



# Democracy and Trade Liberalisation

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# Democracy and Trade Liberalisation\*

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\*MSc dissertation. Awarded distinction

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## **Abstract**

In the 20<sup>th</sup> century, waves of democratisation and the concurrent rush to free trade worldwide prompted many scholars to research the link between democracy and trade liberalisation. Despite scholars agreeing that democratisation positively affects trade liberalisation, no consensus prevails on which specific aspect of democracy matters most and through which mechanism that it affects trade liberalisation. By building on Mayer's (1984) application of the Median Voter Theorem, this dissertation argues that democratisation affects trade liberalisation by allowing the preferences of the owners of abundant factors to be represented in the decision/policy-making process. In other words, electoral democratic institutions mediate the representation of preferences. This argument is tested in two ways. First, by relying on a new dataset from the Varieties of Democracy project for the period 1974 to 2014 and using country-level panel data regression, preliminary analysis shows that electoral democracy matters most for trade liberalisation. Next, a Difference-in-Difference analysis finds that the extension of suffrage lowers tariffs and results in a more open trade policy for developing countries. These findings provide fresh support for the application of the Median Voter Theorem to the link between democratisation and trade liberalisation.

# 1. Introduction

From the end of the Second World War in 1945 to the collapse of the Soviet Union in the late 1980s, many new democracies emerged (Klaas, 2016). The last of these ‘waves of democratisation’ occurred in the 1970s and 80s, where countries in Europe (e.g. Portugal) and Asia Pacific (e.g. Philippines, South Korea) pushed the number of democracies in the world to close to 100 from just 30 in 1975 (Diamond, 1996). Concurrently, global trade expanded with great pace, uplifting poor societies across the world. According to the International Monetary Fund (2011), by the 1970s, a few advanced economies dominated global trade, namely the United States, West Germany, Japan, and the United Kingdom. However, between the 1970s and the 1990s, developing countries share of global trade rose from a quarter to a third, with many of those countries developing strong manufacturing bases to boost exports (IMF, 2001). Thus, studies concerning democracy and trade liberalisation became a central topic in political economy as scholars started to study the link between these two phenomena.

The link between democracy and trade liberalisation can be understood comprehensively through the demand and supply-side theories of trade. Demand-side theories posit that trade policy is a function of preferences (through the Heckscher-Ohlin and Stolper-Samuelson models), whilst supply-side theories look at both domestic and international institutions that aggregate those preferences (Martin, 2015). Given democracy’s relative importance in influencing national policymaking, does any specific aspect of democracy play a crucial role in liberalising trade? What causal mechanism links the two together? This dissertation’s contribution is to conduct a preliminary analysis to determine which specific democratic aspect matters most for trade liberalisation, and then to study the causal mechanism at play.

A new measure of democracy, Varieties of Democracy (V-Dem), is relied on. V-Dem contains a comprehensive list of democratic indicators that are divided into five main measures - electoral democracy, liberal democracy, participative democracy, deliberative democracy, egalitarian democracy – with each indicator further divided into sub-components. By using country-level panel data regression to analyse this new dataset, this dissertation finds empirical support for previous studies (Dutt and Mitra (2002); Milner and Kubota (2005); O’Rourke and Taylor (2006); Milner and Mukherjee (2009a)) and shows that electoral democratic institutions matter most to trade liberalisation. So far, this unique dataset has not been used to study trade liberalisation.

Next, I provide a theoretical explanation for the finding above by relying on Mayer’s (1984) application of the Median Voter Theorem (MVT) to the Heckscher-Ohlin and Stolper-Samuelson

framework. This dissertation argues that democratisation affects trade liberalisation by allowing the preferences of the owners of abundant factors to be represented in the decision/policy-making process. I study the effects of the extension of suffrage on trade liberalisation in several developing countries worldwide in the period 1974 to 2014. By relying on a Difference-in-Difference (DiD) analysis, I find that the extension of suffrage leads to lower tariffs and a more open trade policy. To the best of knowledge, this work represents the first empirical study of the MVT applied to the link between democracy and trade liberalisation using a DiD.

The next section is a literature review of various studies related to the topic of democracy and trade liberalisation. The third section bridges the gap between the demand and supply side literature using the MVT as a theoretical framework and states the hypotheses to be tested. The fourth section discusses the research methodology of this dissertation. The fifth section presents the results and discussion of the preliminary analysis on democratic indicators from the V-Dem dataset. The sixth section presents the results of DiD analysis, the main contribution of this paper. The seventh section discusses limitations and areas for future research. The conclusion summarises the dissertation in the eighth and final section.

## **2. Literature Review**

In understanding the link between democracy and trade liberalisation, it is imperative to understand the determinants of trade policy. Broadly, studies surrounding this topic can be divided into two categories – demand-side theories and supply-side theories (Martin, 2015). Each of the demand and supply side theories explain views related to trade policy that are driven by economic self-interests and domestic/international institutions, respectively.

The first section below discusses demand-side theories. The second section looks at supply-side theories, particularly on democracy and trade liberalisation.

### **2.1 Demand-side theories**

Demand-side theory is an actor-based approach focusing on societal players such as individuals and special interest groups (Martin, 2015). According to Schonhardt-Bailey (2006, p. 31), in demand-side theories ‘...political representatives translate into policy the new set of preferences that arise from exogenous changes in the interests, partisanship, or ideas of their constituents’. Fearing being voted out during an election, elected officials respond to these demands (Mansfield and Busch, no date). Formal theory surrounding the demand aspect of trade is based on Ricardo’s

law of comparative advantage, which argues that countries should specialize in the production of goods based on the factors of production bestowed with as they are able to produce more of it, relative to goods on which they do not have a comparative advantage (Maneschi, 1998).

Heckscher and Ohlin (HO) build on the law of comparative advantage by focusing on a country's factor endowments. According to their theory, productive factors – land, labour, capital – determine a country's comparative advantage in producing certain types of goods (Baldwin, 1989). For example, rich countries are usually well endowed with capital and therefore produce most efficiently goods that are capital-intensive such as high-technology machinery. On the other hand, less-developed countries tend to be land rich or rich in labour, which allows for the flourishing of an agricultural or manufacturing sector, respectively (Baldwin, 1989).

The HO model relies on three main assumptions. First, it assumes that factors of production are perfectly mobile in a country (Rogowski, 1989). This assumption means that factors are not tied to any specific industry. If a sector (e.g. aerospace) is no longer competitive due to stiff international competition, the factor in question (e.g. capital) can be relocated to another sector (e.g. auto-manufacturing). Second, the HO model posits there are only two industries (export and import) and third, only two factors of production (labour and capital) (Rogowski, 1989).

Stolper and Samuelson (SS), drawing on the HO model, argue that free trade benefits the owners of the abundant factors of production while being to the detriment of the scarce factors (Rogowski, 1989). Owners of the abundant factors favour trade liberalisation, while owners of the scarce factors are pro-trade protectionism. Together, the HO-SS theorem predict that domestic political cleavages that are factor-based. If capital is abundant in an economy, capital owners will push for trade liberalisation and if they outnumber land or labour owners, under a democratic setting, free trade will prevail.

The Ricardo-Viner (RV) (i.e. the specific-factors model) model relaxes the assumption of the HO-SS theorem of perfect factor mobility by assuming imperfect factor mobility (Mansfield and Busch, no date). In this setting, because factors cannot move to other domestic industries in the short term when it faces a threat, the owners of factors in export-competing industries are the winners of free trade and would therefore support trade liberalisation, while the losers of free trade in import-competing industries oppose it (Martin, 2015).

Empirically, Hiscox (2002) conducts a cross-national analysis on 30 major pieces of US legislation between 1824 and 1924. He assumes that there are adjustment costs pertaining to factor

mobility, and finds that class-based differences in trade policy occur when inter-industry factor mobility is high, while sector-based conflict arises where factor mobility is low – a finding that does not fully support the HO-SS theorem. In another empirical study, Alt et. al. (1999) provide evidence that firms that possess specific (i.e. less-mobile) assets are more likely to lobby for subsidies. This study, which focuses on Norwegian firms in the 1980's, finds support for the RV model in that political cleavages exist along industry lines. However, Mayda and Rodrik (2005) find empirical support for the HO-SS theorem. Using data from the International Social Survey Programme and the World Values Survey, they find that pro-trade liberalisation preferences are associated with an individual's human capital level that is consistent with the HO-SS theorem. Thus, overall, it seems that empirical evidence is mixed.

Several other studies examine group-based (e.g. labour unions) influences over trade policy. Ahlquist, Clayton and Levi (2014, p. 1) argue that 'political support for trade depends not just on voter's structural positions in the economy but also on the organisation and networks in which they are embedded'. Their study, which uses an original survey from members of the International Longshore and Warehouse Union (ILWU) between 2006 and 2011, finds no support for either the HO-SS or RV models. Instead, the study shows that workers who belonged to ILWU had stronger anti-trade sentiments than workers in the same industry that did not belong to any trade unions. This finding suggests that the ILWU affected its members' sentiments on trade, lending credence to the notion that there are also socio-economic factors that may affect trade policy than owning a factor or working in a specific industry as suggested by the HO-SS and RV theorems.

Unions may also affect trade policy through political lobbying. Steagall and Jennings (1996) conduct a study on the level of support of House representatives towards the North American Free Trade Agreement (NAFTA) and finds that representatives who received contributions from labour unions tended to oppose NAFTA, while those receiving funds from businesses tended to support the agreement.

However, demand-side theories alone may not be able to fully explain variations that are observed in trade policy. As discussed above, interests can be diffused and varied across individuals and social organisations. What or who decides relative importance to each? There should be a mechanism to aggregate these preferences in determining the outcome. Supply-side theories play this role. This strand of theory focuses on institutional-based arguments in trade policy.



## 2.2 Supply-side theories

The focus on domestic supply-side theories concern incentives stemming from democratic institutions. McGillivray (2004, p. 1) argues that ‘...who the winners and losers are is shaped by domestic political institutions’. These institutions incentivise and constrain preferences differently, which influences the course of action of those individuals. Since the gains from trade policy can be highly redistributive, winners and losers of trade can either be shielded from the rigour of international competition or take advantage of liberalising policies (McGillivray, 2004). In this regard, democracy plays an important role in incentivising elected representatives towards being responsive to the needs of their constituents in demanding for free trade or trade protectionism. Several large-N studies find that democracies are more likely to undertake trade liberalisation (Dutt and Mitra 2002; Milner and Kubota 2005; O’Rourke and Taylor 2006; Milner and Mukherjee 2009a).

Dutt and Mitra (2002) study the link between inequality and trade barriers, in both capital abundant and scarce countries. Using data from the 20<sup>th</sup> century, they find that free trade prevails in countries where labour is the abundant factor and protectionist measures are prevalent in countries that are labour-scarce. Milner and Kubota (2005) find that democratisation promotes trade liberalisation amongst 179 developing countries between 1970 and 1999. Since democracy empowers sections of societies that were previously disenfranchised, these societies will vote to liberalise trade since they stand to benefit from it. In another study, O’Rourke and Taylor (2006) find that democratisation provides a more significant effect on reducing tariffs in capital-abundant countries compared to capital-poor countries. Their study, based on data between 1870 and 1914, tests for an interaction variable between variables on institutions and land-labour ratios (in comparison, Dutt and Mitra (2002) tested capital-labour ratios). Milner and Mukherjee (2009a), on a study of 130 developing countries, also finds that democracy fosters higher levels of trade liberalisation (measured through trade openness) and also capital account openness.

In another study that supports the role of factor endowments, Oehl (2012) studies non-democracies (monarchies and electoral regimes) to determine the cause of trade liberalisation in these countries given the lack of democracy. The author finds that factor endowments still matter – trade volumes in electoral regimes are positively associated with factor endowments whilst no such effects were found for absolute monarchies.

However, a closer look at the studies above may suggest that any link between democracy and trade liberalisation may have been generalised. Three questions are asked - firstly, does trade

liberalisation benefit everyone equally? Secondly, does democracy always result in free trade? Thirdly, are there any other specific aspects of democracy that matter?

In addressing the first question, Milner and Mukherjee (2009b) argue that Milner and Kubota (2005) make a naïve assumption in that all workers/voters benefit equally from trade liberalisation. They argue that just because voters believe that they may benefit from trade liberalisation, it does not mean that they will vote for such measures. Milner and Mukherjee (2009b) include special interest politics into the HO-SS model and argue that elected representatives have incentives to implement high tariffs for high-skilled goods and simultaneously reduce tariffs on low skilled goods. The authors conduct an empirical study by studying the ratio of skilled workers and tested it on industry-level dataset. They find that democratisation engenders a 'skill-biased' trade reform.

In addressing the second question, Boudreaux (2015) studies the impact of democracy on trade, both in the short and long run. The author finds that democracy has a bigger impact on trade output over time while in the short term, democracy only affects trade policy. In another study, Giavazzi and Tabellini (2005) study the sequence of economic and political reforms to test which countries perform better in terms of governance and the economy. Their results indicate that countries which liberalise their economies before democratising perform better in performance than countries which follow the opposite way. In other words, autocratic countries are more likely to be successful in liberalising trade.

In answering the third question, several studies (Rogowski 1987; Grossman and Helpman 2005; Evans 2009; Rogowski and Kayser 2002; Kono 2009) focus on the role of the electoral rule and presidential/parliamentary systems, some of which are not likely to result in trade liberalisation. Other studies also examine the dynamics of political ideology (Dutt and Mitra 2005; Milner and Judkins 2004) in the setting of trade policy.

Rogowski (1987) argues that Proportional Representation (PR) provides elected representatives with greater insulation from public pressure, therefore allowing them to pursue trade liberalisation policies without fearing being voted out. Representatives elected from smaller districts are more likely to be protectionist than their counterparts elected from larger districts because of the insulation factor – larger districts tend to make elected representatives feel more 'distant' to the needs of their constituents, thereby insulating any trade protectionist sentiments.

Grossman and Helpman (2005) provide theoretical support for Rogowski's (1987) findings with a model in which there is an industry located in each of three districts in a majoritarian system.

If a political party controls all three districts, the party is secure enough to pursue free trade policies. However, if a party only controls two out of the three districts, a trade protectionist policy will be pursued instead as party legislators want to avoid losing their seats. In terms of empirical findings, results are mixed. Rogowski (1987) tests the link between district size and trade liberalisation and find that larger districts (which are more common in PR systems) are associated with lower trade barriers. Consistent with his findings, Evans (2009) also finds that PR systems, relative to majoritarian systems, have lower trade tariffs.

However, there are also studies showing that majoritarian systems tend to be more liberal in terms of trade policies relative to PR systems. Rogowski and Kayser (2002) use a concept known as 'seat-vote elasticity', which measures relative changes in terms of seats won/lost relative to changes in the number of votes gained/lost. Using this measure, they find that representatives in majoritarian systems tended to be more pro-consumer while PR representatives are more pro-producer, owing to greater seat-vote elasticity in the former. In adding more nuance into the wide/narrow benefit debate, Kono (2009) introduces the role of intra-industry trade in influencing trade policies. Specifically, when a country's democratic institutions reward narrow interests, lobbying for trade protectionism/free trade will rise and the opposite will occur if wider benefits are catered to.

Dutt and Mitra (2005) examine the dynamics of left-right wing ideology in the formulation of trade policy. The authors find evidence that left-wing governments would naturally pursue more protectionist policies than right-wing governments in countries that are capital-abundant, and the opposite case in labour-abundant countries. In contrast, Milner and Judkins (2004) argue that, when analysing developed countries in the years after the Second World War, left-wing governments in capital rich countries tend to support trade protectionist policies.

However, all the studies discussed above study tariffs as the main source of trade barriers. In another group of studies, the use of Non-Tariff Barriers (NTB) are scrutinised. Import/export quotas and production subsidies are some examples of NTBs (Jehle (2013), in Lukaukas et. al. 2013). Kono (2006), based on a study covering 75 countries in the 1990s, finds evidence that democracies tend to have lower tariff rates than non-democracies, but use more NTBs to protect their domestic economy. Mansfield and Busch (1995, in Frieden and Lake, 1999) find that NTBs are prevalently used in countries with PR systems while Rickard (2012) finds that spending on industrial subsidies are higher in countries with majoritarian systems than PR ones. Could trade liberalisation and democracy also be represented differently?

Chen and Li (2017) argue that previous studies tend to group trade policy as a whole and not disaggregate it further. They argue that democracy has different effects on different measures of trade policy – which they mention is made up of trade barriers, ease of trade and trade dependency. Democracy lowers trade barriers, increases the ease of doing trade, but does not increase trade dependency. With regards to democracy, several studies (de Mesquita and Smith 2003; Frye and Mansfield 2003) represent it besides the usual regime type (i.e. democracy or autocracy). de Mesquita and Smith (2003) represent regime type based on the size of the winning coalition, where they find an association between it and trade policy openness. Frye and Mansfield (2003) interact regime type and political fragmentation to find that the degree of fragmentation matters when it comes to liberalising trade.

According to Wruuck (2015), two criticisms can be made against studies that look at democracy as regime types. First, studies related to democracy and trade liberalisation largely use the Polity Index, which groups countries dichotomously into autocracies and democracies. Similarly, the same critique can be extended for measures of democracy relying on the Freedom House Index, which groups countries into free, partially free, and unfree categories (Freedom in the World, 2017). This method does not provide a measure of democracy per se, but only *how* democratic a country is. Second, although these indices are made up of sub-components, testing it in its composite form poses a problem as it is unclear on what specifically drives trade liberalisation. Therefore, it could be possible that the variation in the results discussed above may simply reflect the different variables used in measuring democracy or trade. A summary of these measures is in **Appendix 1**.

In representing democracy as a variable, more detailed measures of it are required, beyond traditional variables that have been used in extant studies (Dutt and Mitra 2002; Milner and Kubota 2005; O'Rourke and Taylor 2006; Milner and Mukherjee 2009a). In testing disaggregated measures of democracy, Berden, Bergstrand and van Etten (2014) study how different elements of governance, as measured by the World Bank's World Governance Indicators (WGI), affect levels of trade. The authors test the six indicators in the WGI against bilateral trade and investment. They find that a specific indicator, Voice and Accountability, is negatively associated with trade levels, probably through increasing the voice of the losers of trade. In another study, Dean (2015) finds that the effect of democratisation on liberalising trade in developing countries is conditional on a country's level of labour rights. Labour rights allow workers to organise themselves collectively in influencing the government in matters pertaining to trade policy. The authors interact the polity index score with labour rights level, and finds the interaction term to be positive. However,

governance is different from democracy and the rationale behind the use of labour rights does not seem well-defined.

### **2.3 Way forward**

Overall, differences in results above show a complex and nuanced debate surrounding the literature on democracy and trade liberalisation. According to demand-side theories, preferences drive trade policy outcomes. In contrast, supply-side arguments focus on the role of democratic institutions in influencing trade policy outcomes. While the studies cited above seek to investigate the effects of democratic institutions in detail, existing studies have not done enough to study specific aspects of democracy. Given this criticism, two questions arise. First, which specific democratic institution promotes trade liberalisation? Second, what is the causal mechanism behind that specific institution and trade liberalisation? These two questions are discussed in the next section, where an attempt to reconcile the literature is made by relying on the MVT.

## **3. Bridging Demand and Supply-side through the Median Voter Theorem**

This section bridges the demand and supply-side arguments to better understand the specific aspects of democracy that influence trade liberalisation and its causal mechanism.

### **3.1 Theoretical motivation: The Median Voter Theorem (MVT)**

Isolated studies of either demand or supply-side theories prevent a comprehensive view of how trade policy outcomes occur. Mayer (1984) attempts to bridge the gap between the two theories. In a theoretical paper, he combines the median voter logic and the HO-SS theorem and argues that democratisation empowers the median voter, and since developing countries are more labour-oriented, free trade will be to their benefit and hence, trade liberalisation will prevail. The MVT can explain why in some cases, minority industries are able to attain trade protectionism against majority preference (Mayer, 1984). Therefore, the MVT and HO-SS framework suggest that, in countries where labour is the abundant factor, the owners of that factor become the median voter and will prefer trade liberalisation since it is beneficial to them. Political parties competing in an election tend to pander to the preferences of the median voter to win. As **Figure 1** depicts on the next page, both demand and supply side theories are connected – the right-hand side of the diagram show how preferences become policy through institutions. The left-hand side of the diagram depict the economic outcomes of free trade (Persson and Tabellini, 2000). This figure

shows, despite any preferences stemming from individuals, political institutions play a crucial role in aggregating these preferences into policies. In turn, these policies then influence individuals and their preferences that feed back into the policy-making process (Persson and Tabellini, 2000). By building on Mayer (1984), I argue that electoral democratic institutions play a crucial role in mediating preferences, and that the preference of the median voter is paramount in determining trade policy outcome.

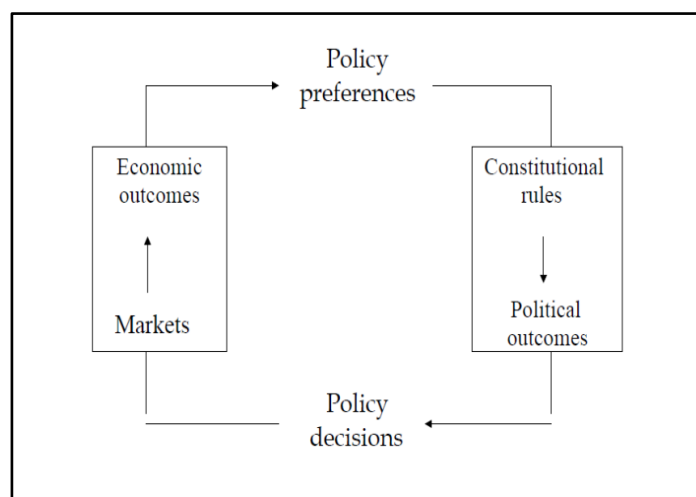


Figure 1: Model of Policy Making, Persson and Tabellini (2000)

Electoral democracy is an important aspect of democracy as democracy is, according to Dahl (1989), best achieved in a setting that is competitive, highly procedural, and through periodic elections, which result in elected representatives becoming sensitive to the needs of an electorate. This definition of democracy does not only consider election outcomes, but also the extent to which the political environment facilitates healthy, fair competition (Dahl, 1989).

Therefore, using the MVT as the theoretical foundation of this dissertation, two contributions are made. First, proving that electoral democracy and its sub-indicator, the polyarchy index, (both from the V-Dem dataset that provides well-defined notions of democracy) is an important aspect of democracy in liberalising trade. Second, which is the main contribution of this dissertation, a study is done on the extension of suffrage in developing countries around the world in the period 1974 to 2014. This will be undertaken through a DiD analysis.

### 3.2 Hypotheses for preliminary analysis

Based on the theory and existing literature, each democracy indicator should be negatively associated with tariff rates, and positively associated with both trade-to-GDP ratio and trade policy openness.

- Hypothesis 1(a): Electoral democracy is negatively associated with simple average tariff rate, *ceteris paribus*,
- Hypothesis 1(b): Participatory democracy is negatively associated with simple average tariff rate, *ceteris paribus*,
- Hypothesis 1(c): Liberal democracy is negatively associated with simple average tariff rate, *ceteris paribus*,
- Hypothesis 1(d): Egalitarian democracy is negatively associated with simple average tariff rate, *ceteris paribus*, and
- Hypothesis 1(e): Deliberative democracy is negatively associated with simple average tariff rate, *ceteris paribus*.

Against trade policy openness:

- Hypothesis 2(a): Electoral democracy is positively associated with trade policy openness, *ceteris paribus*,
- Hypothesis 2(b): Participatory democracy is positively associated with trade policy openness, *ceteris paribus*,
- Hypothesis 2(c): Liberal democracy is positively associated with trade policy openness, *ceteris paribus*,
- Hypothesis 2(d): Egalitarian democracy is positively associated with trade policy openness, *ceteris paribus*, and
- Hypothesis 2(e): Deliberative democracy is positively associated with trade policy openness, *ceteris paribus*.

Next, this dissertation tests the following hypothesis to determine if the main sub-indicator for the electoral democracy index – the polyarchy index – is the most significant indicator that explains trade liberalisation against the other sub-indicators.

Hypothesis 3: The sub-indicator for electoral democracy, the polyarchy index, is a better measure of democracy against average tariff rate and trade policy openness relative to other sub-indicators, *ceteris paribus*.

### **3.3 Hypotheses for main analysis**

Hypothesis 4: The extension of suffrage reduced tariff rates and resulted in a more open trade policy in the years after the introduction of it.

## 4. Research Methodology

This section outlines the research design for both the preliminary analysis on democracy and the main analysis on the extension of suffrage on trade liberalisation.

### 4.1 Data

The dataset consists of annual observations from developed and developing countries during the period 1974-2014.

#### 4.1.1 *Democracy variables for preliminary analysis*

The V-Dem dataset, unlike other political indicators such as the Polity Index, does not group a country into democracies and non-democracies. Rather, it focuses on providing a continuous index for a wide range of democratic attributes. The dataset contains some 350 indicators that allows for more nuanced, well-defined, and broader insights into democracy (V-Dem Institute, 2017). These indicators are constructed based on the views of multiple researchers and contain multiple indices of measurement and a transparent aggregation procedure (Coppedge et. al., 2017a). This continuous measure is better than dichotomous measures of democracy as the former allows more variation to be captured in measurement. It also goes beyond traditional measures of democracy that measure regime type.

The V-Dem dataset includes five carefully constructed macro indicators - electoral democracy, liberal democracy, participative democracy, deliberative democracy, egalitarian democracy – with each indicator further sub-divided into sub-components<sup>2</sup>. These macro-indicators are listed on the next page.

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<sup>2</sup>Each macro-indicator is made up of several sub-indicators but only the main sub-indicators are tested in this dissertation.



- Electoral democracy: measures the responsiveness of elected representatives/executive to the electorate via regular elections. The main sub-indicator is the Polyarchy Index<sup>3</sup>,
- Liberal democracy: measures the protection citizens have against government repression. The main sub-indicator is the Liberal Component Index,
- Deliberative democracy: measures the degree of consensus that a country practises in respect to rule-making with its citizens. The main sub-indicator is the Deliberative Component Index,
- Egalitarian democracy: measures the degree of inequality in political rights. The main sub-indicator is the Egalitarian Component Index,
- Participative democracy: measures the degree of direct democracy and participation by citizens in a country's democratic process. The main sub-indicator is the Participatory Component Index.

(Source: Coppedge et. al., 2017a).

**Appendix 2** shows the Pearson correlation coefficient for these five indicators. These indicators provide different views of democracy and as such, should not be aggregated together. Based on the results, the high correlation coefficients of these indicators suggest each be regressed individually than in an aggregate manner to avoid multicollinearity problems. Thus, a stepwise regression is done where, firstly, all five macro indicators are individually regressed against measures of trade liberalisation. Secondly, only the sub-indicators belonging to the most statistically significant macro indicators are regressed.

#### *4.1.2 Democracy variable for main analysis*

In the main analysis, the democracy variable that will be tested is a suffrage index provided in the V-Dem dataset. This index measures the share of population with suffrage, defined as the share of adult citizens (defined by laws in each country) that has the legal right to vote (Coppedge et. al., 2017b). This index is a sub-component of electoral democracy.

#### *4.1.3 Trade Liberalisation variables*

Most studies fail to distinguish between using trade policy indicators showing outcome openness and policy openness (McCulloch, Winters and Cirera 2001). The first measure is outcome oriented such as volume of trade, which could be driven by country size, population size and technological level. The second group of indicators are related to trade policy, which can be the result of

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<sup>3</sup>There are two sub-indicators – additive and multiplicative. For consistency, only the additive version is considered as the sub-indicators belonging to the other main indicators are additive indices too.

deliberate actions that make a country more open to trade. The difference between the two types is that, even if a country does not have an open trade policy, it may still be a large trading nation due to its natural advantages (McCulloch, Winters and Cirera 2001).

Considering this, the main trade indicators that will be used for this dissertation is simple average tariff rate (outcome openness) and trade policy openness index (policy openness). Weighted average tariff rate and trade-to-GDP ratio (both are measures of outcome openness) will serve as robustness checks. Trade policy openness index is attained from the Fraser Institute, while the rest are taken from the dataset by Chen and Li (2017):

- Simple average tariff rate: straightforward measure of a country's tariff rates,
- Weighted average tariff rate: average tariff rate weighted by rate of protectionism by sector,
- Trade-to-GDP ratio: ratio of total merchandise trade to a country's GDP,
- Trade policy openness: taken from the 'freedom to trade internationally' component of the Economic Freedom Index, published by the Fraser Institute. Among others, this indicator measures trade barriers resulting from regulation and controls on the movement of people and capital.

The 'Freedom to Trade Internationally' measure of the Economic Freedom Index published by the Fraser Institute is a measure made up of four components – tariffs, regulatory trade barriers, black market exchange rates, controls of the movement of capital and people (Economic Freedom Index, Fraser Institute, 2017).

The correlation scores among all four trade indicators show that simple and weighted average tariff rates are strongly correlated to each other, and that both these indicators are negatively correlated to trade-to-GDP ratio and trade policy openness, showing that both variables alone cannot accurately represent trade policy. Trade-to-GDP ratio and trade policy openness are positively correlated with each other, albeit weakly. The results are shown in **Appendix 3**.

#### *4.1.3 Control variables*

Both the preliminary and main analysis rely on the same set of control variables as trade liberalisation may also be the result of other economic factors.

Several variables are controlled for due to their influence on trade, as concurred by Milner and Kubota (2005), Eichengreen and Leblang (2008) and Chen and Li (2017) - Gross Domestic Product (GDP) per capita (adjusted for purchasing power parity), capital account openness and Foreign Direct Investment (FDI) level (as a % of GDP) is controlled for as more developed

countries tend to have lower trade barriers; General Agreement on Trade and Tariff (GATT)\World Trade Organisation (WTO) membership is controlled for as members may trade more with each other relative to non-members; population size and land area are controlled for as smaller countries trade more.

GDP per capita is measured in terms of its natural log in US Dollars (USD). Countries that were/are members of the GATT/WTO take on a dummy value of 1 and 0 otherwise (by year). Capital account openness is measured through the Chinn-Ito index (commonly known as 'KAOPEN') of financial openness (2006), available in the dataset by Chen and Li (2017). This index is a range of value between 0 and 1, with higher values indicating greater financial openness. FDI levels are measured as a percentage of GDP. Lastly, the natural logs of population and land area are used. The use of natural logs is to smooth out any positive or negative skew in the data distribution to improve the fit of the variables (Benoit, 2011).

In addressing potential multicollinearity in the control variables, a Variance Inflation Factor (VIF) test is run. Multicollinearity poses a problem to regression analysis as it can yield variables that are not statistically significant (O'Brien, 2007). The VIF estimates the severity of multicollinearity that is present in a regression model. Following the 'rule of thumb of 10' (O'Brien, 2007), the VIF test results on the control variables finds that any chance of multicollinearity is low. **Appendix 4** shows the scores.

## 4.2 Research Design

### 4.2.1 Preliminary analysis

For the preliminary analysis, a panel-data regression is used to estimate the effect of democracy on trade liberalisation. The first step is deciding whether to run a Fixed-Effects (FE) or a Random-Effects (RE) regression. A Hausman Test leads to the conclusion that a FE regression is to be used since the null hypothesis that the unique errors are uncorrelated with the independent variables is rejected. Three equations (country FE, country and year FE, and country FE and year FE with country-time trends) are used to estimate the effects on each of the democratic indicators of V-Dem against trade liberalisation measures. The first, with country FE, accounts for unobservable country-related factors which could correlate with the main explanatory variable, resulting in bias estimations (Woolridge, 2012). The second equation with both country and year FE accounts for unobservable country-related factors and heterogeneity that occurs over time, equally for each country, which is not related to the explanatory variables (Woolridge, 2012). The

third equation, country time trends are added to country and year FE to control for any exogenous increase in the dependent variable in each country, that is not explained by the other variables (Woolridge, 2012).

#### 4.2.2 *Main analysis*

Studies on democracy and trade liberalisation are susceptible to reverse causality. In a study by Rudra (2005), it is suggested that increasing international exposure in global trade and finance improves the state of democracy in a country. For instance, globalisation could increase social safety nets, which could then be used to provide some form of welfare protection against groups that would lose out from free trade. In another study by Eichengreen and Leblang (2008), the authors find evidence that globalisation induces democracy and vice versa.

Giavazzi and Tabellini (2005) indicate that causality more likely runs from political reforms to economic performance, and nations that liberalise their economies before becoming democracies do better than countries in the opposite sequence. This would suggest that more autocratic countries are in a better position to liberalise trade. Milner and Kubota (2005) also tested for potential reverse causality by employing the use of instrumental variables alongside fixed effects regression that control for country fixed effects to conclude that causality runs democratisation to trade liberalisation. Milner and Mukherjee (2009a) also find that evidence of reverse causality, is at best, weak. Therefore, several studies point to causality running from democracy to trade liberalisation.

In this dissertation, a DiD analysis is used to test the effects of the extension of suffrage on trade liberalisation, where the extension of suffrage is the treatment. The use of suffrage extension presents a natural experiment to determine if trade liberalisation followed, which will allow a causal estimation to be made. Given this, the treatment ('extension of suffrage') is defined as the following:

- I. in the year before universal suffrage is introduced, at least 20% of the citizens in a country that are eligible to vote are not given the right to do so, AND
- II. the introduction of universal suffrage is permanent until the final year in the dataset (i.e. 2014).

The threshold of 20%<sup>4</sup> acts as a 'shock' to the political environment, in the hopes of changing the identity of the median voter. Subsequently, I create a new dummy variable ('suffrage\_dummy9') that is based on the suffrage index in the V-Dem dataset to capture the

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<sup>4</sup>This threshold is chosen as it allows a sufficient number of countries to be included in the sample; higher thresholds provided fewer and fewer number of countries.

treatment effect. This ‘date-based’ openness indicator is consistent with the estimation strategy with that of Wacziarg and Welch (2003) in that, given criteria I and II above are met, a dummy of 1 is given and 0 otherwise. This allows only within-country (i.e. before and after for the treated units, since, for the control units, data for the ‘after’ is not available) comparisons are made given that the treatment (i.e. extension of suffrage) does not happen in the same year for all the countries (Giavazzi and Tabellini, 2005). Notwithstanding this, the DiD method can still be used to estimate the causal effect of the treatment as, at any time  $t$ , countries that introduced universal suffrage can be compared against countries that did not. Thus, the DiD specification is based on the following set-up,

$$y_{it} = a_i + \delta \text{suffrage}_{it} + e_{it}$$

where  $y_{it}$  denotes trade liberalisation,  $a$  is country fixed effect,  $\text{suffrage}_{it}$  is a dummy variable taking on the value of 1 (by country-year, 0 otherwise) based on conditions I and II in the previous page.  $\delta$  is the coefficient of interest measuring the effect of the universal suffrage extension on trade liberalisation.  $e$  is the unobserved error term.

According to Angrist and Pischke (2009), the identification assumption required for a DiD to be undertaken is parallel trends. This means that there is no unobserved variable that affects the performance in both the treatment and control groups over the period of the study besides the extension of universal suffrage. Therefore, to minimise the risk of violating the parallel trends assumption, country fixed effects are included to reduce the risk of potential confounders that could affect the treatment with other unobserved variables (Giavazzi and Tabellini, 2005). Given that the period of this study takes place from 1974 to 2014, only developing countries<sup>5</sup> form the sample of study.

**Appendix 5** summarises the operationalisation of all the variables involved in the dissertation, in both the preliminary and main analysis.

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<sup>5</sup>Angola, Brazil, Cape Verde, Ecuador, Eq. Guinea, Iraq, Jordan, Kuwait, Mozambique, Namibia, Nigeria, Oman, Palestine (West Bank), Peru, Philippines, Portugal, Qatar, Sao Tome & Principe, Somaliland, South Africa, Timor Leste, Vanuatu, Zanzibar, Zimbabwe.

## 5. Preliminary Results and Discussion

### 5.1 Descriptive statistics

**Appendix 6** shows the descriptive statistics of the variables used in this dissertation. The measures for trade liberalisation cover observations from 1974 to 2014, except for the trade policy openness index, which is taken from the Fraser Institute Economic Freedom database and only covers observations made every five years from 1975 to 2000, and every year from 2001 onwards. The democratic indicators are taken from the V-Dem dataset.

Since not all observations are available for each unit country-year, the dataset is unbalanced, but this would not pose a problem since the missing data is randomly distributed (Fitzgerald, Gottschalk and Moffitt, 1998).

### 5.2 Results for preliminary analysis

**Table 1** presents the regression results for simple tariff rates and **Table 2** presents the same analysis for trade policy openness, as regressed against each of the five main V-Dem democratic indicators.

Table 1: Regression results of democratic indicators against simple average tariff rate (1) (a)

VARIABLES	(1) Tariff rate applied simple mean all products	(2) Tariff rate applied simple mean all products	(3) Tariff rate applied simple mean all products
Electoral democracy index	-6.007*** (1.838)	-4.039** (1.813)	-4.760** (1.870)
Natural log of gdpcc	-2.054*** (0.321)	-0.820 (0.520)	0.386 (0.546)
WTO/GATT membership	-1.629** (0.722)	-1.015 (0.710)	0.330 (0.679)
Chinn-Ito index, normalized	-0.284 (0.669)	1.730** (0.692)	0.151 (0.710)
Net FDI inflow (% of GDP)	-0.00798 (0.0228)	0.0253 (0.0230)	0.00961 (0.0184)
Natural log of pop	-15.29*** (1.446)	-9.573*** (1.642)	-16.95** (7.126)
Natural log of land	-15.87 (19.85)	-23.56 (19.45)	-45.70** (21.83)
Constant	474.9* (244.6)	463.0* (239.9)	-1,965*** (692.6)
Observations	1,980	1,980	1,980
R-squared	0.702	0.722	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 1: Regression results of democratic indicators against simple average tariff rate (1) (b)

VARIABLES	(1) Tariff rate applied simple mean all products	(2) Tariff rate applied simple mean all products	(3) Tariff rate applied simple mean all products
Participatory democracy index	-9.691*** (2.623)	-5.717** (2.620)	-6.919** (2.816)
Natural log of gdppc	-2.009*** (0.322)	-0.800 (0.520)	0.424 (0.546)
WTO/GATT membership	-1.641** (0.722)	-1.029 (0.710)	0.335 (0.679)
Chinn-Ito index, normalized	-0.214 (0.669)	1.742** (0.692)	0.152 (0.710)
Net FDI inflow (% of GDP)	-0.00956 (0.0228)	0.0239 (0.0230)	0.00854 (0.0184)
Natural log of pop	-15.24*** (1.443)	-9.646*** (1.639)	-16.43** (7.143)
Natural log of land	-15.62 (19.84)	-23.62 (19.45)	-45.67** (21.83)
Constant	470.7* (244.4)	464.4* (239.9)	-1,959*** (692.6)
Observations	1,980	1,980	1,980
R-squared	0.702	0.722	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



**Table 1: Regression results of democratic indicators against simple average tariff rate (1) (c)**

<b>VARIABLES</b>	<b>(1) Tariff rate applied simple mean all products</b>	<b>(2) Tariff rate applied simple mean all products</b>	<b>(3) Tariff rate applied simple mean all products</b>
Liberal democracy index	-7.050*** (1.942)	-4.361** (1.926)	-3.841* (2.177)
Natural log of gdppc	-2.021*** (0.322)	-0.829 (0.520)	0.398 (0.547)
WTO/GATT membership	-1.609** (0.722)	-1.007 (0.709)	0.343 (0.679)
Chinn-Ito index, normalized	-0.193 (0.669)	1.767** (0.692)	0.132 (0.711)
Net FDI inflow (% of GDP)	-0.00757 (0.0228)	0.0253 (0.0230)	0.00953 (0.0184)
Natural log of pop	-15.39*** (1.438)	-9.751*** (1.635)	-17.26** (7.133)
Natural log of land	-13.84 (19.87)	-22.41 (19.48)	-46.34** (21.88)
Constant	451.3* (244.8)	451.6* (240.2)	-1,962*** (694.2)
Observations	1,980	1,980	1,980
R-squared	0.702	0.722	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 1: Regression results of democratic indicators against simple average tariff rate (1) (d)**

<b>VARIABLES</b>	<b>(1) Tariff rate applied simple mean all products</b>	<b>(2) Tariff rate applied simple mean all products</b>	<b>(3) Tariff rate applied simple mean all products</b>
Egalitarian democracy index	-7.601*** (2.602)	-3.163 (2.599)	-5.123* (2.775)
Natural log of gdppc	-2.035*** (0.322)	-0.850 (0.520)	0.408 (0.546)
WTO/GATT membership	-1.672** (0.723)	-1.032 (0.710)	0.314 (0.680)
Chinn-Ito index, normalized	-0.204 (0.670)	1.770** (0.693)	0.133 (0.711)
Net FDI inflow (% of GDP)	-0.00716 (0.0228)	0.0253 (0.0230)	0.00975 (0.0184)
Natural log of pop	-15.25*** (1.454)	-9.763*** (1.643)	-16.96** (7.142)
Natural log of land	-18.17 (19.85)	-25.23 (19.45)	-44.79** (21.85)
Constant	502.2** (244.5)	485.8** (239.9)	-1,976*** (694.6)
Observations	1,980	1,980	1,980
R-squared	0.701	0.721	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 1: Regression results of democratic indicators against simple average tariff rate (1) (e)**

<b>VARIABLES</b>	<b>(1) Tariff rate applied simple mean all products</b>	<b>(2) Tariff rate applied simple mean all products</b>	<b>(3) Tariff rate applied simple mean all products</b>
Deliberative democracy index	-6.517*** (1.577)	-4.585*** (1.562)	-4.773*** (1.607)
Natural log of gdppc	-2.029*** (0.321)	-0.807 (0.519)	0.370 (0.546)
WTO/GATT membership	-1.618** (0.721)	-1.009 (0.709)	0.299 (0.678)
Chinn-Ito index, normalized	-0.224 (0.668)	1.743** (0.691)	0.122 (0.709)
Net FDI inflow (% of GDP)	-0.00763 (0.0228)	0.0251 (0.0229)	0.00904 (0.0183)
Natural log of pop	-15.22*** (1.440)	-9.535*** (1.637)	-17.01** (7.117)
Natural log of land	-16.41 (19.81)	-23.77 (19.42)	-44.84** (21.81)
Constant	479.6** (244.0)	464.6* (239.5)	-2,023*** (693.0)
Observations	1,980	1,980	1,980
R-squared	0.703	0.722	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2: Regression results of democratic indicators against trade policy openness (1) (a)**

VARIABLES	(1) Freedom to trade internationally	(2) Freedom to trade internationally	(3) Freedom to trade internationally
Electoral democracy index	2.092*** (0.200)	1.634*** (0.200)	1.045*** (0.204)
Natural log of gdppc	-0.151*** (0.0435)	0.0603 (0.0724)	-0.0100 (0.0699)
WTO/GATT membership	-0.0184 (0.101)	-0.152 (0.0988)	0.205* (0.116)
Chinn-Ito index, normalized	2.114*** (0.0985)	1.766*** (0.101)	1.690*** (0.108)
Net FDI inflow (% of GDP)	0.00546 (0.00402)	0.00464 (0.00398)	0.00398 (0.00333)
Natural log of pop	2.724*** (0.141)	2.283*** (0.209)	-0.719 (0.605)
Natural log of land	-12.17*** (3.816)	-11.66*** (3.702)	3.466 (5.307)
Constant	110.3** (46.79)	110.1** (45.31)	-98.86 (75.93)
Observations	2,210	2,210	2,210
R-squared	0.771	0.787	0.892
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2: Regression results of democratic indicators against trade policy openness (1) (b)**

VARIABLES	(1) Freedom to trade internationally	(2) Freedom to trade internationally	(3) Freedom to trade internationally
Participatory democracy index	3.596*** (0.307)	2.820*** (0.311)	1.869*** (0.328)
Natural log of gdppc	-0.178*** (0.0433)	0.0435 (0.0722)	-0.0177 (0.0698)
WTO/GATT membership	-0.0172 (0.100)	-0.144 (0.0984)	0.213* (0.115)
Chinn-Ito index, normalized	2.078*** (0.0980)	1.761*** (0.101)	1.692*** (0.108)
Net FDI inflow (% of GDP)	0.00573 (0.00399)	0.00496 (0.00397)	0.00411 (0.00332)
Natural log of pop	2.697*** (0.139)	2.338*** (0.207)	-0.795 (0.605)
Natural log of land	-12.09*** (3.790)	-11.64*** (3.688)	3.698 (5.299)
Constant	109.8** (46.46)	109.1** (45.13)	-100.6 (75.79)
Observations	2,210	2,210	2,210
R-squared	0.773	0.788	0.892
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2: Regression results of democratic indicators against trade policy openness (1) (c)**

VARIABLES	(1) Freedom to trade internationally	(2) Freedom to trade internationally	(3) Freedom to trade internationally
Liberal democracy index	2.428*** (0.224)	1.893*** (0.225)	1.412*** (0.248)
Natural log of gdppc	-0.172*** (0.0435)	0.0441 (0.0724)	-0.00934 (0.0698)
WTO/GATT membership	-0.000656 (0.101)	-0.135 (0.0987)	0.212* (0.115)
Chinn-Ito index, normalized	2.074*** (0.0986)	1.741*** (0.101)	1.693*** (0.108)
Net FDI inflow (% of GDP)	0.00558 (0.00401)	0.00475 (0.00398)	0.00406 (0.00332)
Natural log of pop	2.835*** (0.136)	2.397*** (0.207)	-0.663 (0.603)
Natural log of land	-12.46*** (3.810)	-11.90*** (3.700)	4.253 (5.302)
Constant	112.3** (46.70)	111.4** (45.27)	-105.6 (75.78)
Observations	2,210	2,210	2,210
R-squared	0.771	0.787	0.892
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2: Regression results of democratic indicators against trade policy openness (1) (d)**

VARIABLES	(1) Freedom to trade internationally	(2) Freedom to trade internationally	(3) Freedom to trade internationally
Egalitarian democracy index	3.087*** (0.295)	2.306*** (0.300)	1.664*** (0.327)
Natural log of gdppc	-0.193*** (0.0438)	0.0362 (0.0727)	-0.0173 (0.0699)
WTO/GATT membership	0.0157 (0.101)	-0.120 (0.0990)	0.221* (0.116)
Chinn-Ito index, normalized	2.113*** (0.0985)	1.781*** (0.102)	1.702*** (0.108)
Net FDI inflow (% of GDP)	0.00511 (0.00402)	0.00449 (0.00399)	0.00390 (0.00333)
Natural log of pop	2.807*** (0.138)	2.424*** (0.207)	-0.671 (0.604)
Natural log of land	-10.79*** (3.811)	-10.63*** (3.705)	3.306 (5.308)
Constant	92.23** (46.70)	95.28** (45.32)	-87.06 (76.04)
Observations	2,210	2,210	2,210
R-squared	0.771	0.786	0.892
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 2: Regression results of democratic indicators against trade policy openness (1) (e)**

VARIABLES	(1) Freedom to trade internationally	(2) Freedom to trade internationally	(3) Freedom to trade internationally
Deliberative democracy index	2.084*** (0.188)	1.613*** (0.189)	0.958*** (0.196)
Natural log of gdppc	-0.163*** (0.0434)	0.0459 (0.0723)	-0.00881 (0.0699)
WTO/GATT membership	0.0161 (0.101)	-0.121 (0.0986)	0.215* (0.116)
Chinn-Ito index, normalized	2.095*** (0.0983)	1.763*** (0.101)	1.682*** (0.108)
Net FDI inflow (% of GDP)	0.00548 (0.00401)	0.00476 (0.00398)	0.00412 (0.00333)
Natural log of pop	2.731*** (0.139)	2.312*** (0.208)	-0.656 (0.605)
Natural log of land	-11.32*** (3.800)	-11.00*** (3.694)	3.302 (5.310)
Constant	100.1** (46.58)	101.8** (45.19)	-96.58 (75.99)
Observations	2,210	2,210	2,210
R-squared	0.772	0.788	0.892
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



For hypothesis 1, overall, the results (in **Table 1**) confirm across the three equations estimated that all five democratic indicators have negative coefficient values when regressed against simple average tariff rate, consistent with the results of extant empirical studies. The coefficients also suggest that electoral, participatory, and deliberative democracy are the strongest estimators, as the coefficients of these three measures of democracy are all statistically significant to at least the 5% level. All models also have a very high fit ( $R^2$  of  $>0.7$ ). Thus, it can be concluded that democracy is negatively associated with trade tariffs.

For hypothesis 2, overall, the results (in **Table 2**) confirm that all five measures of democracy are positively associated with trade policy openness as measured by the 'Freedom to Trade Internationally' index, across all three equations estimated. All coefficients are highly statistically significant to the 1% level. All models also have a very high fit ( $R^2$  of  $>0.7$ ). Thus, it can be concluded that democracy is positively associated with trade policy openness.

While both log GDP per capita and GATT/WTO membership are negatively associated with simple average tariff rates in the state FE and state-year FE equations, both are unexpectedly (i.e. positive coefficient) associated with tariff rates in the state-year FE with country time trends suggesting that GATT/WTO membership and higher levels of GDP per capita increase trade tariffs, which is not consistent with literature findings. As for the natural log of population and land size, all coefficients in all equations are negative, suggesting that bigger countries have lower tariffs, which goes against what Milner and Kubota (2005) suggest that small countries tend to be more open than big ones. Lastly, both the coefficients for the Chinn-Ito index and Net FDI inflow are negative in all equations with State FE and the coefficients are positive in the state-year FE with country time trends equation (which is not consistent with literature findings).

When regressed against trade policy openness, the signs for natural log GDP per capita and GATT/WTO membership are also mixed – natural log of GDP per capita is positive, negative, and positive respectively for the state FE, state-year FE, and state-year FE with country time trends equations respectively whilst GATT/WTO membership is negative, positive, negative respectively in all three equations when the electoral democracy index, participatory democracy index and liberal democracy index are the regressors. With regards to the natural log of population and land size, results are also mixed. The sign of the coefficient for the former is positive for the first two equations, and negative for the equation on state-year FE with country time trends; for the latter, it is the opposite. Lastly, for the Chinn-Ito index and Net FDI inflow, all coefficients are positive in all equations.

**Table 3** and **Table 4** below show the results of the regressions that test hypothesis 3. Owing to the results from **Table 1** and **Table 2** above that finds the democratic indicators for electoral, participatory, and deliberative democracy as the strongest in terms of statistical significance, the analysis for hypothesis 3 only tests the sub-indicators related to these three measures which is the polyarchy index, participatory component, and deliberative component index, respectively.

Table 3: Regression results of democratic indicators against simple average tariff rate (2) (a)

VARIABLES	(1) Tariff rate applied simple mean all products	(2) Tariff rate applied simple mean all products	(3) Tariff rate applied simple mean all products
Additive polyarchy index	-7.575*** (2.118)	-6.065*** (2.085)	-5.270** (2.086)
Natural log of gdp	-2.062*** (0.321)	-0.778 (0.520)	0.380 (0.546)
WTO/GATT membership	-1.631** (0.722)	-1.014 (0.709)	0.330 (0.679)
Chinn-Ito index, normalized	-0.343 (0.669)	1.685** (0.692)	0.177 (0.710)
Net FDI inflow (% of GDP)	-0.00822 (0.0228)	0.0253 (0.0229)	0.00987 (0.0184)
Natural log of pop	-15.06*** (1.453)	-9.217*** (1.651)	-17.31** (7.120)
Natural log of land	-16.63 (19.83)	-23.86 (19.42)	-44.64** (21.82)
Constant	482.6** (244.3)	462.8* (239.6)	-1,995*** (693.4)
Observations	1,980	1,980	1,980
R-squared	0.702	0.722	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3: Regression results of democratic indicators against simple average tariff rate (2) (b)**

<b>VARIABLES</b>	<b>(1) Tariff rate applied simple mean all products</b>	<b>(2) Tariff rate applied simple mean all products</b>	<b>(3) Tariff rate applied simple mean all products</b>
Participatory component index	-12.56*** (2.963)	-8.479*** (2.963)	-5.848* (3.092)
Natural log of gdppc	-2.047*** (0.321)	-0.744 (0.521)	0.424 (0.546)
WTO/GATT membership	-1.376* (0.709)	-0.796 (0.697)	0.294 (0.672)
Chinn-Ito index, normalized	-0.291 (0.668)	1.660** (0.692)	0.209 (0.706)
Net FDI inflow (% of GDP)	-0.0126 (0.0228)	0.0215 (0.0230)	0.00797 (0.0184)
Natural log of pop	-14.68*** (1.442)	-9.004*** (1.641)	-14.91** (6.398)
Natural log of land	-17.03 (19.79)	-23.99 (19.41)	-43.84** (21.83)
Constant	481.3** (243.7)	459.9* (239.3)	-1,989*** (693.4)
Observations	1,982	1,982	1,982
R-squared	0.702	0.722	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3: Regression results of democratic indicators against simple average tariff rate (2) (c)**

<b>VARIABLES</b>	<b>(1) Tariff rate applied simple mean all products</b>	<b>(2) Tariff rate applied simple mean all products</b>	<b>(3) Tariff rate applied simple mean all products</b>
Deliberative component index	-7.938*** (1.440)	-6.836*** (1.420)	-5.480*** (1.450)
Natural log of gdppc	-2.046*** (0.319)	-0.697 (0.518)	0.350 (0.545)
WTO/GATT membership	-1.333* (0.706)	-0.751 (0.694)	0.202 (0.670)
Chinn-Ito index, normalized	-0.312 (0.665)	1.655** (0.689)	0.193 (0.703)
Net FDI inflow (% of GDP)	-0.00917 (0.0227)	0.0237 (0.0229)	0.00816 (0.0183)
Natural log of pop	-14.76*** (1.427)	-8.795*** (1.628)	-15.79** (6.326)
Natural log of land	-16.94 (19.72)	-23.71 (19.33)	-43.46** (21.76)
Constant	481.0** (242.8)	453.5* (238.3)	-2,243*** (695.5)
Observations	1,982	1,982	1,982
R-squared	0.704	0.724	0.885
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4: Regression results of democratic indicators against trade policy openness (2) (a)**

VARIABLES	(1) Freedom to trade internationally	(2) Freedom to trade internationally	(3) Freedom to trade internationally
Additive polyarchy index	1.746*** (0.208)	1.306*** (0.206)	0.689*** (0.204)
Natural log of gdppc	-0.120*** (0.0439)	0.0843 (0.0728)	-0.00490 (0.0702)
WTO/GATT membership	-0.0202 (0.102)	-0.160 (0.0995)	0.215* (0.116)
Chinn-Ito index, normalized	2.154*** (0.0992)	1.777*** (0.102)	1.683*** (0.109)
Net FDI inflow (% of GDP)	0.00554 (0.00406)	0.00466 (0.00401)	0.00383 (0.00334)
Natural log of pop	2.698*** (0.150)	2.217*** (0.215)	-0.641 (0.607)
Natural log of land	-11.81*** (3.850)	-11.31*** (3.726)	3.167 (5.328)
Constant	105.9** (47.22)	106.6** (45.61)	-100.0 (76.25)
Observations	2,210	2,210	2,210
R-squared	0.766	0.784	0.891
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4: Regression results of democratic indicators against trade policy openness (2) (b)**

VARIABLES	(1) Freedom to trade internationally	(2) Freedom to trade internationally	(3) Freedom to trade internationally
Participatory component index	3.332*** (0.342)	2.550*** (0.342)	1.022*** (0.357)
Natural log of gdppc	-0.131*** (0.0436)	0.0834 (0.0725)	-0.00395 (0.0702)
WTO/GATT membership	-0.0193 (0.100)	-0.155 (0.0979)	0.269** (0.114)
Chinn-Ito index, normalized	2.153*** (0.0985)	1.795*** (0.102)	1.667*** (0.108)
Net FDI inflow (% of GDP)	0.00627 (0.00403)	0.00537 (0.00399)	0.00382 (0.00335)
Natural log of pop	2.665*** (0.146)	2.238*** (0.211)	-0.867 (0.593)
Natural log of land	-11.21*** (3.823)	-10.94*** (3.708)	3.565 (5.333)
Constant	98.96** (46.86)	101.4** (45.37)	-105.0 (76.31)
Observations	2,213	2,213	2,213
R-squared	0.769	0.785	0.891
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4: Regression results of democratic indicators against trade policy openness (2) (c)**

<b>VARIABLES</b>	<b>(1) Freedom to trade internationally</b>	<b>(2) Freedom to trade internationally</b>	<b>(3) Freedom to trade internationally</b>
Deliberative component index	1.406*** (0.168)	1.010*** (0.168)	0.282* (0.171)
Natural log of gdppc	-0.114*** (0.0439)	0.0861 (0.0729)	-0.000281 (0.0704)
WTO/GATT membership	0.00373 (0.101)	-0.140 (0.0983)	0.261** (0.115)
Chinn-Ito index, normalized	2.143*** (0.0992)	1.777*** (0.102)	1.662*** (0.109)
Net FDI inflow (% of GDP)	0.00596 (0.00406)	0.00505 (0.00401)	0.00371 (0.00335)
Natural log of pop	2.734*** (0.148)	2.265*** (0.214)	-0.781 (0.592)
Natural log of land	-10.93*** (3.844)	-10.63*** (3.725)	3.481 (5.341)
Constant	94.78** (47.12)	97.74** (45.58)	-103.0 (76.50)
Observations	2,213	2,213	2,213
R-squared	0.766	0.783	0.890
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



### 5.3 Discussion

In both **Table 1** and **Table 2**, the various measures of democracy are consistent with existing literature and hypothesis 1 and 2 of this dissertation in terms of coefficient sign when regressed against tariff rates and trade policy openness. All models also have a very high fit ( $R^2$  of  $>0.7$ ). However, some of the control variables produced unexpected results.

In **Table 1**, results show that when regressed against simple average tariff rate, the inconsistent with literature findings (i.e. positive signs) for log GDP per capita, GATT/WTO membership, the Chinn-Ito index and Net FDI inflow in all equations with country-time trends are statistically insignificant. However, specifically for the Chinn-Ito index, the value of its coefficients for all equations with state FE and year FE across the five democratic indicators are positive and statistically significant, suggesting that an increase in financial openness raises tariff rates. As for both population land size, all coefficients in all equations are negative, suggesting that bigger countries have lower tariffs.

In **Table 2**, population size is positive (consistent with literature) and statistically significant in all equations except for the equation with country-time trends, where it was negative but statistically insignificant anyway. As for land size, the results show that larger countries have lower tariffs, which as stated in the preceding paragraph, is not consistent with existing literature. As for the Chinn-Ito index and Net FDI inflow, the positive coefficient signs suggest that as countries become more financially open, trade policy becomes more open. The coefficient signs for natural log GDP per capita are negative and significant in all equations with state FE only, suggesting that as income decreases, a country becomes more open to trade. As for GATT/WTO membership, inclusion into these institutions should increase trade policy openness; indeed, any negative coefficients are insignificant.

Moving to the next level of analysis on the democratic sub-indicators, based on the overall results in **Table 3** and **Table 4** above, the main component of the electoral democracy index – the additive polyarchy index – was consistently significant to at least the 5% level relative to the other two sub-indicators, deliberative and participatory component indices (whose coefficients are significant to only at least the 10% level), when regressing against both simple average tariff and trade policy openness. In addition, the negative sign of the coefficient when regressed against the tariff rate and the positive sign when regressed against trade policy openness are both consistent with existing empirical studies. Thus, it can be concluded that the electoral democracy index sub-indicator, the polyarchy index, is the better indicator relative to the other two sub-indicators, proving hypothesis 3 right.

When assessing the control variables in the regression equations involving simple tariff rate as the dependent variable, results are again mixed. While log GDP per capita, GATT/WTO membership, the Chinn-Ito index and Net FDI inflow should all be negatively associated with tariff rates, some of the results in **Table 3** fare the opposite. However, the coefficients that have a different (positive) sign are statistically insignificant, except for the coefficient for the Chinn-Ito index under state FE and year FE equations. As for natural log of population and land size, all coefficients in all equations also have a different (negative) sign.

When assessing the control variables in **Table 4** that involves trade policy openness as the dependent variable, coefficients of the Chinn-Ito index and Net FDI inflow are positive, suggesting that as a country's financial openness and net FDI inflow increases, trade policy becomes more open – which is consistent with existing literature.

Several reasons could explain the inconsistency of results affecting the control variables. First, different measurement. Both Eichengreen and Leblang (2008) and Chen and Li (2017) measure trade openness as imports plus exports over GDP whereas this dissertation uses a different measure, the 'freedom to trade internationally' component of the Economic Freedom Index, published by the Fraser Institute. Secondly, different datasets. As mentioned in section 2.2 above, most extant studies rely on the use of the Polity Index or Freedom House to represent democracy. However, these measures of democracy are different from that of the V-Dem dataset; democracy is represented through regime types in the former and as through specific democratic attributes in the latter. In addition, the period looked at for each study also differs. Overall, the combination of these - different variables measured, different datasets used and different period of study – may explain why different results are found for the control variables relative to what existing literature says.

## 5.4 Robustness checks

The findings above are further examined against other dependent variables such as weighted average tariff rates and trade-to-GDP ratio for robustness checks. These results are presented in **Appendix 7**. The regression results show that the main five indicators are positively associated with trade-to-GDP ratio and statistically significant to at least the 5% level. All the indicators are negatively associated with weighted average tariff rate but most coefficients across the three estimates are not statistically significant.

Similar robustness checks are conducted for the additive polyarchy index, participatory component index, and deliberative component index. These results are presented in **Appendix 8**.

On the balance of it, it appears that the coefficients of the deliberative component index are statistically significant at least at the 5% level in more equations relative to the polyarchy index when regressed against trade-to-GDP ratio. Most of the coefficients are not statistically significant when regressing against weighted average tariff rate. Despite this, the consistency of the polyarchy index in terms of statistical significance still shows that is a good variable in estimating the effect on different measures of trade liberalisation.

## 5.5 Conclusion

Overall, hypotheses 1 to 3 listed in section 3.2 above finds positive evidence that various measures of democracy, particularly electoral democracy and its specific component – the polyarchy index – is associated negatively with tariff rates and positively with trade policy openness and trade-to-GDP ratio, proving hypothesis 1, 2 and 3 correct. The electoral democracy indicator is the most consistently significant measure relative to the other democratic indicators.

# 6. Main Results and Discussion

The main contribution of this dissertation is to empirically test the MVT applied to trade liberalisation through a DiD analysis on the effect of the extension of suffrage on all four trade liberalisation indicators. This section describes the results and discusses the findings for the DiD estimation using the definition of treatment (extension of suffrage) in section 4.2.2.

## 6.1 Results

The results are displayed below in **Table 5**. The results show that the extension of suffrage did not have a statistically significant effect on lowering tariff rates even though the sign of the coefficient was correct i.e. negative. However, the extension of suffrage did have a statistically significant effect at the 1% level on trade policy openness. In addition, only the model with trade-to-GDP ratio has a high fit ( $R^2 > 0.5$ ). Overall, there seems to be support for hypothesis 4 that the extension of suffrage liberalised trade.

**Table 5: DiD results of suffrage extension towards indicators of trade liberalisation**

VARIABLES	(1) tariff_s	(2) Freedom to trade internationally	(3) tariff_w	(4) trade
suffrage_dummy9	-2.219 (2.864)	1.595** (0.278)	-3.662 (3.075)	6.412* (3.493)
Constant	13.68*** (2.805)	5.121*** (0.263)	12.51*** (3.011)	77.48*** (3.004)
Observations	226	268	226	727
R-squared	0.460	0.499	0.350	0.696
State FE	YES	YES	YES	YES

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 6.2 Discussion

Based on the results in **Table 6**, all coefficients have signs that are consistent with the literature (i.e. negative for both tariff rates, positive for both trade policy openness and trade-to-GDP ratio). However, coefficients for the tariff rates are insignificant; coefficients for trade policy openness and trade-to-GDP ratio are significant at the 1% and 10% level, respectively. Given these results, it can be deduced that the extension of the right to vote shifted the electorate's preferences towards free trade. Given the period of this study from 1974 to 2014, several countries that did not introduce universal suffrage denied the right to vote to economic minorities (e.g. South Africa). Using Mayer's (1984) argument, the identity of the median voter in those countries shifted; labour become the abundant factor and because trade liberalisation benefits them, a policy of trade liberalisation ensued. However, it seems that this phenomenon applies only to a more open trade policy and higher trade-to-GDP ratio.

## 6.3 Robustness checks

Different thresholds of extension (i.e. at least 30% - 'suffrage\_dummy8' and 40% - 'suffrage\_dummy7') of suffrage from one year to the next are tested based on the equation in section 4.2.2 above, as shown in **Appendix 9** (further thresholds are not tested owing to limited observations. In both thresholds, the coefficient for simple and weighted tariff are negative, but insignificant. Trade policy openness and trade-to-GDP ratio are both positive, but only the former is significant. Despite low R<sup>2</sup> values in all equations, the results show that the extension of suffrage lends credence to the MVT. Given such a large 'shock' to the voting polity in a country and given that the sample size of countries studies is made up of developing nations, the identity of the median voter shifted towards labour, who preferred trade liberalisation. In other words, the treatment increased the voice of labour in the political environment, who used their voice to demand for pro-trade policies.

## 7. Limitations and Opportunities for Future Research

While much progress has been made to understand the impact of democracy and trade liberalisation, there remains several areas where more can be done to enhance the understanding of the link between democracy and trade liberalisation.

The first remark concerns the generalisation of findings in this dissertation. Owing to the period of study (1974 to 2014), only developing countries are included in the main analysis as most countries had already introduced universal suffrage. Can results stemming from this dissertation have external validity? Given that much of Europe and North America then included colonial powers and industrialised nations that benefitted greatly from the Industrial Revolution, the sample of countries used in the DiD analysis is representative of the developing world (Asia, Africa, Oceania, South America). Results may still be replicable if the study covered more decades in the past as the developing world then included countries from these continents. A large-N study covering 19<sup>th</sup> and early 20<sup>th</sup> century data may then still find a positive association between democracy and trade liberalisation, so long as developing countries are adequately represented in the dataset. In addition, the results may also have high external validity for developed countries when these countries were developing themselves.

Second, Mayer's (1984) application of the MVT into the HO-SS framework neglects the role of voter turnout. The assumption that the median voter decides trade policy outcome ignores election day turnout as the people who benefit from trade liberalisation may have a lower probability of turning up to vote. According to Larcinese (2007), not everyone votes with the same probability – the demography of abstainers and voters are likely to be different, affected by varying social or economic factors. Lijphart (1997) argues that low voter turnout is often socioeconomically biased, meaning that poorer sections of society are often under-represented. Applied to this dissertation, if labour is the abundant factor whose income is relatively lower, the probability of turning up to vote is lower, which could affect trade policy outcomes. However, trade policy may drive voter turnout as well. According to Morelli et. al. (2017), populist parties thrive on issues surrounding economic security such as those related to trade, which may increase voter turnout during elections as poorer sections of societies feel more threatened by it relative to those who are well-off. In addition, trade policy may not be a salient issue for poorer voters, who could be more concerned with other bread-and-butter issues such as cost of living, or immigration (the latter suggested by Morelli et. al. (2017)). Trade policy may also employ the use of NTBs as suggested by Kono (2006), making trade policy unclear to the common voter. Therefore, the

inclusion of a voter turnout variable in studies on democracy and trade liberalisation may not be entirely clear in its effect.

Third, it may be worthwhile to determine if specific democratic aspects affect disaggregated tariff rates by industry (i.e. disaggregated by industry-country-year), as undertaken by Milner and Mukherjee (2009b). Specific industry-level tariff rates help to further understand the politics of trade especially when it comes to critical sectors such as agriculture, which may suggest that the overall effective tariff rate needs to be weighted by industries. However, given that the use of weighted average tariff rate produced mixed results in this dissertation, an appropriate formula for weighted tariff rates would have to be formulated first.

Fourth, given the challenges highlighted in section 4.2.2 above, this dissertation analyses trade liberalisation before and after countries had introduced universal suffrage. Such studies cannot model cross-country comparisons or capture exogenous shocks that affect all countries simultaneously (Giavazzi and Tabellini, 2005). In this regard, future studies on this topic using a DiD estimation should study groups of countries, such as those belonging to the former Soviet Union, as the fall of the Iron Curtain provides an exogenous shock (to be used as treatment) that affects a group of countries simultaneously. However, this would limit large-N studies from being undertaken as such a shock affecting many countries may be challenging to find.

## **8. Conclusion**

This dissertation set out to determine if democracy affects trade liberalisation in the period 1974 to 2014. The consensus of existing literature is that democracy is positively associated with trade liberalisation. By utilising a new dataset, I find that results point in the direction of an association between democracy (both the main and sub-indicators of the V-Dem dataset) and several measures of trade liberalisation (tariff rates, trade policy openness, trade-to-GDP ratio). I also find that, specifically, electoral democracy and its sub-indicator, the polyarchy index, matter most for trade liberalisation as it is the aspect of democracy that aggregates preferences (Dahl, 1989). In testing the causal mechanism of this finding, I used a DiD analysis on Mayer's (1984) MVT theorem which finds that the extension of suffrage lowered trade tariffs and resulted in a more open trade policy and higher trade-to-GDP ratio. When tested against higher level of thresholds for robustness, similar results held. Despite varying degrees of statistical significance and model fit, the results confirm the findings of various studies in existing literature.

By suggesting several areas of improvement - generalisation of study, inclusion of voter turnout as a variable, disaggregating tariff rates by industry and a more robust DiD analysis – this dissertation discusses promising areas for future research, although, as discussed in section 7, these suggestions may require further refinement.

What does this mean for governmental policy on trade? Firstly, a strong and robust democracy is needed for an open trade policy - through periodic elections, voters can hold governments to account over their trade policies, which may incentivise elected representatives to represent the best interests of their constituents. Secondly, societal elites may still be able to dictate trade policy if their agreement is required to allow the extension of suffrage. Such a move undeniably erodes their political power, and the move to free trade may also affect their economic power. In countries where support from the elites are crucial, such as in semi/hybrid democracies, trade protectionism may still be provided to them to shield them and their business from the rigours of international trade, thereby maintaining their status whilst allowing the general population to have more political rights and economic freedom.

In recent years however, the picture has been gloomy for global democracy. Since 2006, the level of democracy in the world has been in decline (Klaas, 2016). In trade, the voice of protectionism grows ever stronger – the collapse of the Trans-Pacific Partnership Agreement and probable trade wars have dominated global headlines in recent years. Although the voice of populism has given a platform to trade protectionism, it is hoped that further waves of democracy such as the Arab Spring several years ago may once again drive trade liberalisation. It is hoped that this can continue to inspire current and future scholars alike to study democracy and trade liberalisation as a central topic in political economy.

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# Appendix

## Appendix 1- Empirical studies on democracy and trade

Study	Y-variable (Trade)	Y-variable (Democracy)	Source of Data
Dutt and Mitra (2002)	<ul style="list-style-type: none"> <li>• Tariff based measure (duties/imports, average tariff rate)</li> <li>• Non-tariff based measure (NTB coverage ratio)</li> <li>• Trade volume openness [(IM + EX)/GDP]</li> </ul>	Political rights	<ul style="list-style-type: none"> <li>• World Development Indicators (WDI), World Bank</li> <li>• Freedom House</li> </ul>
O'Rourke and Taylor (2006)	Tariff based measure (duties/imports, average tariff rate)	Regime types	<ul style="list-style-type: none"> <li>• Dataset from Williamson (2004)</li> <li>• Polity Index</li> </ul>
Boudreaux (2015)	<ul style="list-style-type: none"> <li>• Tariff output (merchandise)</li> <li>• Trade policy openness</li> </ul>	Regime types	<ul style="list-style-type: none"> <li>• Sachs-Warner index (1995)</li> <li>• World Bank</li> <li>• Fraser Institute (Economic Freedom Index)</li> </ul>
Giavazzi and Tabellini (2005)	Trade volume openness [(IM + EX)/GDP]	Political liberalisation (dichotomous and continuous)	<ul style="list-style-type: none"> <li>• Penn World Tables</li> <li>• International Monetary Fund</li> <li>• Wacziarg-Welch index (2003)</li> <li>• Polity Index</li> </ul>
Milner and Kubota (2005)	<ul style="list-style-type: none"> <li>• Dichotomous openness indicators</li> <li>• Tariff based measure (duties/imports, average tariff rate)</li> <li>• Non-tariff based measure (NTB coverage ratio)</li> <li>• Trade volume openness [(IM + EX)/GDP]</li> </ul>	<ul style="list-style-type: none"> <li>• Regime type index</li> <li>• Regime type dummies</li> </ul>	<ul style="list-style-type: none"> <li>• Polity Index</li> <li>• WDI, World Bank</li> <li>• Sachs-Warner index (1995)</li> <li>• Wacziarg-Welch index (2003)</li> </ul>
Milner and Mukherjee (2009a)	Trade volume openness [(IM + EX)/GDP]	Regime type index	<ul style="list-style-type: none"> <li>• Polity Index</li> <li>• Milner and Kubota (2005) dataset</li> <li>• International Monetary Fund</li> <li>• WDI, World Bank</li> </ul>

Study	Y-variable (Trade)	Y-variable (Democracy)	Source of Data
Milner and Mukherjee (2009b)	High-skill and low-skill worker tariff rates	Regime type index (continuous, dichotomous)	<ul style="list-style-type: none"> <li>• UNCTAD</li> <li>• Trade, Production and Protection database, World Bank</li> <li>• International Customs Tariff Bureau dataset</li> <li>• World Integrated Trade Solution database, World Bank</li> <li>• Przeworski (2000)</li> <li>• International Monetary Fund</li> </ul>
Chen and Li (2017)	<ul style="list-style-type: none"> <li>• Tariff based measure (simple tariff rate, weighted tariff rate)</li> <li>• Trade facilitation</li> <li>• Trade volume openness [(IM + EX)/GDP]</li> </ul>	Regime type index	<ul style="list-style-type: none"> <li>• Logistics Performance Index, World Bank</li> <li>• Polity Index</li> <li>• Freedom House Index</li> </ul>
Frye and Mansfield (2003)	Liberalisation indicator	<ul style="list-style-type: none"> <li>• Regime type (dichotomous, continuous)</li> <li>• Political fragmentation</li> </ul>	<ul style="list-style-type: none"> <li>• Polity Index</li> <li>• Freedom House</li> <li>• Frye, Hellman, Tucker Index (for political fragmentation)</li> </ul>

## Appendix 2 - Pearson correlation coefficient table of democratic indicators

	<b>Electoral</b>	<b>Liberal</b>	<b>Deliberative</b>	<b>Egalitarian</b>	<b>Participatory</b>
Electoral	1.0000				
Liberal	0.9735	1.0000			
Deliberative	0.9740	0.9808	1.0000		
Egalitarian	0.9455	0.9725	0.9582	1.0000	
Participatory	0.9725	0.9755	0.9724	0.9512	1.0000

Data source: V-Dem dataset

### Appendix 3 - Pearson correlation coefficient table of trade indicators

	Simple average tariff rate	Weighted average tariff rate	Trade-to-GDP ratio	Trade policy openness
Simple average tariff rate	1.0000			
Weighted average tariff rate	0.6948	1.0000		
Trade-to-GDP ratio	-0.2250	-0.1645	1.0000	
Trade policy openness	-0.6100	-0.5740	0.3613	1.0000

Data source: Chen and Li (2017)



## Appendix 4 – Variance Inflation Factor Test

Variable	VIF	SQRT VIF	Tolerance	R-Squared
Log GDP per capita	1.48	1.22	0.6756	0.3244
WTO/GATT membership	1.11	1.05	0.9047	0.0953
Chinn-Ito index	1.45	1.20	0.6917	0.3083
FDI (as a % of GDP)	1.06	1.03	0.9423	0.0577
Log population	2.86	1.69	0.3497	0.6503
Log land	2.82	1.68	0.3541	0.6459
Mean VIF		1.80		

Data source: Chen and Li (2017)

## Appendix 5 - Operationalisation of variables

Variable	Indicator	Source	Operationalisation	Analysis
<b>Dependent</b>	Simple average tariff rate	Chen and Li (2017) dataset	Simple mean across products	Preliminary and Main
	Trade policy openness	Fraser Institute	Index of policy openness	
<b>Independent</b>	Main democracy indicators (electoral, liberal, participatory, egalitarian, deliberative)	V-Dem	Index score	Preliminary
	Main democracy sub-indicators (additive polyarchy index, participatory component index, deliberative component index)			
	Suffrage index			
<b>Control Variables</b>	GDP per Capita	Chen and Li (2017) dataset	Natural log (in USD)	Preliminary and Main
	GATT/WTO membership		1 if members; 0 otherwise	
	Capital account openness		Index of financial openness between 0 and 1	
	FDI level		% of GDP	
	Population size		Natural log	
<b>Robustness check variables</b>	Land area	Chen and Li (2017) dataset	Natural log (km <sup>2</sup> )	Preliminary and Main
	Weighted average tariff rate		Weighted mean across products	
	Trade-to-GDP ratio		Total merchandised trade as a % of GDP	

## Appendix 6 – Descriptive statistics

Variable	Observations	Mean	Std. Deviation	Minimum	Maximum
GATT/WTO membership	7,995	.5879925	.4922272	0	1
Log GDP per Capita	6,844	7.761711	1.59939	4.171462	11.66706
FDI level (% of GDP)	6,226	3.550145	9.745351	-82.8921	466.5622
Trade-to-GDP ratio	6,477	82.98895	52.4689	.0209992	531.7374
Simple average tariff rate	2,316	8.715276	7.784028	0	105.36
Weighted average tariff rate	2,316	7.301835	9.280176	0	254.58
Log population size	7,992	15.17922	2.200716	9.349581	21.03389
Log land area	7,892	11.23247	2.728865	2.995732	16.61218
Financial openness index	6,114	.4482687	.3611755	0	1
Trade policy openness index	2,639	6.707764	1.723162	0	10
Electoral democracy index	6,692	.4500616	.2847073	.0154874	.9493701
Additive polyarchy index	6,692	.6157588	.2728527	.0309748	.9793902
Liberal democracy index	6,692	.3505646	.2760457	.0106992	.9164944
Liberal component index	6,724	.5505209	.2773168	.0298048	.9794423
Participatory democracy index	6,690	.2736982	.2071603	.0091066	.8266866
Participatory component index	6,722	.3999314	.1845564	.0277824	.9292344
Deliberative democracy index	6,692	.3250484	.2895893	.0010434	.9071604
Deliberative democracy component index	6,724	.5691937	.2941616	.0123407	.9900696
Egalitarian democracy index	6,692	.3535721	.2463452	.0197034	.8909268
Egalitarian component index	6,724	.5932256	.2189502	.0596484	.9750888
Suffrage index	6,698	.9629158	.1800324	0	1

Data source: Chen and Li (2017), V-Dem Dataset (2017), Fraser Institute (2017)

## Appendix 7 – Regression output for robustness checks (1)

VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Electoral democracy index	13.99*** (2.486)	8.594*** (2.432)	9.388*** (2.823)
Natural log of gdppc	1.997*** (0.600)	-10.47*** (0.818)	-16.42*** (1.037)
WTO/GATT membership	3.646*** (1.203)	1.335 (1.151)	-3.283** (1.423)
Chinn-Ito index, normalized	4.857*** (1.387)	-0.898 (1.388)	5.920*** (1.630)
Net FDI inflow (% of GDP)	1.096*** (0.0533)	0.930*** (0.0513)	0.845*** (0.0456)
Natural log of pop	1.590 (1.749)	-37.33*** (2.637)	-13.61* (8.141)
Natural log of land	-118.7*** (37.81)	-82.12** (35.88)	53.93 (53.94)
Constant	1,459*** (458.9)	1,713*** (436.2)	12.73 (921.5)
Observations	4,958	4,958	4,958
R-squared	0.849	0.866	0.911
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Participatory democracy index	20.98*** (3.929)	9.616** (3.890)	11.22** (4.644)
Natural log of gdppc	1.897*** (0.603)	-10.48*** (0.819)	-16.43*** (1.038)
WTO/GATT membership	3.650*** (1.204)	1.356 (1.152)	-3.240** (1.424)
Chinn-Ito index, normalized	4.613*** (1.389)	-1.031 (1.388)	5.831*** (1.631)
Net FDI inflow (% of GDP)	1.099*** (0.0533)	0.932*** (0.0513)	0.845*** (0.0456)
Natural log of pop	2.070 (1.729)	-36.71*** (2.630)	-13.39 (8.146)
Natural log of land	-120.4*** (37.82)	-83.19** (35.90)	59.14 (53.92)
Constant	1,474*** (459.1)	1,717*** (436.5)	-91.58 (921.1)
Observations	4,958	4,958	4,958
R-squared	0.848	0.865	0.911
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES
Lagged DV			

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Liberal democracy index	19.21*** (2.848)	12.46*** (2.790)	15.20*** (3.441)
Natural log of gdppc	1.757*** (0.602)	-10.56*** (0.818)	-16.46*** (1.036)
WTO/GATT membership	3.658*** (1.201)	1.376 (1.151)	-3.232** (1.421)
Chinn-Ito index, normalized	4.568*** (1.386)	-0.977 (1.386)	6.047*** (1.629)
Net FDI inflow (% of GDP)	1.097*** (0.0532)	0.931*** (0.0513)	0.846*** (0.0455)
Natural log of pop	2.005 (1.685)	-36.65*** (2.624)	-13.60* (8.130)
Natural log of land	-122.5*** (37.76)	-84.69** (35.85)	53.78 (53.84)
Constant	1,500*** (458.4)	1,733*** (435.8)	91.38 (920.4)
Observations	4,958	4,958	4,958
R-squared	0.849	0.866	0.911
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Egalitarian democracy index	21.15*** (3.709)	9.981*** (3.684)	15.93*** (4.553)
Natural log of gdppc	1.751*** (0.605)	-10.53*** (0.819)	-16.46*** (1.037)
WTO/GATT membership	3.743*** (1.203)	1.409 (1.152)	-3.192** (1.423)
Chinn-Ito index, normalized	4.733*** (1.387)	-0.942 (1.388)	5.998*** (1.631)
Net FDI inflow (% of GDP)	1.098*** (0.0533)	0.931*** (0.0513)	0.846*** (0.0456)
Natural log of pop	2.172 (1.708)	-36.51*** (2.628)	-13.72* (8.140)
Natural log of land	-116.7*** (37.81)	-81.48** (35.90)	55.30 (53.90)
Constant	1,426*** (458.8)	1,693*** (436.5)	111.2 (923.9)
Observations	4,958	4,958	4,958
R-squared	0.849	0.865	0.911
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Deliberative democracy index	14.71*** (2.434)	8.890*** (2.393)	10.34*** (2.835)
Natural log of gdppc	1.875*** (0.602)	-10.52*** (0.818)	-16.43*** (1.037)
WTO/GATT membership	3.667*** (1.203)	1.372 (1.151)	-3.305** (1.423)
Chinn-Ito index, normalized	4.693*** (1.387)	-0.935 (1.387)	5.919*** (1.629)
Net FDI inflow (% of GDP)	1.097*** (0.0532)	0.931*** (0.0513)	0.847*** (0.0456)
Natural log of pop	1.681 (1.724)	-37.01*** (2.630)	-13.55* (8.137)
Natural log of land	-119.8*** (37.79)	-82.89** (35.87)	56.57 (53.87)
Constant	1,473*** (458.7)	1,718*** (436.1)	21.57 (920.9)
Observations	4,958	4,958	4,958
R-squared	0.849	0.866	0.911
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



<b>VARIABLES</b>	<b>(1) Tariff rate applied weighted mean all products</b>	<b>(2) Tariff rate applied weighted mean all products</b>	<b>(3) Tariff rate applied weighted mean all products</b>
Electoral democracy index	-5.912** (2.876)	-4.361 (2.876)	-5.685 (4.215)
Natural log of gdppc	-2.048*** (0.503)	0.290 (0.824)	0.722 (1.231)
WTO/GATT membership	-1.957* (1.130)	-1.311 (1.125)	-0.143 (1.530)
Chinn-Ito index, normalized	-0.610 (1.047)	1.139 (1.098)	-1.039 (1.600)
Net FDI inflow (% of GDP)	-0.0161 (0.0357)	0.0268 (0.0364)	0.00587 (0.0414)
Natural log of pop	-14.55*** (2.263)	-7.398*** (2.604)	-9.295 (16.06)
Natural log of land	2.601 (31.07)	-15.26 (30.84)	-48.82 (49.21)
Constant	236.2 (382.8)	316.9 (380.5)	-700.8 (1,561)
Observations	1,980	1,980	1,980
R-squared	0.412	0.437	0.530
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<b>VARIABLES</b>	<b>(1) Tariff rate applied weighted mean all products</b>	<b>(2) Tariff rate applied weighted mean all products</b>	<b>(3) Tariff rate applied weighted mean all products</b>
Participatory democracy index	-9.358** (4.107)	-6.056 (4.154)	-9.366 (6.345)
Natural log of gdppc	-2.005*** (0.504)	0.309 (0.825)	0.767 (1.230)
WTO/GATT membership	-1.968* (1.130)	-1.325 (1.125)	-0.137 (1.530)
Chinn-Ito index, normalized	-0.543 (1.047)	1.153 (1.098)	-1.040 (1.599)
Net FDI inflow (% of GDP)	-0.0176 (0.0357)	0.0253 (0.0364)	0.00443 (0.0414)
Natural log of pop	-14.52*** (2.260)	-7.483*** (2.600)	-8.422 (16.10)
Natural log of land	2.791 (31.06)	-15.37 (30.84)	-49.02 (49.20)
Constant	232.9 (382.7)	319.0 (380.5)	-706.4 (1,561)
Observations	1,980	1,980	1,980
R-squared	0.413	0.437	0.530
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<b>VARIABLES</b>	<b>(1) Tariff rate applied weighted mean all products</b>	<b>(2) Tariff rate applied weighted mean all products</b>	<b>(3) Tariff rate applied weighted mean all products</b>
Liberal democracy index	-6.994** (3.040)	-4.517 (3.055)	-6.156 (4.902)
Natural log of gdppc	-2.015*** (0.503)	0.278 (0.824)	0.724 (1.231)
WTO/GATT membership	-1.937* (1.130)	-1.302 (1.125)	-0.127 (1.530)
Chinn-Ito index, normalized	-0.520 (1.048)	1.180 (1.097)	-1.076 (1.600)
Net FDI inflow (% of GDP)	-0.0157 (0.0357)	0.0268 (0.0364)	0.00578 (0.0414)
Natural log of pop	-14.65*** (2.252)	-7.599*** (2.593)	-9.375 (16.06)
Natural log of land	4.634 (31.10)	-14.16 (30.89)	-50.47 (49.27)
Constant	212.4 (383.2)	306.3 (381.0)	-732.9 (1,563)
Observations	1,980	1,980	1,980
R-squared	0.413	0.437	0.530
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES
Lagged DV			

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<b>VARIABLES</b>	<b>(1) Tariff rate applied weighted mean all products</b>	<b>(2) Tariff rate applied weighted mean all products</b>	<b>(3) Tariff rate applied weighted mean all products</b>
Egalitarian democracy index	-8.072** (4.070)	-4.190 (4.120)	-8.073 (6.250)
Natural log of gdppc	-2.023*** (0.504)	0.259 (0.824)	0.741 (1.231)
WTO/GATT membership	-2.002* (1.131)	-1.335 (1.126)	-0.171 (1.530)
Chinn-Ito index, normalized	-0.524 (1.048)	1.180 (1.098)	-1.073 (1.600)
Net FDI inflow (% of GDP)	-0.0151 (0.0357)	0.0269 (0.0364)	0.00611 (0.0414)
Natural log of pop	-14.45*** (2.274)	-7.552*** (2.604)	-8.925 (16.08)
Natural log of land	0.385 (31.04)	-17.01 (30.83)	-47.99 (49.20)
Constant	261.7 (382.4)	340.2 (380.2)	-753.0 (1,564)
Observations	1,980	1,980	1,980
R-squared	0.412	0.437	0.530
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Tariff rate applied weighted mean all products	(2) Tariff rate applied weighted mean all products	(3) Tariff rate applied weighted mean all products
Deliberative democracy index	-6.270** (2.470)	-4.524* (2.478)	-6.021* (3.623)
Natural log of gdppc	-2.025*** (0.503)	0.298 (0.824)	0.699 (1.231)
WTO/GATT membership	-1.946* (1.130)	-1.304 (1.125)	-0.182 (1.530)
Chinn-Ito index, normalized	-0.553 (1.047)	1.157 (1.097)	-1.076 (1.599)
Net FDI inflow (% of GDP)	-0.0158 (0.0357)	0.0266 (0.0364)	0.00516 (0.0414)
Natural log of pop	-14.50*** (2.256)	-7.397*** (2.599)	-9.306 (16.05)
Natural log of land	2.012 (31.03)	-15.66 (30.82)	-47.84 (49.18)
Constant	241.6 (382.3)	321.1 (380.1)	-779.9 (1,563)
Observations	1,980	1,980	1,980
R-squared	0.413	0.438	0.530
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix 8 – Regression output for robustness checks (2)

VARIABLES	(1) Tariff rate applied weighted mean all products	(2) Tariff rate applied weighted mean all products	(3) Tariff rate applied weighted mean all products
Additive polyarchy index	-7.281** (3.316)	-6.351* (3.308)	-6.565 (4.703)
Natural log of gdppc	-2.057*** (0.502)	0.332 (0.825)	0.713 (1.231)
WTO/GATT membership	-1.958* (1.130)	-1.310 (1.125)	-0.143 (1.530)
Chinn-Ito index, normalized	-0.667 (1.047)	1.094 (1.098)	-1.007 (1.599)
Net FDI inflow (% of GDP)	-0.0164 (0.0357)	0.0268 (0.0364)	0.00620 (0.0414)
Natural log of pop	-14.34*** (2.275)	-7.037*** (2.620)	-9.683 (16.05)
Natural log of land	1.806 (31.05)	-15.65 (30.81)	-47.58 (49.19)
Constant	244.5 (382.5)	317.6 (380.1)	-742.7 (1,563)
Observations	1,980	1,980	1,980
R-squared	0.412	0.438	0.530
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<b>VARIABLES</b>	<b>(1) Tariff rate applied weighted mean all products</b>	<b>(2) Tariff rate applied weighted mean all products</b>	<b>(3) Tariff rate applied weighted mean all products</b>
Participatory component index	-11.38** (4.641)	-8.447* (4.699)	-8.522 (6.963)
Natural log of gdppc	-2.047*** (0.502)	0.363 (0.827)	0.773 (1.229)
WTO/GATT membership	-1.716 (1.110)	-1.126 (1.106)	-0.0365 (1.514)
Chinn-Ito index, normalized	-0.612 (1.046)	1.087 (1.098)	-1.006 (1.590)
Net FDI inflow (% of GDP)	-0.0204 (0.0357)	0.0230 (0.0365)	0.00261 (0.0414)
Natural log of pop	-14.05*** (2.259)	-6.915*** (2.602)	-10.54 (14.41)
Natural log of land	1.385 (30.99)	-15.97 (30.78)	-46.62 (49.17)
Constant	244.6 (381.6)	318.3 (379.4)	-718.9 (1,562)
Observations	1,982	1,982	1,982
R-squared	0.412	0.437	0.529
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Tariff rate applied weighted mean all products	(2) Tariff rate applied weighted mean all products	(3) Tariff rate applied weighted mean all products
Deliberative component index	-7.562*** (2.260)	-6.464*** (2.258)	-6.734** (3.273)
Natural log of gdppc	-2.041*** (0.501)	0.402 (0.824)	0.683 (1.229)
WTO/GATT membership	-1.677 (1.108)	-1.081 (1.104)	-0.149 (1.514)
Chinn-Ito index, normalized	-0.632 (1.044)	1.088 (1.095)	-1.030 (1.588)
Net FDI inflow (% of GDP)	-0.0173 (0.0356)	0.0254 (0.0364)	0.00327 (0.0413)
Natural log of pop	-14.08*** (2.239)	-6.751*** (2.588)	-11.98 (14.28)
Natural log of land	1.487 (30.95)	-15.72 (30.73)	-46.22 (49.12)
Constant	243.6 (381.1)	312.9 (378.9)	-1,008 (1,570)
Observations	1,982	1,982	1,982
R-squared	0.414	0.439	0.530
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Additive polyarchy index	11.76*** (2.428)	7.714*** (2.362)	6.990*** (2.670)
Natural log of gdppc	2.207*** (0.599)	-10.41*** (0.819)	-16.37*** (1.037)
WTO/GATT membership	3.643*** (1.205)	1.299 (1.152)	-3.296** (1.424)
Chinn-Ito index, normalized	5.122*** (1.387)	-0.803 (1.390)	5.898*** (1.632)
Net FDI inflow (% of GDP)	1.096*** (0.0533)	0.929*** (0.0513)	0.844*** (0.0456)
Natural log of pop	1.322 (1.822)	-38.04*** (2.670)	-13.21 (8.142)
Natural log of land	-116.3*** (37.85)	-80.40** (35.89)	55.88 (53.97)
Constant	1,432*** (459.3)	1,702*** (436.3)	-41.53 (922.1)
Observations	4,958	4,958	4,958
R-squared	0.848	0.866	0.911
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Participatory component index	17.92*** (4.399)	5.029 (4.309)	-4.745 (5.231)
Natural log of gdppc	2.215*** (0.598)	-10.43*** (0.817)	-16.34*** (1.035)
WTO/GATT membership	3.609*** (1.192)	1.365 (1.139)	-3.043** (1.406)
Chinn-Ito index, normalized	4.998*** (1.385)	-1.050 (1.386)	5.615*** (1.628)
Net FDI inflow (% of GDP)	1.105*** (0.0532)	0.932*** (0.0512)	0.843*** (0.0456)
Natural log of pop	1.982 (1.774)	-36.96*** (2.625)	-13.63* (7.983)
Natural log of land	-120.3*** (37.81)	-82.70** (35.83)	65.74 (53.83)
Constant	1,470*** (459.0)	1,715*** (435.7)	-252.4 (918.2)
Observations	4,980	4,980	4,980
R-squared	0.848	0.865	0.910
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) Trade to GDP ratio	(2) Trade to GDP ratio	(3) Trade to GDP ratio
Deliberative component index	10.56*** (2.038)	6.808*** (1.991)	6.017*** (2.298)
Natural log of gdppc	2.201*** (0.598)	-10.41*** (0.815)	-16.32*** (1.035)
WTO/GATT membership	3.479*** (1.191)	1.256 (1.138)	-3.155** (1.406)
Chinn-Ito index, normalized	5.126*** (1.383)	-0.803 (1.386)	6.174*** (1.631)
Net FDI inflow (% of GDP)	1.103*** (0.0532)	0.932*** (0.0512)	0.848*** (0.0456)
Natural log of pop	1.210 (1.766)	-37.77*** (2.627)	-14.01* (7.978)
Natural log of land	-121.6*** (37.77)	-83.29** (35.79)	64.25 (53.79)
Constant	1,499*** (458.6)	1,733*** (435.2)	-50.89 (919.8)
Observations	4,980	4,980	4,980
R-squared	0.848	0.866	0.910
State FE	YES	YES	YES
Year FE		YES	YES
Country-time Trends			YES

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix 9 – DiD output for robustness checks

VARIABLES	(1) tariff_s	(2) Freedom to trade internationally	(3) tariff_w	(4) trade
suffrage_dummy8	-2.219 (2.864)	0.726** (0.353)	-3.662 (3.075)	5.074 (4.106)
Constant	12.91*** (1.827)	6.113*** (0.236)	11.23*** (1.961)	79.49*** (2.752)
Observations	226	268	226	727
R-squared	0.460	0.443	0.350	0.695
State FE	YES	YES	YES	YES

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

VARIABLES	(1) tariff_s	(2) Freedom to trade internationally	(3) tariff_w	(4) trade
suffrage_dummy7	-2.219 (2.864)	0.726** (0.353)	-3.662 (3.075)	5.044 (4.141)
Constant	12.65*** (1.512)	6.167*** (0.211)	10.81*** (1.623)	79.78*** (2.566)
Observations	226	268	226	727
R-squared	0.460	0.443	0.350	0.695
State FE	YES	YES	YES	YES

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1