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Assessing the dependency of Finland and the EU on Chinese imports

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2023 No. 7

Juuso Kaaresvirta, Eeva Kerola and
Riikka Nuutilainen

Assessing the dependency of Finland and the
EU on Chinese imports



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The opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the Bank of Finland.

Contents

Abstract	3
1. Introduction	4
2. How much do foreign trade figures tell us about import dependency?	5
3. Trade in Value Added	6
4. The EU's import dependence on China	8
4.1. Machinery, equipment & transport vehicles	10
4.2. Raw materials	12
4.3. Textiles and household goods	15
5. Finland's dependency on Chinese imports	17
5.1. Machinery, equipment & transport vehicles	21
5.2. Raw materials	23
5.3. Textiles and household goods	25
6. Finland's critical dependencies on Chinese imports and possibilities for substitution	27
6.1. Finland's import dependency on raw materials deemed critical by the EU	28
6.2. Industrial products imported from China and domestic production	30
6.3. High-dependency Chinese commodities that can be sourced elsewhere	32
7. Conclusions	34
Appendix	36

Juuso Kaaresvirta, Eeva Kerola and Riikka Nuutilainen

Assessing the dependency of Finland and the EU on Chinese imports

Abstract

This policy brief provides an overview of Finland's dependency on imports from China in both a national and EU context. As trade figures based on value added only provide a rough notion of China's contribution to final consumption, we also consider import dependence from the goods imports figures of Finnish Customs to assess import dependence directly for specific product groups. As many products of Chinese origin are imported as semifinished goods or components for products finished in another EU country, we break down also the import dependency of the EU on China by specific product groups. We then compare Finland's domestic production of select industrial product groups against comparable imports from China. We analyze Finland's dependence on China for critical raw materials and identify potential alternative sources for key product groups for which Finland and the EU are currently dependent on China.

Keywords: China, Finland, EU, foreign trade, imports, dependency

1. Introduction

Like in many other countries, interest in external dependencies has increased rapidly in Finland over the past couple of years as international supply chains were heavily disrupted during early years of the Covid-19 pandemic and Russia's February 2022 invasion of Ukraine effectively severed Finland's trade relations with its neighbor. The current discussion focuses largely on Finland's strong dependencies on China. The country displays increasingly authoritarian tendencies and has become more unpredictable and aggressive in its superpower competition with the United States. The concern is that increased tensions and China's behavior could lead in a major disruption of trade or that China could might exploit critical dependencies to gain political concessions.

It is hardly a surprise that the dependencies of Finland – and the EU – on China are quite large. China is the world's second-largest economy, by far the biggest goods exporter and the global manufacturing hub. China is also an important export market for Finnish and other European firms and a source of substantial earnings generated by Finnish subsidiaries operating in China.¹ Nevertheless, Finland's most critical dependencies relate to our imports from China, specifically goods imports. In the financial sector, China's capital controls have prevented the formation of dependencies with the result that the direct exposure of Finland's financial sector to China is quite modest. The indirect exposures, of course, are much harder to assess.

Several major reports on Europe's dependency on Chinese imports have appeared in recent years. The European Commission has released a number of papers on the EU's critical dependencies.² The European Central Bank just released a paper on European open strategic autonomy which includes a long discussion on EU dependencies.³ Many EU members have also made their own national assessments. The European Think-tank Network on China last year released a report that brought together discussions in various countries on China dependencies.⁴ Finland's dependence on China was reviewed in a recent report from Finland's Ministry of Foreign Affairs.⁵ Some of the groundwork for the report was provided by BOFIT, the Confederation of Finnish Industries, Statistics Finland, Finnish Customs and the Ministry of Economic Affairs and Employment. Moreover, some industries have released their own reports on dependencies. For example, the Finnish lobbying organization Technology Industries of Finland has released a report on critical material flows as they relate to Finnish industries.⁶

This policy brief addresses Finland's dependencies on imports from China, with a focus on critical commodities. We also deal with the larger issue of EU dependence on imports from China as many trading bloc issues are best considered at the supranational level.

¹ China's significance for Finnish firms and Finnish exports to China are discussed for example in [Kiinan kaupan tulevaisuus - haasteet ja mahdollisuudet](#) (In Finnish, "The Future of Finnish exports to China – challenges and possibilities), Publications of the Ministry for Foreign Affairs (12/2022)

² [Critical Raw materials for Strategic Technologies and sectors in the EU](#) (09/2020), [Strategic dependencies and capacities](#) (5/2021) and [EU strategic dependencies and capacities: second stage of in-depth reviews](#) (2/2022)

³ [The EU's Open Strategic Autonomy from a central banking perspective](#) (3/2023)

⁴ [Dependence in Europe's Relations with China: Weighing Perceptions and Reality](#) (4/2022)

⁵ The report, part of the Finnish Government's publication series, includes as an appendix a Statistics Finland report on Finnish-Chinese trade posted [here](#).

⁶ [Kriittiset materiaalivirrat teknologiateollisuudessa](#) (10/2022)

2. How much do foreign trade figures tell us about import dependency?

International trade has become highly complex and dynamic with constantly evolving global production chains. Thus, the foreign trade statistics collected by customs agencies only provide a limited view of this complexity as they do not address entire production chains. For example, when a Finnish firm imports a car from Germany, the car may incorporate parts manufactured in China, contain raw materials produced in China needed for manufacturing those parts and even embody the engineering and design work that created those parts. Customs statistics, however, only indicate that a car was imported from Germany. This information gap can hide critical dependencies. For example, we know that China is the leading producer and refiner of many rare earth metals (REEs) critical to advanced 21st century technologies. However, these materials are not typically imported to Finland in their raw form, but incorporated into finished appliances or components.

The complex logistics of goods can sometimes cause foreign trade statistics to be improperly recorded. For example, the origin of a product manufactured in China may for some reason be recorded as the third country through which the product passed on its journey to Finland. Trade figures also do not reveal whether a producer in China is actually a Chinese or foreign, possibly a Finnish firm operating in China. About 30 % of China's exports are produced by foreign firms in China. Trade statistics compiled on a value-added basis at least attempt to distinguish value-added content by national origin, thereby eliminating some of the drawbacks in customs figures. On the other hand, trade statistics based on value added are rough and released with considerable delay.

Finally, published statistics do not indicate where products are used in Finland. Even rather basic products such as personal protective equipment can be critical to societal functioning as seen during the Covid-19 pandemic. Some other basic products such as blank circuit boards may be critical to domestic production chains. Moreover, the substitutability of import items is very difficult to see from the statistics. For example, China is an important supplier of many intermediate chemicals. Some of these chemicals might be amenable to substitution through use of alternative intermediate chemicals and chemical pathways to formulate the final product, but this does not necessarily apply in all cases. Naturally, the figures cannot reveal information about contractual terms of firms. In Russia's case, for example, we have seen that contracts have complicated attempts of Western firms to suspend or end their business activities in Russia or with Russian partners. Taking these many factors into account when considering the following estimations based on import figures gives considerable reason to believe that they generally understate Finland's dependencies on Chinese imports.

3. Trade in Value Added

The latest available OECD Trade in Value Added (TiVA) figures from 2018 show that 7.6 % of consumed foreign value added in Finland was of Chinese origin. China's share was the fourth largest after Germany (11.2 %), Sweden (9.6 %) and the United States (8.3 %). Sweden's consumed foreign value added from China was 6.0 %, while Germany's consumed value added from China was 8.3 %. In the United States' foreign final consumption, China's share was clearly higher (17.8 %) and roughly the same amount as all value added produced in the euro area consumed by Americans.

The TiVA figures cover 45 branches. Nearly all branches in Finland consume at least some Chinese value added. In Finnish final consumption of combined domestic and foreign value added, China's share is highest in the categories of textiles, garments and footwear (26 %), basic metals (15 %), computers, electronics and optical devices (11 %) and electrical equipment (10 %) (see Table 1). These shares are roughly similar to elsewhere in Europe. China's share of Finnish consumption exceeded the EU average in textiles, garments and footwear, as well as in computer programming, consulting and data services. China's share in nearly all branches is larger in the US than in the EU in terms of consumed value added.

The OECD figures have the advantage of comparability across countries. Finland's national statistics agency, Statistics Finland, has produced domestic value-added trade figures on a pilot basis in recent years. Statistics Finland reports that Chinese inputs are also important in Finnish exports, particularly with regard to Chinese value added in the textile and garment industries and metal industry exports.⁷

⁷ [Kiinan merkitys kauppa-kumppanina korostuu tuonnissa](#) (In Finnish, "Imports highlight China's importance as a trading partner") Tieto & trendit (10/2022)

Table 1. Chinese value-added in final consumption of selected countries by sector in 2018

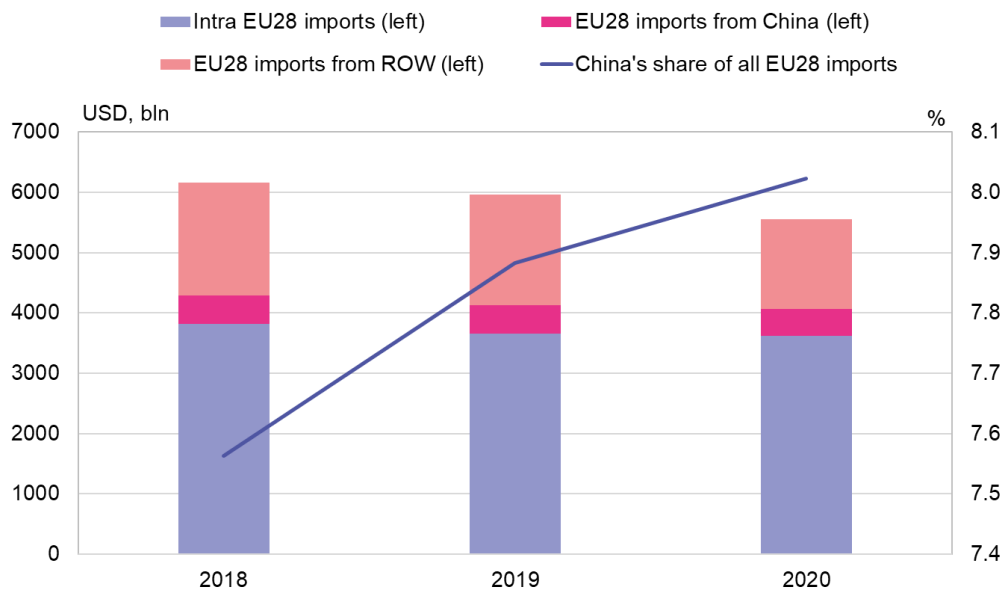
Industry (and its share of Finnish final consumption. %)	Chinese value added embodied in domestic final demand %-share total foreign value added						
	FIN	FRA	GER	SWE	UK	USA	EU 27
Textiles. wearing apparel. leather and related products (0.6 %)	26	20	19	21	17	30	15
Basic metals (0.6 %)	15	17	14	13	17	17	14
Computer. electronic and optical products (1.6 %)	11	19	15	9	12	13	15
Electrical equipment (0.8%)	10	15	8	10	13	17	10
Chemical and chemical products (1.1 %)	9	10	10	9	10	10	9
Rubber and plastics products (0.6 %)	7	6	5	6	7	9	6
Other non-metallic mineral products (0.6 %)	6	7	7	6	7	11	6
Fishing and aquaculture (0.1 %)	5	7	16	4	11	11	6
Mining and quarrying. non-energy producing products (0.3 %)	5	8	7	5	6	6	6
Fabricated metal products (1.2 %)	5	5	4	5	6	8	5
Manufacturing nec; repair and installation of machinery and equipment (1.0%)	5	4	4	6	6	9	4
Agriculture. hunting. forestry (2.3 %)	5	5	7	5	8	9	5
Water transport (0.3 %)	4	8	7	3	3	8	6
Computer programming. consultancy and information services activities (2.9 %)	4	2	3	4	1	1	2
Paper products and printing (0.7 %)	4	4	4	4	4	5	4
Land transport and transport via pipelines (2.5%)	4	4	5	3	4	5	4
Coke and refined petroleum products (0.9 %)	4	6	6	5	5	4	6
Air transport (0.5 %)	3	4	4	3	2	2	4
Wholesale and retail trade; repair of motor vehicles (9.8 %)	3	2	3	2	2	3	2
Machinery and equipment n.e.c (1.8 %)	3	6	3	4	5	7	4
Financial and insurance activities (4.4 %)	3	3	3	2	2	2	3
Motor vehicles. trailers and semi-trailers (0.8 %)	3	2	1	1	2	3	2
Postal and courier activities (0.3 %)	3	2	2	2	1	2	2
Mining and quarrying. energy producing products (1.5 %)	3	5	3	3	3	3	3
Wood and products of wood and cork (0.4 %)	2	7	5	3	7	8	5
Administrative and support services activities (3.8 %)	2	1	1	2	1	2	2
Other transport equipment (0.3 %)	2	2	3	6	2	1	3
Electricity. gas. steam and air conditioning supply (2.1 %)	2	2	2	2	2	3	2
Food products. beverages and tobacco (1.7 %)	2	2	2	2	2	3	2
Mining support service activities (0.1 %)	2	3	2	2	2	1	2
Professional. scientific and technical activities (5.6 %)	2	1	1	1	1	1	1
Publishing. audiovisual and broadcasting activities (1.4 %)	1	1	1	3	1	0	1
Telecommunications (1.3 %)	1	1	1	1	1	0	1
Warehousing and support activities for transportation (1.3 %)	1	1	1	1	1	2	1
Accommodation and food service activities (2.0 %)	1	1	1	1	1	1	1
Water supply; sewerage. waste management and remediation activities (0.7 %)	1	1	1	1	1	3	1
Pharmaceuticals. medicinal chemical and botanical products (0.9 %)	1	3	2	1	2	2	2
Other service activities (1.5 %)	1	1	0	0	0	1	0
Arts. entertainment and recreation (1.3 %)	0	0	0	0	1	0	0
Real estate activities (12.1 %)	0	0	0	0	0	0	0
Education (4.6 %)	0	0	0	0	0	0	0
Public administration and defence; compulsory social security (5.1 %)	0	0	0	0	0	0	0
Human health and social work activities (8.9 %)	0	0	0	0	0	0	0
Construction (7.4 %)	0	0	0	0	0	0	0

Sources: OECD TiVA and BOFIT.

4. The EU's import dependence on China

To get better picture of Finland's dependence on imports from China, we start with an analysis of the EU's import dependency. Later, in Section 5, we deal with Finland's import dependency on Chinese imports using the same breakdown by product group. Total imports of EU countries (EU-28) pre-pandemic amounted to roughly 6 trillion dollars a year. Of that, over 60 % was trade among EU members, i.e. imports within the economic area. During 2018 and 2019, nearly 40 % of imports came from outside the EU. During the first years of the pandemic, imports overall declined slightly and the importance of internal trade within the EU increased. China's share of total EU imports (internal and external) has hovered just below 8 % in recent years. China accounts for roughly a fifth of goods imported from outside the EU.

Figure 1. Imports of EU-28 countries and China's relative contribution



Sources: Comtrade and BOFIT.

Dependence on Chinese imports can be analyzed in several ways. One approach is to arrange the group of imported goods in terms of value starting with the most valuable to see how much they make of total imports and how much of those imports comes from China. Another approach is to arrange product groups based on the size of the contribution of imports from China regardless of how much is actually imported. This could highlight critical product groups where, despite a low value relative to total imports, China may well be the sole source of such imports (e.g. some raw materials).

Table 2 shows the two-digit codes for the categories of goods imported to the EU where the share of total external imports exceeds a half percent. Using the two-digit Harmonized System (HS2) chapters, we find 34 such chapters.⁸ In total, the EU imports from China goods in 97 chapters. The HS chapters in the table are organized in order of contribution to total EU imports (average for 2016–2019). The table also shows the share of imports originated from China.

⁸ Roughly 98 % of global trade is classified under the 6-digit Harmonized System (HS) for goods. The HS comprises approximately 5,300 product descriptions that appear as headings and subheadings, arranged in 99 chapters (2-digits), grouped in 21 sections. A 6-digit subheading can be broken down into three parts. In addition, the EU has refined this system with a more detailed 8-digit Combined Nomenclature (CN) that extends HS subheadings out to 8 digits.

In Table 24 (Appendix), we list commodities at the six-digit (HS6) subheading level for those categories where China's share of imports from outside the EU exceeds 90 %. The subheadings are arranged by commodity code in ascending order. In both tables, we give the averages for 2016–2019 and 2020–2021 in order to express possible changes in the import structure due to the pandemic. The source of foreign trade statistics is the UN's Comtrade statistical database.⁹ For sake of brevity, we omit the least critical commodity chapters such as footwear, food products, textiles and certain consumer goods (e.g. Christmas lights, watches).

Table 2. China's share of HS2 chapter code groups imported to the EU, starting with highest import share in 2016–2019 (chapters where the share of total of imports from outside the EU exceed 0.5 %), percent shares

Product groups	Share of product group from total EU28 imports		Share of China from total product group imports to EU28	
	2016-2019	2020-2021	2016-2019	2020-2021
Mineral Products, 27 Mineral Fuels, Mineral Oils & Products of Their Distillation, Bituminous Substances, Mineral Waxes	18.20	15.22	0.15	0.23
Machinery & Electrical, 85 Electrical Machinery & Equipment & Parts Thereof, Sound Recorders & Reproducers, Television Image & Sound Recorders & Reproducers, Parts & Accessories of Such Articles	12.70	14.09	46.81	48.66
Machinery & Electrical, 84 Nuclear Reactors, Boilers, Machinery & Mechanical Appliances, Parts Thereof	11.78	11.91	35.56	40.30
Transportation, 87 Vehicles, Other than Railway or Tramway Rolling Stock, & Parts & Accessories Thereof	4.74	5.20	9.36	13.71
Stone & Glass, 71 Natural, Cultured Pearls, Precious, Semi-Precious Stones, Precious Metals, Metals Clad with Precious Metal, & Articles Thereof, Imitation Jewellery, Coin	4.39	2.71	2.26	2.94
Chemicals & Allied Industries, 30 Pharmaceutical Products	3.67	4.58	2.18	4.44
Miscellaneous, 90 Optical, Photographic, Cinematographic, Measuring, Checking, Medical or Surgical Instruments & Apparatus, Parts & Accessories	3.41	3.74	16.62	19.47
Chemicals & Allied Industries, 29 Organic Chemicals	2.92	3.41	17.38	19.56
Plastics & Rubbers, 39 Plastics & Articles Thereof	2.25	2.66	24.24	24.40
Textiles, 61 Apparel & Clothing Accessories, Knitted or Crocheted	2.23	1.91	30.50	27.18
Textiles, 62 Apparel & Clothing Accessories, Not Knitted or Crocheted	2.22	1.87	34.63	33.43
Transportation, 88 Aircraft, Spacecraft & Parts Thereof	2.11	1.29	1.59	3.25
Metals, 72 Iron & Steel	1.60	1.87	10.53	5.13
Miscellaneous, 94 Furniture, Bedding, Mattresses, Mattress Supports, Cushions & Similar Stuffed Furnishings, Lamps & Lighting Fittings, N.E.C., Illuminated Signs, Illuminated Name-Plates & the Like, Prefabricated Buildings	1.43	1.49	64.42	64.13
Metals, 73 Iron or Steel Articles	1.32	1.42	36.86	38.27
Metals, 76 Aluminium & Articles Thereof	1.14	1.22	14.66	14.22
Mineral Products, 26 Ores, Slag & Ash	1.13	1.45	0.46	0.30
Footwear & Headgear, 64 Footwear, Gaiters & the Like, Parts of Such Articles	1.11	0.98	42.35	37.56
Animal & Animal Products, 03 Fish & Crustaceans, Molluscs & Other Aquatic Invertebrates	1.10	1.09	7.95	5.86
Vegetable Products, 08 Fruit & Nuts, Edible, Peel of Citrus Fruit or Melons	1.09	1.08	1.75	1.74
Miscellaneous, 95 Toys, Games & Sports Requisites, Parts & Accessories Thereof	0.96	0.99	78.86	73.84
Plastics & Rubbers, 40 Rubber & Articles Thereof	0.95	1.09	20.90	19.95
Chemicals & Allied Industries, 38 Chemical Products N.E.C.	0.84	1.37	8.92	14.66
Wood & Wood Products, 44 Wood & Articles of Wood, Wood Charcoal	0.67	0.66	19.04	16.21
Chemicals & Allied Industries, 28 Inorganic Chemicals, Organic & Inorganic Compounds of Precious Metals, of Rare Earth Metals, of Radio-Active Elements & of Isotopes	0.65	0.73	11.72	10.24
Raw Hides, Skins, Leather, & Furs, 42 Articles of Leather, Saddlery & Harness, Travel Goods, Handbags & Similar Containers, Articles of Animal Gut (Other than Silk-Worm Gut)	0.63	0.50	54.88	48.90
Vegetable Products, 12 Oil Seeds & Oleaginous Fruits, Miscellaneous Grains, Seeds & Fruit, Industrial or Medicinal Plants, Straw & Fodder	0.56	0.68	4.78	3.82
Metals, 74 Copper & Articles Thereof	0.56	0.63	7.39	7.48
Vegetable Products, 09 Coffee, Tea, Mate & Spices	0.55	0.52	4.19	4.39
Textiles, 63 Textiles, Made up Articles, Sets, Worn Clothing & Worn Textile Articles, Rags	0.54	1.19	41.54	64.34
Vegetable Products, 15 Animal or Vegetable Fats & Oils & Their Cleavage Products, Prepared Animal Fats, Animal or Vegetable Waxes	0.53	0.67	2.21	3.86
Transportation, 89 Ships, Boats & Floating Structures	0.52	0.50	16.13	21.08
Foodstuffs, 23 Food Industries, Residues & Wastes Thereof, Prepared Animal Fodder	0.52	0.54	5.08	5.43

Sources: UN Comtrade and BOFIT.

⁹ <https://comtradeplus.un.org/>

The table above highlights three areas with particularly high dependencies on Chinese imports: 1) machinery, equipment and transport vehicles, 2) raw materials and 3) textiles and household goods. We examine each of these areas in more detail below.

4.1. Machinery, equipment & transport vehicles

Machinery and equipment represent the largest groups for imports that also feature a high level of dependency on Chinese imports. Products in these two chapters represent about a quarter of imports from outside the EU. China's share in imports of this category in recent years has been around 40–49 %.

Table 3 shows product groups at the six-digit HS6 level with the highest value import shares (upper panel) and where China dependency is highest (lower panel). The highest value goods groups are mobile phones and laptop computers. Some 70 % of mobile phones and 92 % of laptop computers imported from outside the EU come from China. The EU is most dependent on Chinese imports for toasters (98 %), escalators and moving walkways (97 %), household scales (95 %), radios (94 %) and hydraulic jacking systems for lifting vehicles (93 %).

Table 3. Breakdown of machinery and electrical device groups, HS2: 84 and 85 (percent share)

	Share of product group from total EU28 imports		Share of China from total product group imports to EU28		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product groups 84 and 85 (machinery and equipment)					
Largest product groups by import value (min. 0.5% share of imports)	851712* Telephones for cellular networks or for other wireless networks	69.26	69.70	2.276	1.087
	847130 Automatic data processing machines, portable, weighing not more than 10kg	92.03	92.04	1.418	1.717
	851762 Communication Apparatus (excluding telephones sets or base stations), machines for the reception	56.96	55.35	1.245	1.502
	841191 Turbines, parts of turbo-jets and turbo-propellers	3.54	4.77	1.005	0.528
	841112 Turbo-jets, of a thrust exceeding 25Kn	1.09	1.33	0.757	0.503
	854231 Electronic integrated circuits, processors and controllers, whether or not combined with memories	11.64	14.73	0.661	0.948
	847330 Machinery, parts and accessories of the machines of heading No 8471	56.18	49.04	0.604	0.588
	854239 Electronic integrated circuits, NEC in heading No 8542	7.09	9.95	0.463	0.540
	852990 Reception and transmission apparatus, for use with the apparatus of heading 0 8525 to 8528, excluding aerials and aerial reflectors	53.81	50.81	0.428	0.522
		2016-2019	2020-2021	2016-2019	2020-2021
Largest product groups by China-dependency (min 90 % of product group's imports from China)	851672 Electro-thermic appliances, toasters, of a kind used for domestic purposes	98.23	96.20	0.011	0.009
	842840 Escalators and moving walkways	97.31	96.16	0.003	0.003
	840731 Engines, reciprocating piston engines, of a kind used for the propulsion of vehicles of chapter 87	97.29	97.28	0.000	0.001
	842310 Weighing machines, personal and household scales	95.03	92.37	0.010	0.011
	852792 Radio-broadcast receivers NEC in heading No 8527	94.21	95.63	0.004	0.003
	842541 Jacks, built-in jacking systems of a type used in garages, for raising vehicles	93.34	97.34	0.004	0.005
	852713 Radio broadcast receivers capable of operating without an external power source	92.85	93.08	0.008	0.005
	847130 Automatic data processing machines, portable, weighing no more than 10kg	92.03	92.04	1.418	1.717
	852713 Heating apparatus, electric storage heating radiators	91.28	77.50	0.001	0.001
	841013 Turbines, hydraulic turbines and water wheels, of a power exceeding 10 000Kw	90.88	71.91	0.000	0.000
	846722 Tools, for working in the hand, with self-contained electric motor, saws	90.51	86.18	0.019	0.025
	851679 Electro-thermic appliances, NEC in heading No 8516, used for domestic purposes	90.43	92.18	0.050	0.067
846596 Machine-tools, splitting, slicing or paring machines, for working wood, cork, bone, hard rubber, hard plastics or similar	90.10	88.54	0.002	0.003	

* New product group for cell phones is 851713

Sources: UN Comtrade and BOFIT.

Vehicles, aircraft and ships is the second largest category. It includes HS 87 (vehicles other than railway or tramway rolling-stock), HS 88 (aircraft, spacecraft and parts thereof) and HS 89 (ships, boats and floating structures). In all these groups, dependency on China has grown in recent years. Together they account for about 7 % of total EU imports, and China's share in recent years in the imports of vessels has risen to 20 %, to around 3 % for aircraft and spacecraft, and to 14 % for other transport vehicles.

The largest subheading groups are aircraft and vehicles. The volume of aircraft deliveries from China to the EU varies greatly from year to year, in part because annual orders vary tremendously

and in part because the price tag for a single order can be huge. However, categories where the EU is most dependent on Chinese imports are baby carriages (96 % of those supplied from outside the EU come from China), as well as motorcycles and mopeds (over 80 %).

Table 4. Breakdown of vehicle product groups, HS2: 86–89 (percent shares)

	Share of product group from total EU28 imports		Share of China from total product group imports to EU28		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product groups 86-89 (Transportation)					
Largest product groups by import value (min. 0.3% share of imports)	880240 Aeroplanes and other aircraft, of an unladen weight exceeding 15000 Kg	0.80	4.92	1.24	0.62
	880330 Aircraft and spacecraft, parts of aeroplanes or helicopters NEC in heading No 8803	3.05	2.07	0.61	0.26
	870332 Vehicles, compression-ignition internal combustion piston engine (diesel or semi-diesel), cylinder capacity exceeding 1500Cc but not exceeding 2500Cc	1.04	1.08	0.60	0.26
	870323 Vehicles, spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1500Cc but not exceeding 3000Cc	1.21	3.74	0.42	0.32
	870322 Vehicles, spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1000Cc but not exceeding 1500Cc	1.01	1.47	0.40	0.28
	870421 Vehicles, compression-ignition internal combustion piston engine (diesel or semi-diesel), for transport of goods NEC in item No 8704.1	0.22	0.31	0.31	0.24
	2016-2019	2020-2021	2016-2019	2020-2021	
Largest product groups by China-dependency (min 50 % of product group's imports from China)	871500 Baby carriages and parts thereof	96.82	96.17	0.026	0.021
	871110 Motorcycles (including mopeds) and cycles, fitted with an auxiliary motor, with reciprocating internal combustion engine not exceeding 50Cc with or without side-cars, side-cars	81.16	83.68	0.008	0.010
	871190 Motorcycles (including mopeds) and cycles, NEC in heading No 8711, fitted with auxiliary motor, with or without side-cars, side-cars	80.78	76.79	0.015	0.002
	871680 Vehicles, NEC in heading No 8716	77.51	76.40	0.016	0.019
	890310 Yachts and other vessels, for pleasure or sports, rowing boats and canoes, inflatable	63.66	60.35	0.005	0.003
	871310 Carriages for disabled persons, not mechanically propelled	62.11	65.57	0.008	0.006
	860791 Railway or tramway locomotives, parts NEC in heading No 8607	61.79	48.57	0.004	0.004
	870110 Tractors, pedestrian controlled	59.45	62.25	0.001	0.002
	871640 Trailers and semi-trailers, NEC in item No 8716.3	55.99	47.85	0.005	0.010
	871690 Trailers, semi-trailers and other vehicles not mechanically propelled, parts thereof for heading No 8716	54.25	55.03	0.037	0.039
	871491 Cycles, frames and forks, parts thereof	52.60	56.87	0.056	0.087
	871390 Carriages for disabled persons, mechanically propelled	49.94	52.88	0.004	0.004

Sources: UN Comtrade and BOFIT.

The third group comprises **various devices, instruments and equipment**. They account for over 4 % of goods imported from outside the EU. For HS2: 90 (optical, photographic and other medical equipment) China has provided about 20 % of imports in recent years, for HS2: 91 (timepieces) 18 %, for HS2: 92 (musical instruments) 40 % and for HS2: 93 (firearms and ammunition) 5 %.

In terms of value, the most important subheading groups are various medical instruments, measurement devices and prostheses (all in HS2: 90). China's contribution in the import of these groups ranges from under 1 % (prostheses) up to 20 % (various measurement and monitoring devices). EU's highest dependency on Chinese imports is in the product groups for music boxes, string instruments, cameras, watches and frames and mountings for spectacles.

Table 5. Breakdown of various instruments and devices, HS2: 90–93 (percent share)

	Share of product group from total EU28 imports		Share of China from total product group imports to EU28		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product groups 90-93 (Miscellaneous instruments and appliances)					
Largest product groups by import value (min. 0.1% share of imports)	901890 Medical, surgical or dental instruments and appliances, NEC in heading No 9018	8.58	9.79	0.39	0.44
	901839 Medical, surgical instruments and appliances, catheters, cannulae and the like	4.98	5.88	0.20	0.22
	902190 Appliances, worn, carried or implanted in the body, to compensate for a defect or disability	4.79	6.42	0.12	0.12
	903180 Instruments, appliances and machines, for measuring or checking NEC in chapter 90	17.22	19.51	0.11	0.11
	903289 Regulating or controlling instruments and apparatus, automatic, other than hydraulic or pneumatic	13.10	21.27	0.11	0.09
	910221 Wrist-watches, whether of not incorporating a stop-watch facility, with automatic winding	1.35	1.81	0.11	0.10
	902139 Artificial parts of the body, excluding artificial joints	0.37	0.54	0.10	0.11
	902110 Orthopaedic or fracture appliances	7.21	7.00	0.10	0.12
		2016-2019	2020-2021	2016-2019	2020-2021
Largest product groups by China-dependency (min 70 % of product group's imports from China)	920810 Musical boxes	92.52	88.82	0.000	0.000
	910511 Clocks, alarm clocks, electrically operated	90.97	93.57	0.003	0.003
	920210 Musical instruments, string played with a bow (eg violins)	90.67	83.93	0.001	0.001
	900653 Cameras, photographic of a kind for roll film	88.14	85.86	0.001	0.001
	910521 Clocks, wall clocks, electrically operated	88.09	86.78	0.006	0.005
	900390 Frames and mountings, parts for spectacles, goggles or the like	82.66	85.07	0.006	0.006
	901530 Surveying equipment, levels	80.82	87.37	0.007	0.009
	910591 Clocks, electrically operated	79.62	77.65	0.001	0.001
	900319 Frames and mountings for spectacles, goggles or the like, of materials other than plastics	79.08	80.51	0.028	0.028
	902511 Thermometers and pyrometers, liquid filled, for direct reading	78.24	80.34	0.001	0.002
	910291 Pocket watches and other, including stop-watches	75.50	85.63	0.001	0.002
	910310 Clocks, with watch movements, electrically operated, excluding clocks of heading No 9104	74.87	66.50	0.000	0.000
	910212 Wrist-watches, electrically operated, with or without a stop-watch	73.99	61.74	0.006	0.011
	900311 Frames and mountings, for spectacles, goggles and the like, of plastics	73.36	82.45	0.032	0.022
	901060 Photographic laboratory apparatus and equipment, projection screens	73.00	84.04	0.002	0.002
	901910 Mechano-therapy appliances, massage apparatus and psychological aptitude-testing apparatus	70.87	81.11	0.052	0.074

Sources: UN Comtrade and BOFIT.

4.2. Raw materials

In addition to producing a large amount of consumer goods for the EU, China is also a major supplier of raw materials. The raw materials may sometime be of low value, but their availability still depends critically on Chinese suppliers.

At the two-digit HS level, China's largest import shares are found in HS2: 29 (organic chemical compounds, China's import share has been about 20 % in recent years), HS2: 39 (plastics and plastic products, China's share about 24 %), HS2: 73 (iron and steel products, China's share about 38 %), as well as HS2: 76 (aluminium and aluminium products, China's share about 14 %). Other import product groups with high China dependency are HS2: 28 (inorganic chemical compounds, China's share 11 %), HS2: 38 (other chemical compounds, China's share about 15 %), HS2: 40 (rubber and rubber products, China's share about 20 %), as well as HS2: 44 (wood and wood products, China's share about 16 %).

Turning first to the **chemical compounds** (HS2: 28, 29 and 38), we see the important subheading groups with the highest value in imports are in chapters 29 and 38. China accounts for over 10 % of EU imports of heterocyclic compounds, nucleic acids, amino acids, various antibiotics, cyclic amides and biodiesel fuel. The largest dependencies are found in 28 and 29. China accounts for nearly 100 % of imports in such commodities as acyclic hydrocarbons in the halogenated hydrocarbon subheading (used in semiconductors) and vitamins.

Table 6. Breakdown of HS chapters 28, 29 and 38 (percent share)

	Share of product group from total EU28 imports		Share of China from total product group imports to EU28		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product groups 28, 29 and 38 (Chemical and Allied industries)					
Largest product groups by import value (min. 0.05% share of imports)	293359 Heterocyclic Compounds, Containing a Pyrimidine Ring (Whether or Not Hydrogenated) or Piperazine Ring in the Structure, (Other than Malonylurea & Its Derivatives, Loprazolam, Mecloqualone, Methaqualone, Zipeprol, & Salts Thereof) N.E.C. in 2933.5	7.59	11.34	0.202	0.213
	382200 Reagents, Diagnostic or Laboratory Reagents on a Backing & Prepared Diagnostic or Laboratory Reagents Whether or Not on a Backing, Other than Those of Heading No. 3002 or 3006, Certified Reference Material	3.20	13.25	0.197	0.221
	293719 Polypeptide Hormones, Protein Hormones & Glycoprotein Hormones, Their Derivatives & Structural Analogues, Other than Somatotropin, (Its Derivatives & Structural Analogues) & Insulin & Its Salts, China	0.39	0.42	0.192	0.179
	293399 Heterocyclic Compounds, N.E.C. in Headings No. 2933	15.09	31.77	0.172	0.278
	293499 Nucleic Acids & Their Salts, Other Heterocyclic Compounds, N.E.C. in Heading Number 2934	16.58	16.73	0.147	0.204
	292249 Amino-Acids, Other than Those Containing More than One Kind of Oxygen Function, Their Esters, Salts Thereof, Excluding Lysine, Glutamic Acid, Anthranilic Acid & Tiliidine, Their Esters & Salts Thereof	10.34	26.99	0.133	0.063
	294190 Antibiotics, N.E.C. in Heading No. 2941	15.48	17.46	0.122	0.115
	290511 Alcohols, Saturated Monohydric, Methanol (Methyl Alcohol)	0.03	0.07	0.091	0.077
	293339 Heterocyclic Compounds, Containing An Unfused Pyridine Ring (Whether or Not Hydrogenated) in the Structure, N.E.C. in 2933.3	15.43	22.53	0.084	0.097
	292429 Cyclic Amides (Including Cyclic Carbamates) & Their Derivatives, Other than the Derivatives & Salts of Ureines, 2-Acetamidobenzoic Acid (N-Acetylvanthanicilic Acid), & Ethinamate S	11.72	14.64	0.081	0.077
	293379 Heterocyclic Compounds, Lactams, Other than 6-Hexanelactam (Epsilon Caprolactam) & Clobazam (Inn) & Methyprylon (Inn)	3.62	3.12	0.079	0.275
	382600 Biodiesel & Mixtures Thereof, Not Containing or Containing Less than 70% by Weight of Petroleum Oils or Oils Obtained from Bituminous Minerals	12.61	22.98	0.077	0.143
	381512 Catalysts, Supported, Reaction Initiators, Reaction Accelerators & Catalytic Preparations, with Precious Metal or Precious Metal Compounds as the Active Substance, N.E.C. or Included	0.34	0.88	0.073	0.146
	293712 Polypeptide Hormones, Protein Hormones & Glycoprotein Hormones, Their Derivatives & Structural Analogues, Insulin & Its Salts	0.20	0.14	0.053	0.045
	381800 Chemical Elements, Doped for Use in Electronics, in the Form of Discs, Wafers or Similar Forms, Chemical Compounds Doped for Use in Electronics	7.66	5.95	0.052	0.062
	290110 Acyclic Hydrocarbons, Saturated, China	0.37	0.48	0.050	0.034
	2016-2019	2020-2021	2016-2019	2020-2021	
Largest product groups by China-dependency (min 90 % of product group's imports from China)	290372 Halogenated Derivatives of Acyclic Hydrocarbons Containing Two or More Different Halogens, Dichlorotrifluoroethane	99.95	100.00	0.000	0.000
	294140 Antibiotics, Chloramphenicol & Its Derivatives, Salts Thereof	98.98	98.94	0.002	0.002
	290374 Halogenated Derivatives of Acyclic Hydrocarbons Containing Two or More Different Halogens, Chlorodifluoroethanes	98.29	99.35	0.000	0.000
	293625 Vitamins, Vitamin B6 & Its Derivatives, Unmixed	97.87	98.44	0.003	0.003
	293352 Heterocyclic Compounds, Containing a Pyrimidine Ring (Whether or Not Hydrogenated) or Piperazine Ring in the Structure, Malonylurea (Barbituric Acid) & Its Salts	97.72	98.69	0.000	0.000
	293624 Vitamins, Dor DI-Pantothenic Acid (Vitamin B3 or Vitamin B5) & Its Derivatives, Unmixed	97.64	79.13	0.007	0.007
	291461 Quinones, Anthraquinone	97.55	68.65	0.000	0.000
	280910 Diphosphorus Pentoxide	97.43	92.26	0.001	0.001
	293030 -Organo-Sulphur Compounds, Thiuram Mono-, Di- or Tetrasulphides	94.04	74.66	0.000	0.000
	293622 Vitamins, Vitamin B1 & Its Derivatives, Unmixed	93.20	88.54	0.004	0.002
	293627 Vitamins, Vitamin C & Its Derivatives	91.03	69.80	0.011	0.012
	283711 Cyanides & Cyanide Oxides, of Sodium	90.63	90.48	0.000	0.000
	292141 Amine-Function Compounds, Aromatic Monoamines & Their Derivatives, Aniline & Its Salts	90.49	49.31	0.004	0.013
	291634 Acids, Aromatic Monocarboxylic Acids, Phenylacetic Acid & Its Salts	90.03	75.46	0.000	0.000

Sources: UN Comtrade and BOFIT.

The EU also imports large amounts of basic metals from China, most notably large amounts of iron and steel products (73) and aluminium and aluminium products (76). In these chapters, the largest subheading where dependency on imports from China is large are goods produced from aluminium and aluminium alloys, as well as products and structures fabricated from iron and steel. Nearly 80 % of the imports of austenitic stainless steels used in e.g. kitchen sinks comes from China. The EU also has a sizeable dependency on Chinese imports of other kitchen items manufactured from these materials.

Table 7. Breakdown of HS chapters 73 and 76 (percent share)

	Share of product group from total EU28 imports		Share of China from total product group imports to EU28		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product groups 73 and 76 (products from iron and steel, aluminium and articles thereof)					
Largest product groups by import value (min. 0.05% share of imports)	760120 Aluminium, unwrought, alloys	0.16	0.15	0.293	0.334
	760110 Aluminium, unwrought, not alloyed	0.10	0.02	0.283	0.246
	732690 Iron or steel, articles NEC in heading 7326	43.50	46.66	0.233	0.260
	760612 Aluminium, plates, sheets and strip, thickness exceeding 0.2 Mm, alloys, rectangular (including square)	11.87	11.36	0.120	0.118
	731815 Iron or steel, threaded screws and bolts NEC in item No 7318.1	17.27	25.57	0.107	0.106
	761699 Aluminium, articles NEC in heading 7616	46.88	48.81	0.081	0.091
	730890 Iron or steel, structures and parts thereof, NEC in heading 7308	39.41	31.84	0.067	0.106
	732393 Steel, stainless, table, kitchen and other household articles and parts thereof	79.95	80.91	0.059	0.062
	760429 Aluminium, alloys, bars, rods and profiles, other than hollow	26.85	15.41	0.053	0.053
	2016-2019	2020-2021	2016-2019	2020-2021	
Largest product groups by China-dependency (min. 80 % of product group's imports from China)	732421 Cast iron, baths, whether or not enamelled	96.31	90.10	0.000	0.000
	732392 Cast iron, table, kitchen and other household articles and parts thereof, or cast iron, enamelled	91.67	86.23	0.003	0.003
	732310 Iron or steel, wool, pot scourers and scouring or polishing pads, gloves and the like	89.89	86.02	0.002	0.001
	761510 Aluminium, plates, sheets and strip, thickness exceeding 0.2Mm, alloys, rectangular (including square)	87.59	86.31	0.034	0.040
	732391 Cast iron, table, kitchen and other household articles and parts thereof, of cast iron, not enamelled	87.00	78.56	0.001	0.002
	731431 Iron or steel wire, grill, netting and fencing, welded at the intersection, NEC in item No 7314.20	84.10	61.09	0.002	0.003
	732181 Domestic appliances, non-electric, for gas fuel or for both gas and other fuels, or iron or steel	84.02	83.82	0.003	0.005
	731581 Chain, stud-link chain, of iron or steel	83.17	90.29	0.001	0.001
	732429 Iron (other than cast) or steel, baths	82.77	66.80	0.000	0.000
	731442 Iron or steel wire, grill, netting and fencing, coated with plastic	82.58	81.37	0.001	0.002
	732112 Cooking appliances and plate warmers, for liquid fuel, of iron or steel	81.05	58.71	0.000	0.000
	732399 Iron or steel, table, kitchen and other household articles and parts thereof, of iron or steel NEC in heading No 7323	80.09	75.96	0.025	0.026

Sources: UN Comtrade and BOFIT.

In addition, EU imports from China emphasize plastics (39), rubber (40) and wood and wooden products (44). In terms of value, the largest individual import commodities with significant China import dependency are plastics, automobile tires, packing materials and plastic products for kitchen use. During the acute phase of the Covid-19 pandemic, EU imports of protective gloves soared, with China's share of imports doubling. The highest dependence on Chinese imports in this category is goods made from wood. Over 90 % of the products imported to the EU made from bamboo and wooden hangers come from China.

Table 8. Breakdown of HS chapters 39, 40 and 44 (percent share)

	Share of product group from total EU28 imports		Share of China from total product group imports to EU28		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product groups 39, 40 and 44 (plastic, rubber, wood and articles thereof)					
Largest product groups by import value (min. 0.05% share of imports)	392690 Plastics, other articles NEC in chapter 39	45.52	45.86	0.326	0.388
	401110 Rubber, new pneumatic tyres, of a kind used on motor cars	36.57	35.29	0.234	0.205
	390110 Ethylene polymers, in primary forms, polyethylene having a specific gravity of less than 0.9	0.35	0.43	0.091	0.081
	390120 Ethylene polymers, in primary forms, polyethylene having a specific gravity of 0.9 or more	0.24	0.82	0.089	0.094
	401120 Rubber, new pneumatic tyres, of a kind used in buses or lorries	34.94	14.60	0.081	0.082
	440131 Wood, for fuel, sawdust and wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms, wood pellets	0.01	0.05	0.079	0.045
	401699 Rubber, vulcanised, Articles NEC in heading No 4016	24.08	25.17	0.072	0.078
	390210 Propylene, other olefin polymers, polypropylene in primary forms	0.41	0.93	0.065	0.091
	392321 Ethylene polymers, sacks and bags, for the conveyance or packing or goods	28.43	26.51	0.064	0.057
	392410 Plastics, tableware and kitchenware	65.79	62.58	0.059	0.049
	392190 Plastics, plates, sheets, film, foil and strip, other than cellular	14.27	13.80	0.056	0.062
	392010 Plastics, plates, sheets, film, foil and strip, of polymers of ethylene, non-cellular and not reinforced, laminated, supported or similarly combined with other materials	8.73	8.78	0.049	0.059
	401519 Rubber, vulcanised, gloves, mittens and mitts other than surgical gloves	9.70	19.58	0.048	0.129
	401693 Rubber, vulcanised, gaskets, washers and other seals, of non-cellular rubber	19.42	21.01	0.046	0.048
	2016-2019	2020-2021	2016-2019	2020-2021	
Largest product groups by China-dependency (min 80 % of product group's imports from China)	440921 Wood, bamboo, continuously shaped along any edges, ends or faces, whether or not planed, sanded or end-jointed	98.15	97.43	0.001	0.001
	442110 Wood, clothes hangers	95.52	94.52	0.005	0.004
	441210 Plywood, veneered panels and similar laminated wood, of bamboo	94.02	83.23	0.000	0.000
	392640 Plastics, statuettes and other ornamental articles	89.44	86.56	0.026	0.027
	441400 Wooden frames, for paintings, photographs, mirror or similar objects	89.30	86.03	0.007	0.003
	392220 Plastics, lavatory seats and covers	84.07	80.38	0.007	0.008
	401692 Rubber, vulcanised, erasers, of non-cellular rubber	81.80	72.09	0.001	0.001
	391890 Floor, wall or ceiling coverings, of plastics, whether or not self-adhesive, in rolls or in the form of tiles	80.39	85.01	0.013	0.017

Sources: UN Comtrade BOFIT.

4.3. Textiles and household goods

The EU imports from China considerable amounts of **clothing, footwear and articles of apparel** (HS2: 61–64). The combined share of these groups in the value of total EU imports is about 6 %. Household goods such as **furniture, sports equipment and toys** (HS2: 94–95) account for about 2.5 % of EU imports. In recent years, China has supplied the EU with 30–45 % of imports of clothing, footwear and articles of apparel, nearly 65 % of furniture imports and nearly 80 % for sports equipment and toys.

The largest single import product group in the clothing, footwear and articles of apparel category is basic clothing such as t-shirts and trousers. The largest share of Chinese imports in this category, however, is in overcoats and jackets.

The largest individual import subheadings in the furniture, sports equipment and toys category are baby carriages, game consoles, lamps and wooden furniture. Nearly 90 % of imported Christmas lights, standing lamps, table lamps, tennis rackets and fishing poles come from China.

Table 9. Breakdown of HS chapters 61–64 (percent share)

	Share of product group from total EU28 imports		Share of China from total product group imports to EU28		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product groups 61-64 (textiles)					
Largest product groups by import value (min. 0.1% share of imports)	610910 T-shirts, singlets and other vests, of cotton, knitted or crocheted	7.08	6.02	0.32	0.28
	620342 Trousers, bib and brace overalls, breeches and shorts, men's or boys, of cotton (not knitted or crocheted)	10.78	8.75	0.31	0.23
	611030 Jerseys, pullovers, cardigans, waistcoats and similar articles, of man-made fibres, knitted or crocheted	42.90	40.34	0.27	0.21
	620462 Trousers, bib and brace overalls, breeches and shorts, women's or girl's, of cotton (not knitted or crocheted)	16.92	12.02	0.24	0.19
	611020 Jerseys, pullovers, cardigans, waistcoats and similar articles, of cotton, knitted or crocheted	27.21	19.37	0.23	0.22
	610990 T-shirts, singlets and other vests, of textile materials (other than cotton), knitted or crocheted	23.45	22.91	0.16	0.10
	620520 Shirts, men's or boys, of cotton (not knitted or crocheted)	15.03	14.49	0.12	0.07
	620293 Anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, women's or girl's, of man-made fibres, other than those of heading No 6204 (not knitted or crocheted)	65.20	52.75	0.12	0.05
	620640 Blouses, shirts and shirt-blouses, women's or girl's, of man-made fibres (not knitted or crocheted)	28.57	28.76	0.11	0.06
		2016-2019	2020-2021	2016-2019	2020-2021
Largest product groups by China-dependency (min 65% of product group's imports from China)	620299 Anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, women's or girl's, of textile materials NEC in item No 6202.9	73.72	59.20	0.00	0.00
	620213 Coats, women's or girl's, overcoats, raincoats, car-coats, capes, cloaks and similar articles, of man-made fibres, other than those of heading No 6204	68.93	61.42	0.06	0.03
	620293 Anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, women's or girl's, of man-made fibres, other than those of heading No 6204 (not knitted or crocheted)	65.20	52.75	0.12	0.05
	620113 Coats, men's or boys, overcoats, raincoats, car-coats, capes, cloaks and similar articles, of man-made fibres, other than those of heading No 6203	64.91	56.79	0.03	0.01

Sources: UN Comtrade and BOFIT.

Table 10. Breakdown of HS chapters 94 and 95 (percent share)

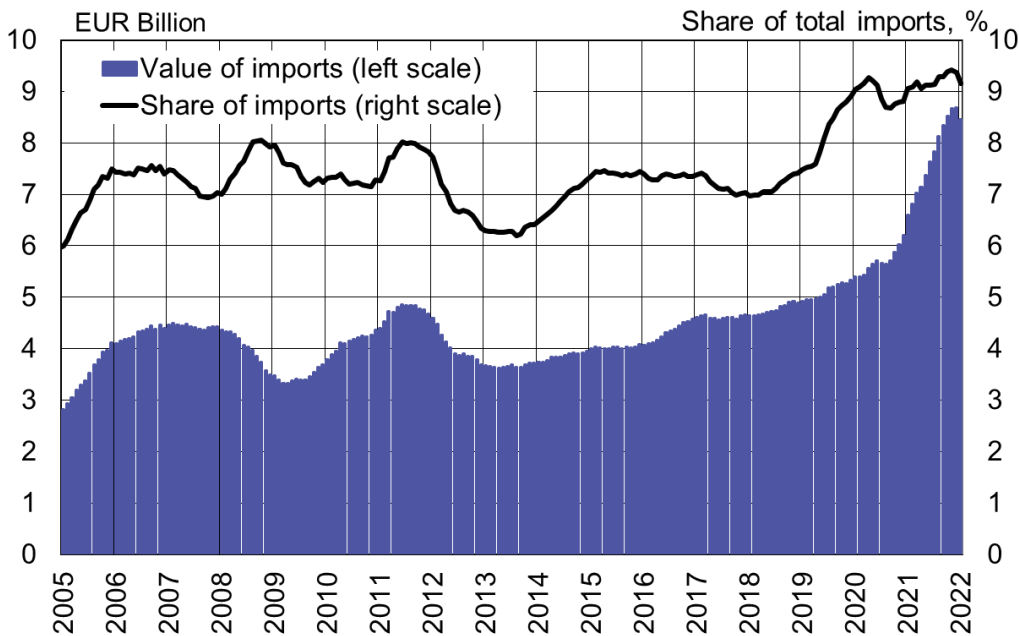
	Share of product group from total EU28 imports		Share of China from total product group imports to EU28			
	2016-2019	2020-2021	2016-2019	2020-2021		
Product groups 94-95 (furniture, sports equipments, toys)						
Largest product groups by import value (min. 0.1% share of imports)	950300 Tricycles, scooters, pedal cars and similar wheeled toys, dolls' carriages, dolls, other toys	85.60	79.62	0.39	0.34	
	950450 Games, video game consoles and machines, other than those of subheading 9504.30	86.06	71.17	0.21	0.23	
	940540 Lamps and light fittings, electric NEC in heading No 9405	85.26	84.19	0.16	0.08	
	940360 Furniture, wooden, other than for office, kitchen or bedroom use	44.44	43.12	0.15	0.13	
	940190 Seat, parts	22.84	22.36	0.14	0.06	
	940510 Chandeliers and other electric ceiling or wall light fittings, excluding those used for lighting public open spaces or thoroughfares	88.71	85.73	0.13	0.07	
	940320 Furniture, metal other than for office use	75.71	75.36	0.12	0.15	
		2016-2019	2020-2021	2016-2019	2020-2021	
	Largest product groups by China-dependency (min 85% of product group's imports from China)	940530 Lighting sets, of a kind used for christmas trees	98.37	98.00	0.02	0.01
		950510 Christmas festivity articles	90.77	89.65	0.04	0.04
940520 Lamps, electric, floor-standing or for table, desk or bedside		89.32	85.43	0.04	0.02	
950651 Lawn-tennis racquets, whether or not strung		89.01	83.78	0.00	0.00	
940510 Chandeliers and other electric ceiling or wall light fittings, excluding those used for lighting public open spaces or thoroughfares		88.71	85.73	0.13	0.07	
950590 Festive, carnival or other entertainment articles including novelty jokes and conjuring tricks, other than christmas festivity articles		87.76	82.79	0.02	0.01	
950710 Fishing rods		86.14	85.83	0.01	0.01	
950450 Games, video game consoles and machines, other than those of subheading 9504.30		86.06	71.17	0.21	0.23	
950300 Tricycles, scooters, pedal cars and similar wheeled toys, dolls' carriages, dolls, other toys		85.60	79.62	0.39	0.34	
940180 Seats, NEC in heading No 9401		85.49	82.16	0.03	0.03	
940540 Lamps and light fittings, electric NEC in heading No 9405	85.26	84.19	0.16	0.08		

Sources: UN Comtrade and BOFIT.

5. Finland's dependency on Chinese imports

Finnish Customs figures make it possible to study goods imports in terms of specific subheadings. Measured by country of origin, the value of imports from China has risen above 9 % of the value of total imports in the wake of the Covid-19 pandemic. With the Ukraine war driving a sharp contraction in trade with Russia, China has emerged as Finland's third-largest provider of imports after Germany and Sweden.

Figure 2. Value of Finland's goods imports from China and share of total goods imports (12-m moving sum)



Sources: Finnish Customs and BOFIT.

In terms of value, Finland's top imports from China are in the categories of machinery & equipment, clothing, furniture, toys, games and sporting goods. At the HS2 level, we see that just these six chapters account for 68 % of Finland's imports from China (Table 11). Electrical machinery and mechanical appliances alone represent over half of the value of imports. Overall, Finland's dependency on China is not particularly high in these goods categories, but assessment of specific commodity groups in the next chapter reveals several high dependencies. Finland's dependency on China for textiles and certain household goods is relatively high even as a whole, so these groups will be discussed separately. We will also consider Finland's direct dependence on China for raw material imports as raw materials are commodities where critical dependencies on China have been detected at the EU level.

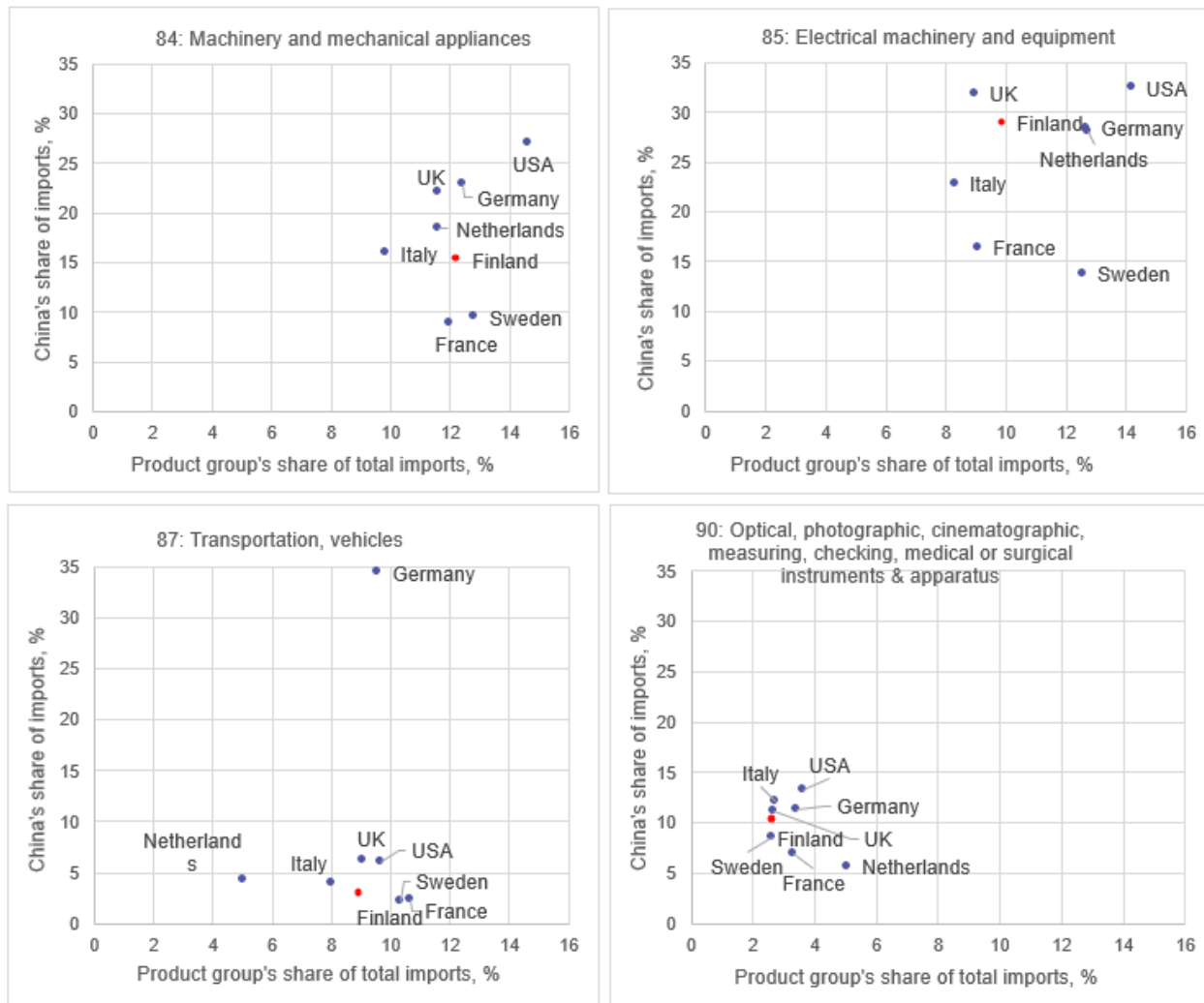
Table 11. Value of imports from China and China's share of Finland's imports (HS2), average 2020–2021

Product classification (HS2)	Value of Chinese imports, EUR million	Share of Finland's total imports, %
Total of all categories	6 001	9.0
85 Electrical machinery and equipment	1 877	28.3
84 Machinery and mechanical appliances	1 255	15.2
62 Articles of clothing (not knitted)	271	44.7
94 Furniture and lighting	264	22.2
95 Toys, games and sports requisites	224	52.3
63 Other made-up textile articles	191	54.1
90 Optical instruments and apparatus	184	9.7
73 Articles of iron or steel	183	10.4
61 Articles of clothing, knitted	176	31.0
39 Plastics and articles thereof	164	7.1
Others, sum	1 211	2.9

Sources: Finnish Customs and BOFIT.

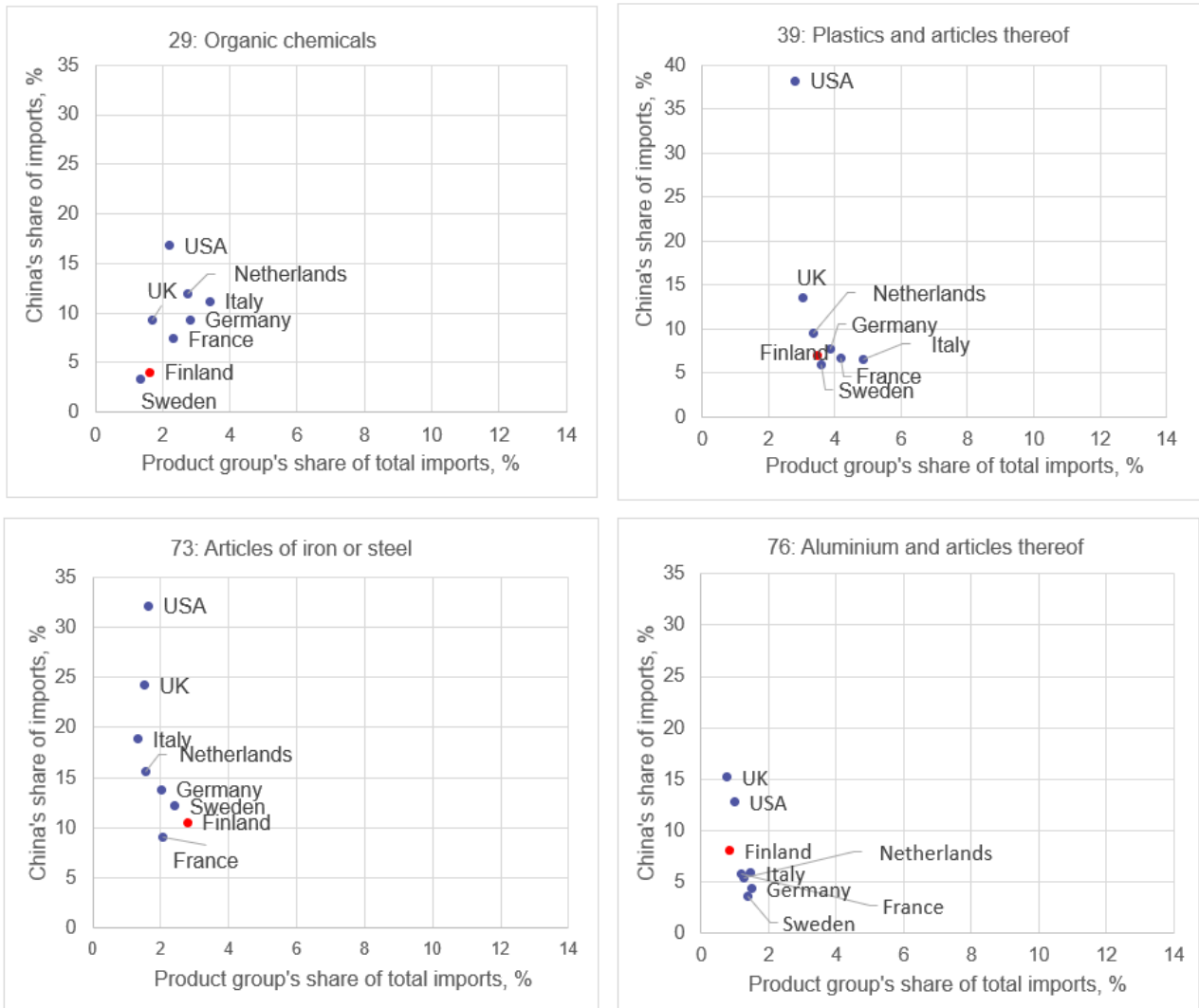
Figures 3 and 4 present a comparison based on the aggregate HS2 code categories to illustrate Finland's dependency on Chinese imports relative to some other countries (Germany, France, Italy, Netherlands, Sweden, United Kingdom and United States). The x-axis in the figure shows the share of goods in question relative to a particular country's total imports. The y-axis shows China's share of goods' imports for a particular country. We see quite large differences among the comparison countries in terms of China dependency. Sweden's dependence on Chinese imports is largely the same as Finland's, with the most notable exception in the electrical machinery and equipment category. In that category, China's share in total imports for Finland are double that of Sweden. In the most important groups (HS2: 84–85), Finland is still less dependent on China than the US or UK, but more dependent than Sweden or France. In these groups, compared to Finland, Sweden imports more from Germany and the Netherlands, and France more from Italy and the US.

Figure 3. Dependency of select countries on imports from China, HS2: 84, 85, 87 and 90 (2021)



Sources: UN Comtrade and BOFIT.

Figure 4. Dependency of select countries on imports from China, HS2: 29, 39, 73, and 76 (2021)



Sources: UN Comtrade and BOFIT.

The following discussion employs Finnish Customs data itemized out to the EU’s 8-digit Combined Nomenclature (CN) system. We here use CN and HS codes interchangeably. This grouping includes 15,175 subheadings. During 2016–2021, Finland imported goods in 9,629 of the subheadings. During the same period, Finland imported goods from China in 6,773 of these subheadings. Excluding groups whose value of imports is not significant (less than 10,000 euros a year on average) results in over 7,600 subheadings, of which Finland imported something from China in over 5,900 groups. The 8-digit CN customs data are quite specific and an individual commodity group typically represents a tiny share of total imports. The Finnish Customs dataset used in the tables in subsections 5.1–5.3 are posted in full in the Bank of Finland’s Finnish-language publication website ([link](#)).¹⁰

¹⁰ The data is available only in Finnish. They can be found under the link “Aineisto”. The material includes the CN codes for the different commodity groups.

5.1. Machinery, equipment & transport vehicles

The first rows of Table 12 show commodities at the HS8 level that account for the greatest value of imports from China in the machinery & equipment categories (HS2: 84 and 85). The lower half of the table presents a breakdown by commodity where Finland's imports are most dependent on China. We exclude from our assessment those commodities where the average annual value of imports from China is less than 10,000 euros. Mechanical machinery and electrical equipment (HS2: 84 and 85) accounted for 52 % of Finland's total imports from China in 2016–2021.

With respect to machinery and equipment, Finland is in its direct imports practically entirely dependent on China in certain types of casting machines and moulds, escalators, diesel engines and radio receivers. With the exception of radio receivers, none of these product groups are significant import commodities. In terms of value of imports from China, the big money is in portable data processing machines (i.e. laptop computers) and mobile phones. These product groups account for a total of 2 % of the entire value of Finland's goods imports.

Two-thirds of laptop computers imported to Finland and nearly half of mobile phones come from China. In addition, a large share of monitors as well as mobile phone and computer parts and accessories are imported from China. Looking at the 8-digit level, the highest-value commodity category Finland imports from China is laptop computers (averaging 358 million euros a year in 2016–2021). The five largest individual import categories involve machinery and electrical equipment (five top rows in Table 12) and together account for 20 % of Finland's imports from China.

Table 12. Breakdown of HS2 chapters 84 and 85

Product categories 84 and 85 (machinery and equipment)	China's share of category's imports, %		Category's share of Finland total imports, %	
	2016-2019	2020-2021	2016-2019	2020-2021
84713000 Data-processing machines, automatic, portable, weighing <= 10 kg	63.6	66.1	0.828	0.953
85171200 Telephones for cellular networks *mobile telephones* or for other wireless networks	43.6	48.1	1.071	1.046
85176200 Machines for the reception, conversion and transmission or regeneration of voice, images or other data	39.9	42.9	0.793	0.756
85177000 Parts of telephones for cellular networks or for other wireless networks...	41.0	82.3	0.114	0.345
84715000 Processing units for automatic data-processing machines	21.0	24.0	0.624	0.365
85049099 (-2019) Parts of static converters	50.1	-	0.152	-
85423990 Electronic integrated circuits	5.7	21.2	0.354	0.442
85285210 Monitors...used in an automatic data-processing system..	50.4	58.4	0.074	0.104
85183095 (-2019) Headphones and earphones, whether or not combined with microphone	70.0	-	0.098	-
85076000 Lithium-ion accumulators (excl. spent)	43.4	22.3	0.059	0.349
85340011 Multilayer printed circuits, consisting only of conductor elements and contacts	85.0	78.1	0.056	0.045
84733020 Electronic assemblies of automatic data-processing machines or other machines of 8471	36.9	30.1	0.117	0.116
	2016-2019	2020-2021	2016-2019	2020-2021
84543010 Machines for casting under pressure of a kind used in metallurgy or in metal foundries	100.0	100.0	0.0000	0.0000
85271391 (-2019) Cassette radios... combined with sound recording or reproducing apparatus...	98.2	-	0.0000	-
84284000 Escalators and moving walkways	97.2	97.3	0.0049	0.0081
85437070 Electronic cigarettes	96.1	97.5	0.0005	0.0013
84804100 Injection or compression-type moulds for metal or metal carbides	96.6	88.4	0.0012	0.0005
85061091 Manganese dioxide cells and batteries, non-alkaline, in the form of cylindrical cells	95.7	86.5	0.0026	0.0006
84082035 Compression-ignition internal combustion piston engine *diesel or semi-diesel engine*...	94.9	89.5	0.0036	0.0004
85271300 (2020-) Radio-broadcast receivers capable of operating without an external source of power...	-	93.5	-	0.0028
85279290 (-2019) Radio-broadcast receivers, ..., not combined with sound recording or reproducing apparatus...	92.5	-	0.0003	0.1164
84021910 Firetube boilers	77.8	94.8	0.0002	0.0015

Sources: Finnish Customs and BOFIT.

Table 13 reviews imports of railway vehicles (86), other transport vehicles such as automobiles (87), aircraft (88) and ships and boats (89) by subheading. Taken together, groups 86, 88 and 89 corresponded to just 1 % of Finland's imports from China in 2016–2021. The total value of other vehicles (87) in Finland's imports from China is classified and not available in the Finnish Customs figures.

Some categories in these groups are subject to wide fluctuations from year to year. For example, no cruise ships were imported from China to Finland during 2016–2020, but over 200 million euros in cruise ships were delivered in 2021. The overwhelming share of Finland's imports of certain automobiles with electrical motors and motorcycles come from China, although they still only represent a tiny share of total imports.

Table 13. Breakdown of HS chapters 86, 87, 88 and 89

	China's share of category's imports, %		Category's share of Finland total imports, %		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product categories 86 - 89 (transport equipment)					
Biggest import categories by value	89011010 Sea-going cruise ships, excursion boats and similar vessels...	0.0	99.9	0.006	0.170
	87024000 Motor vehicles for the transport of >= 10 persons... with only electric motor	84.8	95.1	0.004	0.055
	87036010 Motor cars and vehicles...of <10 persons... with both spark-ignition internal combustion reciprocating piston engine and electric motor...	6.8	3.1	0.188	0.833
	86090090 Containers specially designed...for carriage by one or more modes of transport	34.1	29.1	0.036	0.035
	87116090 Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor...	57.6	76.5	0.004	0.036
	87033219 Motor cars and vehicles...of <10 persons... with only diesel engine...	1.1	1.2	1.091	0.354
	87168000 Vehicles pushed or drawn by hand...	41.6	45.6	0.019	0.023
	87089997 Parts and accessories for tractors, motor cars... and other motor vehicles	2.8	4.0	0.260	0.242
	87082990 Parts and accessories for the industrial assembly of bodies of vehicles..	4.1	3.9	0.138	0.189
	87083091 Parts for disc brakes, for tractors, motor cars,... and other motor vehicles	10.3	9.3	0.061	0.064
		5.7	7.0	0.083	0.091
	2016-2019	2020-2021	2016-2019	2020-2021	
Most China-dependent categories (min. value of annual imports EUR 10 000)	89011010 Sea-going cruise ships, excursion boats and similar vessels...	0.0	99.9	0.0058	0.1696
	87024000 Motor vehicles for the transport of >= 10 persons... with only electric motor	84.8	95.1	0.0041	0.0551
	87119090 (-2016) Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor...	88.3	-	0.0013	-
	89031010 Inflatable vessels for pleasure or sports, <= 100 kg each	70.6	87.7	0.0010	0.0037
	87029031 Motor vehicles for the transport of >= 10 persons, with spark-ignition internal combustion piston engine...	100.0	0.0	0.0000	0.0000
	87116090 Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor...	57.6	76.5	0.0037	0.0356
	87149110 Frames for cycles	62.9	82.6	0.0020	0.0029
	87149130 Front forks for cycles	59.1	58.7	0.0004	0.0012
	87112010 Scooters of cylinder capacity > 50 cm ³ but <= 250 cm ³	53.4	33.0	0.0018	0.0005

Sources: Finnish Customs and BOFIT.

Table 14 presents various instruments and equipment chapters (HS2: 90–93). These chapters together accounted for about 4 % of Finland's imports from China in 2016–2021. The value of Chinese imports in 93 (arms and ammunition) is classified. In these groups, Finland imports several types of measurement and medical devices from China. Beyond timepieces and compasses, however, Finland's import dependence on China does not seem overwhelming. Imports of medical instruments and x-ray accessories is relatively important, while the values in other subheadings appear to be rather small.

Table 14. Breakdown of HS2 groups 90, 91, 92 and 93

	China's share of category's imports, %		Category's share of Finland total imports, %		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product categories 90 - 93 (miscellaneous instruments and equipment)					
Biggest import categories by value	90229020 Parts and accessories of apparatus based on the use of X-rays	20.4	23.2	0.105	0.118
	90318080 Non-optical instruments, appliances and machines for measuring or checking	28.2	24.4	0.061	0.082
	90184990 Instruments and appliances used in dental sciences	15.8	16.4	0.066	0.060
	90283019 Electricity supply or production meters for alternating current, multi-phase	44.7	58.6	0.018	0.024
	90191090 Mechano-therapy appliances; massage apparatus...	29.0	52.1	0.016	0.037
	90214000 Hearing aids	42.3	36.3	0.025	0.018
	91021100 Wrist-watches, whether or not incorporating a stop-watch facility, electrically operated	25.1	33.2	0.034	0.017
	90319000 Parts and accessories for instruments,... and machines for measuring and checking	15.7	27.9	0.027	0.043
	90191010 Electrical vibratory-massage apparatus	54.1	65.7	0.006	0.016
	90141000 Direction finding compasses	75.7	56.6	0.009	0.006
	90189084 Instruments and appliances used in medical, surgical or veterinary sciences	2.5	3.4	0.200	0.208
	2016-2019	2020-2021	2016-2019	2020-2021	
Most China-dependent categories (min. value of annual imports EUR 10 000)	91051100 Alarm clocks, electrically operated	87.1	89.0	0.0010	0.0009
	91118000 Cases for wrist-watches,...and other watches, of materials other than precious metal	21.3	97.7	0.0000	0.0001
	91052900 Wall clocks (excl. electrically operated)	82.2	85.4	0.0003	0.0003
	91131010 Watch straps, watch bands and watch bracelets,... of precious metal	86.8	48.4	0.0001	0.0000
	90065310 Disposable cameras for roll film of a width of 35 mm	71.3	93.7	0.0000	0.0001
	91131090 Watch straps, watch bands and watch bracelets,... of metal clad with precious metal	70.1	90.7	0.0001	0.0001
	90064000 Instant print cameras (excl. special cameras)	73.1	79.8	0.0012	0.0017
	91069000 Time of day recording apparatus and apparatus for...indicating intervals of time, with clock or watch movement or with synchronous motor	73.1	81.4	0.0017	0.0016
	92081000 Musical boxes	78.3	46.4	0.0001	0.0000
	91122000 Clock and watch cases	75.5	71.6	0.0000	0.0001

Sources: Finnish Customs and BOFIT.

5.2. Raw materials

Tables 15–17 present Finland's imports from China of chemical compounds and products; iron, steel and aluminium products; as well as plastic, rubber and wood products. These groups involve a wide range of raw materials and finished goods both for industrial and household uses. In terms of value, many of these are not particularly significant in total imports. Nevertheless, Finland is highly dependent in its imports on China e.g. in many chemical compounds.

The eight HS chapters (28, 29, 38, 39, 40, 44, 73 and 76) accounted for 9 % of Finland's imports from China in 2016–2021. Articles of plastics n.e.s. was the largest individual import chapter (Table 17 top row), with an average value of 30 million euros a year during 2016–2021.

Table 15. Breakdown of HS chapters 28, 29 and 38

	China's share of category's imports, %		Category's share of Finland total imports, %		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product categories 28, 29 and 38 (chemical compounds)					
Biggest import categories by value	38220000 Diagnostic or laboratory reagents...	1.2	6.4	0.163	0.260
	29322090 Lactones	58.2	40.6	0.012	0.010
	29309098 Organo-sulphur compounds	29.4	29.3	0.017	0.024
	38151990 Supported catalysts	7.7	6.7	0.059	0.057
	29159070 Saturated acyclic monocarboxylic acids, their anhydrides, halides, peroxides and peroxyacids	0.0	8.3	0.020	0.020
	29335995 Heterocyclic compounds with nitrogen hetero-atom*s* only...	67.3	53.8	0.005	0.005
	29225000 Amino-alcohol-phenols, amino-acid-phenols and other amino-compounds with oxygen function	15.3	39.5	0.009	0.013
	28421000 Double or complex silicates of inorganic acids or peroxyacids	70.8	58.0	0.004	0.003
	29372900 Steroidal hormones, their derivatives and structural analogues	23.4	25.4	0.008	0.010
	29161995 Unsaturated acyclic monocarboxylic acids, their anhydrides, halides, peroxides...	63.3	54.5	0.003	0.004
	29280090 Organic derivatives of hydrazine or of hydroxylamine	32.7	29.7	0.006	0.007
	2016-2019	2020-2021	2016-2019	2020-2021	
Most China-dependent categories (minimum value of annual imports EUR 10 000)	29307000 Bis(2-hydroxyethyl)sulfide (thiodiglycol (INN))	99.8	99.8	0.0004	0.0001
	29214400 Diphenylamine and its derivatives; salts thereof	98.1	100.0	0.0004	0.0017
	29053930 2,4,7,9-Tetramethyldec-5-yne-4,7-diol	83.5	96.8	0.0000	0.0001
	38089130 Insecticides based on carbamates	0.0	97.1	0.0000	0.0001
	29089900 Halogenated, sulphonated, nitrated or nitrosated derivatives of phenols or phenol-alcohols	96.9	35.3	0.0001	0.0000
	29121200 Ethanal "acetaldehyde"	93.1	97.0	0.0000	0.0000
	29061390 Inositols	90.3	72.2	0.0000	0.0000
	29251995 Imides and their derivatives; salts thereof	79.5	83.3	0.0007	0.0010
	29321400 Sucralose	77.9	82.1	0.0001	0.0002

Sources: Finnish Customs and BOFIT.

Table 16. Breakdown of HS chapters 73 and 76

	China's share of category's imports, %		Category's share of Finland total imports, %		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product categories 73 and 76 (iron, steel and aluminum and products thereof)					
Biggest import categories by value	73269098 Articles of iron or steel, n.e.s.	13.1	15.9	0.236	0.307
	73089098 Structures and parts of structures of iron or steel, n.e.s.	4.8	6.0	0.387	0.442
	73211190 Appliances for baking, frying, grilling and cooking and plate warmers, for domestic use	80.0	93.4	0.021	0.028
	73239300 Table, kitchen or other household articles, of stainless steel	54.5	54.3	0.028	0.028
	76071119 Aluminium foil, not backed, rolled but not further worked	65.8	69.1	0.021	0.020
	73082000 Towers and lattice masts, of iron or steel	29.1	9.8	0.045	0.129
	76169990 Articles of aluminium, uncast, n.e.s.	22.0	26.8	0.054	0.051
	76109090 Structures and parts of structures, of aluminium, and plates, rods, profiles, tubes and the like...	11.2	12.5	0.064	0.050
	73170020 Nails of iron or steel wire, in strips or coils	37.0	35.5	0.018	0.018
	73239900 Table, kitchen or household articles... of iron other than cast iron or steel other than stainless	48.5	47.0	0.012	0.014
	76141000 Stranded wire, cables, plaited bands and the like, of aluminium, with steel core	34.8	56.5	0.009	0.021
	73262000 Articles of iron or steel wire, n.e.s.	23.6	30.8	0.019	0.027
	2016-2019	2020-2021	2016-2019	2020-2021	
Most China-dependent categories (minimum value of annual imports EUR 10 000)	73042910 Casing and tubing of a kind used for drilling for oil or gas, of iron or steel	98.1	0.0	0.0001	0.0000
	73239200 Table, kitchen or other household articles, and parts thereof, of cast iron, enamelled	91.0	84.6	0.0024	0.0022
	73211190 Appliances for baking, frying, grilling and cooking and plate warmers, for domestic use	80.0	93.4	0.0208	0.0279
	76051900 Wire of non-alloy aluminium, with a maximum cross-sectional dimension of <= 7 mm	85.7	83.4	0.0009	0.0008
	73144200 Grill, netting and fencing, of iron or steel wire... coated with plastics	81.9	75.7	0.0014	0.0017
	73158200 Welded link chain of iron or steel	80.3	77.5	0.0048	0.0050
	76151010 Table, kitchen or other household articles and parts thereof...of cast aluminium	80.0	73.9	0.0031	0.0032
	73211200 Appliances for baking, frying, grilling and cooking... for domestic use, of iron or steel	63.7	89.9	0.0003	0.0006
73239100 Table, kitchen or other household articles, and parts thereof, of cast iron, not enamelled	74.8	79.0	0.0012	0.0017	

Sources: Finnish Customs and BOFIT.

Table 17. Breakdown of HS chapters 39, 40 and 44

	China's share of category's imports, %		Category's share of Finland total imports, %		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product categories 39, 40 and 44 (plastic, rubber, wood and articles thereof)					
Biggest import categories by value	39269097 Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s.	13.1	19.0	0.295	0.339
	40111000 New pneumatic tyres, of rubber, of a kind used for motor cars	10.2	14.2	0.352	0.324
	39262000 Articles of apparel and clothing accessories produced by the stitching or sticking together of plastic sheeting	58.8	70.7	0.028	0.080
	40151900 Gloves, mittens and mitts, of vulcanised rubber	11.3	38.3	0.029	0.133
	39241000 Tableware and kitchenware, of plastics	22.1	25.7	0.050	0.044
	39181090 Floor coverings of polymers of vinyl chloride, in rolls or in the form of tiles	8.1	41.0	0.035	0.051
	39181010 Floor coverings... and wall or ceiling coverings in rolls with a width of >= 45 cm	21.4	28.5	0.028	0.033
	39232100 Sacks and bags, incl. cones, of polymers of ethylene	3.7	10.5	0.052	0.056
	40112090 Pneumatic tyres, new, of rubber, of a kind used for buses or lorries	13.4	3.5	0.065	0.067
	39249000 Household articles and toilet articles, of plastics	18.5	21.6	0.030	0.032
	39269092 (-2019) Articles made from plastic sheet, n.e.s.	25.1	-	0.033	-
	39189000 Floor coverings of plastics....and wall or ceiling coverings in rolls with a width of >= 45 cm, consisting of a layer of plastics fixed permanently on a backing of any material	48.4	23.9	0.013	0.010
		2016-2019	2020-2021	2016-2019	2020-2021
Most China-dependent categories (min. value of annual imports EUR 10 000)	44191100 Bread boards, chopping boards and similar boards, of bamboo	83.1	92.8	0.0004	0.0008
	39046910 Polyvinyl fluoride in blocks of irregular shaped	82.5	85.7	0.0012	0.0017
	44211000 Clothes hangers of wood	87.6	66.0	0.0033	0.0026
	39264000 Statuettes and other ornamental articles, of plastics	66.9	80.2	0.0053	0.0053
	39262000 Articles of apparel and clothing accessories produced by the stitching or sticking together of plastic sheeting	58.8	70.7	0.0283	0.0798
	44201019 Statuettes and other ornaments, of wood	68.4	55.1	0.0019	0.0019
	44199010 Tableware and kitchenware, of tropical wood...	63.3	55.9	0.0002	0.0002
	44191200 Chopsticks of bamboo	64.9	53.8	0.0001	0.0002
	44191900 Tableware and kitchenware, of bamboo	48.3	73.4	0.0011	0.0012
	44121000 Plywood, veneered panel and similar laminated wood, of bamboo...	42.8	89.1	0.0001	0.0001
	44209099 Caskets and cases for jewellery or cutlery, and similar articles and articles of furniture	48.7	53.2	0.0028	0.0029

Sources: Finnish Customs and BOFIT.

5.3. Textiles and household goods

Finland imports from China a wide variety of consumer goods, furniture and clothing. Breakdowns of these import categories are presented in Tables 18 and 19. Clothing, footwear and other textile goods and accessories (HS 61–64) accounted for 13 % of Finland's imports from China in 2016–2021. The combined share of furniture, lighting, sports equipment and toys (HS 94 and 95) was 8 %.

While Finland relies heavily on China for many individual products in these categories, it is also true that most of these products are not particularly critical as they can be replaced with other products or from other sources. There are exceptions, however. In the early phases of the Covid-19 pandemic, there were critical global shortages of certain textile products (masks and other personal protective gear). In 2021, nearly 90 % of Finland's imports of protective masks came from China (Table 18). Statistics Finland maintains figures on imports use by sector that shows in which fields do the firms in Finland operate that import products in certain commodity groups.¹¹ The figures reveal that firms importing textiles as production inputs mostly operate in the textile industry (16 %), but a

¹¹ Imports are not broken out by county in these figures.

relatively large share also in sectors more critical to society, such as construction (7.5 %), waste management and wastewater treatment (6 %) and healthcare services (5 %).

Table 18. Breakdown of HS chapter 61–64

	China's share of category's imports, %		Category's share of Finland total imports, %		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product categories 61, 62, 63 and 64 (clothes, shoes and accessories)					
Biggest import categories by value	63079098 Made-up articles of textile materials, incl. dress patterns, n.e.s.	52.0	82.3	0.045	0.222
	62105000 Women's or girls' garments of textile fabrics... coated, covered or laminated with plastics...	73.7	69.0	0.088	0.079
	62104000 Men's or boys' garments of textile fabrics... coated, covered or laminated with plastics...	66.7	63.1	0.077	0.063
	64041990 Footwear with outer soles of rubber or plastics and uppers of textile materials	47.9	42.9	0.091	0.086
	62029300 Women's or girls' anoraks, windcheaters, wind jackets... of man-made fibres	64.2	57.8	0.059	0.046
	61103099 Women's or girls' jerseys, pullovers, cardigans...of man-made fibres, knitted	43.5	42.8	0.073	0.050
	62019300 Men's or boys' anoraks, windcheaters, wind jackets... of man-made fibres	58.7	44.0	0.054	0.044
	62121090 Brassieres of all types of textile materials	41.3	41.1	0.046	0.036
	61099020 T-shirts, singlets and other vests of wool or fine animal hair or man-made fibres, knitted	32.8	34.6	0.058	0.041
	64029190 Footwear covering the ankle, with outer soles and uppers of rubber or plastics	55.0	60.1	0.031	0.023
	61046300 Women's or girls' trousers ... and shorts of synthetic fibres, knitted	33.3	32.4	0.046	0.047
	62160000 Gloves, mittens and mitts, of all types of textile materials	69.2	68.8	0.022	0.022
	64041100 Sports footwear ...with outer soles of rubber or plastics and uppers of textile materials	23.5	23.0	0.065	0.062
	2016-2019	2020-2021	2016-2019	2020-2021	
Most China-dependent categories (min. value of annual imports EUR 10 000)	62032918 Men's or boys' ensembles, of artificial fibres	98.8	99.3	0.0001	0.0000
	61123990 Men's or boys' swimwear of textile materials, knitted	92.4	98.3	0.0004	0.0003
	63029310 Toilet linen and kitchen linen of nonwovens of man-made fibres	94.8	91.3	0.0008	0.0011
	61119011 Babies' gloves, mittens and mitts, of wool or fine animal hair, knitted	94.5	85.3	0.0000	0.0000
	61124990 Women's or girls' swimwear of textile materials, knitted	92.6	81.1	0.0006	0.0003
	62103000 Garments of the type in heading 6202.. coated, covered or laminated with plastics...	89.8	89.5	0.0056	0.0080
	63079095 (2021-) Protective face masks (excl. filtering facepieces FFP according to EN149)	-	89.4	-	0.0208
	62042380 Women's or girls' ensembles, of synthetic fibres	88.2	71.3	0.0008	0.0003
	63011000 Electric blankets of all types of textile materials	87.5	82.9	0.0005	0.0007
	63014010 Blankets and travelling rugs of synthetic fibres, knitted	83.4	87.1	0.0038	0.0030
	63079093 (2021-) Filtering facepieces (FFP) according to EN149	-	84.4	-	0.0181
63042000 Bed nets, warp knit, antimalarial	91.8	76.9	0.0000	0.0000	

Sources: Finnish Customs and BOFIT.

Table 19. Breakdown of HS chapters 94 and 95

	China's share of category's imports, %		Category's share of Finland total imports, %		
	2016-2019	2020-2021	2016-2019	2020-2021	
Product categories 94 and 95 (furniture, lighting, toys and sport equipment)					
Biggest import categories by value	95069190 Articles and equipment for general physical exercise, gymnastics or athletics	50.1	62.6	0.066	0.108
	94054099 Electric lamps and lighting fittings, n.e.s.	42.0	40.2	0.083	0.086
	95045000 Video game consoles and machines	30.8	59.6	0.095	0.074
	95069990 Articles and equipment for sport and outdoor games... swimming and paddling pools	44.8	49.7	0.065	0.071
	94032080 Metal furniture	37.5	42.6	0.074	0.089
	94051098 Electric ceiling or wall lighting fittings, used with discharge lamps	31.4	33.1	0.093	0.103
	94054039 Electric lamps and lighting fittings, of plastics	67.8	73.7	0.035	0.039
	94017900 Seats, with metal frames	50.6	48.8	0.036	0.043
	95030070 Toys, put up in sets or outfits	70.8	67.3	0.027	0.026
	94049090 Articles of bedding and similar furnishing, fitted with springs or stuffed or... filled	19.1	26.6	0.081	0.084
	94017100 Upholstered seats, with metal frames	36.0	45.2	0.040	0.044
	94051040 Electric ceiling or wall lighting fittings, of plastics or of ceramics	69.1	68.7	0.021	0.025
		2016-2019	2020-2021	2016-2019	2020-2021
Most China-dependent categories (min. value of annual imports EUR 10 000)	95051010 Christmas articles, of glass	88.9	91.5	0.0008	0.0011
	95049010 Electric car racing sets, having the character of competitive games	88.6	92.0	0.0005	0.0005
	95030055 Toy musical instruments and apparatus	85.6	85.4	0.0011	0.0010
	95030075 Plastic toys and models, incorporating a motor	90.5	74.2	0.0091	0.0082
	95051090 Christmas articles (excl. of glass...)	81.3	84.7	0.0112	0.0131
	95062900 Water-skis, surfboards and other water-sport equipment	75.5	88.1	0.0064	0.0155
	94015900 Seats of cane, osier or similar materials	88.9	4.8	0.0016	0.0003
	95063990 Golf equipment (excl. balls, clubs and parts thereof)	85.8	77.3	0.0041	0.0073
	94038200 Furniture of bamboo	77.9	86.5	0.0013	0.0014
	95030081 Toy weapons	77.9	81.5	0.0049	0.0042

Sources: Finnish Customs and BOFIT.

6. Finland's critical dependencies on Chinese imports and possibilities for substitution

In the previous sections, we considered those product groups where Finland or the EU have significant Chinese imports, as well as those product groups on which Finland or the EU are highly dependent on China. Of course, even if a particular commodity is imported exclusively from China, it does not mean that an interruption in imports will necessarily cause a crisis (at least from the standpoint of society continuing to function). In this section, we focus on those product groups that can be considered critical to some extent, and then look at the possibilities of substituting Chinese imports with products from alternative sources.

We assess substitutability in several ways in this section. In section 6.1, we consider the substitutability of critical raw materials presently imported from China, listing the alternative suppliers of the specific raw materials in question, as well as the main suppliers of such raw materials to the EU if such information is available. In section 6.2, we examine how various industrial commodities are amenable to substitution with existing domestic manufacturing. In section 6.3, we consider the most important commodities in terms of China dependency, the size of China's market share in the global export market, and alternative sources for imports.

6.1. Finland's import dependency on raw materials deemed critical by the EU

The European Commission has maintained a list of critical raw materials since 2011.¹² In its latest update of 2020,¹³ the list includes 30 raw materials deemed critical to the EU. In most cases, China is either the top producer or refiner of the raw material. Six of these critical raw materials used in the EU mainly come from China (see Table 21). China is the world's main producer in 19 of these raw materials. The following discussion examines the critical raw materials Finland imports from China.

Table 20 presents the value of critical raw materials imported to Finland, and the share of direct imports from China. The commercial codes (HS or CN) for each raw material are collected from the European Commission's 2020 study on critical raw materials.¹⁴ In addition, the table includes alternative import sources of raw materials in the few cases when direct imports from China are at least somewhat meaningful.

In terms of value, the most significant critical raw materials imported to Finland are cobalt and coking coal. Publicly available figures from Finnish Customs show that Finland gets none of its cobalt or coke from China (data for certain 8-digit country-specific import groups are classified). Finland's highest value critical raw materials imported from China are fluorspar, aluminium and bauxite, as well as baryte. In cases of all the three groups of raw materials, China accounted for less than 16 % of Finnish imports in 2020–2021. In the case of fluorspar as well as aluminium and bauxite, China's share has become smaller compared to 2016–2019. In 2020–2021, Finland was most dependent on China in imports of bismuth (35 % of the value of imports coming from China) and lithium (about a quarter from China). The value of bismuth imports, however, was low. In 2016–2019, over half of the magnesium Finland imported came from China, but in recent years that share has fallen to less than a fifth. China was not directly the top provider of a single critical raw material imported to Finland in 2020–2021.

It is important to bear in mind that a raw material may originate from China but might make its way to Finland via a third country (e.g. another EU country) further processed or as a part or component. Table 20 reveals that several raw materials are imported to Finland from e.g. Germany, even if Germany is not a significant producer of that material. According to a member survey conducted by Technology Industries of Finland,¹⁵ 65 % of respondents at industrial firms in Finland said they acquire metals, alloys and composites in the form of finished components and just 35 % directly from the market. Under the EU definition for critical raw materials, Finnish technology firms named cobalt as most critical to their operations, followed by tungsten and magnesium. Of these metals, only magnesium is imported directly to Finland from China. China is the world's most important producer of magnesium and tungsten (Table 21).

For the purposes of comparison, Table 21 presents EU import dependency and dependency on China for the critical raw materials. The EU's dependence on critical raw materials from China and China's importance as a producer is clearly larger than Finland's direct import dependence on China, which means that Finnish companies are also ultimately dependent on China for their raw materials.

¹²See https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials_en

¹³European Commission (2020a) Study on the EU's list of Critical Raw Materials Final Report: <https://ec.europa.eu/docsroom/documents/42883/attachments/1/translations/en/renditions/native>

¹⁴European Commission (2020b) Study on the EU's list of Critical Raw Materials Factsheets: <https://ec.europa.eu/docsroom/documents/42883/attachments/2/translations/en/renditions/native> Thirty rare earth metals (REEs) are designated as critical. The table presents REEs as a single group, but in the original document they are divided into light and heavy rare earth metals. In addition, phosphate rock and phosphorus are combined here.

¹⁵ Teknologiateollisuus (2022) [Kriittiset materiaalit teknologiateollisuudessa](#) (in Finnish, "Critical materials in the technology sector")

On the other hand, some critical raw materials are produced in Finland, including cobalt, platinum-group metals and phosphorus (e.g. apatite).

Table 20. Value and share of Finland's critical raw material imports from China

Raw material	Value of imports, annual average, EUR 1 000		China's share of imports, %		Major import countries	HS-codes
	2016-2019	2020-2021	2016-2019	2020-2021	(share of imports in 2020-21)	
Antimony	725	687	3.21	5.79	France (40 %), Belgium (25 %), Czech (17 %)	26171000, 81101000, 28258000
Baryte	1 586	1 576	12.11	15.46	Turkey (36 %), Netherlands (24 %), Germany (16 %)	25111000
Aluminium and Bauxite	3 052	5 561	16.91	11.65	Russia (38 %), Germany (29 %)	26060000, 76011000, 76012010
Beryllium	3	1	0.00	0.00		28259020, 81121200, 2617900003**
Bismuth	216	31	0.00	35.28	Belgium (63 %), France (2 %)	81060010, 81069010
Borates	5 678	4 830	0.00	0.01		25280000, 28100010, 28100090, 28401100, 28401910, 28401990
Cobalt	1 030 878	1 369 501	-/ 0,00	-/ 0,00		26050000, 81052000*, 75011000, 28220000*, 28273930, 28332930
Coking coal	308 929	197 040	-/ 0,00	-/ 0,00		27011210, 27040010*, 27040011, 27040019
Fluorspar	8 852	7 492	29.83	14.18	Mexico (50 %), Germany (26 %)	25292200, 25292100, 28111100, 28263000, 28261200
Gallium	6	7	0.00	0.00		81129289
Germanium	378	178	0.00	0.09		81129295, 28256010***
Hafnium	34	9	0.05	14.65	USA (53 %), Germany (20 %)	81129210, 81129920
Indium	8	6	0.00	0.00		81129281
Lithium	897	549	8.74	25.56	Germany (54 %), USA (10 %)	28369100, 28252000
Magnesium	99	154	54.31	18.65	Germany (81 %)	81041100, 81041900
Natural graphite	598	1 108	0.69	0.73		25041000, 25049000
Natural rubber	18 556	17 589	0.03	1.59		40011000, 40012100, 40012200, 40012900
Niobium (ferroniobium)	31 469	36 040	0.00	0.00		72029300
Platinum-group metals	8 950	20 667	0.01	0.02		71104100, 71102100, 71101100, 71103100, 71104900, 71102900, 71101910, 71101980, 71103900, 71129200, 71151000
Phosphate rock and Elemental phosphorus	474	1 127	0.00	0.00		25101000, 25102000, 28047000
Rare Earth Elements (REE)	1 639	1 321	3.78	2.51		28461000, 28469010, 28469020, 28053010, 28053020, 28053030, 28053080, 28053090, 28469000, 28469090
Scandium	14	9	0.00	3.70		28053040, 28469030
Silicon metal	9 383	8 721	-/ 0,10	-/ 0,06		28046900, 28046100*
Strontium	261	212	0.00	0.00		28369200
Tantalum	0	38	0.00	0.00		26159000, 26159010, 26159090
Titanium	12 847	0.1	0.00	0.00		26140000
Tungsten	513	1 742	0.02	0.00		26110000, 72028000, 28418000, 28499030, 81011000
Vanadium	0.3	0.2	6.66	0.00		26159090, 28253000

* The value of Finland's imports from China in these categories is classified and thus unavailable. Due to the uncertainty of the value, we assign a value of zero to such China imports in our calculations. ** Finnish Customs does not provide data on these imports at the 10-digit level, so the import subheading 2617900003 is not included in our analysis. *** We replace this in the Finnish data with subheading 28256000 as subheading 28256010 is unavailable.

Sources: Finnish Customs and BOFIT.

Table 21. The EU's most important source countries of critical raw materials and import reliance (European Commission 2020c,¹⁶ authors' summary of page 19–22 tables)

Raw materials	Main global producers	Main EU sourcing countries	EU Import reliance
Antimony	China (74 %), Tajikistan (8 %)	Turkey (62 %), Bolivia (20 %)	100 %
Baryte	China (38 %), India (12 %)	China (38 %), Morocco (28 %)	70 %
Bauxite	Australia (28 %), China (20 %)	Guinea (64 %), Greece (12 %)	87 %
Beryllium	United States (88 %), China (8 %)	n/a	n/a
Bismuth	China (85 %), Lao Pdr (7 %)	China (93 %)	100 %
Borate	Turkey (42 %), United States (24 %)	Turkey (98 %)	100 %
Cobalt	Congo DR (59 %), China (7 %)	Congo DR (68 %), Finland (14 %)	86 %
Coking coal	China (55 %), Australia (16 %)	Australia (24 %), Poland (23 %)	62 %
Fluorspar	China (65 %), Mexico (15 %)	Mexico (25 %), Spain (14 %)	66 %
Gallium	China (80 %), Germany (8 %)	Germany (35 %), UK (28 %)	31 %
Germanium	China (80 %), Finland (10 %)	Finland (51 %), China (17 %)	31 %
Hafnium	France (49%), United States (44%)	France (84 %), United States (5 %)	0 %
Indium	China (48 %), Korea, Rep. (21 %)	France (28 %), Belgium(23 %)	0 %
Lithium	Chile (44 %), China (39 %)	Chile (78 %), United States (8 %)	100 %
Magnesium	China (89 %), United States (4 %)	China (93 %)	100 %
Natural Graphite	China (69 %), India (12 %)	China (47 %), Brazil (12 %)	98 %
Natural Rubber	Thailand (33 %), Indonesia (24 %)	Indonesia (31 %), Thailand (18 %)	100 %
Niobium	Brazil (92 %), Canada (8 %)	Brazil (85 %), Canada (13 %)	100 %
Platinum Group Metals	South Africa (84 %)	n/a	100 %
Phosphate rock	China (48 %), Morocco (11 %)	Morocco (24 %), Russia (20 %)	84 %
Phosphorus	China (74 %), Kazakhstan (9 %)	Kazakhstan (71 %), Vietnam (18 %)	100 %
Heavy Rare Earth Elements	China (86 %), Australia (6 %)	China (98 %), UK (1 %)	100 %
Light Rare Earth Elements	China (86 %), Australia (6 %)	China (98 %), UK (1 %)	100 %
Scandium	China (66 %), Russia (26 %)	UK (98 %), Russia (1 %)	100 %
Silicon metal	China (66 %), United States (8 %)	Norway (30 %), France (20 %)	63 %
Strontium	Spain (31 %), Iran (30 %)	Spain (100 %)	0 %
Tantalum	Congo DR (33 %), Rwanda (28 %)	Congo DR (36 %), Rwanda (30 %)	99 %
Titanium	China (45 %), Russia (22 %)	n/a	100 %
Tungsten	China (69 %), Vietnam (7 %)	n/a	n/a
Vanadium	China (55 %), South Africa (22 %)	n/a	n/a

Source: European Commission (2020c).

6.2. Industrial products imported from China and domestic production

We now consider how well Finnish producers can provide substitutes for manufactured products imported from China. By combining the Finnish Customs import figures for manufactured products and Statistics Finland domestic manufacturing figures, it is possible to isolate specific subheadings with a high dependency on Chinese imports and where Finnish production is minimal or non-existent. For these, the substitution with domestic products is most challenging.

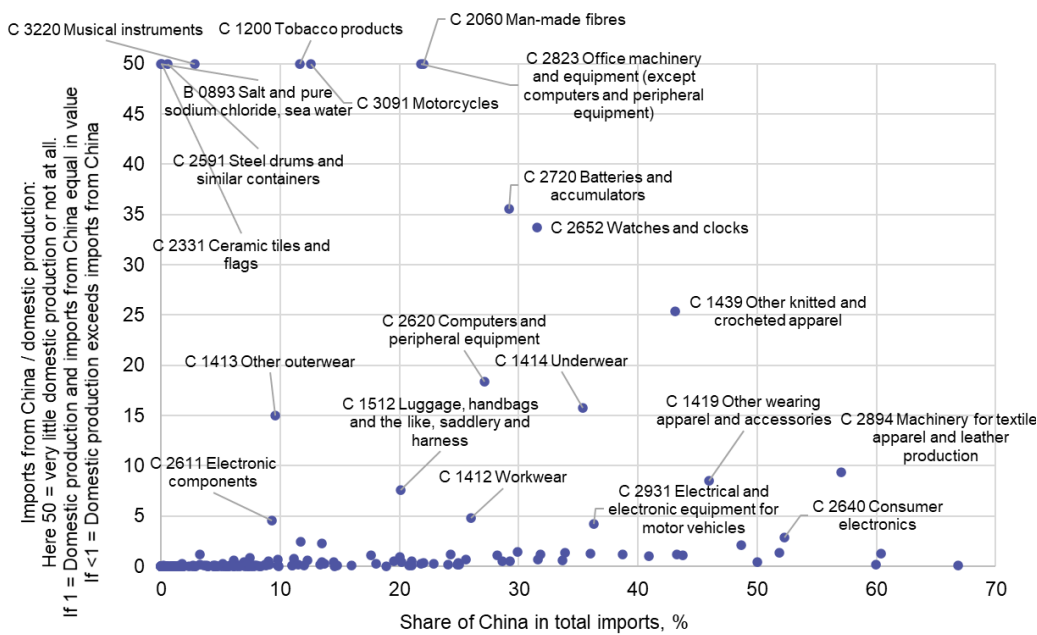
Figure 5 shows a collection of manufactured products groups at the four-digit HS heading level. The x-axis shows China's share of Finnish imports in that particular product group as a percentage.

¹⁶ European Commission (2020c) Critical raw materials resilience: Charting a path towards greater security and sustainability: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0474>

The y-axis shows the ratio of Chinese imports to domestic production (both from 2021). When this latter ratio is exactly 1, the value of China’s imports and the value of domestic production sold are the same (in euros). If the ratio falls below 1, domestic production exceeds Chinese imports. A ratio of 50 in the figure means that domestic production is minimal or non-existent, i.e. virtually nothing is produced in Finland in that subheading. Among those products, Finland’s dependency on China is highest for batteries and power storage, motorcycles, musical instruments and artificial fibers.

At the four-digit HS level, Finland’s imports from China span 210 commodity headings. Of these 210, Finland has no domestic production in just eight headings. In the lion’s share (82 %) of products at this level, the value of Finnish domestic production in euros exceeds the value of similar products imported from China.

Figure 5. Relative share of manufactured imports from China and Finland’s domestic production (2021)



Sources: Statistics Finland, Finnish Customs and BOFIT.

The situation changes when we shift our analysis to the more detailed subheading level (HS8). At this level of resolution, we find nearly 4,700 commodity subheadings with products imported from China. About half of these subheadings comprise products not produced at all in Finland. Now for only about 40 % of product groups, the value of domestic production exceeds the value of imports from China.

Table 25 in the Appendix¹⁷ presents a breakdown of manufactured commodities where the following criteria are met: 1) China has an import share of over 50 %, 2) the value of imports in that product group is significant (over 500,000 euros in 2019) and 3) the value of products imported from China is at least 20 times greater than the value of similar products produced in Finland. We also exclude subheadings where any potential disruption in imports is unlikely to have immediate critical effects (e.g. fireworks, artificial flowers, umbrellas, mannequins and men’s swimwear). We can thus infer that Finland is highly dependent on China for manufactured products that meet these criteria.

¹⁷ The table combines import and domestic manufacturing data. The full datasets for the important product groups are posted in the Finnish-language publications section of the Bank of Finland website ([here](#)) under the “Ainesto” link.

The first row in Table 25 is associated machinery and equipment for manufacture of displays, where China's share of imports is a perfect 100 % and no such products are made in Finland. Other commodities in which Finland is in practice completely dependent on China and not manufactured at all in Finland include escalators, moving walkways, some cermet goods,¹⁸ as well as machinery and equipment for such uses as moulding or retreading inflatable tires.

6.3. High-dependency Chinese commodities that can be sourced elsewhere

Last, we consider those product groups for which the EU is most dependent on China. Table 22 presents commodities at the two-digit HS chapter level where China accounts for a large share of imports to the EU and which also appeared in Table 2, i.e. they represent a substantial share of EU total imports. Each chapter in the table shows China's share of EU-28 imports, the share of China's exports (i.e. how important the group is to China's export sector), as well as China's global market share of exports for that chapter. The final column lists the export shares of largest alternative exporting countries.

Table 22. HS2 groups for Chinese products with highest EU import dependency with alternative sources

	Product group	Share of China in EU28 imports	Share of product group in Chinese total exports	Share of China in global exports of product group	Other major exporters (and their share in global exports)
95	Toys and sports equipment	78.0	3.03	60.25	United States 4%; Germany 3.8%; Netherlands 2.7%
94	Furniture	66.0	4.15	45.26	Germany 6.3%; Poland 5.7%; Italy 5.1%; Mexico 3.6%
63	Textiles, made up articles, sets, worn clothing, rags	52.2	1.24	48.24	India 7.7%; Pakistan 6.3%; Germany 4.7%; Turkey 3.3%; United States 3.3%
42	Articles of leather, saddlery and harness	50.9	0.92	36.32	Italy 14.3%; France 14%
85	Electrical machinery and equipment	50.0	26.74	27.74	South Korea 6.2%; United States 5.7%; Germany 5.5%; Singapore 5.2%
84	Machinery and mechanical appliances	42.3	16.29	22.45	Germany 11 %; United States 8.6%; Japan 6 %; Italy 4.4%
73	Articles of iron and steel	39.9	2.84	27.01	Germany 9.6%; Italy 6%; United States 5.4%; Poland 3%
64	Footwear	39.7	1.54	41.07	Italy 10.3%; Germany 7.7%; Indonesia 4.9%; France 3.8%; Netherlands 3.6%
62	Textiles, apparel and clothing accessories, knitted or crocheted	33.1	2.08	35.76	Italy 7%; Germany 6.4%; Spain 4.4%; Turkey 3.8%; India 3.7%; France 3.6%; Netherlands 3.4%
61	Textiles, apparel and clothing accessories, not knitted or crocheted	27.7	2.57	38.53	Germany 6%; Italy 4.9%; Turkey 4.8%; India 3.5%
39	Plastics and articles thereof	25.1	3.90	17.03	United States 9.7%; Germany 9.6%; South Korea 5.6%; Netherlands 4.2%; Japan 3.9%
29	Organic chemicals	21.9	2.46	19.27	United States 10 %; Germany 7.1%; Switzerland 6.9%; South Korea 5.5%; Netherlands 5.3%; India 4.9%
89	Ships, boats and floating structures	21.2	0.74	20.65	South Korea 18.4%; Japan 8.1%; Italy 5.9%; Germany 5.5%
40	Rubber and articles thereof	20.3	0.93	14.44	Thailand 9.1%; Germany 8.4%; Malaysia 7.8%; United States 6.1%
90	Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus	19.6	2.90	14.87	United States 14%; Germany 12.8%; Japan 6.6%; Netherlands 6.3%
87	Vehicles, other than railway or tramway	16.8	3.57	8.08	Germany 16.6%; Japan 9.3%; United States 8.2%; Mexico 7.7%
38	Chemical product NEC	16.3	0.85	10.62	United States 13.8%; Germany 12.3%; Netherlands 7.4%; France 5.6%; Japan 5.5%
44	Wood and articles thereof	16.0	0.55	10.51	Canada 12.7%; Germany 7.5%; Russia 6.6%; United States 5.5%
76	Aluminium and articles thereof	13.1	1.03	15.14	Germany 8.2%; Canada 5.3%; United States 5.2%; India 3.9%
28	Inorganic chemicals, organic and inorganic compounds of precious metals, of rare earth metals	11.4	0.70	16.03	Germany 9.9%; United States 9.2%; Japan 6.4%; South Korea 5.3%; Australia 4.3%

Sources: UN Comtrade and BOFIT.

After a rough categorization of commodities in the above table, we move to a more detailed breakdown. As the number of product subheadings soars, the handling becomes more difficult. As stated earlier, with respect to certain commodities (e.g. some semiconductors and raw materials) the dependency on Chinese imports is substantially more critical than for others (e.g. furniture and textiles). Even a brief disruption in the supply of these critical commodities can cause huge problems.

Table 23 provides examples of most important commodities often described as critical in policy discussions (besides those metals and raw materials already mentioned in section 6.1). For these commodities, we show how much Finland imports and how much of these imports comes from China. By comparing that amount to China's share of total global exports, we get a sense of scale as to China's market share in each category. The right-hand column lists largest alternative exporters. Separate assessments are made for Finland and the EU as a whole.

¹⁸ Cermet is a composite material composed of ceramic particles (ceramic phase materials such as titanium carbonitride or tungsten carbide) and various metals.

Table 23. Examples of HS6 product groups where China accounts for a large share of the global market (in order of importance, 2021)

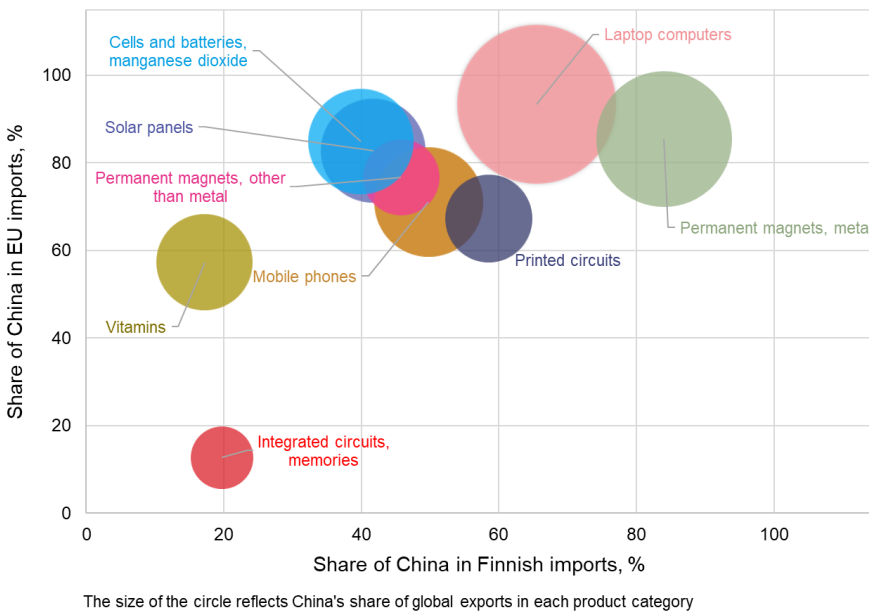
HS-code	Product group	Finnish imports, USD mln.	Share of China in Finnish imports, %	EU imports, USD mln.	Share of China in EU imports, %	Share of China in global exports, %	Other major exporters and share of global exports, %
854140	Solar panels	77.5	41.7	13240.6	82.8	47.0	Malaysia 7%, Vietnam 7%, HK 6%, Japan 5%
847130	Laptop computers	822.8	65.5	40959.1	93.4	71.7	Germany 4%, United States 4%, HK 4%, Czech Republic 3%
851712	Mobile phones	839.8	49.8	43182.4	71.1	49.2	Vietnam 11%, HK 11%, UAE 7%
850511	Permanent magnets, metal	18.3	84.0	1054.1	85.5	61.0	Japan 10%, Vietnam 5%, Germany 5%
850519	Permanent magnets, other than metal	1.9	45.8	393.6	76.7	34.3	Germany 9%, Philippines 8%, South Korea 8%, HK 6%
850610	Cells and batteries, manganese dioxide	18.9	40.0	517.9	84.9	47.5	Singapore 8%, Germany 7%, Poland 7%, Belgium 6%
853400	Printed circuits	74.5	58.6	6110.1	67.3	34.9	HK 19%, South Korea 11%, Japan 10%
854232	Integrated circuits, memories	61.9	19.7	2996.7	12.7	28.1	South Korea 26%, HK 18%, Singapore 9%
2936	Vitamins	12.9	17.2	1662.7	57.3	43.4	United States 12%, France 5%, Germany 5%, Netherlands 5%

Sources: UN Comtrade and BOFIT.

Figure 6 highlights some of these findings. The y-axis of Figure 6 shows China’s share of EU imports and the x-axis China’s share of Finland’s imports for each commodity. The size of the circle indicates China’s share of global exports. The bigger the circle, the larger China’s market share. For nearly every commodity, the EU’s import dependency on China is greater than Finland’s. This is to be expected as we only look at extra-EU imports where trade between member countries is not included.

China is essentially as important for Finland as the entire EU in the categories of permanent magnets, printed circuit boards and certain microchips. China is clearly more important to the EU in laptop computers, power cells, batteries, solar panels and vitamins. China has the largest global market shares among these product groups in laptop computers and permanent magnets.

Figure 6. Product groups considered critical by the EU, China’s share of Finnish and EU imports (2021)



Sources: UN Comtrade and BOFIT.

7. Conclusions

This policy brief focused on Finland's import dependency on China and especially those commodities where dependence is greatest. Because Finland is part of the EU's internal market and some commodities originating in China may be imported to Finland reprocessed or as a part of a final good via a third country (often another EU country), we also considered import dependency at the EU level. Measured in value added, China is Finland's fourth most important import provider, accounting for roughly 8 % of imports. China's significance as a source of imports for Finland is slightly greater than for Sweden, but less than for Germany and especially the United States.

China is by far the world's biggest exporter, with particular dominance in exports of such goods as electronics, textile products and consumer goods. It is hardly surprising then that Finland imports large amounts of these commodities from China. Over half of the value of Finland's imports from China is machinery and electronic equipment, and Finland is extremely dependent on China in many of these product categories. Finland is also highly dependent on Chinese imports in the clothing and textiles category. Most products in these categories, however, can be seen as less critical to the functioning of the society or readily sourced from elsewhere. Finland's import dependency on China is somewhat different than some other advanced economies. For example, in the machinery and electronic device category, Finland's average dependency is somewhat larger than that of Sweden or France, but less than that of the US or the UK. These national differences are explained in part by the differences economic structures. What import inputs are needed for producing exports and what commodities are produced domestically so that a country is less dependent on imports.

We also examined the relationship of imports from China to Finland's own production of industrial products. For example, we import from China about 25 times the value of computers and related equipment than we produce domestically. In communications devices, Finnish production amounts to about a third of that of the value of imports from China.

The fact that Finland is import-dependent on many commodities is by no means a bad thing from an economic standpoint. On the contrary, specialization in production in places of greatest comparative advantage benefits the well-being of the entire world. China enjoys several competitive advantages, including an ability to produce manufactured products at economies of scale, a vast labor pool, as well as efficient production and logistics chains. Of course, there is always a risk from becoming excessively dependent on a single country as it makes the importing country vulnerable to disruptions in production or supply chains (as seen in the initial phases of the Covid-19 pandemic) as well as the possible trade policy whims of the exporting country (as seen with China's restrictions on export of rare earth metals in 2010). Diversification of import sources reduces such risks, but can be extremely expensive. Certain imported commodities are also less critical to maintaining a functioning society and easier to substitute with other products.

There are, however, certain raw materials and commodities where production is currently so firmly based in China that finding alternatives or diversifying the sourcing is nearly impossible. Such critical dependencies on China that create an economic risk for Finland or the EU exists for some specific raw materials, as well as electronic products and components. A relatively small amount of raw materials deemed critical by the EU are imported directly from China to Finland, so we cannot say Finland is currently critically dependent on China for these materials. Finnish firms, however, acquire their raw materials mainly in processed forms from the global market. In the end, Finland is as dependent on China as the rest of the world. With respect to such products as solar panels, batteries and printed circuits, Finland is less directly dependent on imports from China than the EU. The availability of such commodities in Finland, however, will be ultimately defined by how widely they are available throughout the EU. It is also worth keeping in mind that assessment of individual import

commodities says little about the underlying production chain. Based on the customs data, we cannot know whether for example a finished product imported anywhere in the world contains raw materials or components of Chinese origin. For this reason, our actual dependency on China is likely even greater than estimated here.

Appendix

Table 24. Subheadings (HS6) where EU dependency on Chinese imports exceeds 90 %

Product group	Share of product group from total EU28 imports		Share of China from total product group imports to EU28	
	2016-2019	2020-2021	2016-2019	2020-2021
253020 Kieserite, Epsomite (Natural Magnesium Sulphates)	99.49	97.41	0.000	0.000
280910 Diphosphorus Pentoxide	97.43	92.26	0.001	0.001
283711 Cyanides & Cyanide Oxides, of Sodium	90.63	90.48	0.000	0.000
290372 Halogenated Derivatives of Acyclic Hydrocarbons Containing Two or More Different Halogens, Dichlorotrifluoroethane	99.95	100.00	0.000	0.000
290374 Halogenated Derivatives of Acyclic Hydrocarbons Containing Two or More Different Halogens, Chlorodifluoroethanes	98.29	99.35	0.000	0.000
291461 Quinones, Anthraquinone	97.55	68.65	0.000	0.000
291634 Acids, Aromatic Monocarboxylic Acids, Phenylacetic Acid & Its Salts	90.03	75.46	0.000	0.000
292141 Amine-Function Compounds, Aromatic Monoamines & Their Derivatives, Aniline & Its Salts	90.49	49.31	0.004	0.013
293030 Organo-Sulphur Compounds, Thiuram Mono-, Di- or Tetrasulphides	94.04	74.66	0.000	0.000
293352 Heterocyclic Compounds, Containing a Pyrimidine Ring (Whether or Not Hydrogenated) or Piperazine Ring in the Structure, Malonylurea (Barbituric Acid) & Its Salts	97.72	98.69	0.000	0.000
293622 Vitamins, Vitamin B1 & Its Derivatives, Unmixed	93.20	88.54	0.004	0.002
293624 Vitamins, D- or DL-Pantothenic Acid (Vitamin B3 or Vitamin B5) & Its Derivatives, Unmixed	97.64	79.13	0.007	0.007
293625 Vitamins, Vitamin B6 & Its Derivatives, Unmixed	97.87	98.44	0.003	0.003
293627 Vitamins, Vitamin C & Its Derivatives	91.03	69.80	0.011	0.012
294140 Antibiotics, Chloramphenicol & Its Derivatives, Salts Thereof	98.98	98.94	0.002	0.002
360410 Pyrotechnic Products, Fireworks	97.82	97.42	0.015	0.007
470630 Pulp, of Bamboo	93.83	69.29	0.000	0.000
732392 Cast Iron, Table, Kitchen & Other Household Articles & Parts Thereof, of Cast Iron, Enamelled	91.67	86.23	0.003	0.003
741820 Copper, Sanitary Ware & Parts Thereof	91.52	93.84	0.007	0.006
810411 Magnesium, Unwrought, Containing at Least 99.8% by Weight of Magnesium	95.87	91.07	0.009	0.009
810419 Magnesium, Unwrought, Containing Less than 99.8% by Weight of Magnesium	91.45	96.58	0.008	0.007
810430 Magnesium, Rasplings, Turnings & Granules, Graded According to Size, Powders	91.15	88.52	0.003	0.003
820551 Tools, Hand, Household Tools	90.85	86.67	0.011	0.012
821410 Cutlery, Paper Knives, Letter Openers, Erasing Knives, Pencil Sharpeners & Blades Therefore	90.48	88.86	0.001	0.001
840731 Engines, Reciprocating Piston Engines, of a Kind Used for the Propulsion of Vehicles of Chapter 87, of a Cylinder Capacity Not Exceeding 50Cc	97.29	97.28	0.000	0.001
841013 Turbines, Hydraulic Turbines & Water Wheels, of a Power Exceeding 10000Kw	90.88	71.91	0.000	0.000
842310 Weighing Machines, Personal (Including Baby Scales) & Household Scales	95.03	92.37	0.010	0.011
842541 Jacks, Built-In Jacking Systems of a Type Used in Garages, for Raising Vehicles	93.34	97.34	0.004	0.005
842840 Escalators & Moving Walkways	97.31	96.16	0.003	0.003
846596 Machine-Tools, Splitting, Slicing or Paring Machines, for Working Wood, Cork, Bone, Hard Rubber, Hard Plastics or Similar Hard Materials	90.10	88.54	0.002	0.003
846722 Tools, for Working in the Hand, with Self-Contained Electric Motor, Saws	90.51	86.18	0.019	0.025
847130 Automatic Data Processing Machines, Portable, Weighing Not More than 10Kg, Consisting of at Least a Central Processing Unit, a Keyboard & a Display	92.03	92.04	1.418	1.717
851621 Heating Apparatus, Electric Storage Heating Radiators	91.28	77.50	0.001	0.001
852713 Radio Broadcast Receivers Capable of Operating without An External Power Source, Apparatus (Other than Pocket-Size Radio Cassette-Players), Combined with Sound Recording or Reproducing Apparatus	92.85	93.08	0.008	0.005
852792 Radio-Broadcast Receivers N.E.C. in Heading No. 8527, Not Combined with Sound Recording or Reproducing Apparatus but Combined with a Clock	94.21	95.63	0.004	0.003

Sources: UN Comtrade and BOFIT.

Table 25. Ratio of imported manufactured products from China to domestic production (CN subheadings)

CN code	Product name	Share of China in Finnish imports, %	Imports from China / domestic production
84863000	Machines and apparatus for the manufacture of flat panel displays	100.0	No domestic production
84284000	Escalators and moving walkways	98.4	No domestic production
81130090	Articles of cermets, n.e.s.	96.7	No domestic production
84775100	Machinery for moulding or retreading pneumatic tyres or for moulding or otherwise forming inner tubes of rubber or plastics	95.5	No domestic production
85061091	Manganese dioxide cells and batteries, non-alkaline, in the form of cylindrical cells (excl. spent)	92.9	No domestic production
85271300	Radio-broadcast receivers capable of operating without an external source of power, combined with sound recording or reproducing apparatus (excl. pocket-size radiocassette players)	92.9	No domestic production
63029310	Toilet linen and kitchen linen of nonwovens of man-made fibres (excl. floorcloths, polishing cloths, dishcloths and dusters)	92.1	No domestic production
96138000	Lighters (excl. gas fuelled pocket lighters, and fuses and primers for propellant powders and explosives)	91.1	No domestic production
89031010	Inflatable "incl. rigid hull inflatable" boats, for pleasure or sports, fitted or designed to be fitted with a motor, unladen "net" weight excluding the motor <= 100 kg	89.4	No domestic production
29332100	Hydantoin and its derivatives	89.4	No domestic production
91051100	Alarm clocks, electrically operated	89.1	No domestic production
76051900	Wire of non-alloy aluminium, with a maximum cross-sectional dimension of <= 7 mm (other than stranded wires, cables, ropes and other articles of heading 7614, electrically insulated wires, strings for musical instruments)	87.9	No domestic production
81110011	Unwrought manganese; manganese powders	85.0	No domestic production
38121000	Prepared rubber accelerators	84.4	No domestic production
91069000	Time of day recording apparatus and apparatus for measuring, recording or otherwise indicating intervals of time, with clock or watch movement or with synchronous motor (excl. clocks of heading 9101 to 9105, time registers and time recorders)	84.2	No domestic production
29251995	Imides and their derivatives; salts thereof (excl. saccharin, its salts, glutethimide "INN", 3,3',4,4',5,5',6,6'-octabromo-N,N'-ethylenedipthalimide, N,N'-ethylenebis[4,5-dibromohexahydro-3,6- methanophthalimide], and inorganic or organic compounds of mercury)	83.9	No domestic production
70140000	Signalling glassware and optical elements of glass, not optically worked (excl. clock or watch glasses, glasses for non-corrective or corrective spectacles, incl. hollow glass spheres and their segments, for the manufacture of such glasses, microspheres, loose, lighting fittings and parts thereof)	83.8	No domestic production
96170000	Vacuum flasks and other vacuum vessels, and parts thereof (excl. glass inner)	83.0	No domestic production
63011000	Electric blankets of all types of textile materials	81.7	No domestic production
73211900	Appliances for baking, frying, grilling and cooking and plate warmers, for domestic use, of iron or steel, for solid fuel or other non-electric source of energy (excl. liquid or gaseous fuel, and large cooking appliances)	81.6	No domestic production
29215190	Derivatives of o-phenylenediamine, m-phenylenediamine, p-phenylenediamine or diamintoluenes; salts thereof (excl. halogenated, sulphonated, nitrated and nitrosated derivatives, and salts thereof)	79.7	No domestic production
90064000	Instant print cameras (excl. special cameras of subheading 9006.30)	77.4	No domestic production
85151100	Soldering irons and guns, electric	76.5	No domestic production
84231010	Household scales (excl. personal weighing machines and baby scales)	76.1	No domestic production
85323000	Variable or adjustable "pre-set" electrical capacitors	74.9	No domestic production
90129000	Parts and accessories for electron microscopes, proton microscopes and diffraction apparatus, n.e.s.	74.5	No domestic production
85272120	Radio-broadcast receivers capable of receiving and decoding digital Radio Data System signals, of a kind used in motor vehicles, only capable of being operated with an external source of power, combined with sound recording or reproducing apparatus incorporating a laser reading system	74.0	No domestic production
96200010	Monopods, bipods, tripods and similar articles of a kind used for digital, photographic or video cameras, cinematographic cameras and projectors, and of a kind used for other apparatus of Ch 90	73.0	No domestic production
84183020	Freezers of the chest type, of a capacity <= 400 l	71.9	No domestic production
26060000	Aluminium ores and concentrates	70.6	No domestic production
82090080	Plates, sticks, tips and the like for tools, unmounted, of sintered metal carbides or cermets (excl. indexable inserts)	70.5	No domestic production
84672110	Chainsaws for working in the hand, with self-contained electric motor	70.1	No domestic production
87116090	Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor, with electric motor for propulsion (excl. bicycles, tricycles and quadricycles, with pedal assistance, with a continuous rated power <= 250 W)	69.2	No domestic production
62160000	Gloves, mittens and mitts, of all types of textile materials (excl. knitted or crocheted and for babies)	68.8	No domestic production
29055998	Halogenated, sulphonated, nitrated or nitrosated derivatives of acyclic alcohols (excl. 2,2-bis("bromomethyl")propanediol and ethchlorvynol "INN")	68.4	No domestic production
85171800	Telephone sets (excl. line telephone sets with cordless handsets and telephones for cellular networks or for other wireless networks)	67.7	No domestic production
85099000	Parts of electromechanical domestic appliances, with self-contained electric motor, n.e.s. (excl. of vacuum cleaners, dry and wet vacuum cleaners)	67.4	No domestic production
85399090	Parts of electric filament or discharge lamps, sealed beam lamp units, ultraviolet or infra-red lamps, arc lamps and LED light sources, n.e.s.	67.1	No domestic production
90251120	Clinical or veterinary thermometers, liquid-filled, for direct reading	66.2	No domestic production
90191010	Electrical vibratory-massage apparatus	65.7	No domestic production
73160000	Anchors, grapnels and parts thereof, of iron or steel	65.5	No domestic production
84713000	Data-processing machines, automatic, portable, weighing <= 10 kg, consisting of at least a central processing unit, a keyboard and a display (excl. peripheral units)	65.5	No domestic production
85176910	Videophones	65.4	No domestic production
84144010	Air compressors mounted on a wheeled chassis for towing, giving a flow per minute <= 2 m ³	65.3	No domestic production
56074911	Twine, cordage, ropes and cables, of polyethylene or polypropylene, plaited or braided and whether or not impregnated, coated, covered or sheathed with rubber or plastics, with a linear density of > 50.000 decitex "5 g/m" (excl. binder or baler twine)	62.2	No domestic production
85258099	Television cameras, digital cameras and video camera recorders (excl. high-speed, radiation-hardened or radiation-tolerant, and night vision goods)	61.0	No domestic production
73211110	Appliances for baking, frying, grilling and cooking with oven, incl. separate ovens, for domestic use, of iron or steel, for gas fuel or for both gas and other fuels (excl. large cooking appliances)	60.5	No domestic production
85165000	Microwave ovens	59.7	No domestic production
85166090	Electric ovens, for domestic use (excl. space-heating stoves, electric cookers incorporating at least an oven and a hob, microwave ovens and electric ovens for building in)	58.7	No domestic production
29362700	Vitamin C and its derivatives, used primarily as vitamins	57.9	No domestic production
85279900	Radio-broadcast receivers, for mains operation only, not combined with sound recording or reproducing apparatus and not combined with a clock (excl. those of a kind used in motor vehicles)	57.8	No domestic production
85287191	Apparatus with a microprocessor-based device incorporating a modem for gaining access to the Internet, and having a function of interactive information exchange, capable of receiving television signals (set-top boxes with a communication function, excl. video tuners)	57.1	No domestic production

CN code	Product name	Share of China in Finnish imports, %	Imports from China / domestic production
90191090	Mechano-therapy appliances; massage apparatus; psychological aptitude-testing apparatus (excl. electrical vibratory-massage apparatus)	56.8	No domestic production
90069100	Parts and accessories for photographic cameras, n.e.s.	56.5	No domestic production
73024000	Fish-plates and sole plates of iron or steel, for railways or tramways	56.5	No domestic production
69032010	Retorts, crucibles, mufflers, nozzles, plugs, supports, cupels, tubes, pipes, sheaths, rods and other refractory ceramic goods, containing, by weight, < 45% of alumina and > 50% of silica (excl. refractory bricks, blocks, tiles and similar refractory ceramic constructional goods)	56.3	No domestic production
85078000	Electric accumulators (excl. spent, and lead-acid, nickel-cadmium, nickel-metal hydride and lithium-ion accumulators)	55.9	No domestic production
84142080	Hand-operated or foot-operated air pumps (excl. handpumps for cycles)	55.7	No domestic production
84384000	Brewery machinery (excl. centrifuges and filtering, heating or refrigerating equipment)	55.2	No domestic production
29161995	Unsaturated acyclic monocarboxylic acids, their anhydrides, halides, peroxides, and their halogenated, sulphonated, nitrated or nitrosated derivatives (excl. acrylic acid and its salts and esters, methacrylic acid and its salts and esters, oleic, linoleic or linolenic acids, their salts and esters, undecenoic acids and their salts and esters, crotonic acid and binapacryl [ISO])	54.2	No domestic production
54022000	High-tenacity filament yarn of polyesters (excl. that put up for retail sale)	53.9	No domestic production
63069000	Camping goods of textile materials (excl. tents, awnings and sunblinds, sails, pneumatic mattresses, rucksacks, knapsacks and similar receptacles, filled sleeping bags, mattresses and cushions)	52.9	No domestic production
87111000	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder capacity ≤ 50 cm ³	52.9	No domestic production
84433900	Printers, copying machines and facsimile machines, whether or not combined (excl. those capable of connecting to an automatic data processing machine or to a network and printing machinery used for printing by means of plates, cylinders and other printing components of heading 8442)	52.8	No domestic production
85176930	Reception apparatus for radio-telephony or radio-telegraphy	52.6	No domestic production
83052000	Staples in strips, of base metal	52.2	No domestic production
85412100	Transistors with a dissipation rate < 1 W (excl. photosensitive transistors)	51.7	No domestic production
90258080	Hydrometers, areometers and similar floating instruments, hygrometers and psychrometers, whether or not combined with each other or with thermometers or barometers, non-electronic	51.3	No domestic production
85393190	Discharge lamps, fluorescent, hot cathode (excl. with double ended cap)	51.3	No domestic production
40132000	Inner tubes, of rubber, of a kind used for bicycles	50.9	No domestic production
72052900	Powders, of pig iron, spiegeleisen, iron or non-alloy steel (excl. powders of ferro-alloys and radioactive iron powders "isotopes")	50.8	No domestic production
90021900	Objective lenses (excl. for cameras, projectors or photographic enlargers or reducers)	50.6	No domestic production
84705000	Cash registers incorporating a calculating device	50.4	No domestic production
85079080	Parts of electric accumulators (excl. separators)	57.8	883.8
84716070	Input or output units for automatic data-processing machines, whether or not containing storage units in the same housing (excl. keyboards)	62.6	692.9
85051910	Permanent magnets of agglomerated ferrite	62.0	508.8
85285210	Monitors of a kind solely or principally used in an automatic data-processing system of heading 8471 (excl. CRT, with TV receiver)	59.1	490.0
62104000	Men's or boys' garments of textile fabrics, rubberised or impregnated, coated, covered or laminated with plastics or other substances (excl. of the type described in subheading 6201,11 to 6201,19, and babies' garments and clothing accessories)	60.2	408.6
83016000	Parts of padlocks, locks, clasps and frames with clasps, incorporating locks, of base metal, n.e.s.	59.9	360.2
84716060	Keyboards for automatic data-processing machines, whether or not containing storage units in the same housing	69.8	325.2
85423111	Electronic multi-component integrated circuits "MCOs" as processors and controllers as specified in note 12 (b) (4) to chapter 85, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits	80.6	305.6
85177000	Aerials and aerial reflectors of all kinds, of telephone sets, telephones for cellular networks or for other wireless networks and of other apparatus for the transmission or reception of voice, images or other data; parts suitable for use therewith	85.6	72.6
73211190	Appliances for baking, frying, grilling and cooking and plate warmers, for domestic use, of iron or steel, for gas fuel or for both gas and other fuels (excl. cooking appliances with oven, separate ovens and large cooking appliances)	93.7	34.5
73144200	Grill, netting and fencing, of iron or steel wire, not welded at the intersection, coated with plastics	76.7	33.3
85183000	Headphones and earphones, whether or not combined with microphone, and sets consisting of a microphone and one or more loudspeakers (excl. telephone sets, hearing aids and helmets with built-in headphones, whether or not incorporating a microphone)	77.2	29.6
85065030	Lithium cells and batteries, in the form of button cells (excl. spent)	59.0	24.7
85131000	Portable electrical lamps designed to function by their own source of energy	76.6	24.5
87024000	Motor vehicles for the transport of ≥ 10 persons, incl. driver, with only electric motor for propulsion	94.6	21.4

Sources: Statistics Finland, Finnish Customs and BOFIT.

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