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Economic Sanctions

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Overview

- What are economic sanctions?
- International economics review and connections
- Types of sanctions and what they do and what goals do they have?
- Studying Sanctions: Major Themes and Methods
- Data Overview: Different Ways to Think about the Past
- The current example with Russia
- The future of sanctions

What are economic sanctions?

Economic sanctions are restrictive measures placed by a **sender** economy on a **target** economy

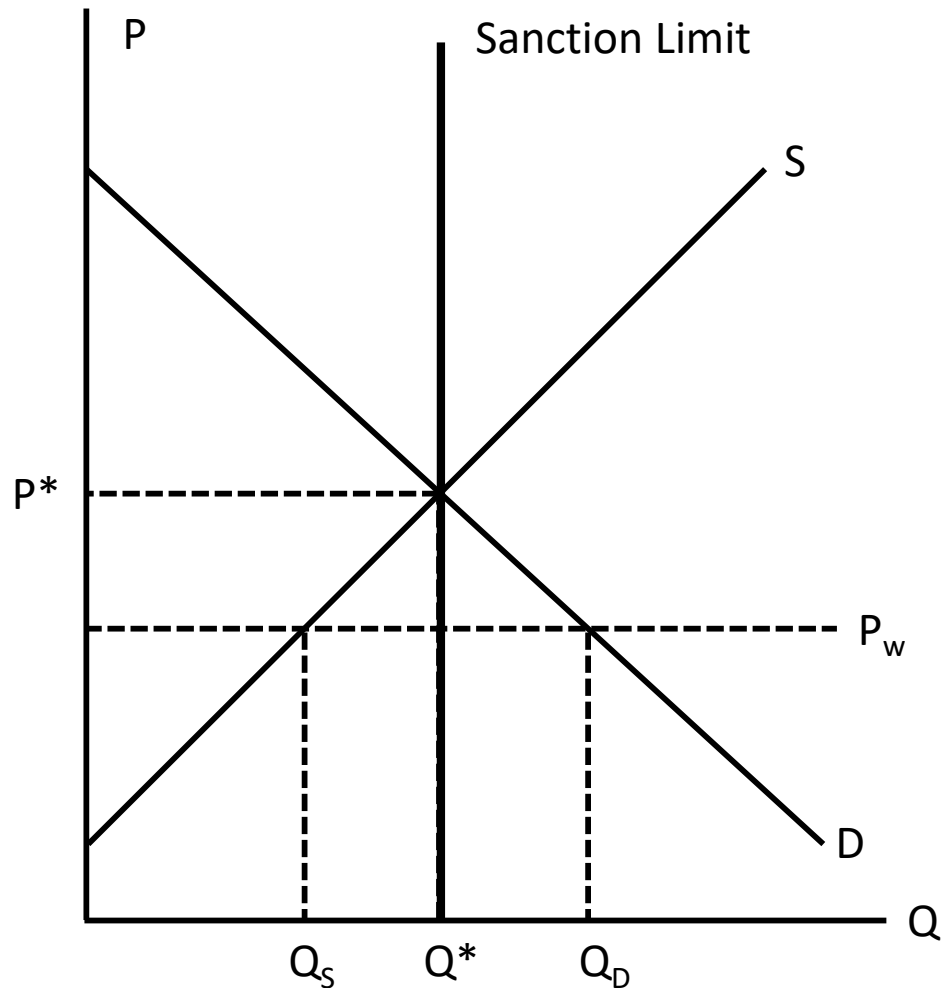
- Senders are historically larger economies and coalitions
- Targets have historically been smaller, emerging market economies
- Third parties and coalitions exist in many sanction cases

- What are sanctions seeking to accomplish?
 - Current policy reversal: current policies to stop
 - Regime change
 - Economic change
 - Social change

Sanction Flavors

- Export Sanctions
 - Sender economy curbs or stops selling target economy goods and services
- Import Sanctions
 - Sender economy curbs or stops purchases from target economy of goods and services
- Financial Market Sanctions
 - Sender economy freezes, seizes or reduces ability to buy and sell assets by target economy
 - “Smart Sanctions” focus on specific people or firms
 - Sender economy curbs or denies credit-market activity with the target economy
- Sanction “package”: the mix of final policies

International economics review and connections



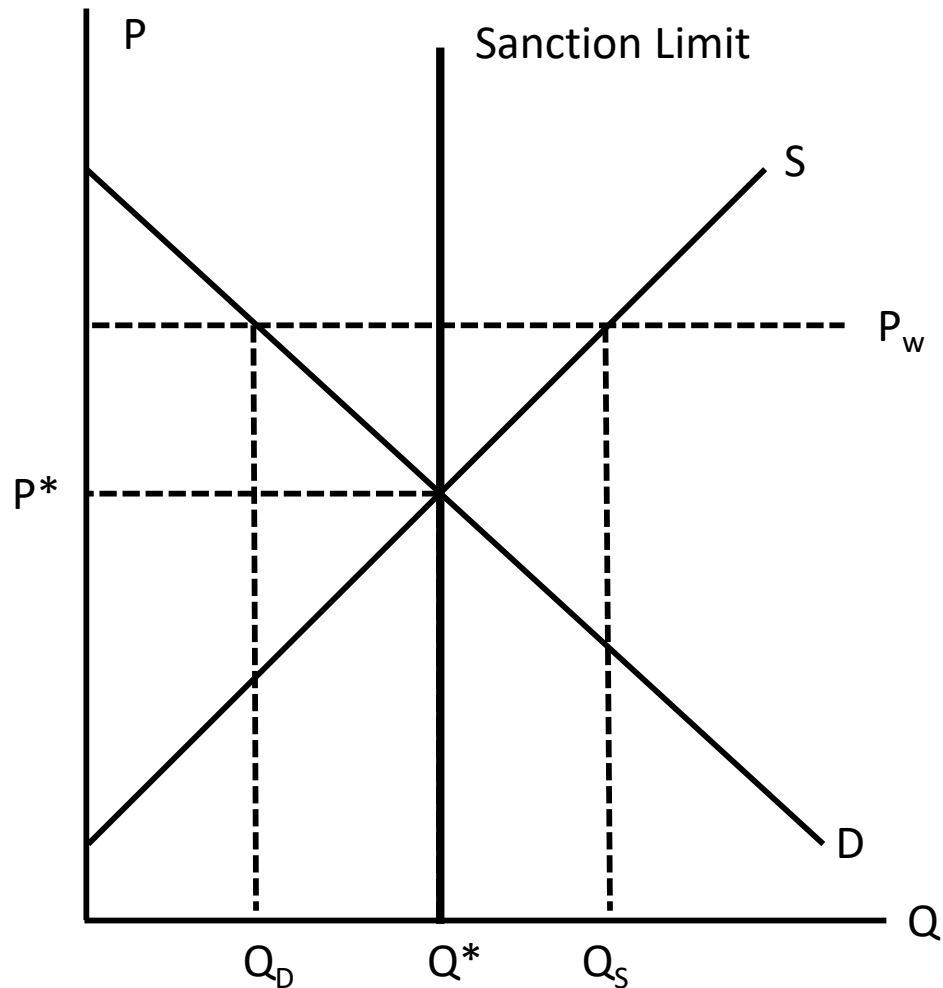
Classic international trade ideas here:

1. Domestic market sells at a higher price than world market
2. Domestic market is a price “taker”, meaning domestic supply will not change world price easily
3. Domestic consumers gain from free trade by expanding availability and lowering price

Why is this important?

1. To engage in import sanctions “credibly”, sender needs to have a viable import market with target economy
2. Sanctions need to be able to affect world market, changing balance of payments (BOP)

International economics review and connections



Classic international trade ideas here:

1. Domestic market sells at a lower price than world market
2. Domestic market is a price “maker”, a comparative advantage exists for the sender economy to globally sell goods and services
3. Domestic consumers lose from free trade by expanding availability and rising prices

Why is this important?

1. To engage in export sanctions “credibly”, sender needs to have a viable export market with target economy
2. Sanctions need to be able to affect world market, changing balance of payments (BOP)

International economics review and connections

$$\frac{e_f - e_s}{e_s} \approx (i_{for} - i_{dom})$$

Interest rate parity

Financial sanctions affect interest rate differentials which then affect exchange rates

e_f = forward exchange rate

e_s = spot exchange rate

i_{for} = foreign exchange rate

i_{dom} = domestic interest rate

Exchange rate = foreign currency units/domestic

Classic international finance ideas here:

1. Balance of Payments (BOP) changes become changing exchange rates
2. Capital flows a big deal for international financial transactions, especially for smaller economies

Why is this important?

1. Financial sanctions are used a majority of the time senders engage in sanctions versus trade
2. Changing capital flows between the sender and target economies, thus changing BOP like trade sanctions
3. What can be a way to undermine sanctions is to affect exchange rates and provide incentives for “white knights”

A research node:

Exchange rates and sanctions

- Should exchange rate between sender and target change and help provide relief to target economy?
 - Rising risk of holding target currency: Russian Ruble example in 2022
 - Domestic investors leaving target currency
- Balance of Payments (BOP) is the net flow of domestic currency in and out of the domestic economy
 - Sanctions may have a mixed effect on the BOP, and thus a mixed effect on exchange rates
 - Can a change in the target's currency value affect sanction efficacy?

NBER Working Paper 30009 (Itskhoki and Mukhin, 2022)

Export Sanctions

Benefits to the Sender

- Use of exports cutback can become lower prices domestically
- Can work with domestic producers to provide incentives to shift markets

Costs to the Sender

- Domestic producers lose revenue, assuming prices to sender exceed revenue domestically or in other economies
- Can shift supply-chain revenues domestically and have reverse multiplier effects

Import Sanctions

Benefits to the Sender

- Use of a major trade relationship to reduce revenues to target (an immediate lever)
- Could help some domestic producers to gain domestic market share and keep it

Costs to the Sender

- Increased costs to the sender consumers
- May create supply-chain concerns based on what goods are sanctioned domestically for many industries (oil and natural gas in Europe in 2022)

Financial Sanctions

Benefits to the Sender

- For domestic borrowers, more funds available
- Easy to impose and monitor from domestic financial markets
- Such sanctions can focus on decision makers in the target economy to perhaps change (“Smart”)

Costs to the Sender

- Larger regulatory and compliance costs of asset managers, banks and other financial institutions
- Leakages through other currency markets and havens reduce sanction efficacy
- Some banks and financial institutions may lose rate of return

Econometric Approaches

Discrete choice models

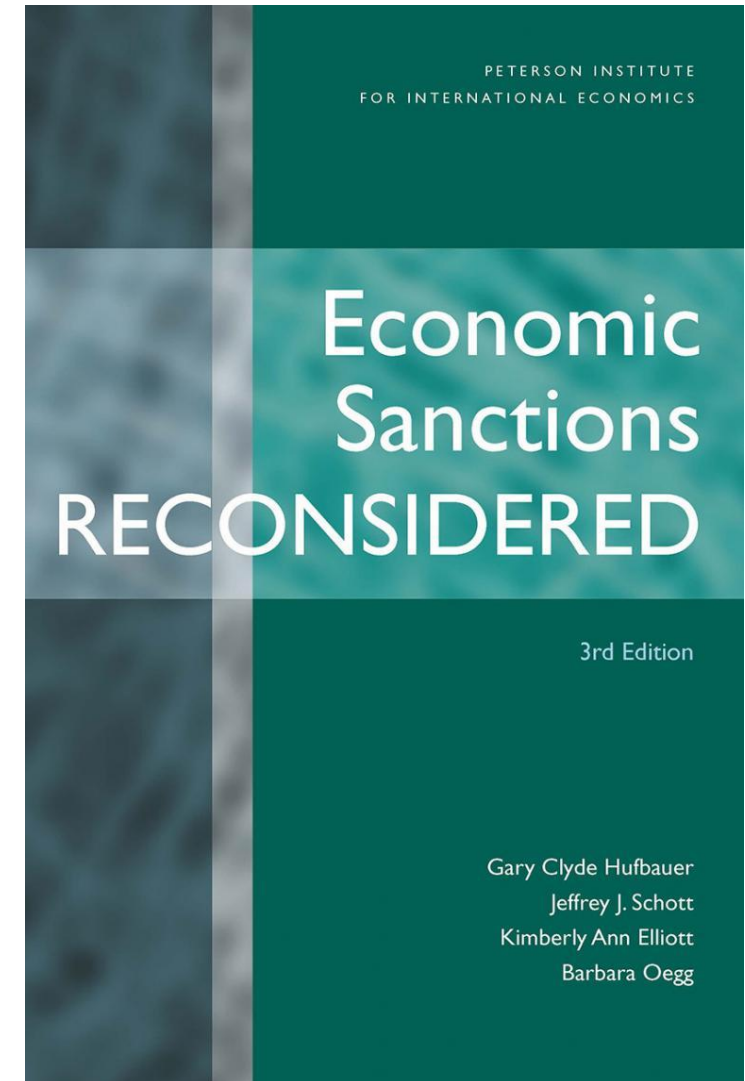
Hufbauer, Schott, Elliott (1985, 1992, 2000, 2009, with Oegg) = HSE

- Effective? = $f(\text{target, sender, policy indicators}) + \text{error}$
 - Where the variable “Effective” is either 0 or 1
 - Classic logit model, one of the most-used tools in sanction research
 - Exogenous variables the gamut of sanction possibilities, but some specification issues

In some cases, sender may be more concerned about the odds of a change in policy and affecting those because the true change (regime change) is less likely)

Classic regression not as effective in analyzing sanction effects unless the sanction variable is continuous: most models are discrete

Numerous studies use the HSE data and case studies as the basis for sanction research



Econometric Modeling (cont.)

Vector Autoregression (VAR)

Main variables are the policy variable: what does the sender want policy to change in sanctions?

Equations equal the number of variables in a fully-identified model, and we assume that there is a system of equations that theoretically links the variables.

The lag structure and how sanctions move through the target economy critical to understanding sanctions. Applications abound in monetary policy.

Looking for the effects of a policy “impulse”: sanctions imposed, effects on some variables

$$\begin{matrix} Y_1 \\ Y_2 \\ Y_3 \end{matrix} = (\beta_1 \quad \beta_2 \quad \beta_3) \begin{pmatrix} X_1 \\ X_2 \\ X_3 \end{pmatrix} + \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \varepsilon_3 \end{pmatrix}$$

Shock to X creates a disruption in Y with a lag effect (impulse response): are the effects transitory or permanent? Is there feedback?

Can sanctions “Granger Cause” policy change? If causal structure found econometrically, would need to link macro variable to a policy change as an instrument? (Bank failures, e.g.)

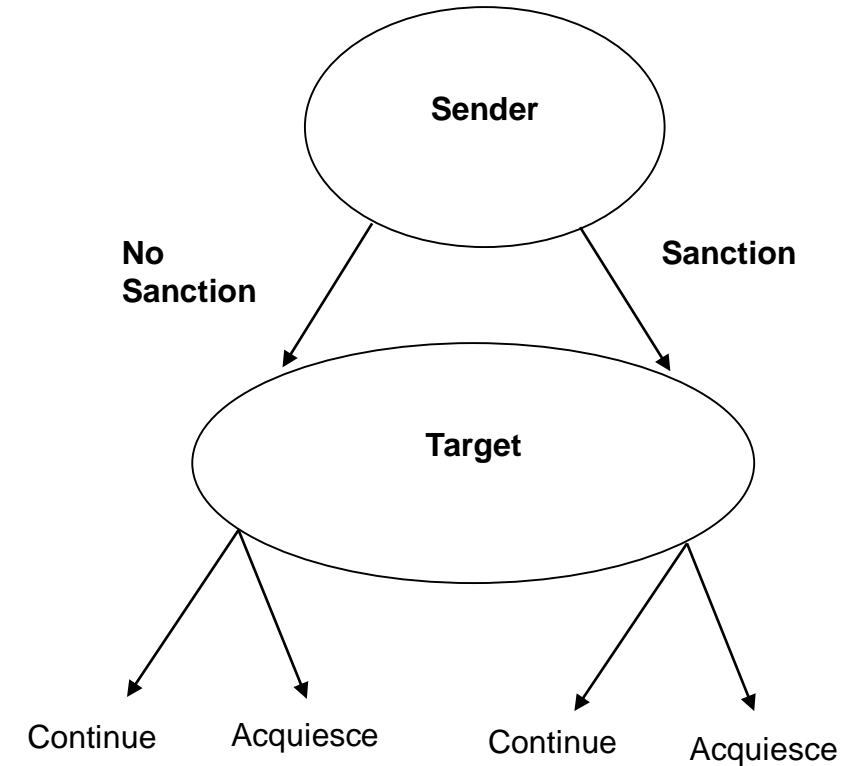
Example: Dizaji and Bergeijk (2013): “Potential early phase success and ultimate failure of economic sanctions: A VAR approach with an application to Iran”, **Journal of Peace Research**, 50(6):721-736 (Oct)

Econometric/Data Challenges

- Data availability and reliability
 - Can we believe many of the historic targets' data?
 - IMF databases have been used, how reliable are they?
- What macroeconomic data tell the sanction story the best?
 - GDP and Employment
 - Interest rates
 - Trade
 - Capital flows
 - Exchange rates
 - None?
 - All the above?
- For Discrete Choice models, what is success?

Game Theory

- Cross between political science and economics: statecraft
- Benefits and Costs to the sender and the target compared to find a “strategy”
- From the target standpoint
 - At what cost is policy change?
 - How much cost without policy change?
 - Russia and Ukraine
 - South Africa and Apartheid
 - China and human rights abuses
 - Other
- From the sender standpoint
 - Many sanction episodes are large economies versus smaller economies
 - Costs to the sender for long-term sanctions not trivial, but not effective
 - At what level of internal costs or losses do senders abandon sanctions?



Public Choice

Public choice another framework in which sanctions have been studied

- Similar to cost-benefit analyses
- Similar to supply and demand frameworks

Target economy: sender's policy choices around sanctions are an "exogenous" shock to the current choice framework

- The target faces a cost of sanctions borne by the public
- The target faces a benefit from continued policy

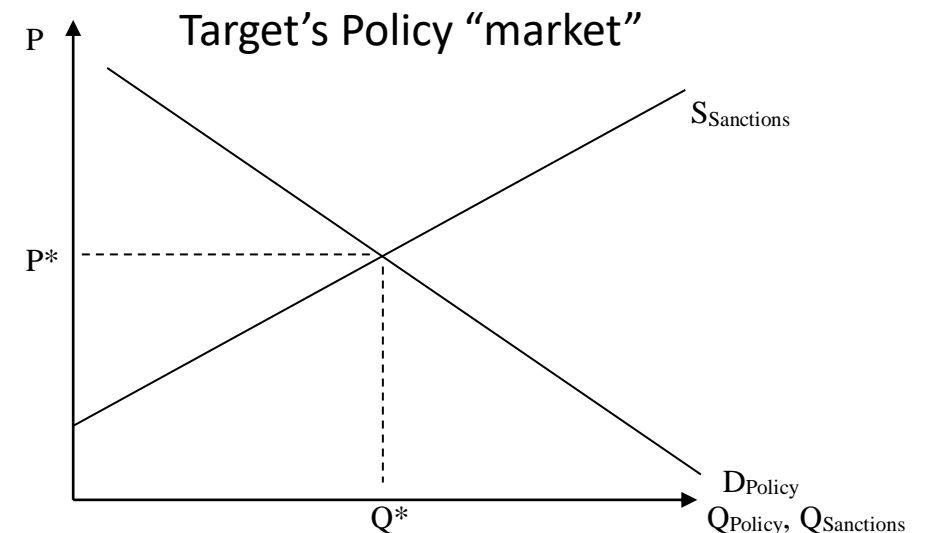
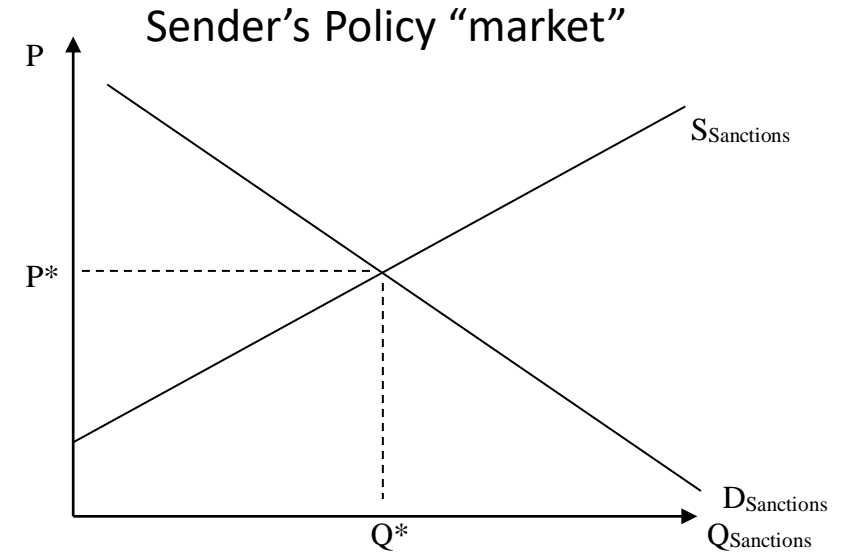
The sender's sanctions are meant to increase the costs of the behaviors in such a way to reduce the behavior levels

- At some, smaller level of sanctions, targets abandon the behavior (based on the rising costs of the behavior continuing)
- Related to game theory

The Theory of International Economic Sanctions: A Public Choice Approach (1988)

William H. Kaempfer and Anton D. Lowenberg

The American Economic Review, Vol. 78, No. 4, pp. 786-793



Historic Case Breakdown

Historic cases are in three major groups after World War II (approx. 1,100 sanctions)

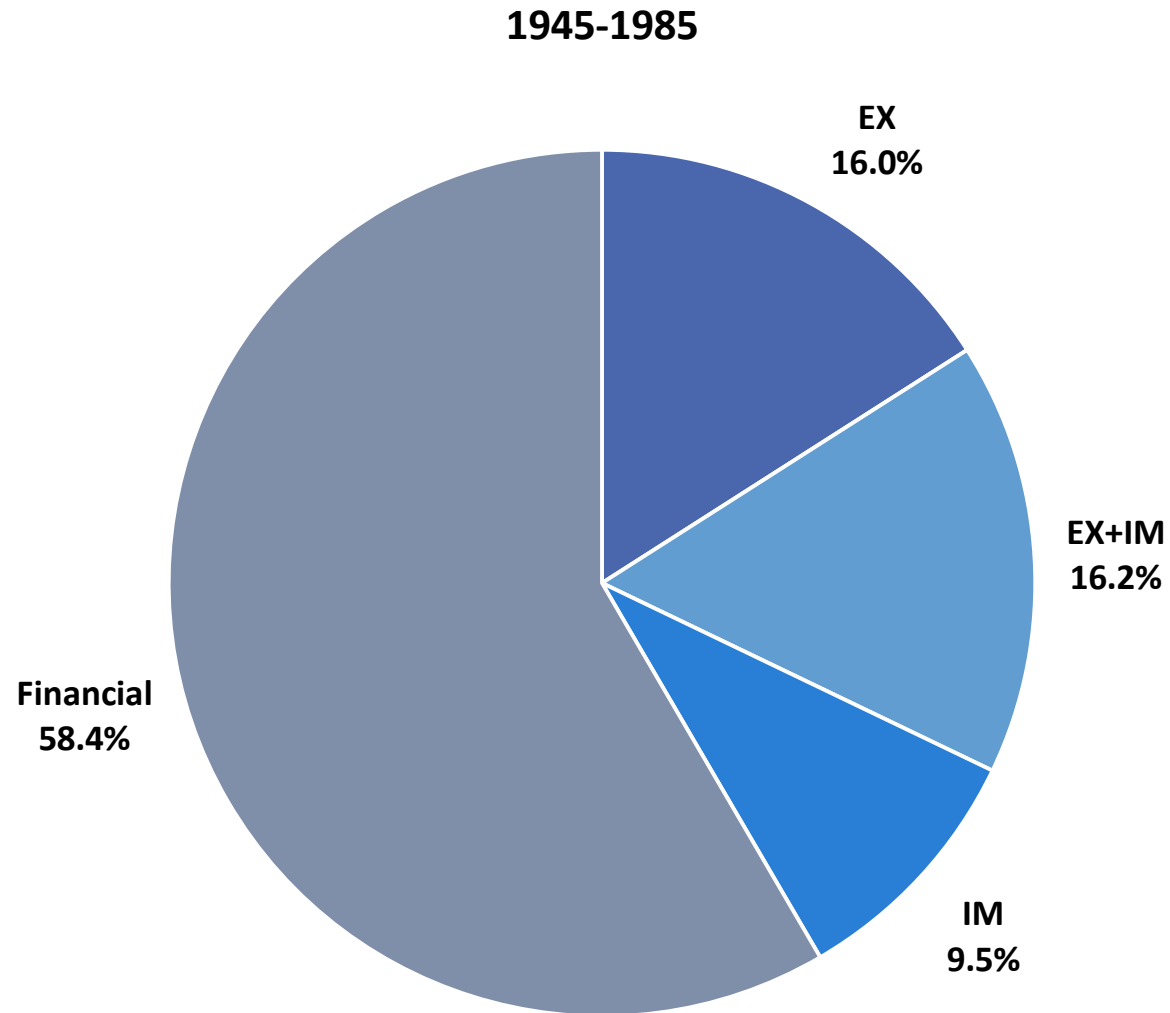
1. 1945 – 1985 (after World War II and before final sanctions against South Africa/Apartheid)
2. 1986 – 2001 (after South Africa sanctions and before 9/11 attacks in US)
3. 2002 – 2020 (After 9/11 attacks and before Russian invasion of Ukraine)

Before World War II: usually associated with or explicitly part of a military action

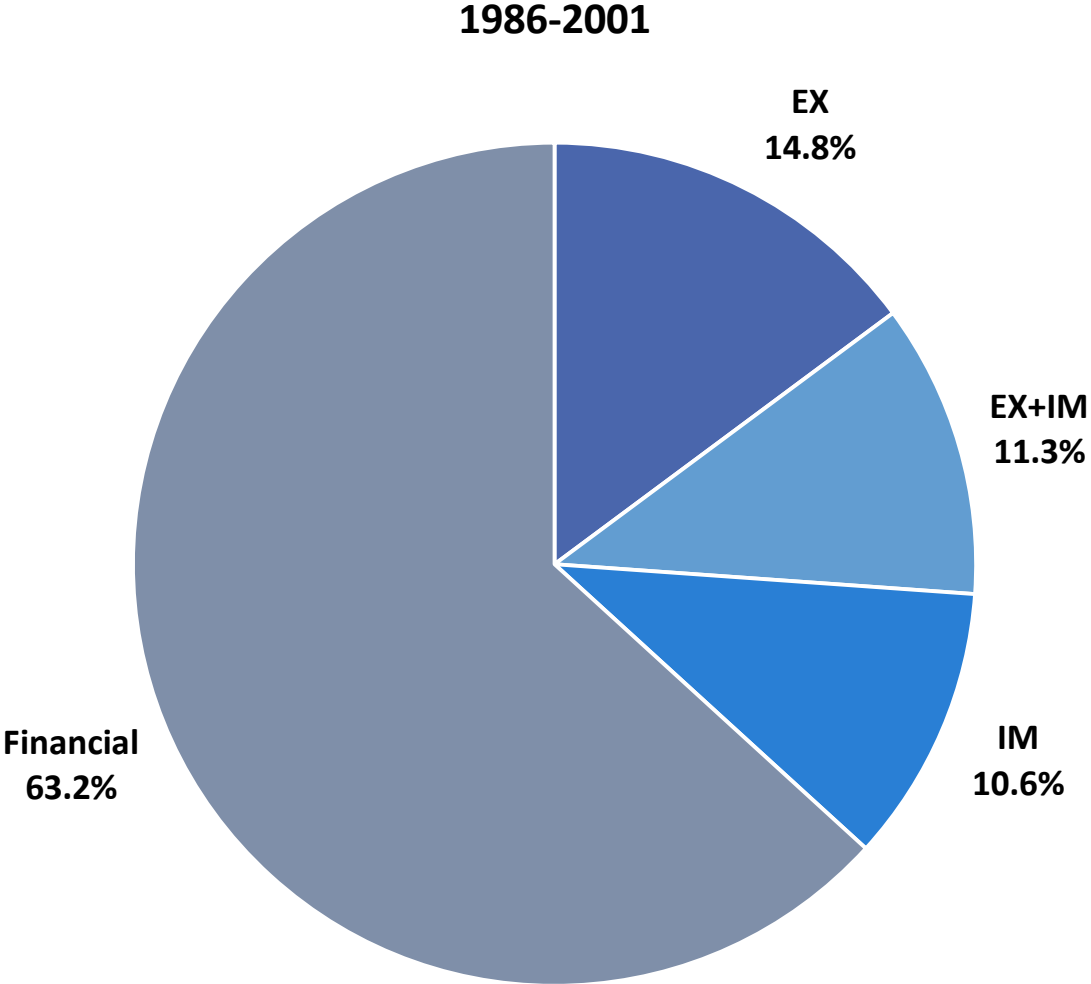
Note: Current sanctions against Russia are the most comprehensive sanctions since sanctions against apartheid in South Africa and really since World War II without explicit military action by a sender economy or coalition member

- North Korea is close, but a special circumstance (ongoing since 1950)

Historic Case Breakdown: Sanction Types

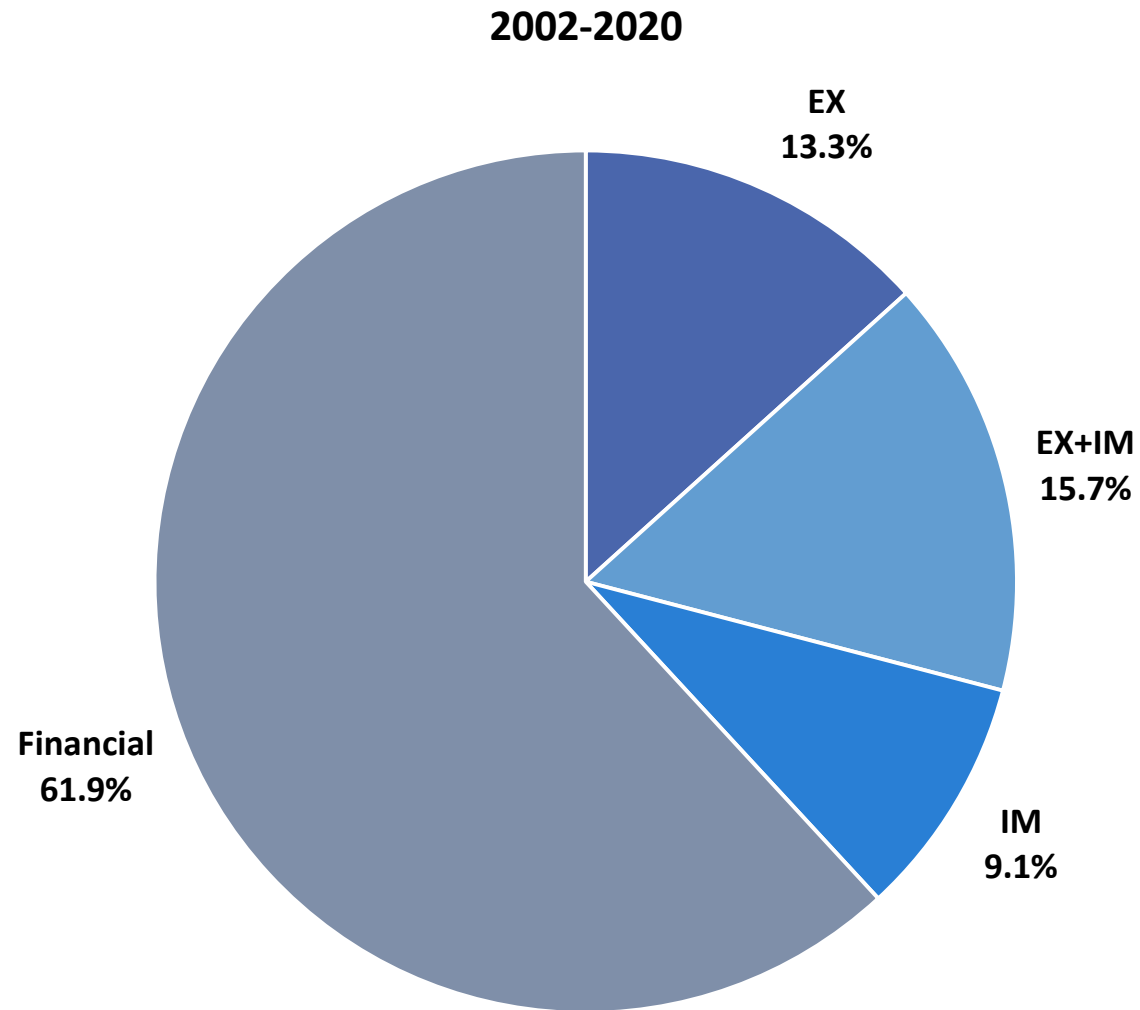


Historic Case Breakdown: Sanction Types

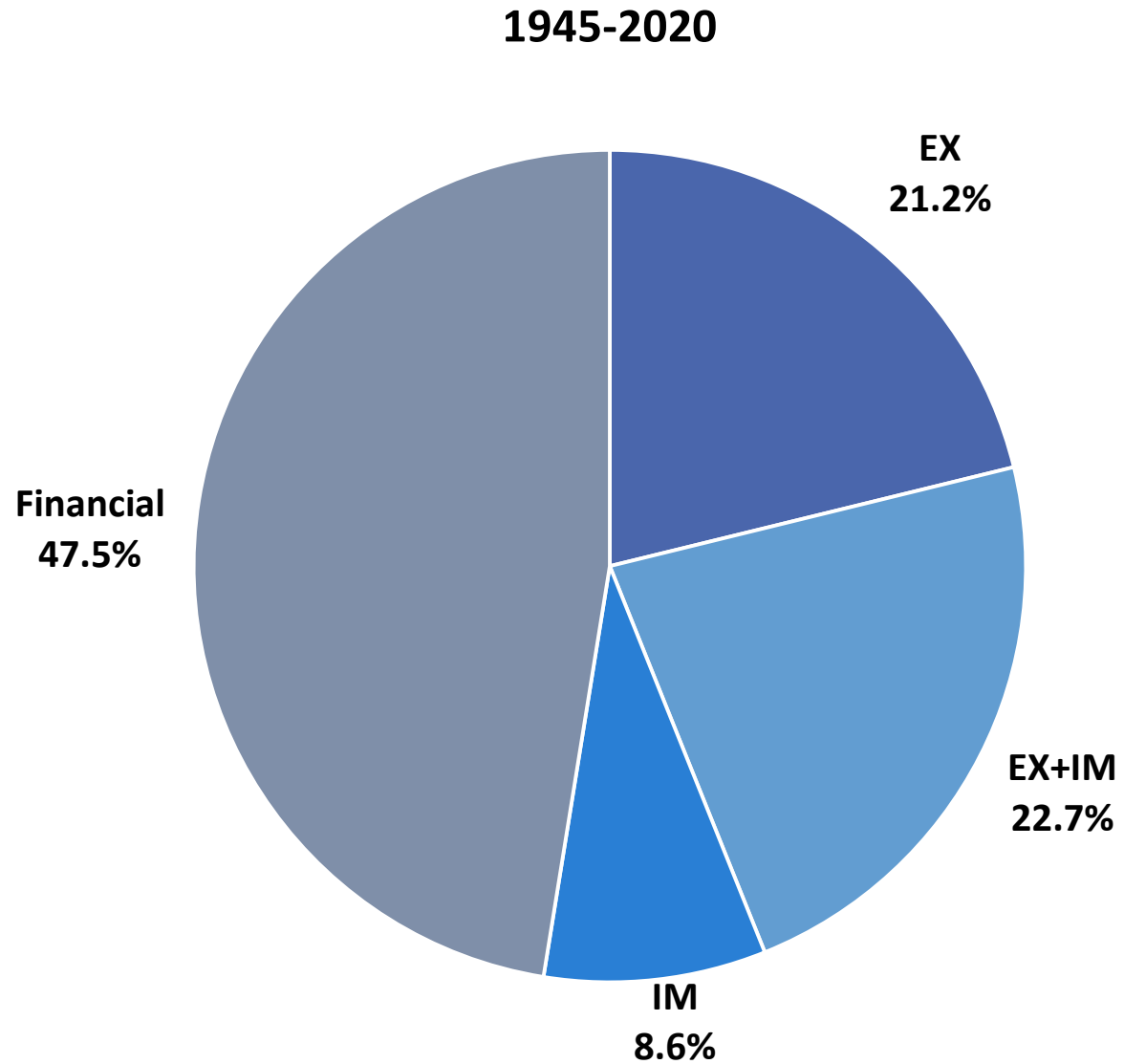


Source: Global Sanctions Database and Author's Calculations

Historic Case Breakdown: Sanction Types

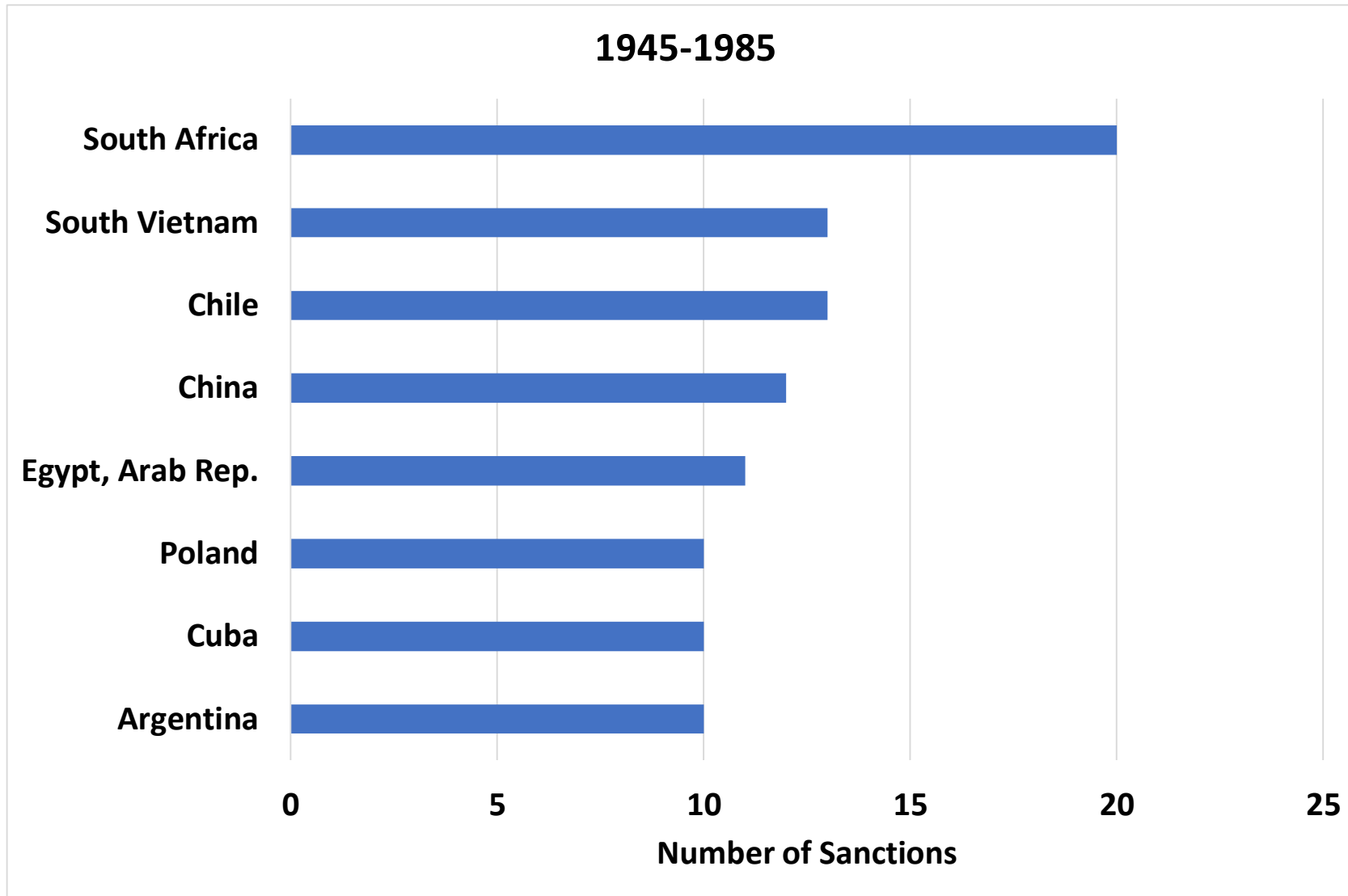


Historic Case Breakdown: Sanction Types



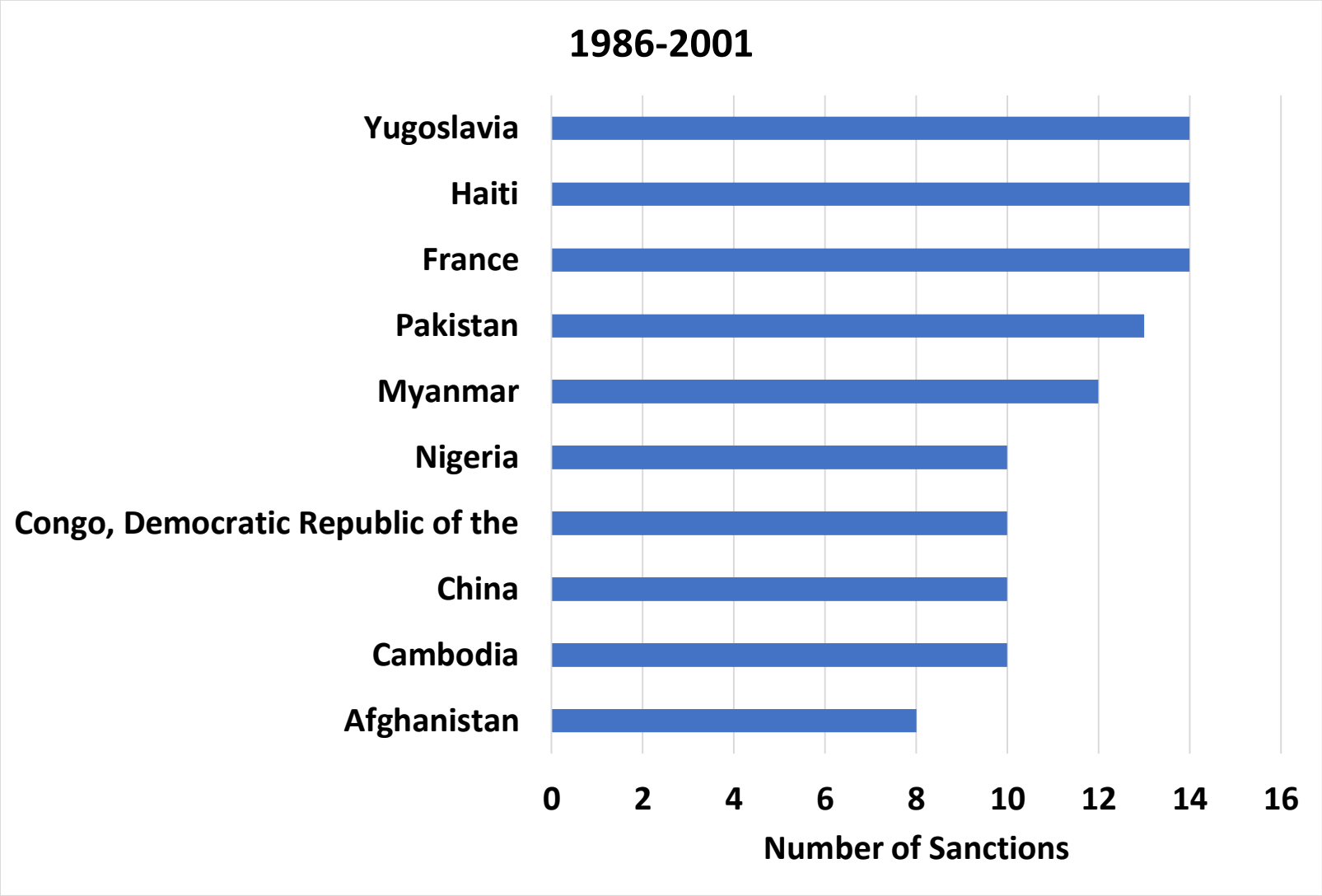
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Historic Case Breakdown: Top Targets of Sanctions



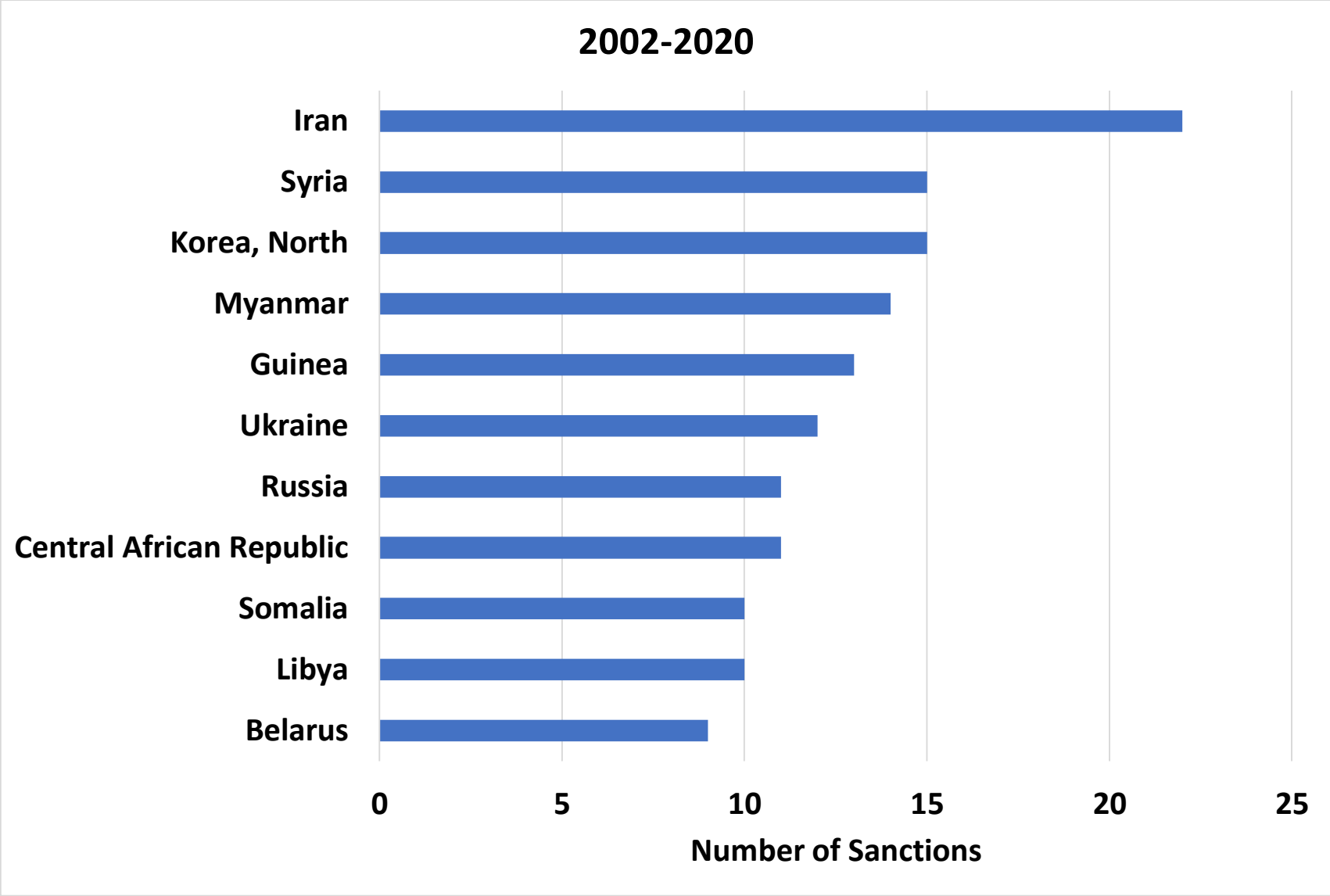
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Historic Case Breakdown: Top Targets of Sanctions



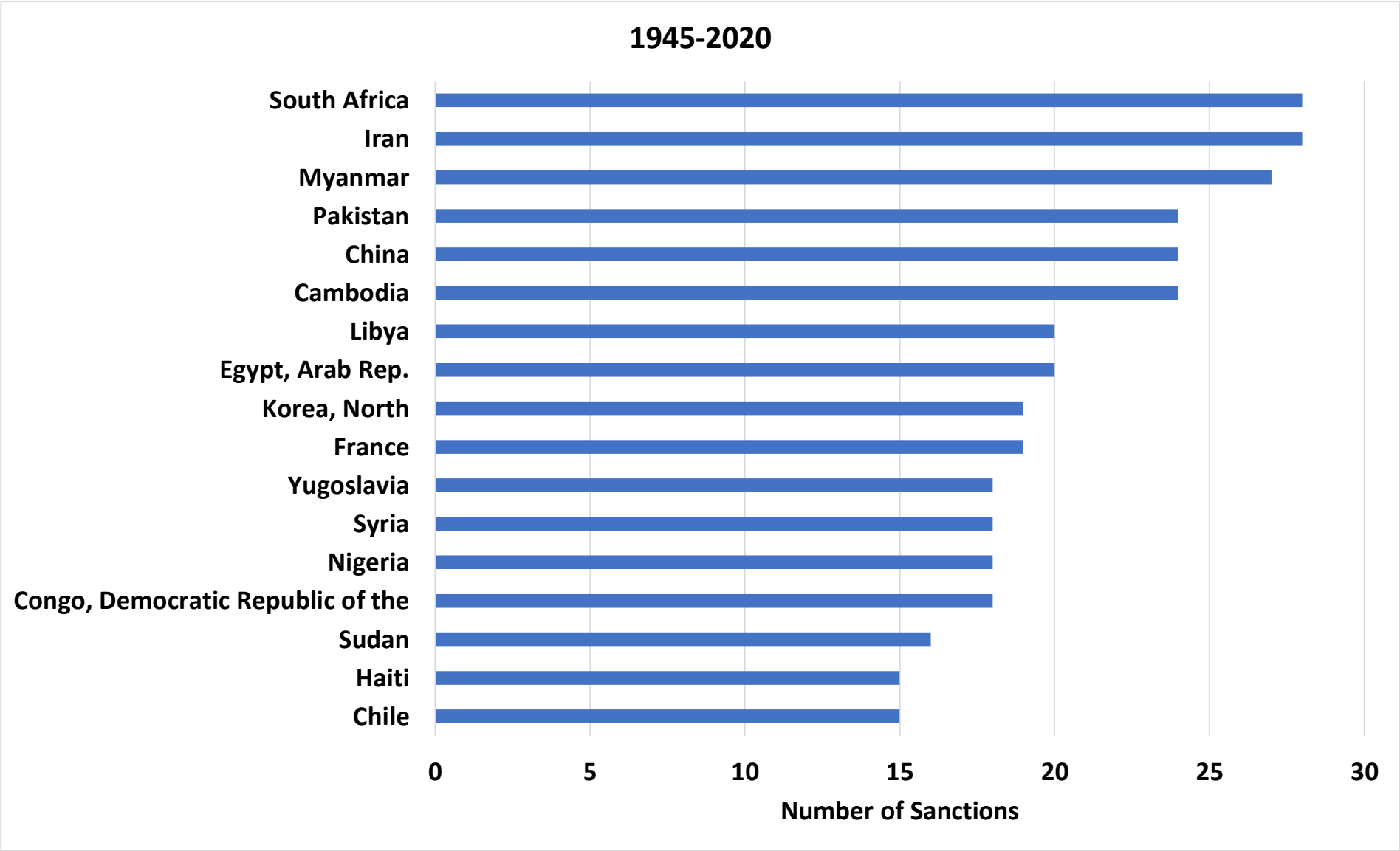
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Historic Case Breakdown: Top Targets of Sanctions



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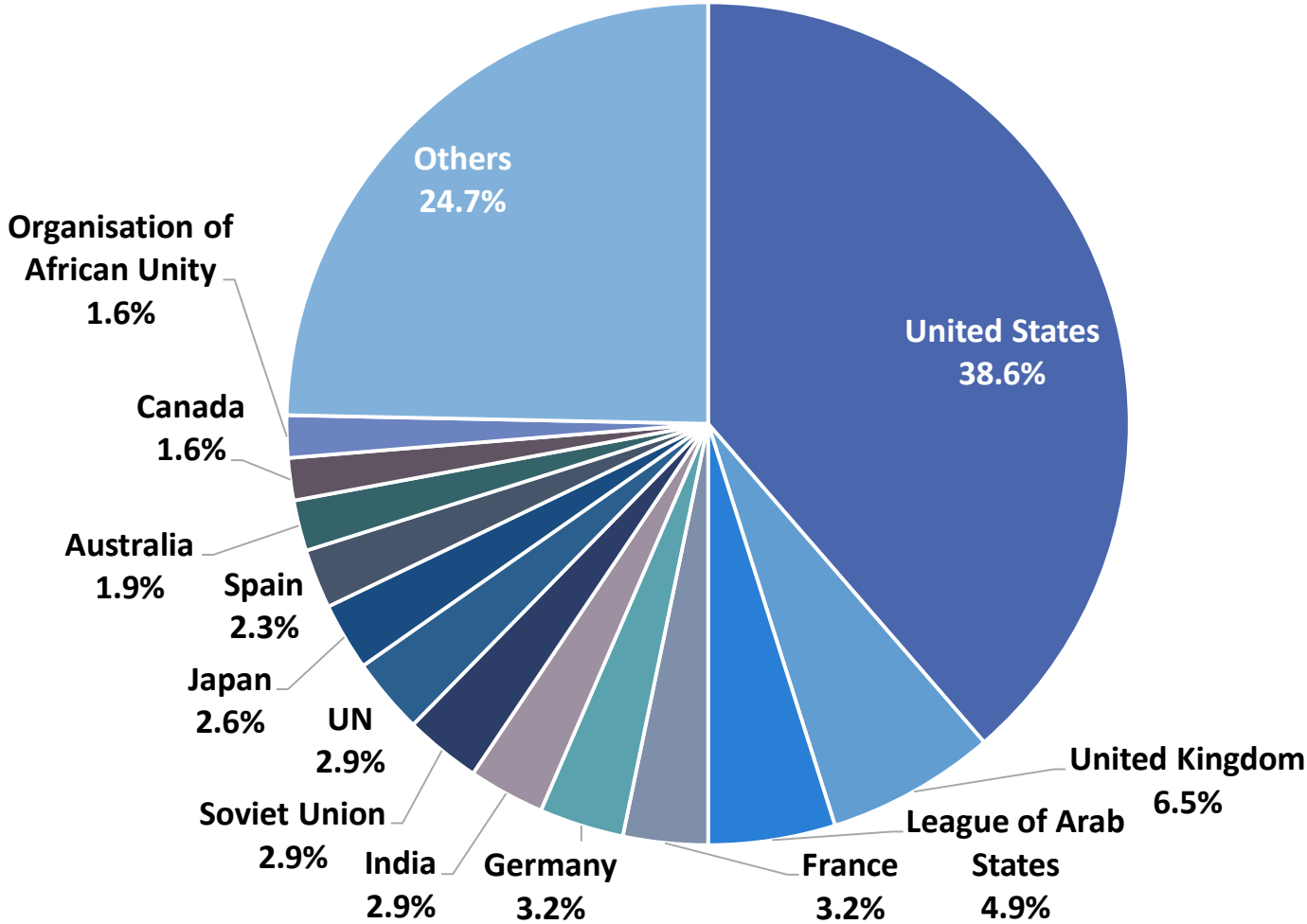
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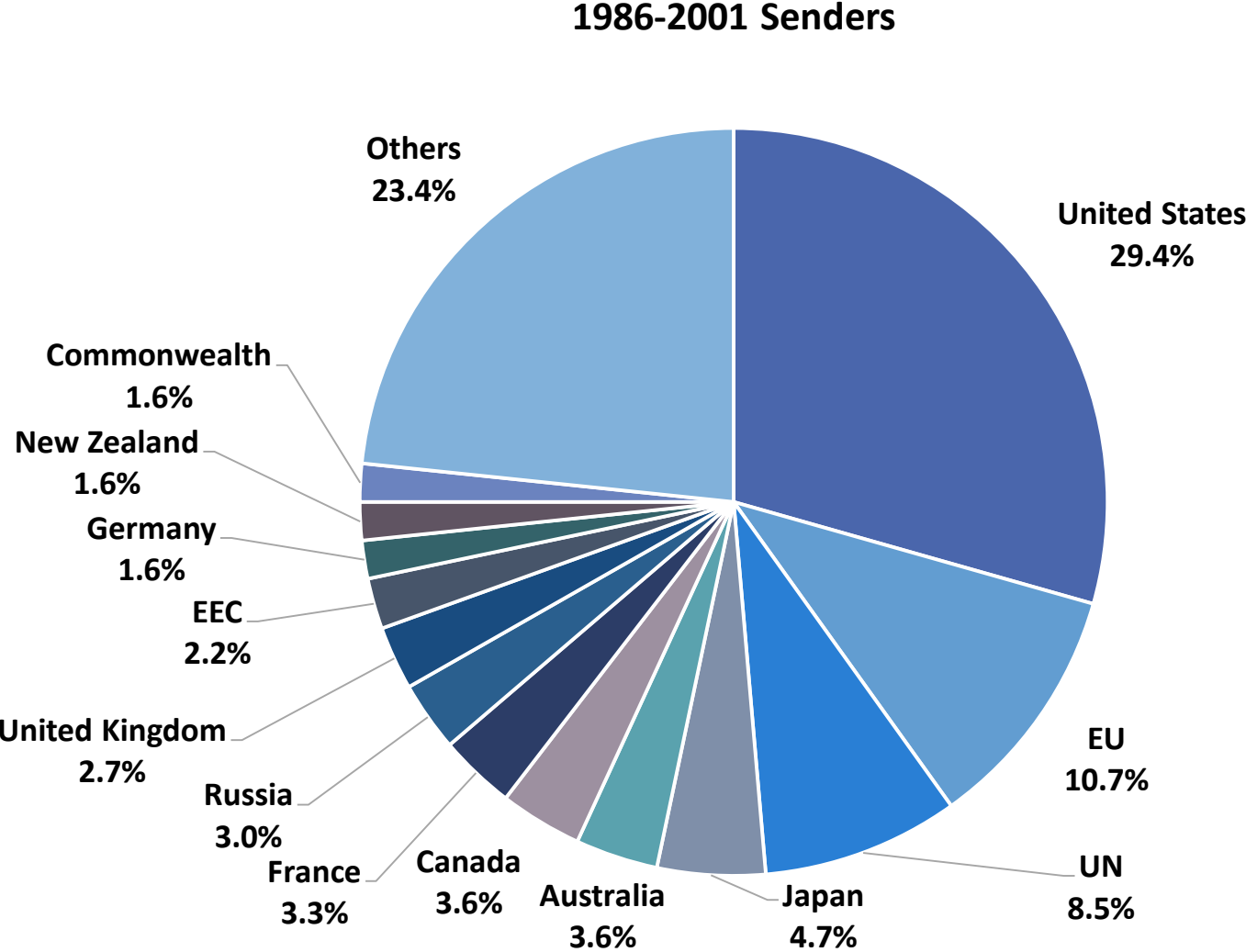
Historic Case Breakdown: Sender Distribution

1945 - 1985 Senders



Source: Global Sanctions Database and Author's Calculations

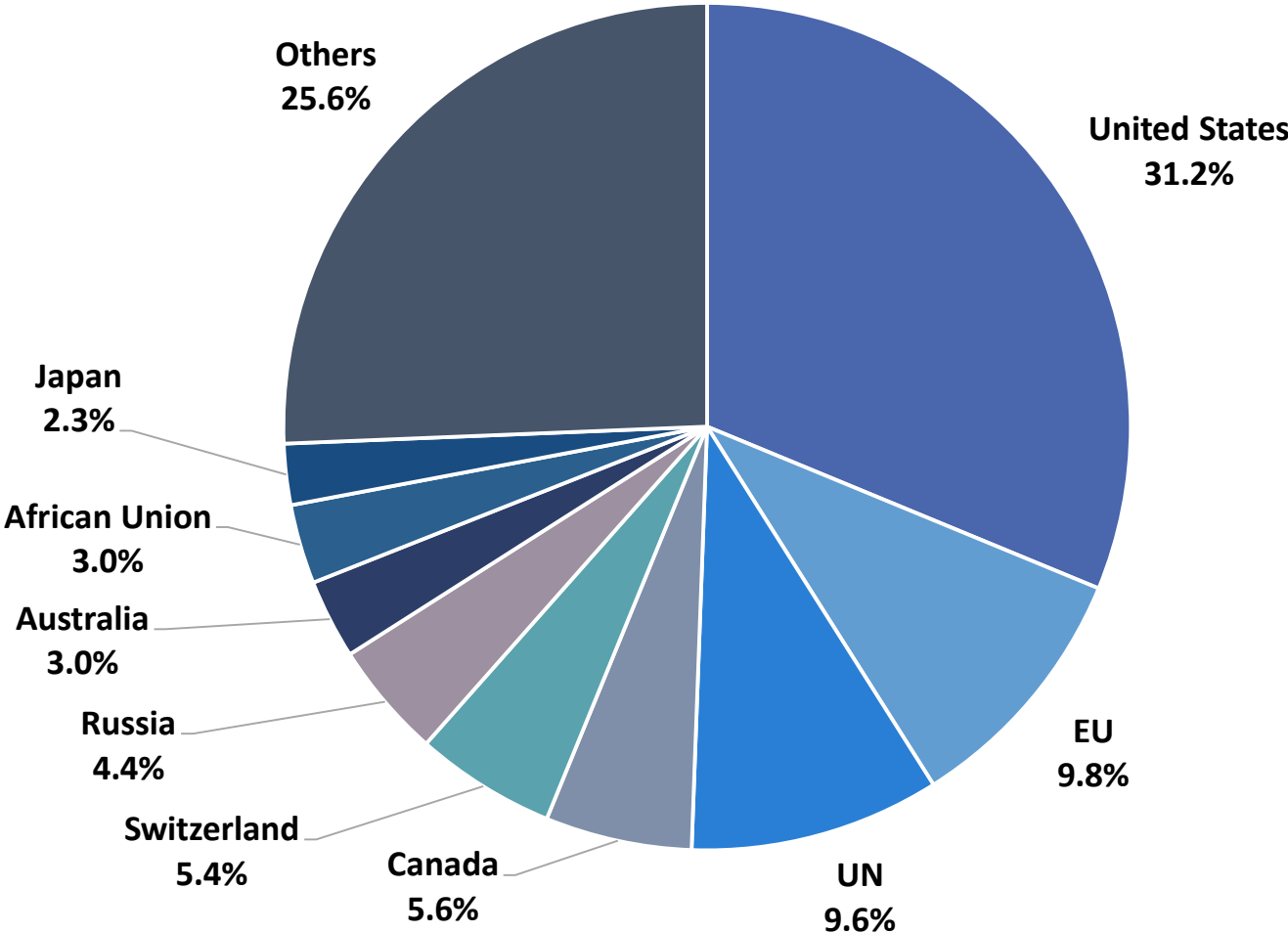
Historic Case Breakdown: Sender Distribution



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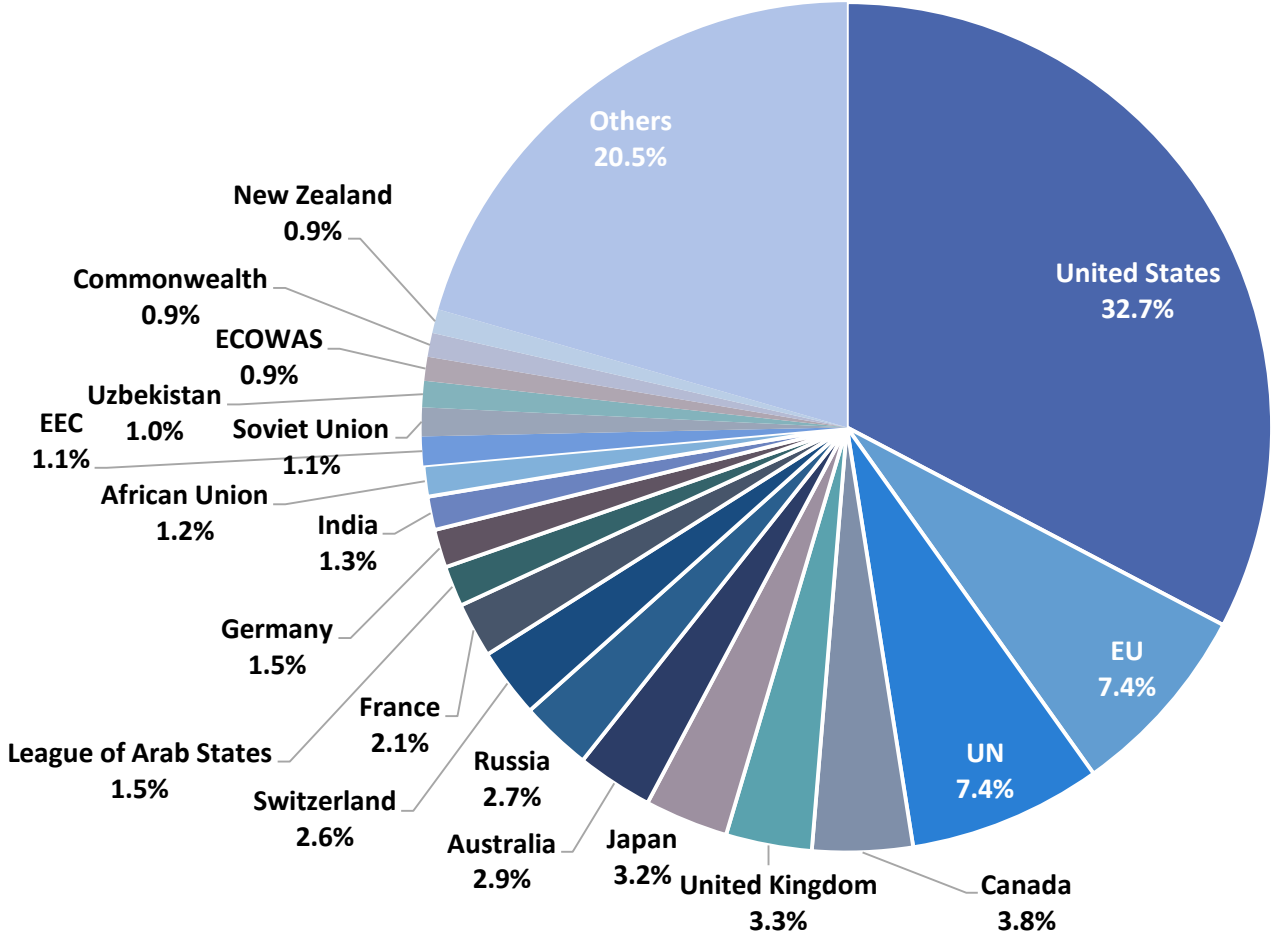
2002-2020 Senders



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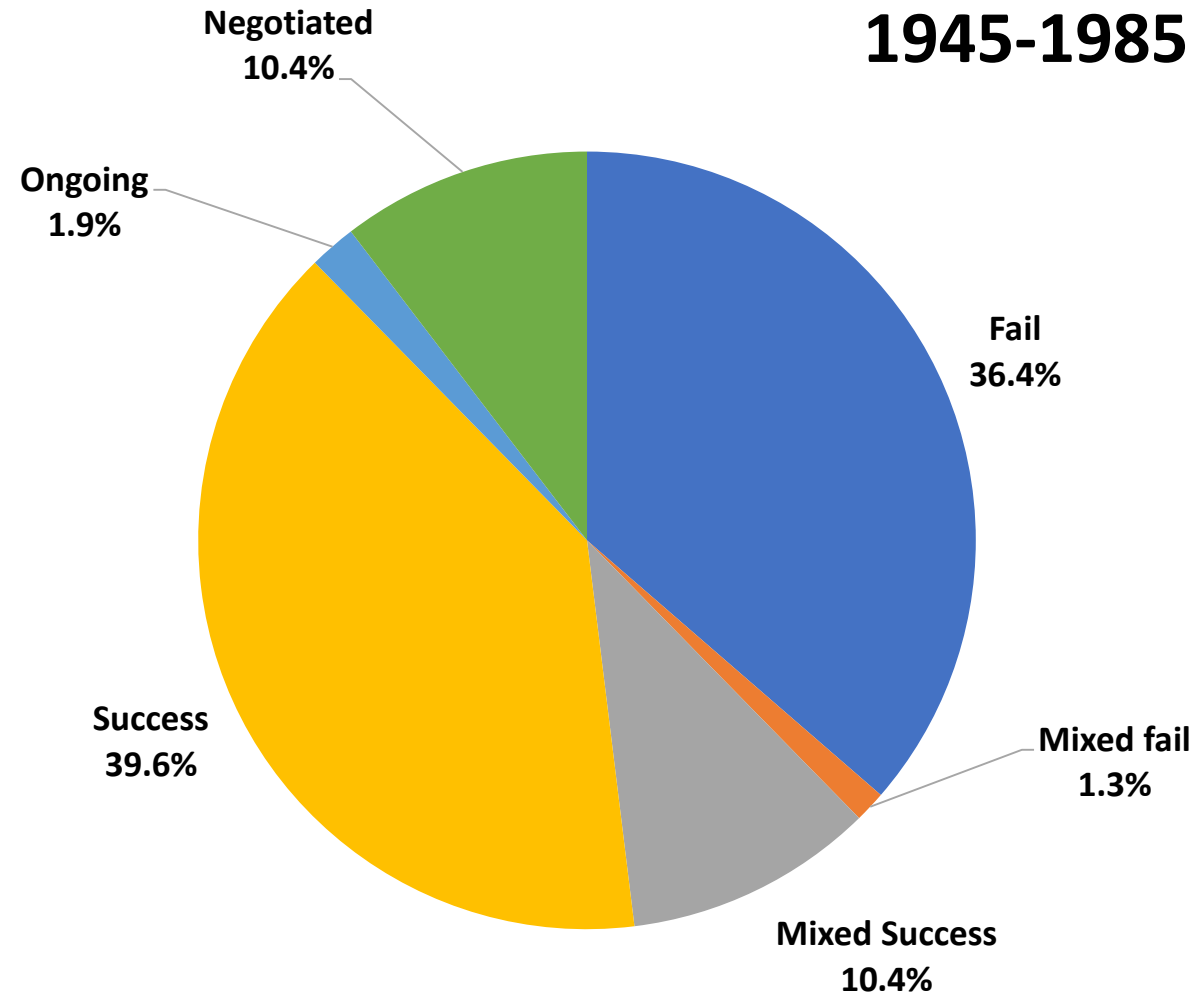
Historic Case Breakdown: Sender Distribution

1945 - 2020 Senders



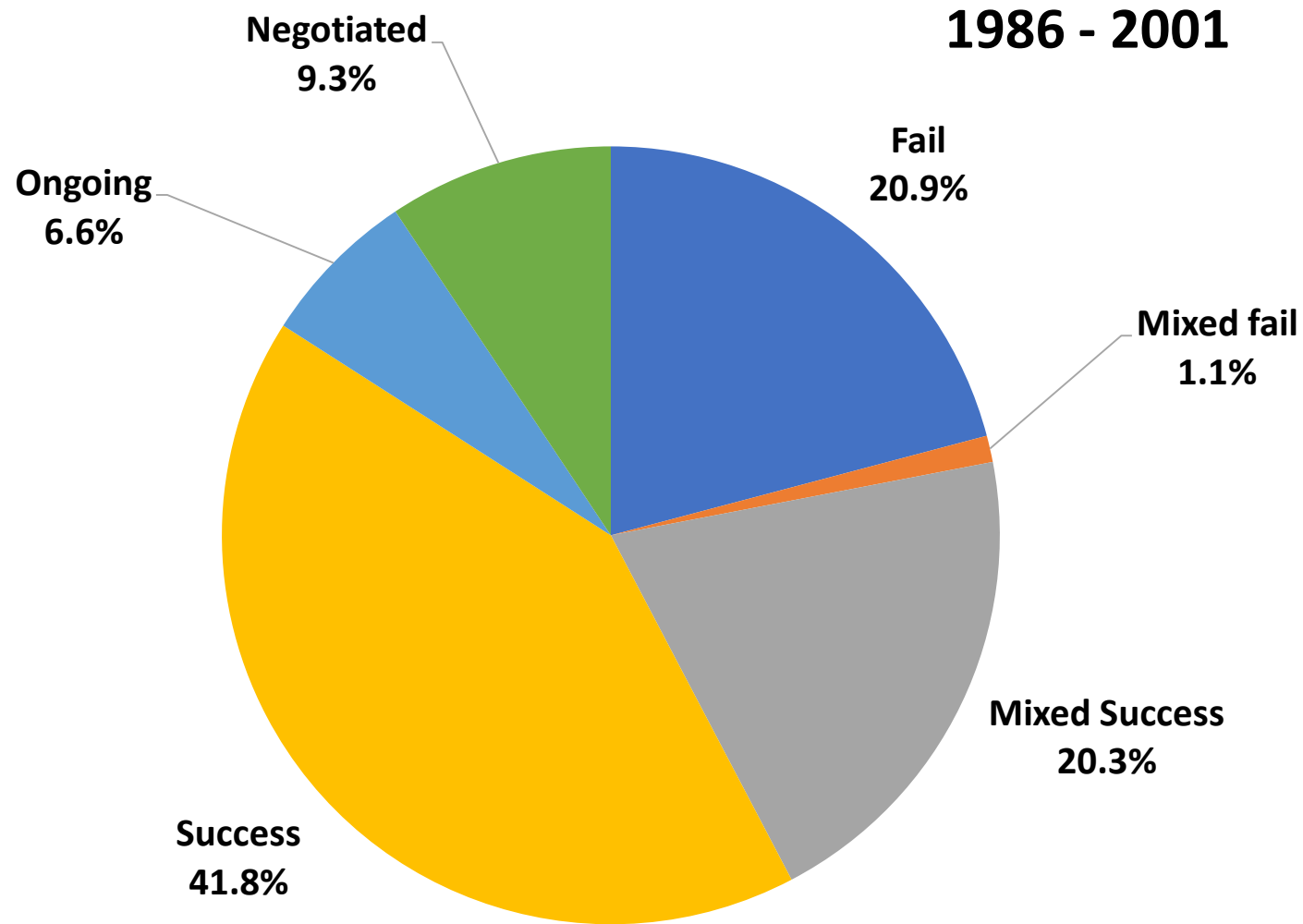
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Historic Case Breakdown: Success?

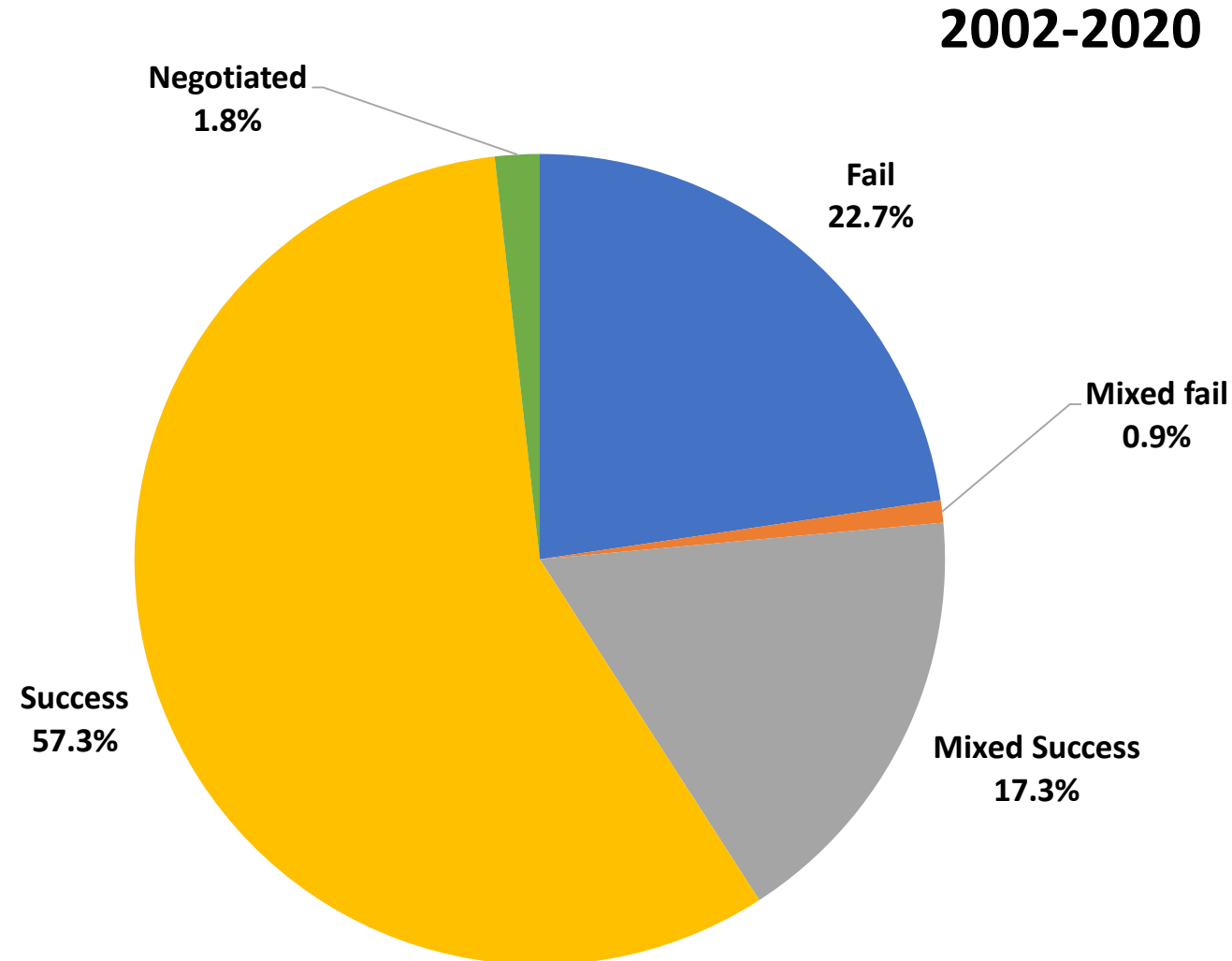


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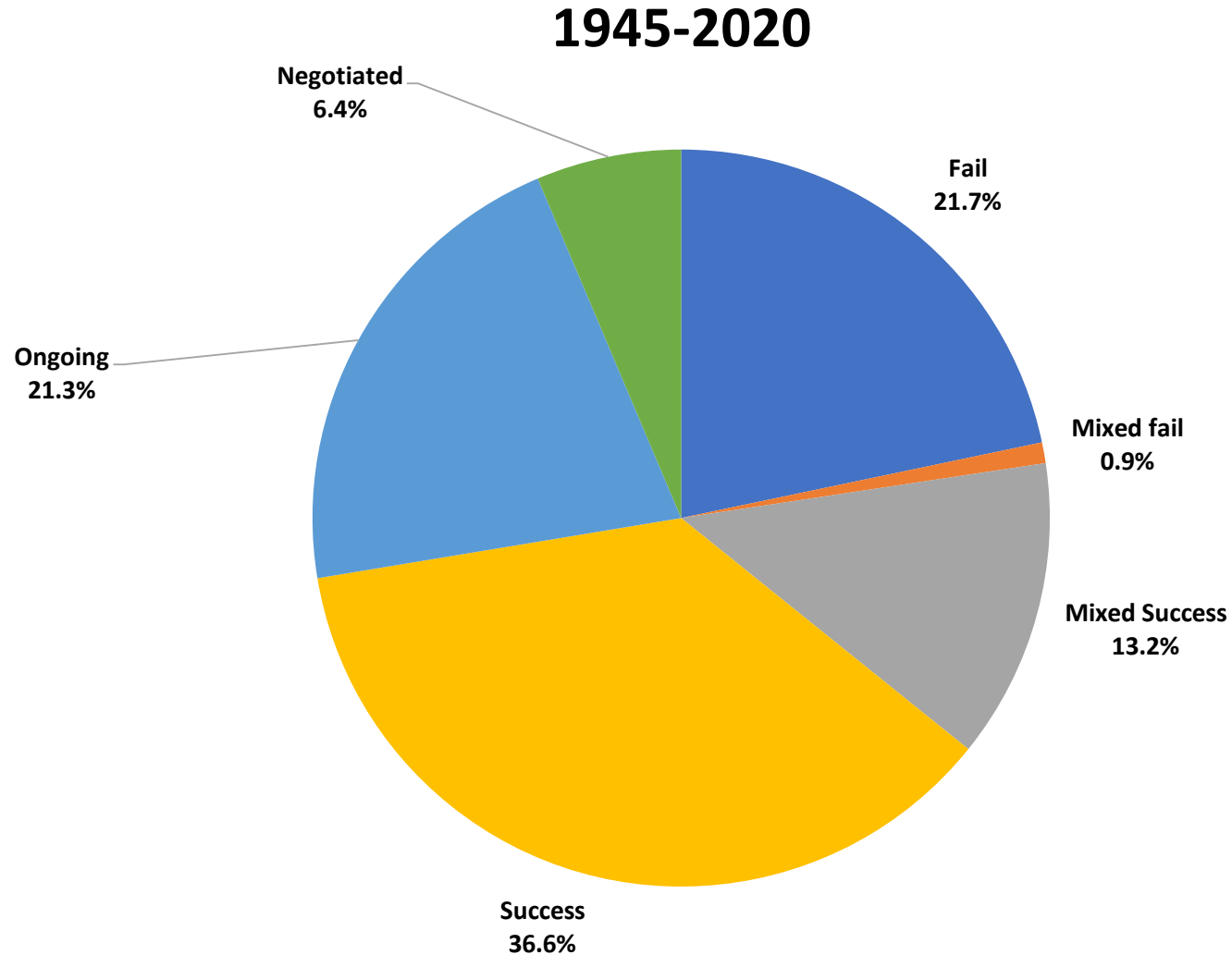
Historic Case Breakdown: Success?



Historic Case Breakdown: Success?



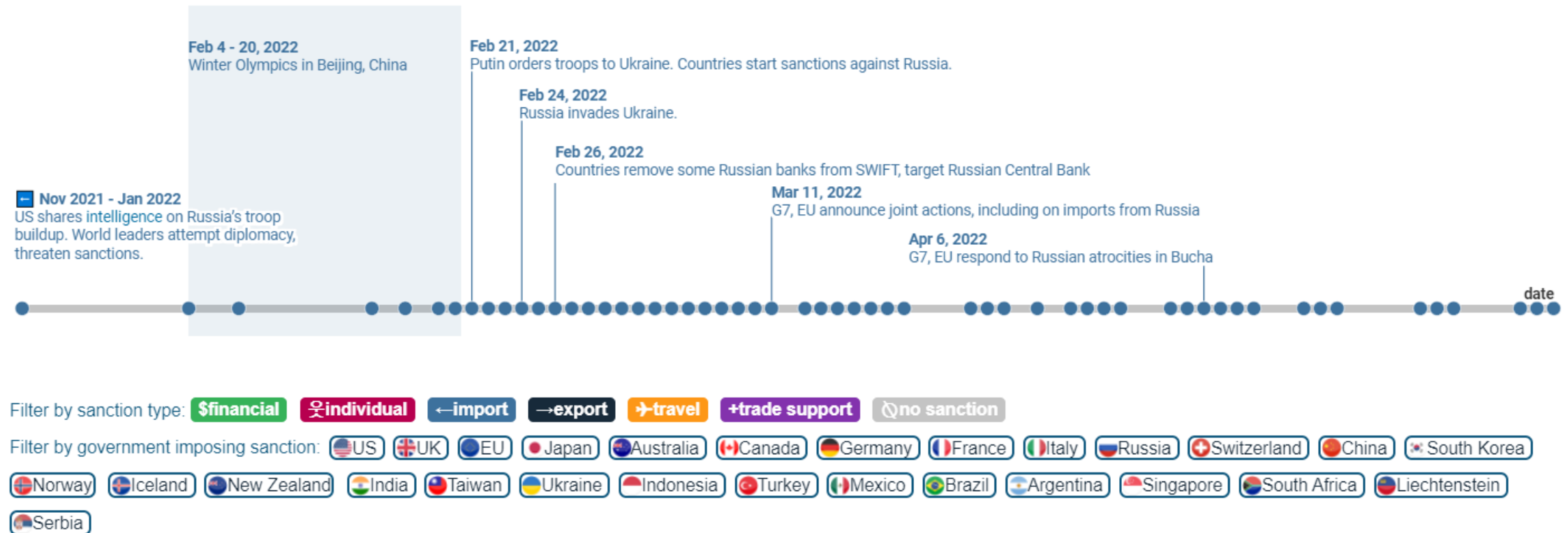
Historic Case Breakdown: Success?



The Russian Sanctions

Sanctions against Russia and other major events starting November 2021

Hover over dots for summary of events, or see full list below by sanction type and country




Source: [Peterson Institute for International Economics](#)

The Russian Sanctions (cont.)

Filter by sanction type: **\$financial** **👤individual** **←import** **→export** **→travel** **+trade support** **🚫no sanction**

Filter by government imposing sanction: **🇺🇸US** **🇬🇧UK** **🇪🇺EU** **🇯🇵Japan** **🇦🇺Australia** **🇨🇦Canada** **🇩🇪Germany** **🇫🇷France** **🇮🇹Italy** **🇷🇺Russia** **🇨🇭Switzerland** **🇨🇳China** **🇰🇷South Korea**
🇳🇴Norway **🇮🇸Iceland** **🇳🇿New Zealand** **🇮🇳India** **🇹🇼Taiwan** **🇺🇦Ukraine** **🇮🇩Indonesia** **🇹🇷Turkey** **🇲🇽Mexico** **🇧🇷Brazil** **🇦🇷Argentina** **🇸🇬Singapore** **🇿🇦South Africa** **🇱🇮Liechtenstein**
🇷🇸Serbia

[reset](#)

Date	Country	Sanction type	Description
Feb 25, 2022	 Taiwan	→export	In response to Russia's invasion, Taiwan announces it will join international economic sanctions against Russia and will continue to coordinate closely with the US and other like-minded countries (Taiwanese semiconductor companies later state they will comply with export controls).



The Future

Sanctions continue to be a policy tool used by emerged nations instead of military action:

- **Current sanctions against Russia a historic test, very few examples at this scale**
- **Will cryptocurrency and larger adoption levels reduce credit and asset sanction effectiveness through diversification?**
- **Will trade sanctions outside of energy markets matter if economies are more self-sustaining?**
- **What lessons will we take from the Russian sanctions?**
 - **How long can the Russian sanctions continue?**

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