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BELARUSIAN EXPORTS TO CHINA POTENTIAL IN ITC FRAMEWORK

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Expand current and find new exports opportunities from Belarus to China is possible in several ways. Here we try to apply ITC framework to predict the best potential commodities to export. There are two approaches in ITC framework: Export Potential Indicator (EPI) – identifies products a country already exports competitively but could expand further, and Product Diversification Indicator (PDI) identifies feasible new exports. Conditions of supply, demand and ease of trade are applied. There are also tariff considerations and distance factor. There 25 most prospective exports commodities for China from Belarus with HS codes are proposed both by EPI and PDI approach in ITC framework.

Keywords: export potential; product space; export diversification; ITC Export Potential Map.

ПОТЕНЦИАЛ БЕЛОРУССКОГО ЭКСПОРТА В КИТАЙ В РАМКАХ ITC

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Расширить существующие и найти новые возможности для экспорта из Беларуси в Китай можно несколькими способами. Здесь мы пытаемся использовать модель ITC для прогнозирования наилучших потенциальных товаров для экспорта. В рамках ITC существует два подхода: индикатор экспортного потенциала (EPI) – определяет продукты, которые страна уже экспортирует, но может поставлять еще больше, и индикатор диверсификации продукции (PDI) определяет возможные новые экспортные товары. Применяются условия спроса, предложения и простоты торговли. Учитываются также тарифные соображения и фактор расстояния. В рамках ITC предлагается 25 наиболее перспективных экспортных товаров для Китая из Беларуси с кодами ТН ВЭД как по EPI, так и по PDI.

Ключевые слова: экспортный потенциал; пространство продуктов; диверсификация экспорта; карта экспортного потенциала ITC

To make Belarusian exports to China optimal they should meet 3 criteria: 1) It should be in line with economic growth and development of Belarus; 2) It should be in best interests of China; 3) It should be feasible given Belarusian production and logistics available.

There are three modern approaches how to achieve this objective:

1. To develop local model of export basket improvement by experts (hand-made) [1].
2. To create model of export basket improvement using machine-learning and AI [2].
3. To adopt ready-made global framework of export expansion and diversification.

In this work we try to turn to the third option as it is more applied and ready to use in business and trade policies: export potential framework by The International Trade Centre (ITC) – a subsidiary agency of UNCTAD and the WTO [3].

ITC's Methodology. The International Trade Centre (ITC) defines export potential as the unrealized trade value a country could achieve in a target market under optimal conditions, accounting for three core dimensions:

1) Supply Capacity: evaluates a country's ability to produce and export goods competitively, adjusted for global tariff disadvantages (GTD) and re-export distortions. Utilizes dynamic market share projections weighted by GDP growth.

2) Demand Conditions: estimates import growth in target markets using income elasticity (ε_{mdc}), population trends, and scheduled tariff reductions. Incorporates product-specific distance sensitivity (e. g., perishable goods).

3) Ease of Trade: measures bilateral trade efficiency relative to global benchmarks (e. g., logistics, cultural proximity).

The structural model decomposes potential exports (EPI_{ijk}) as:

$$EPI_{ijk} = Supply_{ik}^{EPI} \times Ease_{ij} \times Demand_{ijk}.$$

This avoids econometric complexities by leveraging two-dimensional trade data and forward-looking adjustments (ITC, 2022).

ITC EPI Approach: Maximizing Existing Exports [4]. The Export Potential Indicator (EPI) identifies products a country already exports competitively but could expand further. Key components include:

- *Supply Capacity:*

Dynamic Market Share: $\text{Projected MS}_{ik} = \frac{v_{ik} \times \Delta GDP_i}{\sum_i \left(v_{ik} \times \Delta GDP_i\right)}$, where v_{ik} is historical exports and ΔGDP_i projects economic growth.

Global Tariff Disadvantage (GTD): $GTD_{ik} = \left(\frac{1 + \text{Avg. Tariff}_{ik}}{1 + \text{Avg. Global Tariff}_k}\right)^{\sigma_k}$, where σ_k is substitution elasticity.

- *Demand Conditions:*

Projected Imports: $\text{Projected M}_{jk} = v_{jk} \times \left(\frac{\Delta GDP_j}{\Delta Pop_j}\right)^{\varepsilon_{mlr}} \times \Delta Pop_j \times \zeta_{dc}$, Market Tariff Advantage (MTA): Adjusts for preferential tariffs.

Distance Factor: Penalizes geographically sensitive products.

- *Ease of Trade:*

$$Ease_{ij} = \frac{v_{ij}}{\sum_k \left(Supply_{ik}^{EPI} \times Demand_{ijk}\right)},$$

***ITC PDI* Approach: Diversification into New Products [5]**

The Product Diversification Indicator (PDI) identifies feasible new exports using product space theory:

- Supply Density:

Measures proximity of a new product (k) to existing capabilities: $Density_{ik} = \frac{\sum_l \left(CA_{il} \cdot \phi_{kl}\right)}{\sum_l \phi_{kl}}$, where ϕ_{kl} = probability of exporting k given expertise in l.

- Demand and Ease of Trade aligns with EPI's demand projections and trade efficiency metrics.

- Natural Endowment Filters: excludes products requiring unavailable resources (e. g., rare earths for HS28 chemicals).

The products with greatest existing export potential from Belarus to China are Rapeseed oil (erucic acid < 2 %), crude, Coniferous wood, sawn/chipped lengthwise, > 6 mm and Fowls, cuts &

offal, frozen. Belarus has the highest supply capacity in Rapeseed oil (erucic acid < 2 %), crude. Motor vehicles for the transport of < 10 persons are the product that faces the strongest demand potential in China (see tab. 1).

Table 1

EPI Approach: Maximizing Existing Exports from Belarus to China

Rank by Potential	HS Code	Commodity	China's Projected Imports, bn USD	Tariff to Belarus, %
1	151411	Rapeseed oil (erucic acid <2%), crude	1,900	9.0
2	4407Xa	Coniferous wood, sawn/chipped lengthwise, >6 mm	3,900	na
3	020714	Fowls, cuts & offal, frozen	3,500	5.2
4	020230	Bovine cuts boneless, frozen	12,000	12.0
5	470321	Chemical wood pulp, soda/sulphate (coniferous, (semi-)bleached)	6,300	0.0
6	020220	Bovine cuts bone in, frozen, n.e.s.	1,200	12.0
7	40210	Low-fat milk powder	1,200	10.0
8	230641	Oilcake from rape/colza seeds, <2% erucic acid	0,828	5.0
9	530130	Flax tow & waste	0,089	6.0
10	040410	Whey	0,832	6.0
11	740321	Brass, unwrought	0,900	1.0
12	4407Xb	Wood, sawn/chipped lengthwise, >6 mm, n.e.s.	2,200	na
13	8703XX	Motor vehicles for the transport of <10 persons	46,000	na
14	081190	Fruits & nuts, frozen, n.e.s.	0,758	30.0
15	381121	Prepared additives for oil lubricants with bituminous mineral oil	0,954	6.5
16	470329	Chemical wood pulp, soda/sulphate (non-coniferous, (semi-) bleached)	7,100	0.0
17	040510	Butter	0,545	10.0
18	441011	Wooden particle board, n.e.s.	0,216	4.0
19	040221	Milk powder	2,300	10.0
20	901390	Parts & accessories for liquid crystal devices/lasers, n.e.s.	1,100	1.5
21	721420	Bars & rods of iron/steel, deformed	0,447	3.0
22	854449	Electric conductors <=1,000V, without connectors	1,100	3.5
23	4421XX	Articles of wood, n.e.s.	0,338	na
24	300420	Medicaments containing antibiotics, for retail sale	1,200	0.0
25	30XXXX	Medicaments for retail sale, n.e.s.	16,000	na

Source: [3].

Belarus's best options for export diversification in China are Rape/colza seeds, < 2 % erucic acid, Barley and Maize. Belarus finds Urea easiest to reach. Soya beans is the product that faces the strongest demand potential in China.

ITC's EPI and PDI frameworks enable Belarus to systematically exploit existing strengths and diversify into high-potential sectors. Addressing logistical and regulatory barriers could unlock $2.5B in unrealized exports to China by 2030.

Table 2

PDI Approach: Diversification into Exports of New Products from Belarus to China

Rank by Potential	HS Code	Commodity	China's Projected Imports, bn USD	Tariff to Belarus, %
1	120510	Rape/colza seeds, <2 % erucic acid	2,000	4.5
2	1003	Barley	2,700	1.5
3	100590	Maize	6,400	65.0
4	4403Xc	Wood in the rough, n.e.s.	2,500	na
5	720260	Ferro-nickel	13,000	2.0
6	310520	Mineral/chemical fertilizers with nitrogen, phosphorus & potassium	504	50.0
7	0102	Live bovine animals	493	7.6
8	310420	Potassium chloride as fertilizer	3,300	3.0
9	120590	Rape/colza seeds, >=2 % erucic acid	124	4.5
10	740311	Copper cathodes	30,000	2.0
11	1201	Soya beans	52,000	1.5
12	440791	Oak, sawn/chipped lengthwise, sliced/peeled, >6mm	456	0.0
13	152000	Glycerol, crude; glycerol waters & lyes	522	20.0
14	440795	Ash, sawn/chipped lengthwise, >6 mm	172	0.0
15	1004	Oats	115	1.0
16	440810	Sheets for veneering, of coniferous wood, <=6mm	47	4.5
17	310210	Urea	25	50.0
18	470500	Wood pulp, mechanical & chemical processes	748	0.0
19	440792	Beech, sawn/chipped lengthwise, sliced/peeled, >6mm	268	0.0
20	120600	Sunflower seeds	135	5.0
21	271600	Electrical energy	228	0.0
22	0809XX	Cherries, fresh	2,000	na
23	730900	Reservoirs of iron/steel, >300L	146	8.0
24	040900	Honey	70	15.0
25	0304Xa	Fish cuts, fresh, n.e.s.	14	na

Source: [3].

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