

I'll Be Here All Week!

*The Effect of Autocratic Time Horizons on
Signing and Content of Double Tax Agreements*

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Abstract

Balancing the preferences of developing and developed countries is at the core of current debates concerning international taxation. This study takes a closer look at the domestic actors involved in economic decision making, to better understand why some developing countries engage in the international tax treaty regime, and why others refrain from doing so. It investigates a question not yet covered by the research on double tax agreements. Namely, the effect of an autocrat's expected length of tenure on signing and content.

The analysis is based on a Heckman model, to correct for nonrandom sample selection and a brand new Tax treaties explorer dataset (ICTD), covering 2533 double tax agreements in 118 low and lower income countries. This study finds that autocrats with longer time horizons are more likely to sign a double tax agreement, and that this effect is even stronger when the wealth of signatories is more asymmetric. There is too much uncertainty in the results to conclude on how autocratic time horizons affect the content of double tax agreements. However, it might seem as if autocrats with longer time horizons tend to sign double tax agreements with lower thresholds for what constitutes permanent establishment.

Keywords: Double tax agreement, asymmetric treaties, leadership failure, autocratic time horizon, international economic agreement, credible commitment, bureaucratic capacity.

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Replication data for the analysis are made available to the public.¹ Responsibility for mistakes and inaccuracies remain entirely my own.

Julie Kristine Wood

Oslo, 6. June 2021

¹Github: <https://bit.ly/2QAxKs5> More information regarding the R-script can be provided upon request. Contact: woodjuliekristine@gmail.com

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Abbreviations

ATH - Autocratic time horizon

BIT - Bilateral investment treaty

DTA - Double tax agreement

FDI - Foreign direct investment

ICTD - The International Centre for Tax and Development

ML - Maximum likelihood

OECD - Organisation for Economic Co-operation and Development

PE - Permanent establishment

Pr(Fail) - Predicted probability of leadership failure

PTA - Preferential trade agreement

UN - United Nations

WHT - Withholding tax

1 Introduction

Double tax agreements (DTAs) are bilateral treaties that determine if, and to what extent, either of the signatory states are allowed to tax income of companies and residents away from home. Frequently the media, NGOs and academics have framed DTAs as a burden on developing countries, restricting their possibilities to collect tax revenue from multinational companies (ActionAid, 2016; Brooks & Krever, 2015). Several countries have also renegotiated or cancelled double tax agreements the past 10 years (Hearson, 2016). This leads me to ask, “Why would developing countries sign them in the first place?”

Research in the field of international economic agreements have explained treaty signing as a way for states to credibly commit to property- and contract rights (e.g. Milner & Bütte, 2008), in competition for foreign investments. Some have pointed to treaties as tools to strengthen diplomatic ties (e.g. Jandhyala, Henisz, & Mansfield, 2011). The content of agreements have been explained as the result of power relations between signatory states (e.g. Allee & Peinhardt, 2014) and the fear of missing out on foreign capital (e.g. Barthel & Neumayer, 2012). Some have also emphasized the importance of bureaucratic capacity for the outcome of negotiations, and thus treaty content (e.g. Berge & Stiansen, 2021).

In this thesis I investigate a possible explanation not yet covered in the research on DTAs, namely the autocratic leader’s expected length of future tenure.² Building on Olson’s (1993) concept of autocratic time horizons, and newer empirical research on how this affects political and economic decision making, I hypothesise and test, whether an authoritarian leader who expects to rule for a longer period of time is more likely to sign a DTA, and sign away more of the country’s rights to taxation. The rationale for these hypotheses is that leaders do not expect momentous financial gains from a DTA, in the form of spurred foreign investments, but see this as an investment in the future. If someone does not think they

²The autocratic leader is defined as the individual who has de facto chief executive power over an autocracy (Goemans et al., 2009, p. 5), which is a country with the lack of direct, reasonably fair and free elections, and with formal and informal rules for choosing new leaders and policies decided by the leader and his inner circle (Geddes, Wright, & Frantz, 2014).

will be in a position for more than a week, there is no reason to sign an agreement, as they will not be in a position to gain from it. Further, if a DTA sets restrictions on the kind of tax policy a leader can put in place, it is more costly for an authoritarian leader clinging to power in his final moments, than for a leader who feels safe that he will be at the steering wheel for a long time yet.

In order to test these arguments, I use the Tax treaties explorer dataset, which has just been published by The International Centre for Tax and Development (ICTD & Hearson, 2021). It covers 2533 DTAs signed by 118 developing economies from 1947 to 2019. These data are particularly appealing as they include a holistic perspective of DTA content, through the coding of 28 clauses. The dataset also includes several indices: the Source index, the Permanent establishment index, the Withholding tax index and the Other index, which I use to measure the degree of taxing rights a developing country denounces in an agreement.

This thesis considers DTAs signed by autocratic countries, with a relatively richer counterparty. I also run the analysis with a sample of asymmetric DTAs, which are treaties signed between countries with an even larger difference in wealth (Braun & Zagler, 2018). Democracies are excluded from the two samples because the theory I test only concerns autocracies. Democratic executives are also more constrained in their decision making, which would make the individual leaders' time horizon less important.

The independent variable, autocratic time horizon, is operationalized by replicating and adjusting Bak and Moon's (2019) probit regression for predicting the probability of autocratic leadership failure. Using this measure, I assume that leaders are sensitive to those factors that empirically predict leadership failure, such as coups and conflict. A high probability of leadership failure translates to a short time horizon, and opposite. Though such an unobservable concept is challenging to operationalize, a probit regression is a much more robust measure than a single variable proxy.

For obvious reasons, data on DTA content is only available for *signed* DTAs. Further, there is reason to suspect that countries that do not sign DTAs are significantly different from

those who do. Using a Heckman model, with past signing of bilateral investment treaties as an instrumental variable, I control for nonrandom sample selection. This guards the analysis against biased results, and makes causal inference more feasible.

I find robust evidence that autocrats with longer time horizons are more likely to sign a double tax agreement. There are mixed results and too much uncertainty to infer a causal effect from the length of autocratic time horizons to DTA content. However, it might seem as if autocrats with longer time horizons tend to sign DTAs with lower thresholds for what constitutes permanent establishment.

The findings in this thesis add to a growing body of literature on autocratic political economy, and international economic agreements. It contributes to the understanding of how the incentives of regime survival shape political economic policy in authoritarian regimes, and in what situations the autocratic ruler chooses or is able to exercise his influence. In addition to the value for theory on autocracies, it represents a fundamentally new approach to the study of why some developing countries sign DTAs, and why some sign away their rights to collect tax revenue to a larger degree.

1.1 Outline of the thesis

The thesis is structured the following way. First, I give an overview of what DTAs are, the negotiation process and key trends related to signing DTAs. In chapter A.4, I compare two DTAs: between Zambia and China, and between Tanzania and Canada, in order to understand how DTAs can be more or less beneficial for source countries. A source country is the country hosting foreign companies or residents. The literature on DTAs also refer to source countries as host or capital importing countries. The counterparts are referred to as resident, home or capital exporting countries. Developing countries and low- and lower middle income countries are often source countries, as they are net importers of investments. In chapter three, I present current attempts at understanding why developing countries enter international economic agreements, and why some sign agreements that are more source-friendly than others. This includes literature on preferential trade agreements (PTAs), bilateral investment treaties (BITs) and DTAs. In chapter four, I look to the literature and empirical work on autocratic time horizons and create a set of hypotheses. In this chapter I also discuss possible constraints on an autocrat's economic decision making, from the bureaucracy, the broader population and his inner circle. I then justify why I have chosen the individual leader as the unit of inquiry, rather than the regime. In chapter five, I cover the methodology and data used to test my hypotheses, including discussions on how DTA signing and content, in addition to autocratic time horizons, are operationalised and why I have chosen a Heckman model, with past BIT signing as the instrumental variable. I also elaborate on the criteria for the main sample, in addition to the sample of asymmetric DTAs. In chapter six, I report and discuss the results from the analysis, including robustness checks. After summarizing and concluding, I reflect on the implications of the results, in terms of real world relevant and ideas for further research.

2 Double Tax Agreements

In this chapter I give an overview of the central characteristics and trends for double tax agreements. In section 2.2 I describe how the negotiation of treaties typically goes about. Finally, I compare two tax treaties to better understand the ways in which DTA content can be more or less restricting on a source country's possibility to tax foreign companies and nationals.

2.1 Main features and trends

DTAs are long term binding instruments, committing parties to allocation of taxing rights and obligations. There are over 3,000 in force worldwide, covering 96% of foreign direct investment (United Nations, 2021, p. 26). They are referred to as DTAs, DTTs (double tax treaties) or tax treaties. The “double” in double tax agreements stems from the original motive of signatories to prevent double taxation, occurring when more than one country taxes the same cross border income (Hearson, 2016, p. 8). DTAs are intended to make it clear if it is the country where the company has its residency, or the country where the income has its source, which has the right to tax income.

DTAs are largely bilateral, but there are exceptions, such as the treaty between the Nordic countries.³ 141 jurisdictions participate in the Multilateral Convention on Mutual Assistance in Tax Matters, which deals with issues as exchange of information, assistance in the collection of taxes and dispute resolution (Arnold, 2016). 95 jurisdictions are also part of the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (BEPS), which entered into force 1st of July 2018, and modifies existing DTAs, to be in line with the OECD's 15 actions to prevent BEPS (OECD, 2016; Remeur, 2019).

Generally, DTAs divide the right to tax two types of income: active and passive. Active income simply means business profits, and the right to tax is in the country where the

³Norway, Sweden, Iceland, Finland and Denmark.

multinational company has a so-called permanent establishment (PE), a fixed place of business. The residence country then has to prevent double taxation, by giving exemptions or tax credits for taxes paid in the other state. I will get back to what constitutes permanent establishment.

Passive income is what recipients earn without being actively involved, such as profits made from dividends, which are payments to shareholders, royalties, which is income for the use of assets (e.g. copyright or patent), and interests, which is income made from debt claims. In a DTA the residence country can agree to make allowance for any tax its residents have paid in the source country when calculating their tax liability at home. In return, the source country agrees to certain restrictions on its right to tax income earned by residents of the treaty partner within its borders. This can for example be restrictions on taxing capital gains, taxes on pensions or withholding taxes.

Withholding taxes are paid directly to the tax authorities from the source of income, in contrast to when the income is transferred to the tax payer before it is paid to the tax authorities (Hearson, 2018a, p. 7). This is a practical way to tax foreign recipients on passive income, because of the difficulties that might be encountered in assessing whether these recipients own other assets in the country apart from the royalties, interest or dividends in question (Daurer & Krever, 2014).

Reciprocity is a fundamental principle of DTAs, meaning that obligations apply to both signatories. For example, if the DTA provides a maximum rate of source-country withholding tax this is equally applied for both parties. However, in an agreement where one signatory is mainly capital-importing and the other is mainly capital-exporting, a DTA may have very different outcomes, often restricting the source country's rights to tax (Baker, 2014, p. 342). To illustrate, Norway and Zambia have a DTA where all provisions are equal to both parties, but the fact that investors and companies largely will be residents of Norway, doing business in Zambia, means that it is primarily Zambia's ability to collect taxes that is limited by the treaty.

Avi-Yonah (2009) goes as far as to say that in a situation where the capital flows mostly from one country to another, a DTA *only* limits the tax a capital-importer can impose on the capital-exporting country. This assuming that capital flows are static, and do not change direction or composition.

DTAs are not a new concept, and several OECD countries entered into them between the 1950s and 1970s. However, Barthel and Neumayer (2012, p. 4) claim that before the end of World War II, only 6 DTAs had been signed. Baker (2014, p. 342) reported that 60% of DTAs had been signed over the last 20 years in 2012, and that by 2008 more than 50% of DTAs were between a developed country and either a developing or a transitioning economy. Figure 1 shows the frequency of DTA signing over time, for a sample of 118 mostly low and lower middle income countries (ICTD & Hearson, 2021). It clearly supports that DTAs have grown in popularity since 1950, but that signing frequency has decreased since the late 1990s. For this sample, 73% of DTAs were signed since 1990.

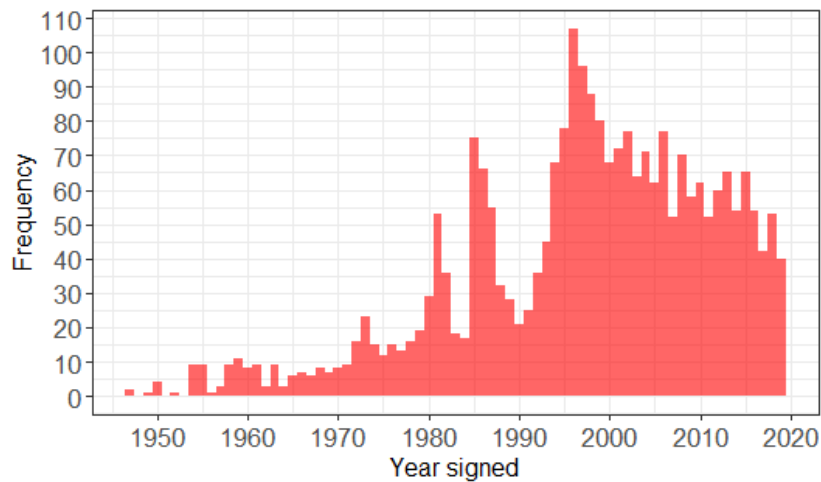


Figure 1: DTA signing 1945 - 2020

Note. The data is from the Tax treaties explorer dataset (ICTD & Hearson, 2021). It includes 2533 bilateral DTAs, signed by 118, mostly low or lower middle income countries. These are DTAs signed before and after independence, which are still in force or terminated.

2.2 Negotiation process

The content of a DTA is decided through negotiations between signatory states. According to “The Manual for the Negotiation of Tax Treaties between Developed and Developing Countries” (2019, p. 20-45), negotiations are typically conducted by negotiation teams from each country, including bureaucratic officials from the ministry in charge of finance and tax administration. Some countries include officials from other relevant ministries, such as the Ministry of Foreign Affairs. The leader of the team is typically a senior official, with the authority to make decisions during negotiations, and should have extensive knowledge of domestic taxation. Usually, the team also includes at least two other members who advise the leader, and a note taker. The team sometimes consults relevant businesses and the embassy in the other country, gathering information about issues concerning the economic relationship between the two states.

To begin negotiations, both countries bring a draft agreement to the table. There are two international tax treaty models that are, with few exceptions, used as a starting point. The first is the United Nations Model Double Taxation Convention between Developed and Developing Countries, hereby referred to as the UN model (United Nations, 2017), and the other is the Organisation for Economic Cooperation and Development’s Model Tax Convention on Income and on Capital, hereby referred to as the OECD model (OECD, 2019). They are both based on the model from the League of Nations,⁴ and therefore share the same structure, and are quite similar in terms of content. In fact, approximately 75% of language in signed DTAs are the same (Avi-Yonah, 2009, p. 99). The models have been updated directly several times, and indirectly through changes in the “commentary”, which lays out possible interpretations of the provisions (Daurer & Krever, 2014). Some countries, like the US, have their own model DTA (Arnold, 2016, p. 140). The UN model is seen as more beneficial to developing countries (Daurer & Krever, 2014), than the OECD model, as it allocates more rights to source-countries. The negotiators might use one of these models, but can also complete a draft containing provisions from both. Differences between the two

⁴For a thorough review of the history of DTAs see Daurer and Krever (2014)

countries' first drafts are identified before the first round of negotiations (United Nations, 2019, p. 20-45).

When the parties meet, they go through the drafts article by article, closing paragraphs already agreed on and try to find agreement on the points where they do not agree. The parties might present provisions or wording which are “red lines” (non-negotiable), language they strongly prefer, and where they can be flexible. It can be useful to know if a negotiating partner has registered “reservations” or “observations” in the commentary of the OECD model or UN model. A reservation means that the country is not willing to adopt a particular provision, and an observation means that a country disagrees with the interpretation in the commentary on a provision. With negotiation styles ranging from aggressive to soft, the parties lay out their arguments, for example comparing the provisions with other DTAs agreed to with similar countries. Alternative provisions or amendments from the commentary in the OECD or UN models, or in other DTAs can sometimes serve as a path to agreement. These provisions have been thoroughly discussed in international fora and used for decades, and are thus less prone to risks of technical mistakes or unintended consequences.

As full agreement is often not found in the first reading, discussions are postponed for a later date, typically alternating the location between the two capitals. In a survey of 207 past and present DTA negotiators, 81% answered that personal relationships among negotiators are extremely or very important for quick and successful treaty negotiations (Brauner, 2020). When agreement is found, possible translations, and other formal requirements, varying from one country to the next, are conducted. To make the agreement official, it is signed, often by a council or cabinet of ministers, and a signing ceremony is arranged by the foreign ministries. The document is treated as confidential until the date of signing. Further, the DTA does not enter into force before it has been approved by parliament or a legislative assembly in both states. Baker (2014, p. 345) claims DTAs can take years to negotiate, and that ratification can take further two or three years.

2.3 Comparing content in two double tax agreements

In order to understand the basics of how a DTA is structured and what content can be more or less beneficial for a source country, and thus often a developing country, I compare two existing agreements on some of the most important provisions.⁵ To some degree, the DTAs compared in this section represent each end of the scale concerning taxing rights for a source country. The more source-friendly treaty is the DTA between Canada and Tanzania (1995), hereby referred to as the Tanzania treaty. The more restrictive DTA, in terms of taxing rights for developing countries, is the DTA between China and Zambia (2010), from now on referred to as the Zambia treaty. Table 1 gives an overview of articles and issues covered in this comparison. A more in depth comparison of the two DTAs, covering several more provisions, is included in appendix chapter A.

2.3.1 Permanent Establishment

What article 5 does, in combination with other articles in a DTA, is to remove entirely the source country's right to tax business profits derived in its territory, unless this is earned through a "permanent establishment" (Daurer & Krever, 2014). In article 5(3), the Tanzania and Zambia treaty defines a permanent establishment as a fixed place of business through which the business of an enterprise is wholly or partly carried on, before listing a couple of categories, such as an office, a factory and a mine.

Activities taking place at this fixed geographical space must continue for a minimum of 6 months to constitute a permanent establishment in the Tanzania treaty, while the Zambia treaty has a criteria of at least 9 months. This means that a Chinese enterprise has to operate in the same geographical location in Zambia for more than 9 months to be taxed by the source country, while a Canadian company will be taxed for doing the same for a minimum of 6 months in Tanzania. A high threshold makes it harder for source countries

⁵As DTAs can come about through a mixture of OECD and UN model provisions, a comparison of the specific articles included in real treaties seems more fruitful than simply a comparison of the content of model treaties. However, more discussions concerning the differences between the UN and OECD model treaties are included in appendix chapter A.

to claim that a multinational company should be taxed for their business profits made in their country, and can represent a severe loss of taxing rights for a developing country.

In sum, how permanent establishment is defined in a DTA is important in deciding who has the right to tax the business profits (Braun & Zagler, 2018, p. 1480). If this definition is easy to fulfil, more income will be subject to source taxation, which often is beneficial for developing countries. It is worth mentioning that many types of companies' legal entities do not match with the available definitions of permanent establishment in DTAs, as for example businesses that only have digital presence in a country (Remeur, 2019, p. 2).

Table 1: Comparison of two double tax agreements

Provision	Tanzania/Canada	Zambia/China
Permanent Establishment		
Art. 5(3): PE	6 months	9 months
Distributive Provisions		
Art. 8(2): Shipping and Air Transport	Included	Excluded
Art. 10: Direct Dividends	20%	5%
Art. 10: Portfolio Dividends	25%	5%
Art. 11: Interest	15%	10%
Art. 12: Royalty	20%	5%
Other Provisions		
Art. 13: Capital Gains Tax	Included	Immovable Prop
Art. 25: Mandatory Arbitration (OECD)	Excluded	Excluded

Note. In cases where an article is included in only one of the treaties, the article number will refer to the article. number in that treaty. When articles are not included in any of the treaties, the article number refers to the article in the model treaty specified in the table.

2.3.2 Distributive Provisions

Articles 6-22 in the Tanzania treaty and 6-20 in the Zambia treaty are referred to as the distributive provisions (Arnold, 2015; United Nations, 2019). These determine whether only one or both, resident and source, have the right to to tax certain types of income, and

at what rate.

For example, Article 8 covers shipping and air transport. The Tanzania treaty allows for shared taxing rights on shipping activities, as under the UN model tax treaty, while the Zambia treaty does not, meaning that profits from shipping activities from a China-registered company should not be taxed in Zambia, even though they deliver goods to Zambian harbors.

Articles 10-12 set a ceiling on the withholding tax a source country can levy on individuals' and companies' passive income from article 10. Dividends, 11. Interest and 12. Royalties. The lower this cap on withholding tax is set to, the less source countries can tax (Daurer & Krever, 2014, p. 9). The Zambia treaty can be said to be more restrictive for the source country, setting a cap at 5% for royalties and dividends, and 10% tax for interest. The Tanzania treaty on the other hand, gives more room for taxation on passive income. The DTA separates between direct dividends (tax rate of 20% allowed), with a threshold of owning minimum of 15% of shares in a company, and portfolio dividends (25% taxation allowed), which has no such ownership threshold. Interest can be taxed at a maximum of 15% in this DTA, while the cap for royalties is 20%.

2.3.3 Other Provisions

The next articles, 13-22 in the Tanzania treaty and 14-20 in the Zambia treaty, cover taxation of "other" income and more administrative articles, such as dispute settlement mechanisms. The articles on income includes capital gains which are not covered elsewhere in the agreement, independent services, managerial fees and governmental fees. This category also covers special topics as students, athletes, artists and pensions. Overall, the Tanzania treaty includes provisions allowing for source-based taxation on these all of these points, while the Zambia treaty does not.

Article 13, on capital gains covers tax on gains incurred on the sale of investments such as shares, trusts or real estate. The Tanzania treaty allows for source taxation on gains

incurred from the selling of shares, property and other types of investments, while the Zambia treaty only allows for capital gains tax imposed on immovable property by the source country.

The next article in both DTAs, decides the way in which parties resolve disputes. The article describes the mutual agreement procedure (MAP) stating that a person that considers the actions of one or both of the contracting states to be a breach to the DTA, can address a country's "competent authority", often being a senior official in the country's tax department (Arnold, 2016, p. 174). According to MAP these parties "shall endeavor" to resolve matters referred to them (Avi-Yonah, 2009). In other words, they are not required to agree. The disputes mostly concern transfer pricing issues.

None of the DTAs subject to this comparison contain provisions for mandatory binding arbitration. This means that in the case of a dispute, investors or parties would not be able to go through a specified arbitrator, outside the domestic courts, for a final and binding decision. In fact, only 55 of the 2533 DTAs in the Tax treaties explorer dataset include a mandatory binding arbitration provision (ICTD & Hearson, 2021). About half of these include a low or lower middle income country, and all of them are signed since 1998. DTAs commonly include provisions on a mutual agreement procedure, which will be further discussed in chapter 3.1.

2.3.4 Concluding the comparison

Though this comparison makes no claim of being a comprehensive legal analysis, it would seem as if the Tanzania treaty is more in favour of the source country, and thus often the developing country, than the Zambia treaty. I have attempted to exemplify several ways in which a DTA can restrict a developing country's right to tax income derived by non-residents. It shows the importance of including a broad perspective on the content of DTAs, not limited to only withholding tax rates or permanent establishment thresholds alone. These insights will be useful when operationalizing DTA content later in this thesis.

3 Literature Review

We have seen how double tax agreements can restrict developing countries' possibilities of collecting domestic revenue. Still, a lot of developing countries have signed such agreements, and the content in these vary. The question is *why?* Why are some developing countries more likely to sign DTAs than others, and why do some developing countries sign away more of their rights to taxation? In this section I will present key takeaways from the current literature on international economic agreements, including literature on bilateral investment treaties (BITs) and preferential international trade agreements (PTAs), in addition to double tax agreements (DTAs).

A broader perspective, not limited to DTAs, is included for several reasons. Firstly, PTAs and BITs have much in common with DTAs. Most importantly, developing countries presumably sign them all with the same primary motivations: attracting increased foreign investments and strengthening diplomatic ties (Barthel & Neumayer, 2012; Braun & Ziegler, 2018; Hearson, 2018b; Milner, 2014; Milner & Büthe, 2008; Simmons, 2014; Baker, 2014). Secondly, countries who sign agreements forgo some degree of flexibility concerning domestic policy making or enforcement. Also, as in the case of DTAs, the majority of PTAs and BITs are bilateral. Finally, a broader focus enables the use of a larger pool of literature, which in turn can give inspiration to mechanisms not yet explored in the literature on DTAs.

There are four main perspectives to why developing countries enter international economic agreements, and what decides the outcome of these negotiations. The first is (1) agreements as credible commitments, which can be divided into two strands - tying of hands and power and preferences. The tying of hands perspective centres around to which degree developing countries are willing to restrict their policy room in order to potentially attract investments through an agreement, while the power and preferences perspective focuses on the developed countries' preferences, and to which degree they are able to attain them in treaty negotiations. The second perspective is (2) treaty diffusion as a result of competition,

arguing that content signing and treaty content spread as a result of competition for foreign investments. The third approach is (3) diplomatic ties and bounded rationality, suggesting that agreements are not always signed with rational and economic motives. Finally, the last perspective is (4) negotiation capacity, claiming bureaucracies to be important for securing preferable negotiation outcomes.

3.1 Agreements as credible commitments

The first theoretical explanation starts with an assumption of why investors might hesitate in providing foreign investments, to a developing country. Vernon (1971, p. 46-49) lays out the dynamics in the relationship between multinational companies and source states in the Obsolescing Bargain Model, in the case of raw material ventures. Before investment, companies have the upper hand in the face of countries desperate to attract much needed revenue. However, once the investment is made, bargaining power shifts to the source country government, because of the costs related to moving one's operations once in place. At this point it is rational for the source country to put in place discriminatory or frequent policy changes, such as expropriation (Simmons, 2014, p. 18). As expropriations of foreign assets have become rarer, other more subtle government interventions, reducing profitability of investments have replaced it as a main concern for investors (Milner, 2014, p. 741). Nonetheless, the idea remains much the same.

With this in mind, several researchers refer to international economic agreements (Allee & Peinhardt, 2014; Milner & Büthe, 2008) as a way for states to credibly prove commitments to foreign investors about the treatment of their assets, and for other countries to protect the interests of investors in their resident countries. "An introduction to Tax Treaties" (2015) states that the average life of an agreement is 15 years, which can be said to contribute with some predictability for a potential investor.

Buthe and Milner (2008) claim agreements make commitments more credible through two mechanisms. (1) An informational effect: the public commitment to economic policies

make it more likely that renegeing will be detected and punished (Milner & Bütthe, 2008, p. 745), and (2) the establishment of institutions through agreements, that make it easier to bring costly pressure on governments if they do not carry through on those promises (Milner & Bütthe, 2008, p. 746). Concerning the informational effect, the researchers largely refer to the reviews undertaken and published when countries are members of international organizations like the World Trade Organization. However, they also point to how states who sign international agreements tend to follow domestic politics of the other signatory more closely, than in the absence of an agreement.

As for the the second mechanism, the establishment of institutions for enforcing agreements, it is worth mentioning that there are certain differences between BITs, PTAs and DTAs. The dispute provisions in PTAs and BITs vary between providing disputing parties international binding arbitration through one or more venues (such as the International Centre for Settlement of Investment Disputes of the World Bank, ICSID), more ad hoc forms of arbitration, and dispute resolution through the use of domestic courts (Allee & Peinhardt, 2010; Jo & Namgung, 2012). Where PTAs contain provisions both regarding investment and trade, only investor protection issues are handled through binding arbitration, while trade-issues are normally settled by state-to-state dispute mechanisms.

DTAs on the other hand almost never include binding arbitration for settling disputes. The dispute settlement provision in DTAs has even been characterised as weak by Avi-Yonah (2009) compared to that of BITs. DTAs rather rely on a mutual agreement procedure (MAP) which lays out certain steps for signatories to reach an agreement between competent authorities in the two countries (Brauner, 2020). One might say that the structures for asserting “costly pressure” is stronger in the case of PTAs and BITs, than for DTAs. This might also explain why many of the following studies on PTAs and BITs use differences in enforcement provisions, as a test of which source countries have signed away policy room, while studies focusing on DTAs tend to use withholding tax rates or a more holistic approach with several provisions.

This is not to say that breaching commitments made in a DTA is cost free. Johnson (2018, p. 78) suggests three ways in which international and domestic actors exert costs on a country in the case of DTA violation. First, he argues breaching commitments in a DTA could lead to capital flight, mainly in the form of foreign portfolio divestment. He claims these types of passive investments in securities are easier to relocate, than foreign direct investments (FDI). The second cost presented are sanctions from global tax policy makers, who would voice their displeasure, exclude most violators from relevant fora and inform of this behavior to domestic audiences. Finally, Johnson argues that foreign credit rating agencies could downgrade sovereign credit ratings, which would be likely to blacklist their financial markets. He further argues that these consequences likely would shift the tax burden to domestic actors, in turn affecting popularity and voting behavior.

Some researchers argue the existence of a “credible commitment” effect, through finding increased FDI when PTAs and DTAs are present (Milner & Bütche, 2008; Johnson, 2018). A critique of this as evidence, is that there could be a number of other explanations for why international agreements correlate with increased FDI, not controlled for by these models. For example, one might assume that developing countries are well aware of what multinationals fear, and might adjust their behavior independent of having signed an agreement. Also, there might be a selection effect in the other direction: that those countries who are least likely to attract FDI, because of non-investor friendly behavior, could be least likely to sign international economic agreements. This could mean that the reason why FDI is absent, is for other reasons than the lack of an agreement. Milner and Buthe (2008) control for domestic policies in place at the time of signing, in their study on PTAs. They find that domestic policies are important for treaty signing, but that it does not diminish the importance of agreement signing as an explanation of FDI-inflows. Having said this, omitted variable bias is always a challenge in statistical analysis, as it is often challenging to include all types of potential explanatory domestic policy-variables.

Johnson (2018) argues that his findings of increased FDI for DTA-signatories can be pre-scribed to a credible commitment effect because despite few enforcement powers in the

international tax system there is close to no evidence of non-compliance with DTAs. This might be the case, but without comparing the level of compliance with a situation where countries lack an agreement, it is challenging to count this as hard evidence of a causal effect.

Another critique is that the evidence of a positive effect on FDI flows from international economic agreements is mixed in the literature (Vindheim & Rusten, 2017; Allee & Peinhardt, 2014; Johnson, 2018; Baker, 2014; Avi-Yonah, 2009). Considering this, it might be less understandable that so many developing countries enter into international economic agreements, especially if one assumes that these agreements also set limits to tax collection and economic policy making. One thing to remember is that there is a difference between motivation and effect. Those making the calls, whether being state leaders or bureaucrats, might not have time to review existing literature on DTA signing and foreign investments, but still could be motivated by the possibility of mobilising foreign investments. However, an effect on investments should be present to claim that international economic agreements are tools for creation of credible commitment.

Until now, we have discussed agreements as credible commitments, presuming that both capital-exporting and importing countries have something to gain from agreements. The two following approaches are both based in the credible commitment-argument, but are divided in which set of actors they believe are the source of variation in treaty content and likelihood of signing.

3.1.1 Tying of hands

According to the tying of hands approach, variation in content of international economic agreements stems from differences between capital-importing countries. Because of the mechanisms of agreements as credible commitments explained above, it is rational for source states to give up some policy space, to “tie their hands”, to attract foreign investments.

Based on this perspective, Allee and Peinhardt (2014) hypothesize that a country with

greater credibility problems, measured as weak rule of law or recent history of expropriation, should be more likely to gain from a commitment. Thus, they should also be more willing to enter agreements which, to a larger degree, restricts the country in its policy making, through stronger provisions concerning enforcement. This in turn stems from the logic that how much credibility an agreement produces varies with the strength of the agreement itself (Allee & Peinhardt, 2014, p. 58). However, the researchers do not find empirical support for this relationship in their study on BIT variation.

Rosendorff and Shin (2015) show that democratic countries would rather sign PTAs, and that autocracies prefer BITs. One of the presented explanations for this is that hand-tying, in terms of restricting the possibilities for expropriation or changes in tax policy, is less costly for the leadership in an autocracy than in a democracy. The electorate accountability in democracies makes signing BITs more costly, because this type of agreement restricts policy room to a larger degree than PTAs. The authors argue that democracies would rather sign PTAs, which mainly restrict their availability of tariff revenue rents, and does not restrict the policy maneuvering demanded to please a larger electorate.⁶ It costs less for autocrats to sign BITs, as securing their position is based less on pleasing the population. The researchers also find support for increased BIT signing for countries that are more dependent on FDI, as measured by GDP/FDI ratio in a country's economy, which might imply that countries that are more dependent on FDI are more willing to forgo some policy space to be attractive to investors. However, the danger of selection effects and omitted variable bias is also present here.

Another study,⁷ by Hearson (2018b), finds that dependence on corporate tax (as share

⁶The selectorate is, put simply, citizens with the theoretical possibility of being part of the winning coalition, who in turn have the power to overthrow a leader (Buono de Mesquita, Smith, Siverson, & Morrow, 2005, p. 41). The selectorate theory from *The logic of political survival* (2005) is elaborated on in the theory chapter.

⁷Hearson's article, "When do developing countries negotiate away their tax base?" uses the ActionAid tax treaties dataset, which includes less treaties than the newly published Tax treaties explorer dataset. Martin Hearson is the creator of both of them, but has not, to this date, published a study based on the latter data.

of total revenue) in developing countries increases the likelihood of signing DTAs with wealthier countries. Though this study does not refer explicitly to “tying of hands”, it lends support to the concept. This is because it paints a picture of countries that might not have a lot of income relative to corporate tax, as more eager to sign DTAs, in a kind of desperation to attract government revenue. If one assumes that these countries, at least somewhat, limit their decision making possibilities through DTAs, this can be interpreted within the framework of hand-tying. Hearson’s study also shows that developing countries who depend more on corporate tax sign DTAs with higher withholding tax rates, but are not more source-country friendly DTA provisions overall. From this, Hearson draws the conclusion that countries more dependent on corporate tax are willing to forgo some rights, on the premise of retaining the possibility of collecting withholding tax, ignoring DTA provisions that are harder to understand.

3.1.2 Power and preferences

Researchers working from a realist view of power in international politics, but still assuming that agreements are devices for credible commitment, have suggested that preferential outcomes in a negotiated agreement are a product of power differences between negotiating countries. In other words, material and economic power equals the power to make the rules.

Allee and Peinhardt (2014, p. 49) find no evidence for the self-hand-tying logic of agreement as commitment, rejecting that those with the most severe credibility problems will sign stricter treaties, in terms of enforcement provisions. They rather place the explanatory power in the variation of capital rich states and claim that what makes an agreement credible is shaped by the preferences of these countries. More specifically, they find that agreements will include stronger, and multiple provisions for enforcing BITs, when asymmetry in GDP with the other signatory is larger. This suggesting that powerful states, relative to the other signatory, are able to push through their preferences. Here, the researchers argue that stronger provisions of enforcement are generally preferred by industrialised states, as investors from these resident states nearly always tend to be the claimants in disputes.

Further, a positive and significant relationship is found when capital exporting states have more multinational companies and right-wing governments. In other words, powerful states with more interest in the protection of investors sign stricter BITs concerning dispute-settlement provisions. To summarize in the words of Allee and Peinhardt (2014, p. 82), "Capital-seeking governments do not so much tie their own hands with BITs, as have their hands tied for them."

Simmons (2014) finds that developing countries are more willing to ratify BITs with stronger enforcement provisions when their domestic economies are under stress, supporting the idea that economically powerful states are in a position to rule over a weak negotiating partner. Having said this, the developing countries' economies are measured in absolute terms, and not relative to their more wealthy negotiating partners. This might suggest that the developing countries themselves see it necessary to tie their hands more tightly when they are in a bad place economically, independent of how powerful their bargaining opponent is. In cases like this, it can be difficult to separate between the approaches of "tying of hands" and "power and preferences" under the umbrella of agreements as credible commitments.

In the case of DTAs, there is mixed evidence of how power relations affect the distribution of taxing rights in treaties. Rixen and Schwarz (2009) found in the case of German DTAs that withholding tax rates, but not permanent establishment provisions, tended to be more generous to the net capital importing country in a dyad when the FDI relationship was more asymmetrical. This supports the idea that a higher fiscal cost (having less revenue) leads to a tougher negotiating stance by a developing country, but only for the easiest provisions to understand. However, Hearson (2018b) came to the opposite conclusion in his study, finding that greater asymmetries in FDI for signatories meant the loss of taxing rights for developing countries. His findings are based on several provisions in DTAs, not limited to withholding tax and Permanent Establishment. Hearson also shows that larger asymmetries in capacity, as measured in the Correlates of War project's Composite Index of National Capability (Singer, Bremer, & Stuckey, 1972), which incorporates military expenditure,

industrial production and population size variables, has a negative effect on permanent establishment and the “other” category of DTA-provisions for developing countries. This broader, and more up to date, research adds weight to a power-based explanation in the case of DTAs.

3.2 Diffusion by competition

Another strand of literature on the international investment regime looks at competition as an explanation. As in the “tying of hands” perspective, this approach sees international economic agreements as vehicles for less wealthy countries to attract foreign investments. However, this pool of literature proposes that the driver for signing of international agreement stems from the fear of missing out when other countries, for example neighbors or countries trading with similar good and services, do so.

Elkins, Guzman, and Simmons (2006) find that developing countries are more willing to sign a BIT with a richer state, if competing countries who export more or less the same goods and services, have similar infrastructures or have equally skilled work forces, do so. By testing different theoretical approaches empirically, including agreements as credible commitment, they find BIT diffusion as a result of competition for foreign capital to be the strongest explanation overall.

Neumayer, Nunnenkamp and Roy (2016) find that developing countries sign PTAs and BITs with stricter provisions on investor-to-state dispute settlement and pre-establishment national treatment⁸ if countries competing for capital from the same developed country previously have signed a similar agreement. They observe the same to be true in the case of weaker provisions in international investment agreements, finding these contagious to agreements signed with other developing countries, competing for FDI from the same country.

⁸Pre-establishment national treatment provisions restrict the ability of source country governments to discriminate foreign investors in regards to market admission (Neumayer et al., 2016, p. 187).

The way multinational companies structure themselves to take advantage of the very best combination of tax agreements, and the awareness of this happening, might lead developing countries to sign away taxing rights in hope of being more attractive than their neighbors. Barthel and Neumayer (2012) find that strong competition, measured by the number of countries in the region and countries who export similar goods signing DTAs, lead to countries being more likely to sign them. They do not find this relationship in the case of competition measured by the number of countries who export to similar third party markets. On the basis of the two significant relationships mentioned, the researchers argue that spatial dependence is an important reason for proliferation of DTAs. Further, they claim source states are caught in a prisoner’s dilemma; meaning that they would be better off if none of them signed DTAs, because these agreements nearly always favor residence over source taxation, and that the highest payoff occurs for a sole country if it signs a DTA, when others do not.

3.3 Diplomatic relations and bounded rationality

Another perspective suggests that most leaders do not sign international economic agreements with a fully rational economic motive, and that promotion of diplomatic agendas could be part of the motive in many cases. This section will mostly draw on literature on BITs, as this question has been subject to less scrutiny in the context of DTAs. “The Manual for the Negotiation of Tax Treaties between Developed and Developing Countries” does however list “to pursue political or diplomatic objectives” as one of four motivations to sign a DTA (United Nations, 2019, p. 11).

Jandhyala, Henisz and Mansfield (2011) find statistical evidence indicating that BIT signing was, from the late 1980s to the 2000s, largely driven by signing in peer countries. The researchers claim that adoption of BITs were, in this period, less a result of cost-benefit evaluations, but rather motivated by the chance to publicly symbolise an allegiance to the norm of investor friendly policies, and to strengthen diplomatic ties. They argue that this explains the surge of south-south countries adopting BITs in this period, as the motivation

to attract substantial investments are less present between lower income countries.

Poulsen and Aisbett (2013) also question the degree of rationality with the decision makers signing international economic agreements, finding support for that developing countries have not always been aware of the potential risk and costs related to signing a BIT. In their survey of stakeholders and negotiators for investment protection policies in the 90s, 62% of the 13 countries in the study answered that they had not realised before the first claim that BIT obligations were far-reaching and enforceable. An early and critical essay, by Irish (1974), argues that developing countries were not aware of the implications of investor-friendly DTAs, and saw their own bargaining position as weak. Bounded rationality is closely linked with the level of expertise and capacity of national bureaucracies, which is discussed in the next section.

In a chapter devoted to the politics of international investment treaties in developing countries, Bonnitcha, Poulsen and Waibel's book *The Political Economy of the Investment Treaty Regime* (2017, p. 223-224) covers investment treaties as diplomatic tools. They, among others, point to that politicians and individual bureaucrats sometimes use treaty signing for selfish reasons; to promote their own careers through "photo-ops", make it look like they are busy at work or simply facilitate an expensive business trip.

3.4 Negotiation capacity

This final approach considers how bureaucracies shape provisions and treaty balance. Might the differences in bureaucratic capacity and technical expertise between countries offer an explanation to differences in treaty content?

Berge (2021) finds, through interviews with 64 international investment agreement (IIA) negotiators from 35 states that negotiators from high-capacity bureaucracies report better access to stakeholders and in-house policy experts during negotiations than negotiators from states with low bureaucratic capacity. Berge and Stiansen (2021) further support this through statistical analysis, finding that bureaucratic capacity advantages are robustly

associated with increased attainment of preferences in BIT negotiations. They do however admit, that a more specific measure of the bureaucratic capacity related to BIT negotiations would have been able to offer better content validity, an assurance that the study measures what it intends to. Also, these authors argue that at least some of the explanatory effect of bureaucratic capacity on treaty-content could be ascribed to differences in more general power-asymmetries. However, the opposite could also be said concerning most findings in the section on power and preferences.

BIT negotiators from developing and emerging market economies such as India, Namibia, Serbia, and Sri Lanka note that very strict budgetary constraints makes it difficult to attract the necessary expertise, and that they sometimes are not able to participate in formal training due to costs (Berge, 2021). In a survey of 207 past and current DTA negotiators, Brauner (2020) finds a strong correlation in the amount of training received between negotiators from OECD member countries and others. A third of the respondents answered that they had received no specific training prior to negotiating DTAs. As, OECD countries tend to be richer than the rest, one might presume this to have negative consequences for developing countries' negotiation outcomes.

Hearson (2018b) does not find any effect of negotiation capacity, as measured by expert assessments of states' bureaucracy in general, on states' willingness to sign DTAs. He does however find that developing countries with a larger tax base, measured as total government revenue as a share of GDP,⁹ are more likely to be protective of their taxing rights in negotiations. He argues that this statistical relationship might be attributed to stronger negotiating capacity, which is not picked up by the assessment of general state bureaucracy. Also, he points out that international tax policy tends to be a specialist function within most governments, with treaty negotiations often led by one person (2018b, p. 243). He also points to a significant learning effect, insinuating that developing countries become tougher negotiators when they have signed several DTAs. However, this learning could be prescribed to several actors, not limited to negotiators or the bureaucracy.

⁹Total government revenue, excluding grants and social contributions.

3.4.1 What do we know?

There is a broad literature on why signing and content of international economic agreements vary. I tentatively conclude that developing countries that sign DTAs, often do so in the belief that it will attract foreign investment, and to strengthen diplomatic ties. Considering treaty signing as instruments for credible commitment, there is no evidence that source countries with more severe credibility problems are more willing to “tie their hands” through stricter agreements, but it can seem as if the asymmetry between powers, whether this is due to a power dynamic or differences in negotiation capacity, is an important explanatory variable. In the case of DTAs more specifically it is unclear whether power asymmetries leave developing countries better or worse off in terms of treaty content, but newer research suggests that residence countries often lay the rules. A developing country might also be more willing to sign agreements if they are in a competitive region or sector, and stricter agreements if others have sign similar agreements with the same country previously. It is plausible that decision makers do not always foresee the consequences of treaty signing. Finally, it seems as if stronger negotiating capacity and experience can help countries in attaining preferred outcomes in negotiations.

This study fits best in under “agreements as credible commitment”, and more specifically the “tying of hands” approach. This is because I investigate whether characteristics in source countries play a part in explaining variation in signing and content of DTAs. Despite lacking support for self hand-tying, there has been done little research concerning political factors and DTA signing and content, which means their still might be a story to tell. This literature review has shown the need to take into account power-based explanations, diffusion through competition, and perspectives on negotiation capacity as as part of the analysis.

4 Theory

In this chapter I discuss how the time horizons of autocrats affect the choice to sign double tax agreements, and the content of such treaties. I first introduce autocratic time horizons, and review the current literature on this concept. Then I discuss in which way a short or long time horizon might incentivise autocratic leaders in their policy choices, and more specifically when considering a double tax agreement. My main argument is that autocratic executives with longer time horizons should be more likely to sign a tax agreement, and will give up more of their rights to tax, because they can expect to still be there to gain, in the form of foreign investments, from long term commitments. Autocrats with longer time horizons are also not as dependent on the freedom to quickly mobilise resources to secure their position, as autocrats with shorter time horizons. In this chapter possible critiques and alternatives to these assumptions are also covered, including whether leaders are the most relevant subjects of inquiry. At the end of this chapter I introduce my hypotheses to be tested.

4.1 Review: Autocratic time horizons

Since Machiavelli outlined his famous typology of autocratic leadership in the Prince, researchers have tried to pinpoint just what drives autocrats in their choices. The logic of political survival (Bueno de Mesquita et al., 2005) is a widely cited attempt. Its selectorate theory starts from the assumption that the executive is a rational self-serving actor, with the main objective of remaining in power for as long as possible, as a means to maximise private wealth (Bueno de Mesquita et al., 2005, p. 23). This is also the starting point of this thesis.¹⁰ Another reason to stay in power for as long as possible is that autocrats are often ousted through violent means (Horowitz, Stam, & Ellis, 2015, p. 56).

¹⁰Alternative assumptions about autocrats' main motivations are Olson (1993) who assumes maximized private consumption, and Wintrobe (2009) who separates between "totalitarians", who maximize power, and "tinpot" dictators who maximize their own consumption, with the smallest cost possible to stay in power.

The logic of political survival went far in explaining how institutional features lead to different incentives and choices of policy in democracies and autocracies. However, not all variation in policy choices can be explained by selectorate theory or regime type. Figure 2 shows that countries that sign DTAs, at least since the 90s, are well distributed on the scale from authoritarian to democratic.

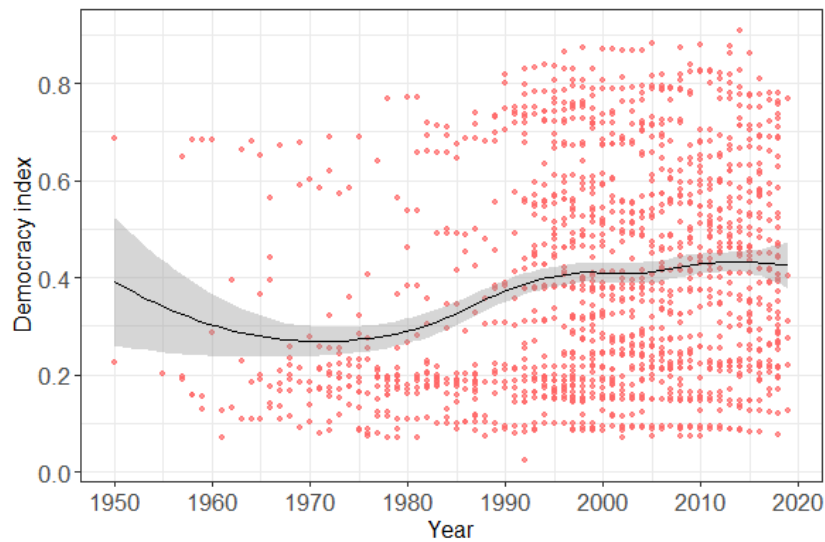


Figure 2: DTA signing and level of democracy

Note. The democracy Electorate democracy index (D) from V-Dem (Coppedge et al., 2021). Fitted with locally weighted scatterplot smoothing (Loess). This figure includes each DTA once. The value on the democracy index is for the party in each treaty with the lowest GDP per capita.

I suggest that how long an autocrat expects to stay in power might have a role to play in explaining why some autocrats enter a DTA. This is because the strategies to remain in power are not constant, but relate to the potential threats and possibilities facing the regime, and ruler, at any given point in time. While not dismissing other possible factors shaping the choices of autocrats, the following review will cover the literature theorizing and empirically testing the effects of autocratic time horizons. Autocratic time horizons was

coined by the economist and political scientist, Olson (1993). In his article, “Dictatorship, Democracy and Development”, an autocratic time horizon is defined as being an autocrat’s expectation of job security in the future. The length of this time horizon depends on the level of threat the autocrat sees to the rule of the leadership/regime (Wright, 2008).

How long a dictator expects to rule probably depends quite a lot on his personality. As with all people, individual autocrats can be more or less impatient, nervous or pessimistic by nature. They might be bigger risk-takers than the average citizen (Horowitz et al., 2015), but there is good reason to think that also autocrats’ personalities differ. However, also exogenous factors can shape how long an autocrat expects to rule. For example, an autocrat who rules in a country which has recently suffered a number of coups, will probably perceive his position as less safe. An autocrat in a stable environment, for example with access to revenue from oil, might see his position as secure, due to his ability to suppress opposition and pay off allies.

In his theoretical work, Olson (1993) argues that though all autocratic leaders will rule towards maximising revenue surplus for reasons of self-interest, their behavior and strategies to stay in power varies with the length of their time horizons. If a dictator does not expect to rule for long, it pays him to confiscate those assets whose yield over his tenure is less than their total value (Olson, 1993, p. 567). This might be done through excessive taxation or confiscating capital goods. His incentives are that of a “roving bandit”, because he does not predict to gain from investments made far into the future.

An autocrat with a longer time horizon is more likely to promote domestic economic productivity, as they expect the benefits of long term growth to outway the possibility of short-term predatory rents. This might be through what Wright refers to as optimal (or revenue-maximizing) taxation, which is the perfect balance between collecting revenue and creating incentives for the population to work. These “stationary bandits” are further, according to Olson, more likely to set in place protection of property rights and contract

rights, in an attempt to convince potential investors that the state is stable.¹¹

Olson is not the only economist to consider the importance of time for decision making. The theory on intertemporal utility functions in the field of psychology and economy is one example. Here, the discount factor encompasses any reason why an actor will discount gains further into the future, such as uncertainty or decreasing utility of the gain in question.

Wright (2008) illustrates the theory on autocratic time horizons by referring to Mobutu's Zaire. He claims that social service spending during Mobutu's regime fell from 17.5% of government spending in 1972 to 2% in 1990, and that agricultural spending (mostly subsidies) fell from over 40% of the budget to 11% in 1990. Wright attributes the move towards rent-seeking behavior at the end of Mobutu's rule, to a change in his perceived time horizon. It was no longer rational to invest in infrastructure and public goods, as he did not expect to stay in power long enough to benefit from the gains. Though this anecdotal example is not to prove the existence of an autocratic time horizon-effect, a number of empirical works have tested the theory's applicability in the real world.

4.1.1 Long-term investment

Bak and Moon (2019), and Wright (2008), find that autocrats with longer time horizons are more effective in turning foreign aid and FDI into economic growth. In line with Olson's theory, they argue that this is evidence that leaders with long time horizons have incentives to invest in long term projects for the country, rather than use resources as private pay-offs for short term private security. Likewise, Kendall-Taylor (2011) finds both quantitative and qualitative support suggesting that authoritarian regimes with longer time horizons are more likely to save windfall oil revenues abroad, avoiding dutch disease in the national economy. However, she notes that the study is unable to separate between revenue saved abroad, for the good of the country, and private wealth stashed away offshore. Dionne

¹¹To some extent, Olson also makes a normative argument, claiming that, given autocracy, longer time horizons are better for the population. This thesis does not take a stance on whether longer time horizons, or DTAs, are good for a population.

(2011) is also concerned with how an executive ruler's time horizon affects willingness to invest in public goods. She finds, in an analysis of intervention policies against AIDS, that leaders with longer time horizons tend to spend a larger percent of the national budget on health. Surprisingly, she also finds that leaders with shorter time horizons have more comprehensive policies on AIDS. This study does however have several conflicting results, and suffers from a small sample of only 15 eastern and southern African countries.

4.1.2 Property- and contract rights

Two studies concern themselves with the relationship between time horizons and property/contract rights. Firstly, Clague, Keefer, Knack, and Olson (1996), find a positive statistical relationship between longer time horizons and property- and contract rights. In this study, the autocratic time horizon is measured by an autocrat's number of years in power, and time horizon in democracies are measured by the age of the political system. Moon (2015) also finds that autocracies with longer time horizons provide better property rights institutions and attract more FDI.

Li (2009) uses data on expropriations between 1960 and 1990 to explain the variation within democracies and autocracies. The conclusions from his analysis is that leadership constraints reduce expropriations in both democracies and autocracies, but democracies generally impose more constraints on executives. The most relevant finding for this thesis is however a significant and negative correlation between current leadership tenure and expropriation in autocracies, but not in democracies. In other words, an autocratic executive will tend to expropriate less toward the end of his rule. Li argues a longer tenure reflects more certainty in the leaders' position, and thus his time horizon. As I will return to in the methods chapter, this measure of time horizon can be problematic.

4.1.3 International agreements

The studies from Chen and Ye (2020), Cui and Moon (2020), and Blake (2013) are the most closely related to my topic of inquiry. They are concerned with how autocratic time

horizons affect the willingness of signing and content of international economic agreements, more specifically BITs.

Chen and Ye (2020) find that autocracies with longer time horizons are more willing to enter into BITs which contain investor discretionary policy standards. This provision enhances the credibility of foreign investor protection, and could be thought to attract foreign investments. Chen and Ye argue that autocracies with shorter time horizons will not be able to comply with this type of agreement, and thus do not enter them. Entering a BIT represents a higher cost for an autocrat with a shorter time horizon, as they are more dependent on collecting revenue, in the face of challenges to their position in power.

Cui and Moon (2020) study the effect of autocratic states' time horizons on their ability to attract FDI through designing domestic and international institutions. They argue that autocrats with long time horizons tend to build credible domestic market-supporting commitment-institutions that attract foreign investors, and that these render BITs less important in explaining FDI inflows. However, they do not give any examples of domestic commitment-institutions, making their argument harder to grasp.

Blake (2013) makes an interesting and slightly surprising contribution to the discussion on time horizons and international agreements. In an analysis of a random sample of BITs signed by autocracies, he finds that BITs signed by autocrats with longer time horizons tend to include more carve-outs. These carve-outs determine which business sectors are not included in the commitment to treat foreign companies equally or better than national actors. Blake argues that this reflects that autocrat's with longer time horizons have the incentive to preserve more policy wiggle room, as they are more likely to experience changes in economic and political factors. This at the cost of a weaker BIT, which might be expected to attract less FDI inflow. An autocrat with a shorter time horizon, given that he already has decided to sign a BIT, will not worry as much about future policy wiggle room, as they do not expect to be around long enough to bear the costs of the institutional constraints they have committed to. They will therefore want the agreement to be the strongest possible

device for credible commitment, in order to gain from this short term.

Though the articles reviewed refer to the concept of time horizon in a variety of ways, as for example government time horizon (Blake, 2013), political time horizon (Kendall-Taylor, 2011), executive time horizon (Dionne, 2011), and the most frequent autocratic time horizon (Wright, 2008; Moon, 2015; Bak & Moon, 2019; Chen & Ye, 2020), they are all expressions of the same phenomenon. Namely, how long the executive, or ruling group, expects to hold power. In contrast to autocratic time horizons, the other types include time horizons for democratic countries. In those cases time horizons are often measured differently, as the length of their time in power, and succession, is much more regular than in democracies.¹² This is not to say that regular succession does not occur in autocracies, but that it is less so on average (Wright, 2008, p. 977). The consequence of regular turnover in democracies would be less variation in the length of time horizons, and even larger challenges in measuring time horizons in a valid manner. For these reasons, this thesis only covers autocratic time horizons. An in-depth discussion on the measurement of autocratic time horizons can be found in the methods chapter.

4.2 Implications for signing of double tax agreements

This section applies the theory on autocratic time horizons on the question of DTAs. This has not, to my knowledge, been done previously. In the following paragraphs I argue that autocratic leaders with longer time horizons are more willing to sign DTAs. The next section argues that they also are likely to forgo more rights to taxation in such an agreement, than their short-time-horizon counterparts. I believe autocratic regimes with longer time horizons are more willing to sign a double tax for two main reasons.

Firstly, as Olson (1993) points out, autocrats who do not expect to rule for long have the

¹²For example Blake (2013) measures democratic time horizons through log age of largest party in government coalition (or the president's party), as a proxy for party institutionalism. Dionne (2011) uses election margins, assuming parties who won with a smaller margin will be more preoccupied in securing survival because of less support in the electorate. Clague et al. (1996) measures democratic time horizons through the age of the political system.

incentives to maximise their rents through short-term gains, and do not believe they will be present to gain from long-term investments and decisions. I would argue that increased investments are the primary gain an autocrat expects from entering a DTA, and that this economic gain will not arrive momentarily, but rather gradually. Assuming this, a rational self-serving autocrat with a shorter time horizon will have less of an interest in signing a tax agreement, but rather be interested in gains that can be achieved in the very short future. Expropriation of foreign assets is often cited as such a short-term possibility. However, this is not specially relevant to DTAs, and is not as commonplace as in the 70s (Milner, 2014, p. 741), as discussed in section 3.1. In this case, it is more sensible to consider the short-term possibilities to adopt, and collect, taxes from the country's current foreign tax payers. Assuming autocrats with longer time horizons, on average, have longer tenures, they are also more likely to have personal experience that long-term gains outweigh short-term ones (Blake, 2013, p. 347). Institutions like treaties can then become self-enforcing, leading to even more signing of DTAs by autocrats with longer time horizons.

The second argument is that autocrats with shorter time horizons face larger political uncertainty, and are therefore more desperate for revenue to consolidate their rule. As a DTA could compromise the possibility of mobilizing revenue on a short term basis, autocrats with shorter time horizons should be less willing to sign them. This assumes that time horizons are decided mostly by exogenous factors, as the looming threat from a political opponent, and not psychological traits of the individual dictator. The allocation of resources is a key way for political leaders to sustain power. This might be through buying loyalty with cronies, mitigating public discontent, or repression of political opponents (Wright, 2008, p. 973)(Cui & Moon, 2020, p. 250). A way in which a DTA could constraint policy autonomy, is through a strict cap on tax rates for certain types of profit, hindering an autocrat profiting, or setting in place lucrative tax policies. In other words, signing a tax agreement is more costly for an autocrat with a shorter time horizon, and they should therefore be less willing to sign them.

In addition to this, a dictator seeing the end of his tenure approach at an alarming speed,

must decide between clinging to power and securing himself in the case of failure. Still assuming that dictators' main motivation is to stay in power as long as possible, as a means to secure private wealth, there are likely situations where he no longer sees continued rule as a viable option. When this happens he might have the incentive to secure as much private wealth as possible, lacking the option of continued ruling. At this point he might send the loot abroad before fleeing the country himself (Wright, 2008, p. 975). Assuming that the likelihood of this behavior increases drastically with the shortest time horizons, autocrats would be less likely to enter a DTA, restricting them in their short term predatory tax collection.

4.3 Implications for content of double tax agreements

Following the logic from the arguments in the last section, an autocrat with a longer time horizon should have the incentive to sign investor-friendly agreements in the short term, if they believe they will be able to gain from this in the long term. If one assumes that a stronger DTA has a larger potential to attract foreign investment (as Allee and Peinhardt (2014) do in the case of BITs), through a credible commitment effect, one should expect a positive relationship between the length of autocratic time horizons and the degree of restrictions on source-based taxation in a DTA. Also, autocrats with longer time horizons do not need to quickly mobilise resources in order to consolidate power, so the cost of “tying hands” through investor-friendly provisions should be less costly to bear.

Though I believe this is the correct interpretation of the theory on autocratic time horizons, I am not as sure that it will pass an empirical test. While the implications for signing DTAs are easy to identify, there could be several ways to implement autocratic time horizons on DTA content. Also, it is less clear what kind of influence and involvement an executive has over tax negotiations. Competing approaches and limitations to this way of implementing the theory on autocratic time horizons will be covered in the two following sections.

4.4 Competing approaches and limitations

Though most of the research I have found on time horizons supports my main arguments, there are other ways to think about this concept, and which incentives it provides for autocrats. In this section I present some counterarguments, and argue why I still believe that autocrats with longer time horizons are more willing to sign DTAs, and DTAs that impose more restrictions on their rights to tax.

Firstly, Blake (2013) argues that the length of time horizons lead to the opposite incentives from those I have presented. In this article about autocratic time horizons and BIT content, he argues that an autocrat with a longer time horizon will be more concerned with protecting future policy autonomy when signing an international economic agreement, as he expects a longer tenure. Because they predict to rule further into the future, including through times of economic and political challenges, they will guard themselves from policy constraints. Further, Blake theorizes that an autocrat who pictures a short tenure, does not expect to have to live with the constraints of a BIT for long, and is therefore willing to sign an agreement in the hope of attracting FDI inflows. Interestingly enough, Blake also finds empirical support for this argument.

I do not find this logic unreasonable, but question the assumption that FDI is something that an autocrat with a short time horizon would expect to gain from short term. One should expect at least some time between when a DTA enters into force, and foreign investors making their decision to invest abroad, especially if this investment constitutes a fixed place of business. If an autocrat cannot expect increased FDI inflows in the short term, Blake's logic does not hold.

Also, when an agreement is signed, it still needs to be ratified in the respective countries before it is actually effective. This is a process that can take two or three years (Baker, 2014, p. 345). However, one could also argue that the policy constraints from a DTA also are delayed in this case.

I also question his approach to uncertainty. Blake argues that longer time horizons will lead autocrats to signing agreements which allow for more policy autonomy, because states faced with uncertainty will seek flexible institutions (Blake, 2013, p. 823). He sees an expectance of longer tenure as increased uncertainty, while I would argue that autocrats with shorter time horizons are in a much more unpredictable situation, as they are likely to experience more threats to their position.

A second possible critique of my application of time horizon theory on DTA, is that the differences between BITs and DTAs are so grave than one should not expect the same results as in the empirical studies done on BITs. For example, DTAs might not be as strong devices for the creation of credible commitment, and thus for increasing FDI inflows, as BITs. As mentioned in chapter 3, there are mixed results in the literature on the effect of DTAs on FDIs to developing countries. Also, most DTAs do not include the kind of legalistic dispute settlement mechanisms as in BITs (Brauner, 2020), which probably makes them less costly to break. However, there is no reason to believe that reputational costs from potential investors or audience costs (Blake, 2013, p. 801), the loss of financial or electoral support from domestic actors, in the case of breaching an agreement, is different in the case of BITs and DTAs. Assuming the damage to a country's reputation is as important as the possible international juridical costs of breaking an international agreement, it should not be an issue applying the logic, and empirical evidence from BIT signing, of time horizons on DTAs.

Finally, there are several explanatory variables which are likely to affect the likelihood of signing, and the content of DTAs, beyond autocratic time horizons. These are presented and discussed in chapter 3, and in this theory chapter, including the next section on the role of the autocratic ruler in economical decision making. Whether any of these factors render the effect of autocratic time horizons insignificant will be tested by adding these as controls in the main model. In addition to this, it is necessary to underscore that the concept of autocratic time horizons is regarded, not as an alternative, but an additional explanation of these DTA signing and content.

4.5 Do leaders matter?

When applying the theory of autocratic time horizons on DTAs, I assume leaders have sufficient influence over the content and choice of signing international economic agreements. More precisely, that this influence is not completely swamped by the interests and actions of other actors, as for example bureaucracies or elites. In this section I discuss possible constraints to an autocrat's economic decision making, and justify my choice of leaders as the main unit of theoretical and empirical inquiry.

4.5.1 Bureaucratic involvement and constraints

The decision *to sign* an international economic agreement can be expected to be made by the political leadership of a country. I have not found any research suggesting a sufficiently strong relationship between the interests of the bureaucracy and the decision to sign international economic agreements, to challenge this claim. However, a leader is, at least somewhat, aware of the capacity of his bureaucracy, which could make the prospect of starting negotiations more or less tempting.

When considering *content* on the other hand, bureaucrats and tax experts are typically heavily involved when negotiations kick off. International tax policy tends to be a small, specialist function and DTA negotiations are frequently conducted by a small group, and led by one individual, with extensive knowledge of tax law (Hearson, 2016, p. 243).

Tax law and DTAs are technical in character, and thus the details negotiated might be distant to the sphere of executive decision making, rendering the incentives of autocrats less important. As a result of this, it is plausible that bureaucratic capacity is more vital for the design of DTA content.

One problem in confirming this suspicion is that the existing empirical research done, has been limited to a general measure of bureaucratic capacity for the whole of government, rather than a specific measure of the expertise or capacity of negotiations involved in specific negotiations of international economic agreements (Berge & Stiansen, 2021; Hearson,

2018b).

One might expect the role of the bureaucracy in negotiations to vary depending on the interest by the individual autocrat or regime. On the one hand, many autocrats might see the signing of international agreements as a way to secure international and diplomatic recognition, without having much interest in negotiations and treaty content (Jandhyala et al., 2011). Other autocrats likely see these agreements as important instruments for economic growth, and wish to be deeply involved in the process and design of content. Assuming this is a reasonable typology, a statistical relationship between a leaders' interests and DTA content could depend on the distribution of autocrats in each of the two groups.

In contrast to the idea that the bureaucracy is more involved when the autocrat is less interested, a Weberian view suggests that leaders matter, as long as bureaucracies are not strong enough to constrain them (Jones & Olken, 2005, p. 839). As discussed in the next section, on political constraints, autocratic decision making is typically less constrained than their democratic counterparts.

If one assumes bureaucracies are most important for the content of DTAs, it seems relevant to ask what their interests are in this context. An anonymous survey of 207 past and present DTA negotiators (Brauner, 2020) indicates that their motives and interests largely overlap with what is assumed of leaders. Half of the respondents answered that promoting cross border investment was the most important motive for signing a DTA, while some answered alleviation of double taxes. Concerning specific provisions most tax negotiators from OECD countries answered that a DTA leading to source tax reduction was a motive, while developing country negotiators tended to emphasize the relief of double taxation and the exchange of information. So even though a bureaucracy is not necessarily a perfect agent of a leader, it might not always be as easy to separate between the interests of the two (Li, 2009, p. 1103).

Also, along the same lines as we assume that the main motivation for autocratic leaders is to stay in power, one might assume that the main incentive for bureaucrats is to keep

their job, and they will therefore, to a large degree, try to align his/her interests with those at the top. A related argument is that individuals who agree with the country's political leadership could be more likely to apply and get a job under this rule. However, this should be less relevant in countries that suffer from high unemployment, as people have less choice in terms of occupation.

To sum up, the bureaucracy is probably more important than leaders in designing DTA content, but this varies from one autocracy to the next. The interests of autocrats and the bureaucracy is at least partly overlapping, and bureaucratic capacity is likely to be more important in determining whether preferable content in DTAs are attained. Whether the strategic interests of autocrats are important enough to find a significant relationship between autocratic time horizons and DTA content, is yet to be tested.

4.5.2 Political constraints

To a varying degree, an autocrat will need to retain a certain amount of popularity in the population and his inner circle through public goods, payoffs and power sharing, depending on how his position is secured (Geddes, Wright, & Frantz, 2018, p. 222). As long as personal rule is not absolute, no autocrat can afford to completely ignore the population or stray too far away from their policy preferences (Horowitz et al., 2015, p. 7).

Keeping the inner circle happy is at the centre of any autocratic strategy to stay in power, and their preferences are likely to constrain an autocrat in his policy making. Bueno de Mesquita, Smith, Siverson and Morrow (2005) claim that an autocrat's freedom to choose policies without worrying about being ousted by his inner circle, depends on the size of their winning coalition relative to the larger selectorate. They argue that an autocrat with a small group of elite supporters, relative to a larger population (selectorate) has more freedom, because it is harder for the winning coalition to credibly commit to replacing him (2005, p. 8). This is because a large number of members of the selectorate transfers to slim prospects for a current member of the winning coalition of being included in the subsequent

winning coalition. This in turn is because there are more people who will gladly take his place without demanding the same level of benefits and pay-offs. As those in the inner circle wish to continue to receive private benefits, they will often not replace the leader, and risk their position.

As for the broader population, their power lies in being the majority, and their possibility of coordinating collective action to overthrow the dictator, or in an extreme scenario, organize a revolution. Because an autocracy does not serve the people, there is a constant will to change the policies, regime or leader. The threat of upheaval, if credible, is likely to sway an autocrat to aligning, at least somewhat, with the needs and preferences of the people (Acemoglu & Robinson, 2005). For such a threat to be credible an uproar has to be in the interest of the people, and they must overcome certain collective action problems.

These two sources of threat to an autocrat's position makes it clear that no decisions are made in a vacuum. The question is rather, are the interests of these actors so influential that it leaves the autocrat's own wishes insignificant in the case of DTAs? I think not.

Firstly, the theory on autocratic time horizon already takes into consideration the constraints from the elites and the people. As already explained, I believe the need to quickly mobilize resources, in order to keep these actors happy, makes DTA signing less likely as time horizons grow shorter. One might entertain the thought that certain elite players would demand the signing of a DTA in order to reap the benefits for their foreign owned companies or sources of investments, but quicker and individual tax exemptions seem more likely to serve this purpose, as they are quicker to organize.

Second, the lack of constraints from the broader population is in fact what, in the words of Acemoglu and Robinson (2005, p. 20), distinguishes autocracies from democracies: "Non-democracy (...) is a situation in which the wishes of the majority are ignored in favor of the desires of a sub-population, the elites." This stems at least partly from that most autocrats have not come to power through contested elections, and do not have to worry about being voted out in the next election (Moon, 2015, p. 1).

Jones and Olken (2005) find empirical support that individual leaders matter more for economic and monetary policy in autocracies than in democracies. The relationship between a change in leader, as a result of natural death, meant significant changes in economic growth and inflation, in autocracies. The authors prescribe this effect to differences in institutional and political constraints. However, they point to mixed results concerning fiscal and trade policy, as measured by tariffs and consumption of national accounts (2005, p. 860).

That DTA signing and content is a decision related to foreign policy, further supports that autocrats are relatively free from popular constraints in this situation. Horowitz et al. (2015, p. 55) argue that domestic policy making is likely to be more sensitive and constrained by interests at home, than foreign policy is by international institutions, making the preferences of leaders more important in the latter (Horowitz et al., 2015, p. 10).

In summary, an autocrat will always need to keep his inner circle content, and avoid a revolution mounted by the population. However, a dictator is likely quite free in his decision to enter an international economic agreement, compared to democratic leaders. I believe this contributes to justify the focus on the autocratic ruler as unit of inquiry, and underscores why I have chosen to exclude democracies in the analysis.

4.5.3 Leaders or regimes?

As discussed, an autocrat seldom has unlimited power and influence over economic decision making. This supports theorizing over regimes rather than individual leaders, to include the interests and influences of a wider ruling elite. In this section I will argue that leaders are still the most relevant unit of analysis, as it is closer related to the theory on autocratic time horizons.

A leader, as defined in this thesis, is the effective leader of each independent state, meaning the individual who has de facto chief executive power over a country (Goemans et al., 2009, p. 5). As an example of what this definition means in practice, many monarchs in Europe only have ceremonial roles, while the real executive power is delegated to someone such as

a prime minister. When the individual who has de facto power loses it to someone else, this counts as a change in leadership.

An autocratic regime, on the other hand, starts when an executive achieves power through undemocratic means and, and with his inner circle, establishes new formal and informal rules for choosing leaders and policies (Geddes et al., 2014, p. 315). In other words, the replacement of one leader is not enough to declare the end of a regime. There has to be a change to the broader regime identity as a whole, as for example that a fair, free and competitive election takes place. Informal rules are included in the definition because the rules that can affect policies are often hidden in autocracies. The criteria for a democratic regime to end is the same, but the other way around. The country has to experience a broader change, as for example the banning of opposition parties, for it to count as regime change.

The choice between leader and regime makes a difference in the data for how time horizons are coded. Wright and Bak (2016) show how the majority of leader exits in the Archigos leadership data happen when the incumbent regime (GWF regime data) stays in power. To be precise they find that 246 of 1268 leadership exits in the Archigos leadership data coincided with regime change (2016, p. 4). In other words, there can be many leader exits within the same regime. These researchers argue that some leadership changes simply reflect an internal rotation of leadership within a ruling elite group. In their discussion on measuring autocratic survival and breakdown, they do however not swear to either leaders or regimes as units, but rather emphasize the importance of knowing what you are measuring and choosing the best fit for the specific testable hypotheses.

In line with this advice, I have chosen leaders as the unit of analysis because the theory on time horizons is most relevant to individual actors. Olson's (1993) incentives are assigned to the individual autocratic ruler, and not the ruling coalition more broadly. If I was to choose regimes as my unit, I would assume that these constraining actors, when aggregating their preferences together with the leader, is what would drive them in their choice to sign a

DTA. As regimes include several actors and is in general a more complicated unit, it would be harder to derive explanations about the interests of the regime.

Having said this, several researchers, including all those who have used Wright's logit model as a measurement of autocratic time horizons (Chen & Ye, 2020; Blake, 2013; Moon, 2015; Dionne, 2011; Cui & Moon, 2020; Kendall-Taylor, 2011; Wright, 2008), use data where regimes are the unit of analysis. Though there are many more leadership exits than regime failures, there is nearly always leadership failure in the case of regime change (Geddes et al., 2014). This implies that the incentives for regime and leadership survival tends to overlap quite a lot (Geddes et al., 2014). Although this makes the choice less consequential, it does not make it insignificant. This for the reasons I have already touched upon.

Leadership exits and regime change also tends to correlate strongly within regime types (Geddes et al., 2014). In party and monarchy autocracies, both leadership and regimes last longer, while in personal and military regimes life is shorter for both leaders and regimes. The smallest difference between the rate of failure for regimes and leaders are in the case of personal autocracies. This type of dictator can also be assumed to suffer less under the constraints of the regime, in force of the regime type's individualistic characteristics. Though the analysis in this thesis will capture larger trends across all types of autocratic leadership, one could note personalist regimes are probably a most likely case for finding the incentives from autocratic time horizons at play.

The discussions concerning bureaucratic and political constraints, have highlighted that no autocratic leaders rule in a vacuum, and that there are several other possible actors with influence on the signing and content of DTAs. However, because autocratic leaders have sufficient control and influence over economic policy decision making, and because the incentives from long or short time horizons are most relevant to the individual ruler, this is a better fit for my analysis. Also, as a result of the discussion in this chapter and in the literature review in chapter 3.4, I believe the bureaucracy plays an important role for the design of DTA content, which will be controlled for in the empirical analysis.

4.6 Hypotheses

Based on the arguments laid out in this chapter, on how time horizons affect autocratic behavior, and the literature review on what effect the signing and content of international economic agreements for developing countries, I test the following hypotheses:

H1 Autocratic leaders with longer time horizons are more likely to sign double tax agreements with richer countries.

H2 Autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax.

5 Methods

To test these hypotheses - that autocrats with longer time horizons are more likely to sign double tax agreements and DTAs that are more restrictive on their ability to tax, and even more so in the case of asymmetric DTAs – I turn to the data on DTAs and autocratic time horizons. In this chapter I present the data used in the analysis, and how concepts have been operationalized. First I look at the Tax treaties explorer dataset (ICTD & Hearson, 2021), and its indices, measuring the degree of taxing rights retained for a source country in a DTA. Then I discuss possible validity issues concerning measuring autocratic time horizons, and why I have chosen to use an adjusted version of Bak and Moon’s probit for predicted probability of leadership failure (Bak & Moon, 2019) for this purpose. Further, I turn to the criteria for sample selection for my main sample and a sample of asymmetric DTAs. Finally, this chapter covers the specifications for my main model, which is a Heckman model with past BIT signing as the instrumental variable.

5.1 Tax treaties explorer dataset

The Tax treaties explorer dataset, published by ICTD (2021), covers 2533 DTAs signed by 118 developing economies from 1947 to 2019.¹³ 316 of these DTAs were signed when at least one of the signatories were under colonial rule, and are not included in the analysis. This is because the colonial power in question probably had a lot to say concerning economic decision making, leaving the leader less influential. DTAs in the sample are both in force, and no longer in force today.

The observations in the dataset are bilateral DTAs with countries that are, or recently were, low and lower-middle income countries,¹⁴ all countries in Africa and all the members of the

¹³DTAs concluded after 1st January 2020 are not included.

¹⁴Here, low- and lower-middle income refers to the World Bank’s classification of gross national income (GNI) threshold levels for 2019, as of July 1, 2020. These are low income (< 1,036), lower middle income (1,036 - 4,045), upper middle income (4,046 - 12,535) and high income (> 12,535) (Serajuddin & Hamadeh, 2020).

Intergovernmental Group of 24.¹⁵

The dataset is based on information collected from the International Bureau of Fiscal Documentation's online database (IBFD, 2019), and supplemented with governments' own lists online. In addition to the bilateral DTAs, the dataset covers eight multilateral treaties, 272 amending protocols and 687 amendments by the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (MLI).¹⁶ None of these will be included in my analysis. This is because the amendments are separate observations in the dataset, in addition to the observation for the original bilateral DTA they amend. One might argue that these amendments should be included in the analysis, as they could affect the balance of taxing rights. However, the future signing of the MLI would not have affected autocratic leaders' decisions to sign the original bilateral DTAs in the past, and is therefore not relevant to the analysis. The exemption to this rule, is when a DTA was signed at the same time as an amending protocol. These cases are coded as original DTAs, and are therefore included in the analysis.

The Tax treaties explorer dataset does not include information on the specific date a DTA was signed, but includes the year. To avoid that several leaders are assigned the same DTAs, because they were in position the same year, 1st of January is set as the signatory date for all DTAs. This date is chosen because even though a DTA really was signed in July or October, the decision to enter an agreement is likely to have happened at a much earlier stage. Also, and as touched upon in chapter 2.2, negotiations can stretch over several months.

DTA signing is the dependent variable for testing $H1$: That autocratic leaders with longer time horizons are more likely to sign DTAs with richer countries. This dependent variable is binary and expresses whether at least one treaty was signed in a leader-year observation.

¹⁵The full list of countries in the Tax treaties explorer dataset is included in section B.1 of the appendix.

¹⁶The MLI acts as a multinational amending protocol for bilateral DTAs. It adds a provision equivalent to article 13(4), which grants the right to gains from the sale (alienation) of shares where a certain percentage of the value is created from the source countries' immobile property.

An alternative would be a variable counting the number of DTAs signed in a leader-year. However, I am interested in whether length of autocratic time horizons effect the likelihood of signing a DTA, and not how it effects the number of DTAs they sign.

Before the ActionAid Tax Treaty dataset, which is the predecessor of the Tax treaties explorer dataset (ICTD & Hearson, 2021), was created, assessments of DTA content was limited to analysis of a few articles and clauses (Hearson, 2016, p. 7). With the Tax treaties explorer dataset I am able to compare agreements on 28 treaty clauses, as presented in table 2. This table also presents how each provision is coded. Most are binary yes/no answers for whether a provision is included, or are coded as percentages in the case of withholding tax rates. DTAs mostly share the same structure and much of the same language (Arnold, 2015, p. 5), making them fit for comparison.

The dataset has several indices, expressing aggregated results for the balance of a DTA, including a Permanent establishment (PE) index, a Withholding tax rates (WHT) index, an Other index and a Source index. The provisions used to create the different indices are presented in table 2, as for example the WHT tax rate for royalties which is included in the WHT index and the limited force of attraction, which is a binary yes/no variable included in the Other index. If a DTA scores closer to 0 on one of the indices, it is restrictive in terms of what the source country can impose tax on, or at what rate, while a DTA scoring closer to 1 provides the source country with more taxing rights.

The Source index is the main dependent variable for testing hypotheses *H2*: that autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax. This Source index incorporates values from all fields in the dataset relevant for taxing rights, and expresses the overall balance of the DTA.¹⁷ The mean of the Source index for several DTAs is used in cases where autocrats have signed more than one in a single leader-year.

¹⁷All provisions in the dataset are included in the Source index, except for article 10(2)(a) Threshold for qualified dividends, article 25B(5) Mandatory binding arbitration, article 27 Assistance in tax collection and article 29 General anti-abuse rule.

Table 2: Tax treaties explorer dataset

Provision	Value	Source	PE	WHT	Other
Permanent Establishment					
Art. 5(3)(a): Construction PE length	Months	x	x	-	-
Art. 5(3)(a) Supervisory activities included in PE	Yes/No	x	x	-	-
Art. 5(3)(b) Service PE length in months	Months	x	x	-	-
Art. 5(4)(a) Delivery facilities excluded from PE	Yes/No	x	x	-	-
Art. 5(4)(b) Delivery stock excluded from PE	Yes/No	x	x	-	-
Art. 5(5)(b) Agent maintaining a stock included in PE	Yes/No	x	x	-	-
Art. 5(6) Insurance broker included in PE	Yes/No	x	x	-	-
Art. 5(7) Dependent agent extension to PE	Yes/No	x	x	-	-
Distributive Provisions					
Art. 7(1)(b&c) Limited force of attraction	Yes/No	x	-	-	x
Art. 7(3) No deduction for payments to head office	Yes/No	x	-	-	x
Art. 8(2) Shared taxing right over shipping	Yes/No	x	-	-	x
Art. 10(2)(a) Qualifying dividend WHT rate	%	x	-	x	-
Art. 10(2)(a) Threshold for qualified dividends	%	-	-	x	-
Art. 10(2)(b) Portfolio dividend WHT rate	%	x	-	x	-
Art. 11(2) Interest WHT rate	%	x	-	x	-
Art. 11(2) Interest WHT rate (financial institutions)	%	x	-	x	-
Art. 12(2) Royalties WHT rate	%	x	-	x	-
Art. 12(2) Royalties WHT rate (copyright payments)	%	x	-	x	-
Art. 12(2) Royalties WHT rate (use of equipment)	%	x	-	x	-
Art. 12A Technical service fees WHT rate	%	x	-	x	-
Other Provisions					
Art. 13(4) Capital gains (land rich company)	Yes/No	x	-	-	x
Art. 13(5) Capital gains (other shares)	Yes/No	x	-	-	x
Art. 14 Independent personal services	Yes/No	x	-	-	-
Art. 16(2) Top-level managerial officials	Yes/No	x	-	-	x
Art. 21(3) Source taxation of other income	Yes/No	x	-	-	x
Art. 25B(5) Mandatory binding arbitration	Yes/No	-	-	-	-
Art. 27 Assistance in tax collection	Yes/No	-	-	-	-
Art. 29 General anti-abuse rule	Type	-	-	-	-

Note. The table presents a comprehensive list of all DTA provisions coded for in the Tax Treaty Explorer dataset, how the values are coded, and which provisions are included in the indices. X indicates that the provision is included in the index. A description of each clause can be found on <https://www.treaties.tax>.

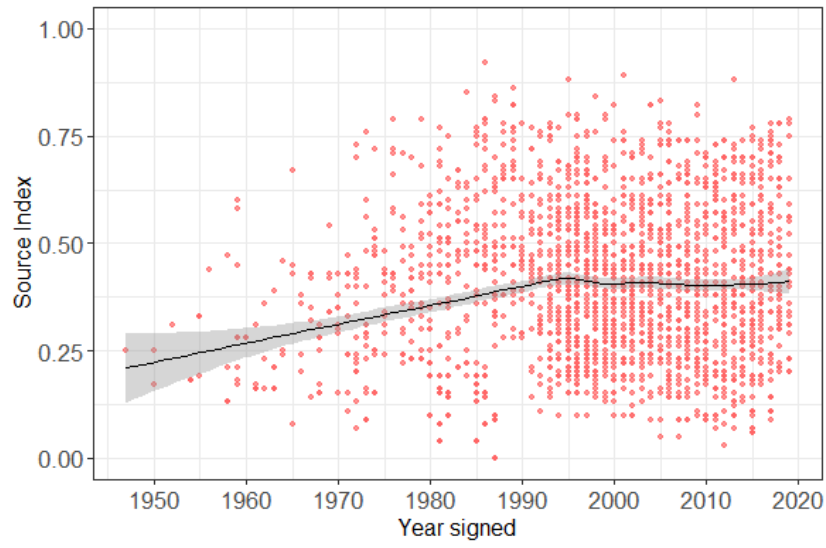


Figure 3: Source index 1945-2020

Note. Fitted with locally weighted scatterplot smoothing (Loess).
Includes DTAs signed pre-independence.

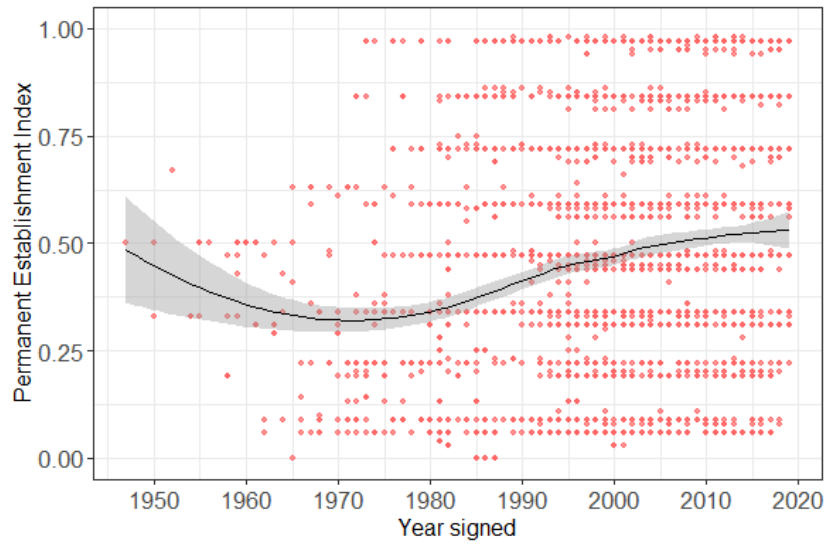


Figure 4: PE index 1945-2020

Note. Fitted with locally weighted scatterplot smoothing (Loess).
Includes DTAs signed pre-independence.

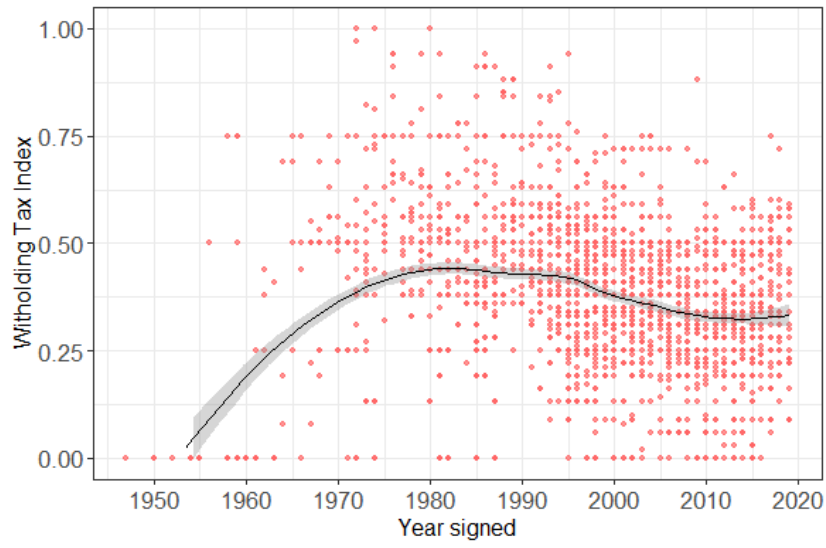


Figure 5: WTH index 1945-2020

Note. Fitted with locally weighted scatterplot smoothing (Loess).
Includes DTAs signed pre-independence.

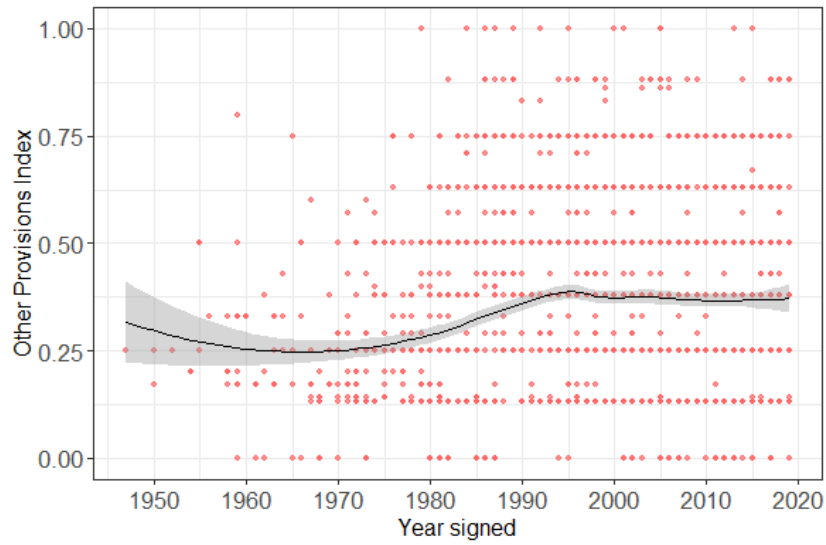


Figure 6: Other index 1945-2020

Note. Fitted with locally weighted scatterplot smoothing (Loess).
Includes DTAs signed pre-independence.

The remaining three sub-indices are used as dependent variables (instead of the Source index) for further analysis on the effect of autocratic time horizons on DTA content. The results are presented towards the end of the results chapter.

The PE index includes fields related to permanent establishment in article 5 of DTAs. Permanent establishment is which criteria that make a foreign company's presence in a country taxable. The WHT index is an average of the withholding tax rates in each DTA. These provisions prevent or set a limit rate to the source country's ability to tax cross border investments and are made up from articles 10 to 12A of the model treaties. The Other index includes the remaining fields, drawn from articles 7, 8, 12, 13, 16 and 21 of the models.

How signed DTAs score on these indices over time is presented in figures 3-6. As can be seen in figure 3, the content of DTAs in the dataset have gradually become more beneficial to source countries, until around 1995, before stabilizing at about 0.4. While the PE and other indices do not follow a easily identifiable pattern over time, there has evidently been an significant change in the approach to withholding taxes between 1950 and 1980. The trends in time for these sub-indices indicate that withholding taxes might be largely to blame for the increase of overall taxing rights for source countries before 1995. More recently, the index for permanent establishment is the only one to cross the 0.5 threshold, making it the largest contributor to increased taxing rights for source countries the past 30 years.

5.1.1 Limitations to the Tax treaties explorer dataset

Though the Tax treaties explorer dataset (ICTD & Hearson, 2021) does a good job in covering DTAs signed by low- and middle lower income countries, and their content, there are some limitations worth discussing. Building on the limitations accounted for on the website of the dataset, but also my own reflections, I give a brief overview of the most important ones in this section.

The dataset does not include all DTAs in its selection criteria, for several reasons. Firstly,

there is the chance that some countries are not included because they were low or lower middle income countries at the time of signature, but were not so in 2019. This is because the DTAs are selected on the basis of being signed by countries defined as low or lower middle income by the World Bank in 2019. However, the other selection criteria, being an African country or a member of the G24, probably helps this issue somewhat.

Second, the Tax treaties explorer website (2021) notes that the content of some DTAs have not been coded due to text not being available, because they vary a lot from the UN and OECD tax models or because they were not published in English, French or Spanish. 194 of 2217 signed original bilateral DTAs in the dataset, not including those signed before independence, have not been coded for content. However, because all DTAs are made publicly available once they enter into force one should not expect there to be systematic sample biases, as for example fewer DTAs coded from autocratic countries.

Also, certain important clauses are not coded, because of a wide variation in the way these are drafted. One example is “tax sparing” provisions, which can be part of the article covering double taxation relief. Tax sparing provisions make a certain amount of tax to have been paid in a source country, when this tax actually has been exempted or been subjected to a reduced rate (Lang & Owens, 2014, p. 6). This is sometimes a key element in the negotiations by developing countries, as it is believed to act as an incentive for foreign investors.

The coding also does not take into account current domestic tax regimes. In practice, this means that a country with a 20% withholding tax rate on interest, which loses taxable income because of a DTA provision setting the rate to 15%, is coded the same as a country which already has a 15% withholding tax on interests, and thus is not affected by such a provision. Though a cap on a tax that does not exist, or is lower, might be seen as insignificant, such a provision could restrict the introduction of that tax in the future.

Further, values for each variable do not always take into consideration the combination of articles in a DTA. In other words, a value can be given for one article included, despite

another article making the former useless. According to the Tax treaties explorer website (2021), coders were instructed to make purposive interpretations when possible, but with the complexity in interpreting DTAs in addition to non-standard provisions included, the dataset does not always reflect the de facto consequences of interacting provisions. Some coding errors may occur, even though each DTA has been coded by two individuals, with a third person handling disagreements.

The last, but maybe the most important limitation is that the indices are not weighted. This makes restrictions on shared taxing rights on shipping as important as restrictions of withholding tax rates. Still, there is reason to believe that the indices are a great improvement from only measuring the balance of taxing rights on single clauses or clauses only related to parts of the DTA.

5.2 Measuring autocratic time horizons

Autocratic time horizon is challenging to measure, as it is not a directly observable concept. It is necessary to consider to what degree a measure captures an autocrat's own perception of their tenure. In this section I will discuss different approaches to this issue, and argue why I have chosen to use predicted probability of leadership failure as measure of autocratic time horizons.

There are two main approaches for measuring autocratic time horizons: through single variable duration measures, and predicted probability models. Note that each type of measure can be applied either for the individual leader or a regime, depending on how one theorizes and operationalizes the concept of time horizons.

As single variable proxies for autocratic time horizon, previous researchers have used the number of changes in chief executive and the number of coups in each authoritarian regime spell (Folch, 2003), the length of time since a three-point change in the Polity score over a three-year period (Cao & Ward, 2015), and the current age of the regime or leader (Clague

et al., 1996; Li, 2009; Folch, 2003).¹⁸

This approach has been criticized by several researchers (Wright, 2008; Blake, 2013; Cui & Moon, 2020; Moon, 2015). The main criticism against the the age of the regime/leader proxy is that it assumes all leaders in their first year of rule have the same time horizon (Wright, 2008). This is unreasonable as it does not take into consideration coups or other factors which might affect their perception of future tenure (Wright, 2008, p. 980). Also, these single variable indicators do not capture time-varying aspects of autocratic time horizons within an autocratic leadership spell. In other words, a leaders' time horizons can vary from year to year, for reasons not limited to previous government turnovers or length of tenure, and should be reflected in a measure (Bak & Moon, 2019, p. 149).

Further, age of the regime/leader as proxy assumes that leaders, at the end of their tenure, always are more likely to stay longer in power, disregarding the fact that the likelihood of a natural death increases with old age.¹⁹ Robert Mugabe died at 95 years old, and could not be said to expect to remain a long time in power at 94 (Cao & Ward, 2015, p. 269).

Clague et al. (1996) discuss how heterogeneity of other factors in autocratic regimes possibly makes tenure to date an inappropriate proxy for time horizons. A sample selection bias might be present if for example skilled leaders tend to survive longer and through coup attempts. If such factors are not accounted for in the model, a correlation between time in power and DTA signing might be spurious.

A probit for predicted probability of failure, on the other hand, captures more of the variation in each year within an autocratic leader's spell. The higher the predicted probability of failure, the shorter the time horizon. The lower predicted probability of failure, the longer the time horizon.

¹⁸As a robustness test I use the duration of leader's tenure to date years, and the presence of a coup as single variable proxies for autocratic time horizons. This is further described in chapter 6.4.2.

¹⁹However, Clague et al. (1996, p. 248) argue that the age of a dictator does not constrain the time horizon of leaders as much as one would expect and therefore does not see this as a crucial factor in the choice of measurement.

As far as I know, there are two measures that have been constructed from several variables for the purpose of representing autocratic time horizons. The predictions from a logit model on regime survival by Wright (2008), which is most widely used, and a probit model by Bak and Moon (2019).

They both assume a strong relationship between the predicted probability of failure, and the autocrats' perception of their time horizon. In other words, autocratic leaders have to be sensitive to the vulnerability of their regimes or their own position. This is a reasonable assumption given that there are few formal possibilities of regaining power, once a dictator has been removed (Blake, 2013), and that it can be dangerous to lose power. This makes survival even more important than in a democracy, and autocrats will most likely strategize heavily to prolong their rule and collect information about possible threats to their position. The difference between the autocratic time horizon probit by Bak and Moon, and Wright's logit model is the variables they include as part of the equation.

For my analysis I replicate the predicted probability probit by Bak and Moon (2019), and make some adjustments. I choose their model as a starting point because they utilise the Archigos data (2009) for autocratic leadership failure for their dependent variable.²⁰, in contrast to Wright's model (2008) which uses data on autocratic regime failure from Geddes' et al. (2014). As I have discussed in the previous chapter the leader is the most relevant unit for this analysis.

The changes I have made to Moon and Bak's measure, in terms of which sources I have collected variable data from, have been done partly to use more updated data, but also in consideration of the relevance and quality of the variables included.

Table A.2 presents the variables included in my probit for measuring autocratic time horizons, hereby referred to as ATH probit. As you can see, leadership tenure ranges from 0

²⁰Prime ministers are as coded as leader in parliamentary regimes, while presidents are the leader unit in presidential systems. In regimes that combine presidential and parliamentary regimes, the president is coded because they often have control over foreign policy (Goemans et al., 2009). In communist regimes, they generally code the chairman of the ruling party as the leader.

days to 49 years (18,012 days) in the data, and the average time in position for an authoritarian ruler is approximately 15 years (5,576 days). However, the longest sitting ruler in the Archigos dataset,²¹ was actually in power even longer than 49 years, but began his reign before the time period for the Archigos data (1840-). Censoring is often an issue with panel data, and will be further discussed in the section on estimators.

Turning to the independent variables in my ATH probit, I also use Archigos' data to identify the number of past leadership failures in each country. I include a variable of the number of failures during the 10 last years because some of the leadership spells in Archigos date back to the middle of the eighteen hundreds, while some only cover a more recent time period. An absolute number of past failures would tell us more about the data available than the frequency of leadership changes in the country.

I add a variable counting the number of days since a leader came to power (start). Bak and Moon (2019) include a variable for total tenure, but seeing as leaders can not see into the future, I do not find it logical that this should effect an autocrat's time horizon. The start-variable is also included in squared and cubed terms, to capture the possible nonlinear relationship between the probability of leadership failure and time in position.

Other independent variables included in the probit model are interstate war and intrastate war from the UCDP/PRIO Armed Conflict Dataset version 20.1 (Pettersson & Öberg, 2020), as conflict is expected to contribute to instability and thus shorten an autocrat's time horizon.

Further, I include dummies for all autocratic regime types (Military, Monarchy, Personalist, Oligarchy and Party rule) in Anckar and Fredriksson's (2019) dataset.²² While Bak and Moon (2019) only include a dummy for whether the regime is a military autocracy, Wright

²¹Pedro II of Brazil was in power for 50 years (Encyclopaedia Britannica, 2021).

²²Anckar and Fredriksson (2019, p. 93) build their regime classification on Geddes et al. (2014), and add Oligarchy as a new regime type. They argue that oligarchies do not fit well into the party-rule category, where they are placed in Geddes. et al., because they are not necessarily dominated by one party and that other political systems like the religious clergy in Iran also can qualify as oligarchies.

(2008, p. 981) supports that conflict and authoritarian regime type are important predictors for authoritarian regime failure, and includes all regime types in his model.

Both successful and unsuccessful coup attempts should shorten autocratic time horizons, as they are probably perceived as threats to leaders' position. The number of coup attempts per leader-year are therefore included in the probit (Powell & Thyne, 2011).

I use Navco's 1.3 (Chenoweth & Wiley Shay, 2020) list of violent and non-violent campaigns as a measure of mass unrest. Bak and Moon (2019) use data from the Cross-National Time-Series Data Archive (Banks & Wilson, 2013), but these were not available to me. An advantage with Navco data, is that the campaigns are coded in a way which is very easy to grasp. Their criteria for a campaign is a minimum of 1000 observed participants, a maximalist goal (i.e. regime change, secession, or self-determination) and that it should not be limited to one event. Though I consider these campaigns to be relevant to include, one should be aware of the potential danger of endogeneity and post treatment bias. The opposition might sense that a leader is in a weak position (have a short time horizon) and launch a campaign, precisely for that reason.

Though Bak and Moon (2019) find little stabilizing effect from oil rents (% of GDP), I include logged oil production as the real value of petroleum produced per capita in my ATH probit, as income from oil has shown effect on regime stability in other studies (Buono De Mesquita & Smith, 2010; Wright, Franz, & Geddes, 2013). In contrast to Moon and Bak's probit, who use oil rents data from Ross (2012), I use data from the Varieties of Democracy dataset (Coppedge et al., 2021). This source is more up to date, and suffers less from missing data. GDP per capita and growth rate are also added from Varieties of Democracy (2021), as economic development is expected to increase regime and leadership stability (Miller, 2012, p. 1010).

Fixed effects on countries are included to control for possibly spurious, but unobservable differences between countries.

Table 3: Predicted probability of leadership failure (ATH probit)

	<i>Dependent variable:</i>
	Autocratic leadership failure
Start	9.91** (3.90)
Start squared	3.29 (3.13)
Start cubed	5.80** (2.77)
Past Failures	-0.04 (0.03)
Interwar	0.02 (0.18)
Intrawar	0.05 (0.10)
Campaign	0.40*** (0.10)
Coup	0.97*** (0.07)
Regime type dummy: Military	-0.30 (0.25)
Regime type dummy: Party	-0.26 (0.25)
Regime type dummy: Personalist	-0.05 (0.25)
Regime type dummy: Oligarchy	0.38 (0.31)
GDP Growth	-1.45*** (0.48)
Log (Oil production)	-0.03 (0.04)
Log (GDP per cap)	0.04 (0.11)
Constant	-2.45** (0.98)
Country fixed effects	Yes
Observations	3,652
Log Likelihood	-1,079.87
Akaike Inf. Crit.	2,369.74

Note.

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

The results from the probit regression for estimating predicted probability of leadership failure $\Pr(\text{Fail})$ are displayed in table 3. Campaigns and coups have significant and positive coefficients, meaning they shorten time horizons. GDP growth is significantly negative, indicating that it co-varies with longer autocratic time horizons. However, this relationship could be endogenous, as leadership failure can have detrimental effects on economic growth.

Though many of the variables in the probit regression are not significant, the ATH probit does a good job in predicting leadership failures. The separation plot in figure 7 illustrates of how well the probit discriminates between failure and non failure leader-years (Ward & Ahlquist, 2018, p. 66-68).

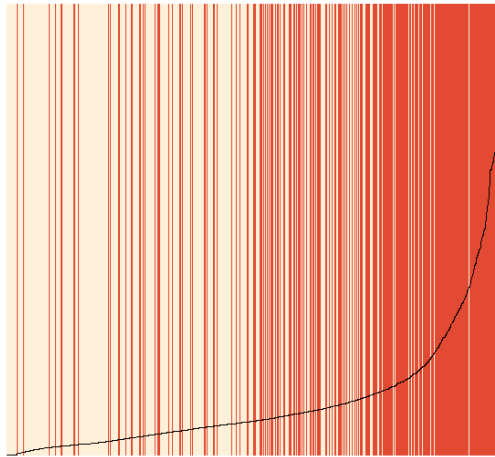


Figure 7: Separation plot: ATH probit

Note. Red bars represent an observation in which a leader has lost his position of power, while the white bars are observations where they survive. An estimated model with the ability to predict these events perfectly would have a separation plot where all of the red bars were at the right and all of the white were at the left.

To facilitate a more intuitive understanding of predicted probabilities of leadership failure, and how they link to autocratic time horizons, figure 8 illustrates predictions for two countries: Afghanistan and Rwanda. Afghanistan had a turbulent period throughout the 1970s. The country suffered a coup in 1973 where the monarchy was replaced by the personal rule

of Sardar Mohammad Daud Khan (Dupree, 2021). The predicted probability of leadership failure reaches its peak at the beginning of the mujaheddin-Taliban phase of civil-war (1992–2001). For the three leaders in power in 1991, $\text{Pr}(\text{Fail})$ ranges from 66% to 73%, reflecting very short autocratic time horizons. For Rwanda, the most obvious source of instability was the genocide in 1994 (Clay, 2021). The three different leaders this year have $\text{Pr}(\text{Fail})$ ranging between 37% and 48%, indicating the shortest autocratic time horizons observed for Rwanda. The illustration shows how $\text{Pr}(\text{Fail})$ often follows patterns of known and destabilizing historic events. Note however that most autocrats have long time horizons (see figure 9).

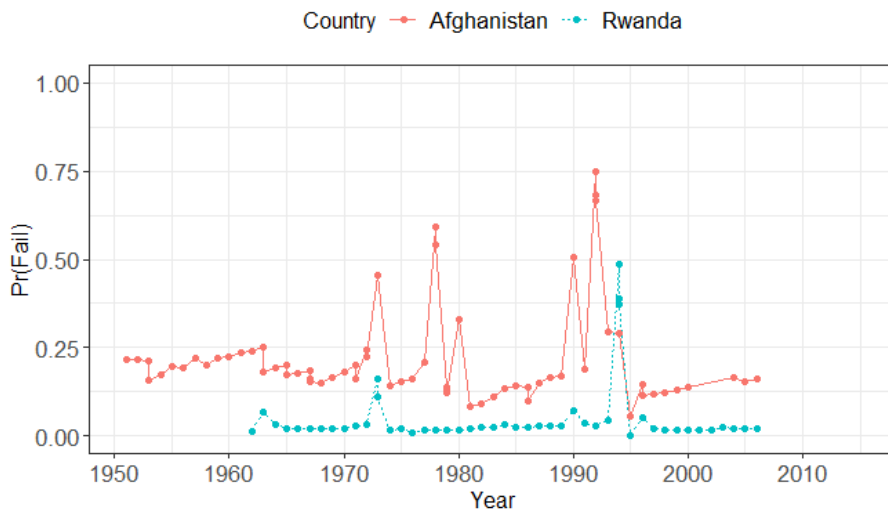


Figure 8: $\text{Pr}(\text{Fail})$ for selected countries

Note. The figure plots the predicted probability of leadership failure, predicted by a probit regression model.

Turning back to the discussion on measurement of autocratic time horizons, there are some limitations to the probit approach worth discussing. Firstly, predicted probability of failure is a latent concept, meaning that we add another theoretical level to the measurement of autocratic time horizons. Though single variable proxies such as age of a regime, or number of previous authoritarian spells, are easy to critique, they are tangible and easy to grasp.

Second, the predicted probability of leadership failure depends heavily on the covariates included in the model, and these vary across different studies of regime and leadership stability (Cao & Ward, 2015). The information also only gives us yearly point estimates, which creates the danger of prescribing a time horizon for an autocrat because of something which will occur after the decision to sign a DTA is made. These are issues for probability models but also for single variable proxies, and the choice of variable is even more sensitive for the latter.

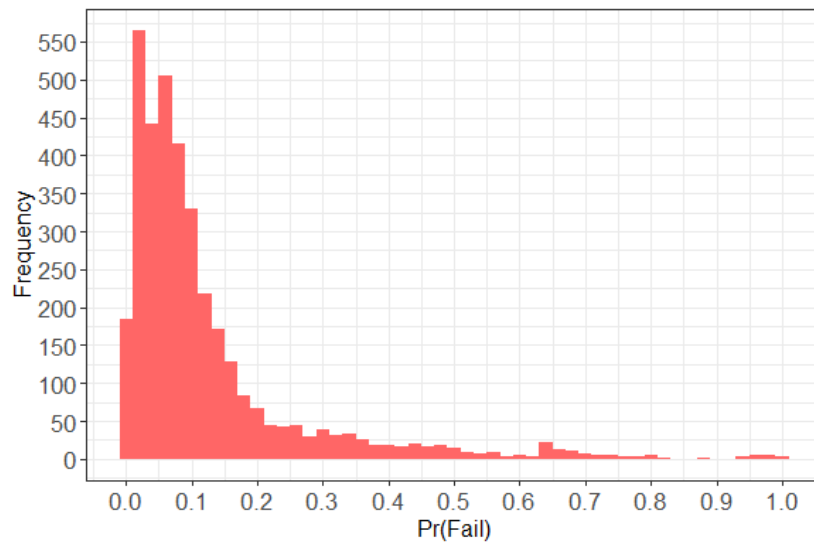


Figure 9: Distribution independent variable: $\text{Pr}(\text{Fail})$

Note. The figure illustrates the distribution of the predicted probability of leadership failure, which is the measure for the length of autocratic time horizons. A low score on $\text{Pr}(\text{Fail})$ indicates a long time horizon, and opposite.

A more general critique of the measurement of time horizons is that researchers do not have full access to information held by autocratic regimes and leaders or have data about their personalities. For this reason we might miss important factors in leaders' assessment (Bak & Moon, 2019, p. 149). By assuming that a leader is sensitive to their current chances of survival, one also misses cases where leaders miscalculate. For example, Saddam Hussein might not have seen his regime coming to an end as it did so, and might have acted with a longer time horizon than the model would show in his final year of rule (Cao & Ward,

2015).

Despite the challenges in measuring autocratic time horizons, I believe the ATH probit I have constructed is the best fit option to represent the concept. Including several theoretically relevant predictors makes the measure more likely to predict correctly, and be in line with the expectations of the autocrats, on average.

5.3 Sample selection

5.3.1 Main sample

The main sample for analysis includes autocratic leadership spells across 98 countries from 1950-2015, who have and have not signed DTAs.²³ First, I use the Archigos dataset (2009) for leadership spells, and remove all leader-year observations that do not fall under the classification of autocratic regime types (2019).²⁴ In this way, all the democratic leader-years are excluded from the sample.

This is merged with the Tax treaties explorer dataset (ICTD & Hearson, 2021). Since these data include DTAs entered into by mainly low- and lower income countries,²⁵ with all other countries, it makes sense to include each DTA only once. The alternative would be to have all DTAs counted twice: one for each signatory party. This would result in more data, and possibly more autocracies in the sample. However, as the dataset for DTAs has poorer countries as their criteria for inclusion, the set of DTAs for richer autocracies would be incomplete - as they would only include the DTAs with relatively poor countries. In other words, it would be challenging to generalize based on the results. This approach could also create some autocorrelation issues, as the values for these DTAs would be identical for many variables.

²³Full list of countries in the main sample are listed in appendix section B.2.

²⁴The regime types are military, personalist, absolute monarchy, party and oligarchy (Anckar & Fredriksson, 2019).

²⁵The full list of 118 countries included in the Tax treaties explorer dataset is presented in appendix section B.1.

Including each DTA only once, I identify a “source” country, and a “resident” country for each treaty. Assuming that the country with the highest annual GDP per capita also is the net capital exporter, and the country with lower GDP per capita is the net capital importer, I use the V-Dem project’s GDP per capita indicator (Coppedge et al., 2021). Several other researchers have used this, or similar, methods to identify source countries in a dyad (Elkins et al., 2006; Blake, 2013; Hearson, 2018b).

This enables analysis of the relationship between a source country’s DTAs and the time horizon of the leader who decides to enter them. Another consequence of defining source and resident for each DTA is that values on the Source index, for measuring the content of DTAs, can be interpreted as more or less taxing rights reserved for the source country.

Finally, it is important to be clear that the sample consists of DTAs signed by autocracies that are largely low- or lower middle income countries (98 of 118 sample countries in the Tax treaties explorer data), always with a relatively richer party. All other DTAs do not appear in the sample. This means that the results will not be possible to generalize to all cases of DTA signing, or even to all DTAs signed by autocracies. What it should be able to tell us, is whether and how the length of time horizons can affect an autocrat’s decision to enter into a DTA with a relatively richer country, and how it might effect the content of such a treaty. This given that the autocracy also is a developing country.

Figure 10 shows the observations for DTA signing (1 for observations including at least one treaty signed). A leader-year observation qualifies for a 0 if it does not include a DTA, if the year is larger than the lowest year and the country overlaps with countries included in the Tax treaties explorer dataset. This is done to ensure that leader-years are not included as a non-treaty observation, without knowing whether a DTA was actually signed in this observation or not.

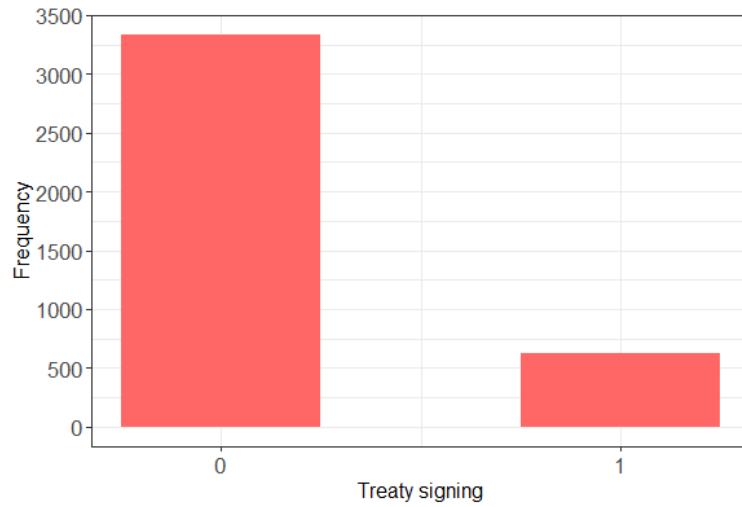


Figure 10: Distribution DTA signing

Note. Across 3,957 leader-year observations in the main sample

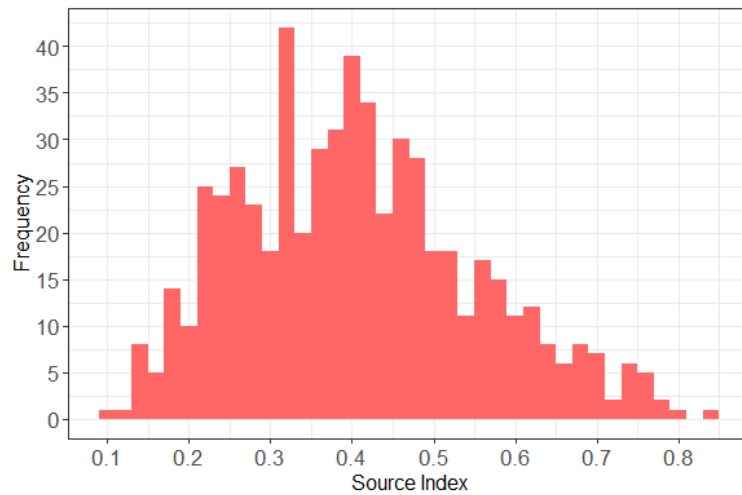


Figure 11: Distribution Source index

Note. Across 579 leader-year observations in the main sample

Figure 11 visualises the distribution on the values on the Source index in the main sample. 579 of 623 signed DTAs include values on the Source index. The distribution of values are quite normal, skewing somewhat towards the lower values.

5.3.2 Asymmetric double tax agreements sample

In addition to the main sample, I run an identical analysis on a subsample of asymmetric DTAs. This is to investigate whether there are differences in the effect of autocratic time horizons when signatories have a larger wealth gap. We might for example not see the incentives from the length of expected tenure play out between two developing countries, as between a developed and a developing country, because of a larger potential for cross border investment flows in the case of the latter.

The criteria for asymmetric DTAs are based on the World Bank's historic income levels data, identifying lower, lower middle, upper middle and higher income countries (Serajuddin & Hamadeh, 2020). These data reflect the countries' wealth level yearly, and the thresholds are adjusted for inflation.

To create a sample of asymmetric DTAs, treaties signed between the two upper or lower income levels are excluded. The share of DTAs defined as asymmetric by the criteria are illustrated in figure 12, and the full list of countries are presented in appendix section B.3. This includes 93 countries, as a share of 98 in the main sample.

Figure 13 shows the share of asymmetric DTAs in the Tax treaties explorer dataset, for the sake of comparison. A larger difference between asymmetric and non-asymmetric in this figure is explained by the inclusion of DTAs signed by non-autocracies with wealthier autocracies, and all the DTAs signed amongst non-autocracies in the the data.

A limitation to this criteria is that the World Bank's historic thresholds only cover 1987-2019. Therefore, the income levels before the first year observed are set to 1987 levels. This is not a perfect solution, but allows for a larger pool of data, enabling a more sound comparison with the analysis on the main sample.

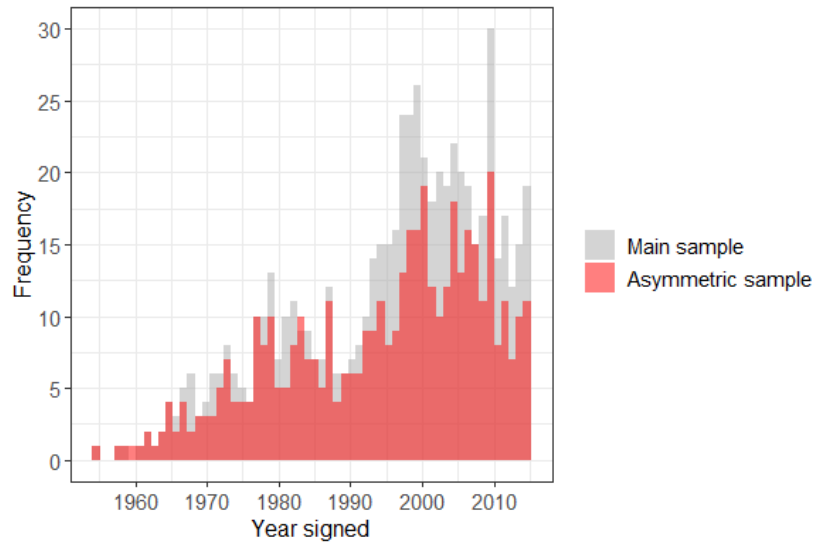


Figure 12: Main and asymmetric samples of DTAs

Note. The sample of asymmetric DTAs consists of 441 signed treaties across 3830 leader-year observations, while the main sample includes 623 treaties across 4439 leader-years

5.4 Estimator and instrumental variable

I am interested in the relationship between an autocrat's time horizon and the signing and content of DTAs. DTA signing is a binary variable with $y = 1$ for signing and $y = 0$ for not signing. The relationship between autocratic time horizons and DTA signing does therefore not fulfill the assumption of linearity in an OLS regression (Skog, 1998). Also, the residuals are bound not to be normally distributed and homoscedastic. I can however run a probit regression model, calculating the probability of DTA signing for leader-year observations.

To investigate the relationship between autocratic time horizons and DTA content on the other hand, is more complicated. This is because we can only observe, by its score on the Source index, the content of *signed* DTAs. This is a form of censoring, because we lack data on the dependent variable for a part of our observations.

If there is reason to believe that observations including signed DTAs, and thus observations that have a value on the Source index, are systematically different from those who don't,

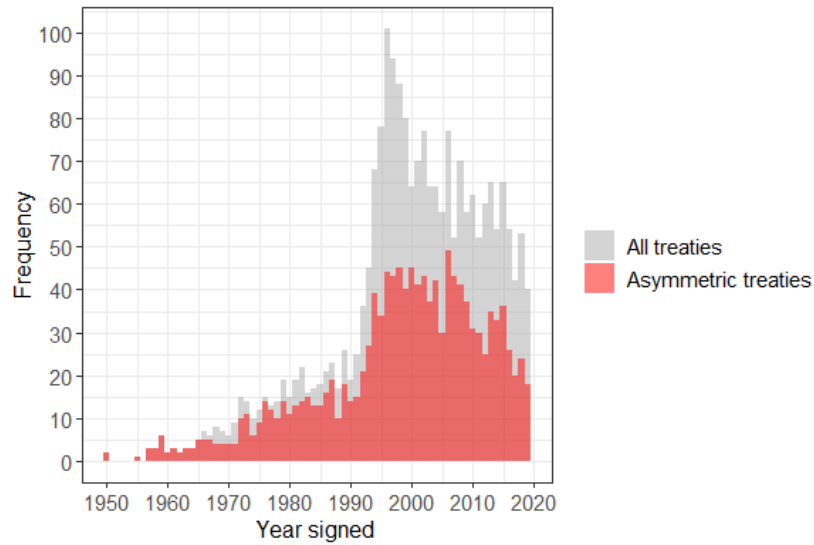


Figure 13: Main and asymmetric DTAs in Tax treaties explorer dataset

Note. Of 2217 original DTAs in the Tax treaties explorer dataset, 1295 are asymmetric. This figure does not include DTAs signed pre-independence.

not controlling for this would give biased and non-representative results. For example, those countries who do not sign DTAs might make this choice because they expect content which is less in their favor than what those who sign. If these leader-year observations have systematically shorter time horizons (higher $\text{Pr}(\text{Fail})$), than the signing countries, an OLS regression for the relationship between autocratic time horizons and DTA content would give us downward biased results, meaning that the coefficient would be smaller than the true parameter. In other words it might look as though autocratic time horizons do not matter much for the content of DTAs, when we have only been able to observe the content for those DTAs that are signed.

This problem of non-random samples is referred to as the sample selection problem (Puhani, 2000). Breaking the independence assumption, by neglecting to control for all relevant confounders, could make causal inference problematic.

The Heckman model (1976) treats the selection problem as an omitted variable problem, meaning that this sample selection bias is controlled for in order to estimate a causal effect

(Greene, 2003, p. 783). The first stage is called the selection equation and is a probit regression where Z_i is binary, estimating the probability of signing a DTA, controlled for a number of relevant variables. This stage also tests $H1$, concerning DTA signing:

$$\textit{Selection} : Z_i = W_{i\gamma} + u_i$$

The second stage is the outcome equation, where Y_i is only observed when $Z_i = 1$, when DTAs are signed. Using the predicted values for DTA signing from stage one, a selection parameter, often referred to as the inverse Mills ratio, is used in the next stage to control for nonrandom sampling. This stage tests $H2$, concerning DTA content:

$$\textit{Outcome} : Y_i = X_i\beta + \epsilon_i$$

u_i and ϵ_i are error terms which are assumed to follow a jointly normal distribution.²⁶ This is a strong assumption, and there is bound to be a high level of multicollinearity when the two stages share many of the same variables. To help this issue I include a variable in the first stage that is meant to fulfill the so-called exclusion restriction (Angrist, 2014, p. 130). This is essentially an instrumental variable, meaning that the variable should be a good predictor of the dependent variable in the first stage probit, DTA signing, but should not be significantly related to the dependent variable in the second stage, Source index.²⁷

One of the criticisms directed towards the Heckman model is that such instrumental vari-

²⁶A probit model is used in the first stage of the Heckman model, rather than a logit, because of the assumption of bivariate joint normality. More specifically, the error term in the selection equation is assumed to be normal, as is the error term in the outcome equation. Logistic regression assumes the error term follows a logistic distribution, and is therefore not valid for the Heckman model (Heckman, 1976). A histogram in appendix chapter C.3, of the residuals of the second stage of the main model, indicates that the residuals follow a close to normal distribution. However, this not a very strict test.

²⁷The output from the Heckman model without a instrument in the first stage equation is presented in appendix section A.7. As you can see from ρ in that table there is a strong correlation between the error terms without the instrument.

ables are hard to find in practice (Puhani, 2000, p. 64). The outcomes of the selection equation and the outcome equation are often related, as in this case, and so most variables which have substantial explanatory power on one will also often have so on the other. I do however believe that I have found a variable that justifies using this method.

For this purpose I use the number of previously signed BITs by a leader. These data are from the UNCTAD Investment Policy Hub, shared with me as replication data, by Berge (2020). Previous BIT signing is likely to be a well fit predictor of DTA signing as the decision to sign them both should stem from several common sources of motivation. As previously covered, developing countries often sign international economic agreements in hope of strengthening diplomatic ties and attracting foreign investments. Further, the Wald-test in table 4, which compares nested models, supports that *Past BIT signing* is significantly relevant to predict DTA signing.²⁸ In other words, it explains enough of the variation in DTA signing to be relevant as an instrument.

Table 4: Wald’s weak instrument test

	Res.Df	Df	F	Pr(>F)
1	2886			
2	2887	-1	322.22	2.2e-16 ***

Note: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’
 Model 1: DTA signing \sim instrument + controls
 Model 2: Treaty signing \sim controls

For the instrument to be valid, it must also not affect the source variable, except through the treatment variable. In other words, past BIT signing should only affect the content of signed DTAs through its effect on likelihood of signing.²⁹

²⁸A F-statistic above 10 is commonly viewed as the threshold (Staiger & Stock, 1997).

²⁹It is tempting to run a regression controlling for the treatment variable, to check if the instrument has no significant relationship with the Source index. However, in such a regression the treatment could become a collider if the instrument is not perfect, opening a back-door path between the instrument and unobservable confounders (Morgan & Winship, 2015, p. 301-302). For this reason, the validity of instruments can not be formally tested, but should rather be justified theoretically.

One possible justification is to have an instrument which works as a natural experiment. In this case it would have to be a mechanism which randomly encourages autocratic leaders to sign DTAs. With the lack of such a mechanism, I am left to argue why a significant relationship between past BIT signing and DTA content is unlikely to be present, conditional on the covariates included.

As discussed extensively in theory chapter 4.5, and touched upon in chapter 2.2, on DTA negotiations, a country's leadership is seldom directly involved in the creation of DTA content. One might even go as far as to say that some leaders may never have heard of DTAs, and that very few of them dictate the content of these agreements, possibility apart from drawing "red lines" for negotiators. In other words, though entering into DTA negotiations is a decision likely made at the very top of the political pyramid, the details are largely in the hands of the bureaucrats who draft and negotiate them.

The trends in time can also tell us something about the relationship between past BIT signing and the Source index. In contrast to the hike in frequency for both BIT and DTA signing towards year 2000 (as seen in figure 14 and 1), there is no such strong change for the Source index over time (see figure 3). The slight increase in source-preferential DTA content is also likely due to the changed view of withholding tax rates, as discussed in section 5.1. Though these trends are not enough to be evidence in itself, it adds to the list of arguments as to why past BIT signing is likely to be a valid instrument in this case.

Finally, the reason why I opt for past BIT signing rather than the number of BITs signed in a leader-year observation, is because it can be challenging to identify the ownership of a single BIT. How long time it takes from the beginning of the negotiation process until the signing of a BIT can range from weeks to years, meaning that it could have been one leader who initiated it, while it was signed by another. Past BITs on the other hand is likely to effect future BIT signing and DTA signing more generally, because they are both expressions of the willingness to cooperate on an international level.

Summing up this discussion on the validity of past BIT signing as an instrument variable, it

is at best unclear how past BIT signing would affect the content of DTAs. I will not claim that this is the perfect instrument, but there are good reasons to believe it can serve as a valid instrument in this case.

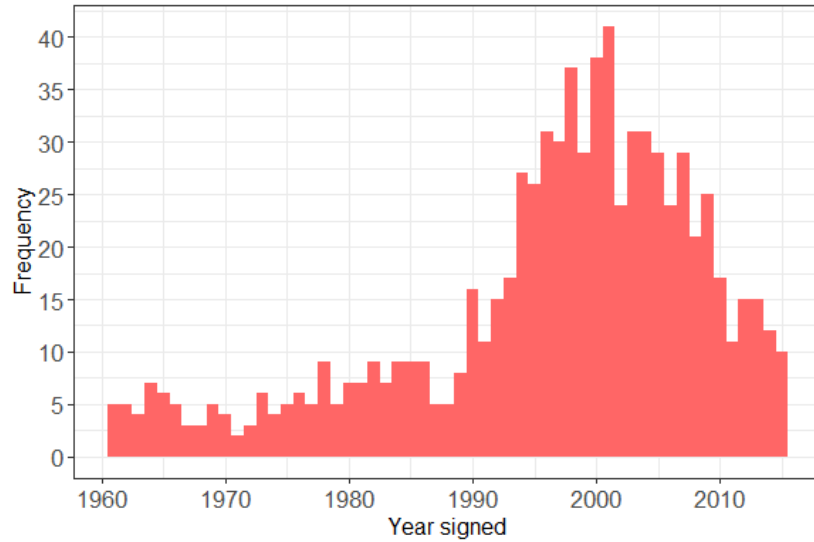


Figure 14: BIT signing 1960-2015

Note. Across 779 leader-year observations in the main sample

There are two different methods for estimating the Heckman model: the Heckman two-step and Maximum Likelihood (ML), which estimates both stages at the same time (Greene, 2003, p. 786). Based on a review of Monte Carlo studies, Puhani (2000) recommends maximum likelihood in the absence of collinearity problems, but finds the two-step estimator to be the more robust method when collinearity problems prevail. In this case, the two methods yield very similar results. Therefore, I only report on the model with maximum likelihood here, and include the 2-step estimation method in appendix chapter C.4.

I also cluster the standard errors on leaders, as this is the choice of grouping best fitted for this theoretical framework. Clustering standard errors gives more conservative uncertainty estimates, and helps deal with autocorrelation, which tends to be an issue for panel data. A version with clustered errors on country is included in appendix chapter C.7.

Other estimators which were considered are, the Tobit model for censored variables, OLS with a lagged dependent variable and logit regression with a cubic time trend. These are used as robustness checks and the results are further discussed in section 6.4.

5.5 Control variables

In this section I lay out the control variables included in both the Heckman stages. They have been selected on the basis of the literature review in chapter 3, and are expected to have effect on DTA signing and content, as well as autocratic time horizons. Descriptive statistics for all variables in the main model, including the instrument and dependent variables in stage 1 (DTA signing) and 2 (Source index) are presented in table A.3. Figures 10 and 11 in chapter 5.3, on sample selection, display the distribution of values in DTA signing and the Source index in the main sample.

The first control variable I include is a measure of bureaucratic quality, which can be said to be a sub-category of bureaucratic capacity. Bureaucratic capacity is expected to positively affect a country's ability to negotiate preferable outcomes in international economic agreements (see chapter 3.4). It should also affect DTA signing, as a leader is, at least somewhat, aware of the strengths and weaknesses of his bureaucracy, which in turn should make the prospect of entering negotiations more or less tempting. With the lack of a more specific measure for countries' skill and capacity in the context of DTA negotiations, I use an indicator from the Varieties of Democracy (V-Dem) project called "Rigorous and impartial public administration". This indicator seeks to capture the

“(...) extent to which public officials generally abide by the law and treat like cases alike, or conversely, the extent to which public administration is characterized by arbitrariness and biases (i.e., nepotism, cronyism, or discrimination).” (Coppedge et al., 2021, p. 176).

I also control for regional competition, measured by the number of DTAs signed in the region the past 10 years. The number of DTAs signed regionally increases a country's likelihood

of signing (see chapter 3.2). The control variable is lagged by a year to avoid capturing the endogenous relationship in the opposite direction, DTA signing leading to signing and certain content of other DTAs in the region. Including this variable could possibly also help control for some other regional unobserved confounders.

The next control is an autocratic regime type dummy for military regimes (Anckar & Fredriksson, 2019), with the rest of the autocratic regimes as reference category. The reason I do not include more regime type dummies is to limit the complexity of the model, but still control for some of the most important differences between regime types. Bak and Moon (Bak & Moon, 2019) use the same strategy, arguing that military regimes, compared with other autocratic regimes are more susceptible to elite-level challenges. I also include logged GDP per capita (VDEM) (Coppedge et al., 2021). Though these two controls are already part of the ATH probit, I believe they affect DTA signing in other ways than through long or short time horizons. However, one should be aware of the possible issues related to collinearity that might occur from adding controls that also are a part of a probit included as a variable $\Pr(\text{Fail})$.

Finally, I add the variables year , year^2 , and year^3 , to control for time trends. One such trend is that there has been a large increase in the frequency of DTA signing since the 50's, reaching its peak in the late 90s (see chapter 1). Year-dummies or decade-dummies would have been even stronger time controls, but are not chosen due to demanding more variation in the data.

6 Results and discussion

In this chapter I present the results from the Heckman models on the main sample and the sample of asymmetric double tax agreements. I also present the results from the models where the sub-indices for content: Permanent establishment index, Withholding tax index and Other index are used instead of the Source index, as the dependent variable. Further, I briefly report on the results from a series of robustness checks. In the last section of this chapter summarize the findings and discuss possible interpretations in addition to the validity of the results.

6.1 Main model

The first stage regression in the Heckman model (table 5) includes predicted probability of leadership failure $\text{Pr}(\text{Fail})$ as its main explanatory variable and has DTA signing as the dependent variable. The results support hypothesis *H1*: That autocratic leaders with longer time horizons are more likely to sign double tax agreements with richer countries. This is because the relationship between predicted probability of leadership failure $\text{Pr}(\text{Fail})$ and signing DTAs is significant and negative, controlled for the other covariates in the model. This indicates that autocrats find it more attractive to sign a DTA when they can expect to be there to reap the benefits from such an international economic agreement. Conversely, autocrats with shorter time horizons are less likely to “tie their hands”, as they are dependent on quickly mobilising revenue in order to consolidate power.

Figure 15 displays the predicted probabilities of signing a DTA, in addition to the 95% associated confidence intervals. An autocrat’s probability of signing a DTA with a richer party moves from 15% to less than 4% when predicted probabilities of failure $\text{Pr}(\text{Fail})$ increases from 0% to 50%. As most leader-year observations in the main sample fall between these two points (see distribution of observations on $\text{Pr}(\text{Fail})$ in figure 9), this is the most relevant interval to consider. For the very shortest time horizons the chance of signing a DTA decreases even further, coming close to 0%.

Table 5: Heckman (ML) Main model

<i>Dependent variable:</i>		
	DTA signing Selection equation	Source index Outcome equation
	(1)	(2)
Pr(Fail)	-1.41*** (0.49)	-0.11 (0.11)
IV: Past BIT signing	0.15*** (0.02)	
Year	19.68*** (7.61)	4.68** (2.28)
Year squared	-9.15 (6.68)	-5.04*** (1.20)
Year cubed	4.06 (6.16)	2.72* (1.41)
Bureaucratic quality	0.06 (0.09)	-0.02 (0.02)
Regime type: Military	-0.04 (0.14)	0.05* (0.03)
Regional competition	0.05*** (0.02)	-0.01 (0.005)
Log GDP per cap	0.28*** (0.09)	-0.02 (0.02)
Constant	-3.68*** (0.72)	0.59** (0.24)
Observations	2,870	2,870
Log Likelihood	-616.24	-616.24
ρ	-0.16 (0.17)	-0.16 (0.17)

*Note.*Clustered standard errors
on leader in parentheses

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

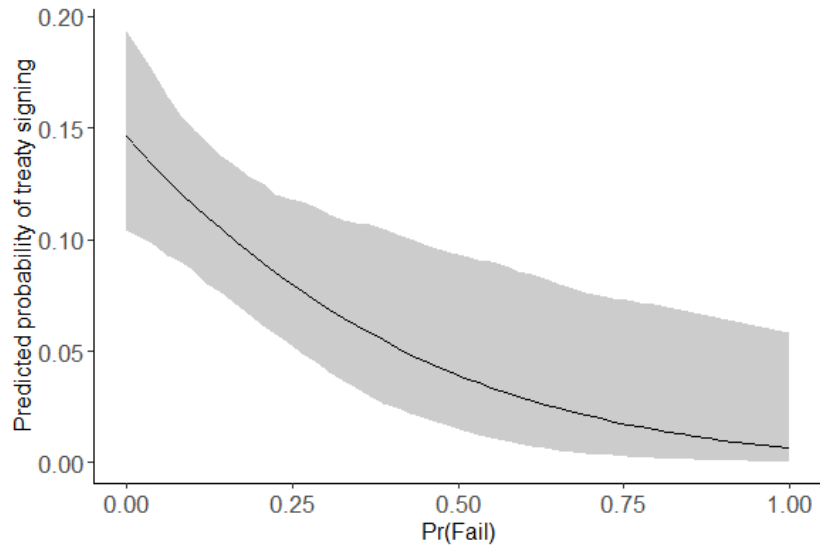


Figure 15: Main sample: Predicted probability of signing a DTA scenario

Note. In this scenario $\text{Pr}(\text{Fail})$ varies from 0 to 1, holding all other covariats constant on their mean values. This with the exception of the dummy for military regimes which is set to 0, for the reference category.

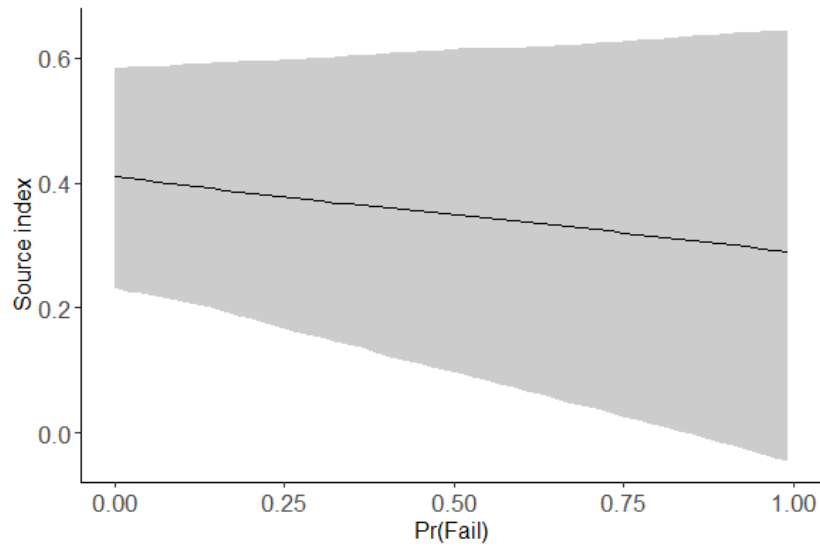


Figure 16: Main sample: Predicted probability of Source index scenario

Note. In this scenario $\text{Pr}(\text{Fail})$ varies from 0 to 1, holding all other covariats constant on their mean values. This with the exception of the dummy for military regimes which is set to 0, for the reference category.

In the second stage of the Heckman model the coefficient for $\text{Pr}(\text{Fail})$ is not significant. This supports the rejection of hypothesis $H2$: That autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax. Further, the coefficient points in the opposite direction as the hypothesis. In other words, if the relationship was significant it would indicate that autocrats with longer time horizons tend to be *more* protective of their taxing rights. This is surprising, as it goes against the incentives derived from autocratic time horizons presented in the theory chapter. But again, this result indicates a null relationship.

Figure 16 displays the predicted probabilities of values on the Source index, in addition to associated 95% confidence intervals. The expected score on the Source index decreases from 0.41 to 0.34 when predicted probabilities of failure $\text{Pr}(\text{Fail})$ increases from 0% to 50%, but as already mentioned there is too much uncertainty to infer any causal relationship from this result.

What might contribute to explaining the lack of relationship between the measure for autocratic time horizons and DTA content, is that leaders tend not to be very involved in the drafting of DTAs. The role of the bureaucracy has already been highlighted in chapters 3.4 and 4.5.1, and will be further covered in the section for summary and discussion.

A possible explanation for the negative relationship between DTA content and autocratic time horizons, despite high uncertainty levels, is the contesting logic of autocratic time horizons suggested by Blake (2013). In his work on BIT content, he suggests that autocrat's with longer time horizons will protect themselves as a way of dealing with uncertainty in the future, and that the need to retain policy space increases with the expected length of tenure.

A second possible interpretation of the negative relationship between DTA content and autocratic time horizons, is that it reflects which autocracies other, and relatively richer, countries are interested in signing tax agreements with. $\text{Pr}(\text{Fail})$ is the measure for the length of an autocrat's time horizon, but is also made up of variables that represent the

degree of stability in a country. A negative relationship between $\text{Pr}(\text{Fail})$ and the Source index can therefore indicate that an unstable country, as measured by $\text{Pr}(\text{Fail})$, for example in the midst of a conflict or a popular protest, has to sacrifice more in the form of taxing rights in a DTA, than a country which is more stable.

6.2 Asymmetric double tax agreements

The sample of asymmetric DTAs consists of treaties signed between either a low or lower middle income country on the one side and a high or upper middle income country on the other side, as defined by the World Bank's historic income level thresholds. It excludes DTAs where signatories have small wealth gaps.

The Heckman model, applied on the sample of asymmetric DTAs, further supports hypothesis *H1*: That autocratic leaders with longer time horizons are more likely to sign double tax agreements with richer countries (See table 6). The coefficient for $\text{Pr}(\text{Fail})$ is significant and slightly stronger for DTA signing, in the same direction as in the main model. Figure 17 illustrates the predicted probabilities of signing a DTA, in addition to 95% associated confidence intervals. An autocrat's probability of signing a DTA with a wealthier signatory party moves from 12% to less than 2% when predicted probabilities of failure $\text{Pr}(\text{Fail})$ increases from 0% to 50%. This is about the same difference as in the main model.

In the second stage of the Heckman model, applied on the sample of asymmetric DTAs, the $\text{Pr}(\text{Fail})$ coefficient is negative and significant at a 0.1 level.³⁰ The estimate is still somewhat uncertain and speaks for the rejection of *H2*: That autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax. Figure 18 displays the predicted probabilities of values on the Source index, in addition to associated 95% confidence intervals. In this scenario the score on the Source index decreases from 0.33 to 0.22 when predicted probabilities of failure $\text{Pr}(\text{Fail})$ increase from 0% to 50%, which is 0.4 points more than in the main model.

³⁰The standard significance level in social sciences is 0.05 or less.

Table 6: Heckman (ML) Asymmetric sample

<i>Dependent variable:</i>		
	DTA signing Selection equation	Source index Outcome equation
	(1)	(2)
Pr(Fail)	-1.52*** (0.52)	-0.21* (0.11)
IV: Past BIT signing	0.10*** (0.02)	
Year	14.85** (6.63)	3.72*** (1.44)
Year squared	-8.09 (6.41)	-4.80*** (1.11)
Year cubed	5.13 (5.91)	2.09* (1.22)
Bureaucratic quality	0.06 (0.09)	-0.02 (0.02)
Regime type: Military	-0.01 (0.14)	0.07** (0.03)
Regional competition	0.04 (0.02)	-0.0002 (0.003)
Log GDP per cap	0.43*** (0.09)	0.002 (0.03)
Constant	-4.79*** (0.71)	0.34 (0.29)
Observations	2,562	2,562
Log Likelihood	-514.31	-514.31
ρ	0.18 (0.23)	0.18 (0.23)

Note.

Clustered standard errors
on leader in parentheses
*p<0.1; **p<0.05; ***p<0.01

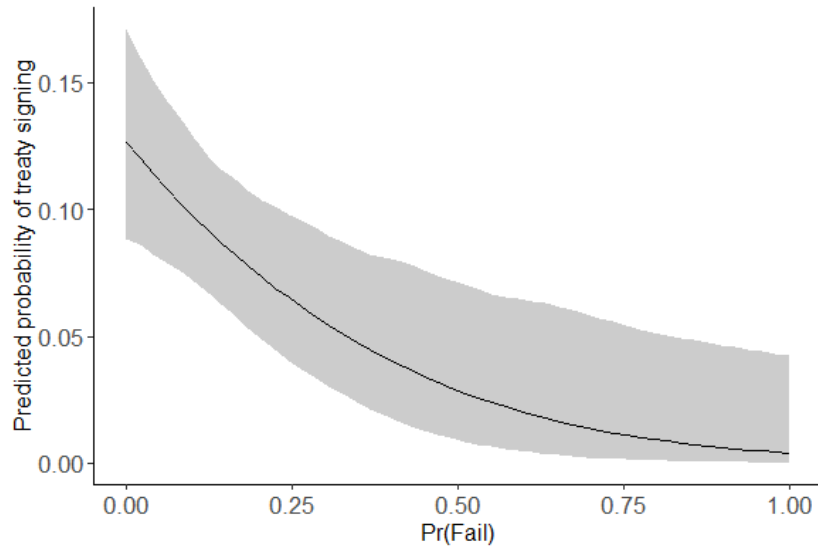


Figure 17: Asymmetric sample: Predicted probability of signing a DTA scenario

Note. In this scenario $\text{Pr}(\text{Fail})$ varies from 0 to 1, holding all other covariats constant on their mean values. This with the exception of the dummy for military regimes which is set to 0, for the reference category. Though the uncertainty estimates surpass 0 on the y-axis, there are no observations with such values.

A stronger, and more significantly negative $\text{Pr}(\text{Fail})$ coefficient, concerning content of asymmetric DTAs might indicate two things. Firstly, one might draw from this that the effect of autocratic time horizon on DTA content is conditional on an economical motive of DTA signing. This because asymmetric DTAs are likely entered more often with the motive of attracting foreign investments, that less asymmetric DTAs. The reason for this is that there should be a larger potential for cross-border activity and investment in these cases.

Excluding DTAs signed between more similar countries thus might work as a way of weeding out DTAs signed primarily to for example strengthen diplomatic ties or to demonstrate a political stance. It is reasonable that autocrats should have a larger interest and involvement in the design and content of DTAs, which might explain a stronger relationship with content in the sample of asymmetric DTAs.

If this assumption is correct, the partly significant and negative relationship between $\text{Pr}(\text{Fail})$

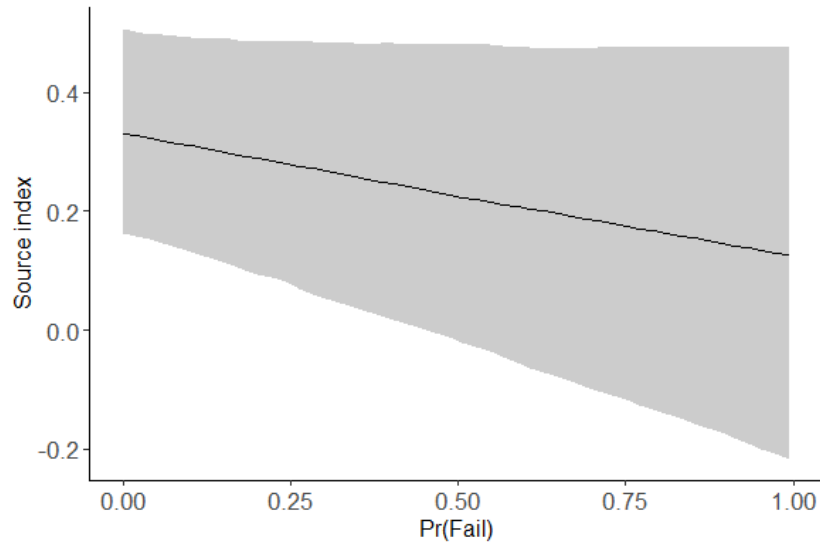


Figure 18: Asymmetric sample: Predicted probability of Source index scenario

Note. In this scenario $\text{Pr}(\text{Fail})$ varies from 0 to 1, holding all other covariats constant on their mean values. This with the exception of the dummy for military regimes which is set to 0, for the reference category. Though the uncertainty estimates surpass 0 on the y-axis, there are no observations with such values.

and the Source index indicates that conditional on economic motivations for entering a DTA, an autocrat with a longer time horizon will be more interested, or able, to negotiate an agreement which retains more of the country's right to tax foreign companies and residents. A second possible interpretation of a stronger effect in the case of asymmetric DTAs, is that powerful states force rulers in more unstable situations to accept worse terms than autocrats in more stable environments, and that this tendency increases with the distance in wealth and power between signatory parties.

6.3 Permanent establishment, Withholding tax and Other indices

As I found no significant relationship between the length of time horizons and the balance of overall content in DTAs in the main model, it seems fruitful to see if this is the case for the sub-indices. Table 7 reports the results from three Heckman models, with the Permanent establishment index, the Withholding tax index and the Other index as the dependent variable in the outcome equation.

The results show that $\text{Pr}(\text{Fail})$ does in fact have a significant and negative effect on permanent establishment provisions in DTAs. In other words, autocrats with longer time horizons tend to retain more of their taxing rights regarding permanent establishment provisions in DTAs with richer countries. This finding stands in opposition to hypotheses *H2*: That autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax.

Figure 19 displays the predicted probability of scores on the PE index, in addition to associated 95% confidence intervals. In this scenario the score on the PE index decreases from 0.60 to 0.31 when predicted probabilities of failure $\text{Pr}(\text{Fail})$ increases from 0% to 50%. This is a large effect.

No significant relationship was found in the case of Withholding tax rates index or Other index, further supporting the rejection of *H2*, and that autocrats are mostly not involved in negotiations, to the extent that their strategies and interests affect DTA content.

Table 7: Heckman (ML) PE, WHT and Other indices

		<i>Dependent variable:</i>					
		DTA signing	PE index	Treaty signing	WHT index	Treaty signing	Other index
		(1)	(2)	(3)	(4)	(5)	(6)
84	Pr(Fail)	-1.59*** (0.50)	-0.53*** (0.19)	-1.54*** (0.51)	0.06 (0.10)	-1.58*** (0.51)	0.20 (0.21)
	IV: Past BIT signing	0.14*** (0.03)		0.14*** (0.03)		0.14*** (0.02)	
	Year	19.15** (7.95)	3.21 (3.73)	25.79*** (8.24)	3.24 (2.41)	20.25** (8.07)	5.23* (2.76)
	Year squared	-10.37 (6.89)	-1.40 (2.07)	-14.16** (6.86)	-6.34*** (1.57)	-11.45* (6.89)	-4.11** (1.96)
	Year cubed	4.49 (6.27)	2.62 (2.20)	10.17 (7.13)	4.52** (1.82)	3.86 (6.54)	-0.58 (2.00)
	Bureaucratic quality	0.08 (0.09)	-0.01 (0.04)	0.07 (0.09)	-0.01 (0.02)	0.08 (0.09)	-0.06** (0.03)
	Regime type: Military	-0.03 (0.14)	0.09* (0.06)	-0.05 (0.14)	0.01 (0.02)	-0.01 (0.14)	0.03 (0.04)
	Regional competition	0.04** (0.02)	0.001 (0.01)	0.05** (0.02)	-0.01*** (0.003)	0.04* (0.02)	-0.003 (0.01)
	Log GDP per cap	0.28*** (0.09)	-0.04 (0.03)	0.29*** (0.09)	-0.03* (0.02)	0.30*** (0.09)	-0.02 (0.03)
	Constant	-3.70*** (0.72)	0.89** (0.44)	-3.81*** (0.74)	0.68*** (0.14)	-3.85*** (0.74)	0.55 (0.35)
	Observations	2,841	2,841	2,836	2,836	2,835	2,835
	Log Likelihood	-798.30	-798.30	-537.90	-537.90	-704.88	-704.88
	ρ	-0.35** (0.16)	-0.35** (0.16)	0.08 (0.15)	0.08 (0.15)	-0.002 (0.19)	-0.002 (0.19)

Note.

Clustered standard errors
on leader in parentheses
*p<0.1; **p<0.05; ***p<0.01

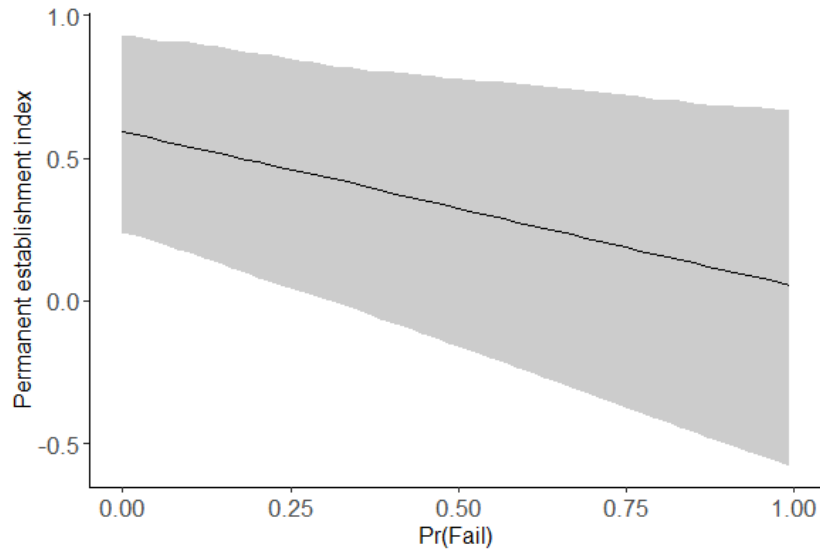


Figure 19: Main sample: Predicted probability of PE index scenario

Note. In this scenario $\text{Pr}(\text{Fail})$ varies from 0 to 1, holding all other covariats constant on their mean values. This with the exception of the dummy for military regimes which is set to 0, for the reference category. Though the uncertainty estimates surpass 0 on the y-axis, there are no observations with such values.

What might explain such different results for the three sub-indices is that the provisions concerning permanent establishment is what decides which and when foreign businesses operating in a source state can be taxed on business income. A significant and negative effect from $\text{Pr}(\text{Fail})$ on the PE index can be interpreted as autocrats with longer time horizons are more interested in future revenues from all the businesses they plan to attract, in contrast to autocrats with shorter time horizons, who will not be there to gain from this kind of business ventures.

Another interpretation could be that countries in unstable situations are more dependent on “tying their hands” harder in regards to taxing business income, than for other types of provisions. This because instability makes them the least attractive countries to establish business inn, while passive income, as interests and royalties, and other provisions, might not be as affected by this.

6.4 Robustness tests

Can we trust the results from the main model? In this section I briefly comment upon the results from a number of robustness tests. All results, tables and figures for this section are presented and discussed further in appendix chapter D.

All tests start off with the specifications of the main model as a baseline. From this starting point different elements are added. First, additional covariates are included to the Heckman to see whether this alters the results. The next test uses different measures for autocratic time horizon. Finally, alternative estimators are tested, including a logit model with a cubic time trend to explain DTA signing, and Tobit and OLS models, with a lagged dependent variable (Source index), for DTA content.

For the most part the tests support the findings from the main model; that autocrats with shorter time horizons sign less DTAs, but that there is no significant relationship between time horizon and the content of DTAs. However, there are a couple of exceptions pointing to a significant and negative relationship between $\text{Pr}(\text{Fail})$ and DTA content.

6.4.1 Alternative covariates

I run a number of Heckman models, estimated with maximum likelihood, adding different control variables (See table A.11). This includes a countries dependence on corporate tax (corporate tax as share of total revenue) (ICTD/UNU-WIDER, 2019), a learning-variable with the number of previously signed DTAs in a country, capability asymmetry measured by a country's score on the National Capability index in the Correlates of War project (Singer et al., 1972), and regime type dummies (Anckar & Fredriksson, 2019) with monarchy as the reference category. The model with dependence on corporate tax lacks a significant constant in the first stage, and therefore supports the rejection of both hypotheses. However, this is plausibly due to few observations (595). The other three models support the findings in the main model.

6.4.2 Alternative measures for autocratic time horizons

Due to the disagreement on the most valid way to measure autocratic time horizons, discussed in the methods chapter, this test implements alternative measures for this concept: a simpler ATH probit, excluding GDP growth, logged oil production and logged GDP per capita, length of tenure to date in years, and the presence of at least one coup in a leader-year observation.

In short, the results from the model with a simpler ATH probit and the presence of at least one coup, support the results from the main model. For the number of years in position to date, as a proxy for autocratic time horizons, there is no significant relationship for neither DTA signing nor content. This serves to illustrate how sensitive this research question is to the choice of measure of autocratic time horizons.

6.4.3 Alternative estimators

To test whether the results in the main model hinge on fitting a Heckman model, I run tests using other estimators: logit, tobit and OLS.

Two logistic regression models, estimating the relationship between $\text{Pr}(\text{Fail})$ and the likelihood of signing a DTA, support the findings from the first stage in the main model, and thus that there is robust evidence for $H1$. The first of these includes a cubic time trend for the number of days in power to date, and the other includes a cubic time trend for year.³¹

Tobit models are designed to deal with censored variables, which is when the values of observations are partly unknown. In this case, we have values for observations on the Source index between 0 and 1. To run a Tobit model, we assume that those observations without a value on the Source index would have been lower than the cutoff-point 0, if registered. The Tobit model uses this information to correct for the unobserved observations. Tobit was not chosen as my main model because this assumption seems unlikely, and it does not take care

³¹As logit regression with time splines share many of same qualities as event history models (Ward & Ahlquist, 2018, p. 225), I did not include this type of model as a robustness test.

of the nonrandom selection problem. As such, the results from this test could be biased. None the less, a Tobit model, with a lagged Source index as dependent variable, gives a negative and significant (at a 0.01 sig. level) coefficient for Pr(Fail). As in the Heckman model applied on the sample of asymmetric DTAs, this result stands in opposition to *H2*: That autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax.

Finally, I run three OLS models, to test the effect of Pr(Fail) on the Source index. The first model uses a lagged Source index as dependent variable, and only includes observations which have a score on the Source index. This does not produce a significant Pr(Fail) coefficient. However, two OLS models using panel data (one with lag on Source index) gives a negative and significant coefficient for Pr(Fail). These three models support the rejection of *H2*: That autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax. For the last two models it is worth noting that including 0's where there has not been observed a score on the Source index breaks the normality assumption in OLS, and the models might give biased results.

6.5 Discussion

In table 8, I summarize the main results from the analysis. To complement this, I discuss possible interpretations: first for DTA signing, and then regarding DTA content. I also comment on the validity of this study, to answer whether it is safe to establish causal inferences based on the results.

Table 8: Summary of results

Hypothesis	Model	Result	Direction
<i>H1: Autocratic leaders with longer time horizons are more likely to sign double tax agreements</i>	Main model:	Supported	As hypothesized
	Asymmetric:	Supported	As hypothesized
	Robustness:	Supported	As hypothesized
<i>H2: Autocratic leaders with longer time horizons sign double tax agreements that impose more restrictions on their ability to tax.</i>	Main model:	Rejected	No relationship
	Asymmetric:	Rejected	Opposite*
	PE Index:	Rejected	Opposite
	WHT index:	Rejected	No relationship
	Other index:	Rejected	No relationship
	Robustness:	Rejected	No relationship/Opposite

Note: *Only on a 0.1 significance level.

6.5.1 Robust evidence for DTA signing

The results across all models and tests give robust evidence that autocrats with longer time horizons are more likely to sign DTAs.

Can we safely infer a causal positive effect from the length of autocratic time horizons on the likelihood of signing a DTA? According to a ROC plot, the first stage in the model predicts correctly 83% of the time, indicating that the model is well fit to represent the data (See ROC plot and further description in appendix chapter C.2). However, it also implies that it will get it wrong 17% of the time.

Moving on from model fit, a threat to the ability to make causal claims is endogeneity. In other words, there could be an effect running from DTAs to the length of an autocrat's time horizon. One might argue that international economic agreements can attract foreign

investments, which in turn contributes to stabilizing a leader's position (Clague et al., 1996, p. 266). However, there is mixed evidence of DTAs' effect on investment flows, and I believe controlling for GDP per capita controls for most of the effect of wealth on time horizons.

A second threat regarding content validity is reliability. This relates to possible coding errors and other mistakes that are likely not to be systematic. As touched upon in the methods chapter, each DTA in the Tax treaties explorer dataset has been coded by two different people, with a third to handle disagreements. In addition, I have made my coding script public³² to enable replication.

Another possible threat to the validity of a causal claim is omitted variable bias. As illustrated in the literature review in chapter 3, there are a myriad of motivations and factors linked to DTA signing and content. Despite this, I believe the controls, in addition to the alternative covariates in the robustness tests, cover the most important facets of this phenomena.

As all models and tests consistently support $H1$, one might be tempted to read this as a direct result of varying autocratic strategies across time horizon lengths. This is likely to be part of the explanation, but it is worth lingering a moment to consider some alternative interpretations of these results.

The main challenge for all research on autocratic time horizon is content validity. Does the measure capture what it should? And, even more relevant in this case, does the measure represent other concepts in addition to autocratic time horizons? The ATH probit for estimating $\text{Pr}(\text{Fail})$ includes variables contributing to the level of stability in a regime and for a leader's position. If a country's stability is an important factor when richer countries decide who to negotiate DTAs with, the results could be interpreted within the power and preferences perspective, discussed in the literature review. In other words, richer countries sign DTAs with stable autocracies, and have no interest in negotiating with the rest.

³²Github: <https://bit.ly/2QAxKs5>

Statistical analysis is well fit to shed light on covariation and, in some cases, to pinpoint causal effects: that the length of autocratic time horizons affect DTA signing. However, it is an insufficient tool to identify causal mechanisms: *How* the length of autocratic time horizons translates to a high or low probability of a DTA being signed. The latter requires in-depth investigation through for example process tracing, surveys or other qualitative methods. Though I find it plausible that both autocrats' strategies, and the interests of richer countries in their choice of treaty partners play a part in explaining why autocrats with longer time horizons are more likely to sign DTAs with richer countries, further research is required to confirm this, and to identify additional mechanisms.

6.5.2 Mixed results for DTA content

There are mixed results and too much uncertainty to infer a causal effect from the length of autocratic time horizons to DTA content.

Regarding the validity of the second stage equation, I chose the Heckman model as it is the only model to my knowledge that controls for nonrandom sampling and gives unbiased estimates with a dependent variable with a large number of 0's. Assuming that there is a nonrandom sampling problem,³³ and that the other assumptions for the Heckman model holds, the model should be trusted. Having said this, there is too much uncertainty to claim there is a relationship between autocratic time horizons and DTA content.

I interpret this absence of a relationship as a testament to the lack of involvement of autocrats in DTA negotiations. As discussed at length in chapter 3.4 and 4.5.1, it is mostly bureaucratic officials who represent the parties in the technical process of creating DTA content. Whether this because autocrat's lack interest in DTA content, or that they are

³³A direct test of the nonrandom sampling problem in maximum likelihood-Heckman is a significant non-zero ρ , which is the correlation between the error terms in the selection equation and the outcome equation (Greene, 2003, p. 786). With the exception of the model with the PE index, all models presented do not have a significant ρ , meaning that the 0 hypothesis, that there is no selection problem in the data, can not be rejected. However, there seems to be some variation in how strictly ρ is interpreted.

not able to take part in this process is hard to say. To counter the argument that the bureaucracy design DTA outcomes, one could ask why the coefficient for the bureaucratic quality variable does not give a significant result in any of the Heckman models or the robustness tests. However, the lack in relationship between bureaucratic quality and negotiation outcomes likely rather signifies the need for a more specific measure of the expertise and capacity of the countries' tax bureaucracies.

Having said this, not all models reject a relationship between autocratic time horizons and DTA content. There are some cases where the coefficient for $\text{Pr}(\text{Fail})$ is significant and negative, indicating that autocrats with longer time horizons tend to retain more of their rights to tax in DTAs (which stands in opposition to $H2$).

A possible explanation for this, still taking account of high uncertainty levels, is the incentives from autocratic time horizons argued by Blake (2013), in relation to BIT signing. He claims that we should expect agreements which leave more policy space in the hands of the leader when the autocrat's time horizon is longer, because he has the incentive to guard himself for a long future, filled with unimaginable economic and political hardships, while an autocrat with a shorter time horizon will not have to worry about this, and would rather attract foreign investments short term by signing the most restricting agreement possible. As I find it unlikely that an autocrat would expect to gain financially from an agreement in the very short future, and do not agree that we should expect higher degree of uncertainty with the autocrats with longer time horizons, I do not find this interpretation likely to be the full explanation of the negative relationship between $\text{Pr}(\text{Fail})$ and the Source index. However, it does align with the empirical evidence in my results.

I find it more convincing that these negative results related to DTA content represent the power dynamics in the international tax treaty regime, already discussed in relation to the *signing* of DTAs. In other words, richer countries do not only have the power to choose who they enter negotiations with, but they also have the power to make developing countries resign more of their taxing rights in a vulnerable situation.

To give an example, the coefficient for $\text{Pr}(\text{Fail})$ is negative and significant on a 0.1 level, with the Source index as dependent variable, for the sample of asymmetric DTAs. As discussed in chapter 6.2, a stronger result in the case of asymmetric DTAs could be interpreted in two ways. That autocrats are more involved in the creation of treaty content when there is an economic motivation to sign a DTA, or that larger asymmetries between countries enable powerful states to negotiate preferable outcomes in DTAs with unstable and thus less attractive signatory source states.

This power perspective is further supported by the difference in results for signing and content between the main sample and the sample of asymmetric DTAs. The effect of autocratic time horizons on the likelihood of signing of a DTA is slightly stronger in the case of asymmetric treaties, than for the main sample. This could reflect which countries rich states are interested in entering DTAs with. In other words, richer countries have less interest in signing DTAs with countries experiencing some kind of turmoil, and this is increasingly so when the wealth gap between signatories increase. Further supporting this perspective is the fact that the Heckman for the asymmetric DTAs predicts a whole point lower on the Source index than for the main sample.

However, the results do in fact show no evidence for a relationship between $\text{Pr}(\text{Fail})$ and DTA content. In addition to bureaucratic involvement, what might serve as an explanation for this is that the incentives from time horizons and the mechanisms I have just outlined null each other out. In other words, autocrats with longer time horizons could wish to “tie their hands” through stricter treaties in line with $H2$, at the same time as richer countries will make those autocrats with shorter time horizons sign DTAs that denounce more of their taxing rights.

The question of interpretation discussed here, highlights one of the most central debates in the field of research on international economic agreements. What should be understood as evidence for “tying of hands” and “power and preferences” under the umbrella of agreements as credible commitments. These question become even more difficult to answer as the

negotiation of DTAs happen behind closed doors.

Finally, who and what situations can the findings in this thesis be generalized to? The 98 autocracies in the main sample, and the 93 autocracies in the asymmetric sample are mostly low and lower middle income countries. The countries are in Africa, Latin-America and Asia. The samples, and thus the analysis only includes DTAs signed with a richer party. Finally, the analysis includes data from 1950-2015, making it possible to generalize across time. Through there is only data on the content of signed DTAs, the Heckman model corrects for nonrandom sample selection. In sum, I would argue that the findings in this thesis can be generalized to autocratic developing countries' DTA signing with relatively richer countries. Though there are notable differences between DTAs, BITs and PTAs, I also hope research in the more general field of international economic agreements can take inspiration from this study, as it has inspired this work.

7 Summary and conclusion

In this final chapter, I summarize the main points from each of the previous chapters and outline the conclusions from this study on the effect of autocratic time horizons on the signing and content of double tax agreements.

In the beginning of this thesis, I covered the main features and historical trends for DTAs, describing them as long term and legally binding treaties, committing the signatory parties to the allocation of taxing rights. DTAs have increased in popularity since the 1950s, but have been signed less frequently since the mid 90s. The negotiations of DTAs are most often handled by official bureaucrats, and based on the two model tax treaties from the OECD and the UN. Negotiated treaties often include most articles from either one, or a combination of these model tax treaties. Finally, the comparison between two real life treaties illustrated the many ways a DTA can be more or less restrictive for a source country, and thus often a developing country, in terms of rights to tax foreign companies or residents.

The literature review covered four approaches to understanding the signing and content of international economic agreements for developing countries: (1) Agreements as credible commitment, with two strands (a) Tying of hands, and (b) Power and preferences, (2) Diffusion by competition, (3) Diplomatic relations and bounded rationality, and (4) Negotiation capacity. As this thesis tests the degree to which variety among source countries matter, its hypotheses fit under the first strand as agreements as credible commitment, namely the tying of hands approach. However, lessons from the other approaches turn out useful for the choice of control variables, and for gaining a more holistic perspective on what might affect DTA signing and content when interpreting the results.

Two main arguments were derived from Olson's theory (1993), and newer empirical literature, on autocratic time horizons. (1) Autocrats with shorter time horizons do not expect to be around to gain from long term foreign investments, and (2) they are more dependent on quickly mobilising revenue to bolster support for their position, and limiting their ability to collect short term predatory rents is more costly in such a situation. From these arguments,

I derived the following hypotheses: *H1*: Autocratic leaders with longer time horizons are more likely to sign double tax agreements with richer countries, and *H2*: Autocratic leaders with longer time horizons sign double tax agreements with richer countries that impose more restrictions on their ability to tax.

Though all autocrats are constrained in one way or the other, by bureaucracies, their inner circle, or the broader populations, they are typically less constrained than their democratic counterparts. This also gives reason to believe that their strategies to hold on to power should have more influence in economic decision making processes. Both regimes and individual leaders are relevant in this context, but as the incentives outlined in the theory on autocratic time horizons relate to the individual, the leader seems to be the most relevant unit of inquiry.

The method's chapter covered how DTA signing and content, in addition to autocratic time horizons were operationalized, with special attention given to the latter. An adjusted and updated version of Bak and Moon's (2019) ATH probit for estimating predicted probabilities of leadership failure is considered to be the most robust alternative. Further, I argue for the use of a Heckman model with past BIT signing as the instrumental variable, to deal with the nonrandom sampling selection problem - that leader-year observations that do not include DTA's are likely to be systematically different than those who do. The first stage of the Heckman model is a probit regression estimating the likelihood of DTA signing, which in turn is used to correct for nonrandom sampling when the effect of predicted probability of leadership failure on DTA content is estimated. The main sample consists of leader-years in mostly low and lower middle income countries, and DTAs with relatively richer signatory countries. A sample of asymmetric DTAs only includes treaties between low or lower middle income countries on the one hand and upper middle- or high income countries on the other hand, as defined by the World Bank's historical income thresholds.

As one of the first to use the newly published Tax treaties explorer data (ICTD & Hearson, 2021), I find a robust and positive relationship between the length of autocratic time

horizons and the likelihood of signing of DTAs, supporting *H1*. This is true in the case of DTAs with a richer signatory, and when DTAs are asymmetric. Olsen’s (1993) roving bandit is not as likely to sign a DTA, because he does not expect to be there long enough to gain from it. Also, he has no interest in “tying his hands” by signing such an agreement, as he needs all the policy room he can get to bolster support for his position. This finding lends support to what we already know about autocratic time horizons. However, because the measure for autocratic time horizons also can be said to represent the level of stability in a country, an alternative interpretation of this result is that richer countries are more interested in signing DTAs with stable developing countries.

Concerning DTA content, and *H2*, the results are mixed and uncertain. It is not possible to conclude on whether the length of autocratic time horizons affect the degree to which developing countries sign away their rights to taxation in DTAs with a richer country. This lack of relationship could be due to the technical nature of DTA negotiations, implying that bureaucrats are at the steering wheel when treaty content is created. This suspicion can only be corroborated or weakened through further research.

7.1 Real world relevance

As noted at the very beginning of this thesis, the past decade has seen a growing number of critical voices against DTAs, for restricting developing countries’ possibilities of revenue collection (e.g. Brooks & Krever, 2015). Simultaneously, there is a broad international agenda calling for increased domestic resource mobilization in order to finance the Sustainable Development Goals (SDGs) (United Nations, 2021, p. 1). Though there is no guarantee that increased tax revenue will create better lives for a population in a developing country, several measures have been set in place in order to raise revenue in development countries’, as for example through capacity building of domestic tax administrations.

A new UN report, from the FACTI panel (United Nations, 2021, p. 23) finds that “a more nuanced approach is needed to fully understand the challenges of international taxation, go-

ing beyond the simple framing of developed versus developing countries, to examine the role of history and power relations in shaping current international norms.” This thesis does exactly that. By discussing and investigating the interests and competences of those involved in signing and designing DTAs, including bureaucrats, autocratic rulers and investors, it sets the stage for better policies and more informed debates.

7.2 Suggestions for further research

During an interesting time in international tax politics, where the OECD and the UN are butting heads over who should spearhead efforts to reform the system of global taxation (United Nations, 2021), the relevance of tax research is not hard to defend. Despite this, there is done relatively little research on DTAs, and even less with a quantitative and holistic approach to DTA provisions.

This thesis has found robust evidence that autocrats with longer time horizons are less likely to sign a DTA, but has not been able to conclude in regards to treaty content. It would be beneficial with further exploration of these questions. This includes the need for a closer look at the role of the bureaucracy in the attainment of preferential outcomes. Future research should strive to find and use a more specific way to measure capacity and expertise of countries’ tax administrations.

As for the more general research field of international economic agreements, there is a need to separate between drivers from source and resident states. Explanatory factors can too often be interpreted in several ways. This has been illustrated in this thesis, in the case of probability of leadership failure. Because this measure can represent both autocratic time horizons and the level of a country’s stability, it is difficult to say to which degree the findings in this study is caused by autocrats’ strategies, or investor preferences in terms of which countries they want to sign DTAs with. Future research can overcome this challenge by striving to ensure that measurements are not open to several interpretations, and by combining lessons learned from quantitative and qualitative approaches.

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A Appendix: Comparison of two double tax agreements (Extended)

In chapter , two double tax agreements were compared. The DTA between Zambia and China, and the agreement between Tanzania and Canada. The section covered some of the most important articles in terms of allocation of taxing rights and was relatively limited. In this section of the appendix I add to this comparison, presenting and discussing several articles and provisions not covered in chapter . I will only briefly refer to the articles already covered in the main text. In this section I will also comment on the differences between the model treaties (UN and OECD) in relation to some key issues³⁴, and discuss some articles which are not included in any of the two DTAs which are subject to comparison.

The first article of both treaties identifies the persons, legal or natural, whose tax obligations are covered by the DTA. Article 2 identifies which taxes are covered in each of the signatory states. This is generally income and capital taxes, but the names for these taxes might vary across states and are therefore specified. Article 3 and 4 give definitions of terms like “company”, “national”, “China” and “resident of a contracting state”. Up to this point the two DTAs are close to identical, apart from the country names and specific names for taxes pertaining to each of the signatories.

A.1 Permanent establishment

As I write in chapter 2, section A.4, article 5 in both DTAs define what shall be considered as permanent establishment, and subsequently in which cases a business can be collected business profits from. The number of months activities must take place for it to be reckoned as a permanent establishments is 6 months in the Tanzania treaty and 9 months in the DTA with Zambia. The 6 month threshold is in line with the UN tax treaty model, while the OECD model treaty suggests 12 months or more for a business to be considered as permanent establishment.

³⁴For a more detailed description of the content of the OECD and UN model treaties see Arnold (2016) *International Tax Primer*, chapter 8.

Table A.1: Comparison of two double tax agreements (extended)

Provision	Tanzania/Canada	Zambia/China
Permanent Establishment		
Art. 5(3): PE	6 months	9 months
Art. 5(3): PE for Supervisory Services	6 months	9 months
Art. 5(3): PE Services	Included	Included
Art. 5(4): Delivery Services and Stock	Excluded	Excluded
Art. 5(6): Insurance Agent	Included	Excluded
Art. 5(5): Dependent Agent	Included	Included
Art. 5(7): Independent Agent	Included	Excluded
Distributive Provisions		
Art. 6: Immovable Property	Included	Included
Art. 7(1): Limited Force of Attraction	Included	Excluded
Art. 7(3): Deduction Restrict HO	Not included	Excluded
Art. 8(2): Shipping and Air Transport	Included	Excluded
Art. 9: Associated Enterprise	Included	Included
Art. 10: Direct Dividends	20%	5%
Art. 10: Portfolio Dividends	25%	5%
Art. 11: Interest	15%	10%
Art. 12: Royalty	20%	5%
Art. 12: Technical service fees	20%	Excluded
Other Provisions		
Art. 13: Capital Gains Tax	Included	Immovable Prop
Art. 15: Independent Personal Services	Included	Excluded
Art. 24/21: Elimination Method	Combination	Credit method
Art. 25/22: Non-Discrimination	Most-favored nation	Included
Art. 25: Mandatory Arbitration (OECD)	Excluded	Excluded
Art. 27: Assistance in Tax Collection (UN)	Excluded	Excluded
Art 27/24: Exchange of Information	Included	Included
Art 28/25: Diplomatic Privileges	Included	Included
Art. 29: Entitlement of Benefits (UN/OECD)	Excluded	Excluded
Art. 31/27 Termination limit	Excluded	5 years

Note. In cases where an article is included in only one of the treaties, the article number will refer to the number in the treaty where it is included. In cases where an article is not included in any of the treaties, the article number refers to the article in the model treaty specified in the table.

A.1.1 Supervisory services

In both DTAs supervisory services 5(3) in connection to a construction- or building site, can constitute a permanent establishment. However, the provision is not an alternative, but an additional condition which must be met for a construction site to constitute a permanent establishment. This means that an enterprise must fulfill both the general definition for permanent establishment as a fixed place of 6/9 months, in addition to the one on supervisory services, for supervisory activity to be taxed by the source country (Arnold, 2016, p. 157).

A.1.2 Services

Both agreements also includes a more general service-provision under 5(3), stating that also consultancy services, or services carried out by employees of the enterprise in a period of 6 months within 12 months, is deemed permanent establishment. This provision stems from the UN model. Hearson (2016, p. 26) notes that this services permanent establishment provision has become more common, and is included in 80% of all DTAs signed the past five years.

A.1.3 Delivery

Both the Tanzania and Zambia treaty exclude delivery facilities and delivery stock 5(4) from their definitions of permanent establishment. An insurance broker collecting premiums in the territory of the other state, or injures risks there 5(6) is deemed as permanent establishment in the Tanzania treaty but not in the Zambia treaty.

A.1.4 Independent agents

As these activities and places alone would make the definition of permanent establishment very narrow and exclude many businesses that do not need a fixed location to operate, both DTAs include dependent agents acting on behalf of the enterprise in article 5(5). A dependent agent is often a person who has the authority to conclude legal contracts on behalf of an enterprise (Arnold, 2016, p. 157). The difference between the two DTAs on this point is that the Tanzania treaty also counts activities from an independent agent if they are wholly or almost wholly devoted on behalf of an enterprise, while the Zambia treaty does not include this into the definition of permanent establishment 5(7).

A.1.5 Payments to head office

Also, none of the DTAs restrict the permanent establishment from deduction on payments to head office or other parts of the enterprise 7(3). An example of such a restricting provision can be found in the agreement between Norway and Nepal (Norwegian Ministry of Finance, 1996).

In total, there is a higher chance that a Canadian company will fall in under the definition of permanent establishment in Tanzania, than for a Chinese company in Zambia, *ceteris paribus*.

A.2 Distributive provisions

As written in the comparison of the two DTAs in chapter , articles 6-22 determine which of the signatories (source or resident) has the right to tax certain types of income, and at what rate. That section covers the articles on Shipping and air transport (article 8), and withholding tax rates on passive income (articles 10-12).

A.2.1 Immovable Property

Article 6, allows the source country to tax income derived from the use of immovable property, irrespective of this being derived from a permanent establishment, including the letting or direct use of land, agriculture or forestry in the source country. Both DTAs include this provision.

A.2.2 Limited Force of Attraction

Article 7 is about business profits which are connected to a permanent establishment and not covered by other articles, like article 6, on immovable property (Arnold, 2016, p. 7). In 7(1) the Tanzania agreement includes a so-called limited force of attraction, from the UN model. This provision states that business profits are taxable if there is a permanent establishment, even though the profits made are not attributable to that permanent establishment, but through an associated enterprise, as defined in article 9.

For example, if a head office of a company makes profits through sales directly to customers in the country of a permanent establishment, and is involved in the same line of activity, the profits earned by the head office can be taxed. Though this seems to broaden the taxing rights of a source country significantly, Arnold (2016) points out that it is easily avoided by companies setting up a

third related non-resident enterprise to handle these sales. The limited force of attraction-provision is not included in the DTA between China and Zambia.

A.2.3 Associated enterprise article

Article 9 is the associated enterprise article, stating that if a transaction between companies in the same enterprise is made, which differs from that which would have been made between independent companies on the open market, a country may make appropriate adjustments to the amount of tax charged. However, only if the other country agrees (Avi-Yonah, 2009, p. 102). The arm's length principal, that goods or services sold between subsidiaries should be priced as if on the open market, is central in the international tax treaty regime (United Nations, 2021, p. 27).

This provision exists to hinder multinational companies from moving profits from where taxes are high to where they are low through transfer mispricing. Also, the commentary on Article 1 in both tax treaty models, deals with treaty abuse (Arnold, 2016, p. 169). There are no differences worth mentioning between the Zambia and Tanzania treaties, in the case of this article.

A.2.4 Passive income

Chapter A.4 discusses articles 10-12, which imposes an upper threshold for the withholding tax a source country can levy on individuals' and companies' passive income dividends, interest and royalties. The Tanzania treaty generally allows for a higher rate of taxation on these types of passive income (see appendix table A.1).

A provision not covered in chapter A.4, but coded for in the Tax treaties explorer Dataset (2021) is article 12A Technical service fees WHT rate. The Zambia treaty does not allow for withholding tax on technical service fees, meaning the source country cannot levy a withholding tax on the fees paid to foreign service providers from the other country, while the Tanzania treaty allows for a 20% WHT rate on these types of fees.

Because WHT caps more generally represent an important issue concerning the rights of developing countries to impose tax, it is worth mentioning that the UN and OECD models are very different in their approach to this question. The OECD model prescribes specific caps, including a zero rate on royalties, 15% for portfolio dividends and 5% for non-portfolio dividends, and 10% for interests, while the UN model does not specify rates, leaving the negotiating parties to settle on these themselves

(Daurer & Krever, 2014; Arnold, 2016).

A.3 Other provisions

13-22 in the Tanzania treaty, and 14-20 in the Zambia treaty cover the remaining articles. Chapter includes discussions on capital gains tax and dispute settlement, but I will add comparisons on a couple more articles here. The Tanzania treaty generally allows for source based taxation on income in this “other” category, while the Zambia treaty does not (see appendix table A.1). These provisions also represent the sharpest divide between the OECD and UN model, where the former reserves the right to tax exclusively to the residence country of the investor, while the latter allows the source country to retain all rights to taxation of this income (Daurer & Krever, 2014, p. 20).

A.3.1 Independent personal services

Of those articles concerning the right to taxation I would like to add that Tanzania includes the UN model provision “Independent personal services” as their article 15, which gives the source country the right to tax dentists, architects, teachers, and other independent services if (s)he has a “fixed base” in that state. This requirement is easier to fulfill than the definition of permanent establishment, because it only requires the resident to stay in that other state for 183 days (6 months) of a year. The Zambia treaty does not include such an article at all, deeming such activities only taxable by the resident country.

A.3.2 Dispute settlement

Moving to the more administrative articles in this section, a discussion on dispute settlement mechanisms are included in chapter 3.1. Here I point out that very few DTAs contain provisions for mandatory binding arbitration, but settle disputes through a mutual agreement procedure (MAP). This includes the two DTAs in this comparison.

To this discussion I might add that the previously mentioned OECD BEPS Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting, includes mandatory binding arbitration as an option where competent authorities can not come to agreement within a specified time frame (OECD, 2016). This has also been included in the OECD model tax treaty from 2008, as article 25. In 2011, the UN model tax treaty also included an option of

arbitration. This is however at the request of competent authorities, and not at the request of a tax-payer, as in the OECD model tax treaty. Issues will be settled through arbitration if the competent authorities can not find a solution within 2 years in the OECD model and 3 years in the UN model. However, the question of mandatory binding arbitration is controversial and few developing countries support such a provision (United Nations, 2021, p. 31).

A.3.3 Methods to eliminate double taxation

Moving on to other administrative articles, not covered in chapter , article 24 in the Tanzania treaty and article 21 in the Zambia treaty state the methods to eliminate double taxation between the signatories. I cases where the source country is entitled to collect tax on income, the resident country is obliged to provide relief of being taxed also in their home state. Generally, this is done in two ways, the exemption method, where the residence country does not tax foreign source income fully or partly, and thus reducing the size of income subjected to taxation, or the credit method, as used by the Zambia treaty, where the residence country reduces the domestic tax for the tax payer the same amount of the actual foreign tax. DTAs could also operate with a combination of these methods, as the Tanzania agreement does (Arnold, 2015).

A.3.4 Anti-discrimination

Article 25 in the Tanzania treaty and article 22 in the Zambia treaty provides protection against discriminatory taxation for residents of the other country. Because nondiscrimination provisions in international trade agreements like the GATT, generally state that tax discrimination should be dealt with in DTAs, this is an important provision in terms of legal protection (Arnold, 2016, p. 166-167). As Canada does not accept language stating that foreign residents will be treated the same as inhabitants, their treaty Tanzania rather has a most-favored nation approach, meaning it agrees not to discriminate between foreigners with whom they have signed DTAs with.

A.3.5 Assistance in tax collection

None of the DTAs in this comparison include article 27 in the OECD and UN models on assistance in tax collection (OECD, 2019; United Nations, 2017), though China and Canada have signed on to the Multilateral Convention on Mutual Assistance in Tax Matters.

A.3.6 Exchange of information

Exchange of information is the topic of article 27 in the Tanzania agreement and article 24 in the Zambian agreement, and they have very similar language. This article contains paragraphs on when a signatory is required to provide information, to what end this information can be used, and who this information can be disclosed to.

A.3.7 Diplomats

The next article in both DTAs simply provides that nothing in the treaty affects the “fiscal privileges” enjoyed by diplomats.

A.3.8 Entitlement of benefits

None of the DTAs include the recently added article 29 in the OECD and UN model treaties on “Entitlement of Benefits” (OECD, 2019, p. 43), including provisions meant to hinder treaty shopping or abuse of the DTA for tax avoidance by denying benefits to a tax payer who’s main purpose with a transaction or arrangement is to avoid tax (Arnold, 2016, p. 146).

A.3.9 Entry into force

The last two articles of both DTAs provide the rules for entry into force and termination of a treaty. The provisions start to have effect on the first day of January following an agreement is settled between the parties. It is within this time limit the parties should communicate to the other that they have received approval from their legislative bodies or ratified the agreements in a way which is specified (Arnold, 2016, p. 153). In regards to termination, the Zambia treaty does not allow this before 5 years after entry into force, while Tanzania does not have such a limit.

A.4 Conclusion of the comparison

As I conclude the comparison in chapter , the Tanzania treaty generally allows for more source taxation than the Zambia treaty. This appendix section supports this further, and makes an even stronger case for the importance of an holistic approach to analysing tax agreements.

B Appendix: Country lists

B.1 Countries in the Tax treaties explorer dataset (118)

The full list of countries in the Tax treaties explorer dataset (2021) is Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, China, Colombia, Comoros, Côte d'Ivoire, Democratic People's Republic of Korea, Democratic Republic of Congo, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Federal States of Micronesia, Gabon, Georgia, Ghana, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iran, Iraq, Jordan, Kenya, Kiribati, Kosovo, Kyrgyz Republic, Lao PDR, Lebanon, Lesotho, Liberia, Libya, Madagascar, Malawi, Maldives, Mali, Marshall Islands, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, North Macedonia, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Republic of Congo, Rwanda, Samoa, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Solomon Islands, Somalia, South Africa, South Sudan, Sri Lanka, Sudan, Syrian Arab Republic, Tajikistan, Tanzania, Thailand, The Gambia, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkmenistan, Uganda, Ukraine, Uzbekistan, Vanuatu, Venezuela, Vietnam, West Bank and Gaza, Yemen, Zambia, Zimbabwe.

B.2 Countries in main sample (98)

Nigeria, Sudan, Comoros, Afghanistan, Iraq, Maldives, Jordan, Haiti, Azerbaijan, Ghana, Eritrea, Cameroon, Iran, Bangladesh, Benin, Kyrgyzstan, Libya, Syria, Egypt, Mexico, Gabon, Albania, Mali, Uganda, Morocco, Nicaragua, Argentina, Guatemala, Ecuador, Burundi, Dominican Republic, Bolivia, Malawi, Sri Lanka, Mongolia, Guinea, Peru, Algeria, Tunisia, Turkmenistan, Pakistan, Sierra Leone, Nepal, Central African Republic, Togo, Equatorial Guinea, South Africa, Laos, Liberia, Georgia, Guyana, Guinea-Bissau, Burkina Faso, Brazil, El Salvador, Lebanon, Thailand, Paraguay, Zambia, Mozambique, Honduras, Congo - Brazzaville, Chad, China, Ethiopia, Niger, Senegal, Mauritania, Angola, Eswatini, Madagascar, Djibouti, Cote d'Ivoire, Indonesia, Rwanda, Somalia, Cambodia, Vietnam, Venezuela, Tajikistan, Gambia, Tanzania, Lesotho, Congo - Kinshasa, Uzbekistan, Solomon Islands, Kenya, North Korea, Armenia, Colombia, Bhutan, Philippines, Myanmar (Burma), Zimbabwe, Namibia, Ukraine, Cape Verde, South Sudan

B.3 Countries in asymmetric sample (93)

Nigeria, Sudan, Comoros, Afghanistan, Jordan, Haiti, Azerbaijan, Ghana, Eritrea, Cameroon, Iran, Bangladesh, Benin, Kyrgyzstan, Syria, Iraq, Egypt, Mexico, Albania, Mali, Uganda, Morocco, Nicaragua, Guatemala, Ecuador, Burundi, Dominican Republic, Bolivia, Malawi, Sri Lanka, Mongolia, Guinea, Peru, Tunisia, Algeria, Turkmenistan, Pakistan, Sierra Leone, Nepal, Central African Republic, Togo, Equatorial Guinea, South Africa, Laos, Liberia, Georgia, Guyana, Guinea-Bissau, Burkina Faso, El Salvador, Honduras, Lebanon, Thailand, Paraguay, Zambia, Mozambique, Congo - Brazzaville, Chad, China, Ethiopia, Niger, Senegal, Mauritania, Angola, Eswatini, Madagascar, Djibouti, Cote d'Ivoire, Indonesia, Rwanda, Somalia, Cambodia, Vietnam, Tajikistan, Gambia, Tanzania, Lesotho, Congo - Kinshasa, Uzbekistan, Solomon Islands, Kenya, North Korea, Armenia, Colombia, Bhutan, Philippines, Maldives, Myanmar (Burma), Zimbabwe, Namibia, Ukraine, Cape Verde, South Sudan

C Appendix: Models and statistics

C.1 Descriptive statistics

Table A.2: Descriptive statistics for variables in ATH probit

Statistic	N	Mean	St. Dev.	Min	Max
Failure	9,835	0.1	0.4	0	1
Past Failures in last 10 years	9,835	1.4	1.6	0	9
Interwar	4,968	0.04	0.2	0.0	1.0
Intrawar	4,968	0.2	0.4	0.0	1.0
Campaigns	7,704	0.1	0.3	0.0	3.0
Coup	5,834	0.1	0.4	0.0	4.0
Regime type: Military	9,754	0.3	0.5	0.0	1.0
Regime type: Party	9,754	0.2	0.4	0.0	1.0
Regime type: Personalist	9,754	0.2	0.4	0.0	1.0
Regime type: Oligarchy	9,754	0.1	0.3	0.0	1.0
Regime type: Monarchy (ref)	9,754	0.2	0.4	0.0	1.0
GDP growth rate	7,286	0.02	0.1	-1.0	2.7
GDP per cap	7,318	5,026.2	9,261.7	0.0	156,029.0
Oil Production	8,515	469.2	3,241.5	0.0	78,588.8
Total tenure (days)	9,835	5,576.2	4,773.8	0	18,012

Table A.3: Descriptive statistics for variables in main model

Statistic	N	Mean	St. Dev.	Min	Max
DTA signing	3,957	0.2	0.4	0.0	1.0
Source index	579	0.4	0.1	0.1	0.8
Pr(Fail)	3,126	0.1	0.2	0.0	1.0
BIT signing	779	1.0	0.0	1.0	1.0
IV: Past BIT signing	4,439	1.5	2.9	0	24
Bureaucratic quality	4,415	1.5	0.7	0.04	3.6
Regime type: Military	4,396	0.4	0.5	0.0	1.0
Regime type: Party	4,396	0.2	0.4	0.0	1.0
Regime type: Personalist	4,396	0.3	0.4	0.0	1.0
Regime type: Oligarchy	4,396	0.04	0.2	0.0	1.0
Regime type: Monarchy (ref)	4,396	0.1	0.3	0.0	1.0
Regional competition	4,434	1.8	2.7	0.0	21.0
GDP per cap	4,164	3,549.5	3,906.7	377.6	47,562.3
Year	4,439	1,984.2	17.3	1,951	2,015

Table A.4: Descriptive statistics for variables in asymmetric model

Statistic	N	Mean	St. Dev.	Min	Max
Treaty signing	3,352	0.1	0.3	0.0	1.0
Source index	411	0.4	0.1	0.1	0.8
Pr(Fail)	2,817	0.1	0.2	0.0	1.0
BIT signing	696	1.0	0.0	1.0	1.0
IV: Past BIT signing	3,830	1.5	2.9	0	24
Bureaucratic quality	3,806	1.5	0.7	0.04	3.6
Regime type: Military	3,803	0.4	0.5	0.0	1.0
Regime type: Party	3,803	0.2	0.4	0.0	1.0
Regime type: Personalist	3,803	0.3	0.4	0.0	1.0
Regime type: Oligarchy	3,803	0.03	0.2	0.0	1.0
Regime type: Monarchy (ref)	3,803	0.1	0.3	0.0	1.0
Regional competition	3,825	1.7	2.6	0.0	16.0
GDP per cap	3,595	2,808.1	2,361.2	377.6	27,571.2
Year	3,830	1,984.4	16.9	1,951	2,015

Table A.5: Descriptive statistics for the PE, WHT and Other indicis

Statistic	N	Mean	St. Dev.	Min	Max
PE index	530	0.5	0.3	0.1	1.0
WHT index	522	0.4	0.1	0.1	1.0
Other index	524	0.4	0.2	0.1	1.0

C.2 ROC/AUC of probit for DTA signing

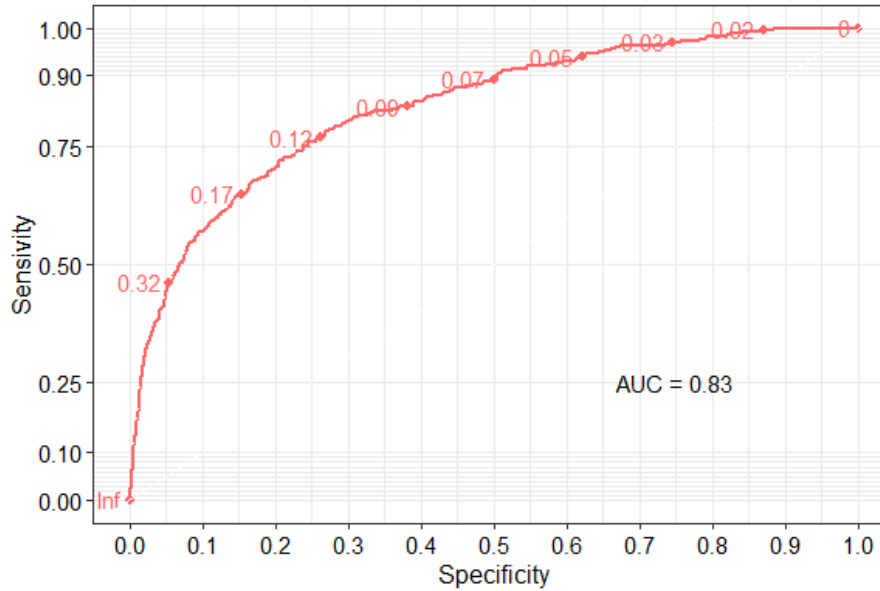


Figure A.1: ROC/AUC of Heckman's first stage

The ROC-curves as presented by figure A.2, for the first stage of the Heckman model, predicting the probability of signing a DTA, is an illustration of how well the model fits the data. The line in the ROC-curve represents the ratio between successes in predicting $y = 1$ correctly against how often $y = 1$ is predicted when the observed data actually is $y = 0$. The area under the ROC/curve (AUC) is 0,83, which signifies a 83% chance of predicting correctly. Ward and Ahlquist do however warn against reading to much precision into AUC as it does not take into account that the power to predict correctly will vary across different threshold values (2018, s. 66-68). One must also take into consideration that a AUC of 0.5 would be the same as guessing.

C.3 Histogram of residuals from main model

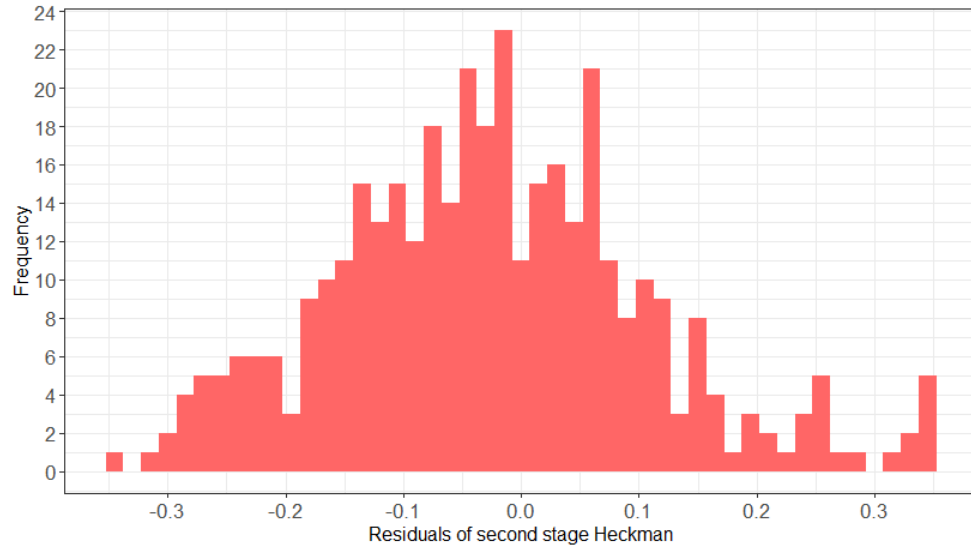


Figure A.2: Distribution Heckman stage two residuals

The histogram shows that the residuals from the second stage of the main Heckman model are close to normally distributed, skewing slightly towards lower values.

C.4 Heckman 2-step model output

Table A.6: Heckman (2-step)

	<i>Dependent variable:</i>	
	DTA signing Selection equation	Source Index Outcome equation
	(1)	(2)
Pr(Fail)	−1.41*** (0.49)	−0.11 (0.11)
IV: Past BIT signing	0.15*** (0.02)	
Year	19.68*** (7.61)	4.68** (2.28)
Year squared	−9.15 (6.68)	−5.04*** (1.20)
Year cubed	4.06 (6.16)	2.72* (1.41)
Bureaucratic quality	0.06 (0.09)	−0.02 (0.02)
Regime type: Military	−0.04 (0.14)	0.05* (0.03)
Regional competition	0.05*** (0.02)	−0.01 (0.005)
Log GDP per cap	0.28*** (0.09)	−0.02 (0.02)
Constant	−3.68*** (0.72)	0.59** (0.24)
Observations	2,870	2,870

Note.

Clustered standard errors
on leader in parentheses
*p<0.1; **p<0.05; ***p<0.01

C.5 Heckman without instrument

Table A.7: Heckman (ML) Without instrument

	<i>Dependent variable:</i>	
	DTA signing Selection equation (1)	Source Index Outcome equation (2)
Pr(Fail)	-2.16*** (0.60)	-0.40*** (0.13)
Year	36.17*** (6.65)	9.32*** (1.76)
Year squared	-2.97 (6.44)	-5.95*** (1.69)
Year cubed	8.01 (5.53)	3.02* (1.57)
Bureaucratic quality	0.02 (0.09)	-0.02 (0.03)
Regime type: Military	-0.02 (0.16)	0.04 (0.04)
Regional competition	0.06*** (0.02)	0.003 (0.004)
Log GDP per cap	0.40*** (0.09)	0.04** (0.02)
Constant	-4.21*** (0.72)	-0.18 (0.17)
Observations	2,870	2,870
Log Likelihood	-676.62	-676.62
ρ	0.85*** (0.06)	0.85*** (0.06)

Note.

Clustered standard errors
on leader in parentheses
*p<0.1; **p<0.05; ***p<0.01

Table A.7 in this section of the appendix presents the Heckman model, but without an instrumental variable. As the model does not include an exclusion restriction, we are now solely relying on the functional form for identification. As you can see, the coefficient for autocratic time horizons is significant and negative for the Source index, in this case. The results might still be unbiased, but the standard errors are somewhat larger. The coefficient for $\text{Pr}(\text{Fail})$ in the first stage is 0.60 compared to 0.49 in the main model while the second stage coefficient has a standard error of 0.13, compared to 0.11 in the main model.

C.6 Heckman with “Value on Source index” as dependent variable

Table A.8: Heckman (ML) With value on Source index as dependent var

	<i>Dependent variable:</i>	
	Value on Source Index Selection equation	Source index Outcome equation
	(1)	(2)
Pr(Fail)	-1.57*** (0.50)	-0.11 (0.12)
IV: Past BIT signing	0.14*** (0.02)	
Year	19.31*** (7.32)	4.66** (2.25)
Year squared	-9.83 (6.51)	-5.02*** (1.20)
Year cubed	3.41 (6.00)	2.73* (1.40)
Bureaucratic quality	0.09 (0.08)	-0.02 (0.02)
Regime type: Military	-0.02 (0.14)	0.05* (0.03)
Regional competition	0.04** (0.02)	-0.01 (0.005)
Log GDP per cap	0.31*** (0.09)	-0.02 (0.02)
Constant	-3.97*** (0.69)	0.60** (0.25)
Observations	3,122	3,122
Log Likelihood	-638.71	-638.71
ρ	-0.17 (0.17)	-0.17 (0.17)

Note.

Clustered standard errors
on leader in parentheses

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

In table A.8 the dependent variable DTA signing, in the selection equation, is traded for a bivariate model for whether the observation has a value on the source variable. These variables are largely overlapping, with source values for 579 of the 623 signed treaties in the main sample. As can be seen in the table, this does not alter the results pertaining to autocratic time horizons. I have chosen DTA signing, rather than “value on Source index” as dependent variable in the main model because it make more sense substantially. In stead of modeling the predicted probability to be in the data, the main model models the chance of signing a DTA.

C.7 Heckman with standard errors clustered on country

Table A.9: Heckman (ML) Standard errors clustered on country

	<i>Dependent variable:</i>	
	DTA signing Selection equation	Source Index Outcome equation
	(1)	(2)
Pr(Fail)	−1.41** (0.56)	−0.11 (0.11)
IV: Past BIT signing	0.15*** (0.02)	
Year	19.68** (8.35)	4.68* (2.43)
Year squared	−9.15 (6.19)	−5.04*** (1.09)
Year cubed	4.06 (6.67)	2.72* (1.44)
Bureaucratic quality	0.06 (0.09)	−0.02 (0.02)
Regime type: Military	−0.04 (0.16)	0.05* (0.03)
Regional competition	0.05** (0.02)	−0.01 (0.005)
Log GDP per cap	0.28*** (0.10)	−0.02 (0.02)
Constant	−3.68*** (0.75)	0.59** (0.25)
Observations	2,870	2,870
Log Likelihood	−616.24	−616.24
ρ	−0.16 (0.17)	−0.16 (0.17)

Note.

Clustered standard errors
on country in parentheses
*p<0.1; **p<0.05; ***p<0.01

C.8 Scatterplot of Heckman's first stage

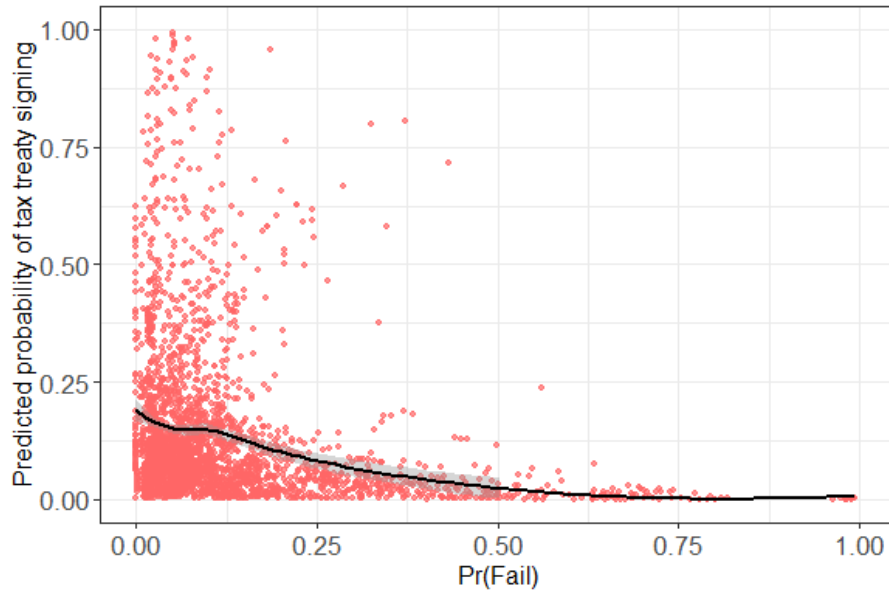


Figure A.3: Distribution: Predicted probability of signing a DTA and Pr(Fail)

Note. Illustrates the distribution of predicted probabilities of DTA signing in the first stage Heckman (Main model). Fitted with locally weighted scatterplot smoothing (Loess).

D Appendix: Robustness tests

D.1 Alternative covariates

The results from the robustness test with additional covariates are presented in table A.11. A table of descriptive statistics for the variables included in this test are presented in table A.10. In this section I will give some more information about the variables included, and comment on the results. Preferably I would also have included robustness models with country fixed effects, or at least region fixed effects, as they are strong controls. However, this was not feasible due to lack of variation in the data.

Table A.10: Descriptive statistics for alternative covariates

Statistic	N	Mean	St. Dev.	Min	Max
Corporate Tax as share of Revenue	1,055	0.1	0.1	0.0	0.9
Learning	4,439	3.8	8.7	0	84
Capacity assymetry	619	0.02	0.04	0.0	0.2
Regime type: Military	4,396	0.4	0.5	0.0	1.0
Regime type: Party	4,396	0.2	0.4	0.0	1.0
Regime type: Personalist	4,396	0.3	0.4	0.0	1.0
Regime type: Oligarchy	4,396	0.04	0.2	0.0	1.0
Regime type: Monarchy (ref)	4,396	0.1	0.3	0.0	1.0

D.1.1 Dependence on corporate tax

In models 1 and 2 I include dependence on corporate tax as a variable, measured by tax income as share of total revenue, and collected from the ICTD Government Revenue dataset (2019). Hearson (2018b) finds that countries more dependent on corporate tax are more likely to sign DTAs. He also finds that countries who sign DTAs, that are more dependent on corporate tax tend to sign treaties which are more beneficial to source countries in the respect of WHT rates, but only on a 0.1 significance level. The model does not give significant results, as seen by the lack of a significant coefficient and constant in both stages of the Heckman. This is no surprise as models 1 and 2 include few observations (595), due

to a lot of missing in the corporate tax dependence data.

D.1.2 Learning

Hearson's study (2018b) is also the inspiration for the next variable included in this test. He finds that developing countries are able to obtain more preferential outcomes when having signed several DTAs in the past - implying a learning effect. I create a learning variable by counting how many DTAs a country has signed since the beginning of the first year observed in the data. Models 3 and 4 in table A.11 show a positive and significant effect on DTA signing, but no significant correlation with DTA content.

D.1.3 Capability asymmetry

For models 5 and 6 a variable for capability asymmetry is added to the second stage of the Heckman. This is included as a control because, as discussed in the literature review in section 3.1.2, differences in power and resources has been shown to enable relatively richer countries to negotiate more preferable outcomes. This capability asymmetry variable is measured by the difference in score on the National Capability index in the Correlates of War project (1972), between DTA signatories. Since there is only data for those observations that include DTA signing,³⁵ it is not feasible to include the control in both stages, as there is not enough variation in the data. The coefficient for asymmetric capability is not significant in explaining the Source index, and there is not change in the autocratic time horizon coefficient from adding this control. There lacks agreement concerning whether the Heckman model requires the outcome model to be a strict subset of the selection model, with the exception of the instrumental variable (Toomet & Henningsen, 2008).

³⁵To be exact there are 616 observations with a value for capability asymmetry of 623 observations including a DTA.

D.1.4 Autocratic regime types

Models 7 and 8 include all autocratic regime type dummies from Anckar and Fredriksson's (2019) data, with monarchy as reference category. Adding these dummy variables supports the conclusions from the main model about the effect of autocratic time horizons on signing and content of DTAs. Interestingly, the dummy variable for military regimes is significant and positive in both stages. In other words, the results indicate that autocrats in military regimes, relative to in monarchies, are more likely to sign tax agreements if their time horizons are shorter, and will also sign slightly more source preferential DTAs when time horizons are shorter.

Table A.11: Heckman (ML) Alternative covariates

		<i>Dependent variable:</i>							
		Selection: DTA signing Outcome: Source index							
		Corporate tax	Corporate tax	Learning	Learning	Capability	Capability	Regime	Regime
						asymmetry	asymmetry	type	type
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pr(Fail)		-1.45*	-0.13	-1.19***	-0.12	-1.36***	-0.11	-1.38***	-0.11
		(0.82)	(0.11)	(0.42)	(0.15)	(0.48)	(0.11)	(0.51)	(0.11)
IV: BIT signing		0.10***		0.09***		0.15***		0.15***	
		(0.03)		(0.03)		(0.02)		(0.03)	
CIT Dependence		0.56	0.02						
		(0.97)	(0.22)						
Learning				0.06***	0.004				
				(0.01)	(0.004)				
Capability asymmetry							-0.28		
							(0.17)		
Regime type: Party								0.23	0.04
								(0.27)	(0.07)
Regime type: Personalist								0.17	0.06
								(0.29)	(0.07)
Regime type: Oligarchy								0.24	-0.03
								(0.35)	(0.07)
Regime type: Military		0.25	0.11***	0.05	0.05*	-0.05	0.05*	0.15	0.09
		(0.24)	(0.02)	(0.12)	(0.03)	(0.14)	(0.03)	(0.28)	(0.07)
Year		-177.82	108.42***	11.34	4.88*	20.98***	4.67**	18.87**	4.22*
		(178.31)	(41.94)	(7.33)	(2.66)	(7.43)	(2.37)	(7.71)	(2.24)
Year squared		144.09	-76.33**	-10.84*	-5.90***	-9.97	-5.10***	-9.02	-4.73***
		(123.09)	(30.28)	(6.00)	(1.51)	(6.56)	(1.27)	(6.72)	(1.27)
Year cubed		-67.44	41.11**	4.91	2.97**	3.09	2.89**	4.07	2.69*
		(65.80)	(16.02)	(6.00)	(1.44)	(6.26)	(1.43)	(6.08)	(1.46)
Bureaucratic quality		-0.02	0.01	0.07	-0.01	0.06	-0.03	0.06	-0.02
		(0.11)	(0.02)	(0.08)	(0.02)	(0.09)	(0.02)	(0.09)	(0.02)
Regional Competition		0.03	0.002	0.06***	-0.003	0.05**	-0.01	0.06***	-0.01
		(0.02)	(0.003)	(0.02)	(0.01)	(0.02)	(0.005)	(0.02)	(0.004)
GDP per capita (logged)		0.41**	0.02	0.17**	-0.02	0.27***	-0.01	0.29***	-0.01
		(0.17)	(0.02)	(0.08)	(0.03)	(0.09)	(0.02)	(0.09)	(0.02)
Constant		-2.53	-0.93**	-3.02***	0.48	-3.62***	0.57**	-3.92***	0.49**
		(2.19)	(0.40)	(0.64)	(0.41)	(0.72)	(0.24)	(0.79)	(0.24)
Region Fixed Effects		No	No	No	No	No	No	No	No
Observations		596	596	2,870	2,870	2,861	2,861	2,870	2,870
Log Likelihood		-150.88	-150.88	-558.05	-558.05	-601.05	-601.05	-610.63	-610.63
ρ		0.01 (0.35)	0.01 (0.35)	0.25 (0.32)	0.25 (0.32)	-0.15 (0.17)	-0.15 (0.17)	-0.20 (0.16)	-0.20 (0.16)

XXX

Note. Clustered standard errors on leader in parentheses
*p<0.1; **p<0.05; ***p<0.01

D.2 Alternative measures for autocratic time horizons

For this robustness test, I trade the probit for measuring autocratic time horizons in the main model, with other measures for autocratic time horizons: a simpler ATH probit, length of tenure to date in years, and the number of coups in a leader-year observation. The results are displayed in table A.13.

D.2.1 Simpler ATH probit

First, I create a simpler version of the ATH probit, by removing the economic variables GDP growth, GDP per capital (logged) and oil production (logged) from the original ATH probit. The differences between the two probits for predicting autocratic leadership failure can be seen in table A.12. The variables used to create the ATH probit, are elaborated on in section 5.2, of the methods chapter. Removing the economic variables mentioned increases the number of observations used in the estimation from 3,652 to 4,443. It also adds several years of Pr(Fail) predictions, as can be seen by comparing figure A.4b and A.4a. As the probits do not include the same number of observations we can not compare the Log likelihood, to judge which of them do the best job in predicting our data. The separation plots A.5b and A.5a also do not give us a clearer indication of which probit model is better at predicting autocratic leadership failure. The AIC/BIC criteria indicate that the ATH probit in the main model is best fit to represent the data (Hox, 2010, s. 47-51) Model 1 and 2 in table A.13 can not be seen as support for the results in the main model, as the constant in the second stage is not significant.

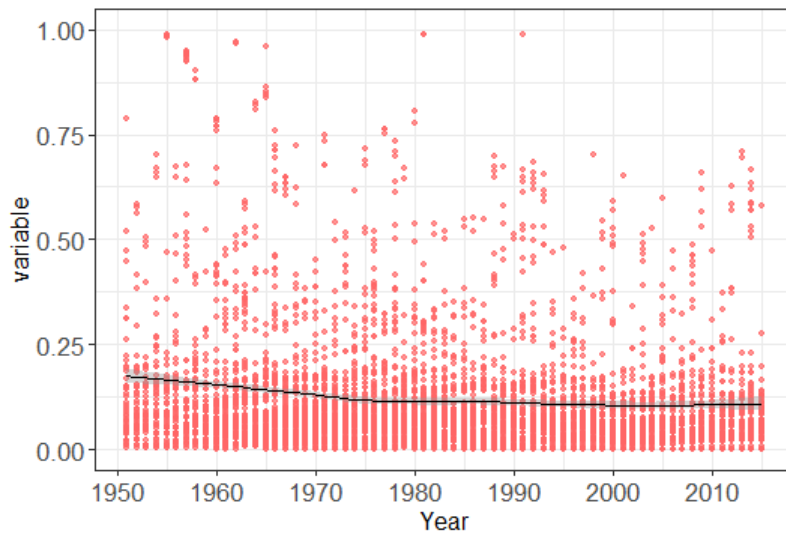
Table A.12: Simpler ATH probit

	<i>Dependent variable:</i>	
	Autocratic leadership failure	
	ATH probit in main model	Simpler ATH probit
	(1)	(2)
Start	9.91** (3.90)	6.25* (3.41)
Start squared	3.29 (3.13)	5.77** (2.70)
Start cubed	5.80** (2.77)	5.49** (2.33)
Past Failures	-0.04 (0.03)	-0.03 (0.03)
Interwar	0.02 (0.18)	0.07 (0.16)
Intrawar	0.05 (0.10)	0.06 (0.08)
Campaign	0.40*** (0.10)	0.41*** (0.08)
Coup	0.97*** (0.07)	0.95*** (0.06)
Regime type dummy: Military	-0.30 (0.25)	-0.28 (0.22)
Regime type dummy: Party	-0.26 (0.25)	-0.10 (0.23)
Regime type dummy: Personalist	-0.05 (0.25)	-0.05 (0.22)
Regime type dummy: Oligarchy	0.38 (0.31)	0.51* (0.30)
GDP growth	-1.45*** (0.48)	
Log Oil production	-0.03 (0.04)	
Log GDP per cap	0.04 (0.11)	
Constant	-2.45** (0.98)	-2.35*** (0.48)
Country Fixed effects	Yes	Yes
Observations	3,652	4,443
Log Likelihood	-1,079.87	-1,324.89
Akaike Inf. Crit.	2,369.74	2,875.78

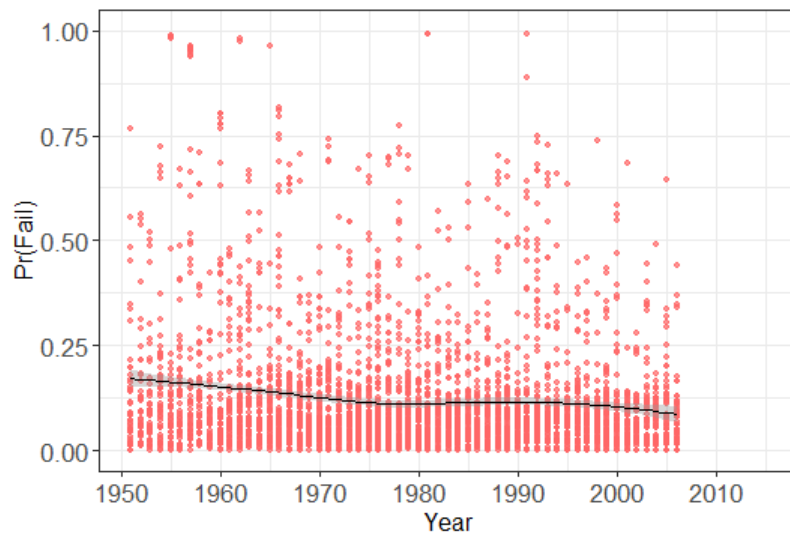
Note.

Standard errors in parentheses

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



(a) Simpler $\text{Pr}(\text{Fail})$ 1950-2015



(b) $\text{Pr}(\text{Fail})$ 1950-2007

Figure A.4: $\text{Pr}(\text{Fail})$ and simpler $\text{Pr}(\text{Fail})$ 1950-2015

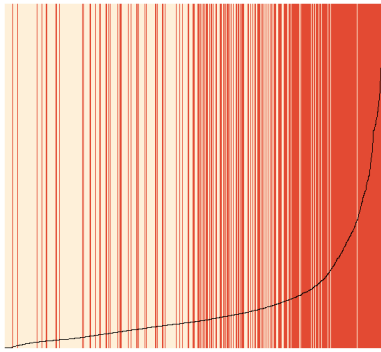
D.2.2 Years in position

The second measure of autocratic time horizon is the time a leader has been in position, in years, as used by Clague et al. (1996). This explanatory variable is constructed from the tenure variable in the Archigos dataset of leadership spells (2009). When using this as a measure for autocratic time horizon, none of the coefficients, for signing or content of DTAs, are significant. However, as discussed in chapter 5.2 on measuring autocratic time horizons, tenure to date is not necessarily a fit measure of autocratic time horizons, as it does not take into account the variety of reasons why a leader might expect a long or short time in position.

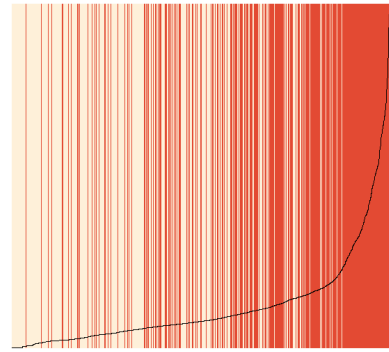
D.2.3 Coup

The last measure for autocratic time horizons tested is the presence of at least one coup in a leader-year observation (5 and 6 in table A.13). The coups data is from Powell and Thyne's dataset (2011). In this case coups has a negative and significant correlation with the likelihood of signing, meaning that an autocrat experiencing at least one coup will be less likely to sign a tax agreement that year. There is no significant relationship between the pre and the content of DTAs signed. These results support the results in the main model.

Figure A.5: Separation plot: ATH probit and simpler ATH probit



(a) ATH probit



(b) Simple ATH probit

Table A.13: Heckman (ML) Alternative ATH measurements

	<i>Dependent variable:</i>					
	Selection: DTA signing			Outcome: Source index		
	Selection: Simple ATH probit	Outcome: Simple ATH probit	Selection: Years in position	Outcome: Years in position	Selection: Coup	Outcome: Coup
(1)	(2)	(3)	(4)	(5)	(6)	
Simpler ATH probit	-1.44*** (0.42)	-0.29 (0.20)				
Proxy Years in position			0.02 (0.01)	0.002 (0.003)		
Proxy Coup					-0.43*** (0.12)	-0.03 (0.04)
IV: Past BIT signing	0.09*** (0.02)		0.08*** (0.02)		0.09*** (0.01)	
Year	17.95*** (4.52)	6.04** (2.98)	17.43*** (4.48)	5.20*** (1.59)	16.35*** (4.20)	5.24*** (1.47)
Year squared	-12.65*** (4.38)	-5.58*** (1.66)	-12.82*** (4.56)	-5.03*** (1.23)	-13.41*** (4.23)	-5.12*** (1.21)
Year cubed	-1.37 (3.37)	2.64*** (0.91)	-0.08 (3.45)	2.19*** (0.77)	0.61 (3.30)	2.23*** (0.75)
Bureaucratic quality	0.05 (0.08)	-0.01 (0.02)	0.03 (0.08)	-0.02 (0.02)	0.03 (0.07)	-0.02 (0.01)
Regime type: Military	-0.06 (0.12)	0.04 (0.03)	-0.10 (0.12)	0.04 (0.03)	-0.06 (0.12)	0.04 (0.03)
Regional competition	0.06*** (0.02)	-0.003 (0.01)	0.07*** (0.01)	-0.01 (0.004)	0.07*** (0.01)	-0.01 (0.004)
Log GDP per cap	0.27*** (0.07)	0.004 (0.03)	0.22*** (0.07)	-0.01 (0.02)	0.19*** (0.07)	-0.01 (0.02)
Constant	-3.48*** (0.58)	0.32 (0.48)	-3.18*** (0.60)	0.49** (0.23)	-2.97*** (0.54)	0.48** (0.21)
Observations	3,286	3,286	3,293	3,293	3,828	3,828
Log Likelihood	-807.46	-807.46	-923.87	-923.87	-975.46	-975.46
ρ	0.28 (0.29)	0.28 (0.29)	-0.08 (0.20)	-0.08 (0.20)	-0.06 (0.18)	-0.06 (0.18)

Note. Clustered standard errors on leader in parentheses
*p<0.1; **p<0.05; ***p<0.01

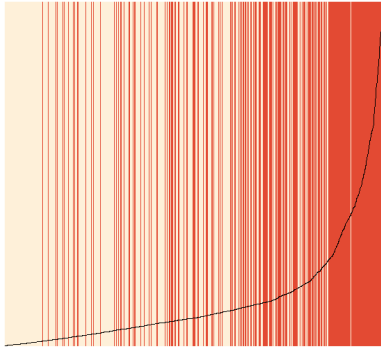
D.3 Alternative estimators

D.3.1 Logit regression: DTA signing

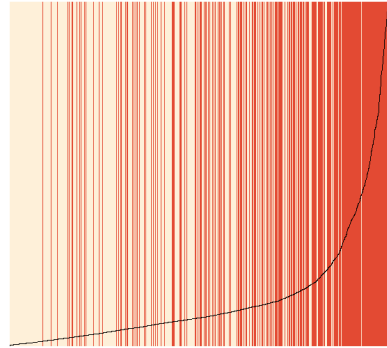
In table A.14 in this section who logit models are compared with the probit used in the first stage of the main model. The first of these two have identical parameters as the main model, while the second adds cubic tenure to date (start) variables in stead of cubic years. All three estimators give significant results in the same direction. The results are consistent with the estimates in the main model, suggesting that likelihood of signing DTAs increase with the length of autocratic time horizons. Ward and Ahlquist (2018, p. 72) argue that there are no real statistical reasons to prefer a logit over a probit model or vica verca. Even though coefficients and standard errors differ, the two models tend to lead to the same predictions and inferences. There is also no noticeable difference in how well the models predict the data in seperation plots A.6b and A.6a. However, AIC is just a little closer to 0 in the logit model, indicating a slight improvement of fit to our data.

The third model in table A.14 is a logit model with a cubic time trend on the number of days since the leader came to power. This model gives similar results, with an even stronger negative coefficient, and similar AIC to the two former models. This kind of model shares most of the same attributes as an event history model, so I do not see the added benefit of including one here (Ward & Ahlquist, 2018, p. 225).

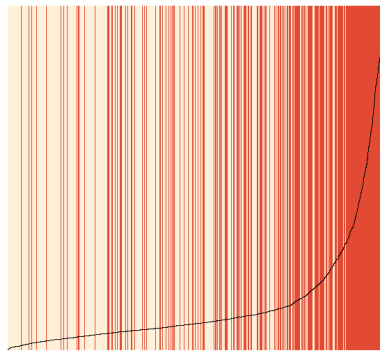
Figure A.6: Separation plot: Probit and logit



(a) Probit



(b) Logit (Cubic year)



(c) Logit (Cubic start)

Table A.14: Alternative estimator: Logit

	<i>Dependent variable:</i>		
	DTA signing		
	<i>probit</i>	<i>logistic</i>	
Pr(Fail)	−1.49*** (0.50)	−3.00*** (1.04)	−3.22*** (0.98)
Past BIT signing	0.15*** (0.03)	0.26*** (0.05)	0.39*** (0.06)
Year	19.58*** (7.43)	41.75*** (14.91)	
Year squared	−8.16 (6.62)	−19.81 (12.59)	
Year cubed	4.90 (5.69)	11.78 (12.00)	
Start			−25.65** (10.43)
Start squared			−21.59*** (6.29)
Start cubed			11.83** (5.20)
Bureaucratic quality	0.06 (0.09)	0.11 (0.17)	0.05 (0.17)
Regime type: Military	−0.02 (0.14)	−0.07 (0.28)	0.01 (0.23)
Regional Competition	0.06*** (0.02)	0.10*** (0.03)	0.14*** (0.03)
Log GDP per capita	0.28*** (0.09)	0.52*** (0.17)	0.60*** (0.15)
Constant	−3.62*** (0.70)	−6.51*** (1.37)	−7.35*** (1.22)
Observations	2,896	2,896	2,896
Log Likelihood	−877.07	−876.88	−868.65
Akaike Inf. Crit.	1,774.15	1,773.76	1,757.29

Note.

Clustered standard errors
on leader in parentheses
*p<0.1; **p<0.05; ***p<0.01

D.3.2 Tobit model: DTA content

The second robustness test with an alternative estimator is a Tobit model with a lagged Source index (by one year) as the dependent variable. A Tobit model for censored variables treats the lack of observations on the Source index (those who do not include signed DTAs) as “missing observations” beyond a cut-off point, of for example 0 (Greene, 2003, p. 762). This type of model makes sense when the inclusion of observations depend on the value of the dependent variable. For example, if one wanted to estimate how much households were willing to pay for a new car, but only had data covering the households who had bought a car, one could count all of the households who could not afford the cheapest car sold, as censored observations (Dubin & Rivers, 1989). In the main sample the Source index includes 3377 instances of 0 and 579 observations with values on the Source index, when 0 is set for overlapping years and countries in the merges panel data.

I lag the source variable to control for autocorrelation, due to the large number of 0's in a row. I would have liked to include random effects for countries, controlling for some of the differences in context, at the same time as letting the constant vary between them. However, there was not enough variation in the take to implement this element.

The results from the Tobit in table A.15 are in line with the direction in the main model, but gives a significant result on a 0.1 level. The marginal effect of a 1 unit change on the Pr(Fail) gives a -0.070 change on the Source index. This is admittedly a very small and uncertain effect.

The reason why I did not use this as my main model is that the fear of a DTA with a low score on the Source index is not likely to be the only reason why some countries do not enter into DTAs. In the Heckman model we are able to model in a number of explanatory factors to why some observations include DTA signing and others do not, not limited to the value on the Source index. Because the Tobit model does not take into consideration the nonrandom sampling problem, the results could be biased.

Table A.15: Alternative estimator: Tobit

	<i>Dependent variable:</i>
	Lagged Source Index
Pr(Fail)	−0.72* (0.40)
Year	21.86*** (4.56)
Year squared	−4.92 (4.47)
Year cubed	4.77 (3.94)
Bureaucratic quality	0.01 (0.07)
Regime type: Military	0.01 (0.10)
Regional Competition	0.03** (0.01)
Log GDP per capita	0.22*** (0.05)
Log Sigma	−0.46*** (0.06)
Constant	−2.48*** (0.44)
Observations	2,481
Log Likelihood	−819.61
Akaike Inf. Crit.	1,659.23
Bayesian Inf. Crit.	1,717.39

*Note.*Clustered standard errors
on leader in parentheses

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

D.3.3 OLS: DTA content

As we were not able to reject the lack of a nonrandom sample problem in the main model, there is still a possibility that OLS could be the best linear unbiased estimator (Ward & Ahlquist, 2018, p. 46-48). I run three types of OLS models, for the sake of comparison and discussion.

The first OLS model in table A.16 has the Source index as a lagged dependent variable. As including observations without a score on the Source index as 0 would break the normality assumption of OLS, this regression is only run on observations with values on the Source index. A distribution of the values on this variable can be seen in figure 11. As you can see in the output from the regression in table A.16 there are only 326 observations in the regression. Though this is necessary to produce unbiased results, removing observations without treaties signed changes the way the output is interpreted. We can no longer predict from the model how the length of time horizons would affect the balance for potential DTAs in the main sample, but the model might tell us something about the relationship between autocratic time horizons for already signed DTAs. The results in table A.16 indicate that there is no relationship between autocratic time horizons and DTA content.

In the two other OLS models in table A.16 I apply panel data, including 0 as source value for those country-years that overlap in the Tax treaties explorer data and Archigos leadership-spells. The first model has a one year lag on the dependent variable, in order to control for possible autocorrelation and a large number of 0's on the Source index variable, which breaks the normality assumption. Here, the autocratic time horizon coefficient shows a negative and significant effect on the lagged Source index. The last model removes the lag of the Source index, which results in little change to either significance or direction of the coefficient from the lagged version. These two models give similar results to the Tobit, with a -0.08-0.10 change on the Source index with a 1 point change on the autocratic time horizon, indicating that autocrat's with longer time horizons tend to sign DTAs that retain slightly more of their taxing rights.

Table A.16: Alternative estimator: OLS

	<i>Dependent variable:</i>		
	Value on Source index	Lagged Source Index Panel	Source Index Panel
Pr(Fail)	−0.07 (0.08)	−0.08** (0.04)	−0.10*** (0.03)
Year	4.84*** (1.51)	2.37*** (0.75)	2.55*** (0.72)
Year squared	−6.30*** (1.39)	0.28 (0.76)	0.46 (0.71)
Year cubed	1.56 (1.46)	0.01 (0.49)	0.06 (0.43)
Bureaucratic quality	−0.04* (0.02)	−0.004 (0.01)	−0.004 (0.01)
Regime type: Military	0.04 (0.03)	0.002 (0.01)	0.001 (0.01)
Regional Competition	−0.01** (0.003)	0.01** (0.003)	0.01** (0.003)
Log GDP per capita	−0.01 (0.02)	0.03*** (0.01)	0.03*** (0.01)
Constant	0.51*** (0.13)	−0.17** (0.07)	−0.17*** (0.06)
Observations	326	2,481	2,895
R ²	0.20	0.11	0.11
Adjusted R ²	0.18	0.10	0.11
Residual Std. Error	0.13 (df = 317)	0.14 (df = 2472)	0.14 (df = 2886)

Note.

Clustered standard errors
on leader in parentheses

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