

Opening of common border between Armenia and Turkey: impact on Armenian trade

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Summary

- Due to closed common border, there is no direct trade between ARM and TUR
- Indirect trade with TUR (via GEO) is possible and consists almost exclusively (>99%) of imports from TUR; in 2021, trade with TUR amounted to less than 1% of total (partly due to ARM import ban)
- We used two reinforcing models to estimate the effect of opening the common border on ARM bilateral trade with TUR

Results of gravity model (long-term approach)

- The model estimates a share of TUR in ARM trade of 12%; much higher than in reality (<1% in 2021); large potential for higher bilateral trade with TUR

Results of trade complementarity model (short to medium term)

- Model estimates ARM exports to TUR at USD 185 m or 6.7% of ARM exports; main items: agro-food products, incl. tobacco, glass & jewelry, copper ores
- Model estimates imports from TUR at USD 678 m or 12.8% of ARM imports; main items: machines & equipment, textile & clothing, medicaments

Summary

	Actual (2021)	Gravity model	Trade complementarity model
Exports to TUR, % of total	0.01%	-	6.7%
Imports from TUR, % of total	1.4%	-	12.8%
Trade with TUR, % of total	0.9%	11.8%	10.7%

Source: WITS, own estimates; for trade complementarity model results, shares are calculated as percentage of 2021 ARM exports, imports and trade

- As a result of an opening of the border with TUR, ARM trade with TUR would increase from less than 1% (2021) to more than 10% of total trade
- Results of both models are similar, i.e. robust results
- Opening of border would also promote ARM exports
- **Opening of border very much in the economic interest of ARM**

Outline

1. Motivation
2. ARM trade in goods
3. ARM-TUR (indirect) trade in goods
4. Methodology for assessing the effect of opening the common border
5. Effect of opening the border on Armenian foreign trade
 - 5.1. Gravity model (long-term approach)
 - 5.2. Trade complementarity model (short to medium term approach)

Annex

1. Motivation

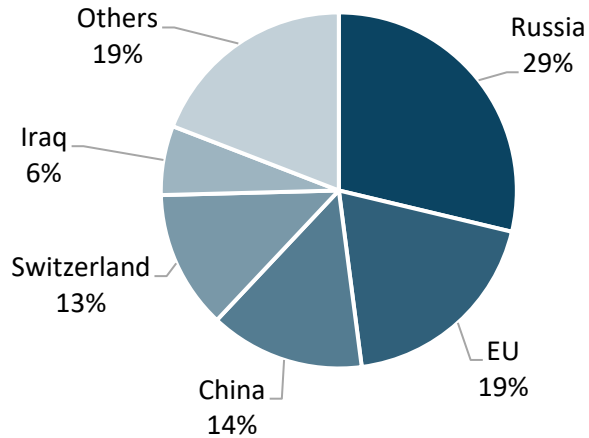
- Currently, ARM main trade partners are RUS, the EU and CHN
- ARM – TUR border remains closed for years, and there is no direct trade between the countries
- Still, indirect trade has been maintained, mostly through GEO
- In 2021, ARM imposed a ban on imports of TUR-origin goods, except for raw materials; however, this ban has been lifted recently

Aim of policy briefing

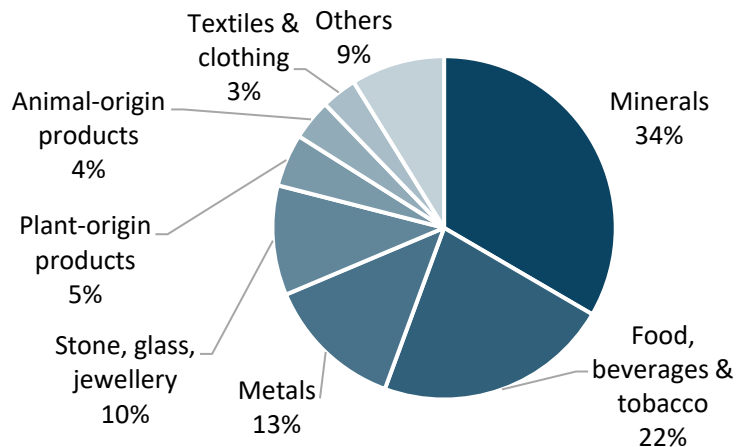
- Analyse a scenario, in which ARM and TUR open their common border and allow direct trade
- Assess the implications of this scenario for ARM trade with TUR

2.1. ARM exports of goods

ARM exports of goods, 2021



Structure of ARM goods exports, 2021



ARM exports of goods, 2021

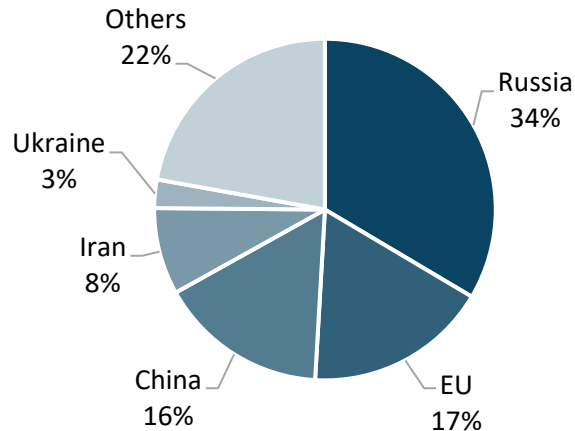
- Value: USD 2.8 bn
 - Growth 2021/2020: 18.6%
 - Share in GDP: 20%
 - Main partners: RUS, EU, CHN
- **Important role in the economy**

Key product subheadings

- Copper ores and concentrates: 28%
 - Cigarettes: 8%
 - Spirits obtained by distilling grape: 8%
 - Ferro-molybdenum: 7%
- **4 products account for over half of exports → highly concentrated**

2.2. ARM imports of goods

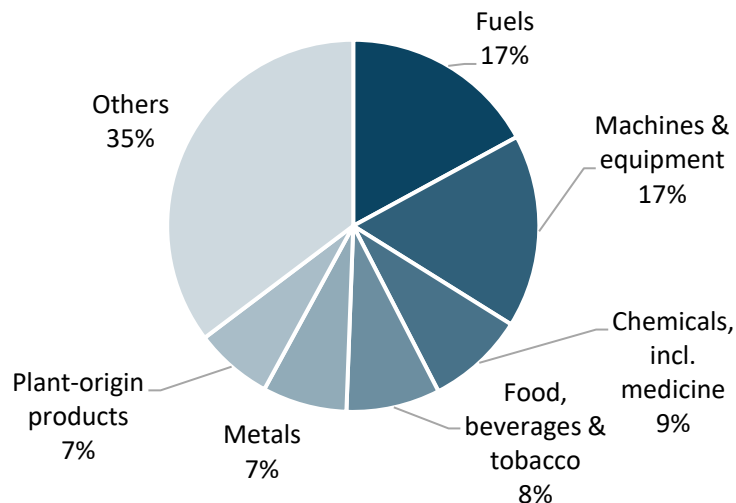
ARM imports of goods, 2021



ARM imports of goods, 2021

- Value: USD 5.3 bn
 - Growth 2021/2020: 16.5%
 - Share in GDP: 38%
 - Main partners: RUS, EU, CHN
- **Imports exceed exports twofold**

Structure of ARM goods imports, 2021

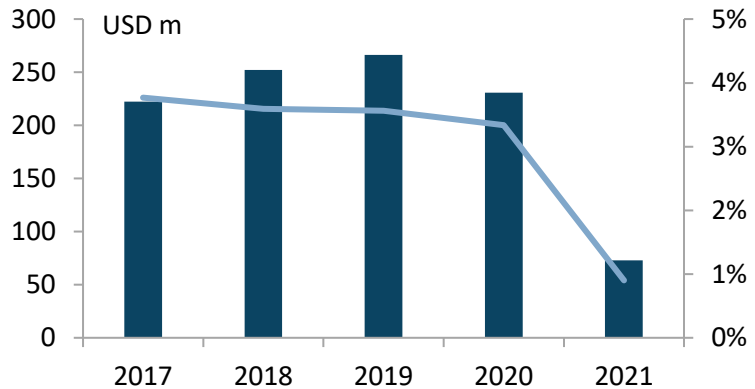


Key product subheadings

- Petroleum gases: 9%
 - Petroleum oils: 7%
 - Medicaments: 3%
- **High product diversification of imports compared to exports**

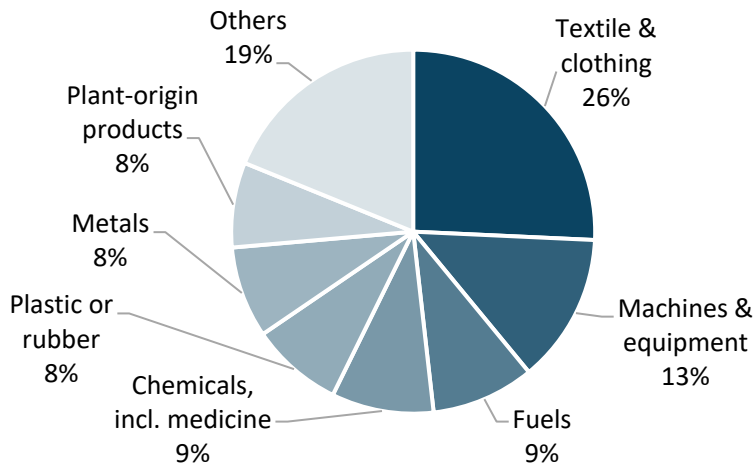
3. ARM-TUR (indirect) trade in goods

ARM trade with TUR, 2017-2021



■ ARM trade with TUR, USD m — Share of total trade, %

Structure of ARM goods imports from TUR, 2019*



Source: WITS, own estimates; exports without re-exports
 Note: * We use 2019 as a baseline to capture trade profile before Covid-19 crisis and the 2021 ban

Year 2021

- Value: USD 73 m (>99% imports)
- Share in ARM total trade: 0.9%
- Growth, 2021/2020: -68%
(due to ban on TUR-origin imports excl. raw materials)
- Share of GDP: 0.5%

Year 2019

- Value: USD 266 m (>99% imports)
- Share in ARM total trade: 3.6%
- Growth, 2019/2018: +6%
- Share of GDP: 1.9%
- **Imports dominate ARM-TUR trade**
- **Main products: textile and clothing, machines and fuel**

4. Methodology for assessing the effect of opening the common border

The assessment of potential trade structure is based on two models

- **Gravity model**
 - A standard trade policy analysis tool
 - Key notion: trade is directly proportional to the size of partner economies and inversely proportional to the ‘economic distance’ between them
 - Does not take into account the product composition of trade
 - model appropriate for assessing the long-run trade pattern
- **Trade complementarity**
 - A custom-made tool assessing a potential structure of bilateral trade based on whether the export basket of one country fits the import basket of the other country, controlling for price difference
 - Takes into account the present product structure of trade
 - model suitable for assessing the short to medium trade structure
- Annex 1 provides the detailed overview of the models

5.1. Gravity model

Gravity model, predicted and actual trade in goods structure

	Predicted	Actual (2021)
EU	20%	18%
Russia	14%	32%
Turkey	12%	1%
Iran	9%	6%
China	7%	15%
USA	6%	2%
India	3%	3%
UK	3%	1%
Georgia	2%	2%
Switzerland	1%	5%
Other countries	24%	15%

Source: own estimates based on gravity model, see Annex 1.1 for detailed model description

- Gravity model: share of TUR in ARM trade should be 12%
- Reality: only 1% in 2021 (partly due to ban), but also only 3.6% in 2019
- **Vast potential for ARM for increasing trade with TUR**

5.2. Trade complementarity model: pot. exports to TUR

HS	Description	ARM potential exports to TUR, USD m	% of total
01-05	Animal-origin products	9	5%
06-15	Plant-origin products	7	4%
16-24	Food, beverages & tobacco	47	26%
25-26	Minerals, incl. ores	19	10%
27-27	Fuels	0	0%
28-38	Chemicals, incl. medicines	4	2%
39-40	Plastic or rubber	3	2%
41-43	Hides and skins	1	0%
44-49	Wood	1	0%
50-63	Textiles and clothing	10	5%
64-67	Footwear	1	1%
68-71	Stone, glass, jewellery	51	27%
72-83	Metals	9	5%
84-85	Machines and equipment	12	6%
86-89	Transport equipment	6	3%
90-99	Miscellaneous	6	3%
	Total	185	100%

Source: own estimates based on trade complementarity model, see Annex 1.2 for detailed model description

- **ARM potential exports to TUR amount to USD 185 m; this is equivalent to 6.7% of ARM exports in 2021; high potential for agrofood (35% of total)**

Top 10 products in potential exports

HS 2017	HS 2017 Product Description	ARM potential exports, USD m	% of total
711319	Jewelry; of precious metal (excluding silver) whether or not plated or clad with precious metal, and parts thereof	37	20%
260300	Copper ores and concentrates	18	10%
240220	Cigarettes; containing tobacco	17	9%
701090	Glass; carboys, bottles, flasks, jars, pots, phials and other containers of glass, (not ampoules), used for the conveyance or packing of goods	10	6%
180690	Chocolate and other food preparations containing cocoa	9	5%
010229	Cattle; live, other than pure-bred breeding animals	7	4%
740400	Copper; waste and scrap	5	3%
611610	Gloves, mittens and mitts; knitted or crocheted, impregnated, coated or covered with plastics or rubber	5	3%
220299	Non-alcoholic beverages; other than non-alcoholic beer	4	2%
901890	Medical, surgical or dental instruments and appliances	4	2%
	Others	68	36%
	Total	185	100%

Source: own estimates based on trade complementarity model, see Annex 1.2 for detailed model description

5.3. Trade complementarity model: pot. imports from TUR

HS	Description	ARM potential imports from TUR, USD m	% of total
01-05	Animal-origin products	3	0%
06-15	Plant-origin products	40	6%
16-24	Food, beverages & tobacco	37	5%
25-26	Minerals, incl. ores	4	1%
27-27	Fuels	46	7%
28-38	Chemicals, incl. medicines	68	10%
39-40	Plastic or rubber	38	6%
41-43	Hides And Skins	5	1%
44-49	Wood	22	3%
50-63	Textiles and clothing	139	20%
64-67	Footwear	18	3%
68-71	Stone, glass, jewellery	15	2%
72-83	Metals	48	7%
84-85	Machines and equipment	142	21%
86-89	Transport equipment	21	3%
90-99	Miscellaneous	32	5%
	Total	678	100%

Source: own estimates based on trade complementarity model, see Annex 1.2 for detailed model description

➤ **ARM potential imports from TUR amount to USD 678 m; that is 12.8% of ARM imports in 2021**

Top 10 products in potential imports

HS 2017	HS 2017 Product Description	ARM potential imports, USD m	% of total
271019	Petroleum oils and oils from bituminous minerals, not containing biodiesel, not crude; preparations containing by weight >70% of petroleum oils	46	7%
611490	Garments; of textile materials (other than cotton or man-made fibres), knitted or crocheted	21	3%
300490	Medicaments; consisting of mixed or unmixed products for therapeutic or prophylactic uses, for retail sale	18	3%
851712	Telephones for cellular networks or for other wireless networks	13	2%
640299	Footwear (other than just covering the ankle), with outer soles and uppers of rubber or plastics	8	1%
180690	Chocolate and other food preparations containing cocoa	7	1%
240220	Cigarettes; containing tobacco	7	1%
730890	Iron or steel; structures and parts thereof	7	1%
600523	Fabrics; warp knit (including those made on galloon knitting machines), of cotton, yarns of different colours	6	1%
230990	Dog or cat food; (not put up for retail sale)	6	1%
	Others	539	79%
	Total	678	100%

Source: own estimates based on trade complementarity model, see Annex 1.2 for detailed model description

About the German Economic Team



Financed by the Federal Ministry for Economic Affairs and Climate Action, the German Economic Team (GET) advises the governments of Ukraine, Belarus*, Moldova, Kosovo, Armenia, Georgia and Uzbekistan on economic policy matters. Berlin Economics has been commissioned with the implementation of the consultancy.

**Advisory activities in Belarus are currently suspended.*

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Implemented by



Annex 1.1. Gravity model

- We use the gravity model with mean coefficients identified by Head and Mayer (2013) through analysis of over 150 studies using gravity model and published in top economic journals:

$$\ln X_{ij} = 0.98 \cdot \ln GDP_i + 0.84 \cdot \ln GDP_j + 0.53 \cdot \text{Contiguity} + 0.54 \cdot \text{Common language} + 0.92 \cdot \text{Colonial link} + 0.59 \cdot \text{FTA} - 0.93 \cdot \ln \text{Distance}_{ij},$$

where i is the origin country and j is the destination country. *Contiguity*, *Common language*, *Colonial link*, *FTA* are dummy variables, which equal to one if the relevant characteristics exist and zero otherwise.

- The estimates are done for each pair of partners and then the potential structure of trade is calculated.

Data sources:

- IMF World Economic Outlook – for GDP
- CEPII database – for Distance, Contiguity, Common language, Colony
- WTO – for FTA (due to limited scope, treaty with Iran is not marked as FTA)

Annex 1.2. Trade complementarity model (1/4)

Step 1: Product match

- Match disaggregated exporter's product structure with disaggregated importer's product structure

Result: the list of potential products that appear both in exporter's and importer's lists and thus could form potential trade flows

Step 2: Price difference

- Calculate the difference in prices of exporter and importer for each product controlling for tariffs and transportation costs.
- We use unit value (UV) measured in USD per kg as a proxy of price:
$$UV_{difference} = UV_{importer} - 1.1 \cdot (1 + duty_{importer}) \cdot UV_{exporter}$$
- It is assumed that trade flow will exist only if exporter can get higher price on new import market compared to price that it gets on other markets. It means that only for $UV_{difference} > 0$, there is a potential for exports

Result: the list of products with positive $UV_{difference}$ thus having export potential

Annex 1.2. Trade complementarity model (2/4)

Step 3: Quality gap control

- We exclude products, for which the difference in exporter and importer prices is high as likely these products are of different type/quality and thus exporter supply and import demand structures do not match de facto.

$$UV_{ratio} = UV_{importer} / (1.1 \cdot (1 + duty_{importer}) \cdot UV_{exporter})$$

- We assume that quality gap occurs when $UV_{ratio} > 5$

Result: the list of products with no (controlled) quality gap and thus having export potential

Annex 1.2. Trade complementarity model (3/4)

Step 4: Potential volume

- For products with positive $UV_{difference}$ and controlled quality gap, we estimate potential volume of exports in kg
- As a control for imperfect elasticity of substitution among products from different partners (Armington elasticity), we assume that imports of any single product cannot be substituted by more than a quarter. It is further assumed that exporter will be ready to supply in addition or reorient to new market up to a half of its current exports
- Thus, potential volume is measured as minimum of two figures – a half of exports volume and a quarter of imports volume

Result: potential volumes per product

Annex 1.2. Trade complementarity model (4/4)

Step 5: Potential value

- We assume that the price difference that generated trade flow is equally split between exporter and importer
- We estimate potential value of exports multiplying potential volume on the expression $UV_{exporter} + 0.5 \cdot UV_{difference}$
- We estimate potential value of imports multiplying potential volume on the expression $UV_{importer} - 0.5 \cdot UV_{difference}$
- As ARM reports extensive indirect imports from TUR until 2021, we compare the estimated potential value with reported imports over last five years and select maximum of these variables as the potential imports value

Result: potential exports and imports value per product

Data sources:

- WITS for trade data
- ITC Market Access Map for ad valorem equivalents of MFN import duties