

Heavy Weapons Donated to Ukraine – A Note

Note: The following will be integrated into the next update of our research paper:

- Antezza, Arianna & Frank, André & Frank, Pascal & Franz, Lukas & Kharitonov, Ivan & Kumar, Bharath & Rebinskaya, Ekaterina & Trebesch, Christoph, 2022. "The Ukraine Support Tracker: Which countries help Ukraine and how?," Kiel Working Paper 2218.

1. Introduction and methodology

This note introduces a new type of ranking to the Ukraine Support Tracker: The share of a government's heavy weapons that is donated to Ukraine. We consider the three main type of heavy weapons discussed in the context of the Russia-Ukraine war, debate, namely (i) tanks, (ii) howitzers (155/152mm), and (iii) multiple rocket launchers (MRLS).

As a baseline, we count the number of weapons (e.g. howitzers) donated to Ukraine (using our own dataset) and compare that to the number of weapons that the government's army has on stock. *The numbers of government stocks come from the annual Military Balance publication by the International Institute for Strategic Studies (IISS 2022)*, one of the world's leading think tanks. Their study assesses the military capabilities of 171 countries worldwide, providing, among others, detailed information on weapon stocks of each country. We use the most recent IISS Military Balance publication released in February 2022 and containing data as of November 2021.

The IISS is widely regarded as reliable and regularly cited by journalists and scholars. Nevertheless, there are some caveats in the context of our own study, as discussed next.

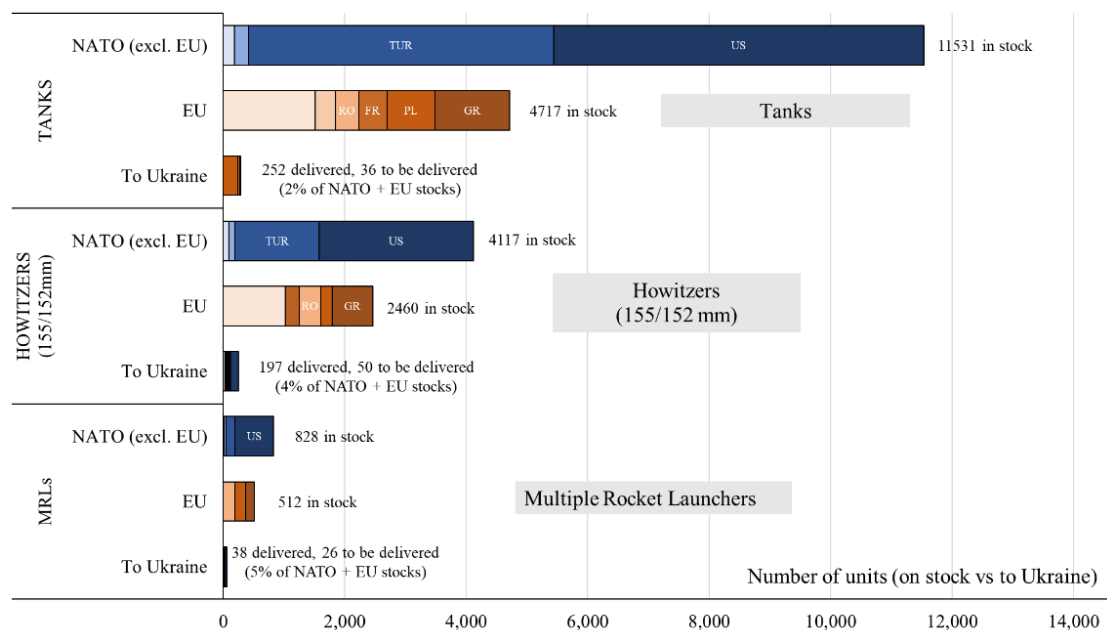
2. Important caveats

- In this release, we do not differentiate by quality, age, or cost of the weapons. An old Soviet-era tank like the T-72 is thus counted in the same way as a modern one like the PT-91. Future versions of these rankings will account for weapon age and/or cost.
- We do not consider armoured vehicles in the main rankings. Adding them does not change results crucially.

- IISS considers only equipment that is deployable, meaning that it does not require major refurbishment. This means that old, discharged weapons that may still be of use for Ukraine are not counted. For example, Slovenia recently pledged 28 old M-55s tanks to Ukraine. These tanks were old and therefore withdrawn from service in approximately 2010-2011 (according to IISS 2011) and were thus not listed in the IISS Military Balance study of 2022. Another case was Norway which had discharged 12 old M270 MRLS in 2005 but then pledged and delivered them together with the United Kingdom to Ukraine. To reduce this problem, we compute shares of weapons donated by adding the stocks sent to Ukraine to the IISS stock data (e.g. we add the 28 M-55s in the case of Slovenia and the 12 M270 MRLS in the case of Norway).
- Some countries purchased weapons with the purpose of sending them to Ukraine. These weapons will thus not appear in IISS (2022). Like in the case of discharged weapons, we add them to the IISS numbers when computing shares of weapons donated. For example, the United Kingdom purchased 20 M109 155mm Howitzers to send to Ukraine but also had 89 AS90 155mm Howitzers in stock, according to IISS military balance. Thus, we consider their total 155mm howitzers stocks to be 109.

3. Main figures from the data

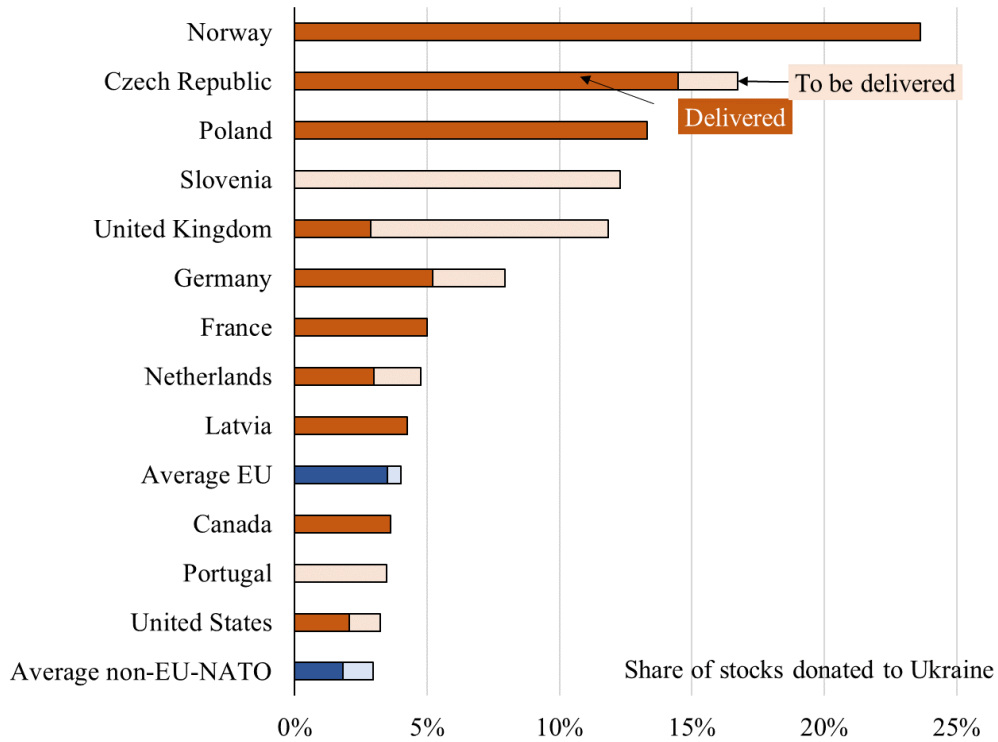
Figure 1. Heavy weapons: NATO and EU stocks vs units sent to Ukraine



Note: This figure shows weapon stock estimates of tanks, howitzers, and MRLS compared with donations to Ukraine. The data on stock comes from IISS, Military Balance (2022) and considers only weapons ready to use. Commitments and deliveries data are from our Ukraine Support Tracker database.

Figure 2. Country ranking of heavy weapon donations: share of stocks donated to Ukraine

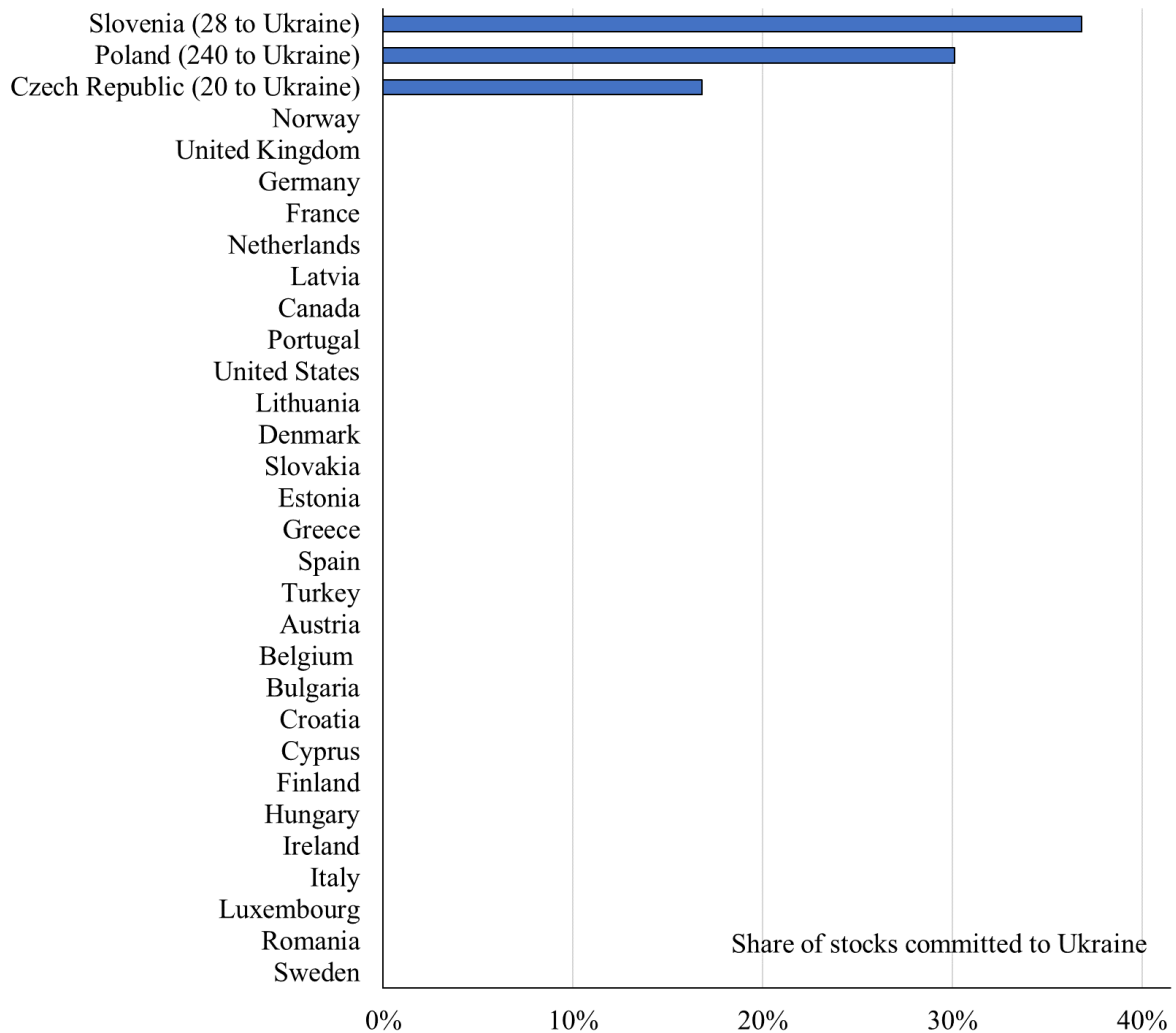
Average share for 3 categories (i) tanks (ii) howitzers and (iii) MLRS. For each category we compare weapon stocks to those sent to Ukraine between Jan. 24 to Sep. 3, 2022, by country



Note: This figure shows the average share of heavy weapon stocks sent to Ukraine by country (average of tanks, howitzers (155, 152 mm), and MRLS shares sent). For stocks, we use IISS (2022) estimates. Here we only consider weapons that are ready to use and do not differentiate by quality/cost/age of weapons. Commitments and deliveries data are from is from our Ukraine Support Tracker database. We only rank countries that actually sent heavy weapons, most countries in our database did not (zeros are not shown, see full data in the next Figures).

Figure 3. **Tank shares** – percent of stocks donated to Ukraine, by country

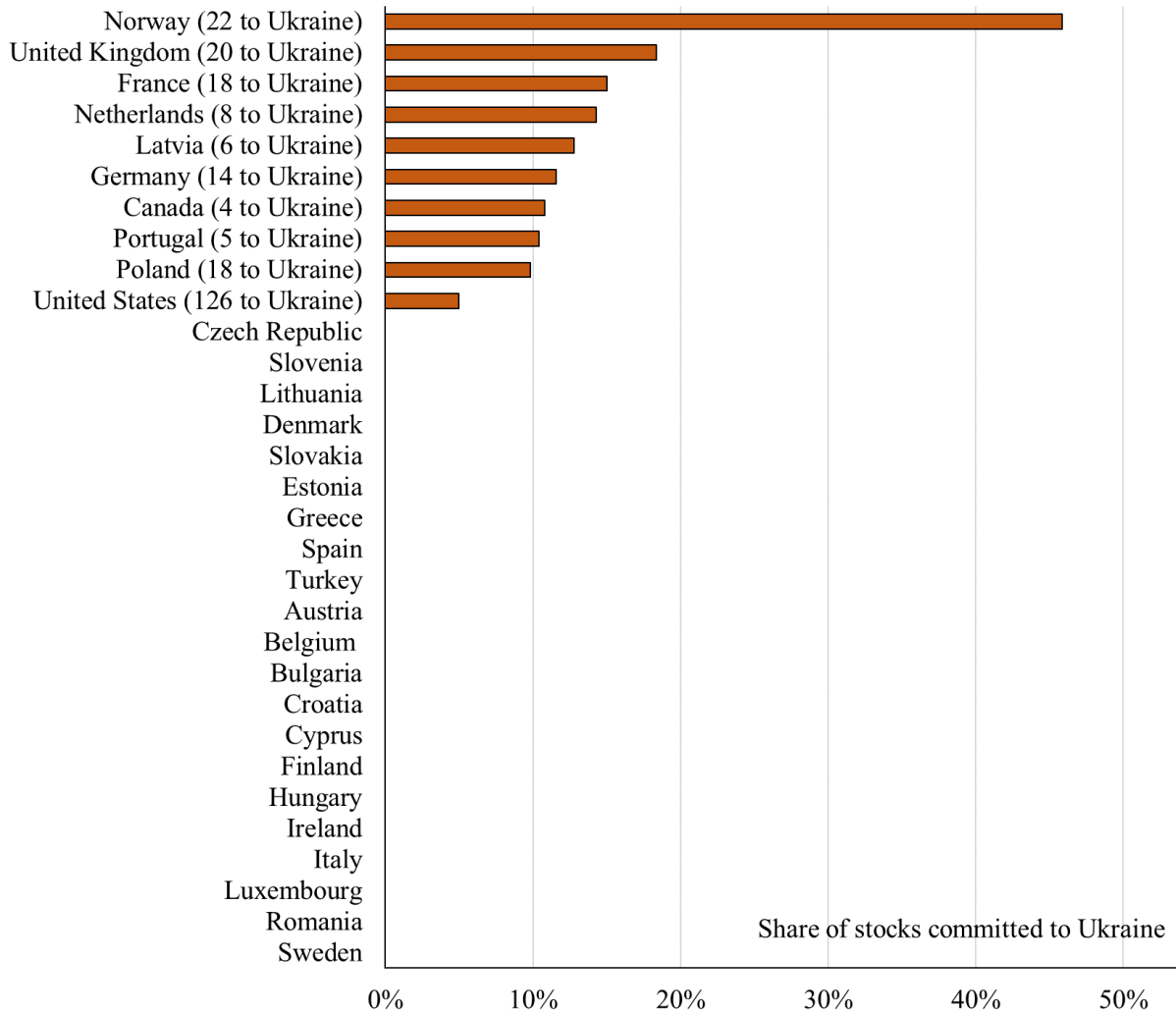
*Data on tank commitments between Jan. 24 to Oct. 3, 2022,
computed in % of tank stock of countries*



Note: This figure shows the share of tanks in stock sent to Ukraine by country. Number in the parentheses is the amount of tanks sent to Ukraine by country. If there are no parentheses, then the country sent zero tanks. Weapon stock estimates are from IISS, Military Balance (2022). considers only weapons ready to use. Here we only consider weapons that are ready to use and do not differentiate by quality/cost/age of weapons. Commitments and deliveries data are from our Ukraine Support Tracker database. Here we rank all countries even if they donated zero tanks.

Figure 4. **Howitzers (155,152mm) shares** – percent of stocks donated to Ukraine, by country

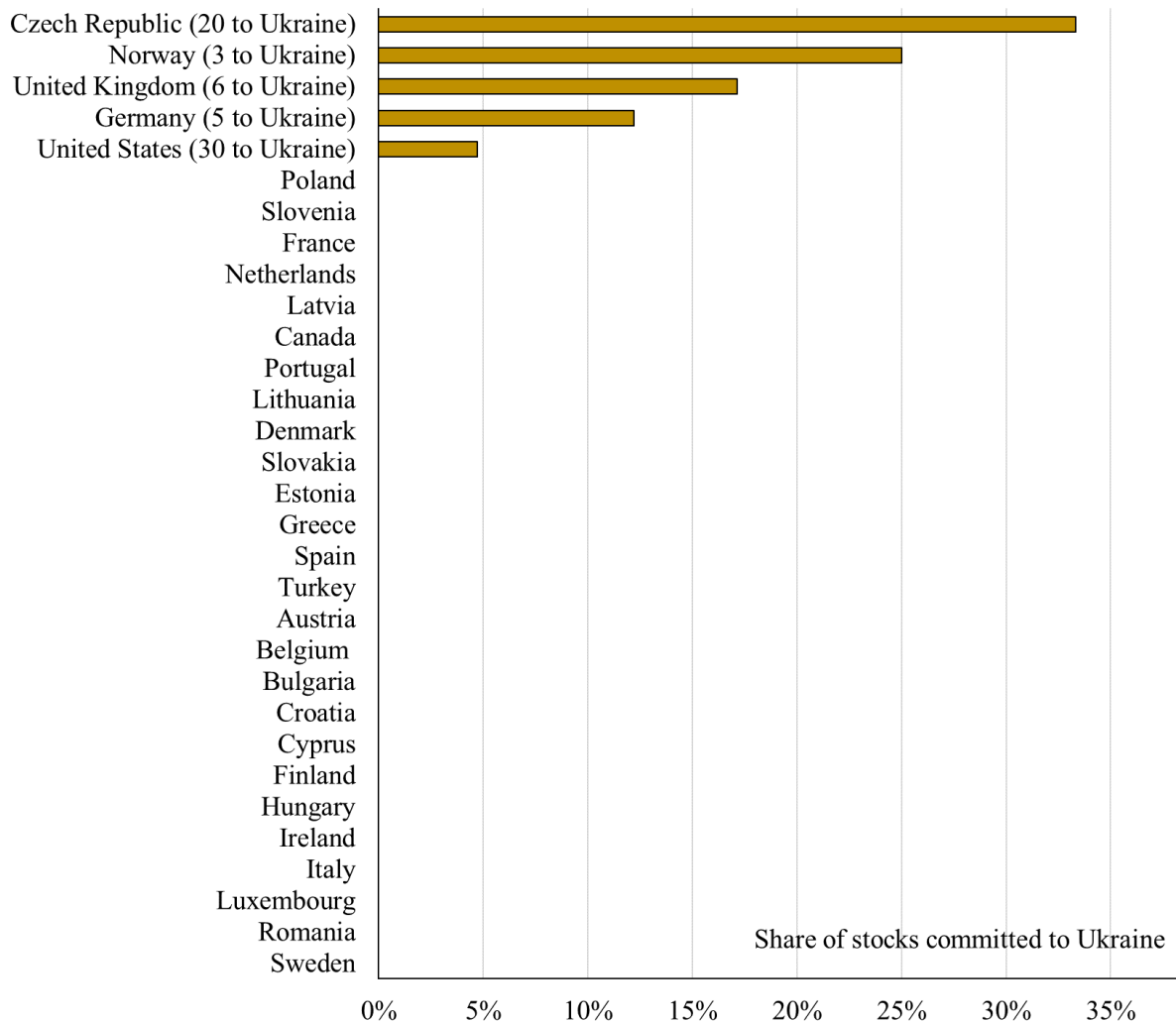
*Data on howitzer commitments between Jan. 24 to Oct. 3, 2022,
computed in % of howitzer stock of countries*



Note: This figure shows the share of howitzers (155/152mm) in stock sent to Ukraine by country. Number in the parentheses is the amount of howitzers sent to Ukraine by country. If there are no parentheses, then the country sent zero howitzers. Weapon stock estimates are from IISS, Military Balance (2022) considers only weapons ready to use. Here we only consider weapons that are ready to use and do NOT differentiate by quality/cost/age of weapons. Commitments and deliveries data are from our Ukraine Support Tracker database. Here we rank all countries even if they donated zero howitzers.

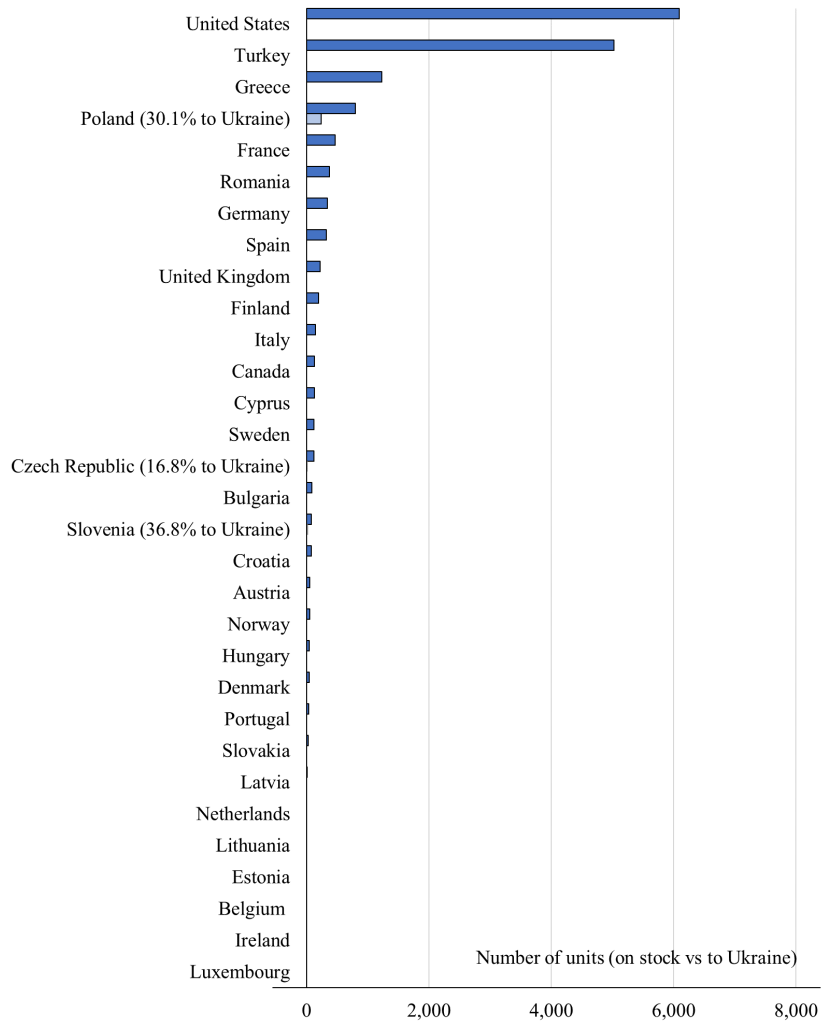
Figure 5. **MRLS shares** – percent of stocks donated to Ukraine, by country

*Data on MRLS commitments between Jan. 24 to Oct. 3, 2022,
computed in % of MRLS stock of countries*



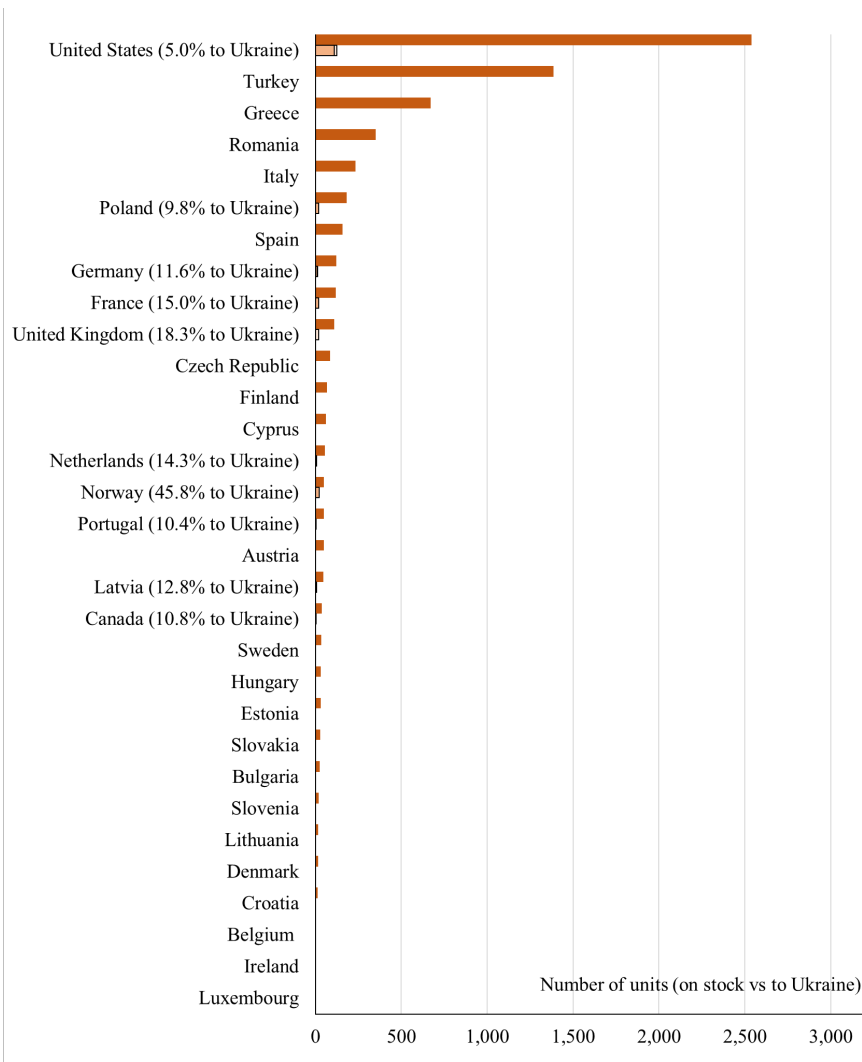
Note: This figure shows the share of MRLS in stock sent to Ukraine by country. Number in the parentheses is the amount of MRLS sent to Ukraine by country. If there are no parentheses, then the country sent zero MRLS. Weapon stock estimates are from IISS, Military Balance (2022) considers only weapons ready to use. Here we only consider weapons that are ready to use and do NOT differentiate by quality/cost/age of weapons. Commitments and deliveries data are from our Ukraine Support Tracker database. Here we rank all countries even if they donated zero MRLS.

Figure 6. **Tank units** – total stocks vs. number donated to Ukraine, by country



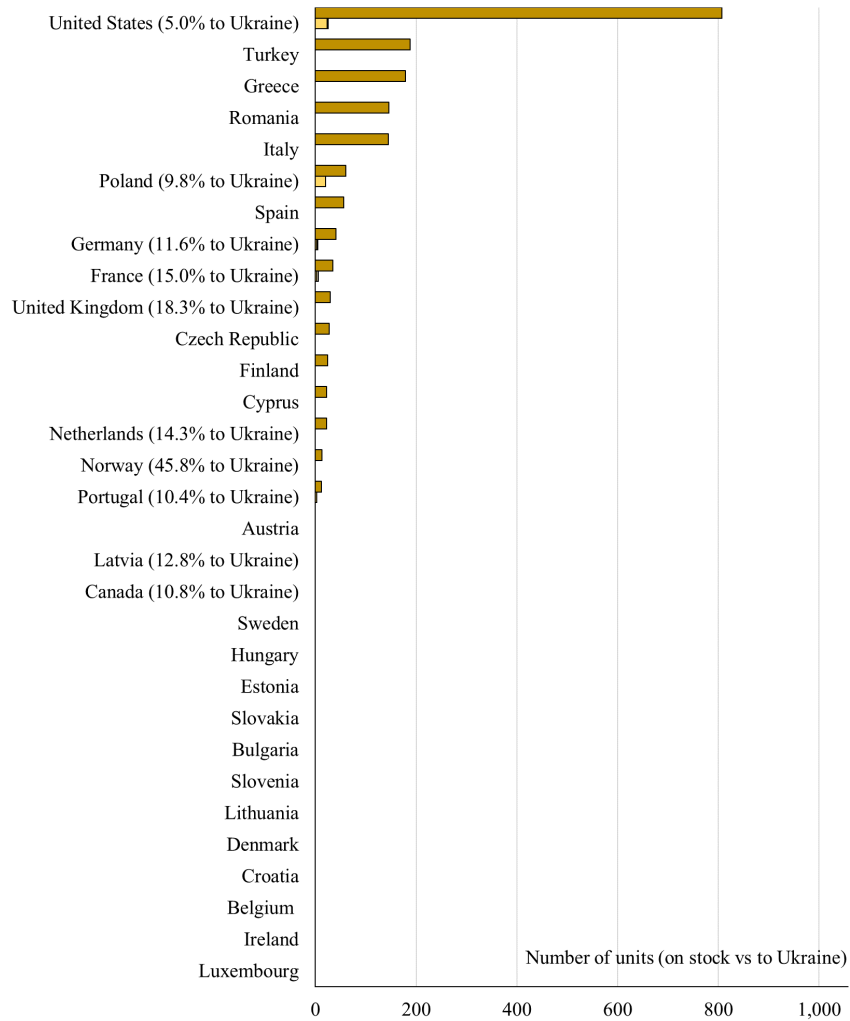
Note: Number of tanks in stock by country. Number in the parentheses is the share of tanks sent to Ukraine by each country. If there are no parentheses, then the country sent zero tanks. Weapon stock estimates are from IISS, Military Balance (2022) considers only weapons ready to use. Here we only consider weapons that are ready to use and do NOT differentiate by quality/cost/age of weapons. Commitments and deliveries data are from our Ukraine Support Tracker database. Here we rank all countries even if they donated zero tanks.

Figure 7. **Howitzer units** – total stocks vs. number donated to Ukraine, by country



Note: Number of howitzers (155/152mm) in stock by country compared with donations to Ukraine. Number in the parentheses is the share of howitzers sent to Ukraine by each country. If there are no parentheses, then the country sent zero howitzers. Weapon stock estimates are from IISS, Military Balance (2022) considers only weapons ready to use. Here we only consider weapons that are ready to use and do NOT differentiate by quality/cost/age of weapons. Commitments and deliveries data are from our Ukraine Support Tracker database. Here we rank all countries even if they donated zero howitzers.

Figure 8. **MRLS units** – total stocks vs. number donated to Ukraine, by country



Note: Number of MRLS in stock by country compared with donations to Ukraine. Number in the parentheses is the share of MRLS sent to Ukraine by each country. If there are no parentheses, then the country sent zero MRLS. Weapon stock estimates are from IISS, Military Balance (2022) considers only weapons ready to use. Here we only consider weapons that are ready to use and do NOT differentiate by quality/cost/age of weapons. Commitments and deliveries data are from our Ukraine Support Tracker database. Here we rank all countries even if they donated zero MRLS.