The Defense Cooperation Agreements Dataset (DCAD) v1.0

CODEBOOK

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Defense cooperation agreements (DCAs) are formal bilateral agreements that establish long-term institutional frameworks on various aspects of defense and military cooperation, including defense policy, military industries and weapons procurement, defense-related research and development, training and officer exchange, joint exercises, and sharing of classified information, among others. DCAs are generic agreements that, in principle, can be signed between any pair of countries. DCAs emphasize routine forms of day-to-day defense cooperation and typically do not address contingencies involving conflict or war. DCAD does not include defense pacts, nonaggression pacts, status of forces agreements, strategic partnerships, one-shot arms deals, joint research limited to specific programs (e.g., the F35 JSF), military aid agreements, nuclear cooperation or assistance deals, security agreements that primarily involve internal ministries and/or civilian security agencies, agreements surrounding border disputes or prior conflicts, arms limitation agreements, or agreements that are narrowly limited only to specific countries or contexts.[1]

Version 1.0 of DCAD covers all independent countries, as determined by the Correlates of War (COW) project's country list, for the period 1980 through 2010. DCAD consists of two files:

- `DCAD-v1.0-main.csv`
- `DCAD-v1.0-dyadic.csv`

These files correspond to the treaty-year and dyad-year versions of the dataset, respectively. The treaty-year data are appropriate when users are interested in explaining the *creation* of DCAs, or when assessing the effects of DCA creation on other outcomes. The dyad-year dataset uses the main treaty-year file to generate six versions of a dyad-year DCA measure. The dyad-year dataset is most appropriate when users are interested in explaining the effects of DCA *existence* on other outcomes. That is, because determining DCA duration (and, thus, the existence of an in-force DCA between any particular pair of countries) is not a straightforward task, users are encouraged to use the dyad-year data only as an independent variable. When DCAs themselves are the outcome of interest, the treaty-year version of the data is more appropriate.

When using DCAD, please cite the following:

- Kinne, Brandon J. Forthcoming. "The Defense Cooperation Dataset (DCAD)." *The Journal of Conflict Resolution.*

[1] Examples of narrow/idiosyncratic agreements include the US post-war partnerships with Iraq and Afghanistan, South and North Korea's agreements regarding the demilitarized zone, Brazil and Argentina's agreements regarding their former nuclear programs, and so on.

Variables in treaty-year dataset (DCAD-v1.0-main.csv)

`ccode1`	Numeric COW country code for signatory 1
`cowName1`	COW acronym for signatory 1
`ccode2`	Numeric COW country code for signatory 2
`cowName2`	COW acronym for signatory 2
`signDay`	Numeric calendar day of signature; missing if unknown
`signMonth`	Numeric calendar month of signature; missing if unknown
`signYear`	Numeric calendar year of signature; missing if unknown
`EIFDay`	Numeric calendar day of entry into force; missing if unknown or if treaty not in force
`EIFMonth`	Numeric calendar month of entry into force; missing if unknown or if treaty not in force
`EIFYear`	Numeric calendar year of entry into force; missing if unknown or if treaty not in force
`type`	A high-level binary classifier indicating whether the agreement is best categorized as **general** or **sector**. General agreements include **Full DCA** and **Industry** agreements. Sector agreements include **Procurement**, **TrEx** (training and exchange), **Research**, and **Commission** agreements. See `category1` below for details on each.
`category1`	For **general** agreements, one of the following: • **Full DCA:** The agreement explicitly attempts to institutionalize the entirety of signatories' cooperative defense relations, both in terms of current and prospective activities, including but not limited to coordination in defense policies and mutual consultation; training, education, and exchange; joint military exercises; coordination in peacekeeping operations; defense-related research and development (R&D), and other forms of defense industrial cooperation; weapons procurement; security of classified information. • **Industry:** The agreement explicitly attempts to institutionalize the entirety of signatories' defense-industrial relations, including but not limited to joint research, development, and production; sharing of classified weapons-related material; exchanges of scientific and technocratic personnel; collaborations between universities, national labs, and other research institutions; collaborations, partnerships, and joint ventures between defense firms; transfer of components and finished weapons. *NOTE:* These agreements are often signed as an industry-oriented companion to full DCAs.

`category1` cont.

For **sector** agreements, one of the following:

- **Procurement:** The agreement establishes a framework for procurement and acquisition of weapons, equipment, spare parts, and possibly weapons-related training. Unlike **Industry** agreements, these agreements focus exclusively on arms trade and do not entail joint research, industrial collaboration, etc.
- **TrEx:** The agreement establishes a framework for officer exchanges, joint training and education, advanced coursework in foreign institutions, and other activities that involve movement of personnel for training/education purposes.
- **Research:** The agreement establishes a framework for defense-related research, often involving universities, national labs, and other basic research facilities, with more of an emphasis on basic research than immediate weapons applications. Unlike **Industry** and **Procurement** agreements, these agreements typically do not involve arms trade.
- **Commission:** The agreement establishes a recurring high-level consultation mechanism, such as a bilateral committee, joint working group, or military commission, with a focus on general defense policy coordination.

`category2`

If any ambiguity exists about agreement category, this variable indicates the most likely alternative category, i.e., one of **Full DCA**, **Industry**, **Procurement**, **TrEx**, **Research**, or **Commission**.

`category3`

If any ambiguity exists about agreement category, this variable indicates the second most likely alternative category, i.e., one of **Full DCA**, **Industry**, **Procurement**, **TrEx**, **Research**, or **Commission**.

`span`

A numeric value indicating the formal span of the agreement

- Positive integer values indicate the treaty's duration, in years, as specified by the treaty text, secondary sources, or newssources.
- **-77** indicates an indefinite agreement. The treaty either makes no provisions for termination or specifies that the agreement endures until terminated.
- **-88** indicates a finite agreement of indeterminate duration. That is, the treaty is not indefinite, but the precise duration cannot be determined.
- Missing values indicate duration is unknown. Treaty may be limited or indefinite.

`renewType`

A numeric value corresponding to one of eight possible renewal conditions

- **-44** indicates treaty is finite with no possibility of renewal and/or renewal is not addressed.

`renewType` cont.

- **-55** indicates treaty renewal for a limited term, conditional on explicit consent from both parties. See `renewYears` for length of renewal term.
- **-56** indicates automatic treaty renewal for a single limited term, no consent from parties required. See `renewYears` for length of renewal term.
- **-57** indicates treaty renews indefinitely, conditional on explicit consent from both parties. Renewal period may consist of successive renewal blocks (e.g., every five years). See `renewYears` for length of renewal term.
- **-58** indicates treaty renewal for either a finite or indefinite term, conditional on explicit consent from both parties, but duration of renewal period is unknown. (`renewYears` coded as **-88**.)
- **-66** indicates ongoing automatic treaty renewal, no consent from parties required. Differs from indefinite agreements in that renewal consists of consecutive blocks of time. That is, `span` indicates a finite time period rather than **-77** code.
- **-77** indicates an indefinite agreement. That is, `span` = **-77**.
- **-88** indicates that treaty appears to include renewal provisions but details are unknown.
- Missing values indicate no information on renewal available.

`renewYears`

A numeric value indicating the duration of the renewal term

- Positive integer values indicate duration of renewal, in years, as specified by the treaty text, secondary sources, or newssources.
- **-44** indicates treaty not renewable.
- **-55** indicates term duration determined at time of renewal (i.e., not specified in treaty text).
- **-66** indicates ongoing automatic renewal consisting of successive renewal blocks. That is, `span` is an integer value and `renewType` = **-66**.
- **-77** indicates an indefinite agreement. That is, `span` = **-77** and `renewType` = **-77**.
- **-88** indicates renewal length indeterminate.
- Missing values indicate no available information on treaty renewal.

`terminated`

If known, the treaty's status as of DCAD's final year of coverage

- **0** indicates that, to the best of the coders' knowledge, the treaty remained in force as of 12/31/2010.
- **1** indicates treaty known to have terminated. See `durationActual` for treaty's full duration.

`terminated` cont.

- **-88** indicates insufficient information about EIF status to determine termination.
- **-99** indicates treaty appears to have entered into force but termination status cannot be determined.

`durationActual` For agreements known to have terminated, the observed duration of the agreement, in years; missing otherwise

`endYearEstimate` An informed estimate of the agreement's year of termination, as determined by the following rules:

- For agreements where `terminated=1`, `endYearEstimate` equals the year of termination, as calculated from `durationActual`.
- For agreements where `terminated=0`, `endYearEstimate` equals the final year of the dataset (i.e., 2010).
- If the treaty is indefinite (i.e., `span=-77`) and there is no evidence of termination, `endYearEstimate=2010`.
- If the treaty renews indefinitely, without required consent from the signatories (i.e., `renewType=-66`), and there is no evidence of termination, `endYearEstimate=2010` regardless of `span`.
- If the treaty is finite and may not be renewed (i.e., `renewType`=-44), `endYearEstimate` equals `signYear` plus `span`.
- If the treaty is finite and (1) renews for a limited term with consent of both parties, or (2) renews automatically for a single term, or (3) renews indefinitely contingent on repeated consent from both parties (i.e., if `renewType={-55,-56,-57}`), `endYearEstimate` equals `signYear` plus `span` plus `renewYears`.
- If the treaty is finite and renewable for a limited term, but the duration and terms of renewal are unknown or unspecified (i.e., `renewType=-58`), `endYearEstimate` equals `signYear` plus `span`.
- For any missing values, `endYearEstimate` equals `signYear` plus the median span, in years, of all observations in the dataset where span is known.
- *NOTE:* `endYearEstimate` is never larger than 2010, the final year of the dataset.

`asymmetry` A trichotomous indicator of potential or actual asymmetry in treaty commitments

- **0** indicates no evidence of asymmetry.
- **1** indicates *possible* evidence of asymmetry, such as military aid, basing and/or foreign deployments, explicit substantive references to colonial ties, or differing legal obligations in the treaty's core areas.
- **2** indicates definitive evidence of asymmetry, as revealed by treaty texts, secondary sources, or newssources.

`asymmetry` cont.

- *NOTE:* This indicator is meant to flag any potential signs of asymmetry. Only `asymmetry = 2` definitively indicates that asymmetry exists. `asymmetry = 1` indicates only that asymmetry *may* exist. Users can generally pool agreements where `asymmetry` equals 0 or 1, but should not pool agreements where `asymmetry` equals 2.

`categoryConf`

A four-level nominal assessment of the coder's confidence in the assigned categories, as reflected in `type`, `category1`, `category2`, and `category3`

- **high** indicates the highest level of confidence in the assigned categories. This scoring typically corresponds to a treaty where the full text is available (either in English or translatable to English), and the text clearly and unequivocally describes the issue-areas covered by the agreement.
- **medium** indicates a moderate level of confidence in the assigned categories. This scoring typically corresponds to an agreement where the full text is unavailable but the treaty is listed in treaty databases or official government records, and available sources—such as treaty archives, news sources, or other secondary sources—contain sufficient information to assign the DCA to a specific category with little ambiguity.
- **low** indicates little confidence in the assigned categories. This scoring typically corresponds to an agreement where full text is unavailable and secondary sources describe the agreement's scope only vaguely or not at all.
- **atypical** indicates that the agreement may differ substantially from the archetypal agreement within that category. Atypical agreements may include provisions that are common to other agreement subtypes; and/or may contain high levels of asymmetry; and/or may be nested within a larger non-DCA treaty framework.
- *NOTE:* When DCAs are the independent or dependent variable of interest, we generally recommend using only **high** and **medium** DCAs in the analysis.

`UNTS`

If available, the treaty's unique numeric code in the United Nations Treaty Series

`fullText`

A four-level nominal indicator of whether the full text of the agreement is available

- **N** indicates full text not available.
- **NE** indicates full text not available in English, but may be available in other, potentially translatable languages.
- **TE** indicates full text available in a non-English language and translated to English by coders, human translators, or translation software.
- **Y** indicates full text available in standard, non-translated English.

`sourceType` A high-level binary indicator of the type of source(s) primarily used to code the agreement

- **treaty** indicates that the agreement was primarily coded using full text, a treaty repository, or country-level resources.
- **factiva** indicates that the agreement was primarily coded using global newspaper, newswire, and transcript searches in the Factiva database

`source` A character string describing the precise source of the data, such as "Albania Treaty Series" or "Macedonian Embassy in Spain." *NOTE:* This variable includes over 90 unique values.

`factivaConf` If `sourceType` = **factiva**, a five-point ordinal scale indicating the coder's confidence in the Factiva-specific sources used to code the agreement, based on the following considerations:

1. Was a formal international agreement signed between two sovereign governments, with no ambiguity about the day, month, and year of signature?
2. Does the agreement cover issue-areas that correspond to those typically covered by DCAs?
3. Is the agreement motivated by general (inter)national security considerations and not by idiosyncratic events such as a recent or ongoing war, activities of a specific terrorist organization or transnational actor, or other non-generalizable factors?
4. Does the agreement reflect other main characteristics of DCAs, such as being long term and relatively symmetric in obligations?

The following rules determine scoring:

- **5** indicates maximum confidence in the coding, such that all four of the above criteria are satisfied, usually due to numerous highly detailed news reports.
- **4** indicates that the first three criteria are clearly satisfied, but there is ambiguity about #4.
- **3** indicates that criteria #1 and #2 are clearly satisfied, but there is ambiguity about #3 and #4.
- **2** indicates that one of the criteria may be satisfied, but there is ambiguity about the remaining three, including #1
- **1** indicates that none of the criteria is clearly satisfied, but news reports nonetheless suggest that a DCA may have been signed

NOTE: When DCAs are the dependent or independent variable of interest, we recommend using only agreements where `factivaConf` is **3** or greater.

`factivaSign` If `sourceType` = **factiva**, a trichotomous indicator of whether newssources definitively indicate that an agreement was signed and not merely discussed or negotiated

- **1** indicates that, based on consulted news reports, an agreement was in fact signed.
- **0** indicates that, based on consulted news reports, an agreement was not signed, but was under discussion, negotiation, and/or serious consideration.
  - *NOTE:* Given that DCAD typically includes only *signed* agreements, `factivaSign=0` is uncommon. DCAD nonetheless includes a handful of such agreements because (a) in some cases signature appears imminent or at least highly probable, and/or (b) in some cases, especially when signature appears imminent, the actual event of DCA signature may go unreported.
- **-99** indicates that consulted news reports are ambiguous or unclear about whether an agreement was physically signed. This ambiguity typically arises from vague language in news sources (e.g., "X and Y agreed today..."), not from duplicity on the part of ministers and diplomats.

`factivaEIF` If `sourceType` = **factiva**, a trichotomous indicator of whether newssources definitively indicate that an agreement entered into force

- **1** indicates that, based on consulted news reports, the agreement entered into force.
- **0** indicates that, based on consulted news reports, the agreement definitively did not enter into force. This coding typically results when a DCA requires legislative approval to enter into force, but that approval has not yet materialized.
- **-99** indicates that news sources are ambiguous about entry into force or, much more commonly, simply make no mention of entry into force.
- *NOTE:* `factivaEIF=0` is based solely on information available to coders via news sources at the time of coding and does not exclude the possibility that the DCA entered into force shortly after the reported signature. News sources rarely report entry-into-force of DCAs separate from treaty signature.

`DCAid` A unique string identifier for each DCA. Any questions about a specific agreement should be emailed to `[email]` and include the agreement's unique ID.

Variables in dyad-year dataset (DCAD-v1.0-dyadic.csv)

The dyad-year dataset uses the `signYear` and `endYearEstimate` variables from the main treaty-year dataset to infer the existence of a DCA between `ccode1` and `ccode2`. For a given dyad in the treaty-year dataset, a DCA is coded as present during those years that fall within the range of `signYear` and `endYearEstimate`, inclusive.

The dataset includes one observation for each possible dyad-year pairing between independent countries, as determined by the COW country list. That is, DCAD includes dyad-year observations where DCAs are present *and* where DCAs are absent. The dataset is also *directed* in that it includes separate observations for `ccode1`→`ccode2` and `ccode2`→`ccode1`. These features ease merging of DCAD with other datasets. However, because DCAs are nondirected, the dataset is symmetric, such that the `ccode1`→`ccode2` observation in a given year is always equal to the `ccode2`→`ccode1` observation in that same year.

DCAD includes six versions of the dyad-year DCA variable, derived from different levels of generality and coder confidence. The `V1` versions of each variable utilize only agreements coded with **medium** or **high** confidence, while the `V2` versions ignore coder confidence. We anticipate that when exploring straightforward questions about the impact of DCAs on relevant outcomes, users will find the `dcaAnyV1` version to be the most appropriate, as it considers a broad range of DCAs while excluding atypical agreements and those coded with low levels of confidence.

Because DCAD is fully transparent about the construction of these variables, users are free (and encouraged) to derive their own variants of dyad-year data.

`ccode1`	The Correlates of War country code for signatory 1
`cowName1`	The Correlates of War acronym for signatory 1
`ccode2`	The Correlates of War country code for signatory 2
`cowName2`	The Correlates of War acronym for signatory 2
`year`	The year of observation

*NOTE: The following are binary variables where **1** indicates a DCA exists in the given dyad-year, and **0** indicates a DCA does not exist. Analyses should use only one version at a time.*

`dcaGeneralV1`	Includes only agreements where `type =` **general**, and `categoryConf =` **medium** or **high**
`dcaGeneralV2`	Includes only agreements where `type =` **general**, regardless of `categoryConf`
`dcaSectorV1`	Includes only agreements where `type =` **sector**, and `categoryConf =` **medium** or **high**

`dcaSectorV2`	Includes only agreements where `type =` **sector**, regardless of `categoryConf`
`dcaAnyV1`	Includes only agreements where `categoryConf =` **medium** or **high**, regardless of `type`
`dcaAnyV2`	Includes all agreements regardless of `categoryConf` or `type`