

# SUPPLEMENTARY MATERIALS

**The myth of deglobalization: multinational corporations in an era of growing geopolitical rivalries**

## Appendix A. Global FDI statistics

The 2015-21 median value estimate of the total global stock of inward FDI in CDIS amounts to USD 36 trillion USD. Over half of it (USD 20 trillion) is accounted for by Europe, of which two thirds (USD 13 trillion) is due to intra-European FDI. Excluding intra-European FDI, the global stock of FDI thus amounts to about 23 trillion. About one quarter of it, USD 7 trillion, is recorded in Europe. A bit more than USD 4 trillion in the United States. The combined positions in Mainland China and Hong Kong amount to about USD 2.6 trillion (1.8 trillion in Hong Kong and 0.8 in Mainland China). These three regions together account for more than half of the estimated global stock of inward FDI. The next biggest locations for FDI are Japan (USD 1.5 trillion) and Canada (USD 1 trillion), followed by South Korea, Australia, Russia (about USD 0.2 trillion each) and a multitude of other countries (see also appendix table A1).

The largest share of FDI in the United States is accounted for by companies based in Japan, which together hold about USD 514 billion out of the total stock of USD 4.2 trillion. Japan is followed by companies from European economies (United Kingdom: USD 505 billion; Netherlands: USD 448 billion; Luxembourg: USD 351 billion; Germany: USD 320 billion; Switzerland: USD 268 billion; France: USD 258 billion; Ireland: USD 253 billion) and Canada (USD 447 billion). On tenth position are the Cayman Islands (USD 102 billion), which—like the Netherlands, Luxembourg, Switzerland and Ireland—are a well-known tax haven jurisdiction facilitating holding companies/special purpose entity (SPE) FDI (Fichtner, 2016; Garcia-Bernardo et al., 2017). Companies from mainland China, with holdings of about USD 36 billion (in range with Norway), only rank 16<sup>th</sup> on this list of biggest corporate investors in the USA. Hong Kong companies account for another USD 14 billion, which is similar to the position held by firms from Taiwan, Austria or the United Arab Emirates (the full list is provided in appendix table A2). Notably, the combined FDI position of mainland China and Hong Kong-based firms of about USD 50 billion is no larger than that held by companies based in Sweden.

Turning to China, we analyse separately the stocks held in mainland China and Hong Kong. The total reported inward position of mainland China amounts to USD 2.8 trillion, of which one half is accounted for by intra-Chinese investments originating in Hong Kong. Of the other half, about one quarter (USD 317 billion) is held by entities registered in the British Virgin Islands. This is followed by European investors with a combined stake of about USD 225 billion (of which the largest shares are held by companies based in Germany, Netherlands, France, United Kingdom, Switzerland, Sweden and Italy), Japan (USD 165 billion), South Korea (USD 76 billion), Taiwan (USD 33 billion), and a diverse set of SPE-facilitating hubs such as Singapore (USD 111 billion), Cayman Islands (USD 49 billion), Mauritius (USD 29 billion), Samoa (USD 28 billion) and Bermuda (USD 11 billion). Direct investments of U.S. companies that is not routed via tax havens amounts to only about USD 74 billion. Canadian and Australian companies together have direct investments of about USD 10 billion each in mainland China. The picture in Hong Kong is similar. About one third of the total reported inward stock of FDI of USD 1.7 trillion is from mainland China. A bit more than half of the remaining total stock is owned by entities in SPE conduits such as the British Virgin Islands (USD 582 billion), Cayman Islands (USD 138 billion), Bermuda (USD 97 billion), Singapore (USD 41 billion) and Cooks Islands (14 billion). The other half is owned by companies from Europe (with entities in the United Kingdom accounting for the lion's share, followed by Netherlands, Switzerland, France, and Germany), direct investments by US companies and firms from Japan, Thailand, Canada, South Africa, Taiwan, Australia and South Korea.

For the subsequent analytic steps, we classify the following countries as “tax haven” jurisdictions: The Netherlands, Luxembourg, Switzerland, Ireland, Liechtenstein, Cayman Islands, Bermuda, Gibraltar, Barbados, Cyprus, British Virgin Islands, Singapore, Bahamas, Curacao, Hungary, Guernsey, Isle of Man, Jersey, Puerto Rico, Barbados, Malta, Mauritius, Samoa, American Samoa.

**Table A1.** Largest recipients of global IFDI (2015-21 median values)

Receiving country or region	Estimated total IFDI position in trillion USD (median 2015-2021)
World, total	36
Europe, aggregate	20 (of which 13 intra-EU)
USA	4.3
China and Hong Kong	2.6
Japan	1.5
Canada	1

NOTE: Own calculations, based on CDIS data.

**Table A2.** Largest investors in USA by country of origin of owners of FDI stock (2015-21 median values)

Origin of companies owning FDI stock in USA	Estimated position in billion USD (median 2015-2021)
World, total	4,200
<b>Japan</b>	514
<b>United Kingdom</b>	505
<b><i>Netherlands</i></b>	448
Canada	447
<b><i>Luxembourg</i></b>	351
<b>Germany</b>	320
<b><i>Switzerland</i></b>	268
<b>France</b>	258
<b><i>Ireland</i></b>	235
<i>Cayman Islands</i>	102
<b>Spain</b>	81
<b>Australia</b>	76
<b>Belgium</b>	73
<b>Korea</b>	56
<b>Sweden</b>	48
<b>China, Mainland</b>	36
<b>Norway</b>	32
<b>Italy</b>	30
<b>Hungary</b>	29
<b>Singapore</b>	25
<b>Denmark</b>	29
Mexico	19
<i>Bermuda</i>	17
<b>UAE</b>	15
<b>China, Hong Kong</b>	14
<b>Taiwan</b>	14
<b>Austria</b>	14
<b>Israel</b>	11
<b><i>Gibraltar</i></b>	10
<i>Barbados</i>	8

NOTE: Own calculations, based on CDIS data. Legend: *Italics*=tax haven; **bold**=outside of home region.

**Table A3.** Largest investors in Mainland China by country of origin of owners of FDI stock (2015-21 median values)

Origin of companies owning FDI stock in Mainland China	Estimated position in billion USD (median 2015-2021)
<i>World, total</i>	2.800
<i>China, Hong Kong</i>	1.400
<i>British Virgin Islands</i>	317
[Europe, aggregate]	[225]
<b>Japan</b>	<b>165</b>
<i>Singapore</i>	111
<b>Germany</b>	<b>78</b>
<b>Korea</b>	<b>76</b>
<b>USA</b>	<b>74</b>
<i>Cayman Islands</i>	49
<i>Netherlands</i>	35
Taiwan	33
<i>Mauritius</i>	29
<i>Samoa</i>	28
<b>France</b>	<b>25</b>
<b>United Kingdom</b>	<b>22</b>
<i>Switzerland</i>	14
<i>Bermuda</i>	11
<b>Canada</b>	<b>10</b>
<b>Australia</b>	<b>10</b>
<b>Sweden</b>	<b>9</b>
China, Macao	9
<b>Italy</b>	<b>8</b>
<i>Barbados</i>	7
<i>Ireland</i>	7
<b>Malaysia</b>	<b>7</b>
<i>American Samoa</i>	6
<i>Luxembourg</i>	6
<b>Denmark</b>	<b>5</b>
<b>Thailand</b>	<b>4</b>
<i>Liberia</i>	4

NOTE: Own calculations, based on CDIS data. Legend: *Italics=tax haven*; **bold=outside of home region**.

**Table A4.** Largest investors in Hong Kong by country of origin of owners of FDI stock (2015-21 median values)

Origin of companies owning FDI stock in Hong Kong	Estimated position in billion USD (median 2015-2021)
World, total	1.700
<i>British Virgin Islands</i>	582
<i>China, Mainland</i>	466
[Europe, aggregate]	[161]
<i>Cayman Islands</i>	138
<b>United Kingdom</b>	<b>135</b>
<i>Bermuda</i>	97
<i>Netherlands</i>	89
<i>Singapore</i>	41
<b>USA</b>	<b>41</b>
<b>Japan</b>	<b>28</b>
<b>Thailand</b>	<b>25</b>
<b>Canada</b>	<b>22</b>
<b>South Africa</b>	<b>17</b>
<i>Cook Islands</i>	14
Taiwan	12
<i>Switzerland</i>	12
<b>France</b>	<b>9</b>
China, Macao	6
<b>Australia</b>	<b>4</b>
<b>Germany</b>	<b>4</b>
<b>Korea</b>	<b>4</b>
<i>Liberia</i>	4
<i>Panama</i>	4
<i>Jersey</i>	3
<i>Belgium</i>	3

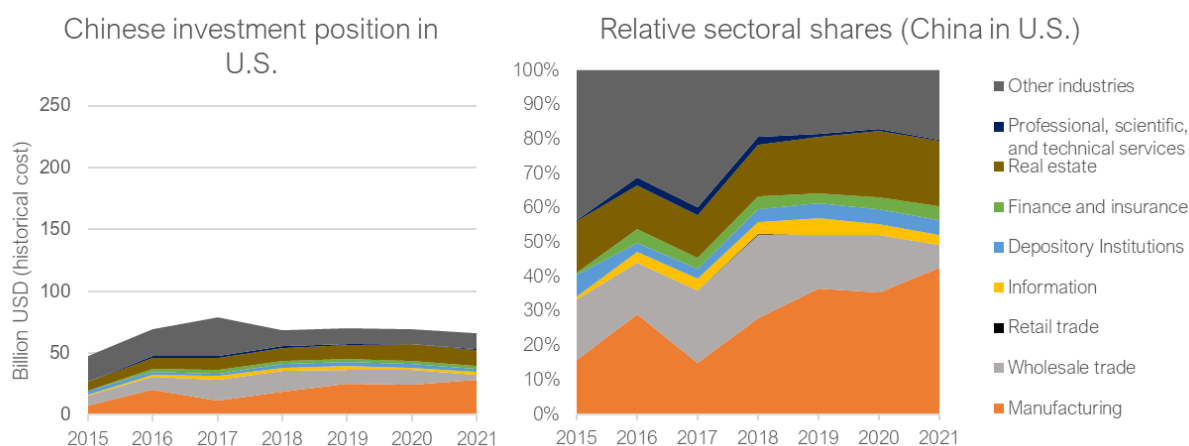
NOTE: Own calculations, based on CDIS data. Legend: *Italics*=tax haven; **bold**=outside of home region.

## Appendix B. Chinese FDI in the USA

Mirroring the analysis of US FDI in China, we also examine the evolution of FDI positions owned by Chinese and Hong Kong-based companies in the United States between 2015 and 2021. We rely on inward FDI data from US BEA. An important technical difference in the two sets of bilateral FDI statistics is that US BEA's outward FDI data includes FDI to SPE jurisdictions, which is categorized as 'holding companies' FDI. Inward FDI figures, in contrast, are estimated on ultimate beneficial owner (UBO) principle.

Figure B1 illustrates the evolution of the position of Chinese and Hong Kong-based companies in the USA over the same time period. The figures, on UBO principle, include indirect SPE FDI from China to the United States. At the aggregate level, shown in the left panel, the combined China/Hong Kong FDI position in the US jumped from USD 47 billion in 2015 to close to 80 billion in 2017. Thereafter it decreased somewhat and stabilized at below USD 70 billion (note that in conventional CDIS IFDI statistics that don't correct for SPE FDI, the aggregate position rose from 25 bn to 46 bn over the same time period).

Although the Chinese position in the US was thus also higher in 2021 than 2015, in contrast to the US position in China, its growth has slowed after 2017. At the same time, against the background of heated debates in U.S. politics about growing Chinese investments, it is also noteworthy that the U.S. position in China is about four times as large as the Chinese position in the USA.<sup>1</sup> Finally, sectoral trends indicate a significant increase in FDI in the manufacturing industries and a decline in FDI in the wholesale trade sector (as well as "other industries", which may also reflect improvements in measurement).

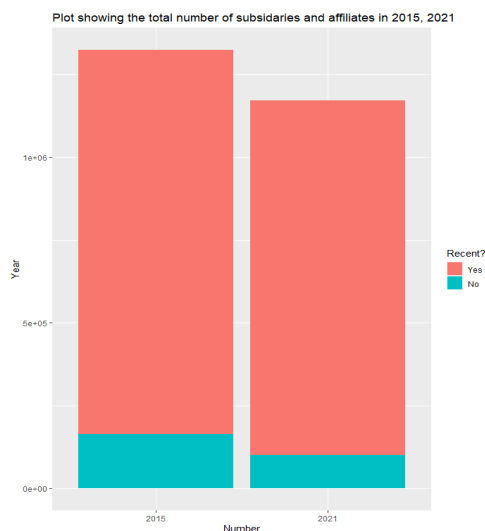


**Figure B1.** Chinese FDI position in the USA, 2015-21. SOURCE: Own calculations, based on data from US BEA.

<sup>1</sup> A briefing by Deutsche Bank Research noted that the sales of U.S. companies' subsidiaries in China amount to about the same amount as the measured U.S. trade deficit with China (Zhang & Xiong, 2018). If trade and FDI are considered together, the U.S. may be running a small surplus in its bilateral relationship with China.

## Appendix C. Description of ORBIS data

The total number of subsidiaries and affiliates captured in our dataset encompasses, respectively, 1,324,006 in 2015 and 1,170,965 in 2021, as shown in Figure C1. A large majority of subsidiary and affiliate records are active links, which have been updated by the database maintainers recently.



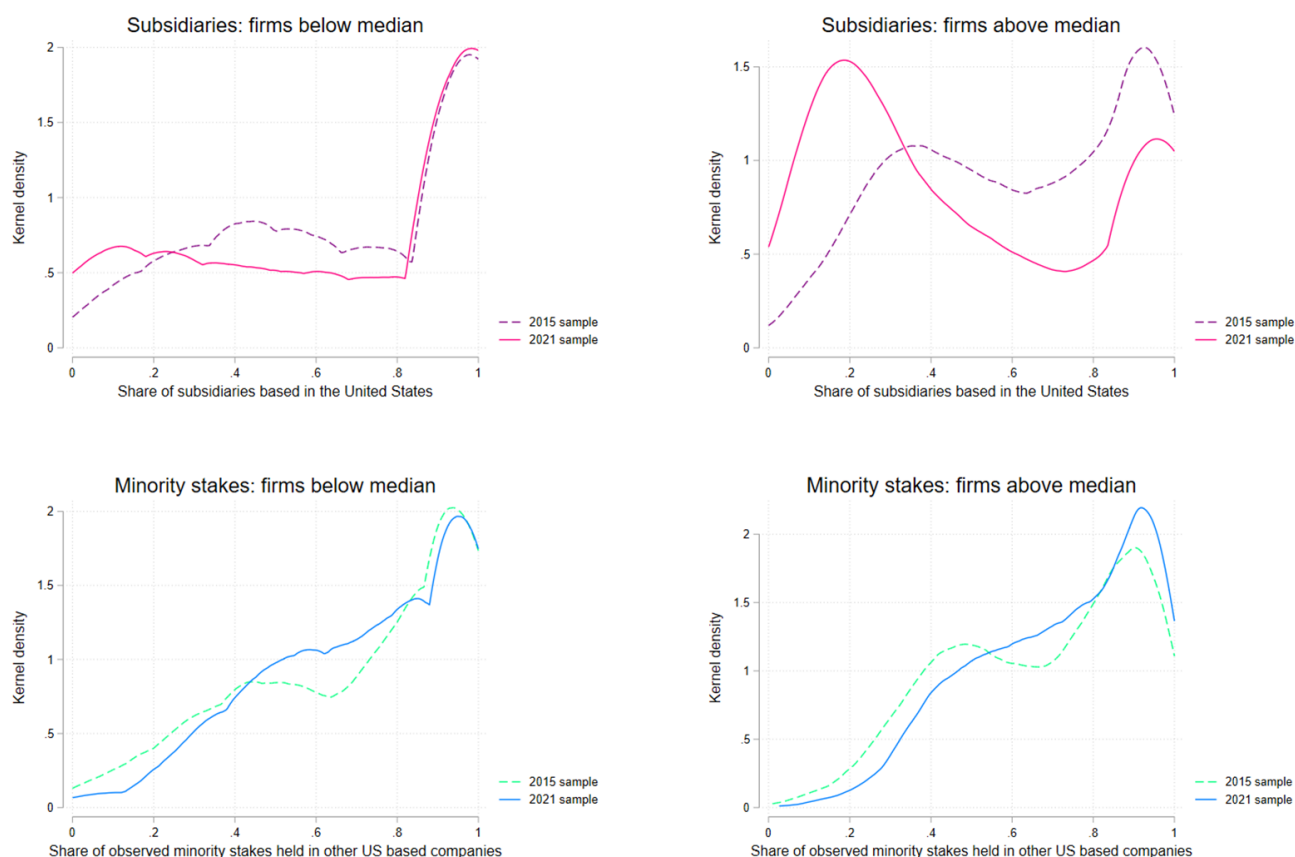
**Figure C1.** Number of subsidiaries and affiliates in global sample

There are important limitations with the database. First of all, Bureau van Dijk provides little information about the underlying sampling methodology. It indicates to collect information from various government and commercial providers. Although the database covers a very large number of entities around the world (close to 400 million firms according to the provider), it remains difficult to thoroughly judge the representativeness or validity of the data. A particular problem for our project is that for close to half of the subsidiaries and affiliates recorded in our 2015 sample the geographical location is unknown, limiting the use of the 2015 sample for our application. (The location of subsidiaries and affiliates is recorded for over 98 percent of observations in the 2021 sample.) Furthermore, the coverage is better for U.S. companies than for those based in China. At the same time, the most recent data is only available via the web interface while the 2015 sample was downloaded from the archive and earlier research has indicated some inconsistencies between the two (Kalemli-Ozcan et al., 2015).

In our analyses, focusing mostly on the data for U.S. companies in the 2021 sample, we try to account for these issues to the extent possible. (For instance, since it is unclear if all ownership positions are recorded in Orbis, we analyse (changes in) relative shares rather than absolute numbers.) However, these remedies cannot fully eradicate underlying measurement challenges.

## Appendix D. Corporate networks of U.S. firms in ORBIS sample

Our dataset contains 2,484 U.S.-based multinational corporations, which are observed in both time periods. To further explore the extent to which U.S. companies have re-shored activities, in the first step we analyse the change in the number of subsidiaries and affiliates as well as minority stakes owned by these companies which are based in the United States, as a share of the total number of ownership positions they hold globally. Figure D1 shows Kernel density plots, divided by the size of companies (parent companies in the top 50 percent in terms of the total number of ownership positions they hold are plotted on the right, the bottom 50 percent on the left<sup>2</sup>).



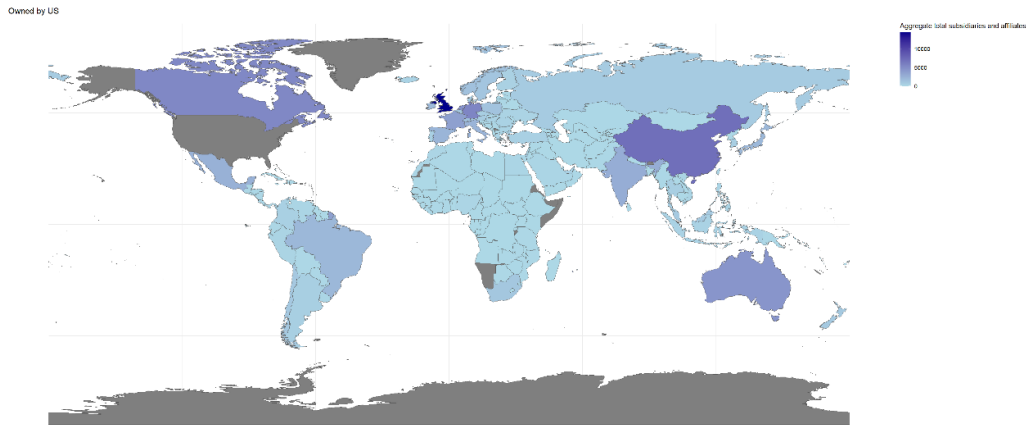
**Figure D1.** Kernel distribution of U.S. corporations' subsidiaries and affiliates at home vs. abroad. SOURCE: Own calculations, based on ORBIS data.

For identified minority stakes (positions amounting to less than 10 percent of outstanding shares), the investment profiles of smaller and larger firms are similar and show a strong home bias. Large firms appear to be slightly more invested in the U.S. in the 2021 sample compared to 2015, but the difference is small. The picture is different for subsidiaries and affiliates positions. Here, smaller firms' ownership networks are also strongly concentrated in the US. Among larger firms, in contrast, many hold a substantial share of their subsidiaries and affiliates outside of the USA. Interestingly, for large firms in our Orbis sample, the density plots suggest that the relative importance of US-based subsidiaries and affiliates has *decreased* from 2015 to 2021. In other words, large firms in our sample appear to have diversified away from the USA and, if anything, increased the globalization of their networks. Although the evidence is certainly not conclusive and will require further investigation, the patterns are clearly at odds with reshoring/near-shoring narratives.

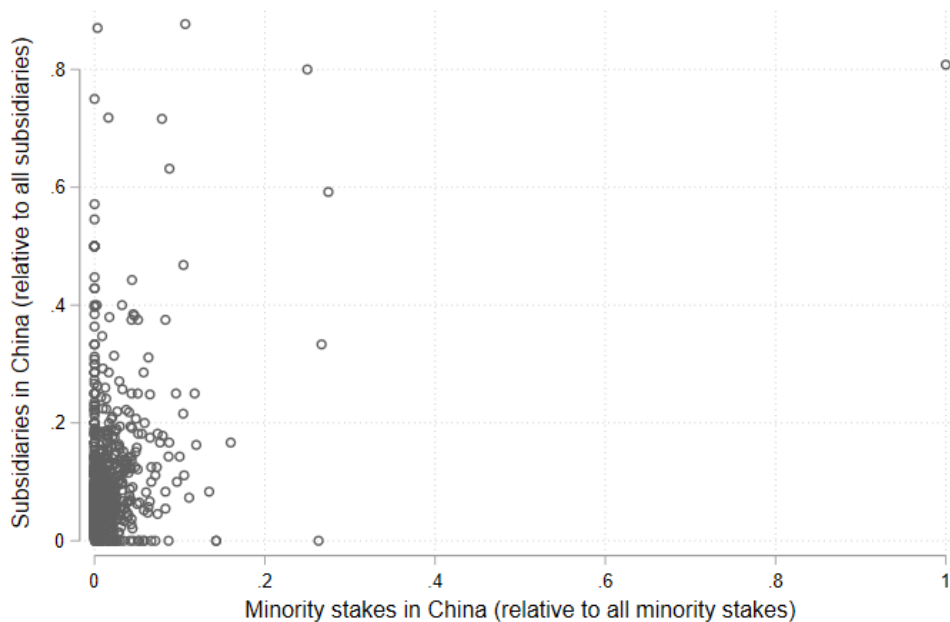
<sup>2</sup> The median for subsidiaries and affiliates is, respectively, 25 and 27 in 2015 /2021 sample; the median for minority stakes is, respectively, 64 and 73.



Where in the world are the subsidiaries and affiliates of U.S. corporations located? About one quarter (653) of the firms in our sample of 2,484 companies are domestic companies with all subsidiaries and affiliates recorded in Orbis being located in the United States. Roughly another quarter owns some, but less than half of all its subsidiaries and affiliates, abroad. The other half (1,253) of corporations is strongly internationally oriented, with more than 50 percent of recorded subsidiaries and affiliates being located outside of the United States. For the subsidiaries and affiliates outside of the United States, the world map in Figure D2 shows their relative geographic distribution. U.S. corporations in our sample have a strong presence in Europe (especially the United Kingdom), China, Canada and Australia.



**Figure D2.** The global distribution of subsidiaries and affiliates owned by U.S. corporations in ORBIS sample. SOURCE: Own calculations, based on ORBIS.



**Figure D3.** Scatterplot of minority and subsidiaries&affiliates positions in China

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