



# Canada-Ukraine Free Trade Agreement: Patterns and Tendencies

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# List of Abbreviations

CIF	Cost Insurance and Freight
CUFTA	Canada-Ukraine Free Trade Agreement
FOB	Free on Board Price
HS	Harmonized System of Foreign Trade Classification
MFN	a Most-Favored-Nation
NRCA	Normalized Revealed Comparative Advantage
RCA	Revealed Comparative Advantage
TRAINS	Trade Analysis Information System
UN	United Nations
UN COMTRADE	Commodity Trade Statistics Database
UNCTAD	United Nations Conference on Trade and Development
VAT	Value Added Tax
WITS	World Integrated Trade Solution
WTO	World Trade Organization



# Executive Summary

Effective from August 1, 2017, the Canada-Ukraine Free Trade Agreement (CUFTA) aims to improve market access conditions for Canadian and Ukrainian companies, including elimination of tariffs. Upon CUFTA's entry into force, Canada immediately eliminated customs duties for 26.5% of its tariff lines resulting in 98.1% of Canada's tariff lines being duty free for imports from Ukraine. The largest tariff cuts under CUFTA included footwear, animal or vegetable fats and oils, textiles and apparel, raw skins, leather & furs, wood and wood products, plastics<sup>1</sup>. Exceptions comprised of: 1) gradual tariff elimination for certain vehicles; 2) global tariff rate quotas for some agricultural products (poultry, dairy products, eggs, wheat, barley, etc).

At the same time, Ukraine immediately eliminated custom duties for 34.7% of tariff lines and overall, 72.6% of Ukraine's tariff lines became duty free for imports from Canada<sup>2</sup>. The rest of the tariffs will be eliminated gradually in 3, 5 and 7 years. About 1% Ukraine's tariff lines for some agricultural products from Canada will remain dutiable (live animals, animal products, vegetables, vegetable oil, prepared food products). The largest Ukraine's tariff reductions upon CUFTA's entry into force in 2017 took place for preparations of vegetables, fruit, nuts, preparations of cereals and flour, cocoa preparations and confectionery, beverages, apparel and textiles, soap and cosmetics, cereals, etc.

CUFTA also contains commitments related to non-tariff measures in order to limit unjustified trade barriers, trade facilitation, mutual preferential access to public procurement opportunities, protection and enforcement of intellectual property rights, environmental standards, trade in digital products.

This analysis uses UN COMTRADE data, however, statistics on merchandise trade flows between Ukraine and Canada significantly differs depending on the reporter. There are several factors that may contribute to the difference including CIF vs FOB prices recording of imports and exports; transit time gap between the goods leaving the country of origin and entering the destination country; exchange rate differences; re-export and trans-shipment; misreporting for fraudulent purposes, etc. Most of the discrepancies in Canada-Ukraine trade data were observed for coal (HS2701), as well as for special purpose tariff positions (HS99), vehicles (HS87), pharmaceuticals (HS30) etc.

After signing the CUFTA, Ukraine's exports to Canada have been steadily growing and expanding much faster compared to other trade partners – up by 70% in 2017, 55% in 2018 and 9.4% in 2019 (as reported by Ukraine). However, Canada's total exports to Ukraine contracted during 2018-2019, with a significant drop of almost 30% y/y in 2019 largely due to decreasing coal supplies from Canada. However, Canada's non-coal export

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<sup>1</sup>[https://docs.wto.org/dol2fe/Pages/FE\\_Search/FE\\_S\\_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/\\*&Language=English&Context=ScriptedSearches&languageUIChanged=true](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/*&Language=English&Context=ScriptedSearches&languageUIChanged=true)

<sup>2</sup>[https://docs.wto.org/dol2fe/Pages/FE\\_Search/FE\\_S\\_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/\\*&Language=English&Context=ScriptedSearches&languageUIChanged=true](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/*&Language=English&Context=ScriptedSearches&languageUIChanged=true)

to Ukraine has been growing: from USD 90 million in 2016 to USD 115 million in 2019 or by 28% (as reported by Canada). The slowdown of Canada-Ukraine bilateral non-coal trade growth in 2019 was in line with the declining growth trend in total Ukraine's trade as a result of the national currency appreciation and declining world prices on major Ukraine exported products (metals, etc).

After CUFTA's entry into force, the following product groups of Canada's exports to Ukraine expanded the most (in USD) at HS2 level: Fish and crustaceans (HS3), Machinery and mechanical appliances (HS84), Vehicles (HS87), Meat and edible meat offal (HS2), Electrical equipment (HS85), Instruments and apparatus (HS90), Electrical machinery (HS85), Residues and waste from food industries (HS23), etc. On the Ukrainian side, exports to Canada of Iron and steel (HS72), Cooper and articles (HS74), Preparations of vegetables (HS20), Machinery and mechanical appliances (HS84) and Vehicles (HS87) expanded the most in 2019 vs 2016 (in USD).

In order to evaluate how CUFTA affected the bilateral trade we built a gravity model that accounts for international trade flows among all countries. The gravity model estimates the signing of CUFTA to have increased total Ukrainian exports to Canada by 6,5% from 2016 till 2018. At the same time, it was estimated that CUFTA did not have a significant effect on the dynamics of total Canadian exports to Ukraine during this period. However, CUFTA's effect appeared to be stronger for certain product groups at HS2 level (up by 2-6%): Fish (HS03), Pharmaceutical products (HS30), Electrical machinery (HS85) etc. According to our estimations, CUFTA has not yet considerably affected the trade dynamics due to the short time period it has been in effect – less than 1.5 years of analysed time frame. We expect that it will grow in the future, as FTAs need more time to impact trade.

We also indentified promising goods for importing from Canada to Ukraine, i.e. product groups, in which Canada can expand its export to Ukraine, both in terms of strengthening existing positions and opening up new markets. Methodologically, the promising products were identified according to several criteria: 1) positive revealed comparative advantages (RSA) in this product in Canada and negative - in Ukraine; 2) significant potential for increasing Canada's exports to Ukrainian market based on the assessment of the gap between current and potential export volumes, or "undertrade" (estimated by the gravity model). The analysis was based on UN Comtrade data for 2018 at HS6 level.

Accordingly, the study suggests a list of 181 promising products with significant volume of potential increase of Canada's exports to Ukraine (over USD 50,000), including:

- Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1500cc but not exceeding 3000cc (HS870323)
- Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1000cc but not exceeding 1500cc (HS870322)
- Aeroplanes and other aircraft; of an unladen weight exceeding 15,000kg (HS880240)

- Vehicles; parts and accessories, of bodies, other than safety seat belts (HS870829)
- Vehicles; compression-ignition internal combustion piston engine (diesel or semi-diesel), for transport of goods, n.e.c. in item no 8704.1 (HS870422).

Other important items from the list of promising products include: Boilers, machinery and mechanical appliances; parts thereof (61 goods), Iron and steel (21 goods), Plastics and articles thereof (21 goods), Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof (19 goods) and Paper and paperboard; articles of paper pulp, of paper or paperboard (19 goods).

Moreover, the study identifies, which Ukrainian imports from non-FTA countries (e.g. Turkey, USA and Japan, etc.) can be substituted with Canadian products. We found out that out of 301 products imported by Ukraine from non-FTA countries (at HS6 level), Canada already exports 34 goods to Ukraine. There are additional 209 products, which Canada exports to Europe and Central Asia and can potentially export to Ukraine.

For 12 out of 34 products Canada already supplies to Ukraine, Canadian value per unit was lower than the mean value per unit of Ukrainian import from other countries. They are considered the most promising for the intensification and substitution of import from other countries, including:

- Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1500cc but not exceeding 3000cc (HS870323)
- Aluminium; waste and scrap (HS760200)
- Medicaments; containing vitamins or their derivatives, for therapeutic or prophylactic use, packaged for retail sale (HS300450)
- Fish products (Fish; frozen, hake HS030366; Fish; frozen, flat fish, n.e.c. HS030339, Frozen, cold-water shrimps and prawns HS030616, Fish; frozen, sole (*Solea* spp.) HS030333).
- Clothing; worn, and other worn articles (HS630900), etc.

Out of 209 products that Canada does not yet supply to Ukraine, but sells to Europe and Central Asia, 47 were cheaper than existing imports to Ukraine. Moreover, 15 products from this list overlap with the list of promising products, in particular:

- Alcohols; saturated monohydric, propan-1-ol (propyl alcohol) and propan-2-ol (isopropyl alcohol) (HS 290512)
- Uncoated paper and paperboard (not 4801 or 4803); printing, writing or graphic, weighing 40g/m<sup>2</sup> to 150g/m<sup>2</sup>, in rolls (HS480255)
- Uncoated paper and paperboard (not 4801 or 4803); over 10% by weight of mechanical or chemi-mechanical processed fibre, in rolls (HS480261)
- Fabrics, narrow woven fabrics, n.e.c. in heading no. 5806, of man-made fibres (excluding goods of heading no. 5807) (HS580632)



- Metals; silver, unwrought, (but not powder) (HS710691).

The study also identifies new products from Canada and Ukraine that entered each other's markets under the CUFTA. Most of the top new products supplied from Canada to Ukraine were machinery and mechanical appliances, electrical machinery, fish products, and vehicles. Moreover, exports of most of these products to Ukraine have been gradually increasing throughout the 2017-2019 period. For example, Canada's exports of prepared cranberries to Ukraine increased 17 times from 2017 to 2019. While most of new products supplied from Ukraine to Canada belong to metal products (HS 72, 73, 74), as well as machinery, textiles, furniture (such as seats; convertible into beds, gas-turbines and curtains).

Also, Ukraine relied the most on Canadian imports of maple sugar, soya beans, frozen meat of swine, prepared cranberries. While for Canada the highest reliance on supplies from Ukraine were observed for non-alloy pig iron, apple juice, and live animals n.e.c.

# Chapter 1. CUFTA

## Part 1. CUFTA and its details

The Canada-Ukraine Free Trade Agreement (CUFTA) entered into force on August 1, 2017. CUFTA aims to create new trade and commercial opportunities for Canadian and Ukrainian companies by improving market access conditions, including elimination of tariffs.

### **Tariff commitments under CUFTA:**

#### **Canada**

- Immediate tariff elimination: upon CUFTA's entry into force, 98.1% of Canada's tariff lines became duty free for imports from Ukraine – for all manufactured products (except certain cars) and the vast majority of agricultural products. According to the WTO, Canada immediately eliminated customs duties for 26.5% of its tariff lines (1,939 tariff lines at HS8 level<sup>3</sup>). At the same time, 71.6% of Canada's total tariff (5,232 tariff lines) was already duty free on an MFN basis in 2017<sup>4</sup> (they corresponded to 86% of imports from Ukraine during 2014-2016).
- Gradual tariff elimination: tariff rates for certain vehicles will be gradually reduced to 0% in a 7-year transition period (or by 2024).
- Exceptions from Canada's tariff eliminations for some agricultural products: Canada's global tariff rate quotas remain in place for 111 tariff lines (with duty-free export within quotas and MFN tariff rates over quotas). They include poultry (frozen poultry, poultry fat), dairy products (milk, cream, yogurt, butter), eggs and egg products, cheeses, wheat, barley, etc<sup>5</sup>.

According to the WTO, Ukrainian exports to Canada that benefited from the largest tariff cuts under CUFTA on the HS0 level include footwear (average applied tariff dropped from 9.7% to 0%), animal or vegetable fats and oils (7% to 0%), textiles and apparel (from 4.9% to 0%), raw skins, leather & furs (3.1% to 0%), wood and wood products (2% to 0%), plastics (1.7% to 0%)<sup>6</sup>.

Figure 1 represents 20 product groups on the HS2 level that experienced the largest Canada's tariff reductions upon CUFTA's entry into force in 2017 based on the tariff data from TRAINS<sup>7</sup>. That is, these product groups faced the highest initial tariff protection in

<sup>3</sup> Based on the tariff nomenclature of 2017

<sup>4</sup> [https://docs.wto.org/dol2fe/Pages/FE\\_Search/FE\\_S\\_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/\\*&Language=English&Context=ScriptedSearches&languageUIChanged=true](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/*&Language=English&Context=ScriptedSearches&languageUIChanged=true)

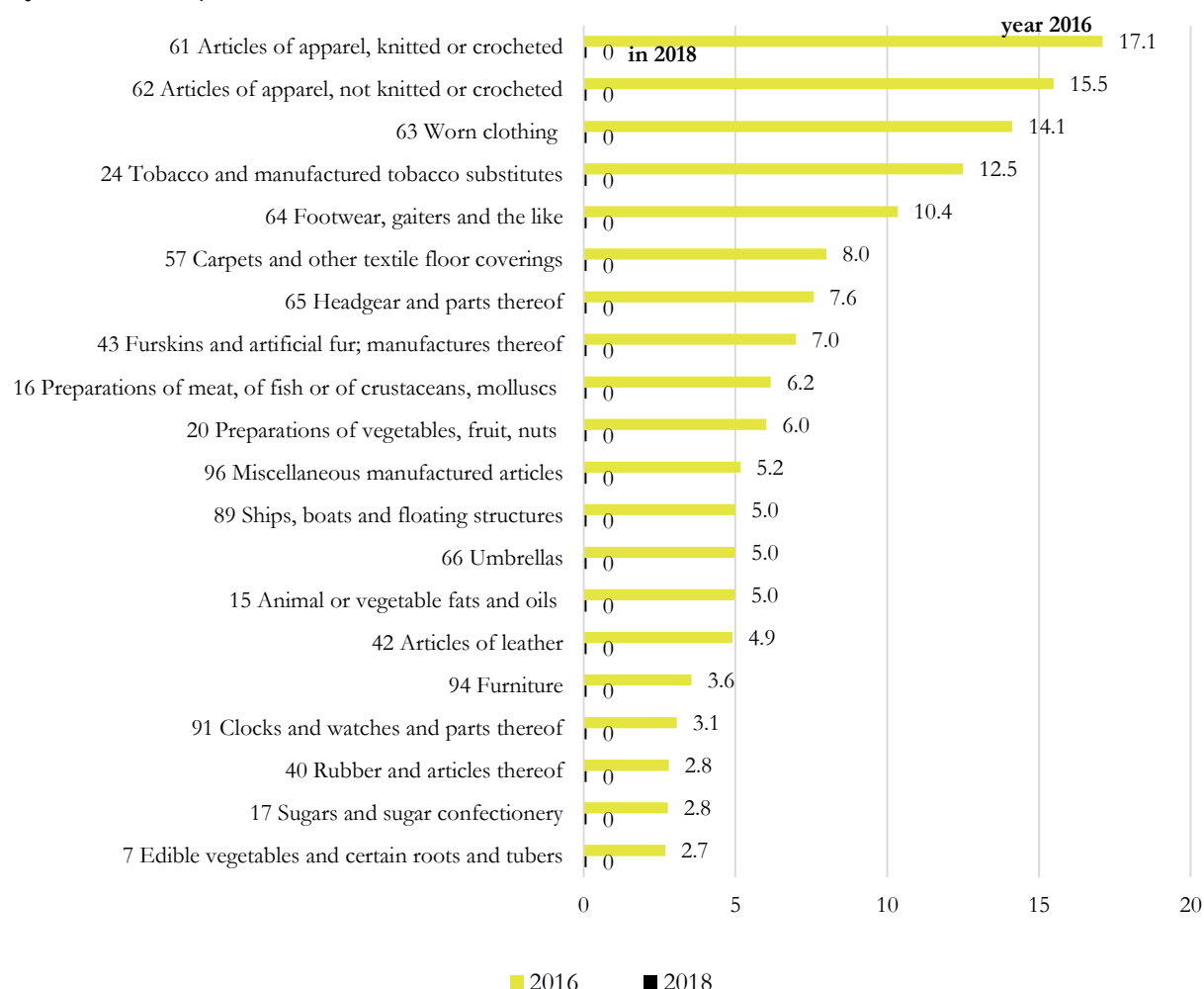
<sup>5</sup> [https://www.international.gc.ca/controls-controles/notices\\_avis/exp/list\\_liste/509-access-quant-acces.aspx?lang=eng](https://www.international.gc.ca/controls-controles/notices_avis/exp/list_liste/509-access-quant-acces.aspx?lang=eng)

<sup>6</sup> [https://docs.wto.org/dol2fe/Pages/FE\\_Search/FE\\_S\\_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/\\*&Language=English&Context=ScriptedSearches&languageUIChanged=true](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/*&Language=English&Context=ScriptedSearches&languageUIChanged=true)

<sup>7</sup> <http://wits.worldbank.org/WITS/WITS/AdvanceQuery/TariffAndTradeAnalysis/AdvancedQueryDefinition.aspx?Page=TariffandTradeAnalysis>

Canada before the Agreement in 2016 (in terms of MFN tariffs applied to imports from Ukraine) and immediately became duty free in 2017. The groups with the highest tariffs also feature textiles, apparel and footwear (7 out of 10 product groups from the top of the list). Other products include vegetable oils, chemicals, wood products, etc. At the same time, Canada still maintains supply control for a number of agricultural products of high importance for Ukrainian exports such as poultry, dairy products, eggs and egg products, cheeses, wheat, barley.

**Figure 1. Top 20 largest Canada's tariff cuts\* under CUFTA, HS2, 2016 vs 2018, % (Canada's tariff rates became 0% for these product groups upon CUFTA's entry into force)**



Source: WITS, TRAINS

\* Note: simple average effectively applied tariffs in %. For all the referred product groups, tariff rates were cut to 0% upon CUFTA's entry into force.

\*\* Note: Since the tariff rates became 0% upon CUFTA's entry into force, the 2018 inputs are not visible on the graph.

## Ukraine

- Immediate tariff elimination: upon CUFTA's entry into force, 72.6% of Ukraine's tariff lines became duty free for imports from Canada. According to the WTO, Ukraine immediately eliminated custom duties for 34.7% of tariff lines (3,628 tariff lines at HS10 level), including for fish and seafood products, such as prepared or

preserved fish and seafood products, cereals, peanuts, juices, mineral water, articles of iron and steel, textiles, certain electrical machinery, cosmetics, articles of plastic, etc. While 37.9% of Ukraine's total tariff (3,970 tariff lines) was already duty free on the MFN basis in 2017<sup>8</sup>.

- Gradual tariff elimination: the rest of the tariffs will be eliminated gradually in 3, 5 and 7 years (during transition periods) according to Ukraine's elimination schedule. In particular, Ukraine will eliminate 428 tariffs (4.1% of its total lines) in 2020, 1,768 (16.9%) – in 2022, and finally 570 (5.4%) – in 2024. As a result, in 2024, 99% of the Ukrainian tariff will become duty free for Canadian imports: all manufactured goods and most agricultural products.
- Partial liberalization and exceptions: about 1% Ukraine's tariff lines for some agricultural products from Canada (101 tariff lines) will remain dutiable, including tariffs for certain live animals and animal products, vegetables, animal or vegetable fats and oil, and prepared food products. For most of these products, CUFTA provides for partial tariff reduction. Moreover, Ukraine establishes a tariff rate quota for certain pork products from Canada (frozen pork and certain pork offal and fat). Sugar is excluded from the FTA regime.

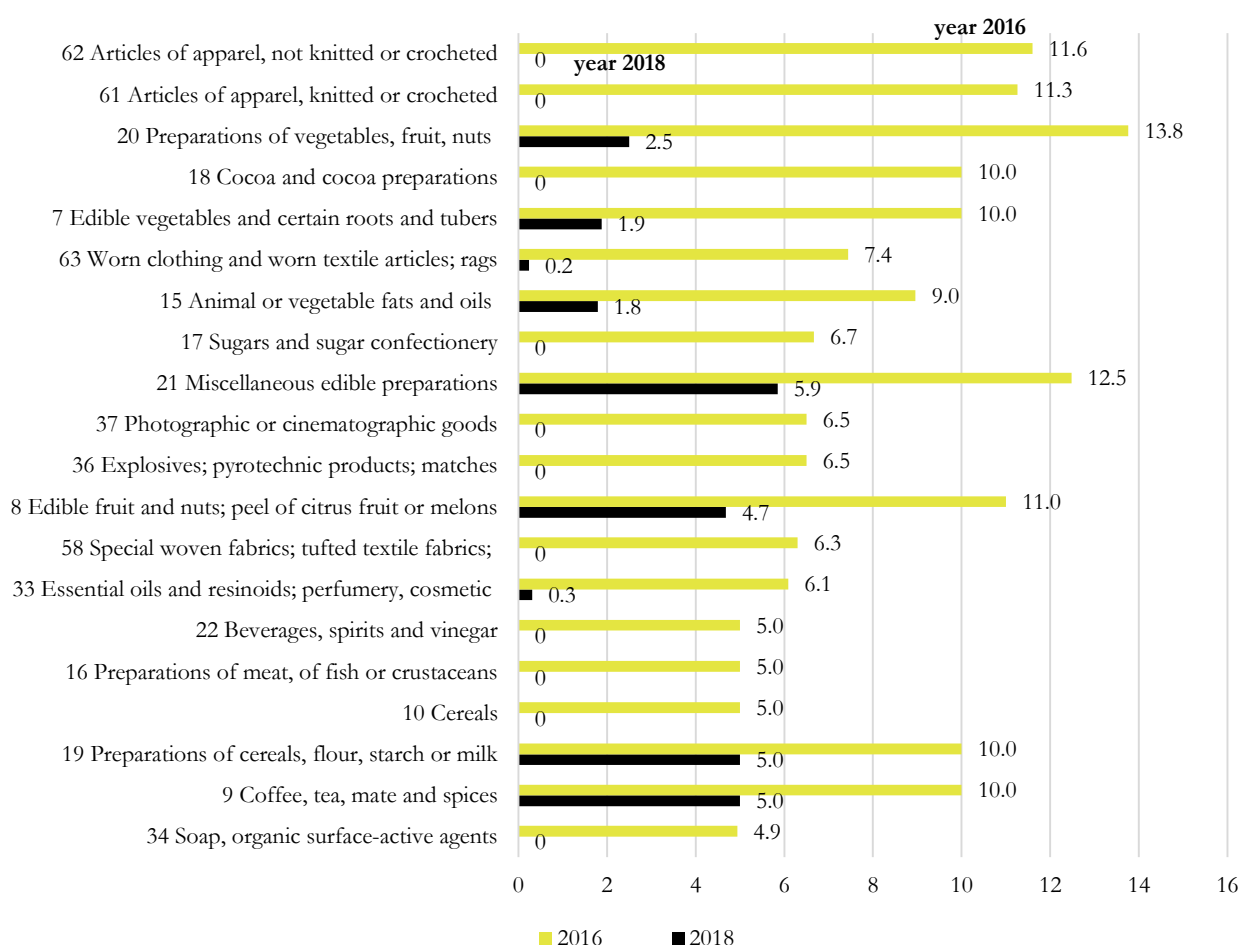
Figure 2 represents 20 product groups on the HS2 level that experienced the largest Ukraine's tariff reductions upon CUFTA's entry into force in 2017 based on the tariff data from TRAINS<sup>9</sup>. This list contains preparations of vegetables, fruit, nuts, apparel and textiles, cocoa preparations and confectionery, beverages, preparations of cereals and flour, soap and cosmetics, cereals, etc.

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<sup>8</sup>[https://docs.wto.org/dol2fe/Pages/FE\\_Search/FE\\_S\\_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/\\*&Language=English&Context=ScriptedSearches&languageUIChanged=true](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?DataSource=Cat&query=@Symbol=WT/REG388/*&Language=English&Context=ScriptedSearches&languageUIChanged=true)

<sup>9</sup>[http://wits.worldbank.org/WITS/WITS/AdvanceQuery/TariffAndTradeAnalysis/AdvancedQueryDefinition.aspx?Page=](http://wits.worldbank.org/WITS/WITS/AdvanceQuery/TariffAndTradeAnalysis/AdvancedQueryDefinition.aspx?Page=TariffandTradeAnalysis)

**Figure 2. Top 20 largest Ukraine's tariff cuts\* under CUFTA, HS2, 2016 vs 2018, %**



Source: WITS, TRAINS

\* Note: simple average effectively applied tariffs in %. Sorted by tariff cuts.

## Non-tariff commitments

CUFTA also contains commitments related to non-tariff measures in order to limit unjustified trade barriers, trade facilitation designed to reduce red tape, mutual preferential access to public procurement opportunities, protection and enforcement of intellectual property rights, environmental standards, facilitation of trade in digital products. It also contains provisions on possible mutual recognition of conformity assessment bodies under certain conditions for the sake of reducing technical barriers to trade. CUFTA envisages possible extension of its provisions to cross-border trade in services, telecommunications, business entry, investment and financial services. In February 2020, Canada and Ukraine have launched public consultations on possible modernization of Canada-Ukraine Free Trade Agreement<sup>10</sup>.

<sup>10</sup> <https://www.canada.ca/en/global-affairs/news/2020/02/minister-ng-launches-public-consultations-on-possible-modernization-of-canada-ukraine-free-trade-agreement.html>

## Chapter 2. Analysis of Discrepancies in Mirror Trade Data Between Ukrainian and Canadian Statistical Sources

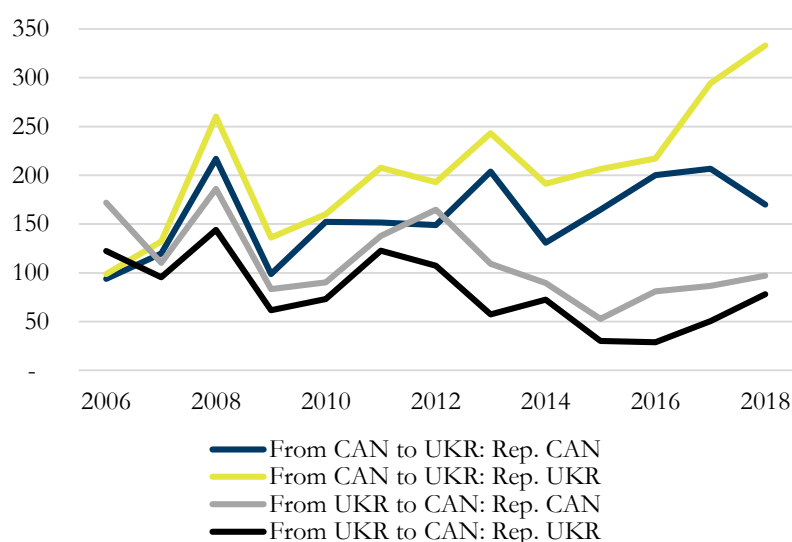
Statistics on merchandise trade flows between Ukraine and Canada significantly differs depending on the reporter. Moreover, the difference in goods flow from Canada to Ukraine reported by both countries substantially widened during 2017-2018 (Figure 3). In our analysis we use UN COMTRADE data that covers trade in goods on a customs basis (in contrast to balance of payments basis), so in this dataset estimation approach is the same for both Canada and Ukraine.

There are several factors that may contribute to the difference. The main one is the price of goods. While export is reported in Free on Board (FOB)<sup>11</sup> prices, import is recorded in Cost Insurance and Freight (CIF)<sup>12</sup> prices, which in addition to FOB price also includes insurance and freight.

Apart from transportation costs, measurement error may also be caused by<sup>13</sup>:

- Transit time gap between the goods leaving the country of origin and entering the destination country,
- Exchange rate issues in the beginning of the transaction and in the end,
- Reexport and transshipment. United Nations recommends to report country of origin for imported goods and country of destination for exports, though they are not always known. So Ukraine may import Canadian goods not from Canada directly but from third countries and vice versa.

**Figure 3. Merchandise trade between Canada and Ukraine by reporter, USD million**



Source: UN Comtrade data

<sup>11</sup> Free on Board price - the price including the cost of delivering goods to the nearest port of the exporting country.

<sup>12</sup> Cost Insurance and Freight - the price of a good delivered at the frontier of the importing country, including insurance and freight against the possibility of loss or damage while it is in transit.

<sup>13</sup> United Nations International Trade Statistics Knowledgebase. Bilateral asymmetries.  
<https://unstats.un.org/unsd/tradekb/Knowledgebase/50657/Bilateral-asymmetries>

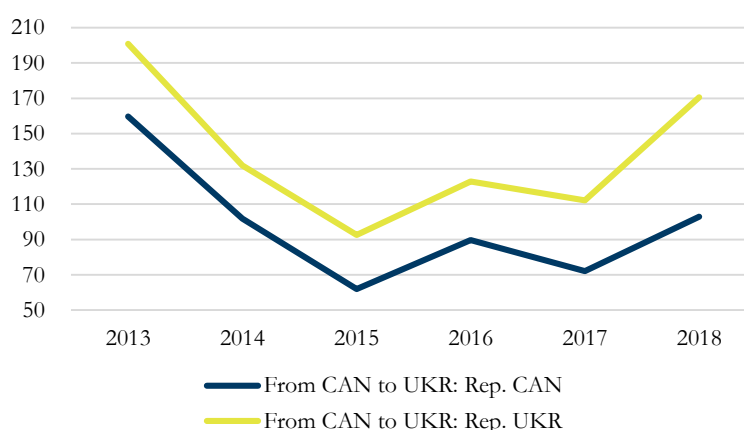


Another possible explanation of the statistical discrepancies is misreporting for fraudulent purposes<sup>14</sup>:

- Reporting lower value of imports as to evade tariffs (and other taxes, i.e. Value added tax (VAT)),
- Increasing value of imports by customs officials as to increase value of tariffs and VAT,
- Transfer pricing – overvaluing imports as to reduce profits inside the country,
- Different classification of goods. Some countries do not classify products for political and economic reasons, these products are classified as HS 999999.

In 2018, according to UN Comtrade, Canada reported that its exports to Ukraine amounted to USD 170 million, while Ukraine reported that its imports from Canada amounted to USD 333 million, which is almost twice higher than the Canadian estimates. Most of this difference (USD 96 million out of 163 million) is attributed to coal (HS2701), which at the time was the main product of Canadian

**Figure 4. Merchandise trade flow from Canada to Ukraine excluding coal, USD million**



Source: UN Comtrade data

exports to Ukraine. This phenomenon can be explained by the long transportation time: while Ukraine imported the coal in January-February of 2018, in Canadian exports it was reflected in the previous year – 2017. The coal exports from Canada to Ukraine peaked in 2015 and were gradually decreasing since as its price went up compared to other suppliers. As a result, in 2019 Ukraine did not import coal from Canada.

If we exclude coal from the mirror data, both Ukrainian imports from Canada and Canadian exports to Ukraine follow the same pattern in 2018 demonstrating growth (Figure 4).

<sup>14</sup> Céline Carrère & Christopher Grigoriou, 2014. "Can Mirror Data Help To Capture Informal International Trade?," UNCTAD Blue Series Papers 65, United Nations Conference on Trade and Development.

Other sectors that contributed to the difference in bilateral trade reports were special purpose customs tariff statistical positions (HS99), vehicles other than railway or tramway (HS87), pharmaceutical industry (HS30) etc. Special purpose customs tariff statistical positions (HS99) include military and dual-use<sup>15</sup> goods, which countries do not want to disclose. This chapter also includes goods present in HS2017 classification yet not featured in the older version – HS2012, since Ukraine still uses the 2012 system.

### **Alternative Data Source**

There are data sources which clean trade data as to account for inconsistent reporting between countries. For instance, The Atlas of Economic Complexity developed at Harvard's Growth Lab employs such approach. The data is reported with a two-year lag, so the most recent data available in mid-2019 dates back to 2017.

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<sup>15</sup> Dual-use items are goods that can be used for both civilian and military applications

# Chapter 3. Impact of Canada-Ukraine Free Trade Agreement on Trade Intensity

## Part A. Summary statistics of Canada-Ukraine trade developments

### 3.1. Overall Canada-Ukraine merchandise bilateral trade dynamics

Figure 5 presents the trends in Canada-Ukraine merchandise bilateral trade over the past 10 years, as reported by two countries (as can be seen, there were significant discrepancies in mirror trade data between Ukrainian and Canadian statistical sources – see Chapter 2 for more detailed discussion). The bilateral trade volumes are still quite low and volatile – according to UN Comtrade statistics for Canada, in 2019, it amounted to USD 225 million, with Canada's exports of goods to Ukraine amounting to USD 115 million, and Canada's merchandise imports from Ukraine – USD 110 million (accounting for less than 1% of total trade for both countries). Overall, the bilateral trade trend largely follows the trend in both partners' overall trade. It has been increasing until the 2008-2009 global economic crises, then it partly recovered in 2010-2013 and contracted again in 2014-2015 due to Ukraine's economic crisis and military conflict in the Donbas region. Bilateral trade resumed growth in 2017-2018, due to Ukraine's economic recovery, as well as CUFTA's implementation (see Figure 5).

After signing the CUFTA, Ukraine's exports to Canada have been steadily growing and expanding much faster compared to other trade partners - up by 70% in 2017, 55% in 2018 and 9.4% in 2019 vs Ukraine's total export growth up by 19% in 2017, 9.42% in 2018, and 5.8% in 2019 (as reported by Ukraine). However, Canada's total exports to Ukraine contracted during 2018-2019, with a significant drop of almost 30% y/y in 2019 (as reported by Canada). This was largely due to decreasing coal supplies from Canada (HS2701) that were the main product of total Canada's exports to Ukraine at the time (coal exports from Canada dropped from USD 135 million in 2017 to USD 67 million in 2018 and to completely ceased in 2019, as reported by Canada). Canada's exports of coal to Ukraine surged in 2015-2017 (accounting for more than 50% of total Canada's exports to Ukraine in 2016 and 2017, as reported by Canada). As discussed in Chapter 2, coal was the important source of discrepancy in mirror statistics on the bilateral merchandise trade flows. However, as Ukraine switched to a coal supplier from the US<sup>16</sup>, total Canada's exports to Ukraine decreased by almost 18% in 2018 and by almost 30% in 2019 (as reported by Canada).

However, should coal be excluded from the overview, the rest of Canada's exports to Ukraine were on an upward trend in 2018 and 2019, up by 43% and 12% respectively (as

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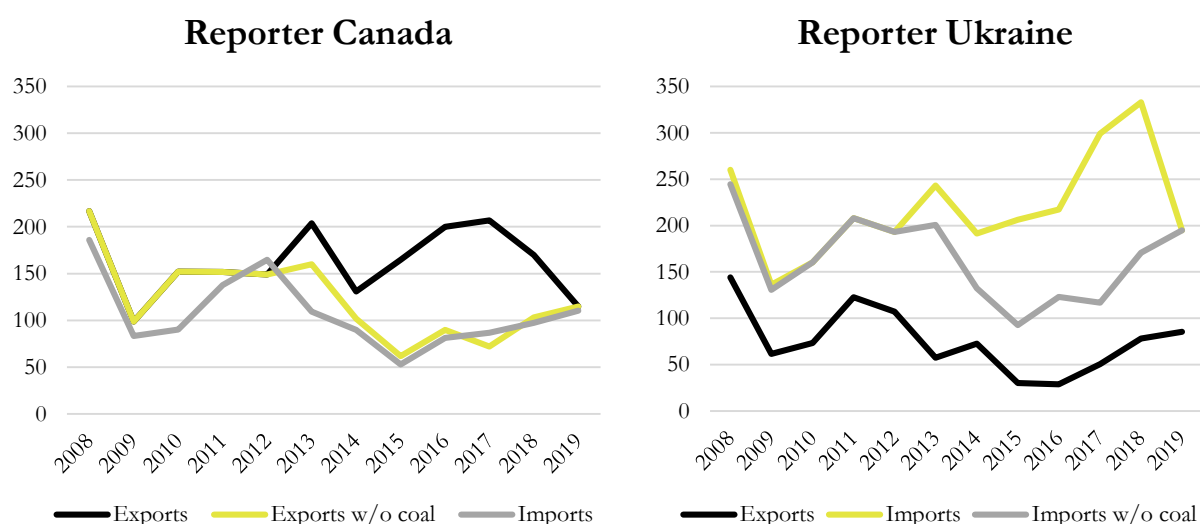
<sup>16</sup> <https://www.kyivpost.com/business/world-in-ukraine-ukraine-canada-starting-to-benefit-from-free-trade.html>

reported by Canada). Overall, Canada's non-coal export to Ukraine has been growing since the CUFTA came into force: from USD 90 million in 2016 to USD 115 million in 2019 or by 28% (as reported by Canada).

During 2018-2019, Canada's non-coal supplies to Ukraine grew faster in comparison to total Ukraine's non-coal imports: 52% vs 15.5% in 2018, 14.2% vs 7.1% in 2019 (as reported by Ukraine) – see Figure 6.

Ukraine's export growth to Canada slowed down in 2019 (to about 9%, as reported by Ukraine). The slowdown in Canada-Ukraine bilateral exports/imports (excluding coal) growth in 2019 was in line with the declining growth trend in total Ukraine's trade (with only a 5.8% growth for exports and 6.3% growth for imports) as a result of Ukrainian currency appreciation and declining world prices on major Ukrainian exported/imported products (metals, etc).

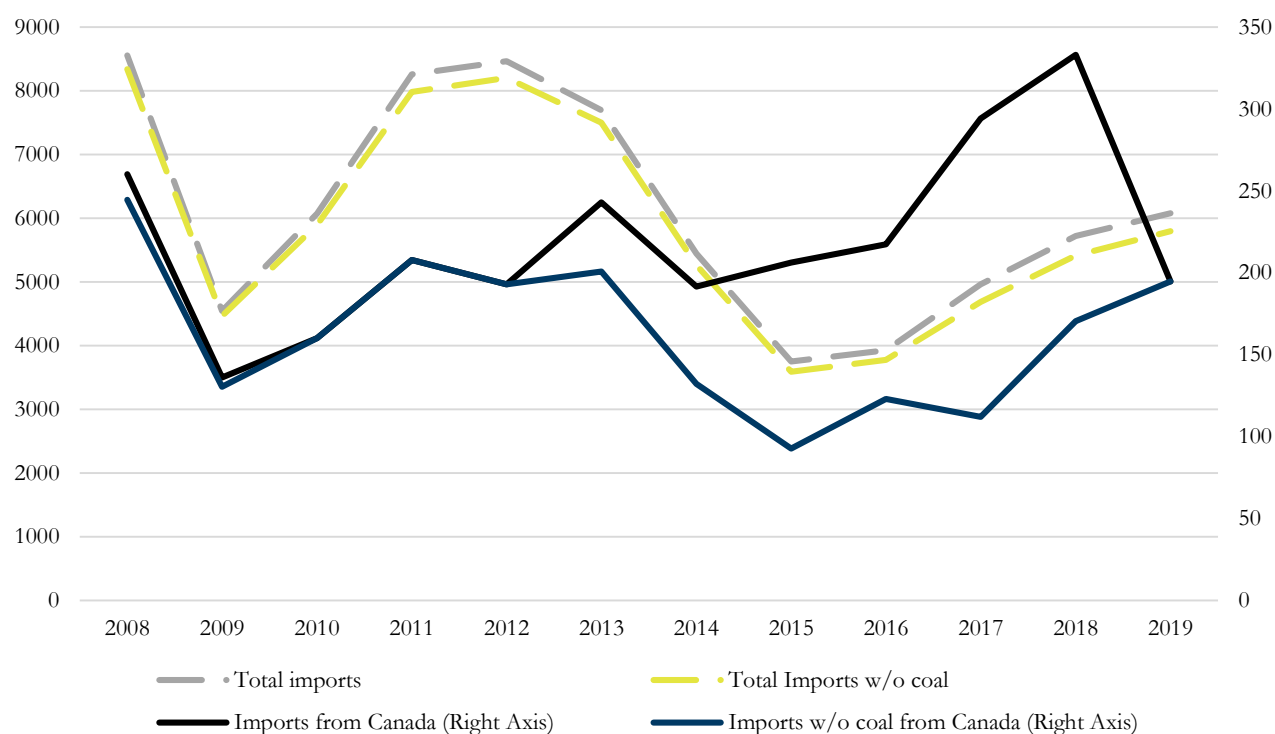
**Figure 5. Canada-Ukraine merchandise bilateral trade, 2008-2019, by reporter, USD million**



Source: UN Comtrade

\*Note: Exports w/o coal and Imports w/o coal – exports/imports from Canada to Ukraine excluding coal (HS2701).

**Figure 6. Ukraine's total imports vs Ukraine's imports from Canada, 2008-2019  
(as reported by Ukraine), USD million**



Source: UN Comtrade

Note: Imports w/o coal – imports to Ukraine excluding coal (HS2701).

### 3.2 Product structure of bilateral trade between Canada and Ukraine and its dynamics

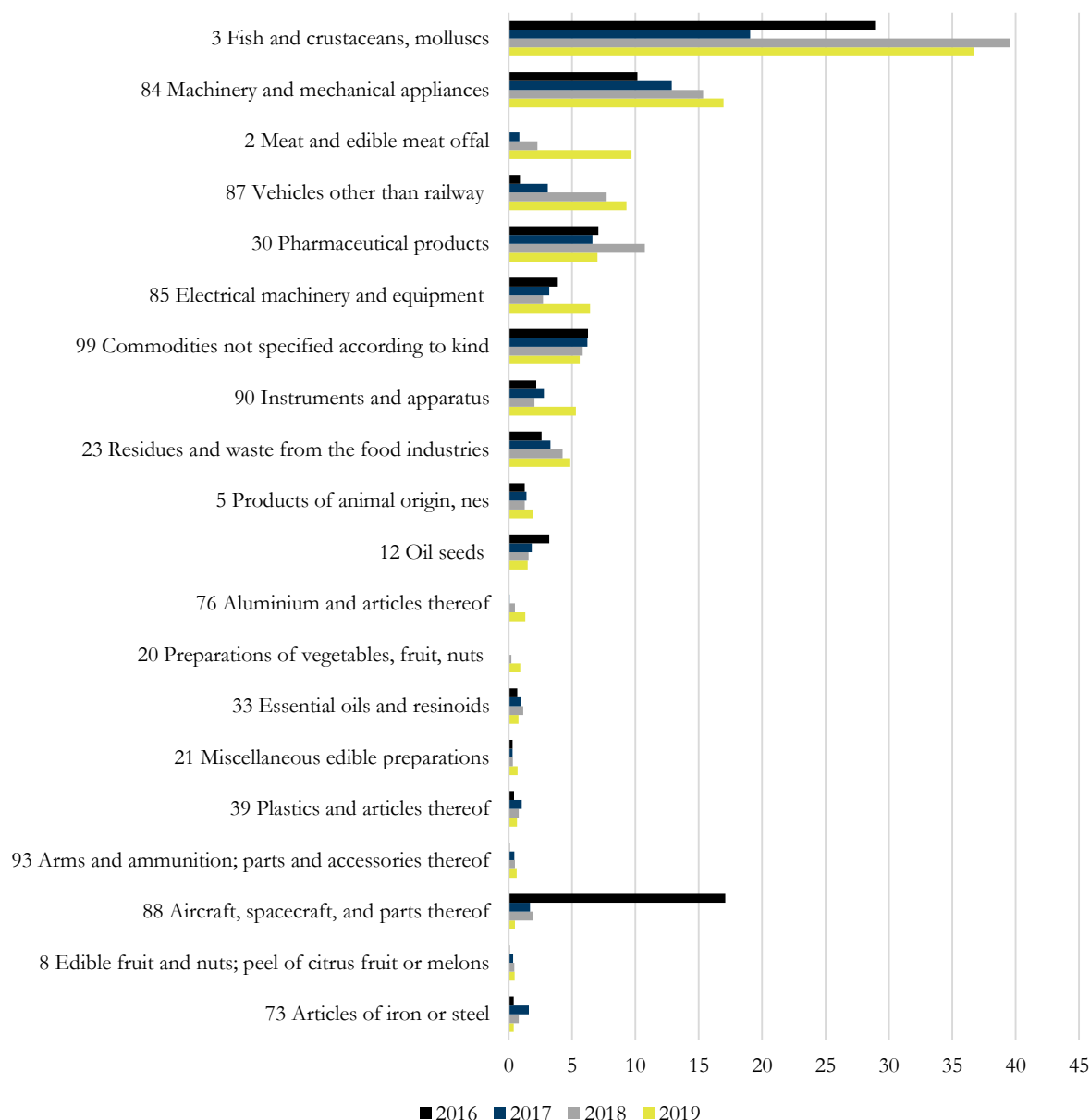
Figure 7 illustrates dynamics of 20 largest Canada's exports to Ukraine over 2016-2019 at the HS2 level (non-coal exports) in USD, as reported by Canada. These product groups altogether accounted for 97% of total exports from Canada to Ukraine in 2019.

As can be seen, supplies of the following product groups expanded the most in value terms (in USD) after CUFTA's entry into force (during 2018-2019): Fish and crustaceans (HS3), Machinery and mechanical appliances (HS84), Vehicles (HS87), Meat and edible meat offal (HS2), Electrical equipment (HS85), Instruments and apparatus (HS90), Electrical equipment (HS85), Residues and waste from food industries (HS23), etc. Exports of Pharmaceutical products (HS30) increased in 2018 (up by 60% y/y), however reversed to the previous level in 2019. On the contrary, supplies of Aircraft, spacecraft (HS88), Oils seeds (HS12), Articles of iron or steel (HS73) declined as compared to 2016 (first pre-CUFTA year).

At the same time, the highest growth rates (in %) in 2019 vs 2016 were observed for Vehicles (HS87), Miscellaneous manufactured articles (HS96), Meat and edible meat offal (HS2), Aluminum and articles (HS76), Arms and ammunition (HS93), Preparations of

vegetables and fruits (HS20), Inorganic chemicals (HS28), Edible fruits and nuts (HS8); etc.

**Figure 7. Top 20\* Canada's exports to Ukraine and their dynamics, 2016-2019, HS2 (non-coal exports), USD million (as reported by Canada)**



Source: UN Comtrade

\*Note: sorted by export value in 2019.

Figure 8 presents major changes in product structure of Canada's exports to Ukraine at HS2 level in 2017-2019 (latest available for CUFTA implementation) vs 2014-2016 (pre-CUFTA years), as reported by Canada. The most significant shift in product structure of Canada's exports to Ukraine during the referred period was observed for mineral products (HS27), whose share collapsed from 55% in 2016 to 0.1% in 2019 (due to coal supplies fluctuations).



Fish and crustaceans (HS03) hold the leading position that was further strengthened during 2017-2019 as compared to 2014-2016 (from 25% to 33%). Fish and crustaceans accounted for about one-third of all supplies from Canada in 2017-2019. Machinery and mechanical appliances (HS84), Vehicles (HS87), and Meat and edible meat offal (HS02) also significantly increased their importance in Canada's exports to Ukraine as compared to the pre-CUFTA period (from 11%, 4%, 2% to 16%, 7%, 4% respectively). At the same time, shares of Pharmaceutical products (HS30), Aircraft, spacecraft (HS88) and Oil seeds (HS12) declined.

Overall, machinery, transport equipment and instruments and apparatus (HS 84, 85, 87, 90) account for a large part of Canada's exports to Ukraine (about 33% in 2019). In particular, exports of Machinery and mechanical appliances (HS84) reached USD 17 million in 2019 vs USD 10 million in 2016. As of 2019, the major exported products within this group included Boring or sinking machinery (HS843143, USD2.7 million), Machinery for soil preparation or cultivation for lawns (HS843290, USD2.6 million), Weighing machines (HS842389, USD2.4 million), Machines; for sorting, screening, separating or washing earth, stone, ores (HS847410, USD2.1 million), Engines; pneumatic power engines and motors (HS841280, USD0.75 million).

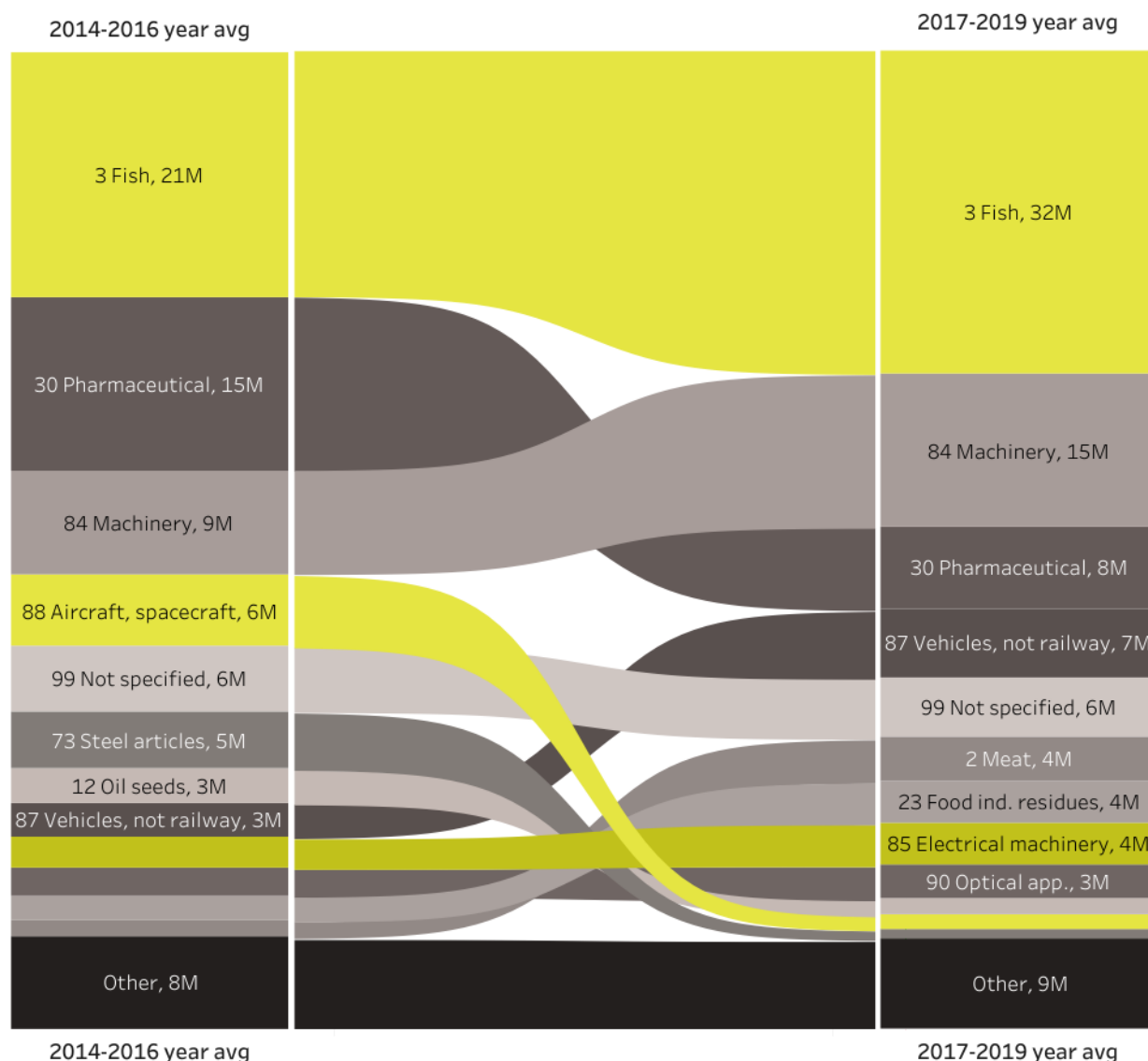
The boost of exports of Vehicles (HS87) up to USD9.3 million in 2019 was attributed by two major exports Vehicles; with only spark-ignition internal combustion reciprocating piston engine, cylinder capacity over 1500 but not over 3000cc (HS870323, USD 5.5 million) and Vehicles; with only spark-ignition internal combustion reciprocating piston engine, cylinder capacity over 3000cc (HS870324<sup>17</sup>, USD 2.3 million). These data include both new and used vehicles.

At the same time, exports of Electrical machinery and equipment (HS85, USD 6.4 million) were largely represented by Projectors (HS852862, USD 1.8 million), Radio navigational aid apparatus (HS852691, USD 1.6 million), Electrical transformers, static converters and inductors (HS850490, USD 0.8 million). Exports of Instruments and apparatus (HS90) more than doubled in 2019 as compared to 2016 (up to USD 5.3 million), with such major products as Monoculars; other optical telescopes (HS900580, USD 1.8 million), Parts and accessories for those measuring or checking devices of heading no. 9031 (HS903190, USD 1.3 million) and Optical devices (HS901380, USD 0.8 million).

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<sup>17</sup> HS870323 and HS870324 include vehicles principally designed for the transport of more than seven persons, including the driver; motor cars; Jeeps and Rover type vehicles; specialized transport vehicles (e.g. ambulances, prison vans and the like), etc.

**Figure 8. Structure of Canada's exports to Ukraine, 2017-2019 vs 2014-2016 (non-coal exports), annual averages, HS2 (as reported by Canada)**



*Source: UN Comtrade.*

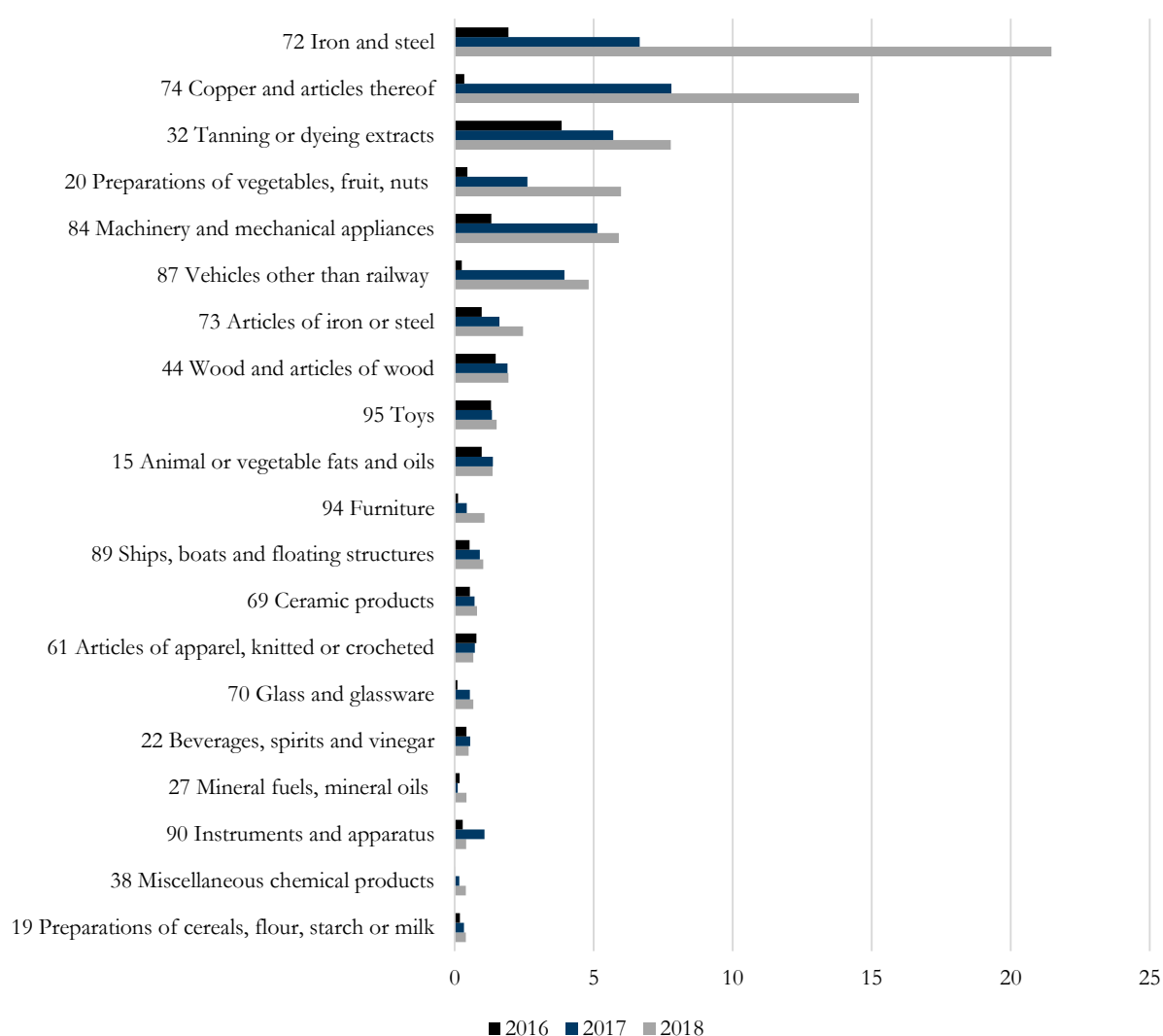
\* Note: Annual averages for the respective periods, in USD million.

Figure 9 illustrates dynamics of 20 largest Ukraine's exports to Canada over 2016-2018 at the HS2 level in USD, as reported by Ukraine. They altogether accounted for 95% of total exports from Ukraine to Canada in 2018. According to the Ukrainian statistics, major exports to Canada had been expanding in 2017-2018 recovering from the deep economic crisis (when total Ukraine's exports to Canada fell to the lowest level over the past 10 years – USD 29 million). Exports of Iron and steel (HS72), Cooper and articles (HS74), Preparations of vegetables (HS20), Machinery and mechanical appliances (HS84) and Vehicles (HS87) increased in value terms (in USD) the most in 2019 vs 2016. While the highest growth rates (in %) was demonstrated by Carpets and other textile floor coverings (HS57), Tools of base metal (HS82), Miscellaneous articles of base metal (HS83), Copper

and articles thereof (HS74), Vehicles other than railway (HS87) and Preparations of vegetables, fruit, nuts (HS20).

At the same time, certain product groups experienced a decline as compared to 2016, including Railway or tramway locomotives (H86), Edible products of animal origin (HS4), Oil seeds (HS12), Residues and waste from the food industries (HS23), Articles of apparel, knitted or crocheted (HS61), etc.

**Figure 9. Top 20\* Ukraine's exports to Canada and their dynamics, 2016-2018, HS2, USD million (as reported by Ukraine)**



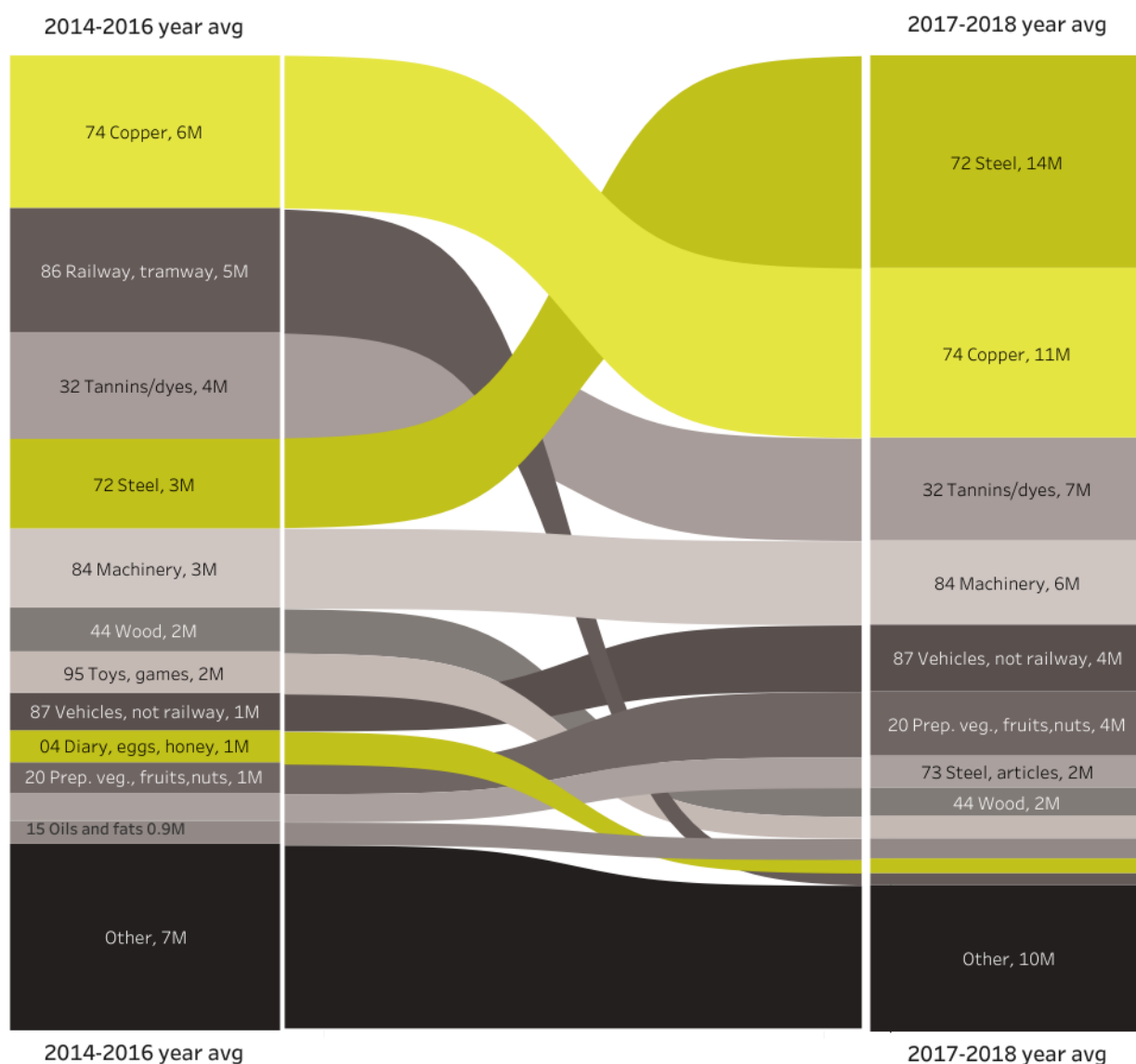
Source: UN Comtrade.

\*Note: sorted by export value in 2018.

Figure 10 presents major changes in product structure of Ukraine's exports to Canada at HS2 level in 2017-2018 (latest available for CUFTA implementation) vs 2014-2016 (pre-CUFTA years), as reported by Ukraine. Iron and steel (HS72) topped Ukraine's exports to Canada in 2017-2018 and its share significantly increased as compared to 2014-2016 (from 8% to 22%). There was also a significant shift towards Vehicles other than railway

(HS87) and Preparations of vegetables, fruit, nuts (HS20) that increased their shares from less than 1% in 2014-2016 to almost 7% each in 2017-2018. At the same time, shares of Railway or tramway locomotives (HS86), Fertilizers (HS31), Articles of apparel, knitted or crocheted (HS61) dropped.

**Figure 10. Structure of Ukraine's exports to Canada, 2017-2018 vs 2014-2016\*, annual averages, HS2 (as reported by Ukraine)**



Source: UN Comtrade, own calculations.

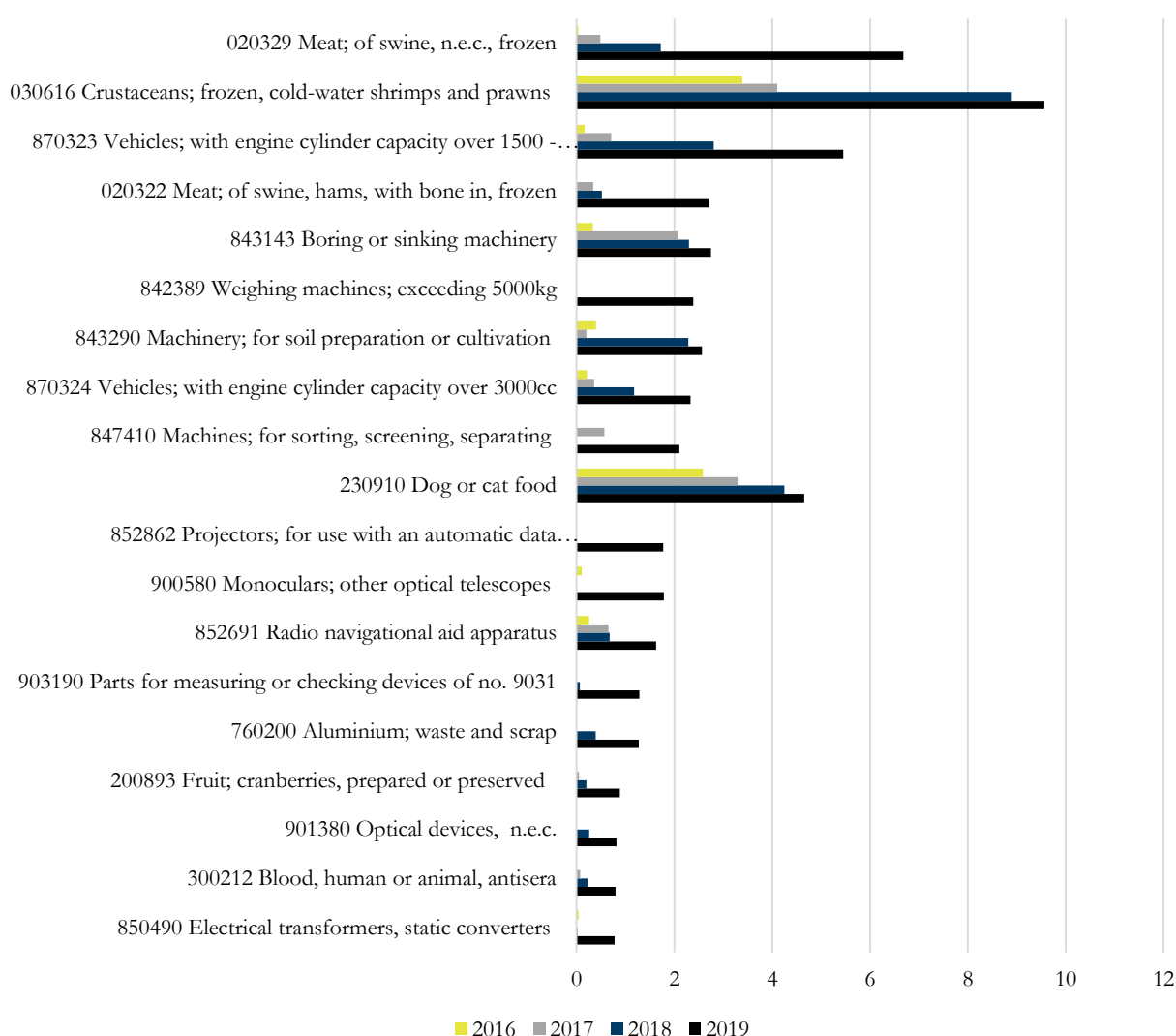
\*Note: Annual averages for the respective periods, in USD million.

### 2.3. Major changes in trade flows between Canada and Ukraine in 2016-2019 at HS6 level

Using COMTRADE data at HS6 level, we computed increases in bilateral trade between Canada and Ukraine in absolute (USD) and relative (percent) terms and identified products that experienced the highest growth in 2016-2019.

Figure 11 and Table 1 illustrate the product groups of Canada's exports to Ukraine that experienced the highest expansion in USD value and growth rates at more disaggregated level HS6 in 2019 vs 2016.

**Figure 11. Top-20 Canada's exports to Ukraine with highest value increase, 2019 vs 2016, HS6, USD million**



Source: UN Comtrade, own calculations.

\*Note: sorted by the value of export expansion in 2019 vs 2016.

**Table 1. Top-20 Canada's exports\* to Ukraine with the highest growth rates, HS6, USD, %**

Product code	Product	Export* 2019	Growth rate % (2019/2016)
611241	Swimwear; women's or girls', of synthetic fibres, knitted or crocheted	25,785	1074.4
842549	Jacks and hoists; (other than hydraulic), of a kind used for raising vehicles	111,958	717.7
841290	Engines; parts, for engines and motors of heading no. 8412	228,236	648.4
852351	Semiconductor media; solid-state non-volatile storage devices	71,345	385.6
902680	Instruments and apparatus; for measuring or checking variables of liquids or gases	41,612	371.5
848299	Bearings; parts, (other than balls, needles and rollers)	355,263	244.2
903281	Regulating or controlling instruments and apparatus; automatic, hydraulic or pneumatic	30,772	234.9
020329	Meat; of swine, n.e.c. in item no. 0203.2, frozen	6,681,149	190.0
391739	Plastics; tubes, pipes and hoses thereof, n.e.c. in item no. 3917.30	102,793	130.9
851769	Communication apparatus	42,575	126.7
848360	Clutches and shaft couplings (including universal joints)	74,859	106.8
871690	Trailers, semi-trailers and other vehicles not mechanically propelled; parts thereof for heading no. 8716	168,989	101.0
870870	Vehicle parts; road wheels and parts and accessories thereof	333,131	100.9
900791	Cameras, cinematographic; parts and accessories	238,309	80.8
901590	Surveying equipment; parts and accessories for articles of heading no. 9015	105,502	46.6
841459	Fans; n.e.c. in item no. 8414.51	15,107	39.0
870323	Vehicles; with only spark-ignition internal combustion reciprocating piston engine, cylinder capacity over 1500 but not over 3000cc	5,454,011	33.9
842121	Machinery; for filtering or purifying water	230,337	33.8
841280	Engines; pneumatic power engines and motors, n.e.c.	748,722	25.2
847180	Units of automatic data processing machines	15,866	21.7

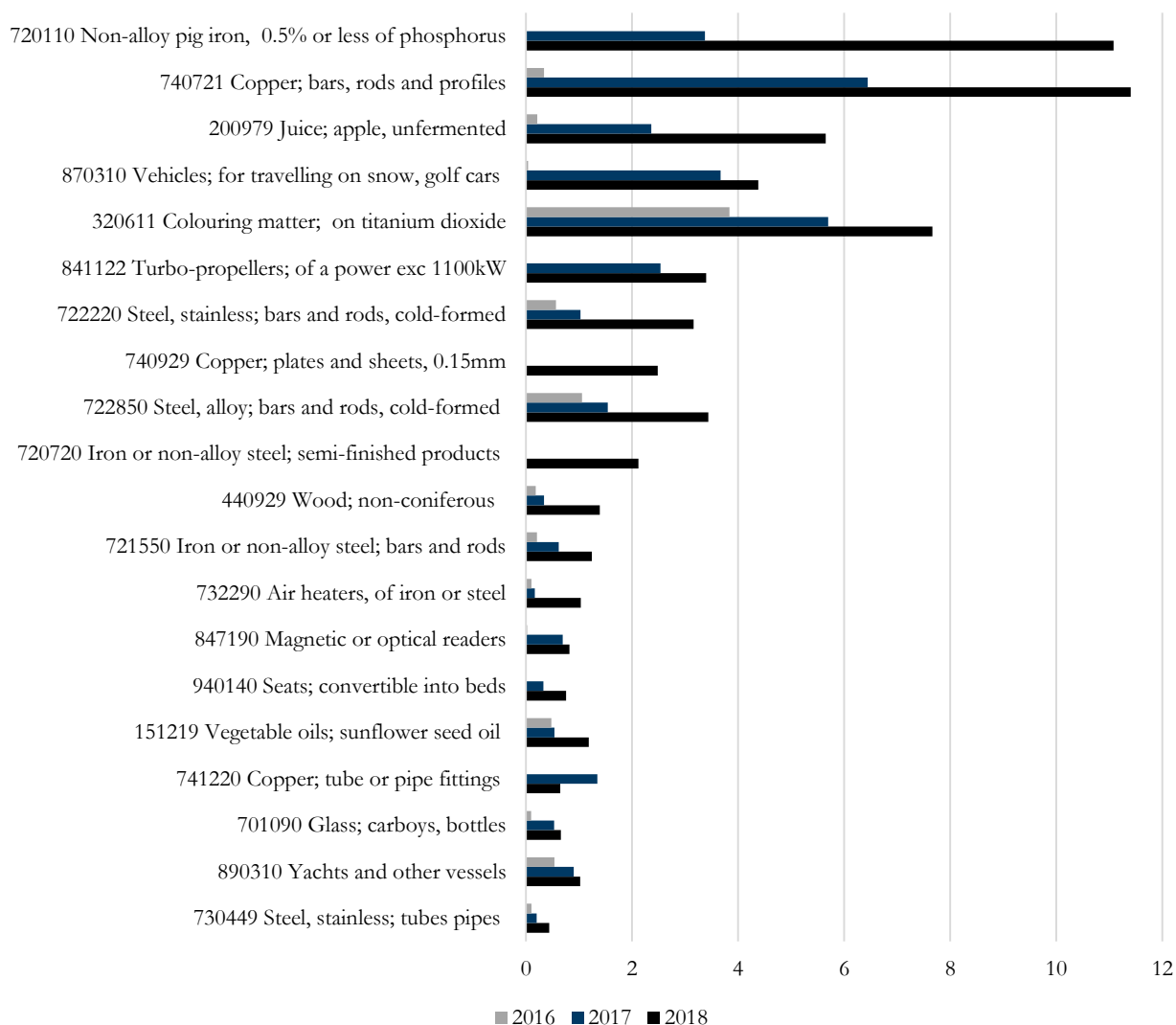
Source: UN Comtrade

\* Note: exceeding USD 10,000 as of 2019.

Figure 12 and Table 2 illustrate the product groups of Ukraine's exports to Canada that experienced the highest expansion and growth at HS6 in 2018 vs 2016. Overall, 182 product groups at HS6 level (of export value exceeding USD 10,000) were exported by Ukraine to Canada in 2019 vs 136 product groups - in 2016.



**Figure 12. Top-20 Ukraine's exports to Canada with highest value increase, 2018 vs 2016, HS6, USD million**



Source: UN Comtrade, own calculations

\*Note: sorted by the value of export expansion in 2018 vs 2016.

**Table 2. Top-20 Ukraine's exports\* to Canada with highest growth rates, HS6, USD, %**

Product code	Product	Export,* 2018	Growth rate % (2018/2016)
847160	Units of automatic data processing machines	27,177	4529.5
382490	Chemical products, preparations and residuals, n.e.c.	21,804	4360.8
950300	Tricycles, scooters, pedal cars	64,057	3202.9
630120	Blankets; of wool or fine animal hair	13,441	1920.1
680422	Millstones, grindstones, grinding wheels	29,491	1638.4
200390	Vegetable preparations; mushrooms	10,938	911.5
940320	Furniture; metal, other than for office use	36,625	590.7
210111	Extracts, essences and concentrates; of coffee	91,299	498.9
940360	Furniture; wooden, kitchen or bedroom use	42,460	433.3
040610	Dairy produce; fresh cheese	22,761	413.8
110100	Wheat or meslin flour	225,483	349.6
870870	Vehicle parts; road wheels	187,444	253.6
851762	Communication apparatus	56,866	118.7
870310	Vehicles; for travelling on snow, golf cars	4,382,999	110.5
820600	Tools, hand; in sets for retail sale	112,414	102.0
321410	Mastics; painters' fillings	98,269	93.1
620463	Trousers, bib and brace overalls,	14,158	84.3
200210	Vegetable preparations; tomatoes	38,087	81.0
940161	Seats; with wooden frames	19,439	41.3
830990	Stoppers; caps and lids, of base metal	55,490	40.7

Source: UN Comtrade.

\* Note: exceeding USD 10,000 as of 2018.

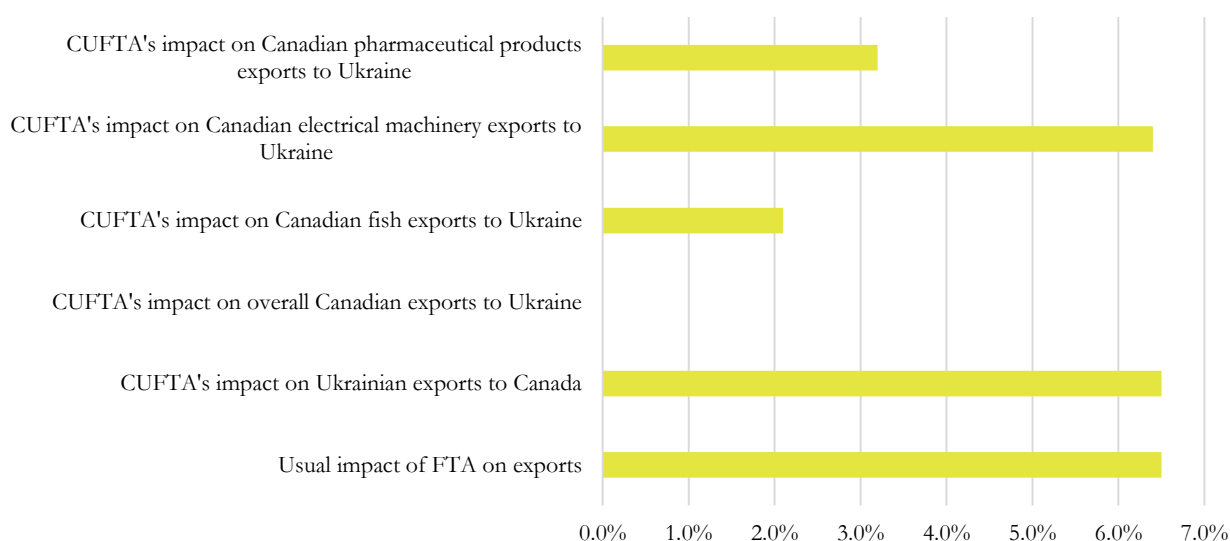
## Part B. Gravity model

In order to evaluate how CUFTA affected the bilateral trade we built a gravity model that accounts for international trade flows among all countries. The methodology of the model and the results are provided in Appendix B.

The gravity model estimates the signing of CUFTA to have increased total Ukrainian exports to Canada by 6,5% from 2016 till 2018 (Figure 13). The other components of growth were driven not by CUFTA, but by GDP, population and some other factors. For Ukrainian exports the effect of CUFTA was the same as for all other FTAs in 2016-2018.

At the same time, it was estimated that CUFTA did not have a significant effect on the dynamics of total Canadian exports to Ukraine during this period. Although Canadian exports to Ukraine shows positive trend, it is not due to the CUFTA, but rather to other factors. However, CUFTA's effect appeared to be stronger for certain product groups at HS2 level (up by 2-6%): Fish (HS03), Pharmaceutical products (HS30), Electrical machinery (HS85) etc.

**Figure 13. CUFTA's impact on Ukrainian and Canadian exports**



*Source: UN Comtrade, own calculations.*

According to our estimations, CUFTA has not yet considerably affected the trade dynamics due to the short time period it has been in effect – less than 1.5 years of analysed time frame. Usually, economically significant effect of FTA picks up after the first 6-7 years after agreement comes into force.<sup>18</sup> We therefore expect the effect of CUFTA to grow in the future.

<sup>18</sup> <https://ideas.repec.org/a/eee/ecmode/v73y2018icp317-328.html>

# Chapter 4. Promising Goods for Importing From Canada to Ukraine

Chapter 4 analyses the groups of goods, in which Canada can expand its export to Ukraine, both in terms of strengthening existing positions and opening up new markets. The study applies two approaches. The first approach is based on the index of revealed comparative advantages and a gravity model regression estimation. The second approach focuses on comparative nomenclature analysis of goods imported by Ukraine from “no-free-trade-agreement” countries and exported by Canada to the Eastern Europe and Central Asia. The detailed methodology is presented in the Appendix C.

## Comparative Advantages and Gravity Model

According to the first approach, we estimated normalised revealed comparative advantages (NRCA) for Ukraine and Canada. Revealed comparative advantage provides a general indication of a country's competitive export strengths in specific commodities. As a result, we got a list of 500+ commodities corresponding to positive NRCA in Canadian foreign trade and negative NRCA in Ukrainian foreign trade.

Table A1 in Appendix A demonstrates total list of 181 commodities with significant volume of trade potential (over USD 50,000). Table 3 below shows TOP-20 commodities out of 181.

**Table 3. TOP-20 Promising goods for intensifying Canadian exports to Ukraine (First Approach)**

Product code	Product	Export 2018	Trade Potential 2018 (USD)
870323	Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1500cc but not exceeding 3000cc	2 803 394	7 832 978
870322	Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1000cc but not exceeding 1500cc	43 108	5 832 216
880240	Aeroplanes and other aircraft; of an unladen weight exceeding 15,000kg	-	2 963 424
870829	Vehicles; parts and accessories, of bodies, other than safety seat belts	69 926	2 240 300
870422	Vehicles; compression-ignition internal combustion piston engine (diesel or semi-diesel), for transport of goods, (of a g.v.w. exceeding 5 tonnes but not exceeding 20 tonnes), n.e.c. in item no 8704.1	-	1 494 660
271112	Petroleum gases and other gaseous hydrocarbons; liquefied, propane	-	1 426 123
390120	Ethylene polymers; in primary forms, polyethylene having a specific gravity of 0.94 or more	-	1 388 243
870431	Vehicles; spark-ignition internal combustion piston engine, for transport of goods, (of a g.v.w. not exceeding 5 tonnes), n.e.c. in item no 8704.1	7 621	1 382 079
840734	Engines; reciprocating piston engines, of a kind used for the propulsion of vehicles of chapter 87, of a cylinder capacity exceeding 1000cc	-	1 182 262
870210	Vehicles; public transport type (carries 10 or more passengers), compression-ignition internal combustion piston engine (diesel or semi-diesel)	3 083	1 033 961

870423	Vehicles; compression-ignition internal combustion piston engine (diesel or semi-diesel), for transport of goods, (of a g.v.w. exceeding 20 tonnes), n.e.c. in item no 8704.1	-	984 996
20130	Meat; of bovine animals, boneless cuts, fresh or chilled	-	966 822
841191	Turbines; parts of turbo-jets and turbo-propellers	-	963 172
870324	Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 3000cc	1 172 553	944 805
401120	Rubber; new pneumatic tyres, of a kind used on buses or lorries	-	910 570
470321	Wood pulp; chemical wood pulp, soda or sulphate, (other than dissolving grades), semi-bleached or bleached, of coniferous wood	-	864 592
841199	Turbines; parts of gas turbines (excluding turbo-jets and turbo-propellers)	-	860 543
730890	Iron or steel; structures and parts thereof, n.e.c. in heading 7308	366	819 334
841112	Turbo-jets; of a thrust exceeding 25kN	-	814 150

Source: UN Comtrade

The majority of items on the long list are Boilers, machinery and mechanical appliances; parts thereof (61 goods), Iron and steel (21 goods), Plastics and articles thereof (21 goods), Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof (19 goods) and Paper and paperboard; articles of paper pulp, of paper or paperboard (19 goods).

## Comparative Nomenclature Analysis

This section identifies goods imported by Canadian firms to Europe and Cental Asia<sup>19</sup>. Analysis shows that Canada exports a total of 379 product groups (HS6 aggregation level) to the region in 2018. Top destination markets for Canadian exports are the United Kingdom (174 good or USD 539 mln), Germany (156 goods or USD 478 mln) and France (147 goods or USD 216 mln). Among the countries-neighbors of Ukraine the biggest destination markets include: Poland (70 goods or USD 187 mln), Russia (60 goods or USD 64 mln), Hungary (41 goods or USD 22 mln), and Czech Republic (36 goods or USD 42 mln).

On the other hand, we analyse Ukrainian imports from countries it does not have free trade regimes with. According to UN Comtrade data, Ukraine imported 301 goods from 28 countries<sup>20</sup>. Top supplier countries are Turkey (193 goods or USD 260 mln), USA (119 goods or USD 1,268 mln) and Japan (33 goods or USD 186 mln).

At the next stage we compare these two lists of goods to identify wich Ukrainian imports from non-FTA countries can be substituted with Canadian products. Out of 301 goods imported by Ukraine from non-FTA countries, Canada already exports 34 goods to Ukraine and there are additional 209 products, which Canada exports to Europe and

<sup>19</sup> Particularly, geography of the analysis covers Ukraine and 39 countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Moldova, Russia, Cyprus, Norway, Switzerland, Austria, Belgium, Bulgaria, Czech Republic, Germany, Denmark, Spain, Estonia, Finland, France, United Kingdom, Greece, Croatia, Hungary, Ireland, Italy, Lithuania, Luxemburg, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia and Sweden

<sup>20</sup> Albania, Argentina, Australia, Bahrain, Brazil, Chile, Columbia, Ecuador, Egypt, Hong Kong, Indonesia, Israel, Japan, South Korea, Mexico, Malaysia, New Zealand, Pakistan, Peru, Philippines, Saudi Arabia, Singapore, Thailand, Turkey, Uruguay, USA and South Africa

Central Asia and can potentially export them to Ukraine as well. We additionally compare value per unit of these products to estimate the likelihood of such substitution.

Regarding the products Canada already supplies to Ukraine, in 12 cases (out of 34) Canadian value per unit is lower than mean value per unit of Ukrainian import from other countries (Table 4). These 12 commodities could be considered as the most promising for the intensification and substitution of import from other countries especially, ***Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1500cc but not exceeding 3000cc*** and ***Aluminium; waste and scrap*** product groups which were also identified as promising goods according to the first approach.

Regarding the products which Canada does not supply to Ukraine but exports to Europe and Central Asia, on average 47 Canadian goods are cheaper than existing import to Ukraine. Table 5 illustrates value patterns for these goods.

Moreover, 15 more goods also overlap with the list of promising products identified by the first approach:

- Alcohols; saturated monohydric, propan-1-ol (propyl alcohol) and propan-2-ol (isopropyl alcohol)
- Uncoated paper and paperboard (not 4801 or 4803); printing, writing or graphic, 10% or less by weight of mechanical or chemi-mechanical processed fibre, weighing 40g/m<sup>2</sup> to 150g/m<sup>2</sup>, in rolls
- Uncoated paper and paperboard (not 4801 or 4803); over 10% by weight of mechanical or chemi-mechanical processed fibre, in rolls
- Fabrics, narrow woven fabrics, n.e.c. in heading no. 5806, of man-made fibres (excluding goods of heading no. 5807)
- Metals; silver, unwrought, (but not powder)
- Iron or non-alloy steel; flat-rolled, width 600mm or more, plated or coated with tin, thickness of less than 0.5mm
- Iron or non-alloy steel; flat-rolled, width 600mm or more, plated or coated with chromium oxides or with chromium and chromium oxides
- Iron or steel; structures and parts thereof, doors, windows and their frames and thresholds for doors
- Cobalt; mattes and other intermediate products of cobalt metallurgy, unwrought cobalt, powders
- Air conditioning machines; containing a motor driven fan, other than window or wall types, incorporating a refrigerating unit
- Air conditioning machines; containing a motor driven fan, other than window or wall types, not incorporating a refrigerating unit



- Fork-lift and other works trucks; fitted with lifting or handling equipment, self-propelled by other than electric motor
- Machinery; parts of the machinery of heading no. 8427
- Pulleys and flywheels, including pulley blocks
- Furniture; wooden, for kitchen use

**Table 4. Products Canada supplies to Ukraine and could expand by intensive margin**

Product code	Product	Minimum value of import to Ukraine*	Mean value of import to Ukraine	Maximum value of import to Ukraine	Mean value of export from Canada to Ukraine
20329	Meat; of swine, n.e.c. in item no. 0203.2, frozen	1,89	1,89	1,89	1,80
30333	Fish; frozen, sole ( <i>Solea</i> spp.), excluding fillets, livers, roes, and other fish meat of heading 0304	2,24	2,24	2,24	1,62
30616	Crustaceans; frozen, cold-water shrimps and prawns ( <i>Pandalus</i> spp., <i>Crangon</i> crangon), in shell or not, smoked, cooked or not before or during smoking; in shell, cooked by steaming or by boiling in water	8,02	8,02	8,02	4,07
71320	Vegetables, leguminous; chickpeas ( <i>garbanzos</i> ), shelled, whether or not skinned or split, dried	1,21	1,21	1,22	0,76
300410	Medicaments; containing penicillins, streptomycins or their derivatives, for therapeutic or prophylactic uses, packaged for retail sale	74,90	146,27	179,93	44,61
730629	Iron or steel (excluding cast iron); casing and tubing of a kind used in drilling for oil and gas (other than stainless steel or seamless), n.e.c. in chapter 73	4,18	4,18	4,18	2,42
30339	Fish; frozen, flat fish, n.e.c. in item no. 0303.3, excluding fillets, livers, roes, and other fish meat of heading 0304	1,06	1,69	2,25	1,49
30366	Fish; frozen, hake ( <i>Merluccius</i> spp., <i>Urophycis</i> spp.), excluding fillets, livers, roes, and other fish meat of heading 0304	1,23	1,53	1,55	1,37
300450	Medicaments; containing vitamins or their derivatives, for therapeutic or prophylactic use, packaged for retail sale	11,53	55,53	84,38	49,81
630900	Clothing; worn, and other worn articles	0,43	9,20	9,48	1,16
760200	Aluminium; waste and scrap	1,29	1,32	2,17	1,30
870323	Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1500cc but not exceeding 3000cc	7 465,19	10 151,34	32 472,97	7 556,32

Source: UN Comtrade

Comments: To control for the difference between import and export types of price (CIF/FOB), we use export data in the analysis. It means that import to Ukraine is actually data on export to Ukraine from other countries.

**Table 5. 47 products Canada supplies to Europe and Central Asia and could expand by extensive margin**

Product code	Product	Minimum value of import to Ukraine	Mean value of import to Ukraine	Maximum value of import to Ukraine	Mean value of export from Canada
70690	Vegetables, root; salad beetroot, salsify, celeric, radishes and similar edible roots, fresh or chilled	0,87	0,87	0,87	0,52
120890	Flours and meals of oil seeds or oleaginous fruits; excluding soya beans and mustard seeds	2,93	2,93	2,93	2,27
252010	Gypsum; anhydrite	0,60	0,60	0,60	0,45
252100	Limestone flux; limestone and other calcareous stone, of a kind used for the manufacture of lime or cement	0,01	0,01	0,01	0,00
252330	Cement; aluminous (ciment fondu), whether or not coloured or in the form of clinkers	0,30	0,30	0,30	0,03
252620	Steatite; natural, crushed, powdered, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape; talc	0,23	0,25	0,49	0,16
271220	Paraffin wax; containing by weight less than 0.75% of oil, obtained by synthesis or by other processes, whether or not coloured	2,79	2,79	2,79	0,87
271500	Bituminous mixtures based on natural asphalt, on natural bitumen, on petroleum bitumen, on mineral tar or on mineral tar pitch (e.g. bituminous mastics, cut-backs)	2,58	2,58	2,58	1,65
283539	Polyphosphates; other than sodium triphosphate (sodium tripolyphosphate), whether or not chemically defined	1,95	1,95	1,95	0,93
290512	Alcohols; saturated monohydric, propan-1-ol (propyl alcohol) and propan-2-ol (isopropyl alcohol)	1,34	1,34	1,34	0,81
291734	Acids; aromatic polycarboxylic acids; other esters of orthophthalic acids	1,31	1,31	1,31	0,96
300320	Medicaments; containing antibiotics other than penicillins, streptomycins and their derivatives, for therapeutic or prophylactic uses, (not in measured doses, not packaged for retail sale)	66,82	66,82	66,82	28,21
310290	Fertilizers, mineral or chemical; nitrogenous, other kinds including mixtures not specified in the foregoing subheadings	0,88	0,88	0,88	0,54
380992	Finishing agents and dye carriers; to accelerate dyeing or fixing of dye-stuffs, other products and preparations, used in the paper industry (excluding those with a basis of amylaceous substances)	2,08	2,08	2,08	0,83
391610	Ethylene polymers; monofilament, of which any cross-sectional dimension exceeds 1mm, rods, sticks and profile shapes, whether or not surface-worked but not otherwise worked	112,96	112,96	112,96	6,10
480255	Uncoated paper and paperboard (not 4801 or 4803); printing, writing or graphic, 10% or less by weight of mechanical or chemi-mechanical processed fibre, weighing 40g/m2 to 150g/m2, in rolls	0,91	0,94	6,26	0,74
480261	Uncoated paper and paperboard (not 4801 or 4803); over 10% by weight of mechanical or chemi-mechanical processed fibre, in rolls	0,83	0,83	0,83	0,62
481160	Paper and paperboard; coated or impregnated with wax, paraffin wax, stearin, oil or glycerol, other than goods of heading no. 4803, 4809, or 4810	4,16	4,16	4,16	2,37
481710	Paper and paperboard; envelopes	2,34	2,85	3,41	2,34

540773	Fabrics, woven; containing 85% or more by weight of synthetic filaments (excluding nylon or other polyamides and polyesters), of yarns of different colours	5,65	5,65	5,65	4,99
560210	Felt; needleloom felt and stitch-bonded fibre fabrics, whether or not impregnated, coated, covered or laminated	9,45	9,45	9,45	4,47
560221	Felt; of wool or fine animal hair (excluding needleloom felt or stitch-bonded fibre fabrics), not impregnated, coated, covered nor laminated	43,03	43,03	43,03	4,58
580632	Fabrics, narrow woven fabrics, n.e.c. in heading no. 5806, of man-made fibres (excluding goods of heading no. 5807)	5,45	5,98	39,83	5,22
681599	Stone articles and articles of other mineral substances; n.e.c. or included in heading no. 6815	2,12	2,89	3,14	2,12
700991	Glass mirrors; unframed, excluding rear-view mirrors for vehicles	1,79	2,03	2,69	1,79
710691	Metals; silver, unwrought, (but not powder)	515,57	515,57	515,57	498,28
721012	Iron or non-alloy steel; flat-rolled, width 600mm or more, plated or coated with tin, thickness of less than 0.5mm	0,96	0,96	1,02	0,66
721050	Iron or non-alloy steel; flat-rolled, width 600mm or more, plated or coated with chromium oxides or with chromium and chromium oxides	0,76	0,76	0,76	0,60
721510	Iron or non-alloy steel; bars and rods, of free-cutting steel, cold-formed or cold-finished, n.e.c. in chapter 72	0,87	0,87	0,87	0,74
730830	Iron or steel; structures and parts thereof, doors, windows and their frames and thresholds for doors	6,61	6,61	6,61	3,55
760529	Aluminium; alloys, wire, maximum cross-sectional dimension is 7mm or less	4,02	4,46	6,03	3,72
761410	Aluminium; stranded wire, cables, plaited bands and the like, (not electrically insulated), with steel core	4,15	4,15	4,15	1,81
810520	Cobalt; mattes and other intermediate products of cobalt metallurgy, unwrought cobalt, powders	72,84	72,84	72,84	67,57
841582	Air conditioning machines; containing a motor driven fan, other than window or wall types, incorporating a refrigerating unit	1 446,30	1 446,30	1 446,30	723,86
841583	Air conditioning machines; containing a motor driven fan, other than window or wall types, not incorporating a refrigerating unit	198,73	198,73	198,73	193,75
842720	Fork-lift and other works trucks; fitted with lifting or handling equipment, self-propelled by other than electric motor	42 896,89	42 896,89	42 896,89	38 688,29
842833	Elevators and conveyors; continuous-action, for goods or materials, belt type, n.e.c. in item no. 8428.20 or 8428.31	21 703,16	21 703,16	21 703,16	16 435,06
842839	Elevators and conveyors; continuous-action, for goods or materials, n.e.c. in item no. 8428.20, 8428.31, 8428.32 or 8428.33	8 718,66	8 718,66	8 718,66	2 950,99
843020	Snow-ploughs and snow-blowers	849,77	849,77	849,77	193,07
843120	Machinery; parts of the machinery of heading no. 8427	15,45	15,45	15,45	15,45
843142	Machinery parts; bulldozer or angledozer blades	4,05	4,05	4,05	2,94
843280	Rollers; for lawns or sports-grounds	3 575,86	3 575,86	3 575,86	2 866,96
848020	Mould bases; for metal, metal carbides, glass, mineral materials, rubber or plastics	10,64	10,64	10,64	10,64
848350	Pulleys and flywheels, including pulley blocks	9,93	9,93	9,93	9,93
901820	Medical, surgical instruments and appliances; ultra-violet or infra-red ray apparatus	300,00	300,00	300,00	299,68
940340	Furniture; wooden, for kitchen use	49,16	52,30	52,40	49,07
950890	Roundabouts, swings, shooting galleries, other fairground amusements; travelling theatres	15,37	36,08	37,85	15,37

Source: UN Comtrade

# Chapter 5. Canada-Ukraine Trade Case Studies

As to identify the interesting examples of Canada-Ukraine cooperation under the CUFTA, we focus our analysis on the following parts:

1. Identifying new products from Canada and Ukraine that entered each other's markets under the CUFTA at HS6 level;
2. Estimating the importance of supplies of particular products for the trade partner at HS6 level.

To identify new products in Canada-Ukraine bilateral trade under the CUFTA we compare the availability of export positions in bilateral trade for both countries before and after CUFTA. Namely, a product was regarded as new if it was traded in 2019, but not in both 2016 and 2013 (2013 was included as a first pre-crisis year).

Table 6 presents 20 largest Canada's exports to Ukraine at HS6 level in 2019 that were missing in the pre-CUFTA period – in both 2016 and 2013. All together they accounted for USD 12.3 million of Canada's exports to Ukraine in 2019. The majority of new products belong to such product groups as machinery and mechanical appliances (HS84), electrical machinery and equipment (HS85), fish products (HS03), and vehicles (HS87). Moreover, exports of most of these products to Ukraine have been gradually increasing throughout the 2017-2019 period. For example, Canada's exports of prepared cranberries (HS200893) to Ukraine increased 17 times from 2017 to 2019.

**Table 6. Top-20 new Canada's exports\* to Ukraine, HS6, USD**

Product code	Product	2017	2018	2019
842389	Weighing machines; having a maximum weighing capacity exceeding 5000kg	-	-	2,386,635
847410	Machines; for sorting, screening, separating or washing earth, stone, ores or other mineral substances	564,859	-	2,099,007
852862	Projectors; capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	-	-	1,769,112
760200	Aluminium; waste and scrap	-	390,800	1,269,599
200893	Fruit; cranberries ( <i>Vaccinium macrocarpon</i> , <i>Vaccinium oxycoccos</i> , <i>Vaccinium vitis-idaea</i> ), prepared or preserved, whether or not containing added sugar, other sweetening matter or spirit	50,397	200,121	883,363
901380	Optical devices, appliances and instruments; n.e.c. in heading no. 9013 (including liquid crystal devices)	-	257,524	816,357
300212	Blood, human or animal, antisera, other blood fractions and immunological products; antisera and other blood fractions	71,286	224,968	797,667
843210	Ploughs; for soil preparation	165,651	-	389,244
030494	Fish meat, excluding fillets, whether or not minced; frozen, Alaska Pollack ( <i>Theragra chalcogramma</i> )	-	51,512	352,662
130219	Vegetable saps and extracts; n.e.c. in item no. 1302.1	-	-	248,051
853190	Signalling apparatus; parts of the electric, sound or visual apparatus of heading no. 8531	82,989	-	177,602

020714	Meat and edible offal; of fowls of the species <i>Gallus domesticus</i> , cuts and offal, frozen	-	-	161,598
871620	Trailers and semi-trailers; self-loading or self-unloading, for agricultural purposes	-	-	158,835
030520	Fish; livers, roes and milt of fish, dried, smoked, salted or in brine	103,187	-	131,541
851761	Base stations	-	-	129,925
842911	Bulldozers and angledozers; self-propelled, track laying	-	-	125,186
841231	Engines; pneumatic power engines and motors, linear acting (cylinders)	219	-	120,154
870332	Vehicles; (diesel or semi-diesel), cylinder capacity over 1500 but not over 2500cc	308,670	127,307	116,023
842951	Front-end shovel loaders			115,141
030632	Crustaceans; live, fresh or chilled, lobsters ( <i>Homarus</i> spp.), whether in shell or not			99,908

Source: UN Comtrade

\* Note: no exports in either 2016 or 2013.

Table 7 presents largest 20 Ukraine's exports to Canada at HS6 level in 2018 that were missing in the pre-CUFTA period – in both 2016 and 2013. All together they accounted for USD 16.1 million of Canada's exports to Ukraine in 2018. Export volumes of most of these products have been increasing in 2017-2018. Many of these product positions fall into metal products and their articles (HS72, 73, 74). But additionally, there are products that belong to machinery, textiles, and furniture such as Seats; convertible into beds (HS940140), gas-turbines (HS841181), and curtains (HS630392), etc.

**Table 7. Top-20 new Ukraine's exports\* to Canada, HS6, USD**

Product code	Product	2017	2018
720110	Iron; non-alloy pig iron cont. by weight 0.5% or less of phosphorus, in pigs, blocks or other primary forms	3,373,279	11,080,509
720720	Iron or non-alloy steel; semi-finished products of iron or non-alloy steel, containing by weight 0.25% or more of carbon	-	2,123,850
940140	Seats; convertible into beds	330,436	756,903
741220	Copper; tube or pipe fittings of copper alloys	1,345,227	647,169
720291	Ferro-alloys; ferro-titanium and ferro-silico-titanium	-	298,019
730890	Iron or steel; structures and parts thereof, n.e.c. in heading 7308	1,636	254,296
381519	Catalysts, supported; reaction initiators, reaction accelerators and catalytic preparations, with an active substance	-	207,765
841181	Turbines; gas-turbines (excluding turbo-jets and turbo-propellers), of a power not exceeding 5000kW	-	160,000
630392	Curtains (including drapes) and interior blinds, curtain or bed valances; of synthetic fibres, not knitted or crocheted	88,318	115,112
831110	Electrodes; coated, of base metal, for electric arc-welding	23,862	88,780
570242	Carpets and other textile floor coverings; woven, (not tufted or flocked), of man-made textile materials, of pile construction	-	87,150
721661	Iron or non-alloy steel; angles, shapes and sections, cold-formed or cold-finished, obtained from flat-rolled products	-	59,349
950450	Games; video game consoles and machines, other than those of subheading 9504.30	5,363	51,879
871680	Vehicles; n.e.c. in heading no. 8716	8,658	43,654
732219	Radiators and parts thereof; for central heating, (not electrically heated), of iron or steel other than cast iron	-	37,132

852910	Reception and transmission apparatus; aerials and aerial reflectors of all kinds and parts suitable for use therewith	33,732	33,370
440791	Wood; oak ( <i>Quercus</i> spp.), sawn or chipped lengthwise, sliced or peeled	-	30,688
071080	Vegetables; uncooked or cooked by steaming or boiling in water, n.e.c. in heading no. 0710, frozen	-	24,374
940599	Lamps and light fittings; parts thereof, of materials other than glass or plastics	-	22,966
721049	Iron or non-alloy steel; flat-rolled, width 600mm or more, (not corrugated), plated or coated with zinc (not electrolytically)	25	22,621

Source: UN Comtrade

\* Note: no exports in either 2016 or 2013.

To identify how the countries rely on each other's product supplies we calculated shares of Canadian/Ukrainian products in partner's total imports at HS6 level. Table 8 lists both Canadian and Ukrainian products that revealed the highest shares in imports of the other trade partner in 2019 (for exports exceeding USD 50,000). In particular, Canada's products of high importance for Ukraine include Crustaceans; frozen, cold-water shrimp and prawns - Canada accounted for about 70% of their total imports to Ukraine in 2018. In addition, Ukraine heavily imports from Canada soya beans (70.5% of total imports to Ukraine), meat; of swine, hams, frozen (56.1%), bovine semen (42.4%), prepared cranberries (46.3%), frozen hake (34.6%), etc.

While for Canada, important supplies from Ukraine include apple juice reaching USD 16.4 million in 2019 or 26.2% of all apple juice imported to Canada that year. Moreover, Ukraine supplies to Canada 10.3% of all imported anoraks, wind-cheaters, wind-jackets and 6.4% of skis.

**Table 8. Importance of Canadian/Ukrainian products in partner's total imports, HS6, USD (sorted by the largest shares in partner's imports)**

Product code	Product	Total imports	Partner's imports	Share, %
<b>Importance of Canadian products in Ukraine's imports, 2018**</b>				
280450	Boron;	171,395	168,925	98.6%
170220	Sugars; maple sugar	77,174	74,655	96.7%
120110	Soya beans; seed, whether or not broken	2,312,364	1,630,518	70.5%
030616	Crustaceans; frozen, cold-water shrimp and prawns	12,478,901	8,746,577	70.1%
020322	Meat; of swine, hams, frozen	2,516,253	1,410,675	56.1%
200893	Fruit; cranberries, prepared or preserved	739,652	342,368	46.3%
051110	Animal products; bovine semen	2,853,278	1,209,335	42.4%
520299	Cotton; waste other than garnetted stock and yarn	286,802	110,716	38.6%
030366	Fish; frozen, hake	77,396,839	26,749,079	34.6%
071340	Vegetables, leguminous; lentils, shelled	511,116	126,424	24.7%
282590	Inorganic bases, metal oxides, hydroxides and peroxides	1,310,825	313,813	23.9%
850421	Electrical transformers; liquid dielectric, not exc 650kVA	485,862	98,269	20.2%
710231	Diamonds; non-industrial, unworked or simply sawn	3,107,263	627,211	20.2%
030622	Crustaceans; not frozen, lobsters	594,763	101,790	17.1%
030339	Fish; frozen, flat fish, n.e.c. in item no. 0303.3	1,607,273	267,232	16.6%
<b>Importance of Ukrainian products in Canada's imports, 2019***</b>				
720110	Non-alloy pig iron cont by weight 0.5% or less of phosphorus	7,082,046	6,826,275	96.4%
870331	Other vehicles; cylinder capacity not over 1500cc	3,686,261	3,390,488	92.0%



200979	Juice; apple	62,846,012	16,438,068	26.2%
010690	Animals; live, n.e.c. in chapter 01	5,512,378	876,447	15.9%
620191	Anoraks, wind-cheaters, wind-jackets	5,102,187	526,739	10.3%
090921	Spices; coriander seeds, neither crushed nor ground	939,446	75,536	8.0%
890310	Yachts and other vessels; for pleasure or sports, inflatable	16,106,781	1,274,276	7.9%
722860	Steel, alloy; bars and rods n.e.c. in heading no. 7228	21,822,915	1,626,575	7.5%
261790	Ores and concentrates n.e.c. in chapter 26	3,087,848	207,899	6.7%
950611	Skis; for snow	50,782,425	3,233,372	6.4%
151219	Vegetable oils; sunflower seed or safflower oil, not chemically modified	40,933,665	2,498,189	6.1%
721050	Iron or non-alloy steel; flat-rolled, width 600mm or more, with with chromium and chromium oxides	1,244,470	71,498	5.7%
240220	Cigarettes; containing tobacco	9,157,310	461,035	5.0%
720291	Ferro-alloys; ferro-titanium and ferro-silico-titanium	2,672,365	133,623	5.0%
851671	Electro-thermic appliances; coffee or tea makers, of a kind used for domestic purposes	152,383,346	7,310,122	4.8%

Source: UN Comtrade

Note: Supplies exceeding USD 50,000. \*\* As reported by Ukraine \*\*\* As reported by Canada.

Table 9 compares top 20 Canada's total exports with Canada's exports to Ukraine, as well as Ukraine's total imports at HS6 level. It reveals that a lot of Canada's top exported products are not yet destined to Ukraine, though Ukraine imports these products from other countries. At the same time, Canada exports to Ukraine USD 5.5 million of medicines (HS 300490), however there is still potential to increase these supplies as Ukraine's total imports reached USD1.1 billion in 2018.

**Table 9. Top Canada's total exports vs Canada's exports to Ukraine vs Ukraine's total imports, 2018\*, HS6, USD million (sorted by Canada's largest total exports)**

Product code	Product	Canada's total exports	Canada's exports to Ukraine	Ukraine's total imports
270900	Oils; petroleum oils, crude	67,205.0	-	433.4
870324	Vehicles; with engine, cylinder capacity over 3000cc	19,036.3	1.2	78.1
870323	Vehicles; with engine, cylinder capacity over 1500 but not over 3000cc	13,917.2	2.8	819.8
710812	Metals; gold, non-monetary, unwrought	12,115.5	-	0.3
440719	Wood; coniferous species, sawn or chipped lengthwise, sliced or peeled, sanded or finger-jointed, of a thickness exceeding 6mm	7,852.2	-	3.1
271019	Petroleum oils and oils n.e.c, containing by weight 70% or more of petroleum oils; not light oils	7,658.0	0.5	4,431.3
271121	Natural gas	7,451.0	-	3,146.8
270112	Coal; bituminous, whether or not pulverised, but not agglomerated	5,778.4	66.8	2,591.7
870322	Vehicles; with engine cylinder capacity over 1000 but not over 1500cc	5,506.8	0.04	159.5
310420	Fertilizers, mineral or chemical; potassic, potassium chloride	4,927.8	-	34.1
100199	Cereals; wheat and meslin, other than durum wheat	4,591.4	-	0.4
470321	Chemical wood pulp, soda or sulphate	4,536.9	-	17.8
271012	Petroleum oils and oils from bituminous minerals, not containing biodiesel, not crude	4,494.9	-	1,088.6
120510	Oil seeds; low erucic acid rape or colza seeds, whether or not broken	4,492.8	-	32.4

870829	Vehicles; parts and accessories, of bodies, other than safety seat belts	4,177.2	0.1	23.5
880240	Aeroplanes and other aircraft; of an unladen weight exceeding 15,000kg	4,143.9	-	0.5
300490	Medicaments; consisting of mixed or unmixed products n.e.c. in heading no. 3004, for therapeutic or prophylactic uses, packaged for retail sale	3,928.6	5.5	1,081.6
760110	Aluminium; unwrought, (not alloyed)	3,307.6	-	10.9
760120	Aluminium; unwrought, alloys	3,140.5	-	26.8
260300	Copper ores and concentrates	2,826.8	-	0.0

Source: UN Comtrade

\* Latest available data for both countries

Table 10 presents those Canada's exports where Ukraine reveals importance as a destination market. They are sorted by Ukraine's share in Canada's exports. For example, almost 37,4% of all Canada's exports of Frozen, hake excl fillets, fish meat (HS030366) went to Ukraine in 2018 (almost USD 30 million), while Ukraine imported USD77.4 million of this product in the same year. Table 10 contains 5 different Canada's fish exports in total signifying Ukraine's importance for them. Other Canada's exports from this list include cameras, cinematographic; parts and accessories (5.3%), tractors of an engine power not exc. 18kW (11%), toxins, cultures of micro-organisms (3.5%), etc.

**Table 10. Importance of Ukrainian market for Canada's exports, 2018\*, HS6, USD (sorted by Ukraine's largest shares in Canada's exports)**

Product code	Product	Canada's total exports	Canada's exports to Ukraine	Ukraine's share in Canada's exports	Ukraine's total imports
030366	Fish; frozen, hake, excl fillets, fish meat of 0304	79,203,462	29,628,461	37.4%	77,396,839
030494	Fish meat, excluding fillets, frozen, Alaska Pollack ( <i>Theragra chalcogramma</i> )	343,672	51,514	15.0%	1,002,353
030474	Fish fillets; frozen, hake	800,114	101,473	12.7%	4,178,150
850231	Electric generating sets; wind-powered	489,829	57,140	11.7%	156,553,558
870191	Tractors; n.e.c. in 8701; of an engine power not exc. 18kW	27,904,007	3,062,919	11.0%	394,382,441
900791	Cameras, cinematographic; parts and accessories	4,091,456	217,694	5.3%	648,752
843221	Harrows; disc harrows	15,342,799	592,347	3.9%	25,743,815
030339	Fish; frozen, flat fish, n.e.c. in item no. 0303.3, excluding fillets	14,783,145	568,650	3.8%	1,607,273
300290	Toxins, cultures of micro-organisms	77,917,672	2,740,430	3.5%	55,779,757
120110	Soya beans; seed, whether or not broken	37,728,632	1,272,008	3.4%	2,312,364
842482	Mechanical appliances; agricultural or horticultural, n.e.c. in heading 8424	5,935,390	184,200	3.1%	46,873,829
030616	Crustaceans; frozen, cold-water shrimp and prawns	303,841,102	8,894,707	2.9%	12,478,901
330190	Oils, essential; concentrates in fats, fixed oils, waxes	7,528,675	157,024	2.1%	1,219,444
300230	Vaccines; for veterinary medicine	6,349,241	127,318	2.0%	47,910,466
841280	Engines; pneumatic power engines and motors, n.e.c. in 8412	15,360,215	267,373	1.7%	836,082



843229	Harrows; scarifiers, cultivators, weeders and hoes	21,150,990	355,656	1.7%	61,535,991
843290	Parts of machinery for soil preparation or cultivation	153,260,000	2,286,046	1.5%	39,583,335
401031	Rubber; vulcanised, endless transmission belts	4,252,802	59,023	1.4%	3,233,486
847740	Vacuum moulding machines for working rubber or plastics	15,142,421	209,765	1.4%	2,725,119
850213	Electric generating sets; with engines of an output exceeding 375kVA	24,380,224	332,569	1.4%	8,743,879

*Source: UN Comtrade*

\* Latest available data for both countries

# Appendices

## Appendix A.

**Table A2. 181 commodities with significant trade potential (over USD 50,000) to Ukraine**

Product code	Product	Export 2018	Trade Potential 2018
870323	Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1500cc but not exceeding 3000cc	2 803 394	7 832 978
870322	Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 1000cc but not exceeding 1500cc	43 108	5 832 216
880240	Aeroplanes and other aircraft; of an unladen weight exceeding 15,000kg	-	2 963 424
870829	Vehicles; parts and accessories, of bodies, other than safety seat belts	69 926	2 240 300
870422	Vehicles; compression-ignition internal combustion piston engine (diesel or semi-diesel), for transport of goods, (of a g.v.w. exceeding 5 tonnes but not exceeding 20 tonnes), n.e.c. in item no 8704.1	-	1 494 660
271112	Petroleum gases and other gaseous hydrocarbons; liquefied, propane	-	1 426 123
390120	Ethylene polymers; in primary forms, polyethylene having a specific gravity of 0.94 or more	-	1 388 243
870431	Vehicles; spark-ignition internal combustion piston engine, for transport of goods, (of a g.v.w. not exceeding 5 tonnes), n.e.c. in item no 8704.1	7 621	1 382 079
840734	Engines; reciprocating piston engines, of a kind used for the propulsion of vehicles of chapter 87, of a cylinder capacity exceeding 1000cc	-	1 182 262
870210	Vehicles; public transport type (carries 10 or more passengers), compression-ignition internal combustion piston engine (diesel or semi-diesel)	3 083	1 033 961
870423	Vehicles; compression-ignition internal combustion piston engine (diesel or semi-diesel), for transport of goods, (of a g.v.w. exceeding 20 tonnes), n.e.c. in item no 8704.1	-	984 996
20130	Meat; of bovine animals, boneless cuts, fresh or chilled	-	966 822
841191	Turbines; parts of turbo-jets and turbo-propellers	-	963 172
870324	Vehicles; spark-ignition internal combustion reciprocating piston engine, cylinder capacity exceeding 3000cc	1 172 553	944 805
401120	Rubber; new pneumatic tyres, of a kind used on buses or lorries	-	910 570
470321	Wood pulp; chemical wood pulp, soda or sulphate, (other than dissolving grades), semi-bleached or bleached, of coniferous wood	-	864 592
841199	Turbines; parts of gas turbines (excluding turbo-jets and turbo-propellers)	-	860 543
730890	Iron or steel; structures and parts thereof, n.e.c. in heading 7308	366	819 334
841112	Turbo-jets; of a thrust exceeding 25kN	-	814 150
390190	Ethylene polymers; in primary forms, n.e.c. in heading no. 3901	-	709 469
271113	Petroleum gases and other gaseous hydrocarbons; liquefied, butanes	-	708 391
870880	Vehicle parts; suspension systems and parts thereof (including shock-absorbers)	28 127	704 777
760120	Aluminium; unwrought, alloys	-	586 575
30214	Fish; fresh or chilled, Atlantic salmon ( <i>Salmo salar</i> ) and Danube salmon ( <i>Hucho hucho</i> ), excluding fillets, livers, roes, and other fish meat of heading 0304	-	550 260
190590	Food preparations; bakers' wares n.e.c. in heading no. 1605, whether or not containing cocoa; communion wafers, empty cachets suitable for pharmaceutical use, sealing wafers, rice papers and similar products	102	497 266
300439	Medicaments; containing hormones (but not insulin), adrenal cortex hormones or antibiotics, for therapeutic or prophylactic uses, packaged for retail sale	-	451 579
740811	Copper; wire, of refined copper, of which the maximum cross-sectional dimension exceeds 6mm	-	444 172
842720	Fork-lift and other works trucks; fitted with lifting or handling equipment, self-propelled by other than electric motor	-	435 086
841391	Pumps; parts thereof	137 790	410 977
392010	Plastics; plates, sheets, film, foil and strip (not self-adhesive), of polymers of ethylene, non-cellular and not reinforced, laminated, supported or similarly combined with other materials	109 878	404 132

210390	Sauces and preparations therefor; mixed condiments and mixed seasonings	-	401 001
848071	Moulds; for rubber or plastics, injection or compression types	-	400 582
870893	Vehicle parts; clutches and parts thereof	4 199	393 278
830230	Mountings, fittings and similar articles; for motor vehicles, of base metal	493	338 294
848310	Transmission shafts (including cam shafts and crank shafts) and cranks	68 742	337 955
842710	Fork-lift and other works trucks; fitted with lifting or handling equipment, self-propelled by electric motor	12 954	326 253
20319	Meat; of swine, n.e.c. in item no. 0203.1, fresh or chilled	-	326 201
842890	Lifting, handling, loading or unloading machinery; n.e.c. in heading no. 8425, 8426, 8427 or 8428	11 784	316 383
300420	Medicaments; containing antibiotics (other than penicillins, streptomycins or their derivatives), for therapeutic or prophylactic uses, packaged for retail sale	-	308 421
740400	Copper; waste and scrap	-	308 026
820730	Tools, interchangeable; (for machine or hand tools, whether or not power-operated), tools for pressing, stamping or punching	4 464	305 908
392321	Ethylene polymers; sacks and bags (including cones), for the conveyance or packing of goods	-	287 173
880230	Aeroplanes and other aircraft; of an unladen weight exceeding 2000kg but not exceeding 15,000kg	-	286 272
870590	Vehicles; break-down lorries, road-sweepers, spraying lorries, mobile workshops, mobile radiological units, and other special purpose vehicles n.e.c. in heading no. 8705	-	285 779
940540	Lamps and light fittings; electric, n.e.c. in heading no. 9405	-	285 252
480255	Uncoated paper and paperboard (not 4801 or 4803); printing, writing or graphic, 10% or less by weight of mechanical or chemi-mechanical processed fibre, weighing 40g/m2 to 150g/m2, in rolls	-	282 696
392350	Plastics; stoppers, lids, caps and other closures, for the conveyance or packing of goods	289	268 448
722830	Steel, alloy; bars and rods, hot-rolled, hot-drawn or extruded	-	265 410
440320	Wood; coniferous, in the rough, whether or not stripped of bark or sapwood, or roughly squared, untreated	-	260 048
630900	Clothing; worn, and other worn articles	101 412	253 673
392390	Plastics; articles for the conveyance or packing of goods n.e.c. in heading no. 3923	-	243 626
160232	Meat preparations; of the poultry of heading no. 0105, (i.e. of fowls of the species Gallus domesticus)	-	239 640
870810	Vehicles; bumpers and parts thereof, for the vehicles of heading no. 8701 to 8705	17 247	238 929
721012	Iron or non-alloy steel; flat-rolled, width 600mm or more, plated or coated with tin, thickness of less than 0.5mm	-	228 714
940510	Chandeliers and other electric ceiling or wall light fittings; excluding those used for lighting public open spaces or thoroughfares	24 168	228 193
480300	Tissue, towel, napkin stock or similar; for household or sanitary use, cellulose, wadding webs of cellulose fibres, in rolls exceeding 36cm in width or rectangular sheets with one side more than 36cm in unfolded state	2 593	210 299
330590	Hair preparations; n.e.c. in heading no. 3305	68 809	207 794
90121	Coffee; roasted, not decaffeinated	-	206 960
271320	Petroleum bitumen; obtained from bituminous minerals	-	197 694
481920	Paper and paperboard; folding cartons, boxes and cases, of non-corrugated paper or paperboard	-	192 419
841582	Air conditioning machines; containing a motor driven fan, other than window or wall types, incorporating a refrigerating unit	-	190 069
880320	Aircraft and spacecraft; under-carriages and parts thereof	-	175 028
330410	Cosmetic and toilet preparations; lip make-up	-	174 498
200410	Vegetable preparations; potatoes, prepared or preserved otherwise than by vinegar or acetic acid, frozen	-	171 974
940320	Furniture; metal, other than for office use	18 964	170 947
330720	Perfumery, cosmetic or toilet preparations; personal deodorants and antiperspirants	-	170 113
81040	Fruit, edible; cranberries, bilberries and other fruits of the genus vaccinium, fresh	-	169 527
903149	Optical instruments and appliances; for measuring or checking, n.e.c. in chapter 90	9 534	168 107
290250	Cyclic hydrocarbons; styrene	-	167 550
261390	Molybdenum ores and concentrates; other than roasted	-	167 464
722530	Steel, alloy; flat-rolled, width 600mm or more, hot-rolled, in coils	-	163 802
841290	Engines; parts, for engines and motors of heading no. 8412	23 746	161 724
70200	Vegetables; tomatoes, fresh or chilled	-	161 550
841981	Machinery, plant and equipment; for making hot drinks, for cooking or heating food	-	160 938

720827	Iron or non-alloy steel; in coils, without patterns in relief, flat-rolled, of a width 600mm or more, hot-rolled, pickled, of a thickness of less than 3mm	-	160 024
853190	Signalling apparatus; parts of the electric, sound or visual apparatus of heading no. 8531	-	159 863
491199	Printed matter; n.e.c. in heading no. 4911	1 048	156 069
761090	Aluminium; structures (excluding prefabricated buildings of heading no. 9406) and parts of structures, n.e.c. in heading no. 7610, plates, rods, profiles, tubes and the like	-	156 051
20312	Meat; of swine, hams, shoulders and cuts thereof, with bone in, fresh or chilled	-	154 644
852910	Reception and transmission apparatus; aerials and aerial reflectors of all kinds and parts suitable for use therewith	26 000	154 281
720421	Ferrous waste and scrap; of stainless steel	-	152 837
870790	Vehicles; bodies (including cabs) for the motor vehicles of heading no. 8701, 8702, 8704 or 8705	-	149 609
121490	Forage products including swedes, mangolds, fodder roots, hay, sainfoin, clover, forage kale, lupines, vetches etc., pelletised or otherwise	-	148 644
880212	Helicopters; of an unladen weight exceeding 2000kg	-	146 233
847710	Machinery; injection-moulding machines, for working rubber or plastics or for the manufacture of products from these materials	-	144 266
400510	Rubber; unvulcanised, compounded with carbon black or silica, in primary forms or in plates, sheets or strip	-	143 776
190410	Food preparations; obtained by the swelling or roasting of cereals or cereal products	-	137 512
480421	Kraft paper and paperboard; sack kraft paper, uncoated, unbleached, in rolls or sheets, other than that of heading no. 4802 or 4803	-	136 759
310420	Fertilizers, mineral or chemical; potassic, potassium chloride	-	136 069
200819	Nuts and other seeds; whether or not containing added sugar, other sweetening matter or spirit (excluding ground-nuts except in mixtures)	-	133 865
480100	Newsprint; made of fibres by a chemi-mechanical process or of a weight, per m <sup>2</sup> , of more than 57g but not more than 65g, in rolls or sheets	-	130 861
271119	Petroleum gases and other gaseous hydrocarbons; liquefied, n.e.c. in heading no. 2711	-	129 468
730900	Reservoirs, tanks, vats and similar containers; for any material (excluding compressed or liquefied gas), of iron or steel, capacity exceeding 300l, whether or not lined or heat insulated	-	126 415
330420	Cosmetic and toilet preparations; eye make-up	-	126 408
441239	Plywood; as specified in Subheading Note 2 to this Chapter, consisting only of sheets of wood (not bamboo), each ply 6mm or thinner, not containing an outer ply of non-coniferous or tropical wood	-	125 700
410150	Hides and skins; raw, whole, of bovine or equine animals, of a weight per skin exceeding 16 kg	-	124 860
720826	Iron or non-alloy steel; in coils, without patterns in relief, flat-rolled, of a width 600mm or more, hot-rolled, pickled, of a thickness of 3mm or more but less than 4.75mm	-	124 490
481141	Paper and paperboard; self-adhesive, in rolls or sheets, other than goods of heading no. 4803, 4809, or 4810	-	120 479
830120	Locks; of a kind used for motor vehicles (key, combination or electrically operated), of base metal	98	119 714
760720	Aluminium; foil, backed with paper, paperboard, plastics or similar backing materials, of a thickness (excluding any backing) not exceeding 0.2mm	21	119 455
848350	Pulleys and flywheels, including pulley blocks	104 840	115 452
210410	Soups and broths and preparations therefor	5 631	115 003
730820	Iron or steel; structures and parts thereof, towers and lattice masts	-	112 868
721050	Iron or non-alloy steel; flat-rolled, width 600mm or more, plated or coated with chromium oxides or with chromium and chromium oxides	-	112 763
482390	Paper pulp, paper, paperboard, cellulose wadding or webs of cellulose fibres; articles n.e.c. in heading no. 4823	49	112 313
890399	Yachts and other vessels; for pleasure or sports, rowing boats and canoes, n.e.c. in heading no. 8903, other than inflatable	-	111 166
30441	Fish fillets; fresh or chilled, salmon, Pacific ( <i>Oncorhynchus nerka</i> , <i>Oncorhynchus gorbuscha</i> , <i>Oncorhynchus keta</i> , <i>Oncorhynchus tshawytscha</i> , <i>Oncorhynchus kisutch</i> , <i>Oncorhynchus masou</i> and <i>Oncorhynchus rhodurus</i> ), Atlantic ( <i>Salmo salar</i> ), Danube ( <i>Hucho hucho</i> )	-	107 003
392049	Plastics; polymers of vinyl chloride, containing by weight, less than 6% of plasticisers; plates, sheets, film, foil and strip (not self-adhesive), non-cellular and not reinforced, laminated, supported or similarly combined with other materials	-	105 758
390311	Styrene polymers; expansible polystyrene, in primary forms	-	104 940

847790	Machinery; parts of the machines of heading no. 8477, n.e.c. in item no. 8477.90	83 785	103 795
381700	Mixed alkylbenzenes and mixed alkylnaphthalenes, other than those of heading no. 2707 or 2902	-	102 532
390130	Ethylene polymers; in primary forms, ethylene-vinyl acetate copolymers	-	102 030
70960	Vegetables; fruits of the genus capsicum or of the genus pimenta, fresh or chilled	-	100 141
320649	Colouring matter; other preparations n.e.c. in item no. 3206.4	-	98 735
150790	Vegetable oils; soya-bean oil and its fractions, other than crude, whether or not refined, but not chemically modified	-	97 965
830210	Hinges; suitable for furniture, doors, staircases, windows, blinds, coachwork, saddlery, trunks, chests, caskets or the like, of base metal	-	97 255
320990	Paints and varnishes; (based on polymers other than acrylic or vinyl), dispersed or dissolved in an aqueous medium	-	96 616
940340	Furniture; wooden, for kitchen use	-	95 557
190120	Food preparations; mixes and doughs for the preparation of bread, pastry, cakes, biscuits and other bakers' wares	-	94 529
70190	Vegetables; potatoes (other than seed), fresh or chilled	-	94 338
843120	Machinery; parts of the machinery of heading no. 8427	1 258	93 391
901580	Surveying equipment; articles n.e.c. in heading no. 9015, including hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances (excluding compasses)	56 010	92 413
150210	Tallow; other than those of heading 1503	-	92 335
940290	Furniture; for medical, surgical, veterinary use (e.g. operating tables, examination tables, hospital beds with mechanical fittings) and parts thereof	1 543	91 435
470311	Wood pulp; chemical wood pulp, soda or sulphate, (other than dissolving grades), unbleached, of coniferous wood	-	90 990
843141	Machinery parts; buckets, shovels, grabs and grips, for the machinery of heading no. 8426 and 8430	-	90 138
310230	Fertilizers, mineral or chemical; nitrogenous, ammonium nitrate, whether or not in aqueous solution	-	90 021
440799	Wood; sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, thicker than 6mm, n.e.c. in heading no. 4407	-	89 925
950699	Equipment for outdoor games and recreation n.e.c. in heading no. 9506	943	88 149
902300	Instruments, apparatus and models; designed for demonstrational purposes (in education or exhibitions), unsuitable for other uses	335	87 812
180620	Chocolate & other food preparations containing cocoa; in blocks, slabs or bars weighing more than 2kg or in liquid, paste, powder, granular or other bulk form in containers or immediate packings, content exceeding 2kg	-	87 734
320810	Paints and varnishes; based on polyesters, dispersed or dissolved in a non-aqueous medium	-	86 338
481820	Paper articles; handkerchiefs, cleansing or facial tissues and towels	-	84 529
851521	Welding machines and apparatus; for resistance welding of metal, fully or partly automatic, whether or not capable of cutting	-	82 758
590310	Textile fabrics; impregnated, coated, covered or laminated with poly(vinyl chloride)	-	82 738
262099	Slag, ash and residues; (not from the manufacture of iron or steel), containing mainly metals or their compounds, n.e.c. in heading no. 2620	-	81 076
710691	Metals; silver, unwrought, (but not powder)	-	79 860
380991	Finishing agents and dye carriers; to accelerate dyeing or fixing of dye-stuffs, other products and preparations, used in the textile industry (excluding those with a basis of amylaceous substances)	-	79 680
620193	Anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles; men's or boys', of man-made fibres, other than those of heading no. 6203 (not knitted or crocheted)	4 468	77 169
901910	Mechano-therapy appliances; massage apparatus and psychological aptitude-testing apparatus	3	76 868
340130	Organic surface-active products and preparations for washing the skin, in the form of liquid or cream and put up for retail sale, whether or not containing soap	3 714	75 999
580632	Fabrics, narrow woven fabrics, n.e.c. in heading no. 5806, of man-made fibres (excluding goods of heading no. 5807)	-	75 744
940599	Lamps and light fittings; parts thereof, of materials other than glass or plastics	-	75 328
730830	Iron or steel; structures and parts thereof, doors, windows and their frames and thresholds for doors	-	75 273
281410	Ammonia; anhydrous	-	74 975

480261	Uncoated paper and paperboard (not 4801 or 4803); over 10% by weight of mechanical or chemi-mechanical processed fibre, in rolls	-	74 849
330491	Cosmetic and toilet preparations; powders, whether or not compressed (excluding lip, eye, manicure or pedicure preparations)	-	74 315
250300	Sulphur of all kinds; other than sublimed, precipitated and colloidal sulphur	-	74 054
842121	Machinery; for filtering or purifying water	244 768	73 405
281700	Zinc; oxide and peroxide	-	71 188
200899	Fruit, nuts and other edible parts of plants; prepared or preserved, whether or not containing added sugar, other sweetening matter or spirit, n.e.c. in heading no. 2008	9 602	68 882
810520	Cobalt; mattes and other intermediate products of cobalt metallurgy, unwrought cobalt, powders	-	68 086
830249	Mountings, fittings and similar articles; suitable for other than buildings or furniture, of base metal	17 048	67 515
848360	Clutches and shaft couplings (including universal joints)	22 954	66 756
160249	Meat preparations; of swine, meat or meat offal (including mixtures), prepared or preserved, n.e.c. in heading no. 1602	-	66 694
732010	Iron or steel; leaf-springs and leaves therefor	-	66 629
901590	Surveying equipment; parts and accessories for articles of heading no. 9015	2 712	64 781
841583	Air conditioning machines; containing a motor driven fan, other than window or wall types, not incorporating a refrigerating unit	-	63 812
20649	Offal, edible; of swine, (other than livers), frozen	-	63 083
870130	Tractors; track-laying	-	62 884
761010	Aluminium; structures (excluding prefabricated buildings of heading no. 9406) and parts of structures, doors, windows and their frames and thresholds for doors	-	61 766
850421	Electrical transformers; liquid dielectric, having a power handling capacity not exceeding 650kVA	-	61 449
848079	Moulds; for rubber or plastics, other than injection or compression types	-	61 240
290512	Alcohols; saturated monohydric, propan-1-ol (propyl alcohol) and propan-2-ol (isopropyl alcohol)	-	60 470
843840	Machinery; industrial, brewery machinery	-	59 797
620293	Anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles; women's or girls', of man-made fibres, other than those of heading no. 6204 (not knitted or crocheted)	3 220	59 464
300630	Pharmaceutical goods; opacifying preparations for x-ray examinations, diagnostic reagents designed to be administered to the patient	-	58 474
290531	Alcohols; acyclic, diols; ethylene glycol (ethanediol)	-	58 437
710692	Metals; silver, semi-manufactured	-	57 693
350300	Gelatin (including gelatin in rectangular sheets, whether or not surface-worked or coloured) and gelatin derivatives; isinglass; other glues of animal origin, excluding casein glues of heading no. 3501	6 986	57 568
720429	Ferrous waste and scrap; of alloy steel (excluding stainless)	-	55 055
880529	Ground flying trainers and parts thereof; other than air combat simulators and parts thereof	-	53 609
681099	Cement, concrete or artificial stone; articles (other than prefabricated structural components for building or civil engineering), whether or not reinforced, n.e.c. in heading no. 6810	-	53 293
871680	Vehicles; n.e.c. in heading no. 8716	30	53 076
848250	Bearings; cylindrical roller bearings n.e.c. in heading no. 8482	-	52 698
871631	Tanker trailers and tanker semi-trailers	-	52 456
701939	Glass fibres; webs, mattresses, boards and similar non-woven products excluding mats and thin sheets	9	52 360
391690	Plastics; monofilament, of plastics n.e.c. in heading no. 3916, cross-sectional dimension exceeds 1mm, rods, sticks and profile shapes, whether or not surface-worked but not otherwise worked	-	52 255
280700	Sulphuric acid; oleum	-	51 750
750890	Nickel; articles thereof n.e.c. in item no. 7508.1	-	51 499
200811	Nuts; ground-nuts, whether or not containing added sugar, other sweetening matter or spirit	-	50 248

Source: Own Calculations based on UN Comtrade

## Appendix B. Methodology of the gravity model

In order to evaluate how CUFTA affected Ukrainian export to Canada and import from Canada we built a gravity model for international trade of all countries between each other. If the countries had no trade during the period of 2016-2018, we constructed zero trade flows for these observations.

The dependent variable of the model is export of countries. The gravity model traditionally contains such variables as distance, common legislation system, colonial relations and free trade agreement. Instead of GDP and population variables we used fixed effects for both reporter and partner country-year pairs. These fixed effects are proxies for multilateral resistance terms in our model. We also added dummies for trade between Ukraine and Canada and for CUFTA. The latter equals to 1 if the trade (export or import) reporter is Ukraine and trade partner is Canada and the year is 2018.

$$TF_{ij} = \beta_0 + \beta_1 \ln(Dist_{ij}) + \beta_2 comleg_{ij} + \beta_3 colony_{ij} + \beta_4 FTA_{ij} + \beta_5 UACAN + \beta_6 year2018 + \beta_7 FTA_{ij} * UACAN + e$$

$Dist_{ij}$  – distance between countries

$comleg_{ij}$  – common legislation system

$colony_{ij}$  – colonial relations in the past

$FTA_{ij}$  – free trade agreement

$UACAN$  – dummy for trade between Ukraine and Canada

$year2018$  – year 2018.

The effect of FTA shows how usual FTA influences trade flow, while its interaction with Ukraine-Canada pair (UACAN) shows how the effect of CUFTA is different from usual FTA. **Therefore, the effect of CUFTA is the sum of  $\beta_6 + \beta_7$ .**

The dataset contains aggregate trade flows data between countries for 2016 and 2018. The data source is UN Comtrade.

In order to exclude the effect of reduction of Canadian coal exports to Ukraine (which was not due to the CUFTA) we built models both including and excluding coal exports from the dependent variable. In addition, we restricted the sample to the countries, whose GDP is higher than \$25 billion. This helped to get rid of the noise in the data and simplified usage of multilateral resistance terms.

The model employs PPML method.

The results of the model are shown in the following table.

**Table B1. Effects on exports**

	Ukrainian export (logarithm)	Ukrainian export without coal (logarithm)	Canadian export (logarithm)	Canadian export without coal (logarithm)
<b>CUFTA</b>	<b>0.0545</b> <b>(0.0351)</b>	<b>0.0546</b> <b>(0.0351)</b>	<b>-0.0954***</b> <b>(0.0328)</b>	<b>-0.0673**</b> <b>(0.033)</b>
<b>Year 2018</b>	1.111*** (0.139)	1.114*** (0.139)	1.111*** (0.139)	1.114*** (0.139)
<b>Trade between Ukraine and Canada</b>	-0.237*** (0.0265)	-0.237*** (0.0265)	0.0275 (0.0262)	-0.0421 (0.0263)
<b>FTA</b>	<b>0.0660***</b> <b>(0.005)</b>	<b>0.0655***</b> <b>(0.005)</b>	<b>0.0660***</b> <b>(0.005)</b>	<b>0.0655***</b> <b>(0.005)</b>
<b>Distance (logarithm)</b>	-0.0605*** (0.00812)	-0.0607*** (0.00813)	-0.0605*** (0.00812)	-0.0607*** (0.00813)
<b>Common legislation</b>	0.0527*** (0.00526)	0.0528*** (0.00526)	0.0528*** (0.00526)	0.0529*** (0.00526)
<b>Colony</b>	0.0631*** (0.00934)	0.0634*** (0.00934)	0.0631*** (0.00934)	0.0634*** (0.00934)
<b>Observations</b>	15954	15954	15954	15954

\*\*\* - significant on 1% level, \*\* - 5% level, \* - 10% level

There difference between the models on Ukrainian exports is negligible, while for Canadian exports there is a notable difference in the coefficient on CUFTA. When we used the sample including coal the model showed that the CUFTA decreased Canadian exports to Ukraine by 3%, while the model on the sample without coal showed that the effect is 0%. Since decrease in Canadian coal exports to Ukraine is not connected to CUFTA, we use the result of the models on the sample without coal.

The models on different product groups were constructed by the same approach, but without excluding countries by GDP, as there are no difficulties of using multilateral resistance terms on the samples which are less in size.

**Table B2. Effects on exports of some Canadian product groups**

	Fish	Pharma	Electric machines
<b>CUFTA</b>	<b>-0.0136</b> <b>(0.0755)</b>	<b>0.00321</b> <b>(0.0597)</b>	<b>-0.0221</b> <b>(0.0529)</b>
<b>Year 2018</b>	2.765*** (0.276)	2.877*** (0.235)	2.666*** (0.18)
<b>Trade between Ukraine and Canada</b>	0.451*** (0.0536)	0.231*** (0.0423)	0.0939** (0.0378)
<b>FTA</b>	<b>0.0206**</b> <b>(0.0095)</b>	<b>0.0323***</b> <b>(0.00848)</b>	<b>0.0639***</b> <b>(0.00645)</b>
<b>Distance (logarithm)</b>	-0.232*** (0.00533)	-0.271*** (0.00516)	-0.261*** (0.00427)
<b>Common legislation</b>	0.0605*** (0.00823)	0.0642*** (0.00669)	0.0484*** (0.00533)
<b>Colony</b>	0.135*** (0.0157)	0.167*** (0.0136)	0.160*** (0.0122)
<b>Observations</b>	10266	16726	23798

\*\*\* - significant on 1% level, \*\* - 5% level, \* - 10% level



## Appendix C. Methodology

### Approach I: Comparative Advantages and Gravity Model

In order to identify promising Canadian exports to Ukraine, a two-step analysis is conducted:

In the first stage, comparison of normalised revealed comparative advantage (NRCA) of Canada and Ukraine is carried out. According to this criterion, we select goods that have positive NRCA in Canada and, on the contrary, have negative NRCA in Ukraine. In the second stage, gravity model of foreign trade for the goods selected in the previous stage is evaluated. According to the estimated model, the indicator of trade relations between Canada and Ukraine was calculated, namely – whether there is a potential for trade in certain groups of goods. Goods with insufficient trading volumes are compared to the forecasted potential level of trade.

The Normalized Revealed Comparative Advantage Index (NRCA) is used to calculate comparative advantages of a particular country in a particular class of goods or services. That is, the index shows the ratio of the share of goods (industry) in national exports to the share of world exports. The index is at -1 when Canada/Ukraine does not export, at +1 – when Canada/Ukraine is a leading exporter. 0 means that a country exports at an average level. Higher scores mean higher revealed comparative advantages.

$$NRCA_k^U = \frac{RCA_k^U - 1}{RCA_k^U + 1}$$
$$RCA_k^U = \frac{X_k^U / X^U}{X_k / X}$$

where  $RCA_k^U$  – is an index of Revealed Comparative Advantage of Ukraine in export of commodity group K,  $X_k^U$  – volume of commodity group K export from Ukraine,  $X^U$  – volume of total export from Ukraine,  $X_k$  – volume of world commodity group K export,  $X$  – total world export.

Next, a gravity model is estimated for these goods to determine which of them have prospects for increasing exports. Gravity model links global production and consumption trends to global trade trends.

The model explains the impact of other countries on the bilateral trade of interest. For example, it reflects the impact of the China-US trade war on Ukraine-Canada trade. In estimating the model, we consider all countries and specific factors. The remaining (non-trading) difference is the deviation from the global trade trends, which cannot be explained by exporter's production capacity, importer's costs, specific factors of trade costs such as distance, cultural differences, free trade agreements and so on.

The study uses the following model specification:

- Dependent variable - export flow from country  $i$  to country  $j$
- Independent variables – GDP of trading partners, existence of regional trade agreement, distance between countries and common characteristics (borders, language, legislation), level of customs measures.

Like any other method, the gravity model of international trade has some limitations. First, the method estimates trade based on long-term trends. Accordingly, it does not account for short-term dynamics. Second, the method is based on trade flow estimation and uses full-employment assumption. Accordingly, it does not take into account the change in the structure of production.

## **Approach II: Comparative Nomenclature Analysis**

This approach is based on matching of Canadian export to Ukraine, Europe and Central Asia and Ukrainian import from other countries (particularly ones with no free trade agreement with Ukraine). This approach includes several steps:

- Identifying the list of goods imported by Ukraine from countries without free trade agreement and evaluate their value. The value of each good is defined as a ratio of monetary trade volume to its physical measure (kilos, items, litres etc).
- Identifying the list of goods exported to Ukraine by Canada and evaluating its Values. Matching these goods with the list from the previous stage provides the list of goods that can be substituted with Canadian imports through the intensive margin.
- Identifying the list of goods exported to Europe and Central Asia by Canada and evaluate their values. Matching these goods with the list from the first stage provides the list of goods that can be substituted with Canadian imports through the extensive margin.

The comparative nomenclature analysis also has some methodological limitations. First, the method is sensitive to outliers: small exporters/importers with too expensive/cheap commodities. Therefore, only countries with significant trade volumes are included into the analysis. Second, restriction is a physical measurement: there are different approaches to report the quantity of traded goods (kilos, liters, items etc). As a result, to compare import/export value across countries, we included countries that measures their trade flows in the most common commodity-specific units.