{w} - d \ln \mathbf{z}), \quad (20)$$

where $\mathbf{S} \equiv [s_{ni}]$ is the $N \times N$ matrix with the ni -th element equal to importer n 's share of expenditure on exporter i , $\mathbf{T} \equiv [t_{in}]$ is the $N \times N$ matrix with the in -th element equal to exporter i 's share of income from importer n , and we define $\mathbf{M} \equiv \mathbf{TS} - \mathbf{I}$.

We rearrange the nominal per capita equation, take the matrix inverse and use the real income per capita equation to recover the real income exposure measure.

$$\mathbf{U} \equiv \frac{\theta}{\theta + 1}(\mathbf{I} - \mathbf{S})(\mathbf{I} - \mathbf{V})^{-1}\mathbf{M} + \mathbf{S}, \quad \mathbf{V} \equiv \frac{\mathbf{T} + \theta\mathbf{TS}}{\theta + 1} - \mathbf{Q} \quad (21)$$

where we define $q_n = w_n \ell_n$ as a country's nominal income; $\mathbf{Q}$ is an $N \times N$ matrix with the nominal income row vector $\mathbf{q}'$ stacked N times; the presence of the term in $\mathbf{Q}$ reflects our choice of world income as the numeraire, such that $\sum_{i=1}^N q_i d \ln w_i = 0$ or $\mathbf{Q} d \ln \mathbf{w} = 0$.

Now that We have retrieved the real income exposure measure using the Armington model, We now walk through the mechanics of the model that drives the exposure measure using eq 19 and 20. Starting with eq 19, a change in the nominal income per capita ($d \ln \mathbf{w}$) can be decomposed into two drivers: a *market size effect* ($\mathbf{T} d \ln \mathbf{w}$) and a *cross-substitution effect* ($\theta \cdot \mathbf{M} \times (d \ln \mathbf{w} - d \ln \mathbf{z})$). The market size effect reflects the impact of productivity growth in country n on country i . The size of the effect will depend on the proportion of income of country i that is coming from consumers in country n , as represented by the income share matrix $\mathbf{T}$. The cross-substitution effect reflects consumer substitution in every country. The extent in which consumers substitute will depend on the product of the income share and expenditure matrices ($\mathbf{M} = \mathbf{TS} - \mathbf{I}$), where the in -th element in cross-substitution matrix $\mathbf{M}$ is given by $m_{in} \equiv \sum_{h=1}^N t_{ih} s_{hn} - \mathbf{1}_{n=i}$. For $i \neq n$, the m_{in} represents the competitive exposure of country i to country n through each of the common markets h where they are both present, weighted by the importance of each market h for country i 's income t_{ih} . As country n experiences an increase in productivity, expressed by a decline in wage relative to productivity ($d \ln w_n - d_n$), consumers of all markets h will substitute toward country n 's good and away from country i 's good. Moving on to eq 20, when there is a change in real income per capita ($d \ln \mathbf{u}$) there are two components, one is the change in nominal income per

capita which has already been explained above and the *cost of living effect* ($S(d \ln w - d \ln z)$). The cost of living effect in country n will depend on how much they spend on goods from country i which is captured in the S matrix (Kleinman et al., 2024).

A5. Disclosure of Artificial Intelligence (AI) Usage

Following academic guidelines regarding disclosure on the usage of artificial intelligence, I provide the following note on how AI has been used in the process of writing this thesis. I used Anthropic's Claude, only as a supportive tool. No AI tool has been used for generating, interpreting or analyzing the data, those tasks have only been carried out by myself. Here are some examples of how AI has been used in writing this thesis:

- Searching for relevant literature
- Improvement of language
- Improvement of formatting in LaTeX
- STATA support

The use of AI in this thesis is limited to what has been disclosed here.