SCALED AND ICY:
EVOLUTION OF THE INTERNATIONAL ARMS TRADE

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Author's Declaration

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Abstract

With increasing global tensions and a rearmament of the planet, international arms trade is more prevalent than ever. Using arms transfer records from the SIPRI Arms Transfer Database, this study analyses the evolution of the international arms trade and its driving factors from 1955 up until 2024 – a period that has not yet been studied. To this purpose, statistical network models and traditional social network analysis methods are used, aiming at evaluating the structural and geopolitical similarity between today's network and its Cold War counterpart. While certain aspects of the current network, such as the emergence of a Sino-Russian sphere of influence and a persistent oligopolistic structure, echo Cold War dynamics, the increased network density reduces the likelihood of a strictly bipolar system. The findings also reveal that the Cold War arms trade was far from static and evolved greatly, making direct comparisons with its contemporary counterpart more difficult. Finally, the modelling of the arms trade showed the profound impact Russia's invasion of Ukraine has had on the network, with large shifts in both endogenous and exogenous variables' contributions.

Acknowledgements

I would like to take this opportunity to thank my supervisor, Dr. Elisa Omodei, for her help and guidance these past months. I would also like to extend my gratitude to Dr. Mark Wittek for his technical expertise and support.

On a more personal note, I would like to thank my parents, our dog Ossli, my girlfriend, and regular friends, but most importantly my family's dog a second time.

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Chapter 1

Introduction

The end of the Cold War ushered in a new period of hope for a peaceful world. Sadly, this promise was short-lived and by the early 2000s, the previous period of progressive disarmament ended and even reversed (Shvydun, 2020). This pattern, combined with a global rise in international tensions (United Nations, n.d.), reinforced the importance of military sovereignty at the state level, and of the international arms trade at the global level. This grants the question, what is the current state of the international arms trade network ?

The importance of studying international arms trade comes from multiple factors. Unlike in other industries, arms trade is not simply regulated by a free market. Due to the existential nature of state defence, the fact that two countries take part in weapon trading implies numerous concerns (Akerman and Seim, 2014). Security concerns – with the potential risk of weapons being used against the supplier or of shifts in regional balances of power. Economic concerns – as arms sales generate revenues, mitigate the costs of research and development, and reduce production costs through economies of scale. Finally, moral concerns – due to the impact of public perception and the political costs of trading with certain partners. This is why the United States of America (USA) would never sell weapons to North-Korea given the current geopolitical context. The financial profit of such a sale would be outweighed by the high likelihood of those arms being used against the USA in the future, the destabilization of the Korean peninsula and its surroundings, and the backlash – both national and international – that would ensue as a democracy would be trading with an authoritarian regime led by a dictator.

This, however, is a dynamic process, and the reality of a time period might be the fiction of another, as exemplified by the USA - Iran relation that went from close allies to enemies in just a few years. There is thus a need to analyse the arms trade longitudinally to better comprehend it.

The arms trade only gained its geopolitical and geostrategic importance after the Second World War, as governments imposed numerous restrictions on an industry that used to be mostly regulated by the private market (Doenges, 1976; Harkavy, 1994). This period is often used as the starting point for modern quantitative analyses of the arms trade, as its renewed complexity coincided with the widespread availability of public statistics, driven by the emergence of global institutions such as the United Nations. In order to analyse such a complex and ever evolving relationship, holistic tools are required, making network science an ideal method as it can measure both endogenous and exogenous effects, and thrives when analysing large amounts of data. This methodology has been implemented by a few scholars that each focused on different driving elements of the arms trade, such as economic factors (Levine and Smith, 1997), political ones (Akerman and Seim, 2014, Martínez-Zarzoso and Johannsen, 2019), security concerns (Jang and Yang, 2023; Chou et al., 2023), or foreign policies (Chen et al., 2016; Kinne, 2016) to name a few. Others have taken a more holistic approach and simply aimed at modelling and describing the network (Kinsella, 2003; Akerman and Seim, 2014; Lebacher et al., 2018; Thurner et al., 2019; Shvydun, 2020; Pamp et al., 2021; Wang et al., 2023; Guo et al., 2025). Some key results were the discovery of properties observed in other real-world networks (small world, high clustering, degree heterogeneity) (Akerman and Seim, 2014), clear separation between the Eastern and Western blocs during the Cold War (Akerman and Seim, 2014), and longitudinal modelling of exogenous effects on arms trade such as political regime similarity (Lebacher et al., 2018; Thurner et al., 2019). However, these works lacked access to contemporary data reflecting today's global geopolitical instabilities. Indeed, major events – such as the full-scale invasion of Ukraine by Russia, Brexit, the Covid-19 pandemic, the capture of Nagorno-Karabakh by Azerbaijan, the return to power of the Taliban in Afghanistan, or the multiple coups that occurred in Africa – have profoundly changed the world. The United States, while remaining the largest economy and arms producer, has definitely lost its hege-

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monic political power which, combined with the global rise of nationalism, has led to a decline of the liberal international order and a rise in power of non-democratic regimes which have growing collaborations. This leads to fears of a new Cold War, with on one side democratic states and on the other non-democratic ones (SIPRI, 2016).

This thesis will focus on the 2020–2024 period as "current". This is because this period has been understudied as the data was only released recently, and because it contains major changes in the production of arms compared to the previous five-year period. For instance, countries such as Italy grew their exports by 138%, while Russia's exports dropped by 64%, losing its place as the second-largest arms exporter to France (George et al., 2025). When tackling this period, this thesis will particularly focus on two elements of the modern network, its (dis-)similarity with its Cold War counterpart and an evaluation of the influence different actors hold on the network. As previously mentioned, recent events have led to concerns over the resurgence of a Cold War (SIPRI, 2016). Furthermore, measures in recent studies, such as lower network density (Pamp et al., 2021) or preponderance of ideological concerns in choosing partnerships (Akerman and Seim, 2014; Pamp et al., 2021), have been pointing towards a structural resurgence of the Cold War. Although globalization and the emergence of new countries have transformed the international landscape since the 1990s, the major arms producers have remained unchanged. This growing number of states and transfers make it more difficult to have a clear bipolar structure in today's interconnected world, but the war in Ukraine and the USA's disengagement in world affairs might have just been a large enough trigger to make this happen. The influence analysis aims at better understanding the power dynamics of the network and answering pressing questions such as the extent of NATO's reliance on the USA (Swan et al., 2023), or the amount of leverage based on arms transfers different countries have.

This thesis makes several key contributions to the existing literature on the international arms trade. To begin with, it is the first study to incorporate arms transfer data from 2024, a period characterized by significant geopolitical shifts that have yet to be thoroughly analysed. Second, it offers new insights into the contemporary structure of the arms trade network. While the oligopolistic nature of the trade persists, the increased network density and the decline in influence of previously dominant actors challenge the emergence of a clear bipolar structure,

where each hub would be centred around one main actor. Third, the study applies Long Range Interaction Centrality to track shifts in influence at a granular level, demonstrating the consolidation of American (USA) dominance in the post-Cold War era. It notes the relatively low network influence the USSR held at its peak, leaving the possibility for a lower influence set of countries to form an independent bloc. The most likely option for such a bloc would seem to be centred around a Sino-Russian relationship. Fourth, by employing the Leiden algorithm, the thesis provides evidence of decreasing community cohesion over time, countering the notion of a resurgence of tight, ideologically aligned blocs akin to the Cold War. Finally, the thesis underscores the significant impact of Russia's invasion of Ukraine in 2022, revealing substantial changes in trade dynamics and network structure, and emphasizing the importance of contemporary geopolitical events in shaping arms trade patterns.

In order to do so, the literature on international arms trade, both traditional and network driven, is developed in Chapter 2. It provides an overview of the evolution of arms trade, its network interpretations, and the tools used to analyse it.

In Chapters 3 and 4, the data and methodology used are described. This includes an overview of the Stockholm International Peace Research Institute's (SIPRI) Arms Transfers Database (2025) which currently compiles all transfers of major conventional arms from 1950 until 2024, and of other data sources used to complement it. In order to analyse this network, I rely on traditional network metrics such as centrality and clustering coefficients, and on more advanced measures such as the Long Range Interaction Centrality (LRIC), community detection, and Exponential Random Graph Models (ERGMs).

The findings are discussed in Chapter 5, where the evolution of the international arms trade network is examined through four interconnected analyses. First, the chapter presents a descriptive overview of key structural properties, such as density, centralization, and actor participation. Second, the influence analysis applies the Long Range Interaction Centrality to identify influential actors and shifts in power dynamics across the study period. Third, the chapter explores community detection, analysing the strength and number of clusters of arms trade partnerships over time. Finally, Exponential Random Graph Models are employed to statistically assess the significance and strength of both endogenous and exogenous factors in

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shaping the network's structure, providing insights into potential structural reconfigurations in the post-Cold War era.

Chapter 2

Literature Review

In this chapter, I review the literature on the international arms trade, its network interpretations, and the measures attached to it. This is done in the following manner: first, I provide a summary on the state of the international arms trade and its recent evolutions. Following this, I present key results and discoveries made using a network science approach to arms trade. All of this sets the foundations for the Methodology chapter.

2.1 Historical Evolution

The international arms trade "began in the distant past when a nation or a subnational group discovered that effective defence or its political and military ambitions could be achieved better with arms produced elsewhere than with domestically produced weapons" according to Doenges (1976). Up-until the Second World War, the private market was largely in charge of this trade, with little regulations from governments (Doenges, 1976; Harkavy, 1994). This meant that economic factors were predominant, and diplomatic usages of weapon sales were rare (Harkavy, 1994). The largest arms exporters were located in Europe and in North-America, with fairly equal market shares amongst them, an element that will largely evolve after the war (Harkavy, 1994). This period was considered to be multipolar (Davis, 1996).

This situation greatly changed during the Cold War. Indeed, the switch to a bipolar world with two large clashing hubs meant that arms were exclusively traded within the blocs or with one bloc (Harkavy, 1994; Davis, 1996). The trade of arms largely corresponded to ideological

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boundaries, and they were used as a geopolitical tool to maintain or attract states to a bloc (Kinsella, 2011). This switch from economical to geopolitical concerns can easily be seen by the number of subsidized weapons being traded, with ideological stability being placed above its economical counterpart (Brzoska †, 2004). The period also saw a rise in arms production and transfers, reaching the highest level in history in the early 1980s (SIPRI, 2025), with Jimmy Carter famously saying that there were enough weapons to "destroy the entire earth" (Jimmy Carter in Katherine T. Phan, 2012). This production was overly concentrated in the USA and the USSR, with a combined market share of 80% in the 1970s and the next two largest suppliers only adding 5% (Harkavy, 1994). The few other arm exporting states were also constrained in the ideologically defined markets, where they served as secondary suppliers (Harkavy, 1994). This *tight bipolarity* turned more into a *loose bipolarity* over time, with more and more decolonized states assuming non-aligned postures (Kaplan, 1957; Harkavy, 1994). The OPEC (Organization of Petroleum Exporting Country) crisis of 1973 was one of the few disturbing events of the period, as the surge in oil prices created a huge market for arms in the Middle East (Harkavy, 1994). The Cold War also saw the initiation of the disarmament of the globe, with multiple arms control and non-proliferation treaties being signed (Bohlen, 2003; Brands, 2007).

The post-Cold War era initially followed the trend of disarmament initiated in the previous years (SIPRI, 2025), with a clear belief that this newfound unipolarity would signify peace. This, however, was transient, and the wars in the Balkans in the 1990s and in Iraq in the early 2000s restarted global arms trading (SIPRI, 2025). According to the *Democracy Peace Theory*, the amount of international conflicts should diminish as democracies are more peaceful in their foreign relations (Reiter, 2012). This however has not been the case in continents other than Europe (N. P. Gleditsch et al., 2002; Davies et al., 2024). Instead, while investments in arms expenditures declined across the old continent, they increased in other regions of the world (Tan, 2014; SIPRI, 2025). Like other industries, the arms industry also became globalized, forcing it to undergo a process of consolidation and rationalization, where large producers grew larger (Bitzinger, 2003) and more international cooperation occurred to lower costs (Tan, 2014), further reinforcing the oligopolistic nature of the arms trade. Indeed, in 2023, the five largest

exporters held 75.4% of the market (Wezeman et al., 2024; SIPRI, 2025). The prevalence of technology in modern weapons has been an aspect of this concentration, forcing dominating states to invest massively to remain at the cutting edge, while making the initial cost of catching up too high for most (Tan, 2014). This could, however, change with the advent of cheap military drones that have been dominant in recent conflicts (Kunertova, 2023).

2.2   Network Approaches to Arms Trade

Kinsella (2003) was the first to perceive the network nature of the arms trade. His reasoning was that the transaction-cost approach to arms acquisition policies did not always make sense in terms of either military or economic efficiency. These policies only start making sense when taking into account less material motives like status, prestige, or the symbols of modern statehood. In this, he is echoing Granoveter's (1985) sentiment that there is an "undersocialized" and utilitarian approach that has been taken towards economic exchanges, ignoring the impact social relations can have. This is especially clear in arms trade as transactions are often not limited to the delivery of a product, they are typically accompanied by the construction of support facilities, technical assistance, knowledge sharing, or military training. Furthermore, those transfers often occur within relationships of mutual defence such as NATO, or in less formal commitments from the provider to the security of the receiver. An arm transfer is often a long-term investment in a mutually beneficial relationship. In his analysis of the network between 1950 and 2000, Kinsella (2003) discovered that it was scale-free, with varying levels of low density. Akerman and Seim (2014) expanded this analysis by focusing on the differences between the Western and Eastern blocs during the Cold War. Furthermore, they added exogenous information in a gravity equation in order to model more accurately the different relationships. This allowed for the discovery of clear clusters separating NATO and Warsaw pact countries, and the discovery that political similarity of states played a large role in determining trade up until the end of the Cold War. They also discovered small world properties.

Lebacher et al. (2018) and Thurner et al. (2019) used different variations of temporal ERGMs to model the 1950–2016 and 1952–2013 periods respectively. The former discovered

strong network effects such as reciprocity and triadic closure, while noting the importance of exogenous effects. It also separated its analysis into two models, a formation and a persistence one, for which they predicted time-varying smooth random effects. This was combined with a functional component analysis, which allowed for a two-dimensional representation of countries' importance evolution according to their sender effects on one axis, and receiver on the other. This for both formation and persistence. The latter – Thurner et al. (2019) – confirmed those results and expanded them using more exogenous variables. They discovered that security concerns were prevalent over economic ones up until the 1970s when they started slowly decreasing. This trend abruptly ended in 2001 and security started regaining its importance, potentially due to the 9/11 terrorist attack.

An alternative approach was brought forward by Shvydun (2020), who considered the arms transfers network as a multiplex network where each layer represents a different category of armament. This allowed for the discovery of different export structure patterns that countries vary in over time. He also found strong overlaps between different categories such as air defence systems and missiles that were traded together 70% of the time. To conclude, he performed an influence analysis using LRIC. On a global level, the highest producers are the most influential countries, however, in more specialized categories, other smaller countries have a large importance. This was, for example, the case of Switzerland that was the most influential country in the trade of sensor systems between 1960 and the 1980s.

Chapter 3

Data

The main data used in this thesis comes from the Stockholm International Peace Research Institute, namely its Arms Transfers Database (2025). This is the most comprehensive compilation of international transfers of major conventional arms, as of now, ranging from 1950 up until 2024. It provides information on the transferred armament, its buyer, its seller, its purchase and delivery dates, its status (new, second hand, second hand but modernized), and its value. In order to have an objective value that allows for comparisons through the years, SIPRI has come up with its own measurement, the trend-indicator value (TIV). It is "based on the known unit production costs of a core set of weapons and is intended to represent the transfer of military resources rather than the financial value of the transfer." This also permits to accurately compare cases where the arms are donated and not sold. Based on this, a series of yearly directed and weighted networks is created, with the weight of an edge being the aggregated sum of TIV values that country A has delivered to country B at time t. Some of those networks are later aggregated to contain multiple years, depending on the needs of the analysis. The main buyers and sellers during the time period 1950-2024 can be found in Table 3.1, while the evolution of traded TIV value over time can be found in Figure 3.1. The complete list of countries that participated in arms trade, and the years in which they appeared, can be found in Appendix A.4.

To complement the arms transfers, other country level datasets were collected. Those aim at providing covariates for the analysis and are the following:

Table 3.1: Main Buyers and Sellers

Rank	Supplier (all-time)	Supplier (2024)	Receiver (all-time)	Receiver (2024)
1	United States	United States	India	Ukraine
2	Soviet Union	France	China	Poland
3	Russia	Germany	Saudi Arabia	United States
4	United Kingdom	Italy	Egypt	India
5	France	Russia	Japan	Qatar
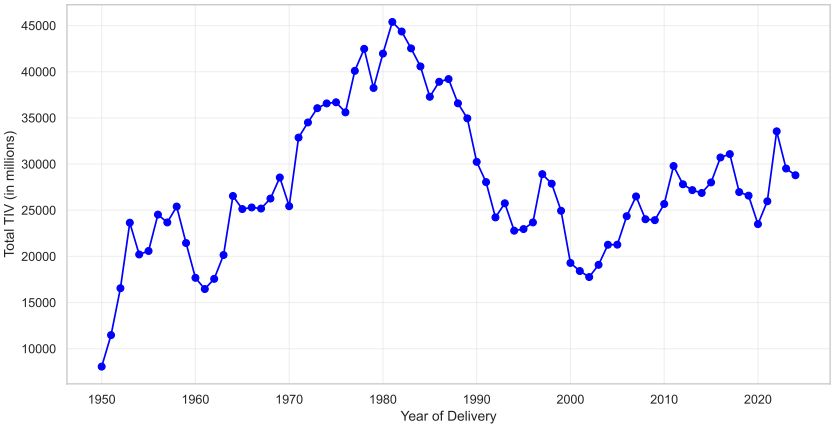
Figure 3.1: Evolution of Arms Transfers Over Time in Terms of TIV

- The Liberal Democracy Index from the Varieties of Democracies project (Coppedge et al., 2025). This index ranges from 0 (least democratic) to 1 (most democratic) and is available annually for all countries throughout the studied period.

- Voting records from the United Nations General Assembly (UN. Dag Hammarskjöld Library, 2025), totalling 911 922 entries that each represent the vote of one member state on a particular resolution.

- Every country's GDP. The primary source used is the Maddison project (Bolt and Van Zanden, 2024) which covers 169 countries throughout history up until 2022. In order to account for missing data, especially for recently formed or dissolved states and for the final years of the study period, additional sources were used. Those are the International Monetary Fund's National Economic Accounts (2025) and World Economic Outlook dataset (2025), the World Bank's World Development Indicators (2025), and the Expanded Trade and GDP Data (K. S. Gleditsch, 2002).

- Military alliances between the different countries. The core of the data comes from the

Alliance Treaty Obligations and Provisions dataset (Leeds et al., 2002). As it only spans until 2018, it is complemented with Wikipedia's List of Military Alliances for the missing years (2025).

- The list of intrastate conflicts from Uppsala's Armed Conflict dataset (Harbom et al., 2008; Davies et al., 2024).

- Every country's population from the United Nation's World Population Prospects dataset (2024).

- The Composite Index of National Capability (CINC) from Singer et al. (1972). This is a composite measure based on six elements: total population, urban population, iron and steel production, primary energy consumption, military expenditure, and military personnel. It aims at quantifying the military capability of a state. As it only contains years prior to 2016, the remaining CINC scores are imputed based on the countries' population and military expenditures (SIPRI, 2024).

Chapter 4

Methodology

This thesis is interested in studying the evolution of the international arms trade and, more specifically, compare its behaviour during the Cold War and contemporary times. In order to achieve this, four different methods are used with different aims each: traditional network science metrics, country influence measurements, community detection, and statistical network modelling. Those are detailed in this chapter.

4.1   Network Terminologies and Metrics

As outlined in the Data chapter, the SIPRI Arms Transfers Database is used to construct weighted, directed networks. In these networks, nodes (or actors) represent countries, and edges (or links) represent arms transfers, with the edge weight corresponding to the sum of TIV values for arms delivered in the specified period. This network is represented by a weighted adjacency matrix A of dimensions $N \times N$, where N is the number of nodes (countries). In this matrix, A_{ij} denotes the transfer value from country i to country j. Since the network is directed, A_{ij} is not necessarily equal to A_{ji}. A country's degree k_i refers to the number of direct trading partners it has within the network, also known as its neighbours. This can be divided into outdegree k_i^{out} – the number of countries it exports arms to – and indegree k_i^{in} – the number of countries it imports arms from. In its weighted version known as strength, the degree considers not just the number of transfers but their TIV value, reflecting the volume of arms traded rather than just the number of connections.

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Beyond individual node connections, the overall structure of the network can be further characterized by examining its density and clustering coefficient. Density provides insight into how interconnected the network is as a whole, and is the total number of edges L divided by the number of potential edges, or for directed networks:

$$d = \frac{L}{N(N-1)} \tag{4.1}$$

Meanwhile, the clustering coefficient measures the tendency of nodes to form tightly-knit groups, capturing the extent to which countries form trade triads in the arms trade network. It can be a local measure, providing the fraction of pairs of the node's neighbours that are connected to each other:

$$C(i) = \frac{2\tau(i)}{k_i(k_i-1)} \tag{4.2}$$

with $\tau(i)$ being the number of triangles – set of three connected countries – node i is part of, or at the network level, representing the average node's clustering coefficient, as shown in Equation 4.3:

$$C = \frac{\sum_{i:k_i>1} C(i)}{N_{k>1}} \tag{4.3}$$

4.2 Long Range Interaction Centrality

The Long Range Interaction Centrality (LRIC) is a measure that allows to quantify the level of influence an actor holds on another actor. Where it differs from traditional measures is that it accounts for transitive influence, namely country A can still influence country B even if they share no direct connections, as long as country A has a strong influence on suppliers of country B. In the context of arms trade, the LRIC measure can be considered as a good quantification of influence, where influence would be defined as "manipulation of the arms transfer relationship in order to coerce or induce a recipient- to conform its policy or actions to the desires of the supplier-state" (Wheelock, 1978; Shvydun, 2020). When applied to international arms trade, it assumes that each country j has some threshold of influence q_j above which the country is affected. This threshold can depend on external values, such as arms production, or it can

be calculated with respect to a network structure. In this case the latter will be used as there is no source compiling domestic production for every country, as it is not known how much armament a state produces for itself. The used threshold is described later. Based on said threshold, a direct influence network is created and is later built upon to get the long distance influence. For this, groups of critical countries whose combined influence exceeds the threshold are identified. More formally, $\Omega(j) \subseteq \overleftarrow{N_j}$ is a critical group of direct neighbours for country j if

$$\sum_{i \in \Omega(j)} w_{ij} \geq q_j \tag{4.4}$$

where w_{ij} is the value of transferred armament from country i to country j. Within this group $\Omega(j)$, country k is considered pivotal if its exclusion from this group makes the group non-critical. Thus, $\Omega^p(j) \subseteq \Omega(j)$ is a subset of pivotal countries of group $\Omega(j)$ if $\forall k \in \Omega^p(i)$:

$$\sum_{i \in \Omega(j) \setminus \{k\}} w_{ij} < q_j \tag{4.5}$$

Finally, if country i is pivotal for country j, its direct influence can be evaluated by taking the maximum proportion that i contributes in every critical group it is part of for country j. This is detailed in Equation 4.6:

$$c_{ij} = \max_{\Omega_k(j): i \in \Omega_k^p(j)} \frac{w_{ij}}{\sum_{h \in \Omega_k(j)} w_{hj}} \tag{4.6}$$

Now that a directed network of influence has been created, the indirect influence of country i on country j can be calculated using different methods. The method chosen in this thesis is the one outlined below. To calculate the influence, every simple path, i.e. a path such that no country is present in the path more than once, between the two countries is considered. The maximal length of such a path can be limited by some parameter s, making $P^{ij} = \{P_1^{ij}, \ldots, P_m^{ij}\}$ a set of all simple paths between i and j, where m is the total number of simple paths, and $n(k) = |P_k^{ij}| \leq s$ is equal to the k-th path's length. Based on this, the influence of i on j via k-th path P_k^{ij} is defined as the aggregate value of direct influence between countries that lie on this

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path as shown in Equation 4.7:

$$f(P_k^{ij}) = c_{il_1^k} \times c_{l_1^k l_2^k} \times \cdots \times c_{l_{n(k)-1}^k j} \tag{4.7}$$

where $i, l_1^k, \ldots, l_{n(k)-1}^k, j$ is an ordered sequence of countries on the k-th path. The influence can then be aggregated by taking the maximal possible influence c^* where

$$c_{ij}^*(s) = \max_{k:|P_k^{ij}| \leq s} f(P_k^{ij}) \tag{4.8}$$

In order to obtain the total influence a country exerts on the whole network, a weighting mechanism is introduced. The weight of a country i is defined as its relative influence on other countries with respect to the whole graph influence, i.e.

$$u^i = \frac{\sum_j w_{ij}}{\sum_k \sum_j w_{kj}} \tag{4.9}$$

This allows to obtain the final vector of influence $\tilde{c}(s)$ by getting the product of the countries' weights with their influences C^*:

$$\tilde{c}(s) = C^* \cdot u \tag{4.10}$$

where $u = (u^1, \ldots, u^n)$.

The network and indirect influence measures are calculated annually from 1955 to 2024. Each network is constructed by aggregating arms transfers over the preceding two years, but only includes countries that were actively trading in the final year of each period. Those are thus moving time windows of three years each. The threshold used is 75% of weighted indegree which Shvydun (2020) describes as a high influence threshold.

4.3   Community Detection

The most defining aspect of the Cold War was its bipolarity, with two ideologically opposed blocs. By conducting a clustering analysis, this division can be confirmed in terms of arms trade, revealing how structural alliances and divisions have evolved over time. Cluster-

ing aims to group sets of nodes, here countries, based on similarities, effectively identifying communities within the network. While many clustering methods exist, this thesis will use the Leiden algorithm (Blondel et al., 2008; Traag et al., 2019). It was selected not only due to the high quality of its detected communities, but also because it determines the optimal number of clusters autonomously. This is particularly valuable for the temporal analysis, as it allows for the objective identification of changes in the number and structure of clusters over time. The Leiden algorithm is an improved version of the Louvain algorithm, as it ensures discovered communities are well-connected. Both the Leiden and Louvain algorithms aim to find the best partition by maximizing modularity. Modularity is a quality metric that quantifies how well a given partition captures the community structure of a network. It measures the fraction of arms transfers occurring within clusters compared to what would be expected at random. In simple terms, a higher modularity score indicates that most connections occur within communities rather than between them. Modularity Q is defined as:

$$Q = \frac{1}{2m} \sum_{ij} (A_{ij} - \frac{k_i^{out} k_j^{in}}{2m}) \delta(\sigma_i, \sigma_j) \tag{4.11}$$

where A_{ij} is the value of the transfers from country i to country j, k_i^{out} and k_j^{in} respectively are the total value of exports from country i and the total value of imports of country j, m is the total value of transferred arms in the network, and the δ function is equal to one if country i and j are part of the same community ($\sigma_i = \sigma_j$) and zero otherwise. Modularity scores range from -1 to 1, where 0 suggests a clustering pattern close to random, and 1 indicates well-defined clusters with all transfers occurring within them. A score of -1 would signify the opposite, with transfers occurring across clusters.

An alternative quality measure that the Leiden algorithm can use is the Reichardt Bornholdt Potts Model. It is very similar to modularity, but permits the introduction of a resolution parameter γ which can adjust the scale of the detected communities, allowing for the identification of smaller or larger clusters by effectively tuning the algorithm's sensitivity to community

structure. It is defined as:

$$Q = \frac{1}{2m} \sum_{ij} (A_{ij} - \gamma \frac{k_i^{out} k_j^{in}}{2m}) \delta(\sigma_i, \sigma_j) \qquad (4.12)$$

and is equivalent to modularity when $\gamma = 1$. It has the same range of potential values and attached interpretation as modularity. Using a larger resolution parameter favours the discovery of smaller communities, while a smaller value will lead to larger communities being uncovered.

The Leiden algorithm is applied annually from 1955 to 2024. For each year, the network is constructed by aggregating the value of arms transfers over a three-year period – the target year and the two preceding years. Only countries present in the target year's network are included in the analysis. To ensure the robustness of the partitions, the algorithm is run 100 times per year. The analysis uses the Reichardt Bornholdt Potts Model with the resolution parameter γ set to 0.5, 0.75, and 1 (the latter being equivalent to the classic modularity). Based on those partitions, a quantitative analysis is conducted for the whole period. A key metric used in this quantitative analysis is the E-I index. It measures the relative density of transfers within clusters compared to those between clusters. It is calculated by taking the difference between external transfers E – transfers between clusters – and internal transfers I – transfers within clusters – and dividing it by the total value of transfers, as defined in Equation 4.13:

$$EI = \frac{E - I}{E + I} \qquad (4.13)$$

The E-I index's values range from -1 to 1, where -1 indicates that all transfers occur exclusively within clusters, and 1 that they all happen across clusters.

4.4 Exponential Random Graph Models

To understand the evolution of exogenous and endogenous effects on the international arms trade network, this thesis utilizes a dual approach aimed at reinforcing the validity of the results. Namely, an Exponential Random Graph Model approach, and one using its longitudinal extension, the Temporal Exponential Random Graph Model. ERGMs are particularly well fit-

ted to analyse the international arms trade, as their tie-related perspective corresponds best to the singularity found in each transaction. It accommodates exogenous predictors at the node or link level, and endogenous dependencies as statistics computed on the network. Consider a network y with N nodes, in this case the different countries, as a $N \times N$ adjacency matrix with entries $y_{ij} = 1$ if nodes i and j are connected by a tie and $y_{ij} = 0$ otherwise. In ERGMs, the assumption is that network ties are a function of network statistics such that

$$P_\theta(Y = y) = \frac{\exp\{\theta s(y)\}}{\sum_{y* \in y} \exp\{\theta s(y*)\}} \qquad (4.14)$$

where $s(y)$ is a vector of network statistics, θ is the vector of parameters of interest, and Y is the set of all possible networks on N nodes. The vector of network statistics is composed of the node-level covariates (state information), dyad-level covariates (interstate information), and network dependencies (structural information). The main difference between the ERGM and the tERGM is that the latter can include functions of the network at time t in its vector of statistics such that

$$P_\theta(Y^t = y^t | Y^{t-1}, \dots Y^{t-k} = y^{t-k}) = \frac{\exp\{\theta s(y^t, y^{t-1}, \dots y^{t-k})\}}{\sum_{y* \in y^t} \exp\{\theta s(y*, y^{t-1}, \dots y^{t-p})\}} \qquad (4.15)$$

In other words, the model for the network at time t is conditioned on some number k of previous realizations of the network.

For the analysis, an ERGM and a tERGM are computed for each year, conditioned on the two previous years, i.e., the models will be based on a moving window of three years. This allows to smooth out the transactions between the different states as those do not occur yearly, while allowing for a granular evolution of the effects. Furthermore, transfers take on average two years to be delivered from the moment they were ordered. Taking a multi-year window allows to also account for the driving factors at the time of purchase. In the case of the ERGMs, this is done by constructing aggregate networks spanning the time periods $t-2, \dots, t$ that are composed of all the countries present at time t. A similar approach is taken for the tERGMs, with the main difference being that individual and not aggregated networks are used. As those models only account for the presence of a tie between two nodes and not the weight

of such a tie, a filter removing the 40% lower transactions between states during that year is applied so as to only keep meaningful interactions. This is an arbitrary threshold that allows to keep a maximum of countries in the network while removing weak ties. As the ERGMs are using stochastic approximations due to time constraints and those are prone to being stuck in local minimums, 10 ERGMs are run for each year. The iteration with the lowest Akaike Information Criterion (AIC), a model quality metric, is then selected to represent that year. The specific type of tERGM used in this study is a Temporal Exponential Random Graph Model by Bootstrapped Pseudolikelihood in which the estimation is based on maximum pseudolikelihood with a bootstrap correction to the confidence intervals. In total, 700 ERGMs and 70 tERGMs – with 1000 bootstrap replications each – are run, covering the years 1955 to 2024.

The expectation is that current driving effects of the arms trade are similar, or tending towards similar levels, as during the Cold War. As mentioned in the Historical Evolution, this period was marked by geopolitical considerations prevailing over economic concerns. Furthermore, the production was constrained to a few countries while purchases occurred in an ideologically limited set of countries. In the literature discussed in Network Approaches to Arms Trade, it was also shown that triadic closure and path dependency are present. Based on this, the selected model terms aim at representing importer and exporter effects, triadic closure, and path dependency as endogenous effects, and geopolitical homophily, economic interests, military capacity, and local instability as exogenous ones.

The simplest network effects to account for are exporter and importer effects. In the case of exporter effects, previous literature indicates that few states should be exporting to many countries. This is why it is expected that this coefficient will be negative. Similarly, it is expected that a country importing arms from a large number of exporters is rare, and as such, the importer effect should also be negative. The third endogenous effect aims at measuring the propensity for countries to take part in shared relationships, meaning how likely is it for two countries that have a common trading partner to also trade with each other. This is known as triadic closure, and can have multiple meanings in the context of arms trade: that producing countries that trade together like to share clients as it is a higher guarantee of trustworthiness, that it is easier to buy from two allied countries (that trade together) rather than two countries

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that are not, or that countries that trade together have compatible equipments making it easier to purchase arms from allied countries due to their interoperability, for example. For all those potential reasons, it is expected that triadic closure will be present in the network, although at a low level due to its overall sparsity. As a non-shared partner term is used, which measures the likelihood of nodes not sharing partners, a negative coefficient for this term would indicate that nodes do in fact share partners, which is the expected result. The final endogenous term investigates path dependency. It is built by adding the traded TIV value between two countries in the previous three years. In the case of the tERGMs, each yearly network has its previously traded TIV value, while for the ERGM, this is only based on the years preceding the modelled year. As trading weapons requires high trust in the receiver, once such a relationship is established, it is assumed that all parties benefit from making it last. The expectation is thus that this term will be positive, except in cases where the network experiences a lot of rewiring.

When it comes to the exogenous variables that are used, they broadly fit into three categories: the capacity of a state, the homophily between different states, and the needs of a state. The first category contains economic and military capacity of states. On the economic side, it aims to account for the propensity richer states have to partake in arms transfers, either as producers – with richer states being the main ones, or as buyers – with richer states having a greater purchasing power. To do this, a term measuring the effect of GDP is included. This term is logged because very wealthy states do not necessarily purchase proportionally more arms than moderately wealthy states. In the case of the ERGM, the mean GDP during the period is taken. As richer states are the main buyers and sellers, it is expected that this effect will be positive. On the military side, the Composite Index of National Capability (CINC) is used. This term is split between importer and exporter effects, as countries with a high CINC typically produce a lot of weapons, making them large exporters and small importers. Thus, it is expected that the exporter effect will be positive while the importer one negative. Once again, in the case of the ERGM, the mean value of the time period is taken. The second category focuses on state homophily, using the states' democracy levels, vote similarity in the United Nations General Assembly, and presence in alliances as proxies. When it comes to the Liberal Democracy Index, the dyad-wise absolute difference is computed between the states to obtain

a political similarity score. A small score indicates strong political similarity, while a large one represents difference. In the case of the ERGM, this is based on the average index in the period. This predictor should demonstrate the evolution of political concerns and should thus be negative during the Cold War (dissimilar countries are less likely to be trading weapons), diminish in intensity and significance over time, and regain its negative significant coefficient in recent years. A similar approach is taken for the United Nations General Assembly votes, which are transformed in a similarity score. It is calculated for each pair of countries based on the votes they both took part in. A value of 1 is assigned for identical votes, 0.5 for different votes where one is an abstention, and 0 for totally different votes. The sum of these is then divided by the total number of votes with shared participation. In the rare cases where a country is not a member of the United Nations in certain periods, such as the case of the Republic of China (Taiwan) and of the People's Republic of China, a similarity of zero is assigned for that period. This similarity score provides a good proxy for countries' foreign policy similarity, and as such should follow the same pattern as the democracy similarity, except that it should have opposite values as in this case a higher score indicates higher similarity. In terms of alliances, a dyad-wise representation is made, with the strength of this relationship being the number of shared alliances between states. The expectation is that both will lead to higher trade, and should thus be positive and follow the same pattern as the UN voting similarity. In the ERGM case, the sum of treaties in the analysed time frame is used. The final category looks at the presence of an intrastate conflict in the importing state. The expectation is that countries that are taking part in an internal conflict are more likely to be buying weapons, and that this estimate should thus be positive.

Chapter 5

Results

In order to comprehensively analyse the evolution of the international arms trade network, this chapter is structured into four distinct but interrelated sections. The first section presents descriptive results, providing an overview of the network's structural properties over time, including changes in density, centralization, and actor participation. The second section delves into the influence analysis using the Long Range Interaction Centrality. This approach enables the identification of key actors within the arms trade network and traces how the distribution of influence has evolved over time. The third section focuses on community detection and outlines the temporal evolution of cluster numbers and strength in arms trade. The final section explores Exponential Random Graph Models, which provide a statistical framework to evaluate the network's structure and identify significant endogenous and exogenous factors driving the formation of arms trade ties. Together, the sections aim at understanding how the arms trade has been evolving, assessing the extent to which the contemporary arms trade network resembles its Cold War era counterpart, and to identify emerging patterns that could indicate a structural reconfiguration in the network.

5.1 Descriptive Results

A visual representation of the networks over time allows to see for a clear core-periphery structure centred around the United-States and the USSR (later Russia) – see Figures 5.1, 5.2, 5.3, 5.4. The size of the nodes reflects each country's total arms exports, while the thickness

and intensity of the edges represent the TIV of the arms transfers. Both node and edge sizes are based on relative rankings rather than absolute values. As such, they should not be compared across different figures. Nodes of the same size in two separate graphs do not indicate identical export volumes, but rather that each country held the same rank (e.g., the *x*-th largest exporter) in its respective year. This core-periphery, however, gets harder to see after the fall of the Soviet Union and the progressive densification of the network as more and more countries join it and regional actors take a more prominent role (see Figures 5.5 and 5.6). Here, network density is calculated using a three-year moving window, based on the set of countries present in the final year of each window
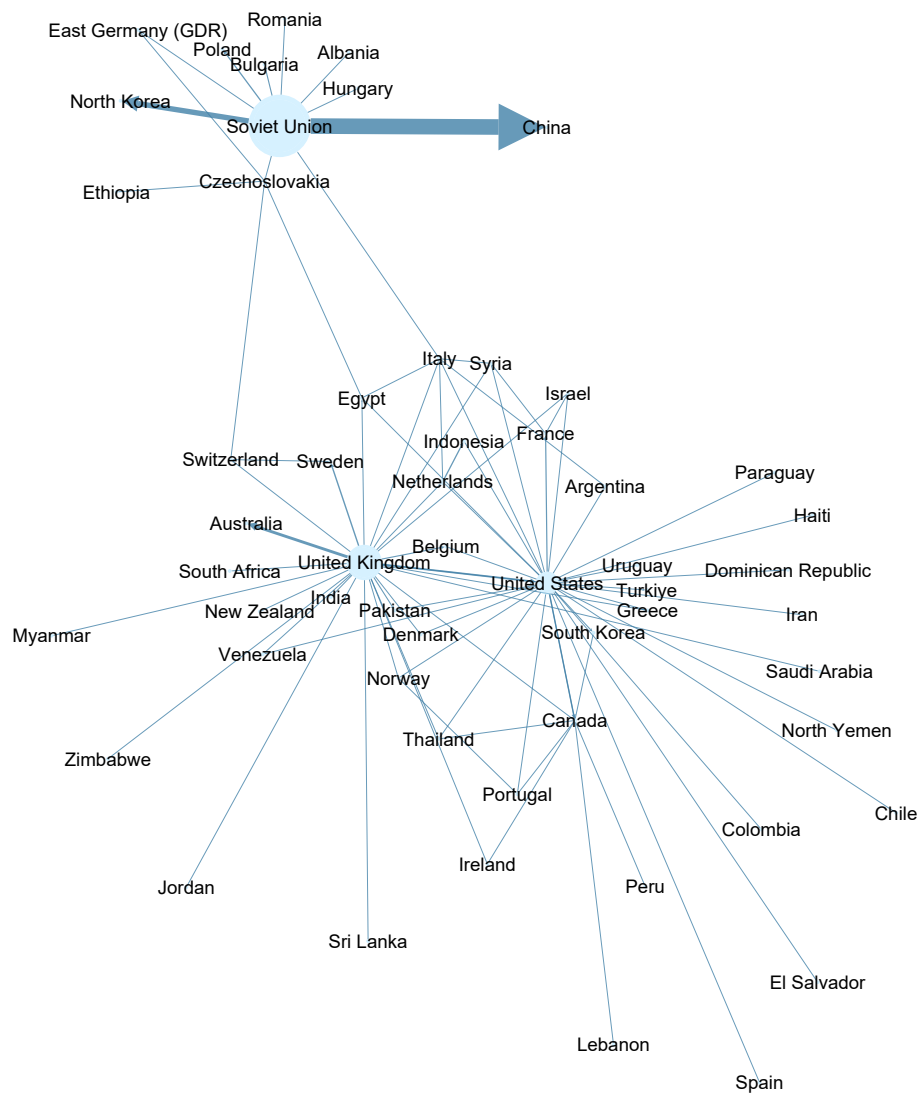
Figure 5.1: Arms Trade Network of 1950
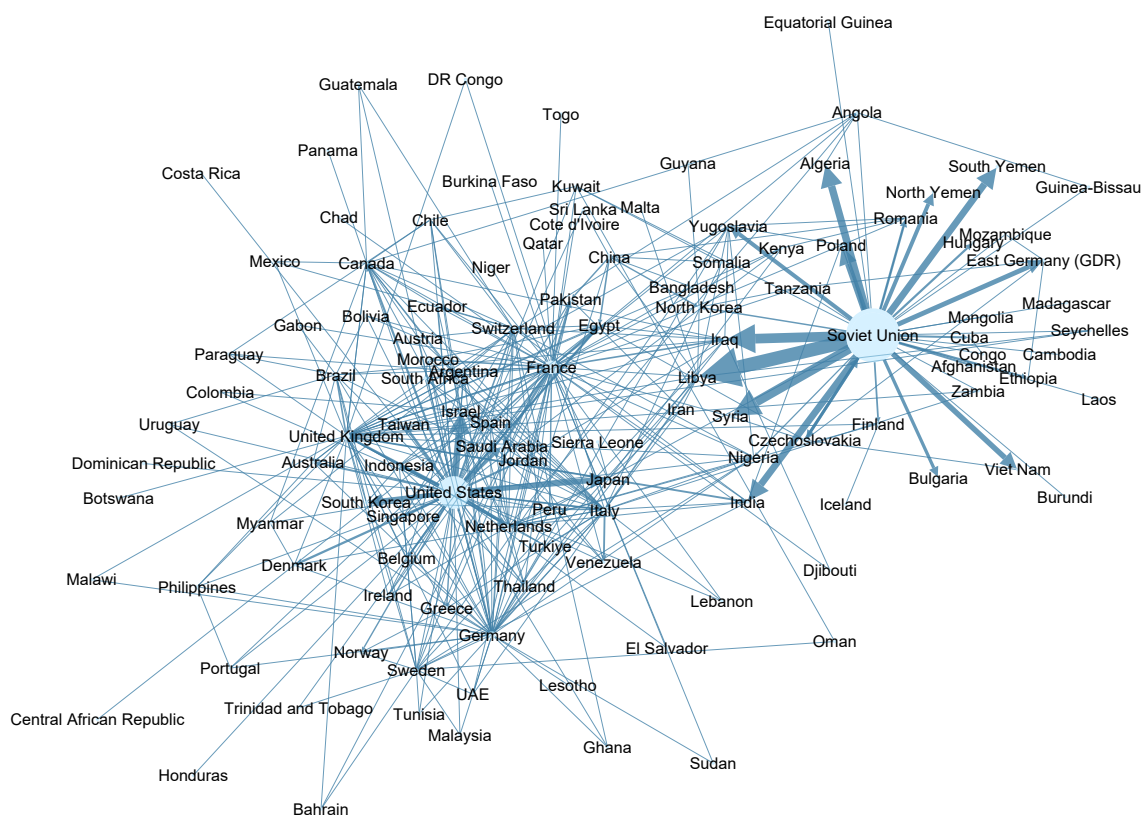
Figure 5.2: Arms Trade Network of 1980
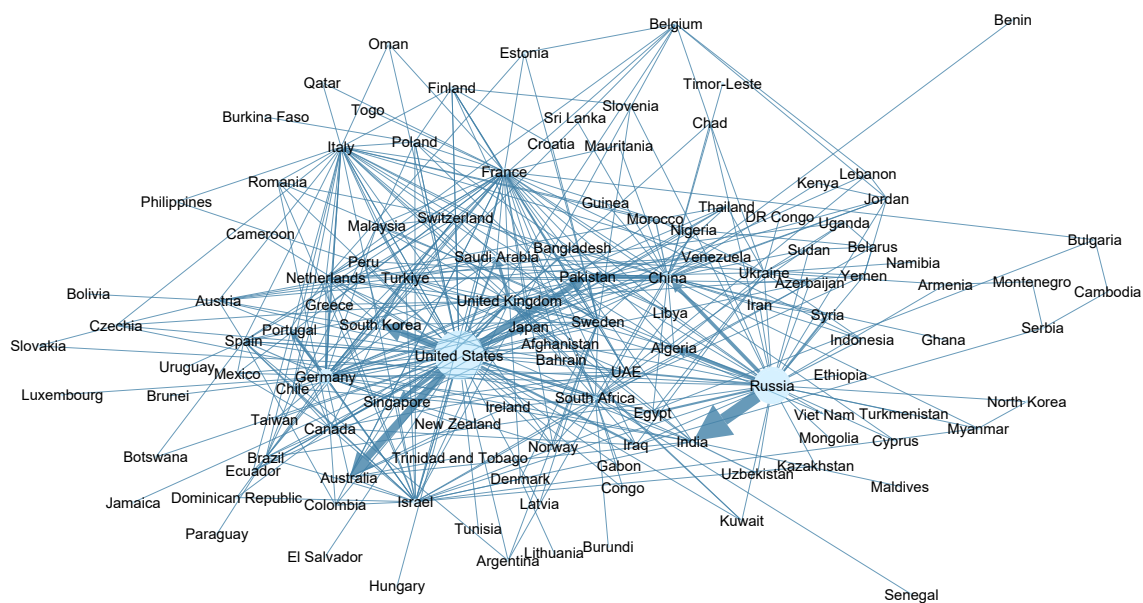
Figure 5.3: Arms Trade Network of 2010
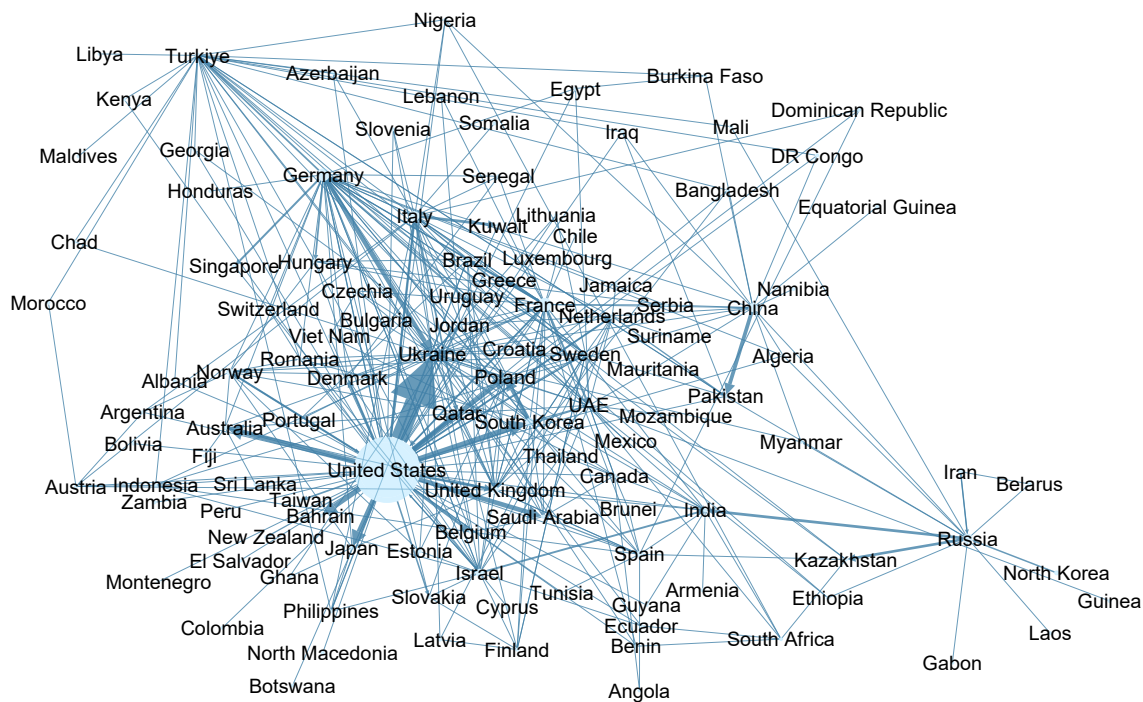
Figure 5.4: Arms Trade Network of 2024
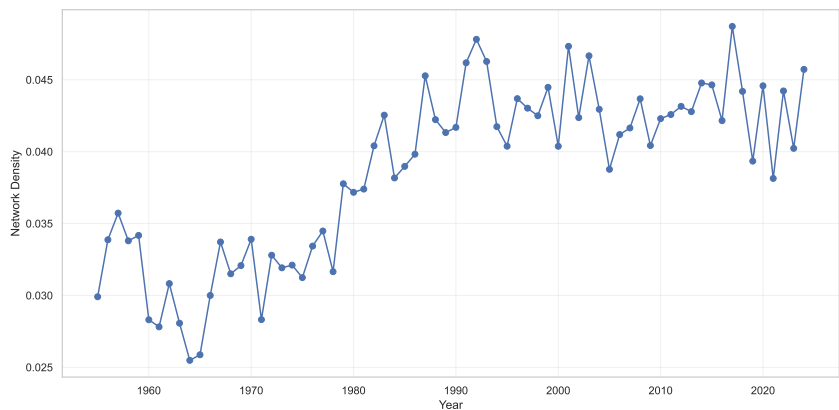
Figure 5.5: Density of the Network for the Time Period 1955-2024
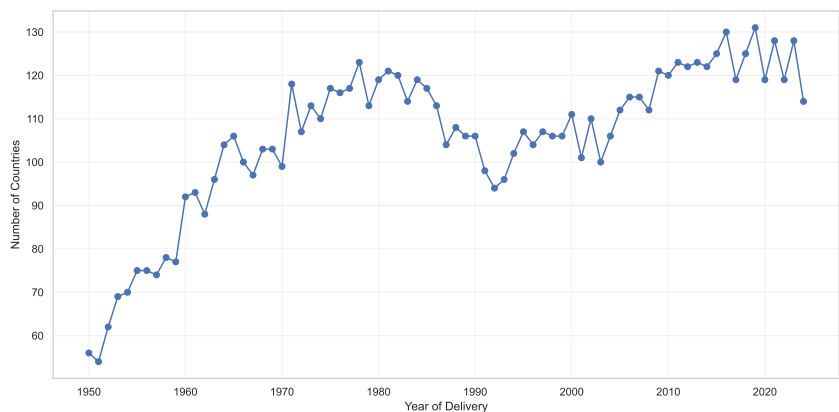
Figure 5.6: Number of Actors in the Network for the Time Period 1950–2024

The evolution of the network's clustering coefficient, calculated using three-year moving windows based on the countries present in the final year of each window (see Figure 5.7), contrasts with the trend observed in network density. Indeed, the clustering coefficient was higher during the Cold War, but dropped significantly after the collapse of the Soviet Union, only to begin rising again in the early 2000s. The sharp changes seen in the 1990s show the profound impact the iron curtain's fall had on international arms trade. The recent increase in the clustering coefficient suggests that countries are currently forming tighter-knit communities compared to previous years, reminiscent of the Cold War structure.
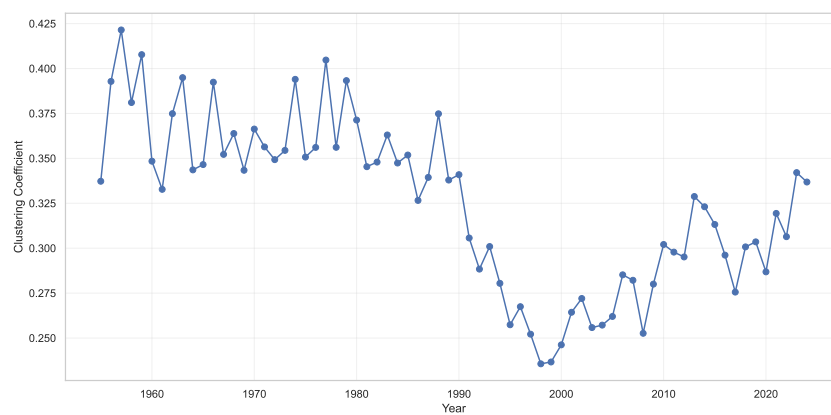
Figure 5.7: Clustering Coefficient of the Network for the Time Period 1955–2024

As described in the Literature Review, the oligopolistic nature of the arms trade is undeniable. This is confirmed when looking at the average percentage distribution of indegrees and outdegrees in Figure 5.8, where the scale free nature of arms exports is apparent. It is obtained by measuring the proportion of each degree in the yearly aggregated networks. Those are the same networks used to measure the density and the clustering coefficient. This distribution is then plotted using error bars, allowing for a comparison across years, even as the number of actors fluctuates. A key conclusion from this figure is that over 60% of countries have an outdegree of 0, meaning that most countries do not transfer weapons at all in a given year. On the indegree side, a few countries only provide weapons while receiving none. Furthermore, most countries receive their arms transfers from a small number of suppliers. These results are in line with those reported by Thurner et al. (2019) which found even starker results when removing edges from the network if they were below a minimum transfer value threshold. They found that, on average, nearly 80% of nodes had an outdegree of zero in a given year, and over 30%

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had an indegree of zero.
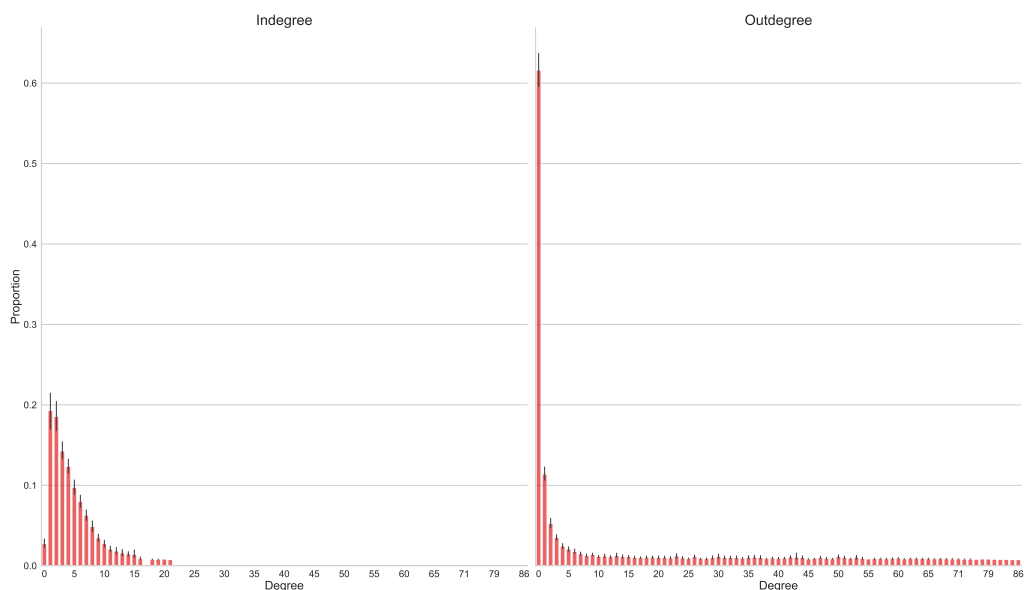
Figure 5.8: Average Proportions of Indegrees and Outdegrees for the Time Period 1955–2024

5.2 Long Range Interaction Centrality

The Long Range Interaction Centrality was calculated for all the countries at the network level from 1955 to 2024. The scores of the ten most influential countries over time are presented in Figure 5.9. Notable findings include the decline in influence of previously dominant countries like the United Kingdom, leaving the United States' position, although weakened, largely uncontested after 2007. This shift follows the abrupt changes in influence observed around the fall of the Soviet Union, which, unexpectedly, reduced Western influence rather than bolstering it. This may be partially attributed to Russia's rapid assumption of the Soviet Union's position. While these results display the USA's dominant position over the years, they also highlight how this position was more contested before the end of the Cold War, solidifying the USA as the sole superpower afterwards.

Another noteworthy trend is the overall increase in influence for most countries following Russia's invasion of Ukraine, with the exception of Russia itself, whose influence declined. Additionally, one should outline the consistency in influence of the USSR and of Russia. Surprisingly, the USSR was never the second most influential country, whereas Russia held this po-

sition consistently until its different invasions of Ukraine in 2014 and 2022. A notable change is the large influence drop of the United Kingdom and the United States at the turn of the millennium, when they (in-)famously invaded Iraq. Finally, it is interesting to note a homogenization of the other influential countries' score, and their relatively low influence compared to the United States.
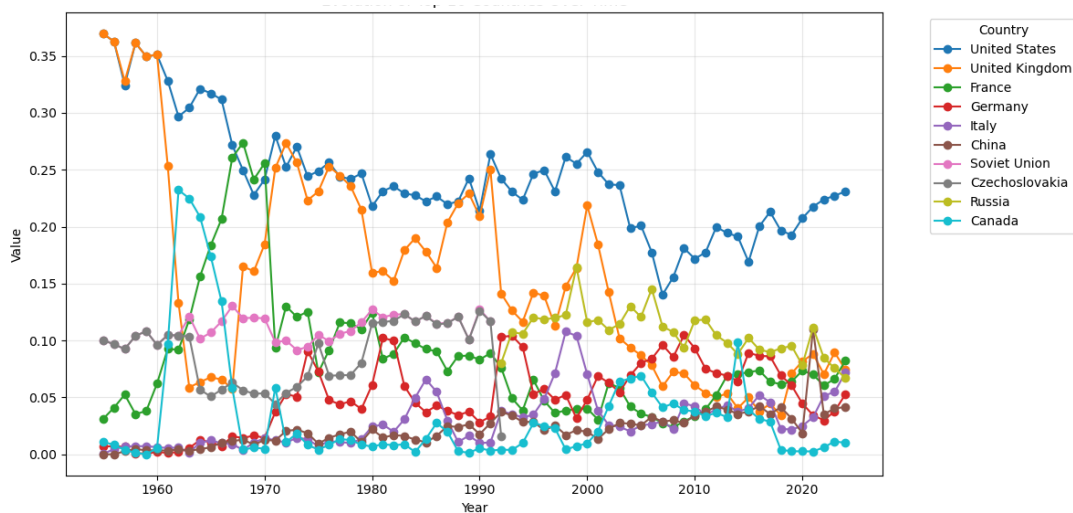
Figure 5.9: Evolution of LRIC Score for the Top Ten Countries Over Time

In order to better understand the current influences in the arms trade network, let's focus on the year 2024. A visual representation of the influences can be found in Figure 5.10, where the size and intensity of the links represents the amount of influence exerted by the sending country. The central role of the United States of America is once again clearly shown, both in terms of quantity of influence relationships and of their respective strength. Other seemingly central actors are France, China, and Russia. In the case of the latter two, while the number of relationships they have seems limited, their level of influence on those is comparatively high, with a surprisingly strong influence of Russia on China. This is most likely because countries' domestic purchases are not included in the dataset and therefore the LRIC measure only accounts for imports. Another notable element is the apparent lack of influence from two of the top five producers that year, namely Italy and Germany.

Due to the unreliability of American involvement in NATO under the Donald Trump presidency, it is interesting to have a deeper dive in this alliance's influences. Firstly, when simply looking at the number of countries in NATO under American influence in 2024, only 23 of
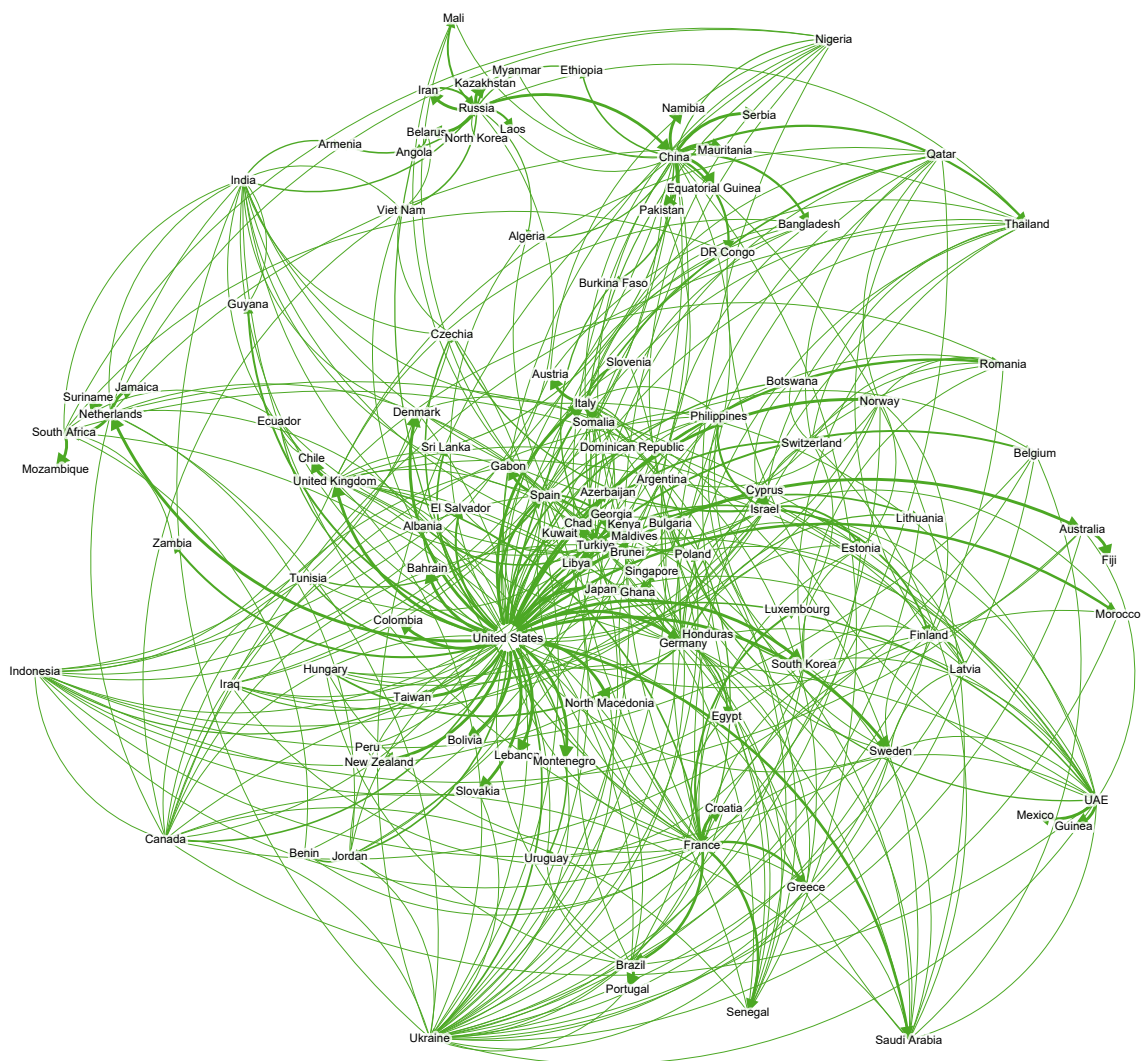
Figure 5.10: LRIC Network of Influence for 2024

the 31 other members are influenced, out of which 10 are completely under US' influence as indicated by their relationship receiving the maximal LRIC score. When averaging America's influence over all NATO members, an LRIC score of 0.5 is obtained showing its strong impact, especially considering this is double the US' global network influence that year. The second most influential member of NATO is France, with 9 countries under its influence, of which only Croatia is completely under its influence. France's average influence on NATO countries is of 0.1 which is significantly lower than the score of the United States.

Looking at the 1980 LRIC influence network (see Figure 5.11), the United States and the Soviet Union are large influence hubs, as expected. Other countries also hold significant positions, most notably France and, to a lesser extent, the United Kingdom and Italy. What is

particularly striking when comparing the two counterparts is the relatively uncontested dominance the USA now exerts over the network, with fewer and weaker alternative hubs compared to 1980.
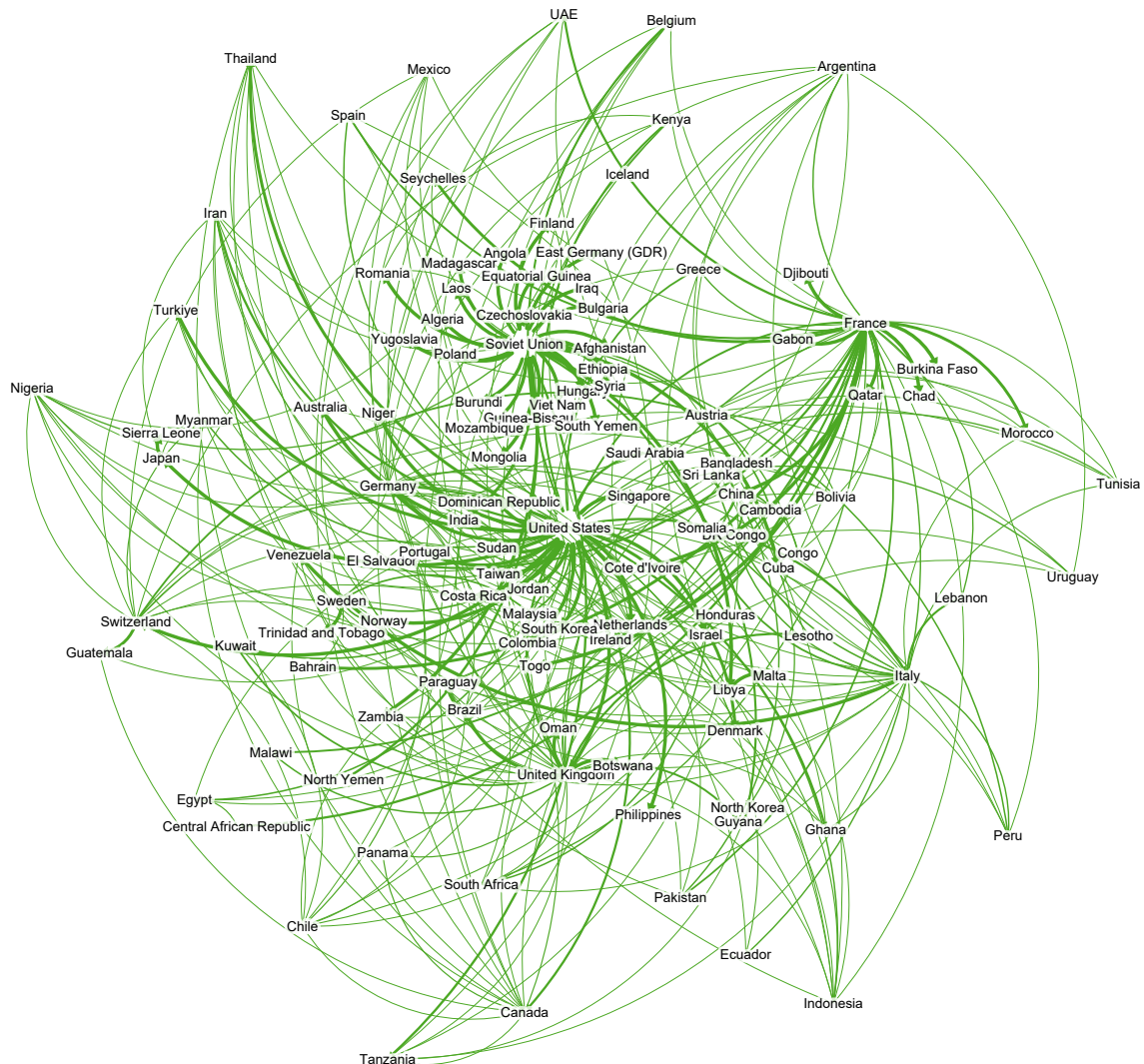
Figure 5.11: LRIC Network of Influence for 1980

In 1980, the USA held influence on 12 out of the 14 other NATO members, with the two missing members being Iceland and Luxembourg, which did not purchase weapons that year. At the time, the USA had an average influence of 0.7, which, while higher than today, was when NATO was twice as small. As a matter of comparison, the USSR had a maximal influence on all 6 other members (excluding observer states) of the Warsaw Pact.

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5.3 Community Detection

The longitudinal clustering analysis reveals the structural evolution of the international arms trade network. Figure 5.12 illustrates the number of communities detected by the Leiden algorithm using the Reichardt Bornholdt Potts Model at different γ levels, with error bars representing the variability in the number of detected communities. The results indicate that a lower γ is necessary to consistently detect only two communities during the Cold War period. Even then, many years display three to four clusters, suggesting that the Cold War structure may have been more nuanced than a strict bipolar division. Additionally, the number of clusters increases around the year 2000, peaking between 2000 and 2010, after which a decline is observed. However, for $\gamma = 1$, a reversal in this trend is noticeable after 2022, with the number of clusters beginning to rise again. While the increased number of clusters in the early 2000s aligns with the structural changes outlined by the literature, the more nuanced effects measured after 2021 require a deeper analysis.
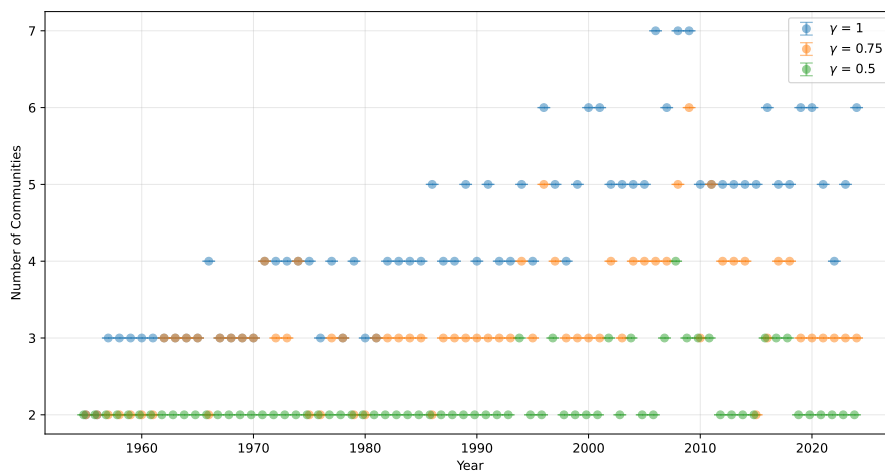
Figure 5.12: Number of Communities for the Time Period 1955–2024

In order to determine which partition is the best, modularity scores were calculated for each of them, as shown in Figure 5.13. The first noticeable element is that modularity follows a similar trend for the different γ values, with a decrease in the 1970s and 1980s, that grows back in the 1990s, only to decrease even more in the new millennia. Secondly, there is no one γ that scores better for the whole time period, notably with a lower γ being better around the year 2000 and $\gamma = 1$ in the last years.
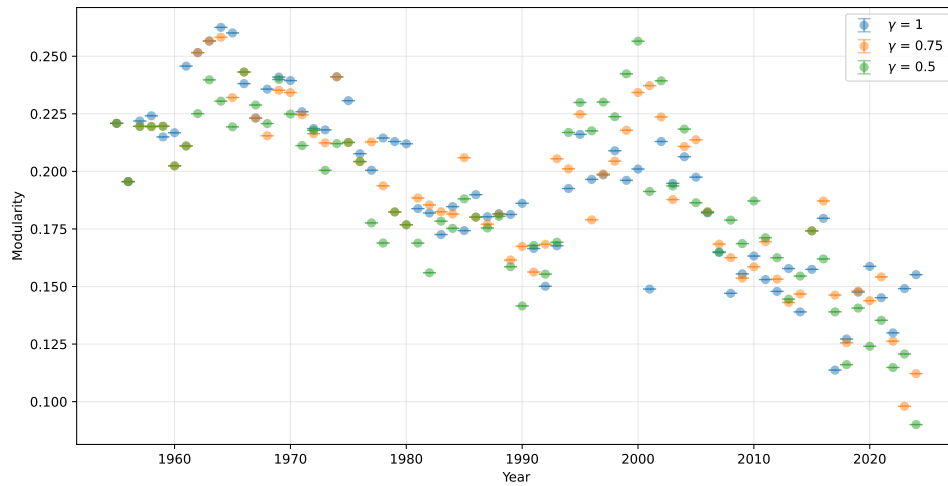
Figure 5.13: Modularity Score for the Time Period 1955–2024

By plotting the number of communities obtained by the best modularity for each year, it is possible to get a better understanding of the community structure's evolution. Figure 5.14 shows how partitions obtained using $\gamma = 1$ yield the best modularity for the majority of years, especially before the collapse of the Soviet Union and in the last three years. The usage of a lower γ, which finds larger communities, provides better results between 1990 and 2010. If only referring to the partitions with the best modularity, the results indicate that the number of communities is currently higher than it was during the Cold War. However, this difference is less stark when taking into account that, according to the discovered partitions, the Cold War period also featured more than two communities most of the time.
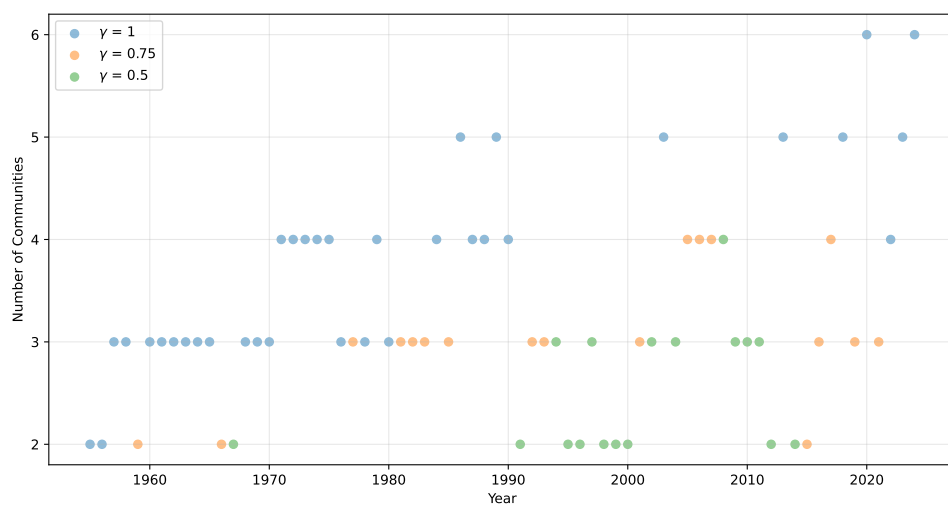
Figure 5.14: Number of Communities with the Best Modularity for 1955–2024

The decreasing strength of communities, as indicated by the decreasing modularity in Fig-

ure 5.13, is also confirmed when the E-I index of the different partitions is calculated. This is shown in Figure 5.15, where inner trade is decreasing across all values of γ, although at different rates.
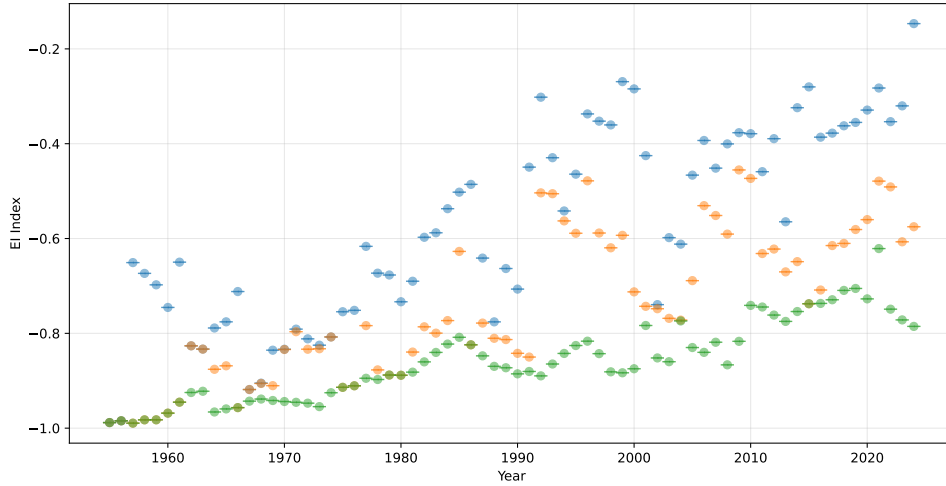
Figure 5.15: E-I Index for the Time Period 1955–2024

By using the communities detected using arms transfers on the influence networks obtained in Section 5.2, it is also possible to see how influence is distributed amongst clusters. To this purpose, the E-I index can be used again, except this time the edges represent influence instead of arms transfers. The results are shown in Figure 5.16 where a similar decrease in internal influence over time is displayed.
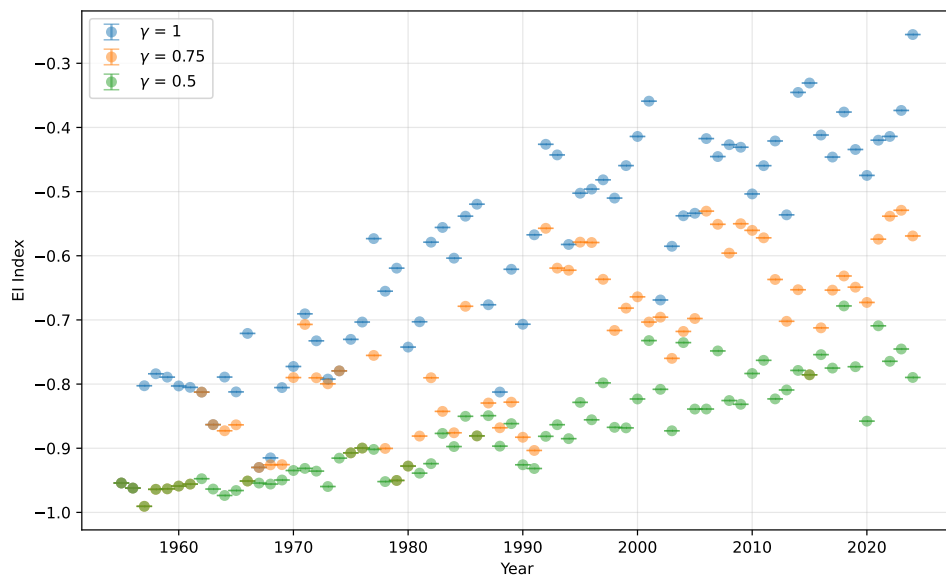
Figure 5.16: E-I Index for the LRIC Influence Network for the Time Period 1955–2024

5.4 Exponential Random Graph Models

When conducting the Exponential Random Graph Model analyses, the goal was to uncover similarities in driving factors of the international arms trade during the Cold War and contemporary times. This was done by both using traditional ERGMs and temporal ERGMs, the two yielding similar results except in terms of significance of variables (see Figure 5.17). The description of variable names can be found in Table A.1. The goodness of fit of the different models can be found in the Appendices A.2 and A.3. Firstly, the strong and statistically significant negative edge variable confirms that arms transfers are non-random and less likely to occur than one would expect at random. Similarly, the results of the outdegree show that a limited amount of countries exports to many, outlining the oligopolistic nature of the international arms trade. The different variations in path dependency are very informative as they outline years in which rewiring occurred. While significant and positive throughout the studied time period, its value remained relatively low during the Cold War, which is surprising. To finish off with the endogenous effects, triadic closure is present throughout, but at varying levels which make it hard to predict in which direction it is heading. Overall, when it comes to endogenous effects, there does not seem to be significant differences between the Cold War models and their contemporary counterparts. However, there have been changes in direction in recent years which could signal a restructuring of the network, and it is too early to tell if this will resemble more closely the Cold War networks, or head away from their structure.

In terms of economic factors, the impact of GDP seems to have been decreasing over time, until a change of direction in the late 1990s. While this does not match the results one would expect from the literature on the arms trade, similar results were found by Thurner et al. (2019) in the time period they studied. Surprisingly, this recent growth of importance of GDP is making the two periods more similar. When it comes to political similarity, it seems to have had a regain of importance in recent years. There has, however, been a large decrease since 2022, potentially due to the influx of weapons to Ukraine, which has a relatively low Liberal Democracy Index, from a lot of Western countries, which have some of the highest indexes. Surprisingly, similar votes at the UN General Assembly seems to negatively affect countries'

propensity to trade arms together. This impact however has gone a lot closer to zero in recent years. The impact of alliances seems to have also been decreasing, although it appeared to be regaining importance before the invasion of Ukraine. Once again, the decrease could be due to the lack of formal alliances between Ukraine and its suppliers, which skews the results due to its predominance in the trade. A similar drop is seen with the CINC of importers, which drops at the same time. Again, Ukraine's already low CINC became even lower due to the large amounts of population that left.

These results highlight the large changes that have been occurring in the past years and the large amounts of weapons being transferred to Ukraine, reaching almost 10% of all imports between 2020 and 2024. This outlines some of the limitations from using objective measurements such as the Liberal Democracy Index, which does not account for a country's intended political trajectory or the system it aspires to and has yet to achieve, but only its current situation.

Figure 5.17: Comparison of Time Series of the Model Estimates for both the ERGMs and btERGMs

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ERGM　　　　　　　　　　　**btERGM**

Figure 5.17: Continued

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ERGM

btERGM

Figure 5.17: Continued

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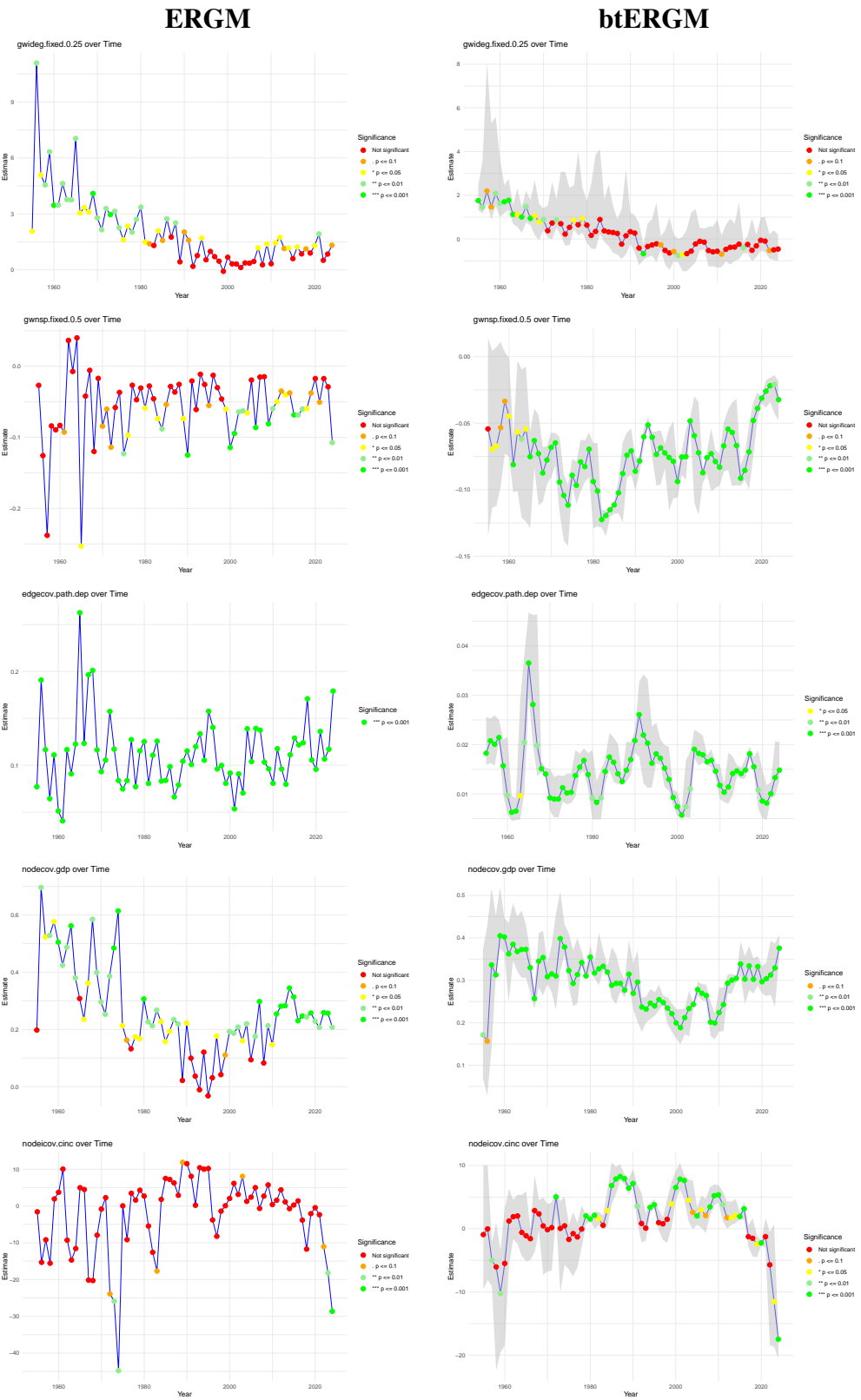
Chapter 6

Conclusions

This thesis sought to investigate the evolution of the international arms trade, and more particularly to understand the similarities and differences present between the Cold War and contemporary times. To this avail, I employed a network science approach, representing the international arms trade as a network where nodes are countries and edge are arms transfers. What motivated this research topic were the numerous changes in international relations and growing geopolitical tensions that have led to a potential restructuring of arms relations into a bipolar system, opposing democratic states to illiberal ones. To verify this, four different approaches were employed: network statistics, influence analysis, community detection, and network modelling.

The first approach confirmed the oligopolistic nature of the arms trade, and discovered a growth of the network's clustering coefficient and density in recent years. This clustering coefficient increase is tending towards Cold War levels and could indicate that tighter knit communities are getting formed. The rising density on the other hand signals more interconnectedness, which would typically diminish the risks of polarization. However, although density is growing, it remains at low levels overall and is thus not redhibitory for a bipolar partition.

The second approach, which implemented the influence analysis using the Long Range Interaction Centrality, revealed the growing domination of the United States on international arms trade. What is notable is that, contrary to the Cold War period where the USA were already the most influential nation, no country is currently coming close to contesting their

domination. This result is in contradiction with previous beliefs that the USA's hegemonic position, which it acquired at the end of the Cold War, was declining. This belief is likely due to the sharp drop in American influence that occurred at the turn of the millennium, and the fact that, although the United States remains the most influential country, its influence has not returned to its previous peak. While these results might suggest that a bipolar structure is unlikely due to the absence of a second pole, it is important to note that the Soviet Union never attained high influence at the network level, due to its limited number of trading partners, and yet, was undeniably one of the most significant actors of the time. This underscores that very large influence is not always required to obtain a strong independent bloc. Currently, quite a few countries are at slightly lower levels of influence than the USSR was, which could indicate the potential emergence of smaller hubs and thus, a polarized structure with unequally sized poles. Indeed, when looking at the details of interstate influences for 2024, a Sino-Russian pole can be observed. Finally, the level of influence the USA holds over NATO countries is substantial, which could explain recent efforts by European leaders to seek greater military autonomy, given their current dependence on the American arms supply chain.

The third approach aimed at measuring the evolution of community structures over time using the Leiden algorithm. It discovered that there were more than two communities during most of the Cold War, and that this was also the case for contemporary times. The strength of those communities has, however, been decreasing over time, which is understandable due to the densification of the network. These results undermine the hypothesis of a bipolar or even tripolar world consisting of two blocs and a third non-aligned group.

The fourth approach allowed to study the evolution of both endogenous and exogenous factors driving the arms trade. It discovered that many geopolitical factors, such as alliances, Liberal Democracy Index similarity, and United Nations General Assembly votes similarity, experienced large changes after Russia's invasion of Ukraine in 2022. This change in pattern makes it hard to evaluate the network as a whole, as the discrepancies might just be driven by Ukraine receiving large amounts of arms. Nonetheless, if one were to stop their analysis in 2020, the lower propensity to have an arms trading relation, the strong oligopolistic nature of the arms trade, the growing importance of military alliances, and democracy similarity scores,

would all be elements pointing towards a Cold War-like system's resurgence. On the other hand, the decreasing triadic closure, path dependency and UN General Assembly voting similarity, coupled with the growing importance of GDP would point in the opposite direction. I would still argue that those opposing elements are slightly weaker, as the first two could simply be indicating a period of changes and rewiring, while the UN votes could simply mark a cultural switch with larger autonomy in the way states conduct their foreign policy. As for the GDP, as its level has been relatively high at all times, its value before 2020 does not seem too distant from Cold War levels. However, as aforementioned, the numerous changes after 2020 make any definitive conclusion difficult to draw.

Based on all those results, it is clear that the international arms trade is at a turning point and that future years will be pivotal for the direction it takes. While some of the metrics obtained shared similar results with their Cold War counterpart, it would seem premature to call for its structural resurgence, notably due to the lack of clear communities and the instability of its driving factors. Furthermore, the increased network density and declining influence of key actors make it unlikely for blocs to form around a single country, suggesting that leadership would more likely be shared. Nonetheless, particular attention should be given to Russia and China in future years, as they are the closest contenders to found an illiberal bloc.

Several potential limitations of this thesis should be acknowledged. First, as only transfers are recorded by SIPRI, there is no information on arms states produce for themselves. This in turns biases the LRIC influence analysis, making it easier to influence countries with a domestic production than it should be. Second, the integration of multiple data sources for the ERGMs introduces the risk of conversion errors during the merging process, potentially affecting the consistency and accuracy of the data. Third, the use of unweighted models in the ERGMs results in a loss of information, as all ties above the threshold are treated equally, disregarding variations in transfer volume. While implementing weighted ERGMs would mitigate this limitation, they are computationally expensive and require different endogenous terms that do not allow for comparisons with regular ERGMs and tERGMs, which is why they were not used in this thesis. Nonetheless, exploring weighted ERGMs presents a promising avenue for future research. Furthermore, splitting the models in formation and persistence models could

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provide a deeper understanding of the network's evolution. Finally, adopting a multilayered approach to the influence analysis – measuring influence separately for each arms category and then aggregating the results – could provide a more accurate picture, as some major producers may still exhibit dependence in specific sectors.

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Appendix A

Appendix

A.1   Model Variables Names

Table A.1: Explanation of ERGM and btERGM Variables Names

Name	Description
edges	represents the propensity for an edge to occur at random
gwodeg.fixed.1	geometrically weighted outdegree fixed at 1
gwideg.fixed.0.25	geometrically weighted indegree fixed at 0.25
gwnsp.fixed.0.5	geometrically weighted non-edgewise shared partner fixed at 0.5
edgecov.path.dep	edge covariate representing past trade between the nodes
nodecov.gdp	node covariate representing the country's logged GDP
nodeicov.cinc	node covariate representing the CINC of receiving countries
nodeocov.cinc	node covariate representing the CINC of sending countries
nodeifactor.intra	boolean node covariate denoting if the country is in an intrastate conflict
edgecov.alliances	edge covariate providing the number of shared defence agreements between the nodes
edgecov.vdem	edge covariate providing the difference in Liberal Democracy Index between the nodes
edgecov.UN	edge covariate providing the similarity in votes at the UN General Assembly

A.2   ERGM Covariate Estimates and Goodness of Fit

Table A.2 provides the ERGM covariates' estimates and goodness of fit. A p-value ≤ 0.1 is indicated by °, $p \leq 0.05$ by *, $p \leq 0.01$ by **, and $p \leq 0.001$ by ***. The goodness of fit of all

the models was assessed by simulating networks from estimated ERGMs and comparing their degree, edgewise-shared partner, and geodesic distance statistics with the observed statistics in the corresponding network.

Table A.2: ERGM Covariate Estimates and Goodness of Fit

Years	1953–1955	1954–1956	1955–1957	1956–1958	1957–1959
edges	-10.94°	-30.93**	-21.99*	-22.99***	-28.34**
gwodeg.fixed.1	-2.56***	-2.81**	-2.92**	-3.14***	-0.46
gwideg.fixed.0.25	2.07*	11.09**	5.08*	4.55**	6.33**
gwnsp.fixed.0.5	-0.03	-0.13	-0.24	-0.08	-0.09
edgecov.path.dep	0.08***	0.19***	0.12***	0.06***	0.11***
nodecov.gdp	0.20	0.70**	0.52*	0.53**	0.58*
nodeicov.cinc	-1.57	-15.32	-9.18	-15.56	1.92
nodeocov.cinc	-1.27	-4.50	-3.29	-0.70	-4.90
nodeifactor.intra	0.39	-1.39	-3.44	1.50*	0.67
edgecov.alliances	0.26°	0.07	0.09	0.30*	0.13
edgecov.vdem	0.73	-2.02°	-2.55*	-1.02	0.98
edgecov.UN	-0.14	1.71°	-1.36	-0.76	0.58
GOF	1.00	0.98	1.00	0.98	0.96

Years	1958–1960	1959–1961	1960–1962	1961–1963	1962–1964
edges	-22.79***	-19.11***	-22.17***	-24.83***	-17.26***
gwodeg.fixed.1	-2.79***	-3.15***	-2.43***	-2.72***	-3.11***
gwideg.fixed.0.25	3.46***	3.47**	4.63**	3.77**	3.75**
gwnsp.fixed.0.5	-0.08	-0.09°	0.04	-0.01	0.04
edgecov.path.dep	0.05***	0.04***	0.12***	0.09***	0.12***
nodecov.gdp	0.51***	0.42**	0.49**	0.56***	0.38**
nodeicov.cinc	3.74	10.03	-9.30	-14.69	-11.56
nodeocov.cinc	-0.93	1.85	-1.17	-1.90	-3.61
nodeifactor.intra	0.74	0.66	-0.35	-0.25	-0.57
edgecov.alliances	0.02	0.14	0.05	0.19*	0.02
edgecov.vdem	-0.42	-1.58*	-1.72°	-1.74*	-2.35**
edgecov.UN	0.90	0.18	0.02	1.00	0.16
GOF	0.89	0.91	0.97	0.96	0.98

Years	1963–1965	1964–1966	1965–1967	1966–1968	1967–1969
edges	-16.01*	-11.85**	-17.68**	-25.58***	-19.54***
gwodeg.fixed.1	-3.47***	-3.59***	-2.86***	-2.37***	-2.72***
gwideg.fixed.0.25	7.04**	3.05*	3.34*	3.10*	4.09***
gwnsp.fixed.0.5	-0.25*	-0.04	-0.01	-0.12	-0.02
edgecov.path.dep	0.26***	0.12***	0.20***	0.20***	0.12***
nodecov.gdp	0.31	0.24*	0.36*	0.59**	0.40**
nodeicov.cinc	4.98	4.49	-20.16	-20.27	-7.92
nodeocov.cinc	-4.66	-5.73°	-8.09°	-8.31*	-5.42.
nodeifactor.intra	-0.08	0.07	-0.37	0.60	0.44
edgecov.alliances	0.10	0.14	0.23°	-0.23	0.05
edgecov.vdem	-1.26	-1.03°	-1.62°	-1.28	-0.55
edgecov.UN	0.39	0.07	0.95	0.45	1.42*
GOF	1.00	0.97	0.93	0.91	0.97

Years	1968–1970	1969–1971	1970–1972	1971–1973	1972–1974
edges	-15.84***	-13.52***	-18.55***	-22.57***	-27.41***
gwodeg.fixed.1	-2.58***	-3.14***	-2.21***	-2.75***	-2.08***
gwideg.fixed.0.25	2.79**	2.15**	3.28**	2.96***	3.14**
gwnsp.fixed.0.5	-0.08°	-0.06°	-0.11°	-0.06	-0.04
edgecov.path.dep	0.09***	0.11***	0.16***	0.12***	0.08***
nodecov.gdp	0.30**	0.25**	0.39**	0.48***	0.61***
nodeicov.cinc	-0.82	2.26	-23.90°	-25.90**	-44.77**
nodeocov.cinc	-0.01	-1.52	-1.30	-5.86*	-6.29.
nodeifactor.intra	0.47	0.13	-0.53	0.31	0.59.
edgecov.alliances	0.07	0.15°	0.07	0.16°	0.12
edgecov.vdem	-0.50	0.48	-0.91	-0.64	-0.58
edgecov.UN	1.70*	0.96°	0.73	1.75*	1.05
GOF	0.95	0.91	0.97	0.92	0.95

Years	1973–1975	1974–1976	1975–1977	1976–1978	1977–1979
edges	-11.89**	-9.70**	-9.19**	-10.55***	-10.70***
gwodeg.fixed.1	-3.00***	-3.70***	-3.62***	-3.49***	-2.47***
gwideg.fixed.0.25	2.26**	1.61*	2.34*	2.02**	2.71**
gwnsp.fixed.0.5	-0.12**	-0.10*	-0.03	-0.05	-0.03
edgecov.path.dep	0.07***	0.08***	0.13***	0.08***	0.12***
nodecov.gdp	0.21*	0.16°	0.13	0.17*	0.17*
nodeicov.cinc	0.04	-9.16	3.47	1.61	4.29
nodeocov.cinc	1.76	-0.42	-0.72	-1.62	2.94
nodeifactor.intra	0.64*	0.29	0.42	0.24	0.56.
edgecov.alliances	0.08	0.27***	0.09	0.09	0.16
edgecov.vdem	0.02	0.28	0.66	0.51	0.48
edgecov.UN	0.74	0.74	0.43	0.87	0.09
GOF	0.93	0.95	0.97	0.94	0.98

Years	1978–1980	1979–1981	1980–1982	1981–1983	1982–1984
edges	-15.32***	-11.90***	-11.56***	-14.01***	-12.45***
gwodeg.fixed.1	-2.54***	-2.77***	-2.46***	-2.34***	-2.66***
gwideg.fixed.0.25	3.36**	1.49*	1.40°	1.31	2.10*
gwnsp.fixed.0.5	-0.06*	-0.03	-0.05	-0.07*	-0.09**
edgecov.path.dep	0.13***	0.08***	0.11***	0.13***	0.08***
nodecov.gdp	0.31***	0.23**	0.21**	0.27**	0.23*
nodeicov.cinc	2.69	-5.45	-12.60	-17.70°	1.80
nodeocov.cinc	-2.93	-0.40	1.62	-1.75	-2.59
nodeifactor.intra	-0.14	0.11	0.38°	0.37	-0.00
edgecov.alliances	0.09	0.18*	0.10	-0.03	0.11
edgecov.vdem	-0.44	-0.10	0.07	0.42	0.50
edgecov.UN	0.49	0.11	0.10	0.03	0.15
GOF	0.94	0.94	0.94	0.92	0.96

Years	1983–1985	1984–1986	1985–1987	1986–1988	1987–1989
edges	-9.44**	-11.25***	-12.24***	-11.48***	-3.85
gwodeg.fixed.1	-2.95***	-2.49***	-2.69***	-3.13***	-3.46***
gwideg.fixed.0.25	1.58°	2.74**	1.76	2.52**	0.43
gwnsp.fixed.0.5	-0.05°	-0.03	-0.04	-0.03	-0.07*
edgecov.path.dep	0.08***	0.10***	0.07***	0.08***	0.10***
nodecov.gdp	0.16*	0.19*	0.23**	0.22**	0.02
nodeicov.cinc	7.50	7.20	6.26	2.90	11.87.
nodeocov.cinc	-0.80	-0.56	-2.75	-3.63	-0.28
nodeifactor.intra	0.47°	0.30	0.54*	0.68*	0.42
edgecov.alliances	0.17*	0.21**	0.18*	0.20*	0.13
edgecov.vdem	-0.40	-0.77°	-0.42	-0.68°	-0.88.
edgecov.UN	-0.16	0.08	-0.17	-0.48	-0.36
GOF	0.98	0.96	0.94	0.96	0.95

Years	1988–1990	1989–1991	1990–1992	1991–1993	1992–1994
edges	-11.94***	-6.27*	-4.26	-2.83	-8.16*
gwodeg.fixed.1	-2.11***	-3.05***	-2.90***	-3.15***	-2.53***
gwideg.fixed.0.25	2.03°	1.59°	0.19	0.77	1.70*.
gwnsp.fixed.0.5	-0.12***	-0.02	-0.06	-0.01	-0.03
edgecov.path.dep	0.12***	0.10***	0.12***	0.13***	0.11***
nodecov.gdp	0.22*	0.10	0.04	-0.01	0.12
nodeicov.cinc	11.50	8.07	0.20	10.41	10.01
nodeocov.cinc	4.62	-0.78	4.47	1.59	1.59
nodeifactor.intra	0.09	-0.48°	0.12	0.28	0.58*
edgecov.alliances	0.10	0.17*	0.10	0.14°	0.12
edgecov.vdem	-1.07*	-1.05*	-0.42	-1.70**	-1.28**
edgecov.UN	-0.17	-0.60	-0.26	0.03	0.03
GOF	0.97	0.97	0.97	0.96	0.96

Years	1993–1995	1994–1996	1995–1997	1996–1998	1997– 1999
edges	-2.70	-4.18	-10.69***	-4.70	-6.43**
gwodeg.fixed.1	-2.91***	-2.81***	-2.75***	-3.21***	-3.09***
gwideg.fixed.0.25	0.54	0.99	0.71	0.47	-0.08
gwnsp.fixed.0.5	-0.06°	-0.01	-0.03	-0.05	-0.06*
edgecov.path.dep	0.16***	0.14***	0.10***	0.10***	0.08***
nodecov.gdp	-0.03	0.03	0.18*	0.04	0.11.
nodeicov.cinc	10.20	-3.80	-8.24	-1.39	0.07
nodeocov.cinc	6.11°	3.00	2.37	-1.32	-0.19
nodeifactor.intra	0.75**	0.62*	0.51*	0.80**	0.42.
edgecov.alliances	0.11	0.01	-0.04	-0.05	-0.01
edgecov.vdem	-0.97°	-0.41	-0.87*	-0.82°	-1.49***
edgecov.UN	0.38	-0.66	1.06	0.30	-0.21
GOF	0.97	0.96	0.95	0.94	0.93

Years	1998–2000	1999–2001	2000–2002	2001–2003	2002–2004
edges	-10.72***	-10.04***	-10.89***	-9.28***	-12.58***
gwodeg.fixed.1	-3.05***	-3.30***	-2.92***	-2.73***	-2.08***
gwideg.fixed.0.25	0.68	0.32	0.31	0.13	0.37
gwnsp.fixed.0.5	-0.11***	-0.09***	-0.06**	-0.06**	-0.07*
edgecov.path.dep	0.09***	0.05***	0.09***	0.07***	0.14***
nodecov.gdp	0.19**	0.19**	0.21**	0.16*	0.22**
nodeicov.cinc	2.06	6.15	3.14	8.07°	1.26
nodeocov.cinc	1.44	2.49	1.79	3.33	2.24
nodeifactor.intra	0.60*	0.42°	0.44°	0.10	0.35
edgecov.alliances	0.10	-0.03	0.05	0.09	0.14*
edgecov.vdem	-1.74***	-1.57***	-1.68***	-1.12**	-0.83.
edgecov.UN	0.87	0.79	0.25	0.46	0.62
GOF	0.98	0.96	0.96	0.97	0.97

Years	2003–2005	2004–2006	2005–2007	2006–2008	2007–2009
edges	-6.25*	-11.01***	-14.48***	-6.13*	-10.69***
gwodeg.fixed.1	-3.19***	-2.65***	-2.96***	-3.24***	-3.19***
gwideg.fixed.0.25	0.36	0.45	1.19*	0.27	1.39*
gwnsp.fixed.0.5	-0.02	-0.09***	-0.02	-0.01	-0.08***
edgecov.path.dep	0.10***	0.14***	0.14***	0.10***	0.10***
nodecov.gdp	0.09	0.18**	0.30***	0.08	0.21**
nodeicov.cinc	2.40	5.00	-0.67	2.69	5.73
nodeocov.cinc	2.65	2.66	-3.09	-0.77	0.13
nodeifactor.intra	0.07	0.23	0.05	0.19	0.03
edgecov.alliances	0.08	0.03	0.06	-0.01	0.02
edgecov.vdem	-1.66***	-1.61***	-1.40**	-1.25**	-1.74***
edgecov.UN	-0.24	1.59*	-0.31	0.16	-0.38
GOF	0.99	0.97	0.97	0.98	0.95

Years	2008–2010	2009–2011	2010–2012	2011–2013	2012–2014
edges	-8.22***	-12.75***	-14.10***	-13.61***	-16.37***
gwodeg.fixed.1	-3.55***	-3.60***	-3.87***	-3.51***	-3.23***
gwideg.fixed.0.25	0.33	1.45*	1.74*	1.14°	1.17*
gwnsp.fixed.0.5	-0.06**	-0.05*	-0.03°	-0.04*	-0.04.
edgecov.path.dep	0.08***	0.12***	0.10***	0.08***	0.11***
nodecov.gdp	0.15*	0.25***	0.28***	0.28***	0.34***
nodeicov.cinc	0.40	1.58	4.40	1.11	-0.72
nodeocov.cinc	0.94	0.37	-0.57	-2.51	-3.20
nodeifactor.intra	0.11	0.10	0.02	-0.13	-0.05
edgecov.alliances	0.08	-0.07	0.08	0.00	-0.01
edgecov.vdem	-1.49***	-1.18**	-1.74***	-0.75*	-0.62.
edgecov.UN	0.08	-0.05	0.51	-0.27	-0.36
GOF	0.92	0.96	0.96	0.95	0.97

Years	2013–2015	2014–2016	2015–2017	2016–2018	2017–2019
edges	-15.69***	-12.38***	-12.85***	-13.18***	-13.24***
gwodeg.fixed.1	-3.01***	-3.24***	-3.10***	-2.93***	-3.33***
gwideg.fixed.0.25	0.60	1.23*	0.86	1.13°	0.90
gwnsp.fixed.0.5	-0.07***	-0.07**	-0.06**	-0.06*	-0.04.
edgecov.path.dep	0.13***	0.12***	0.12***	0.17***	0.11***
nodecov.gdp	0.31***	0.23***	0.25***	0.24**	0.26***
nodeicov.cinc	0.26	1.39	-3.84	-11.72	-2.09
nodeocov.cinc	-0.49	2.80°	0.89	-1.37	-1.79
nodeifactor.intra	0.40°	0.31	0.46*	0.10	0.26
edgecov.alliances	0.13*	0.08	0.06	0.09	0.05
edgecov.vdem	-0.19	-0.31	-0.57	-0.28	-0.67
edgecov.UN	-0.09	-0.02	-0.10	0.20	0.07
GOF	0.96	0.95	0.95	0.95	0.97

Years	2018–2020	2019–2021	2020–2022	2021–2023	2022–2024
edges	-11.17***	-12.11***	-13.05***	-12.49***	-11.04***
gwodeg.fixed.1	-3.67***	-3.38***	-2.80***	-3.04***	-2.81***
gwideg.fixed.0.25	1.30*	1.93**	0.52	0.85	1.32.
gwnsp.fixed.0.5	-0.02	-0.05°	-0.02	-0.03	-0.11**
edgecov.path.dep	0.10***	0.14***	0.11***	0.12***	0.18***
nodecov.gdp	0.23**	0.21**	0.26***	0.26***	0.21**
nodeicov.cinc	-0.45	-2.37	-11.05°	-18.18**	-28.65***
nodeocov.cinc	-2.65	-1.48	-2.73	-1.61	-0.84
nodeifactor.intra	0.40°	0.53*	0.18	0.37°	0.24
edgecov.alliances	0.06	0.05	0.10*	0.01	0.05
edgecov.vdem	-2.11***	-1.72***	-0.40	-0.55	-0.64
edgecov.UN	-0.56	1.20°	-0.28	-0.82	-0.48
GOF	0.97	0.97	0.88	0.90	0.93

A.3 tERGM Covariates and Goodness of Fit

Table A.3 provides the btERGM covariates' estimates and goodness of fit. A p-value ≤ 0.1 is indicated by °, $p \leq 0.05$ by *, $p \leq 0.01$ by **, and $p \leq 0.001$ by ***. The goodness-of-fit for all models was assessed by simulating networks from the estimated ERGMs and computing the Receiver Operating Characteristic Area Under the Curve (ROC AUC score), which measures how well the model predicts the presence or absence of ties.

Table A.3: btERGM Covariates and Goodness of Fit

Years	1953–1955	1954–1956	1955–1957	1956–1958	1957–1959
edges	-9.44***	-8.78*	-15.16***	-14.53***	-18.04***
gwodeg.fixed.1	-3.95***	-3.80***	-3.63***	-3.66***	-3.65***
gwideg.fixed.0.25	1.75***	1.45**	2.20°	1.46°	2.08**
gwnsp.fixed.0.5	-0.05	-0.07*	-0.07*	-0.05°	-0.03.
edgecov.path.dep	0.02***	0.02***	0.02***	0.02***	0.02***
nodecov.gdp	0.17**	0.16°	0.34***	0.31***	0.40***
nodeicov.cinc	-0.93	-0.03	-5.01**	-6.04	-10.25**
nodeocov.cinc	0.84	2.55***	2.15***	3.03***	0.85
nodeifactor.intra	0.41***	0.27	0.17	0.74	0.88**
edgecov.alliances	0.83***	0.67***	0.54***	0.59***	0.56***
edgecov.vdem	-0.11	-0.21	-1.16***	-1.28***	-1.23***
edgecov.UN	0.35	0.52	0.49***	0.65***	0.87**
GOF	0.94	0.94	0.95	0.96	0.95

Years	1958–1960	1959–1961	1960–1962	1961–1963	1962–1964
edges	-17.70***	-15.91***	-16.69***	-15.85***	-16.13***
gwodeg.fixed.1	-3.60***	-3.60***	-3.58***	-4.04***	-3.86***
gwideg.fixed.0.25	1.62**	1.70***	1.77***	1.12***	1.12*
gwnsp.fixed.0.5	-0.04*	-0.08***	-0.06*	-0.06**	-0.05*
edgecov.path.dep	0.01**	0.01***	0.01***	0.01*	0.02**
nodecov.gdp	0.40***	0.36***	0.38***	0.37***	0.37***
nodeicov.cinc	-5.49	1.22	1.90	2.02	-0.59
nodeocov.cinc	0.25	1.43*	1.49***	1.14***	-0.20
nodeifactor.intra	0.92***	0.65***	0.56***	0.49***	0.42***
edgecov.alliances	0.57***	0.53***	0.59***	0.64***	0.76***
edgecov.vdem	-0.81***	-1.15***	-1.34***	-1.53***	-1.32***
edgecov.UN	0.56*	0.39	0.16°	0.13**	-0.05
GOF	0.93	0.93	0.93	0.94	0.95

Years	1963–1965	1964–1966	1965–1967	1966–1968	1967–1969
edges	-16.17***	-14.61***	-11.82***	-15.12***	-15.57***
gwodeg.fixed.1	-3.85***	-4.00***	-4.02***	-3.82***	-3.80***
gwideg.fixed.0.25	1.00***	1.48**	0.94***	1.05*	0.78*
gwnsp.fixed.0.5	-0.08***	-0.06***	-0.07***	-0.09***	-0.08***
edgecov.path.dep	0.04***	0.03***	0.02**	0.02***	0.01***
nodecov.gdp	0.37***	0.33***	0.26***	0.35***	0.35***
nodeicov.cinc	-1.11	-1.58	2.87	2.35	0.45
nodeocov.cinc	-0.59	-1.43°	0.85**	-1.09	-1.44*
nodeifactor.intra	0.31***	0.42***	0.39**	0.49***	0.49***
edgecov.alliances	0.72***	0.74***	0.73***	0.70***	0.64***
edgecov.vdem	-1.03***	-0.67***	-0.85***	-0.74***	-0.51.
edgecov.UN	-0.14	-0.15*	0.01	0.05	0.20**
GOF	0.96	0.94	0.94	0.93	0.93

Years	1968–1970	1969–1971	1970–1972	1971–1973	1972–1974
edges	-13.73***	-14.18***	-14.18***	-17.45***	-16.50***
gwodeg.fixed.1	-4.11***	-4.15***	-3.95***	-3.72***	-3.78***
gwideg.fixed.0.25	0.88**	0.38	0.73	0.86**	0.70
gwnsp.fixed.0.5	-0.07***	-0.06***	-0.09***	-0.10***	-0.11***
edgecov.path.dep	0.01***	0.01***	0.01***	0.01***	0.01***
nodecov.gdp	0.31***	0.31***	0.31***	0.40***	0.38***
nodeicov.cinc	-0.16	0.18	5.03***	0.05	0.46
nodeocov.cinc	-1.33**	-0.48	0.68	-1.24	-0.85*
nodeifactor.intra	0.48***	0.27***	0.20*	0.09	0.19*
edgecov.alliances	0.62***	0.66***	0.67***	0.75***	0.71***
edgecov.vdem	-0.50*	-0.09	-0.23*	-0.09	-0.23***
edgecov.UN	0.09	0.26*	0.42**	0.31**	0.05
GOF	0.92	0.93	0.92	0.93	0.93

Years	1973–1975	1974–1976	1975–1977	1976–1978	1977–1979
edges	-14.27***	-13.24***	-14.21***	-15.50***	-14.26***
gwodeg.fixed.1	-3.92***	-3.95***	-4.16***	-4.17***	-4.02***
gwideg.fixed.0.25	0.22	0.53	0.86*	0.65	0.93*
gwnsp.fixed.0.5	-0.09***	-0.10***	-0.08***	-0.08***	-0.07***
edgecov.path.dep	0.01***	0.01***	0.02***	0.02***	0.01***
nodecov.gdp	0.32***	0.29***	0.31***	0.34***	0.31***
nodeicov.cinc	-1.70	-0.77	-1.31	-0.05	2.03***
nodeocov.cinc	-0.19	0.01	-1.79	-2.34***	-2.63***
nodeifactor.intra	0.30***	0.37***	0.43***	0.31**	0.33***
edgecov.alliances	0.71***	0.65***	0.48***	0.45***	0.48***
edgecov.vdem	-0.02	0.11	0.23*	0.35**	0.23*
edgecov.UN	-0.25*	-0.24**	0.03	0.28°	0.25
GOF	0.92	0.93	0.93	0.93	0.92

Years	1978–1980	1979–1981	1980–1982	1981–1983	1982–1984
edges	-15.68***	-14.00***	-14.31***	-14.69***	-14.27***
gwodeg.fixed.1	-3.80***	-3.86***	-3.86***	-3.65***	-3.67***
gwideg.fixed.0.25	0.63	0.16	0.34	0.89	0.37
gwnsp.fixed.0.5	-0.09***	-0.10***	-0.12***	-0.12***	-0.12***
edgecov.path.dep	0.01**	0.01***	0.01**	0.01***	0.02***
nodecov.gdp	0.35***	0.32***	0.33***	0.33***	0.32***
nodeicov.cinc	1.54***	2.13***	1.56*	0.54	2.83*
nodeocov.cinc	-2.11***	-1.35*	-1.61	-2.35***	-2.02***
nodeifactor.intra	0.23**	0.31***	0.23*	0.07	0.02
edgecov.alliances	0.55***	0.57***	0.50***	0.44***	0.42***
edgecov.vdem	0.19	-0.00	0.01	0.07	0.17**
edgecov.UN	0.03	-0.17***	-0.12*	-0.10°	-0.16
GOF	0.91	0.91	0.91	0.92	0.92

Years	1983–1985	1984–1986	1985–1987	1986–1988	1987–1989
edges	-13.18***	-13.36***	-13.34***	-12.65***	-13.97***
gwodeg.fixed.1	-3.63***	-3.51***	-3.44***	-3.53***	-3.54***
gwideg.fixed.0.25	0.32	0.30	0.25	-0.24	0.15
gwnsp.fixed.0.5	-0.11***	-0.10***	-0.09***	-0.07***	-0.07***
edgecov.path.dep	0.02***	0.01***	0.01***	0.01***	0.02***
nodecov.gdp	0.29***	0.29***	0.29***	0.28***	0.31***
nodeicov.cinc	6.82***	7.86***	8.26***	7.93***	6.41***
nodeocov.cinc	-0.73*	-1.10***	-1.18**	-0.17	-1.39
nodeifactor.intra	0.10	0.20*	0.40***	0.48***	0.43**
edgecov.alliances	0.46***	0.51***	0.49***	0.53***	0.50***
edgecov.vdem	0.05	0.01	-0.07	-0.18	-0.36***
edgecov.UN	-0.29***	-0.38***	-0.44***	-0.60***	-0.78***
GOF	0.93	0.93	0.93	0.93	0.93

Years	1988–1990	1989–1991	1990–1992	1991–1993	1992–1994
edges	-12.05***	-12.92***	-10.66***	-10.76***	-11.69***
gwodeg.fixed.1	-3.57***	-3.44***	-3.54***	-3.33***	-3.24***
gwideg.fixed.0.25	0.33	0.27	-0.42	-0.68***	-0.34
gwnsp.fixed.0.5	-0.09***	-0.08***	-0.06***	-0.05***	-0.06***
edgecov.path.dep	0.02***	0.03***	0.02***	0.02***	0.02***
nodecov.gdp	0.27***	0.30***	0.24***	0.23***	0.25***
nodeicov.cinc	7.15***	3.54**	0.83	0.09	3.38***
nodeocov.cinc	-1.45°	-3.95***	-0.99*	-0.76	2.73.
nodeifactor.intra	0.07	-0.12**	0.03	0.09	0.33***
edgecov.alliances	0.45***	0.40***	0.49***	0.64***	0.68***
edgecov.vdem	-0.61***	-0.78***	-0.69***	-0.50**	-0.77***
edgecov.UN	-0.64***	-0.61***	-0.56***	-0.45***	-0.32*
GOF	0.93	0.93	0.92	0.92	0.91

Years	1993–1995	1994–1996	1995–1997	1996–1998	1997–1999
edges	-11.58***	-11.86***	-11.18***	-10.65***	-10.00***
gwodeg.fixed.1	-3.21***	-3.44***	-3.60***	-3.75***	-4.04***
gwideg.fixed.0.25	-0.28	-0.22	-0.26°	-0.53	-0.64
gwnsp.fixed.0.5	-0.07***	-0.07***	-0.07***	-0.08***	-0.08***
edgecov.path.dep	0.02***	0.02***	0.02***	0.01***	0.01***
nodecov.gdp	0.24***	0.25***	0.25***	0.23***	0.22***
nodeicov.cinc	3.78***	0.97	0.77	1.49	3.91*
nodeocov.cinc	3.71***	2.54°	1.77*	1.35*	1.17***
nodeifactor.intra	0.45***	0.43***	0.28***	0.39***	0.38***
edgecov.alliances	0.56***	0.36***	0.20***	0.25***	0.17*
edgecov.vdem	-0.84***	-0.93***	-1.08***	-1.00***	-1.38***
edgecov.UN	-0.13***	-0.22*	-0.42***	-0.48***	-0.30***
GOF	0.90	0.90	0.90	0.89	0.88

Years	1998–2000	1999–2001	2000–2002	2001–2003	2002–2004
edges	-9.29***	-8.78***	-9.73***	-10.52***	-10.96***
gwodeg.fixed.1	-3.96***	-3.99***	-3.77***	-3.71***	-3.29***
gwideg.fixed.0.25	-0.57°	-0.76**	-0.71*	-0.67	-0.56
gwnsp.fixed.0.5	-0.09***	-0.08***	-0.08***	-0.05***	-0.06***
edgecov.path.dep	0.01***	0.01***	0.01**	0.01**	0.02***
nodecov.gdp	0.20***	0.19***	0.21***	0.23***	0.24***
nodeicov.cinc	6.51***	7.85***	7.62***	4.49*	2.59.
nodeocov.cinc	2.04***	2.59***	3.38***	3.00***	1.19*
nodeifactor.intra	0.48***	0.36***	0.43***	0.32***	0.37***
edgecov.alliances	0.26***	0.23***	0.37***	0.34***	0.41***
edgecov.vdem	-1.50***	-1.47***	-1.51***	-1.59***	-1.61***
edgecov.UN	-0.25***	-0.28**	-0.57**	-0.68**	-0.87***
GOF	0.87	0.87	0.87	0.89	0.89

Years	2003–2005	2004–2006	2005–2007	2006–2008	2007–2009
edges	-12.38***	-11.87***	-11.54***	-8.88***	-8.72***
gwodeg.fixed.1	-3.35***	-3.35***	-3.45***	-3.60***	-3.83***
gwideg.fixed.0.25	-0.23	-0.11	-0.15	-0.53	-0.59
gwnsp.fixed.0.5	-0.07***	-0.09***	-0.08***	-0.07***	-0.08***
edgecov.path.dep	0.02***	0.02***	0.02***	0.02***	0.01***
nodecov.gdp	0.28***	0.27***	0.26***	0.20***	0.20***
nodeicov.cinc	2.02***	2.96*	2.08°	3.46***	5.22***
nodeocov.cinc	-0.36	0.17	0.27	1.82***	2.09***
nodeifactor.intra	0.32***	0.26***	0.34***	0.42***	0.30***
edgecov.alliances	0.42***	0.37***	0.30***	0.30***	0.27***
edgecov.vdem	-1.50***	-1.59***	-1.66***	-1.80***	-1.79***
edgecov.UN	-0.83***	-0.89***	-1.02***	-1.19***	-1.24***
GOF	0.91	0.90	0.90	0.90	0.90

Years	2008–2010	2009–2011	2010–2012	2011–2013	2012–2014
edges	-9.64***	-10.35***	-12.56***	-13.02***	-13.38***
gwodeg.fixed.1	-3.96***	-4.27***	-4.38***	-4.21***	-4.22***
gwideg.fixed.0.25	-0.56	-0.70°	-0.48	-0.38	-0.37
gwnsp.fixed.0.5	-0.08***	-0.07***	-0.05***	-0.06***	-0.07***
edgecov.path.dep	0.01***	0.01***	0.01***	0.01***	0.01***
nodecov.gdp	0.22***	0.24***	0.29***	0.30***	0.30***
nodeicov.cinc	5.37***	3.82**	1.74°	1.70*	2.13*
nodeocov.cinc	2.23***	1.57°	0.07	-1.16*	-1.05
nodeifactor.intra	0.26***	0.18***	0.09**	0.12	0.20**
edgecov.alliances	0.29***	0.30***	0.25***	0.31***	0.24***
edgecov.vdem	-1.70***	-1.49***	-1.39***	-1.14***	-0.96***
edgecov.UN	-1.24***	-1.24***	-0.93***	-0.97***	-0.81***
GOF	0.89	0.90	0.91	0.91	0.90

Years	2013–2015	2014–2016	2015–2017	2016–2018	2017–2019
edges	-14.83***	-13.37***	-13.94***	-12.92***	-14.09***
gwodeg.fixed.1	-3.92***	-3.85***	-3.35***	-3.63***	-3.77***
gwideg.fixed.0.25	-0.24	-0.41**	-0.25	-0.52	-0.32
gwnsp.fixed.0.5	-0.09***	-0.09***	-0.07***	-0.05***	-0.04***
edgecov.path.dep	0.01***	0.01***	0.02***	0.02***	0.01**
nodecov.gdp	0.34***	0.30***	0.33***	0.30***	0.33***
nodeicov.cinc	1.94***	3.16***	-1.26	-1.51	-2.41*
nodeocov.cinc	-0.53	1.33*	-0.06	0.15	-0.92***
nodeifactor.intra	0.27***	0.24***	0.26**	0.14***	0.23**
edgecov.alliances	0.31***	0.29***	0.28***	0.28***	0.31***
edgecov.vdem	-0.82***	-0.87***	-1.29***	-1.24***	-1.44***
edgecov.UN	-0.84***	-0.98***	-1.86***	-1.54***	-1.51***
GOF	0.89	0.89	0.90	0.89	0.89

Years	2018–2020	2019–2021	2020–2022	2021–2023	2022–2024
edges	-12.33***	-12.58***	-12.89***	-14.39***	-16.81***
gwodeg.fixed.1	-3.88***	-3.78***	-3.54***	-3.51***	-3.19***
gwideg.fixed.0.25	-0.06	-0.10	-0.53°	-0.50	-0.46
gwnsp.fixed.0.5	-0.03***	-0.03***	-0.02***	-0.02**	-0.03***
edgecov.path.dep	0.01***	0.01***	0.01***	0.01***	0.01***
nodecov.gdp	0.30***	0.30***	0.31***	0.33***	0.38***
nodeicov.cinc	-2.25***	-1.25	-5.71	-11.52*	-17.48***
nodeocov.cinc	-1.94***	-0.47	-1.01	-0.92	-2.25***
nodeifactor.intra	0.22°	0.40**	0.26**	0.43***	0.28***
edgecov.alliances	0.41***	0.47***	0.40***	0.31***	0.29***
edgecov.vdem	-1.49***	-1.62***	-1.55***	-1.18***	-0.64**
edgecov.UN	-1.98***	-2.19***	-2.12***	-1.11*	-0.58***
GOF	0.88	0.89	0.88	0.88	0.89

A.4 Country Network Participation

Table A.4: Years Countries were Present in the Network

Country	Years Present
Afghanistan	1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 2002, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021
Albania	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1995, 2003, 2005, 2007, 2011, 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2020, 2021, 2023, 2024
Algeria	1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Angola	1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2022, 2023, 2024

Country	Years Present
Antigua and Barbuda	2022
Argentina	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Armenia	1993, 1994, 1995, 1996, 1999, 2004, 2006, 2007, 2009, 2010, 2011, 2013, 2016, 2017, 2019, 2021, 2022, 2023, 2024
Australia	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Austria	1953, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Azerbaijan	1993, 1994, 2000, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2022, 2023, 2024
Bahamas	1978, 1986, 1990, 1991, 2000, 2005, 2009, 2014, 2015, 2016, 2017
Bahrain	1971, 1972, 1973, 1974, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Bangladesh	1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Barbados	1981, 1984, 2007, 2008, 2009

Country	Years Present
Belarus	1993, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Belgium	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Belize	1984, 1996, 2000, 2016, 2023
Benin	1961, 1962, 1964, 1966, 1970, 1971, 1973, 1978, 1979, 1982, 1983, 1984, 1985, 1987, 1988, 1989, 2002, 2007, 2009, 2010, 2011, 2012, 2013, 2016, 2022, 2023, 2024
Bhutan	1968, 2004, 2015, 2016, 2021
Bolivia	1951, 1954, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1985, 1986, 1988, 1989, 1991, 1992, 1993, 1994, 1995, 1999, 2000, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2016, 2017, 2018, 2019, 2020, 2024
Bosnia-Herzegovina	1993, 1994, 1996, 1997, 1998, 1999, 2002, 2011, 2013, 2017, 2019, 2020, 2021, 2022, 2023

Country	Years Present
Botswana	1977, 1978, 1979, 1980, 1981, 1985, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1995, 1996, 1997, 2000, 2001, 2002, 2003, 2004, 2009, 2010, 2012, 2013, 2016, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Brazil	1951, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Brunei	1965, 1966, 1967, 1968, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1978, 1979, 1981, 1982, 1983, 1984, 1986, 1990, 1991, 1996, 1997, 1998, 1999, 2001, 2002, 2003, 2004, 2005, 2006, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2021, 2023, 2024
Bulgaria	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Burkina Faso	1961, 1964, 1965, 1966, 1968, 1969, 1970, 1971, 1975, 1976, 1977, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1988, 1991, 1993, 1999, 2005, 2006, 2007, 2009, 2010, 2011, 2012, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Burundi	1966, 1967, 1969, 1973, 1980, 1981, 1982, 1983, 1984, 1998, 2001, 2002, 2009, 2010, 2012, 2015, 2016, 2019
Cabo Verde	1976, 1979, 1982, 1992, 1998, 2000, 2009, 2012, 2019
Cambodia	1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1978, 1980, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1993, 1994, 1995, 1996, 1997, 2006, 2007, 2009, 2010, 2012, 2013, 2018, 2019, 2021, 2022, 2023
Cameroon	1961, 1963, 1964, 1965, 1966, 1967, 1968, 1971, 1972, 1973, 1976, 1977, 1979, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1992, 1996, 1997, 1998, 1999, 2001, 2002, 2005, 2006, 2008, 2010, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

Country	Years Present
Canada	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Central African Republic	1961, 1965, 1966, 1968, 1971, 1973, 1978, 1980, 1981, 1982, 1983, 1984, 1985, 1988, 1992, 2006, 2008, 2011, 2018, 2020, 2021, 2022, 2023
Chad	1960, 1961, 1965, 1971, 1973, 1974, 1975, 1976, 1977, 1980, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1994, 1995, 1998, 1999, 2001, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Chile	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
China	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Colombia	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Comoros	1977, 1981, 1987, 2008, 2012
Congo	1960, 1961, 1963, 1965, 1968, 1969, 1970, 1971, 1972, 1974, 1975, 1978, 1979, 1980, 1981, 1983, 1984, 1985, 1988, 1989, 1990, 1991, 1997, 1998, 1999, 2000, 2003, 2005, 2006, 2007, 2009, 2010, 2012, 2013, 2014, 2015, 2018, 2021
Costa Rica	1955, 1956, 1963, 1966, 1969, 1973, 1975, 1978, 1979, 1980, 1984, 1985, 1986, 1989, 1993, 2008, 2009, 2018, 2019

Country	Years Present
Cote d'Ivoire	1961, 1962, 1963, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1974, 1977, 1978, 1979, 1980, 1981, 1984, 1989, 1992, 1995, 1997, 1999, 2000, 2002, 2003, 2004, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
Croatia	1991, 1992, 1993, 1994, 1995, 1996, 1997, 2000, 2001, 2002, 2003, 2004, 2007, 2008, 2009, 2010, 2011, 2012, 2014, 2015, 2016, 2017, 2018, 2019, 2022, 2023, 2024
Cuba	1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 2004
Cyprus	1964, 1965, 1973, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2010, 2011, 2012, 2017, 2019, 2020, 2021, 2023, 2024
Czechia	1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Czechoslovakia	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992

Country	Years Present
DR Congo	1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1990, 1996, 1997, 1998, 1999, 2000, 2002, 2005, 2006, 2009, 2010, 2012, 2013, 2015, 2016, 2018, 2020, 2023, 2024
Denmark	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Djibouti	1977, 1978, 1979, 1980, 1981, 1982, 1983, 1985, 1986, 1987, 1991, 1992, 1993, 1995, 2000, 2002, 2005, 2012, 2013, 2014, 2015, 2016, 2019, 2020, 2021, 2022, 2023
Dominican Republic	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1975, 1976, 1980, 1981, 1982, 1984, 1985, 1988, 1996, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2009, 2010, 2011, 2015, 2016, 2017, 2020, 2022, 2023, 2024

Country	Years Present
East Germany (GDR)	1950, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990
Ecuador	1953, 1954, 1955, 1956, 1958, 1960, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Egypt	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
El Salvador	1950, 1954, 1955, 1957, 1963, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1991, 1992, 1993, 1995, 1996, 1998, 2002, 2003, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Equatorial Guinea	1978, 1980, 1982, 1999, 2001, 2004, 2005, 2006, 2007, 2008, 2009, 2011, 2012, 2013, 2014, 2018, 2021, 2024
Eritrea	1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2007
Estonia	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Ethiopia	1950, 1951, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1997, 1998, 1999, 2000, 2002, 2003, 2004, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Fiji	1975, 1976, 1984, 1990, 1992, 1994, 1995, 2017, 2020, 2024

Country	Years Present
Finland	1952, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
France	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Gabon	1961, 1964, 1965, 1966, 1968, 1969, 1970, 1971, 1973, 1974, 1975, 1976, 1977, 1978, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1990, 2004, 2006, 2007, 2010, 2011, 2012, 2013, 2015, 2016, 2019, 2021, 2023, 2024
Gambia	1981, 1989, 2004, 2009, 2022, 2023
Georgia	1993, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2011, 2013, 2014, 2016, 2017, 2018, 2019, 2022, 2023, 2024

Country	Years Present
Germany	1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Ghana	1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1972, 1973, 1974, 1975, 1976, 1978, 1979, 1980, 1981, 1985, 1987, 1989, 1990, 1991, 1994, 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2018, 2019, 2020, 2022, 2023, 2024
Greece	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Grenada	1982

Country	Years Present
Guatemala	1951, 1954, 1955, 1956, 1959, 1960, 1962, 1963, 1964, 1965, 1967, 1968, 1969, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1993, 1994, 1995, 1996, 1998, 2008, 2012, 2015, 2018, 2019, 2022, 2023
Guinea	1959, 1960, 1961, 1963, 1964, 1965, 1967, 1969, 1970, 1971, 1972, 1973, 1974, 1976, 1977, 1978, 1979, 1981, 1982, 1983, 1986, 1989, 1990, 1991, 1998, 2000, 2001, 2003, 2010, 2011, 2014, 2017, 2018, 2019, 2021, 2023, 2024
Guinea-Bissau	1974, 1975, 1976, 1978, 1979, 1980, 1981, 1984, 1986, 1988, 1990, 1991, 1993
Guyana	1968, 1971, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1983, 1984, 1985, 2001, 2002, 2008, 2018, 2019, 2021, 2023, 2024
Haiti	1950, 1952, 1956, 1957, 1960, 1964, 1969, 1973, 1974, 1975, 1976, 1977, 1978, 1981, 1982, 1983, 1985
Honduras	1951, 1952, 1954, 1956, 1957, 1958, 1959, 1962, 1965, 1966, 1969, 1973, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 2008, 2011, 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2020, 2021, 2024

Country	Years Present
Hungary	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2013, 2014, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Iceland	1960, 1968, 1975, 1980, 1993, 2011
India	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Indonesia	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Iran	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2022, 2023, 2024
Iraq	1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2022, 2023, 2024
Ireland	1950, 1953, 1956, 1958, 1960, 1963, 1964, 1971, 1972, 1973, 1974, 1975, 1977, 1978, 1979, 1980, 1981, 1982, 1984, 1985, 1986, 1988, 1991, 1994, 1998, 1999, 2000, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

Country	Years Present
Israel	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Italy	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Jamaica	1962, 1963, 1964, 1967, 1971, 1973, 1974, 1975, 1976, 1977, 1978, 1981, 1985, 1986, 1989, 1998, 1999, 2005, 2006, 2007, 2008, 2010, 2013, 2015, 2016, 2018, 2019, 2020, 2021, 2023, 2024

Country	Years Present
Japan	1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Jordan	1950, 1952, 1953, 1954, 1955, 1956, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Kazakhstan	1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Kenya	1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1989, 1990, 1991, 1993, 1994, 1997, 2000, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2024

Country	Years Present
Kosovo	2014, 2018, 2020, 2021, 2022, 2023
Kuwait	1953, 1954, 1955, 1958, 1960, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Kyrgyzstan	1995, 2003, 2004, 2005, 2006, 2007, 2008, 2015, 2016, 2017, 2018, 2019, 2021, 2022, 2023
Laos	1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1980, 1981, 1982, 1983, 1984, 1985, 1987, 1988, 1990, 1997, 1998, 1999, 2000, 2003, 2005, 2008, 2009, 2011, 2012, 2013, 2015, 2017, 2018, 2019, 2020, 2021, 2023, 2024
Latvia	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Lebanon	1950, 1952, 1953, 1954, 1955, 1957, 1958, 1959, 1961, 1962, 1963, 1965, 1966, 1967, 1968, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1980, 1981, 1982, 1983, 1984, 1985, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2002, 2005, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Lesotho	1977, 1979, 1980, 1983, 1986, 1989, 1991, 1998, 2001, 2004, 2006, 2017, 2018, 2019
Liberia	1959, 1964, 1967, 1971, 1972, 1976, 1978, 1986, 1987, 1989, 1990, 2020, 2022
Libya	1957, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1994, 1997, 1998, 1999, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2016, 2019, 2020, 2024
Lithuania	1992, 1993, 1995, 1996, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Luxembourg	1952, 1953, 1974, 1982, 1996, 1999, 2003, 2007, 2009, 2010, 2019, 2020, 2022, 2023, 2024
Madagascar	1961, 1963, 1964, 1965, 1967, 1968, 1969, 1971, 1972, 1974, 1975, 1979, 1980, 1983, 1985, 1996, 2018, 2020

Country	Years Present
Malawi	1964, 1972, 1976, 1977, 1978, 1979, 1980, 1981, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1994, 2000, 2008, 2012, 2013, 2014, 2015, 2016, 2022
Malaysia	1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
Maldives	1992, 1997, 1998, 2006, 2010, 2013, 2019, 2020, 2021, 2024
Mali	1961, 1962, 1963, 1966, 1967, 1969, 1971, 1975, 1976, 1981, 1982, 1983, 1984, 1985, 1988, 1990, 1994, 1997, 1998, 2000, 2002, 2003, 2005, 2007, 2008, 2009, 2011, 2012, 2013, 2014, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Malta	1972, 1973, 1978, 1980, 1992, 1995, 1996, 1997, 1998, 2000, 2001, 2002, 2004, 2005, 2011, 2012, 2014, 2015, 2016, 2017, 2023
Mauritania	1960, 1961, 1962, 1963, 1964, 1965, 1970, 1971, 1973, 1975, 1976, 1977, 1978, 1979, 1981, 1982, 1989, 1990, 1991, 1994, 1995, 1996, 1997, 1998, 2000, 2002, 2003, 2010, 2011, 2012, 2014, 2015, 2016, 2018, 2019, 2021, 2023, 2024

Country	Years Present
Mauritius	1968, 1971, 1974, 1979, 1990, 1993, 1996, 1997, 2004, 2014, 2016, 2017, 2021, 2022
Mexico	1951, 1953, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2023, 2024
Moldova	1992, 1994, 1995, 1997, 2000, 2001, 2002, 2003, 2005, 2006, 2007, 2008, 2009, 2011, 2023
Mongolia	1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 2008, 2010, 2011, 2012, 2015, 2019, 2021, 2022
Montenegro	2006, 2007, 2010, 2015, 2016, 2017, 2018, 2020, 2021, 2022, 2024
Morocco	1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Mozambique	1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1999, 2003, 2011, 2012, 2013, 2014, 2015, 2016, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Myanmar	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1975, 1976, 1977, 1978, 1979, 1980, 1982, 1986, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Namibia	1994, 1995, 1997, 1998, 2001, 2002, 2004, 2006, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2016, 2017, 2024
Nepal	1965, 1970, 1971, 1972, 1974, 1975, 1976, 1981, 1984, 1985, 1989, 1992, 1995, 2001, 2002, 2003, 2004, 2005, 2008, 2011, 2014, 2015, 2016, 2017, 2018, 2019, 2021
Netherlands	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
New Zealand	1950, 1951, 1952, 1953, 1955, 1956, 1957, 1958, 1960, 1961, 1962, 1963, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Nicaragua	1953, 1954, 1955, 1956, 1957, 1958, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1971, 1972, 1973, 1976, 1977, 1978, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1992, 1993, 1995, 2007, 2009, 2014, 2015, 2016, 2017, 2019
Niger	1960, 1961, 1964, 1965, 1969, 1970, 1971, 1973, 1974, 1978, 1979, 1980, 1982, 1983, 1984, 1986, 1991, 1997, 2008, 2009, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
Nigeria	1959, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 2000, 2001, 2002, 2003, 2004, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
North Korea	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2023, 2024
North Macedonia	1994, 1995, 1998, 1999, 2000, 2001, 2006, 2009, 2012, 2013, 2016, 2022, 2023, 2024
North Yemen	1950, 1952, 1955, 1957, 1958, 1961, 1963, 1967, 1968, 1969, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1988
Norway	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Oman	1959, 1960, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1993, 1994, 1995, 1996, 1997, 1998, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
Pakistan	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Panama	1964, 1968, 1969, 1970, 1971, 1972, 1973, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1988, 1989, 2019
Papua New Guinea	1975, 1977, 1978, 1981, 1982, 1984, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1994, 1996, 1997, 2014, 2017, 2018, 2021, 2023
Paraguay	1950, 1952, 1953, 1955, 1960, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1988, 1990, 1991, 1992, 1996, 2001, 2004, 2005, 2010, 2011, 2012, 2013, 2019, 2021

Country	Years Present
Peru	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Philippines	1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Poland	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Portugal	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Qatar	1968, 1969, 1970, 1971, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Romania	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Russia	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Rwanda	1962, 1964, 1965, 1971, 1972, 1973, 1974, 1975, 1977, 1983, 1984, 1985, 1986, 1988, 1989, 1990, 1991, 1992, 1996, 1997, 1998, 1999, 2000, 2006, 2007, 2008, 2009, 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2021, 2022, 2023
Saint Kitts and Nevis	1985
Saint Vincent	1987
Saudi Arabia	1950, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Senegal	1960, 1961, 1963, 1964, 1965, 1966, 1968, 1969, 1971, 1973, 1974, 1976, 1977, 1978, 1979, 1982, 1983, 1984, 1986, 1987, 1994, 1995, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Serbia	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Seychelles	1977, 1979, 1980, 1982, 1983, 1986, 1988, 1990, 1995, 2005, 2011, 2013, 2014, 2016, 2018, 2021
Sierra Leone	1973, 1976, 1978, 1980, 1983, 1984, 1987, 1992, 1994, 1995, 1997, 1999, 2006, 2011, 2012, 2013, 2015, 2016
Singapore	1956, 1965, 1966, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Slovakia	1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Slovenia	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2009, 2010, 2011, 2014, 2016, 2021, 2022, 2023, 2024
Solomon Islands	1988, 1991, 2019, 2021
Somalia	1960, 1961, 1962, 1963, 1965, 1966, 1967, 1968, 1969, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1990, 1999, 2013, 2015, 2016, 2017, 2019, 2020, 2021, 2023, 2024

Country	Years Present
South Africa	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
South Korea	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
South Sudan	2007, 2008, 2009, 2011, 2012, 2013, 2014, 2015, 2016, 2021, 2022
South Vietnam	1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974
South Yemen	1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989

Country	Years Present
Soviet Union	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991
Spain	1950, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Sri Lanka	1950, 1952, 1953, 1955, 1956, 1957, 1958, 1959, 1960, 1964, 1969, 1971, 1972, 1975, 1976, 1977, 1978, 1980, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2013, 2014, 2017, 2018, 2019, 2021, 2022, 2023, 2024

Country	Years Present
Sudan	1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1995, 1996, 1997, 1999, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2022, 2023
Suriname	1975, 1976, 1977, 1982, 1984, 1986, 1987, 1999, 2000, 2012, 2013, 2015, 2024
Sweden	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Switzerland	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Syria	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021
Taiwan	1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Tajikistan	1994, 2006, 2007, 2009, 2013, 2016, 2017, 2018, 2019, 2022
Tanzania	1964, 1965, 1966, 1967, 1970, 1971, 1972, 1973, 1974, 1975, 1977, 1978, 1979, 1980, 1981, 1982, 1986, 1989, 1992, 1994, 2000, 2002, 2003, 2005, 2006, 2007, 2009, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2020, 2021

Country	Years Present
Thailand	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Timor-Leste	2010, 2011
Togo	1960, 1964, 1965, 1968, 1969, 1970, 1971, 1973, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1986, 1987, 1988, 1991, 1992, 1994, 1995, 1997, 2010, 2014, 2019, 2020, 2021, 2022, 2023
Tonga	1986, 1989, 1990, 1991, 1996, 2015, 2019, 2020
Trinidad and Tobago	1965, 1966, 1972, 1973, 1980, 1981, 1987, 2000, 2001, 2002, 2007, 2010, 2011, 2012, 2015, 2016, 2021
Tunisia	1957, 1959, 1960, 1961, 1963, 1964, 1965, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1987, 1988, 1989, 1990, 1991, 1992, 1994, 1995, 1996, 1997, 1998, 1999, 2002, 2003, 2005, 2006, 2008, 2010, 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
Turkiye	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Turkmenistan	2003, 2004, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2021
UAE	1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Uganda	1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1982, 1985, 1987, 1988, 1989, 1995, 1998, 1999, 2000, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
Ukraine	1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024

Country	Years Present
United Kingdom	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
United States	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Uruguay	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1985, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2002, 2005, 2006, 2007, 2008, 2009, 2010, 2014, 2015, 2018, 2020, 2021, 2022, 2024
Uzbekistan	2001, 2002, 2003, 2004, 2005, 2009, 2010, 2011, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

Country	Years Present
Vanuatu	1987, 2021
Venezuela	1950, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2018, 2020, 2023
Viet Nam	1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Yemen	1990, 1991, 1994, 1995, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018
Yugoslavia	1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991

Country	Years Present
Zambia	1964, 1965, 1966, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1984, 1990, 1996, 2000, 2002, 2005, 2006, 2007, 2008, 2011, 2012, 2015, 2016, 2017, 2019, 2020, 2021, 2022, 2023, 2024
Zimbabwe	1950, 1951, 1952, 1953, 1954, 1955, 1956, 1958, 1960, 1962, 1963, 1964, 1967, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1990, 1991, 1992, 1993, 1998, 1999, 2000, 2001, 2003, 2004, 2005, 2006, 2023
eSwatini	1979, 2000, 2001, 2020