

National Strategy to Increase Foreign Direct Investment in Ukraine

Section 2.1: Transport Infrastructure

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This and other documents constituting the entirety of the Strategy were prepared as of January 29, 2021. No further amendments to quantitative data or recommendations therein were made after that date.

Disclaimer

Key terms and abbreviations (1/3)

Names

GE	General Electric
GOM	Government of Montenegro
GOU	Government of Ukraine

Periods

9mXX	30 September 20XX
FYXX	Fiscal year ended 31 December 20XX
Historical period	FY13, FY14, FY15, TTM16, 9m15 and 9m16
JanXX	31 January 20XX
Q1XX	First quarter of XX
TTM	Trailing twelve months

Organizations

ACI	Airports Council International
CMU	Cabinet of Ministers of Ukraine
EIB	European Investment Bank
EBA	European Business Association
EBRD	European Bank for Reconstruction and Development
ESPO	European Sea Ports Organisation
EU	European Union
FEU	Federation of Employers of Ukraine
FIDIC	International Federation of Consulting Engineers

FTEU

Federation of transport employers of Ukraine

IATA

International Air Transport Association

IAPH

International Association of Ports and Harbors

ICAO

International Civil Aviation Organization

IFI

international finance institution

IMO

International Maritime Organization

MIU

Ministry of Infrastructure of Ukraine

OECD

Organisation for Economic Cooperation and Development

SAAU

State Aviation Administration of Ukraine

SMSU

State Migration Service of Ukraine

UITP

Union Internationale des Transports Publics

UPU

Universal Postal Union

USPA

Ukrainian Sea Ports Authority

WEF

World Economic Forum

WB

World Bank

Infrastructure

ANSP

Air Navigation Service Provider

CSP

commercial sea port

CT

container terminal

CTS

crane technical services

MMTH

multi-modal transport hub

Ro-ro

roll-on/roll-off

TLC

transport-logistic cluster

Key terms and abbreviations (2/3)

TLC	transport logistic cluster
TMS	transportation management system

Airports

BEG	Belgrade
CWC	Chernivtsi Leonid Kadeniuk International Airport
DNK	Dnipropetrovsk International Airport
IEV	Igor Sikorsky Kyiv International Airport (Zhuliany)
IFO	Ivano-Frankivsk International Airport
KBP	Boryspil International Airport
KHE	Kherson International Airport
HRK	Kharkiv International Airport
LWO	Lviv Danylo Halytskyi International Airport
ODS	Odesa International Airport
OZH	Zaporizhzhia International Airport
RWN	Rivne International Airport
SOF	Sofia International Airport
TGD	Podgorica Airport
TIV	Tivat Airport
ZAEZ	Zhengzhou Airport Economy Zone

Units

b	billion
CN¥	Chinese yuan

EUR	Euro
FTE	full-time equivalent
ha	hectares
km	kilometer
m	million
m²	square meters
mm	millimeter
PAX	passengers approximately
sq	square
t	tonne
TEU	twenty-foot equivalent unit
ths	thousand
UAH	Ukrainian hryvnia
USD	United States dollar
Q	quarter
Other	
ANSP	Air navigation service provider
AEO	authorized economic operator
ARRRA	Antwerp-Rotterdam-Rhine-Ruhr Area
CapEx	Capital expenditures
CAGR	compound annual growth rate
CEE	Central and Eastern Europe
COVID	Coronavirus disease

Key terms and abbreviations (3/3)

CWE	Central and Western Europe	OPRC	Output - and Performance-based Road Contracts
DWT	deadweight	P-o-p	period over period
DSTU	National standard of Ukraine	PPP	public-private partnership
EBITDA	earnings before interest, taxes, depreciation and amortization	PSO	public service obligation
e.g.	exempli gratia, for example	R&D	Research and development
ECAA	European Common Aviation	RF	Road fund
EMIS	Emerging Markets Information Service	SA	South America
EV	electric vehicle	SARPs	Standards and recommended practices
FDI	foreign direct investments	SE	state enterprise
FS	feasibility study	SOE	state-owned enterprise
GCI	Global Competitiveness Index	USSR	Ukrainian Soviet Socialist Republic
GDP	Gross domestic product	UZ	Ukrzaliznytsia
i.e.	id est and means, in other words	UZSHK	Ukrainian railway speeding company
incl.	including	Ukrstat	State Statistics Service of Ukraine
IPO	Initial public offering	UTLC	Ukrainian Transport Logistic Center
JSC	joint stock company	vs	versus
JV	joint venture		
KPI	Key performance indicator		
LCC	Low-Cost Carriers		
LLC	limited liability company		
LPI	Logistics Performance Index		
NA	North America		
NI	net income		

Section 2.1

Transport Infrastructure



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Executive Summary

Executive Summary: Introduction

If energy is the lifeblood of the economy, transport infrastructure is undeniably its combination of functional systems: backbone, arteries and more. A cornerstone of the 'critical infrastructure triad,' transport infrastructure shares the same key feature as energy and digital infrastructure sectors: it is both a potential target for FDI and a critical enabler for nearly all other industries.

Despite popular notions, the global transportation industry has not been evolving as rapidly as the global technological growth pace would suggest. Part of the reason is the need for mass adoption of any technological revolutions, and the ostensibly high investment outlays required to introduce new means and modes of transport *en masse*. At that, the sector is nonetheless driven by the same mega-trends that guide global development: sustainability and digitalization. 2020 added a new one – the need to adapt to COVID-19 reality, which, in broader terms, may be defined as resilience. All three are duly affected by continued urbanization, presenting a set of new challenges for the transport infrastructure:

- The global urban population is expected to comprise 70% of the global population in 2050, which will lead to the development of both city and intercity transportations and related infrastructure
- Travel across multiple countries where data and money cross borders and multiple companies are involved, will be available to users through a single interface in their smartphone, and will create new game rules for the existing transport fleet
- Stricter emissions targets. The EU has recently announced its European Green Deal, one of the measures considered is to apply fuel taxes on the aviation industry, which may lead to a decrease in the competitiveness of air transportation compared to other modes.

- Wider use of electric-powered and autonomous vehicles will require additional infrastructure, driving the need for repurposing and expanding existing facilities (i.e., EV charging stations or prop-in points for autonomous transport at car parks)
- Deployment of supply chain visibility tools that provide transparency into capacity constraints at first-, second- and third-tier suppliers, again reshaping existing infrastructure
- Reshaping existing logistics routes to enable long-term resilience to pandemic-type logistics shocks
- Reassessing investment risks, transaction structures and reviewing existing operating models in the sector

Ukraine inherited from the former Soviet Union extensive road and railway networks, high capacities of sea and river ports, as well as airports in almost every region. That legacy has largely been squandered due to lack of systemic investments for decades, leading to significant deterioration of the infrastructure.

While the infrastructure rehabilitation pace picked up over the last decade, precious time was lost. Thus, while the global sector is generally well-positioned to meet the recent trends of digitalization, sustainability and reshaping after COVID-19, Ukraine's key priorities are still rehabilitation of aging strategic infrastructure, unlocking bottlenecks, and improving speed and quality of services for economic development.

Within our analysis, we provide brief review of the key subsectors: ports, railways, airports, roads, transport fleet and delivery:

Executive Summary: Introduction

Transport fleet is represented by ships, rolling stock, heavy vehicles, aircraft and public transport. It is typically financed by debt instead of equity that is also relevant to the latest public transport renewal by municipalities through IFI or state-owned banks financing. However, transport fleet upgrade programs may enable FDI in Advanced Manufacturing.

Within **Postal services**, Ukrposhta is the largest company without identified FDI potential. Other segments of delivery, as well as warehouses, are mostly controlled by Ukrainian companies where we did not find significant development potential.

Ports are represented by 18 sea ports (incl. 5 Crimean) and over 90 stevedoring companies. Regardless of restrictions imposed by COVID-19, handling volumes continue to grow several years in a row. The state still controls a dozen of state-owned stevedoring companies that are losing their market share. Private sea terminals are attractive business targets for foreign investors that may now also consider river terminals construction.

Railways are represented by an extensive but obsolete infrastructure network that requires maintenance and/or renovation in the short and medium term. With state company JSC Ukrzaliznytsya holding a monopoly in passenger and cargo transportation, the sub-sector is stagnating due to both inefficient regulation and lack of locomotives.

Airports are represented by 13 – municipal-owned, 5 – private-operated, 2 – public-owned companies and only 20% of them do not require major repairs of the existing infrastructure. Nevertheless, over the last 5 years, the traffic of Ukrainian airports has doubled, but the COVID-imposed restrictions coupled with absence of state support have undermined subsector potential in the short term.

Roads are represented by 169,000 km of the local and national road network, of which 90%+ requires rehabilitation. The state established a special fund for roads reconstruction and focused on road rehabilitation as one of the key priorities. These efforts, however, are still insufficient to cover the existing need for investments.

Across the following pages, we discuss what may be done to tackle the challenges above, niches that look the most promising for FDI and barriers that preclude the specific sub-sectors' potential from being fully unlocked. Across that analysis, two overarching trends/solutions shape up to be most relevant for Ukraine's status quo - **Multimodality and Containerization and Clusterization**.

It is the latter, defined as the concentrated development of production facilities around the transport infrastructure assets in order to save on transportation and logistic costs, that provides the best bet for FDI efforts in short to mid-term, in our opinion. This approach has been proven globally to be highly efficient both for FDI efforts in the core sector and activation of auxiliary sectors and SME development around those clusters.

Executive Summary: Attractiveness Factors and Development Directions

The list of advantages:

- ▶ Attractive business models supported by stable cargo flows (export, import), in some cases - hard currency-denominated tariffs.
- ▶ A sizeable list of publicly-owned assets and other investment projects that may be proposed to potential investors.
- ▶ Certain sub-sectors of infrastructure are not centrally regulated on price (i.e., stevedoring companies and airport terminals)
- ▶ Development of the sector is considered one of the top priorities of the current government, ensuring special attention from the authorities to incoming potential investors and investment opportunities.

Based on our analysis, we identified the following

KEY FACTORS

influencing the potential attractiveness of the infrastructure sector for investors



The infrastructure sector in Ukraine could be considered an attractive one for potential FDI.

We see the following

KEY DIRECTIONS

Recent developments:



- ▶ Recent pilot port concession of Olvia and Kherson ports as well as presentations of new PPP projects showed interest of foreign investors to Ukrainian PPP projects;
- ▶ Modern concession and privatization laws adopted recently allow structuring attractive and bankable deals according to best practices;
- ▶ Adoption of a new [Law of Ukraine "On Inland Waterways"](#) will allow reviving the river transportation – one of the cheapest and environmental-friendly ways of transporting goods.

I

Concession/privatization of all state-owned stevedoring companies, development of existing and new port facilities (incl. in clusters with productions, on rivers)

II

Concession or privatization of railway supporting facilities – passenger stations and container terminals

III

Brownfield and potentially greenfield road projects, like ones, recently announced in the new road PPP program

IV

Development of multimodal infrastructure, including in coordination with industrial parks as the anchors

Executive Summary: Gaps, Barriers and Enablers

Based on our analysis, we identified the following

KEY GAPS

limiting the potential attractiveness of the infrastructure sector for investors



Nevertheless, gaps and barriers could be effectively mitigated, underpinned by the following

KEY ENABLERS

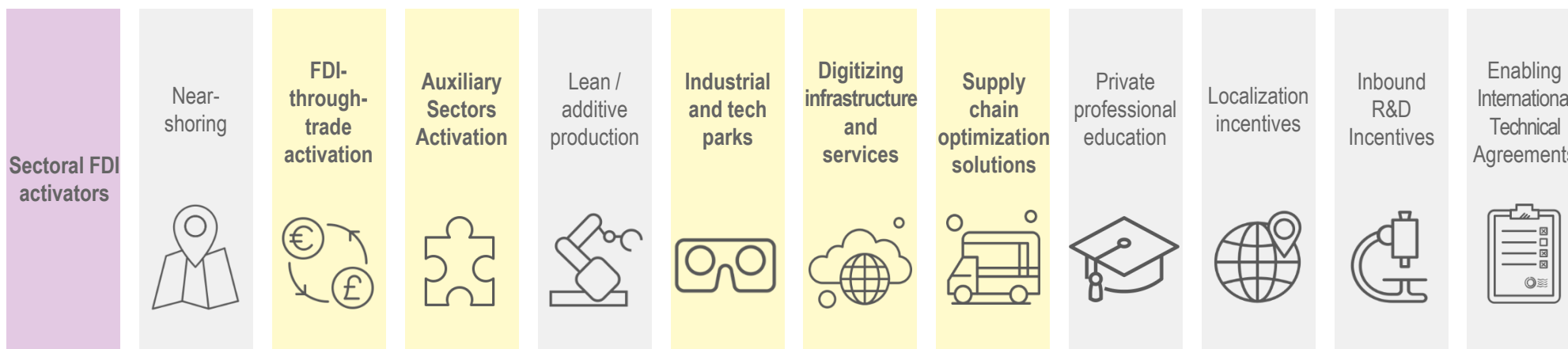
Market gaps:

- ▶ Outdated corporate governance and cross-subsidizing business models of SOEs affect market players and limit FDI potential.
- ▶ Lack of funding for common infrastructure hinders the development of private projects based on it
- ▶ Lack of transparent tariff regulation for state monopolies in the sector affects private players and constrain FDI potential.

Legal barriers:



- ▶ Postponed adoption of the new Law on Railway transport that should initiate markets liberalization
- ▶ Absence of long-term budget commitments for the availability of payment-based PPPs
- ▶ Inefficient procedure for a buyout of land plots and transferring water fund lands into use for transport infrastructure construction
- ▶ Absence of mechanism for compensation of the private investments in public infrastructure objects



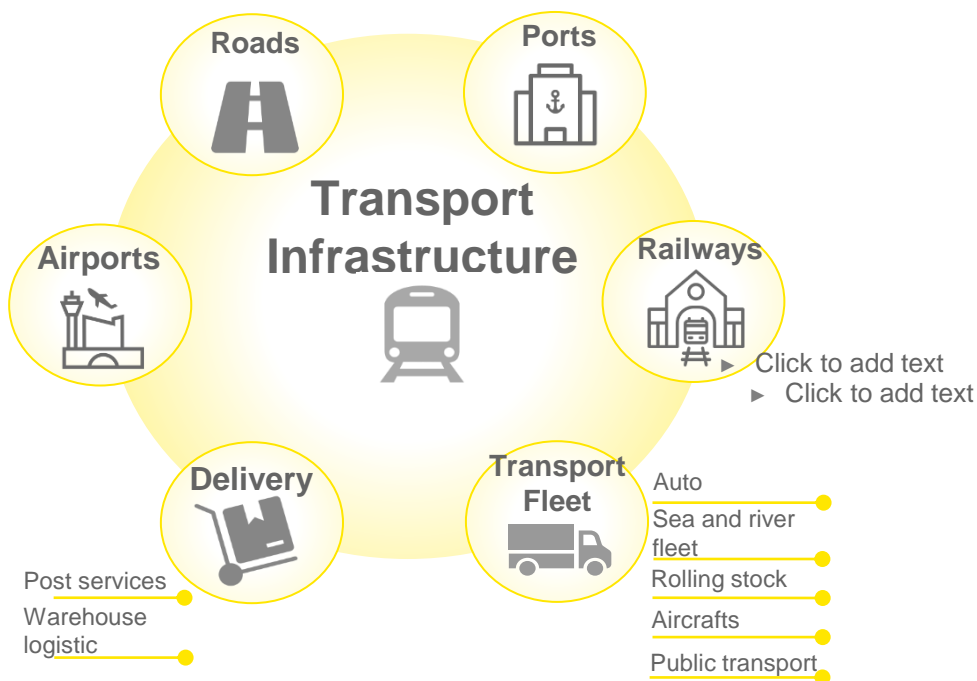
2.1.1. Introduction



2.1.1. Introduction

Ukraine's transport infrastructure sector includes the following subsectors: ports, railways, airports, roads, delivery, and transport fleet

Subsectoral decomposition of Transport Infrastructure sector



Key facts in 2019

Water infrastructure

- ▶ 13 sea ports and 16 river ports and terminals;
- ▶ 2,241 km of internal waterways;

Rail infrastructure

- ▶ 19,787 km of operational network of railways in Ukraine;
- ▶ 1,402 railway stations;

Air infrastructure

- ▶ 20 airports and airfields providing commercial flights;

Road management

- ▶ 52.0 ths km and 117.6 ths km of roads of state and local importance;

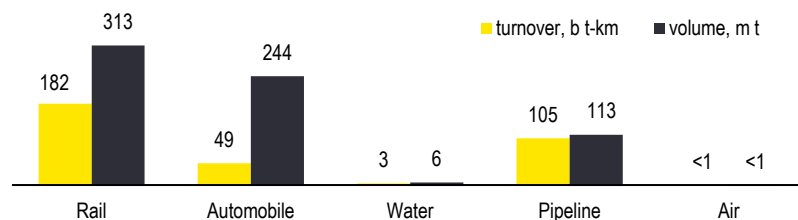
Delivery services

- ▶ More than 11 ths objects of postal service;
- ▶ 100% coverage with postal facilities;

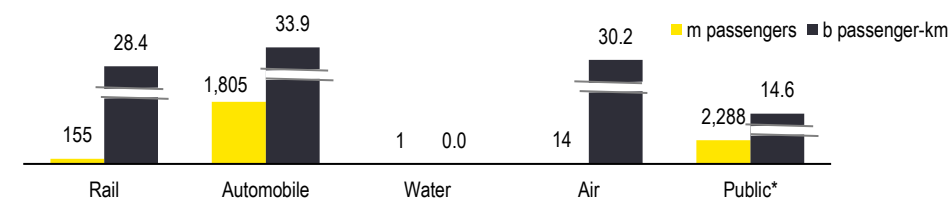
Transport fleet

- ▶ 112.6 km of metro rails, 88 metro stations in 3 cities;
- ▶ 194 ths of rail cars, over 3 ths of locomotives;

Cargo turnover and transportation volumes by means of transport, 2019



Passenger turnover and transportation volumes by means of transport, 2019



Source: Ukrstat
(*) Calculated as sum of passengers transported by tram, trolleybus and subway transport

Delivery and Transport Fleet subsectors are not covered in detail within the sectoral analysis as we do not see clear FDI potential for them in Ukraine. For more information on our rationale for their exclusion from the analysis, see pages 13-22.

2.1.1. Introduction

Global trends are driven by digitalization, sustainability and COVID-19 agenda. Ukraine is lagging behind and has to complete previous steps



Developments in technologies

Technologies revolutionize almost all aspects of infrastructure. New and emerging technologies will be a big part of the solution to the world's infrastructure challenges.

1 Mobility in smartphones

Travel across multiple countries where data and money cross borders and various companies are involved will be available to users through a single interface in their smartphone, and will create new game rules for the existing transport fleet

2 Robot-based solutions

Wider use of autonomous vehicles and mechanisms with a decrease in the human factor will require additional infrastructure facilities

3 Remote cargo control

Deployment of supply chain visibility tools that provide transparency into capacity constraints at first-, second- and third-tier suppliers, reshaping existing infrastructure



Reliability and sustainability

While the COVID crisis has recently been the focus of global attention, the effects of climate change and urbanization continue to intensify and pose significant challenges to which governments and the infrastructure community will need to respond.

1 Urbanization

The global urban population is expected to comprise 70% of the worldwide population in 2050, which will lead to the development of both city and intercity transportations and related infrastructure

2 Stricter emissions targets

The EU has recently announced its European Green Deal, one of the measures considered is to apply fuel taxes on the aviation industry, which may lead to a decrease in the competitiveness of air transportation compared to other modes.

3 New EV infrastructure

Repurposing existing infrastructure, as car parks onto charging stations for EV, or prop-in points for autonomous vehicles



Post-COVID reshaping

Lockdown measures caused falls in formerly stable revenues and challenged the current operating models of the sector.

1 Remote work

Remote working will lead to a permanent shift in working patterns, with consequent impacts on transport infrastructure, mainly in developed countries with high staff mobility

2 Localization

The Virus outbreak revealed the fragility of supply chains and the Western reliance on Asian production, as companies had to quickly identify secondary suppliers, leading to reshaping the existing logistic routes

3 Risks reassessment for PPP projects

The COVID crisis is likely to entail a reassessment of investment risks and stress testing, as well as increased demand for forecasting services, along with a shift to more conservative structures of PPP transactions and risk allocation

Sources: public resources, EY analysis

2.1.1. Introduction

Well-known trends are still relevant for Ukraine. Multimodality and containerization

Containerization

Transportation of cargoes in containers to minimize congestion, shorten shipping time, and minify losses

Need for containerization

90% of the global cargo may be shipped in containers. Commodities such as malt, peat moss, fertilizers, timber, scrap, which are core cargoes, require containerized to a greater extent

Growth in international trade

Surge in long-distance transportation caused by growing demand for goods in developing countries stimulates containerization to provide faster and more safe handling with lower costs

EU

- ▶ Europe has a developed container shipping market with a 45% containerization rate;
- ▶ More than 200 container terminals operate in Europe. Moreover, the construction of multimodal container terminals is developing, for example, Duisburg Multimodal Terminal;
- ▶ 400+ of regular connections and 30 m TEU of railway cargo transportation;

Belarus

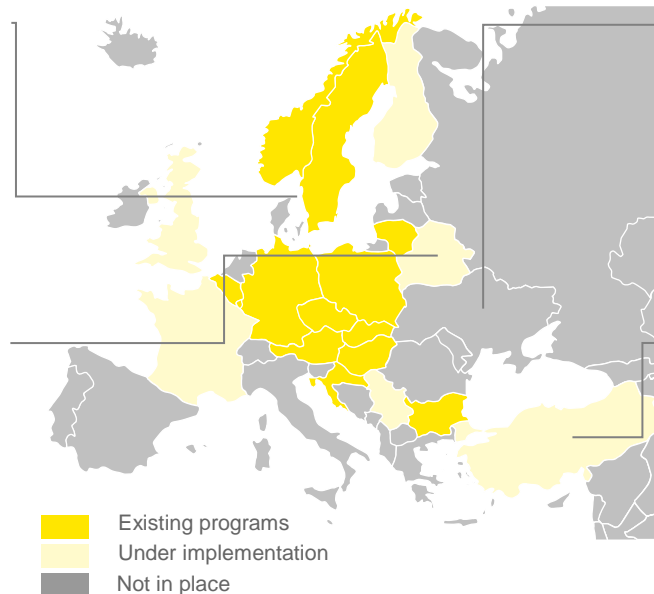
- ▶ Most container terminals were built from 2000 to 2015. During this period, the number of container traffic increased by 7 times. Containerization rate reached 15%;
- ▶ There are 9 container terminals in the country, 12 regular connections with annual transportation volume by rail of 0.38 m TEU;



Multimodality and Containerization

The development of containerization and multimodality in Ukraine is constrained by insufficient regulation, lack of state support and underdeveloped infrastructure

The EU multimodal transportation funding programs, as of September, 2020



Source: BSL Transportation Consultants

Multimodality

Transportation of goods by different modes of transport for optimization of routing and total costs

Shift toward multimodal transportation

Multimodal cargo transportation is expected to grow by nearly 150% between 2019 and 2029. Key growth drivers are trade relations between Europe and China, containerization and automatization

Commercial efficiency

Multimodality promotes door-to-door cargo services, eases and surges billing procedures, creates a basis for streamlining, cargo tracking and TMS development

Ukraine

- ▶ Container transportation in Ukraine is at an early stage of development;
- ▶ The containerization rate in Ukraine remains weak at 2% with 7 terminals;
- ▶ At the same time, the volume of rail transportation is 0.13 m TEU with 9 regular connections;

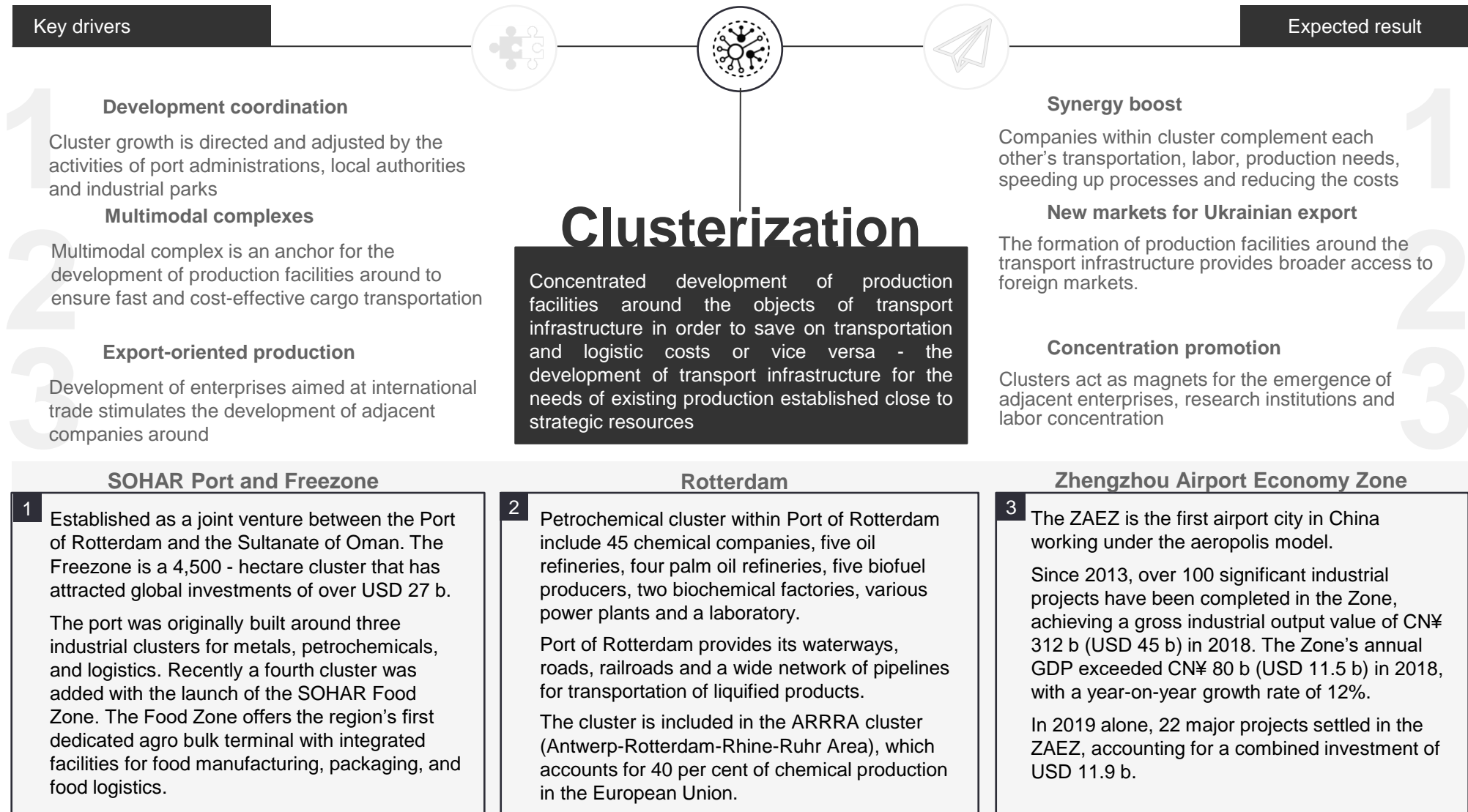
Turkey

- ▶ 11.6 m TEU containers and 484 m t of cargo were handled at the ports of Turkey in 2019;
- ▶ There are 20 container terminals;
- ▶ Cargo containerization rate was equaled to 10% in 2019;

Source: EMIS, EU calculations and analysis

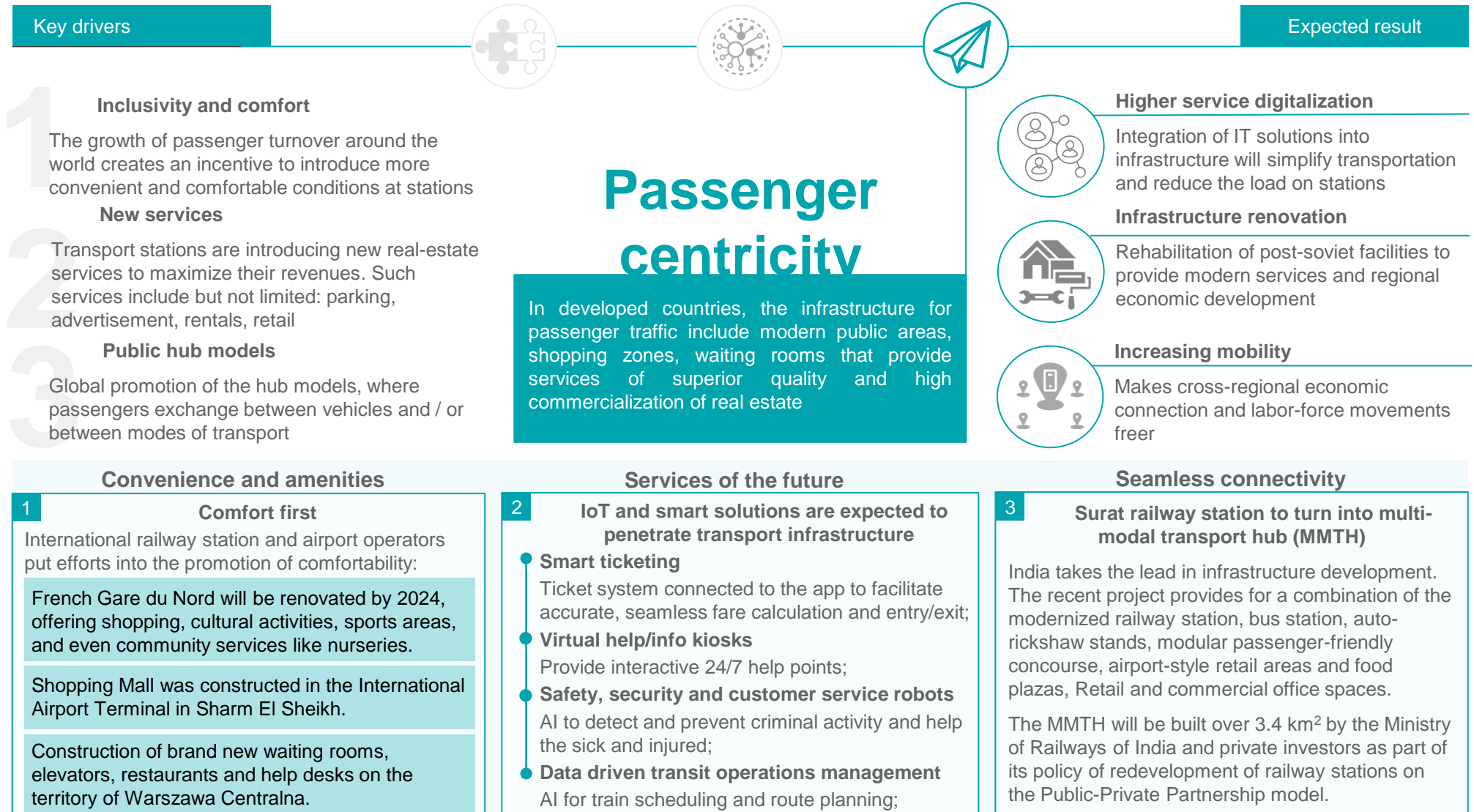
2.1.1. Introduction

Well-known trends still relevant for Ukraine. Clusterization



2.1.1. Introduction

Well-known trends still relevant for Ukraine. Passenger centricity



2.1.1. Introduction

Examples of Railway stations reconstructions to ensure passenger centricity

Comfort first

1

Roma Tiburtina, Italy

The station is a heavily trafficked transit hub, it's second railway station by volume in Italy.



In 2011, after three years of work, the station was completely renovated as part of the Trans European Transport Network project

Key features:

- ▶ Increased mobility by an assortment of 29 escalators and 52 elevators;
- ▶ Greater isolation from noise and vibration generated by passing trains;
- ▶ Shopping center, offices, parking spaces (100,000 parking spaces added).

2

Poznan Główny Railway Station, Poland

The Station is located in Poland's fifth largest city, roughly 200 miles west of Warsaw.



In 2012-2013 Polish National Railways completed a new station building together with a retail and shopping centre.

Key features:

- ▶ 58,000 sq. m. of leasable space, 230 shops, and 35 bars, restaurants and cafés.
- ▶ new ticketing and waiting areas which provide a sense of place, safety and security for individuals;
- ▶ new road design structure near the Station that features three kilometres of bicycle lanes.

3

Railway Station in Sopot, Poland

The Station is located in a small town (approx. 40,000 inhabitants) on Poland's Baltic coast.



In 2013-2015 city council with a private partner was involved in developing the Station areas.

Key features:

- ▶ New hotel and a complex of commercial and service centres;
- ▶ Lively promenade with numerous cafes and resting spots;
- ▶ Underground parking for 240 vehicles.

2.1.1. Introduction

Historic FDI in infrastructure sector

Unlocked FDI from Brands, 2015-2020



"Economic growth in the world is mainly thanks to innovation, while Ukrainians are ready to become pioneers, Ukrainians are able to look to the future and understand the needs of tomorrow. Ukrainians are very talented, hardworking, courageous, ambitious, creative, and this is exactly what your investment needs."

Volodymyr Zelensky
President of Ukraine

"GE is proud to be a trusted partner as Ukraine moves forward on modernizing infrastructure to accelerate growth and improve the lives of its people. We are happy to see the continued progress being achieved by the Government of Ukraine in improving the investment climate and the ease of doing business in the country."

Alex Dimitrief
Senior Vice President, GE

Unlocked FDI, 2015 – 2019*

USD 490 m

Declared FDI

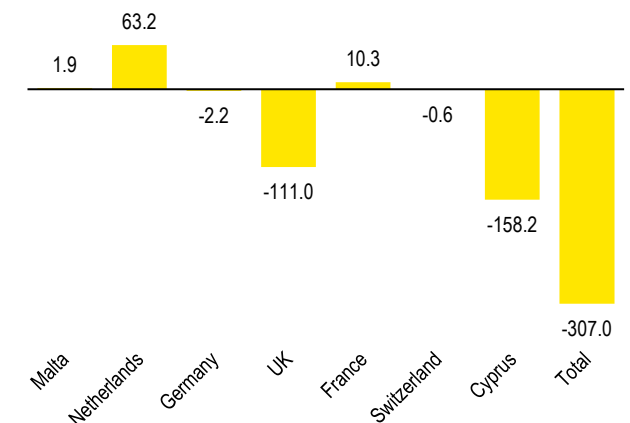
USD 110 m

Source: Ukraineinvest

Note: Expected to be approved by Ukraineinvest

During the last 5 years, the volume of investments returned prevailed over new foreign investment by major funding countries.

Net change in FDI by country 2014-2019, USD m



Source: Ukrstat

2.1.2. Omitted Sectors



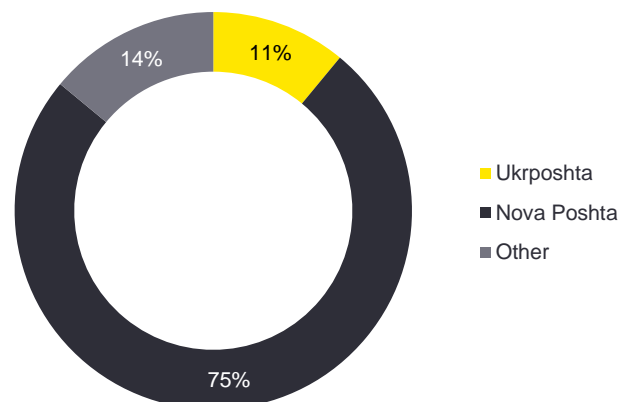
2.1.2. Omitted Sectors

The largest postal company in Ukraine is actively developing. There are no plans to attract any forms of private capital to Ukrposhta

Reasons for omitting subsector analysis



Market share of local parcel market 2019



Source: Forbes Ukraine

Local companies domination

Near 86% of the total postal market demand is covered by local players: "Nova poshta" (a private one) and Ukrposhta (SOE).

JSC Ukrposhta

UAH 7.7 bn

Revenue in 2019

62,000 FTEs

Labor force in 2019

50% of

Revenue is state-provided

National postal operator

SC Ukrposhta is the state-owned designated universal service provider for postal services and one of the leading companies in the Ukrainian postal market, with more than 200 m deliveries made annually. The nationwide branch network of Ukrposhta is comprised of more than 10,000 permanent post offices and approximately 1,000 mobile offices, making it represented in all the Ukrainian communities.

As a part of the Universal Postal Union (UPU), Ukrposhta is obliged to act as a last-mile courier in international deliverables. Besides, State-imposed public service obligations (PSO) require Ukrposhta to deliver state and civil correspondence, pensions, etc., with no regard to the profitability of such operations.

Development potential

In Oct 2020, EBRD with European Investment Bank (EIB) provided EUR 63 and EUR 30 m loan respectively to modernize the logistics network of national postal operator. Ukrposhta is to expand its infrastructure with up to three sorting hubs, 20 depots and related IT infrastructure.

Bank ambitions

- ▶ Since 2017, Ukrposhta has been actively trying to become a bank. The main declared reasons are that, according to the World Bank, 38% of Ukrainians are not in a banking system.
- ▶ Most of these people live in rural areas, where, apart from Ukrposhta, there are no banks, shops, pharmacies, and, sometimes, road infrastructure. They are the expected "target group" for the proposed Post Bank.

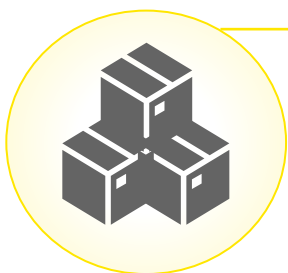
There are some plans on IPO, but it will require significant preparatory work and a political will.

2.1.2. Omitted Sectors

Warehouse logistic market is stable and the future demand is highly-likely to be covered by local developers in the short and medium terms

Reasons for omitting subsector analysis

Warehouses



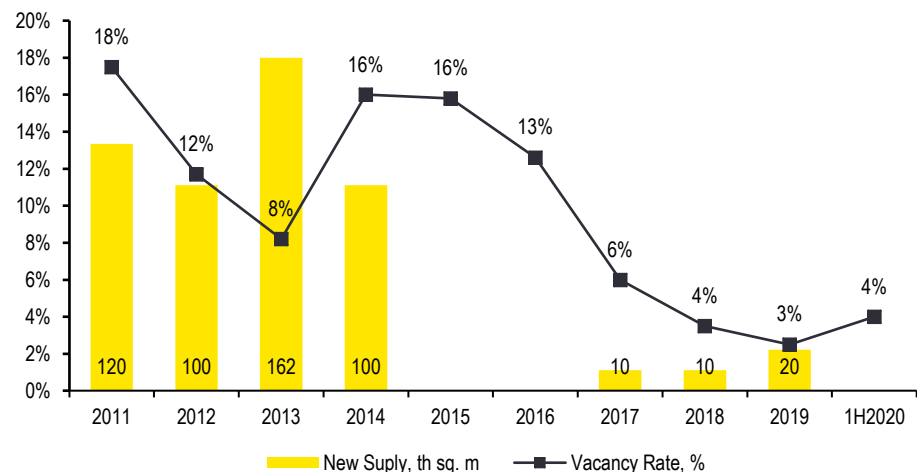
- Low returns
- Limited demand in the future
- Upcoming supply from local players

General information

The largest volume of supply on the high-quality warehouse real estate market is concentrated near Kyiv; so, we consider the Kyiv region as indicative for the whole Ukraine.

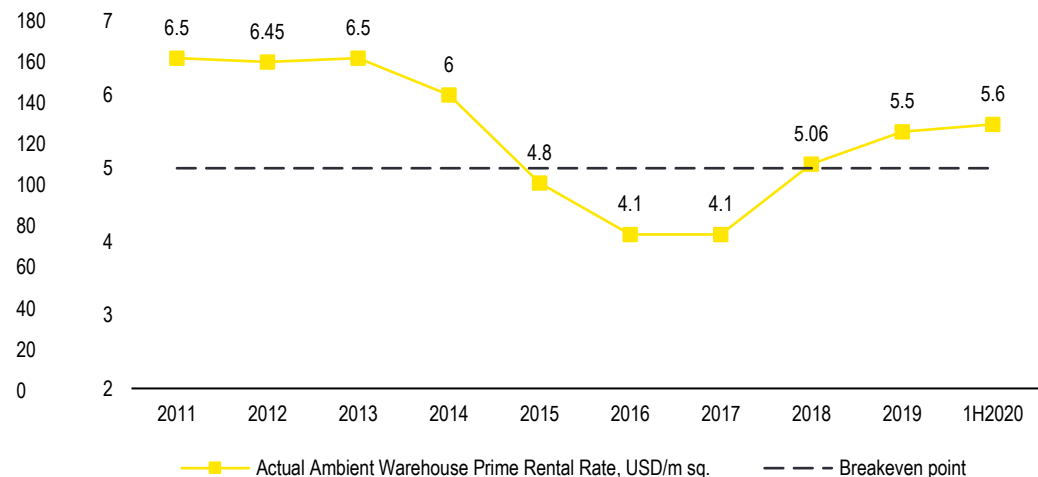
- ▶ In Q1-Q3 2020, there were no new deliveries on the warehousing and logistics property market in the Kyiv region. Nevertheless, in view of stable low vacancy that decreased to record low levels towards the end of 2019 and the prospects of the sector in light of COVID-19, development activity picked up.
- ▶ As of October 2020, Cushman & Wakefield projected that around 103,000 sq meters of new warehousing space still may be commissioned in Q4 2020 with additional 60,000 sq meters in the pipeline for 2021, which is in line with annual commissioning until 2015 and is due to deferred demand over the last five years.
- ▶ Thus, we consider existing supply is enough to cover projected demand and we see little prospects for attracting foreign investors to this subsector.

Over the past five years, growing demand has outpaced new supply



Source: CBRE Ukraine; EY analysis

As rental levels were insufficient to justify new development



Source: CBRE Ukraine; EY analysis

2.1.2. Omitted Sectors

Transport fleets of all modes are expected to grow. However, new vehicles will unlikely be financed by foreign equity

Reasons for omitting subsector analysis



Legislation drawbacks

Lack of private investments incentives

Lease and debt financing instead of equity investments

Public transport	Heavy trucks	Locomotives	Rolling stock	Ships	Aircrafts
Is not considered as a source of FDI, as this is a mostly municipal sector, with a lack of private investments incentives	Is not considered as a source of FDI, as it is already represented by foreign companies.	Is not considered as a source of FDI, as the main future demand is expected from the public side	Is not considered as a source of FDI, as the main future demand is expected from the public side	Is not considered as a source of FDI, as there is no incentives for foreign investments	Is not considered as a source of FDI, as the future demand is doubtful.

2.1.2. Omitted Sectors

Public transport is mostly in municipal ownership. Hence it is not a potential source of FDI, but its renewal may enable FDI in manufacturing

Ukrainian bus transportation system



Source: The MIU

Bus stations

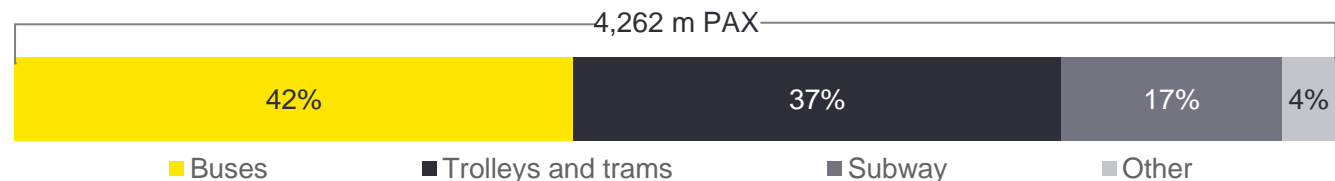
- ▶ There are 132 operators of bus stations in Ukraine, which control about 500 bus stations.
- ▶ Bus stations in Ukraine are most often monopolies. Typical sources of revenue are the commission from the sold tickets and the fee for entry into the station territory.
- ▶ Additional potential for bus stations lies in additional real-estate services, which are currently underdeveloped.
- ▶ However, the potential of developing the Bus station is subject to unshadowing the bus transportation market.

Public transport – is a transport, that in contrast to private transport, available for use by the general public, usually operated on a schedule, on established routes, and charging a fixed fee for each trip.

Public transport renovation:

- ▶ Ukrainian cities cooperate with IFIs on the replenishment of public transport since 2007. In November 2020, the GOU approved yet another order on attracting loan from the EIB for Ukrainian urban transport in the amount of EUR 200 m;
- ▶ As part of the National Transport Strategy until 2030, the MIU plans to completely replace all urban public transport with an electric one and create the appropriate infrastructure for this.

Structure of carried passengers in 2019



Source: Ukrstat, EY analysis

Busses

In-city transportations – Busses are a popular type of municipal transport which is widely represented in Ukrainian cities. Local governments are responsible for the fleet. Private companies are sometimes involved.

Intercity transportations – are completely private. Poor regulation resulted in a high level of the shadow economy (from 30 to 40%) and low quality of fleet:

- ▶ The average age of bus fleet is 16 years;
- ▶ Only 12% of busses have the capacity to carry more than 20 passengers.

Municipal electro transport

Trolleys and trams – Commonly used municipal transport, widely represented in Ukrainian cities. Local governments are responsible for the fleet. Private investors are not involved.

Subway – Municipal owned system of rapid transport, represented in largest Ukrainian cities: Kyiv, Kharkiv and Dnipro. Local governments are responsible for the subway expansion. Private investors are not involved.

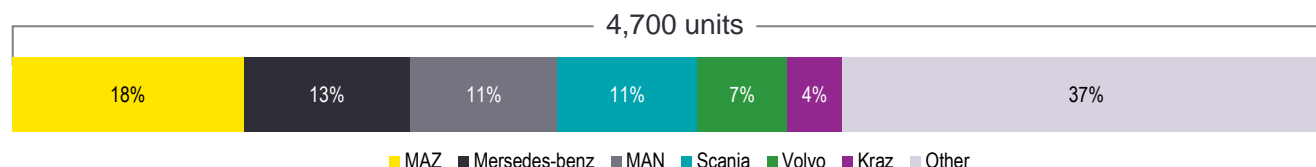
2.1.2. Omitted Sectors

The heavy trucks fleet is continuously growing, but not through equity investments

Features of the heavy trucks fleet

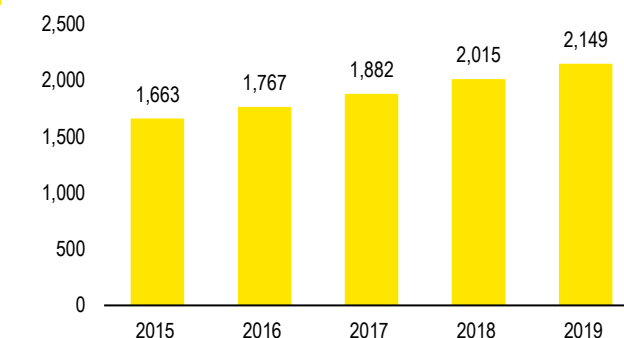
- ▶ The commercial road freight transportation market in Ukraine is completely private and consists of local and foreign companies.
- ▶ Over the last 5 years, the total fleet of heavy-duty trucks on the roads has been steadily increasing due to the organic growth of cargo turnover and the absorption of the railroad market share.
- ▶ The increase of the fleet is derived not only from purchases of both “brand new” and used vehicles, but also from the leasing of the existing fleet of foreign parent companies to the Ukrainian subsidiaries.

The most popular Heavy trucks in Ukraine in terms of sales in 2019



Source: Autoconsulting-group

Heavy trucks fleet in Ukraine, k units:



Source: EMIS

Largest logistic companies in Ukraine

KÜEHNE + NAGEL – One of the largest logistics companies in the world, It has been working in Ukraine since 1992 with 450 employees at 10 locations.

DSV LOGISTICS – The fifth largest transport and logistics company in the world. The company is relatively new in Ukraine – works since 2013.

FM LOGISTICS – European expert in distribution, consumer goods, cosmetics and beauty, industry and healthcare. Works in Ukraine since 1996.

RABEN – European company with a long history since 1931. The Ukrainian branch has been operating since 2003, has 500 employees and branches in seven cities.

Revenue in 2019	Country of origination
1,100 UAH m	Switzerland
900 UAH m	Denmark
800 UAH m	France
600 UAH m	Netherlands

2.1.2. Omitted Sectors

Locomotives fleet is worn out and the UZ is not able to fulfill the investment needs by itself. Private parties are involved, but not in form of an FDI

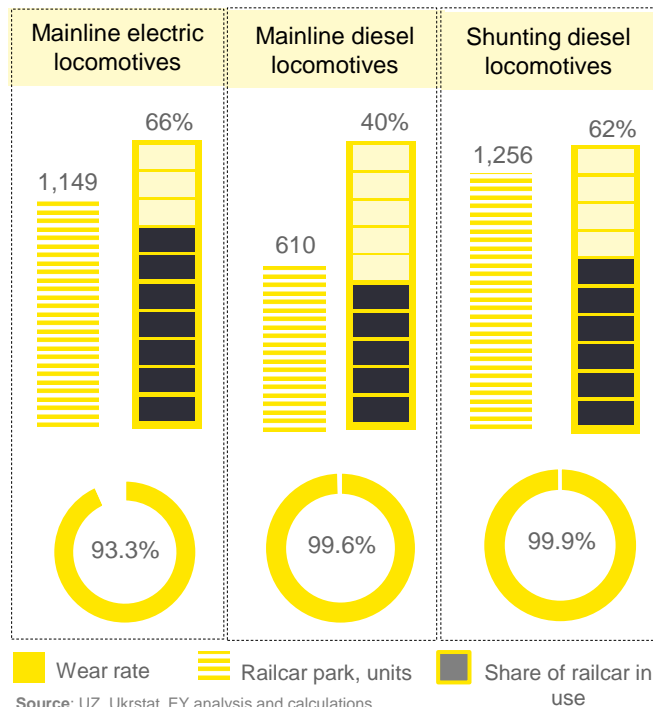
UZ locomotive park is worn out

The average wear rate of locomotives is 96.8%, with an average age of electric locomotives is 40.6 years, with a useful normative life of 30 years.

Due to the lack of traction, the period of locomotive turnover increases - over the past 5 years, it has more than doubled.

The prospect of UZ to fulfil the lack of traction on its own is highly doubtful. Thus the MIU considers the possibility of involvement of the private sector in the traction market.

Technical condition of UZ's locomotive park



Pilot project of private traction and FDI

One of the options to fulfil the investment gap is a pilot project (the Project) on private traction.

As of October 6, 2020, the project is being finalized, ten participants (large local companies of heavy and agrarian industries) had already applied. However, only one fully met the requirements of the MIU.

The subsequent introduction of a private traction market should solve the problem of insufficient traction capacity, increase the speed of transportation and turnover volumes.

The success of the pilot project should encourage both private players and UZ to expand their locomotive fleets.

However, given these companies are local and locomotives and rolling stock are typically leased, their purchasers will not be considered as FDI.

Localization as a potential FDI enabler in the manufacturing industry

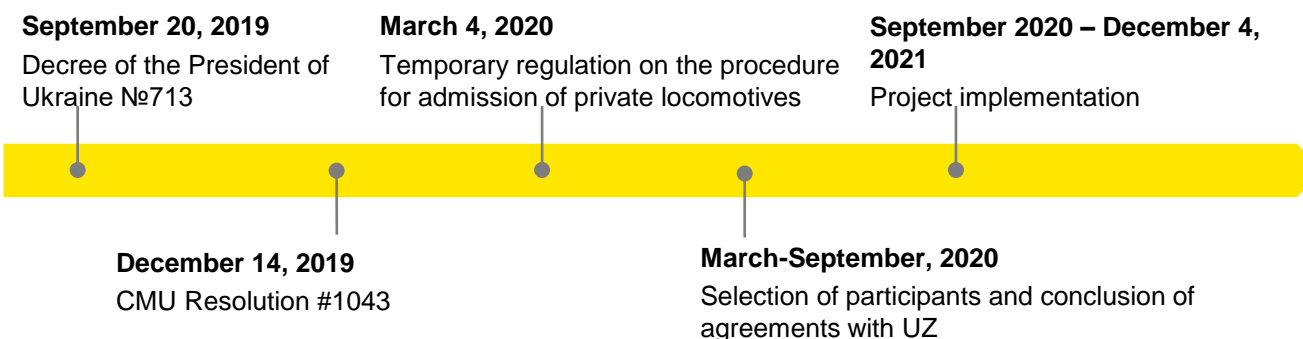
Although new purchases of locomotives will not be considered as FDI by itself, they might be an enabler for FDI in the localization of manufacturing.

In June 2020, UZ announced the start of the selection of an electric locomotive manufacturer for the renewal of its fleet. As a result, it is expected to reach the 35% production localization level of foreign manufacturers.

According to the calculations of FEU, such localization will have a multiplier effect for 150 industrial manufacturing companies and related industries of Ukraine and the Ukrainian economy as a whole.

Please refer for more information to the "Heavy manufacturing" part of the report.

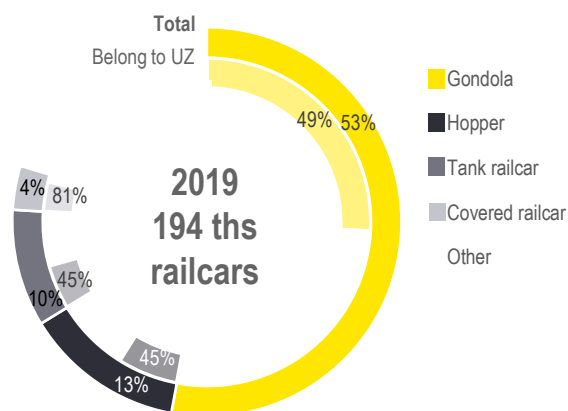
Approximate timeline of private traction implementation



2.1.2. Omitted Sectors

There is a possibility of artificial shortage, which may lead to the purchase of new rolling stock by local players, and will not be considered as FDI

Fleet structure of freight railcars as of 1st November 2019



Source: Rail.Insider, EY analysis and calculations





A possibility of an artificial railcars shortage

In October 2020, MIU published for public discussion a draft Order, which proposes a write-off of old freight rail cars.

According to the analysis of FTEU, UZ is expected to write-off 7.5 ths gondola cars by 2021, which is a quarter of all gondola cars in UZ ownership. By 2028, the amount of write-off is expected to reach 21 ths gondola cars and 11 ths hoppers.

The approach to writing-off cars by age does not take into account its technical condition and creates an opportunity for the write-off of old but working railcars.

Main types of freight railcars and their technical characteristics

Railcar type	Appearance	Cargo	Features	Avg. age in Ukraine, years*
Gondola		Bulk load (ore, coal, timber products, etc.)	Without roof. Cargo is not protected from rainfall	18.4
Hopper		Grains and other loose and granulated cargo	With open doors on the underside to discharge its cargo. Cargo is protected from rainfall	22.9
Tank railcar		Liquid cargo (oil, petrochemicals, liquid gas, cement)	Carries cargo under pressure	31.7
Covered railcar		Parcel, packaged and other types of loose cargo	With roof and side doors. Cargo is protected from rainfall	30.3

Source: Rail.Insider, EY analysis and calculations

Note: as of July, 2020

Note: max useful life provided in MIU draft Order. Differs depending on cargo type

Key market players

State-owned company:

- ▶ UZ operates nearly 106 k railcars through its affiliated company Ukrainian Transport Logistic Center (UTLC). During a long period of time, its railcars have been used at non-market tariffs that caused 90% of railcar fleet depreciation and lack of investments for fleet renewal. The train traction is monopolized by UZ and the available locomotives fleet cannot satisfy demand.

Private companies:

- ▶ Cargo owners that are mostly represented by large production companies (Ferrexpo, ArcelorMittal, Agroprosperis, etc.) use their railcar parks for internal transportation needs. Thus, their rolling stock is unavailable to the market;
- ▶ Transport operators that provide logistics and transportation services (TransGarant, Lemtrans, UkrMetalurgtrans, Crea UA) for external cargo owners or lease their railcar park to third parties. Transport operators, as well as certain other companies (with a fleet of fewer than 500 railcars), are among a few sources of new rolling stock.

2.1.2. Omitted Sectors

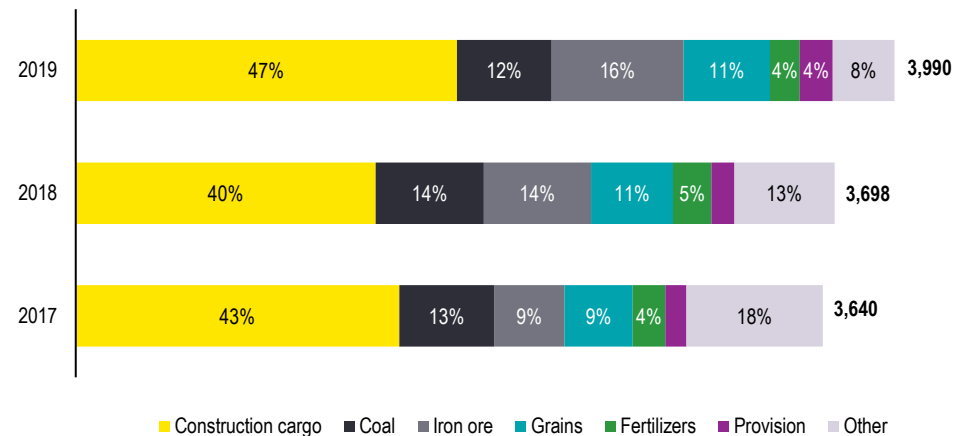
Transport fleets of all modes are expected to grow. However, new vehicles will unlikely be financed by foreign equity

Features of the river fleet

There are three categories of players in the river freight market:

- transport companies that provide transportation services to third parties and have a universal fleet;
- manufacturing companies that operate their fleet for their own needs;
- small shipowners who mainly lease their own vessels to the two previous categories.

Cargo transportation by river transport, k t



The main owners of the river fleet in Ukraine*

Source: Ukrstat, EY analysis and calculations

Company	Fleet in management	Waterways	Cargo	Specialization, features
Ukrainian Danube shipping company	320	Danube river	Iron ore, coal, grains, metals, construction cargo	Provides transport and logistics services for the carriage of goods of third parties. River transport is provided by the fleet on the entire navigable section of the Danube River from the ports of Ust-Dunajsk (Ukraine) to the port of Kelheim (Germany) and back.
Ukrrihflot	62	Dnieper and Southern Bug rivers	Iron ore, coal, grains, metals, construction cargo	Provides transport and logistics services for the carriage of goods of third parties. The company includes 5 river ports: (Dnepropetrovsk, Zaporizhia, Nikopol, Kherson, and Mykolaiv) and a grain elevator.
Kremenchuk river port	20	Dnieper river	Construction cargo, metals, timber freight	It owns a river port. The main activities are the transportation of goods of third parties by its own fleet, extraction and sale of river sand, production and sale of concrete, ship repair work.
Nibulon	16	Dnieper and Southern Bug rivers	Agricultural products	Engaged in the production of agricultural products and their sale. It has its own river terminals: Vitovsky, Voznesensky, Hradizky, Kozatsky, Kamyanets-Dniprovsky, Kremenchuk, Pereyaslavsky.

Source: Shipregister, EY analysis and calculations

Note: self-propelled and non-self-propelled inland vessels, regardless of gross tonnage

2.1.2. Omitted Sectors

Aircraft fleet of the largest market players is well maintained and do not need massive rehabilitation

Features of the Aircraft fleet

- ▶ Although the largest Ukrainian airlines are planning modest fleet growth in the medium term, according to their aircraft orders, the COVID-19 effect calls into question the possibility of new orders.
- ▶ Around 69% of the registered fleet in Ukraine don't operate due to COVID.
- ▶ The fleet is not worn out and does not require massive overhauls or replacements in the nearest future, as the average age of the aircraft operated by Ukraine's largest airlines is about 14 years, with a useful normative life of 20 years.

Source: Ch-aviation GmbH, EY analysis

Actual and ordered civil fleet of the largest Ukrainian airlines

Type	Model	Av. seats
Regional	Embraer 145	49
Regional	ATR 72-600	72
Narrow-body	Airbus A320	180
Narrow-body	Airbus A321	218
Narrow-body	Boeing 737	188
Narrow-body	Embraer 190	98
Narrow-body	Embraer 195	116
Wide-body	Boeing 777	361
Wide-body	Boeing 767	261

Source: Open sources, EY analysis

Average age of the fleet by largest Ukrainian airlines, years



UKRAINE INTERNATIONAL AIRLINES		WINDROSE		SkyUp Airlines	
In service	On order	In service	On order*	In service	On order*
-	-	6	-	-	-
-	-	4	-	-	-
-	-	1	1	-	-
-	-	4	-	-	-
27	3	-	-	11	9
5	-	-	-	-	-
2	-	-	-	-	-
1	-	-	-	-	-
4	-	-	-	-	-
39	3	15	1	11	9

Source: State register of civil aircrafts of Ukraine; Public sources

2.1.3. Ports



2.1.3. Ports

Favorable geographical location at the intersection of trade and transport routes is a strategic advantage of the sea port industry in Ukraine



18 ports (incl. 5 on the territory of temporarily uncontrolled territories in Crimea)



More than 90 stevedoring companies



Ability to accept large vessels

The largest seaports in Ukraine today are Pivdennyi, Odesa, Mykolaiv and Chornomorsk, which account for about 80% of total capacity. The key advantages of these seaports are the availability of deep-sea approaches that make it possible to service large-tonnage marine vessels.

The mooring front and the territory of the ports are served by about 600 portal cranes, thousands of loaders of various types and other units of port equipment. The ports have over 330 thousand m² of covered warehouses and more than 2.5 m m² of open storage space.



2.1.3. Ports

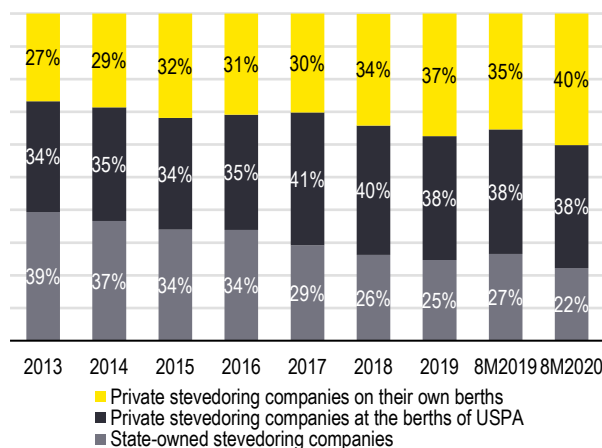
Growing global demand for raw materials is expected to boost transshipment volumes. Additional potential have cabotage and transit

Decrease in share of SOE in transshipment

Competition between public and private companies in terms of cargo transshipment indicates greater efficiency of the latter. The share of state-owned stevedoring companies in cargo transshipment has almost halved in the last 7 years. Although the state still controls more than a fifth of sea freight, they are losing market share and this niche is being handled by private companies.

It creates an opportunity in the direction of privatization in the form of concession projects for small and medium-sized stevedores.

Cargo transshipment structure, by company ownership

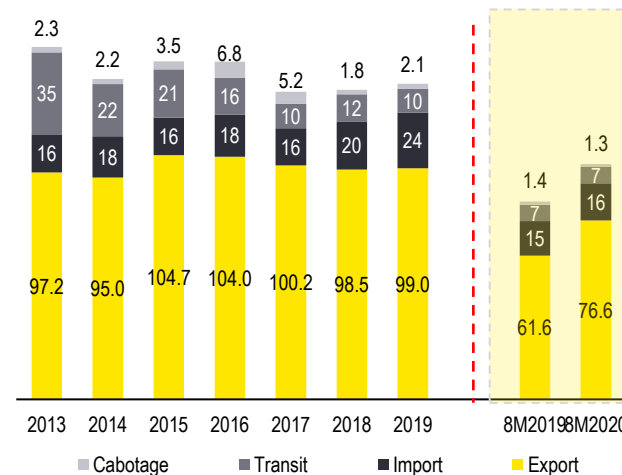


Main transshipment direction

During 2013-2019, the volume of transshipment in the ports of Ukraine remains stable, with export and import trade operations as key drivers. At the same time, there is a tendency to reduction in transit volumes. It is caused by a complete cessation of transit from the Russian Federation. The volumes of cabotage remain weak, but have the potential to be boosted after activation of river transportation.

Despite COVID-19 consequences, transshipment volumes have grown has grown 18% p-o-p

Cargo transshipment by destination, m t



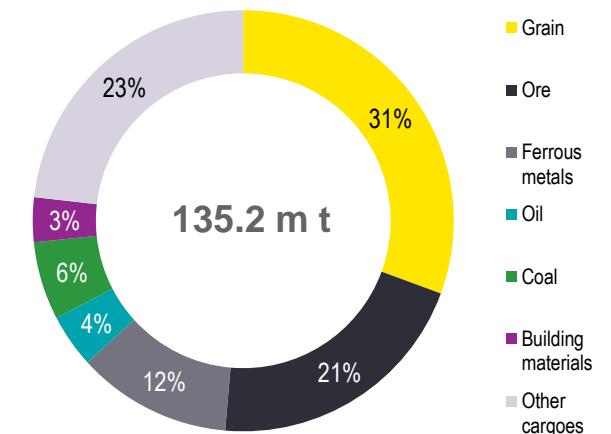
Key cargoes

Grain, ores and metals remain key cargo in Ukrainian ports, accounting for about 64% of the total transshipment volume in 2019.

Raw materials are highly demanded in foreign markets. According to OECD, over the next 10 years, Ukraine will continue to improve its position in the global grain market and, potentially, will enter the top 5 grain exporting countries, increasing its share to 14%. It will be positively reflected in transshipment volumes.

The container transshipment in Ukraine has high growth potential and is expected to double by 2038.

Transshipment structure by cargo type, 2019



2.1.3. Ports

The role and capacities of USPA are critical for ports development. The approved Strategy 2025 should implement modern EU practices



The Ukrainian Sea Ports Authority (further - **USPA**) is a state-owned enterprise established in 2013.

The USPA is managed by the Ministry of Infrastructure of Ukraine.

Main responsibilities of USPA include: management of state property ports, the attraction of investments, maintenance of certificated depth, water areas and hydraulic structures, provision of navigation safety



USPA Reforms

Reform 2013

According to the [Law of Ukraine "On Seaports of Ukraine,"](#) adopted in 2012, 18 state ports were reorganized by allocating strategic assets to the newly created state enterprise - the Seaports Administration of Ukraine (USPA). This ensured the separation of administrative functions (transferred to the USPA) and commercial activities (left to state-owned enterprises - state stevedoring companies).

Strategy 2025

The strategy is based on 3 core pillars:

- Corporatization – the transformation of USPA into a joint-stock company (7 port administrations will be formed);
- Further implementation of «Port landlord» model by the involvement of professional operators in the management of state ports' assets;
- Improving interaction within the port community.

The implementation of the reform is critical for the development of the industry. It will allow USPA to act as a party in lease / concession agreements, expand opportunities for cooperation with IFIs, banks and investors, provide opportunities to establish subsidiaries.

EU experience shows that port authorities should be commercial companies - Port Gdański Eksploatacja S. A. (Poland), The Port of Rotterdam Authority Ltd. (Netherlands), Port of Antwerp Authority (Belgium), Hamburger Hafen Und Logistik AG (Germany), North Sea Port (Belgium, Netherlands) and others.

2.1.3. Ports

Public stevedoring companies cannot compete with private ones and should be privatized to restore their potential

Reduction in transshipment volumes of state-owned stevedores

Compared to 2013, the share of state stevedores in general cargo handling decreased from 38% to 22%. The reasons for this decrease are the following factors:

- ▶ Over-regulation of public stevedores compared to private ones;
- ▶ Underinvestment in assets, which leads to its aging;
- ▶ General inefficiency is inherent to state-owned enterprises in general (organizational, bureaucratic, managerial).

SE CSP Pivdennyi

Pivdennyi CSP is a leading state stevedoring company. It is located on the northwest coast of the Black Sea and is the deepest port in Ukraine. Capable of accepting capesize vessels. There are more than 40 portal cranes for servicing merchant vessels. The company has 4 tugs of the 4th Arctic ice class.



Transshipment volume in 2019 – 15.2 m t



Main cargo – ores and metals, pellets, coal, mineral-building materials



UAH 2.0 b of total revenue
19.56 % EBITDA margin
UAH 3.6 b of assets

Deterioration of financial results

Despite stevedoring business is expected to be highly profitable, public ports have lower margins or even unprofitable. It is due to over-regulation, an overstated amount of staff, high maintenance costs for obsolete equipment.

Based on the results of 2019, unprofitable state-owned stevedores were Odesa, Berdyansk, Mariupol, Reni, Bilgorod-Dnister, Kherson and the 2nd largest stevedore in terms of cargo transshipment Chornomorsk with UAH 177.0 m of loss.

SE CSP Mariupol

SE Mariupol CSP is one of the 2 stevedoring operators of the Mariupol seaport. The port accepts vessels up to 250 meters and with a draft of not more than 8 meters.

There is a risk of the potential blockade of the Sea of Azov for Ukrainian ships by Russia restricting it to enter or leave the Ukrainian seaports.



Transshipment volume in 2019 – 5.8 m t



Main cargo – ores and metals, pellets, coal, mineral-building materials,.



UAH 946 m of total revenue
15.73 % EBITDA margin
UAH 2.8 b of assets

Denationalization plans

State policy towards stevedoring companies is aimed at transferring these facilities to private investors. According to recent plans, «Bilgorod-Dnistrovsky,» «Skadovsk» and «Ust-Dunaïsk» CSPs should be transferred to State Property Fund for further privatization.

Moreover, there are also intentions regarding the further concessions: container and ferry terminals of CSP «Chornomorsk,» "Berdyansk CSP," etc.

SE CSP Chornomorsk

CSP Chornomorsk is one of the largest ports in Ukraine. Berthing line with a total length of about 6 km.

It is already divided between private companies that operate most of the ports. At the same time, SE CSP Chornomorsk operates a container terminal which stands idle.



Transshipment volume in 2019 – 6.8 m t



Main cargo – ferrous metals, grain, coal, mineral-building materials



UAH 994.0 m of total revenue
-6.4 % EBITDA margin
UAH 1.9 b of assets

2.1.3. Ports

High profitability and growing port handling volumes should push new developments within the stevedoring business

FDI through new projects

Due to a decrease in handling rates and some views on overcapacities, e.g., in grain, there are no large projects under construction.

However, long-term grain export forecasts may push the development of new projects.

FDI through M&A

New foreign companies enter the market (as shown on further slides), which indicates that Ukrainian ports and their financial returns are still interesting for foreign companies. Such may be interested in further terminals developments.

FDI through PPP

Most private terminals in Ukraine were developed based on some state-owned assets through joint ventures, lease and investment agreements.

Additionally to concessions of new state-owned terminals, private companies are allowed to transfer from lease to concession with new investment projects.

TIS

- ▶ TIS Terminal Group is the largest stevedoring operator in Ukraine. The group includes 5 terminals: TIS-Grain, TIS-Mineral Fertilizers, TIS-Ore, TIS-Coal and TIS-Container.
- ▶ The depth of the berths near the terminals ranges from 15 to 16 meters. The total length of 8 TIS berths exceeds 1800 meters, with the prospect of expanding by another 1500 meters.



Transshipment volume in 2019 – 31.0 m t



Main cargo – Ores and metals, pellets, coal, minerals, containers



UAH 3.8 b of total revenue
42.1 % EBITDA margin
UAH 7.3 b of assets

Nika-Tera

- ▶ The port consists of 4 cargo areas. The total transshipment capacity of the Nika-Tera is about 9.5 m t per year.
- ▶ The port is equipped with 8 berths with a total length of about 1600 meters with depths from 10.5 to 11.75 meters. The area of the approach channel and operating water area of the port is 67.4 ha.



Transshipment volume in 2019 – 8.7 m t



Main cargo – Grain, metals, bulk and pouring cargoes.



UAH 1.7 b of total revenue
36.5 % EBITDA margin
UAH 2.5 b of assets

Brooklyn-Kyiv

- ▶ Brooklyn-Kyiv has been providing the transport services market since 1992.
- ▶ It has 2 terminals – Brooklyn-Kyiv and Brooklyn-Kyiv Port. The total length of berths is 1600 meters.
- ▶ The activity is carried out on the basis of the transshipment complex No. 5, located in the Hlibniy Harbor of the Odesa Port.



Transshipment volume in 2019 – 6.1 m t



Main cargo – ferrous metals, grain, coal, minerals, building materials



UAH 902 m of total revenue
33.4 % EBITDA margin
UAH 358.2 m of assets

Source: CTS, EMIS, USPA, publicly available data, EY calculations and analysis

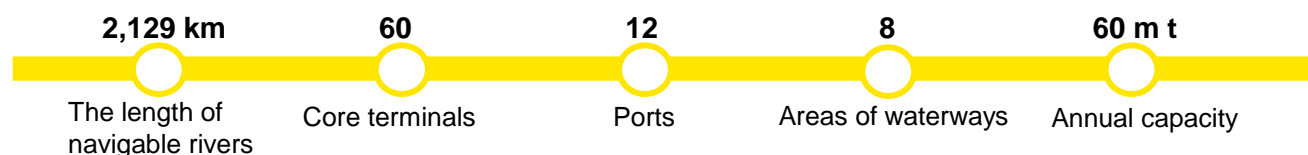
2.1.3. Ports

The potential of river transport is untapped. With an annual capacity of at least 60 m t, the actual volume of transshipment in 2019 amounted to 18.2 m t

Map of navigable rivers of Ukraine



Key element of river infrastructure of Ukraine



Source: USPA, websites of Ukrichflot, Nibulon, EY analysis

Currently, 85% of the infrastructure of navigable locks is worn out, and 90% of inland vessels are physically obsolete. Moreover, the imperfect legal framework discourages potential investors.

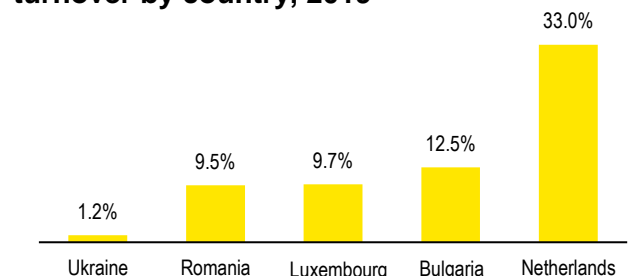
The EBRD estimates the total investment in state-owned river infrastructure rehabilitation at EUR 112.4 m.

The adoption of the [Law of Ukraine "On Inland waterways"](#) may become a factor in boosting investments.

The attraction on private investments and improvement of legislation may activate high river infrastructure potential:

- ▶ 3 navigable rivers, two of which are among TOP-5 largest rivers in Europe;
- ▶ High load capacity: 2 barges and a tug replace 250 trucks, or 100 railroad cars and 2 locomotives;
- ▶ Annual capacity potential - 80 m t.

The share of river transport in total freight turnover by country, 2019



Source: ARU

2.1.3. Ports

The development of river transport is constrained due to lack of legislation, over-complicated tariff and fee systems

Today in the field of inland river water transport, there is [the Charter of Inland Water Transport of the USSR](#) approved by the Resolution of the Council of Ministers of the USSR No. 1801 from 15.10.1955. As the Charter was adopted a long time ago, some of its provisions contradict the current legislation of Ukraine and market relations that have developed in our time.

The main problems	Possible solutions	Development prospects
<p>After analyzing information from open sources, we can identify the following problems of regulation of inland water transport:</p> <ul style="list-style-type: none">▶ Lack of a national regulator and basic legislation on the development of inland water transport. Currently, the governing bodies are the Ministry of Infrastructure and Ukrvodshliak;▶ There are 15 different fees and charges that the shipowner must pay when transporting cargo by the river. This causes a high tariff load, as a result of which the cost of transportation, according to experts, can reach 21 USD per t, including transshipment (for comparison - the cost of transportation by rail is an average of 19 USD per t);▶ The existence of different tariff rates for the Ukrainian-flagged and foreign-flagged fleets, which makes the domestic river transport market less attractive to foreign carriers and causes a shortage of fleets;▶ Mandatory pilotage by the state pilot at non-market rates.	<p>At the moment, one of the possible ways to solve the problem of river transport regulation is an implementation of the Law of Ukraine "On Inland Water Transport," which comes into force in January 2022, and provides for:</p> <ul style="list-style-type: none">▶ Creation of a new governing body in the field of river transport - the Administration of Inland Waterways of Ukraine;▶ Introduction of a single unified river fee instead of the existing fees. In this case, the fee for crossing the locks and bridges passes to the balance of the owner of the infrastructure;▶ Abolition of non-tariff barriers for the foreign fleet, which will allow vessels flying a foreign flag to work on the rivers of Ukraine on equal terms with domestic carriers;▶ Creating conditions and legal framework for the operation of private pilotage agencies, the tariffs of which will be set in accordance with the conditions prevailing in the market. The real competition in the field of pilotage will reduce the pilot fee several times.	<p>According to the comments and preliminary calculations of industry companies in the media, the adoption of the Law of Ukraine "On Inland Water Transport" may have the following effect:</p> <ul style="list-style-type: none">▶ Reduction of costs for transportation by river transport to 16 USD per t due to reduced disbursement as a result of the new tariff regulation;▶ Growing demand for the existing river fleet and construction of a new fleet due to the growing demand for river transportation by cargo owners;▶ Carrying out dredging works with the help of a clear system of distribution of budget funds, which will increase the operational duration of waterways in Ukraine.

Source: draft law "On inland water transport", EY analysis and calculations

2.1.3. Ports

Current legislative framework and legislative initiatives in water infrastructure (1/2)

Association Agreement between the European Union and Ukraine and Plan of Measures for Implementation of the Association Agreement approved by Resolution of the CMU No. 1106 dated 25 October 2017

- ▶ A Party should grant to vessels flying the flag of the other Party treatment no less favorable than that for its own vessels or for third countries, whichever treatment is better (including access to ports, port infrastructure and services, access to maritime auxiliary services, as well as related fees and charges, provision of berths and facilities for loading and unloading)
- ▶ Parties should apply the principle of unrestricted access to international maritime markets and trades on a commercial and non-discriminatory basis effectively
- ▶ Provides for alignment with EU standards, in particular with Directive 2014/90/EC (marine equipment in the use of marine vessels and objects of marine infrastructure) until 31 December 2020 with prolongation (partially implemented by Resolution of the CMU No. 1103 dated 5 September 2007), Regulation (EC) No 417/2002 (was repealed by Regulation (EU) No 530/2012) (double bottom requirements for vessels carrying oil) until 31 October 2020 with prolongation (not implemented), Directive 2005/65/EC and Regulation (EC) No 725/2004 (safety standards on the operation of vessels and port equipment) until 31 December 2020 (not implemented), Directive 2001/96/EC (loading and unloading of bulk carriers) until 31 October 2020 with prolongation (partially implemented), Directives 2000/59/EC, 2007/71/EC and 2015/2087/EC (were repealed by Directive (EU) 2019/883), Directive 2002/84/EC (waste of vessels rules) until 31 October 2020 (partially implemented)

United Nations Convention on the Law of the Sea dated 10 December 1982 (ratified on 3 June 1999) provides for a comprehensive regime of law in the world's oceans and seas, establishes the rules for all uses of the oceans. Coastal States exercise sovereignty over their territorial sea (the limit should not exceed 12 nautical miles), foreign vessels are allowed "innocent passage" through those waters. The coastal States have sovereign rights over the continental shelf (the national area of the seabed), including exploration rights, the shelf can be extended to at least 200 nautical miles from the shore

European Agreement on Main Inland Waterways of International Importance dated 19 January 1996 (ratified on 28 September 2009) sets up the provisions of this Agreement as a coordinated plan for the development and construction of a network of inland waterways of international importance or "E waterway network" (consists of inland waterways and ports of international importance), which Parties intend to undertake within the framework of their relevant programs

Convention on Regime of the Straits dated 20 July 1936 (ratified on 3 April 1992) defines the principle of freedom of navigation in the Bosphorus and other straits of the Aegean Sea and the Black Sea

Agreement on Cooperation in the Use of Azov Sea and Kerch Strait between Ukraine and Russian Federation dated 24 December 2003 (ratified on 20 April 2004) governs relationships related to the use of the Kerch Strait and the Sea of Azov, determines the regime of passage through the Kerch Strait and entry into the Sea of Azov by the merchant, military and non-commercial vessels. Foreign commercial vessels heading to Ukrainian or Russian ports may enter the Azov sea

Water Code of Ukraine (No. 213/95-BP dated 6 June 1995)

- ▶ Sets out the rules related to water objects and water infrastructure, water usage and water protection from pollution, clogging and depletion
- ▶ Says that foreign individuals and legal entities may be the water users in Ukraine
- ▶ CMU establishes the procedure for issuing permits for special water use, dredging, laying cables, pipelines and other communications on water fund lands

Merchant Shipping Code of Ukraine (No. 176/95-BP dated 23 May 1995)

- ▶ Governs activities related to use of ships for the carriage of goods, passengers, cargo and mail, exploration and extraction of minerals, as well as for other economic, scientific and cultural purposes, including navigation in the territorial sea, inland waters, waters of sea ports
- ▶ Allows to apply foreign law and merchant customs to foreign agreements and provides for the list of seaports of Ukraine open to foreign vessels, as determined by the CMU (**Decree of CMU No. 466-p dated 26 June 2013**). Has the rules for chartering of vessels and respective leasing agreements

Charter of Inland Water Transport of the USSR approved by Resolution of the Council of Ministers of the USSR No. 1801 dated 15 October 1955 contains outdated rules on the state planning for transportation on inland waterways. These will be replaced by the **Law of Ukraine "On Inland Water Transport" No. 1054-IX dated 3 December 2020** (will come into force on 1 January 2022 with certain exceptions), which provides for inland water transport reform, including:

- ▶ Providing for necessary definitions and comprehensive regulation of inland waterways use, options for private investment (concession, lease, joint venture and other types of investment agreements) and the possibility to compensate investments in strategic objects of inland water transport infrastructure from the state budget, rent payments and other sources
- ▶ Setting up the State Fund of Inland Waterways for management and financing for maintenance of the public inland waterway transport infrastructure (in particular, the rent for the special use of water is the source for this Fund), as well as approval of the strategy for the development of inland water transport by the CMU

2.1.3. Ports

Current legislative framework and legislative initiatives in water infrastructure (2/2)

Law of Ukraine "On Seaports of Ukraine" (No. 4709-VI dated 17 May 2012)

- ▶ Governs the procedure for construction, opening, expansion and closure of seaports in Ukraine, sets out the rules for seaport governance and business activities
- ▶ Has the rules for private investment in port infrastructure (including such options as a concession, joint activity, lease, etc.)
- ▶ Strategic seaport infrastructure objects can not be leased or transferred into concession. However, there is a specific exemption allowing the lease and concession of berths, access roads and railways (until the first junction outside of port territory), communication lines, heating, gas, water and electrical supply networks, and engineering communications
- ▶ Port charges and fees, as well as other sources, might be the compensation for investments

Law of Ukraine "On Fishery, Industrial Fishing and Protection of Water Bioresources" (No. 3677-VI dated 8 July 2011) sets out the principles of business activity in the areas of fishery and use of water bioresources, determines the status of a sea fishing port

Law of Ukraine "On Transport" (232/94-BP dated 10 November 1994) has the rules governing the composition of water lands and river transport

Law on Licensing of Types of Business Activities (No. 222-VIII dated 2 March 2015) mandates to obtain licenses for the carriage of passengers, hazardous cargo and hazardous waste by river and sea

Order of the MIU "On Port Duties" No. 316 dated 27 May 2013 sets out the rules for port duties (ship, berth, anchor, canal, lighthouse, administrative and sanitary) collected in seaports from ships and floating structures under Ukrainian and foreign flags

Tariffs for Pilotage Services approved by Order of MIU No. 965 dated 03 December 2013 establishes tariffs for pilotage services (pilotage fee), which is handled by all vessels calling at seaports / sea terminals or transiting by navigable waterways

Rules for Protection of Inland Sea Waters and Territorial Sea Of Ukraine from Pollution and Clogging approved by Resolution of CMU No. 269 dated 29 February 1996 sets the requirements for prevention of pollution of the internal sea waters and territorial sea of Ukraine by legal entities and individuals, including foreign legal entities and individuals, as well as by Ukrainian and foreign vessels

Maritime Doctrine of Ukraine until 2035 approved by Resolution of the CMU No. 1307 dated 7 October 2009

- ▶ Indicates that the priority national interests at sea and integrated maritime policy are based on the development of commercial shipping, port infrastructure, shipbuilding and

ship repairs, coastal recreational activities, development of the natural resources of the Black Sea and the Sea of Azov, protection and reproduction of their ecosystems

- ▶ Refers to the PPP mechanisms for the development of the Ukrainian shipbuilding market

Strategy for Development of Ukrainian Seaports Until 2038 approved by Decree of the CMU No. 548-p dated 11 July 2013 sets out tasks and main directions for the development of seaports and port industry in general (in particular, attracting private investment for modernization and creation of port infrastructure facilities based on concession agreements, joint venture agreements and other investment agreements)

National Transport Strategy of Ukraine 2030 approved by Resolution of CMU No. 430-p dated 30 May 2018 provides for:

- ▶ Simplification of conditions for registration of vessels under the State Flag of Ukraine, the establishment of an international register of vessels (was not implemented)
- ▶ Liberalization of cargo transportation by inland waterways, the opening of inland waterways for foreign vessels (on 20 November 2020, MIU published a [draft](#) regulation for simplification of the procedure for obtaining temporary permits for entering into the river ports of Ukraine by foreign vessels, with which no international shipping agreements were executed)
- ▶ Increasing the efficiency of business activities of state stevedoring companies and their concessions (is not implemented yet)

Strategic Development Plan of the SE "Ukrainian Sea Ports Authority" for 2021–2025 approved by Order of the MIU No. 445 dated 10 August 2020 has three strategic directions:

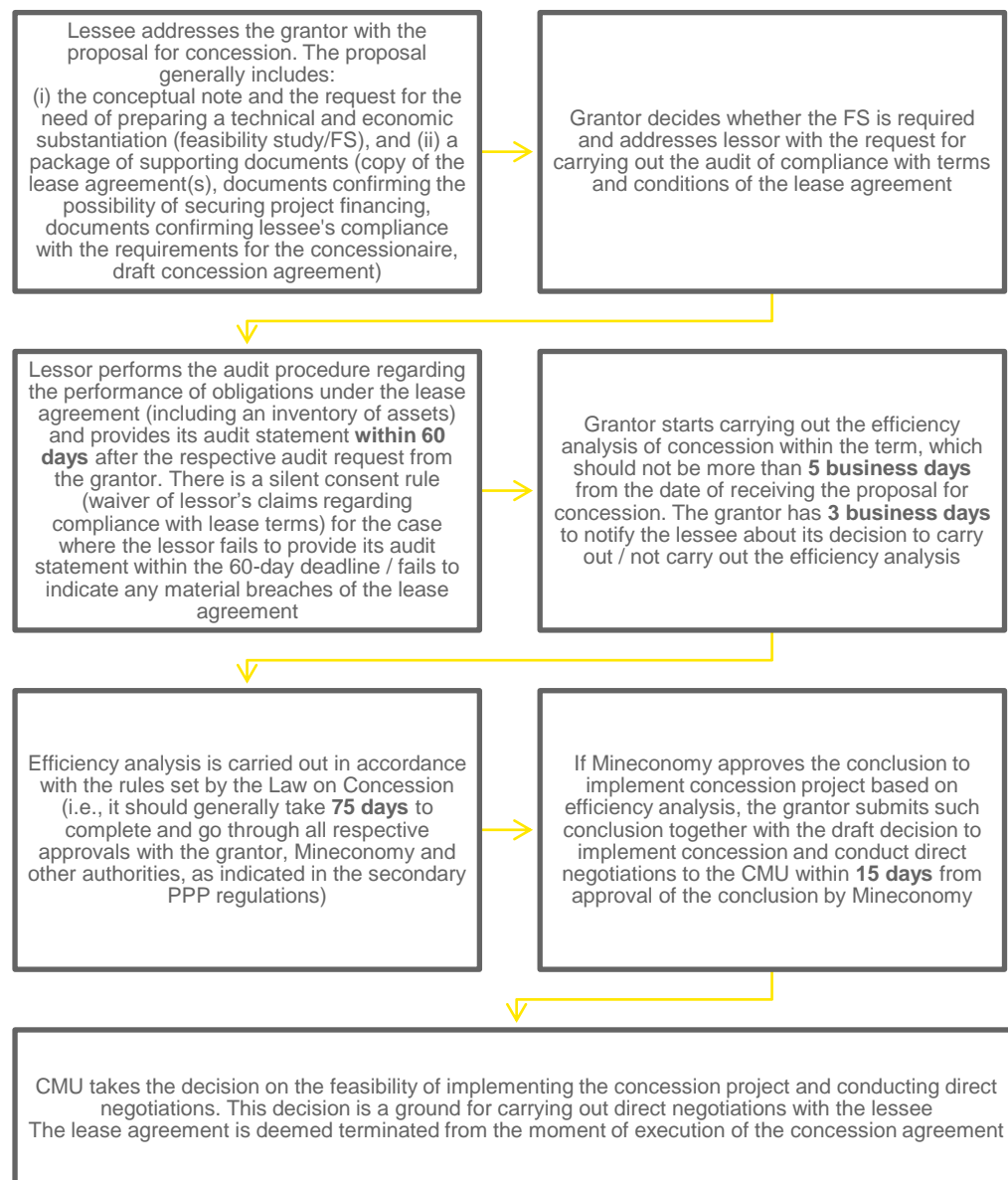
- ▶ Corporatization of USPA, i.e., the transformation of USPA into a JSC with local departments of the seaport administration
- ▶ Establishment of the "Port landlord" model until 2030 by the involvement of professional operators in the management of state ports' assets (USPA is expected to have full control over the use of port lands and receive additional income from concession of port infrastructure)
- ▶ Improving interaction within the port community

Draft Law of Ukraine "On the National Commission on Transport Regulation" No. 3927 dated 22 July 2020 provides for the establishment of a transport regulator which will define tariffs on services of the transport monopolists and ceilings of transportation market tariffs, license business in rail transportation

2.1.3. Ports

Possibility to transform lease into concession without a tender

- ▶ In Ukraine, the vast majority of port infrastructure is leased by investors. However, a lease is not well-suited for heavy investments, as the lessee's rights to carry out reconstruction and new construction works are limited
- ▶ The procedure for obtaining approval to improve assets in a lease is quite complicated and time-consuming. The settlement procedures applied in case of disagreement on improved assets are rather unclear and non-transparent
- ▶ The new Law on Concession provides the lessees of state property with a possibility to execute a concession agreement through direct negotiations without the concession tender (transfer from lease to concession) under the following conditions:
 - ▶ Lease agreement was executed before 20 October 2019
 - ▶ Lessee has the intention to implement concession using the leased property, which requires additional investments
 - ▶ Lessee properly fulfilled its obligations under the lease agreement and did not commit material breaches of the contract, as confirmed by the audit certificate signed by the lessor's representative. The procedure for carrying out such an audit should be established by the State Property Fund of Ukraine (currently published for public review)
 - ▶ Term of concession agreement does not exceed the term left until expiry of the lease agreement and in any case no less than 5 and no more than 50 years
 - ▶ Lessee meets the respective qualification requirements for the concessionaire
 - ▶ Concession agreement does not reduce the number of investment obligations under the lease agreement (if any).
- ▶ The cost of non-separable improvements and new facilities made under the lease agreement is not included in the amount of concession payment
- ▶ The special procedural rules related to transfer from lease to concession are not well aligned with the general rules related to the implementation of concession projects (e.g., there are inconsistencies/unclearities in the sequence of certain procedural stages and milestones, there are no separate rules for direct negotiation and signing procedure)



2.1.3. Ports

The world's largest players are interested in the objects of the sea infrastructure of Ukraine, which is confirmed by the recent transactions

1 DP world purchased 51% in TIS container terminal

TIS-Container Terminal is the deepest terminal in Ukraine, which can simultaneously handle three vessels at once. There are 5 CTS cranes in one line. In 2019, its cargo turnover amounted to 220,000 TEU (+75% compared to 2018), although its design capacity is almost 2.5 times more.

Among the top-priority plans of DP World are the introduction of the latest IT solutions and global expertise of the group into the work of TIS-CT, the focus on the intermodal segment of cargo transportation, the development of an industrial park on its own, already purchased by TIS lands, following the example of the largest free economic zone Jebel Ali Free Zone.



3 Glencore acquired terminal «Every»

Terminal complex “Every” was built in 2010 and modernized in 2018. It has a permanent storage capacity of 160 thousand t and can export 1.6 m t of vegetable oil per year.

The terminal occupies a leading position in the Ukrainian market for handling sugar beet molasses.

Such strategic acquisition strengthens Glencore's position in the agricultural market of Ukraine, as well as makes Glencore Agriculture Limited an important player in the global vegetable oil supply chain.

2 Posco Daewoo acquired a 75% stake in the grain terminal owned by the OREXIM Group

Posco Daewoo purchased not only the property rights but also the right to operate the port terminal, which has a transshipment capacity of 2.5 m t of grain per year.

In addition to providing storage capacities for grain shipments, the terminal also controls the procurement and verification of grain produced throughout Ukraine. Thus, Posco Daewoo strengthens its position as a global grain trader. The deal also enables Posco Daewoo to improve its inventory management efficiency. Posco Daewoo believes the deal will contribute to Korea's efforts to improve the country's food security.

2.1.3. Ports

Foreign direct investments are aimed not only at private port infrastructure but also on state property on PPP terms



Concession of the Specialized Sea Port «Olvia»

The concessionaire – a Qatar-based company – Qterminals. During the concession period, there are up to UAH 17.3 b of expected investments.

This will be the first Qatari direct investment, the second largest investment after «Kryvorizhstal» and one of the largest foreign direct investments in the port industry of Ukraine.

Key terms of concession agreements

- ▶ UAH 80 m – The amount of annual concession payment;
- ▶ Expected CapEx – UAH 3.4 b;
- ▶ UAH 80 m – Investments in the infrastructure of Mykolaiv;
- ▶ 35 years – concession period;



Concession of the Kherson Sea Commercial Port

The Kherson Sea Commercial Port concession is one of two pilot port concession projects in Ukraine.

The agreement provides for modernization with the support of the consortium Risoil S.A. and Georgian Industrial Group. Concessionaire company Risoil-Kherson LLC agreed to invest about UAH 300 m in the development of the port.

Key terms of concession agreements

- ▶ Minimum UAH 12 m of concession payment annually;
- ▶ Minimum UAH 216 m invested during first 3.5 years and UAH 62 m additionally invested during first 10 years;
- ▶ Minimum UAH 18 m investments in local road infrastructure near to the port and a new parking lot outside the city;
- ▶ 30 years – concession period;



Acquisition of ore complex «Bocont» by Risoil S.A.

«Bokonti» capabilities allow to transfer up to 2 m t per year of bulk cargo and ship 200 gondola cars per day. The capacity of simultaneous open storage is up to 200 ths t. The complex is capable of accepting Handymax vessels with a draft of up to 11.2 m, a length of up to 220 m, and a carrying capacity of up to 50,000 t.



CMA CGM sold a stake in a container terminal in Odesa to Terminal Link

The CMA CGM Group sold its stakes in eight port terminals (incl. Brooklyn-Kyiv) to Terminal Link, with 51% owned by CMA CGM and 49 percent by China Merchants Port. The transaction is valued at USD 815 m.

The key purpose was to strengthen its balance sheet amidst the high uncertainty created by the global Covid-19 crisis as the Group expects a decline in volumes, particularly outbound to Europe and the U.S.

2.1.4. Railways



2.1.4. Railways

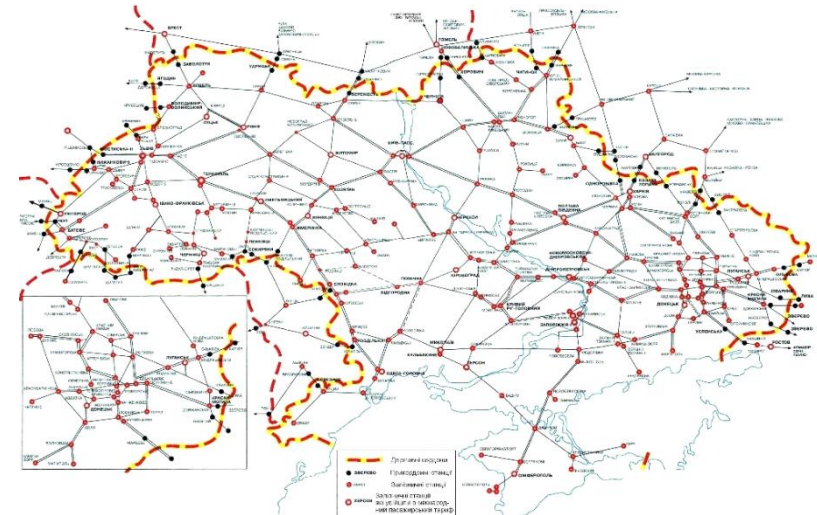
Ukraine has an extensive but obsolete railway network that requires maintenance and/or renovation in short and medium terms

Railway infrastructure

- ▶ The operational network of railways in Ukraine – 19,787 km;
- ▶ Electrified track - 9,319 km (47.4%);
- ▶ Length of rail transit corridors in Ukraine – 3,162 km. These are mainly two-track electrified, equipped with automatic blocking systems railways, characterized by high use of technical facilities;
- ▶ Number of railway stations - 1,402;
- ▶ Number of main railroad stations – 120;
- ▶ Track width – 1,520 mm (similar to other former USSR-countries), in comparison to 1,435 mm in EU countries;
- ▶ 6.4 ths km of the railway are in need of major repairs, 2.7 ths km – require reconstruction;

Source: Ukrzaliznytsya, Economic Audit of Ukraine, public sources

Map of Ukrainian railways



Source: Ukrzaliznytsya, public source

Railway transportation

Cargo transportation

Share of railway in total volume of cargo transportation*, 2019

54%

Cargo turnover 2019

182 b t-km

Cargo volume 2019

312 m t

Passenger transportation

Share of railway in total volume of passenger transportation*, 2019

27%

Passenger turnover 2019

28 b pass-km

Passenger volume 2019

155 m pass

Source: Ukrstat, EY analysis and calculations

Note: Calculations are based on cargo/passenger turnover

- ▶ In terms of cargo traffic, Ukraine's railway is the fourth on the Eurasian continent after Chinese, Russian and Indian railways. The freight-traffic of Ukrainian railways (annual volume of traffic per 1 km) is 3-5 times higher than in European countries.
- ▶ Ukrainian rail transport system is a part of the main trans-European transport corridors (East – West, Baltic Sea – Black Sea).
- ▶ Ukrainian railway directly borders and cooperates with the railways of Russia, Belarus, Moldova, Poland, Romania, Slovakia, Hungary and ensures the work with 40 international cross-walks, and also serves 18 Ukrainian seaports of the Black Sea and Azov basin.

2.1.4. Railways

State-owned enterprise JSC "Ukrzaliznytsia" is a key market player, carrying out virtually all passenger and freight railway transportations (1/2)

Logo of UZ



- ▶ UZ is a state-owned enterprise, a monopoly that controls the vast majority of the railroad transportation in the country;
- ▶ UZ is also the world's 6th largest rail passenger transporter and world's 7th largest cargo transporter;
- ▶ 34 branches – the total quantity of branches of UZ.

Investment priorities of UZ

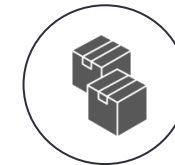
- 1 Support of operating activities
- 2 Cargo transportation
- 3 Passenger transportation
- 4 Infrastructure investments

Business structure of UZ



Infrastructure

- ▶ UZ' is a natural monopoly infrastructure component of railway transportation in Ukraine.
- ▶ There are nearly 25 other auxiliary branches of UZ (excluding Passenger Company, UZSHK, and 6 regional branches) that help to develop the infrastructure of the Ukrainian Railways.
- ▶ The main problem of the infrastructure component of the business structure is assets that are worn-out and depreciated. They should be renovated.



Cargo transportation

- ▶ Today UZ is a monopoly within the locomotive traction within cargo railway transportation in Ukraine.
- ▶ At the same time, UZ is not a monopoly inside the railcars market (30-40% of the market is held by private entrepreneurs).
- ▶ Six regional branches of the Ukrainian Railways are responsible for cargo transportation.



Passenger transportation

- ▶ **UZSHK**
Branch "Ukrainian railway speeding company" (UZSHK) is a separate unit of the UZ that responsible for fast-line transportation.
The first Intercity and Intercity+ trains were launched for UEFA Euro 2012. Due to the deterioration of infrastructure, travel time when using high-speed trains is comparable to road transport, not to aircraft.
- ▶ **Passenger Company**
Today UZ is a monopoly both in traction and railcars markets of passenger railway transportation in Ukraine.

2.1.4. Railways

State-owned enterprise JSC "Ukrzaliznytsia" is a key market player, carrying out virtually all passenger and freight railway transportations (2/2)

Strategic goals of UZ

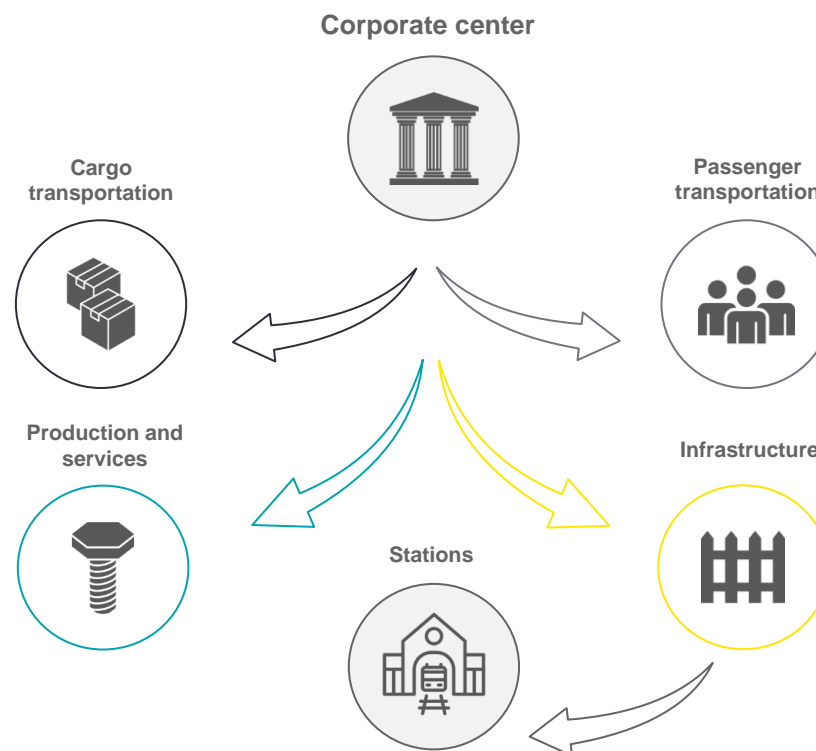
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The state has set 6 strategic goals, according to which decisions are made and actions are taken on UZ

These are the following strategic goals:

- ▶ Ensuring the country's transportation needs;
- ▶ Improving the financial and economic stability of the UZ and industry;
- ▶ Investing in the modernization of the fleet of trains;
- ▶ Improving railway safety and compliance with the best practice and health standard;
- ▶ Increasing the attractiveness of UZ as an employer and ensuring the need for qualified and efficient staff;
- ▶ Improving the quality of management, transparency and readiness to open markets in the context of European integration.

Reorganization of the Company from a regional structure into business segments



Source: the Company's data, EY analysis and calculations

Due to the reorganization of the Company, the Stations will be part of the infrastructure segment. It should help them to improve the level of revenues and services. Today, the Stations are part of the Passenger company.

In October 2019, the Ministry of Infrastructure of Ukraine (MIU), EBRD and UZ signed a memorandum about a movement toward the Company's IPO. It may improve efficiency, the work of the Company, transparency, and prevent corruption.

Key initiatives of UZ

10

In 2019, UZ identified 10 key initiatives that will be implemented in the next 3 years

These are the following key initiatives:

- ▶ Establishment of reasonable tariffs;
- ▶ Reorganization of the Company from a regional structure into business segments;
- ▶ Development and implementation of a long-term investment program;
- ▶ Rationalization of the Company network and production units;
- ▶ Implementation of public-private partnerships and programs financed from the state budget;
- ▶ Reorganization and sale of non-core assets;
- ▶ Client orientation and development of the core services list;
- ▶ Fighting corruption by increasing transparency;
- ▶ Introduction of a new transportation management system;
- ▶ Implementation of a security.

2.1.4. Railways

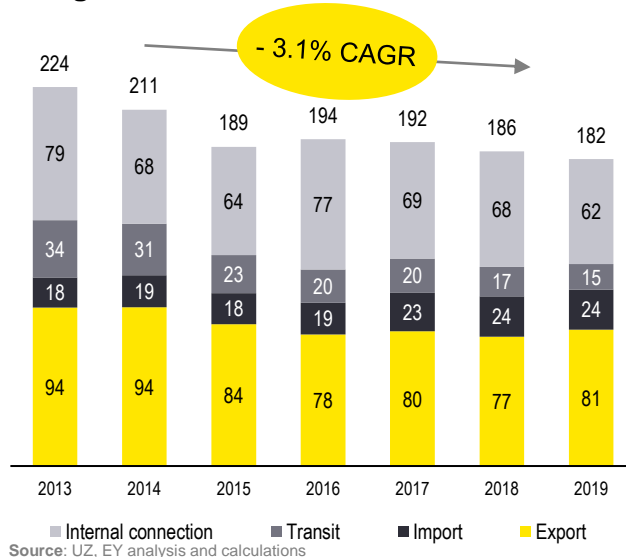
Cargo transportation volumes by rail are decreasing due to inefficient tariff structure and issues with rolling stock availabilities.

The overall cargo turnover decreases

Since 2013, there has been a reduction in turnover by all connection types except for imports. The decline in ore and coal exports since 2014 has been offset by an increase in grain exports. The decline in domestic production and consumption of mineral construction goods negatively impacted the volume of internal railway transportation. The shortage of transit was due to its prevalently Russian origin (80%).

The change in turnover was positively affected by the increase in the distance of transportation, but this was offset by a significant reduction in the volume of traffic, mainly due to technical and operational factors.

Cargo turnover volumes, b t-km



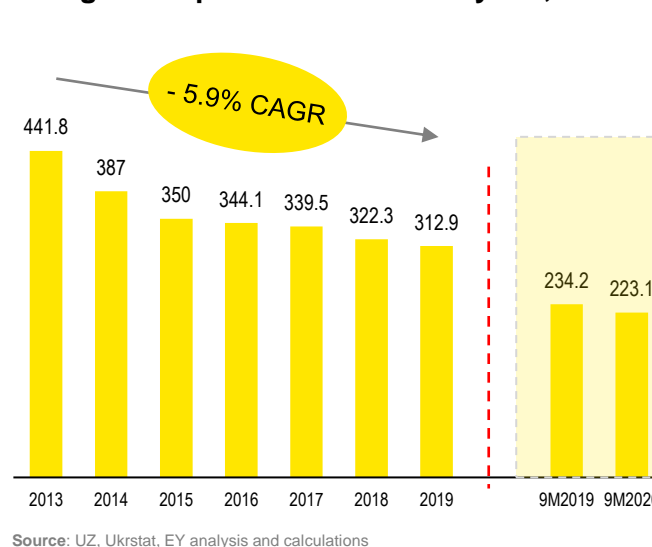
Transportation volume deterrents

The drop in the volume of transportation is primarily due to market factors:

- ▶ The available traction capacity does not meet the demand. As the sole traction market player, UZ lacks 300-500 locomotives*. Up to 40% of UZ mainline locomotives need to be replaced and can not be used due to technical issues;
- ▶ Existing tariff system that provides for the classification of cargos. It is beneficial in terms of ore and coal, discouraging transportation of other cargoes of more expensive tariff classes. As a result, more expensive products are shifting to roads creating additional damage to its pavement.

Note: calculations of Railinsider

Cargo transportation volumes by rail, m t



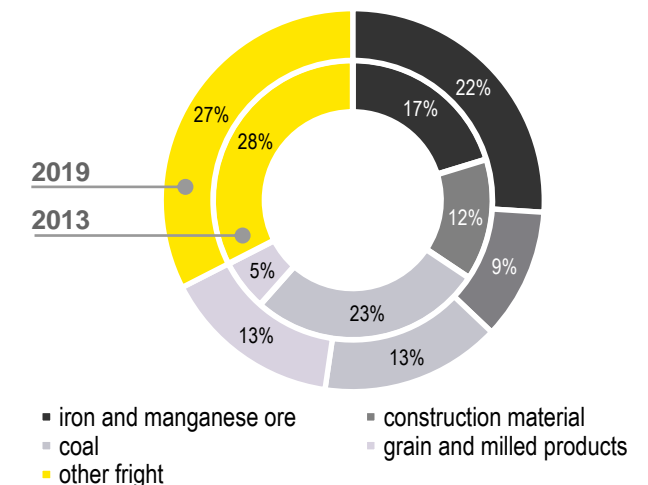
Change in cargo transportation structure

Transportation of iron ore and ferrous metals is declining, given the drop in ferrous metal production in Ukraine due to the slowdown in the metallurgical industry, reduced demand, lower prices, partial shut down of enterprises.

Steady foreign demand has contributed to increased grain transportation volumes. Whereas transportation volumes by other cargoes decreased mostly due to depressed local demand, decreased domestic production and political tension.

Restrictions under quarantine and reduced domestic income led to a reduction in demand for imported goods.

Transportation breakdown by cargo type

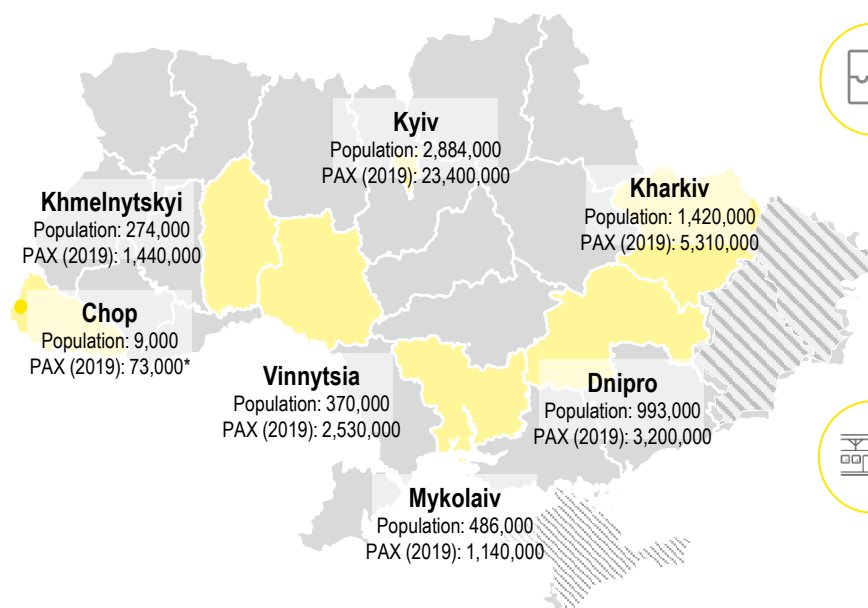


2.1.4. Railways

However, there is an existing potential of attracting FDI into rail support infrastructure that is not effectively managed and generates losses

Opportunities for FDI in the field of rail transport are limited, as the infrastructure (railway) is a strategic asset that should always be state property. Currently, the MIU considers concession as a mechanism for attracting foreign private funds into support infrastructure. In particular, the investor may be interested in investing in the commercialization of stations.

Concession of railway stations



Source: public sources

MIU considers concession as an appropriate mechanism to attract private investment for the reconstruction of the station infrastructure and provide effective asset management of state property. In this direction, expected positive effects are the reconstruction of the station squares, the development of station services (cafes, restaurants, lounges, storage rooms) with further convergence to European standards.

Existing inefficiencies



All main buildings of Stations are in working condition. However, being 40-60 years old, they require some maintenance. Khmelnytskyi and Mykolaiv Stations should require major rehabilitation in the near future.

Railway concession projects



To solve the inefficiencies, the MIU plans to transfer for concession 7 pilot railway stations.

Expected Investments



The ministry plans to attract UAH 3.8 b of investments, provide UAH 60.18 m in concession payments and UAH 17.4 m in taxes to the state budget.

Demonopolization of Railway container terminals

Current state

Despite the global trend for containerization, the share of container cargo transportation in Ukraine is low. The container market is covered by the «Lisky» Transport Service Center, which is part of UZ. It owns the largest number of platforms (3,600), containers (4,500) and terminals. Since 2014, UZ has ceased to be a monopolist and private players have appeared on the market.

Constraining factors

Current tariff methodology developed in 2009, which provides inflexible tariff rates and low containerization with 1-2% of cargoes being transported in containers. Those factors discourage new players and potential investors.

Concession projects

To stimulate this segment, UZ, together with IFC, are preparing container terminals for concession. The newly assigned head of UZ Volodymyr Zhmak, in his program, announced that major terminals in Kyiv and Odesa, among others, would be the subjects of concession in 2020-2021.





2.1.4. Railways





Foreign experience in the development of supporting infrastructure to railways is driven by the promotion of PPP and JV

Lessons from foreign experience

- ▶ Attracting foreign investment in infrastructure development in Europe is a widespread experience, including in neighboring Poland. Polish experience is mainly based on Public-private partnerships.
- ▶ Construction container logistics railway center in Belarus is a step forward to clustering with the industrial park as an anchor.
- ▶ Infrastructure PPPs are highly promoted in India. The government's push towards infrastructure PPP projects is expected to boost capital expenditure by 1.9 percent of GDP by 2022-23. Development of infrastructure through PPPs helps economic growth and development, creates jobs, provides opportunities for private sector participation, and improves overall living conditions.
- ▶ Belarus invests in joint industrial parks with China, for which this is one of the main drivers in the development of transport infrastructure
- ▶ Infrastructure is a capital intensive sector and often requires private investments. Ukraine may follow the example of its neighboring countries and also develop in the same way as Belarus or Poland in terms of transport infrastructure.

International PPP and JV railway stations' related projects

Project list (1/2)		
	Design and construction of Rail Baltica Central Station (incl. central station building, railway bridge and track works).	JV
	Redevelopment of the Birmingham New Street Station to increase the station's capacity and train facilities by 50%.	JV
	Renovation of the Gare du Nord, one of Paris's main train stations. Development of surface area with shops, restaurants and cafes.	PPP
	Upcoming redevelopment of Nagpur, Gwalior, Amritsar and Sabarmati railway stations under PPP model.	PPP

Project list (2/2)		
	Grandi Stazioni" project on renovation of railway stations' facilities across Italy in and development in terms of comfort and capacity.	JV
	Full reconstruction of Sopot train station, including the construction of shops, ticket offices, underground parking places, hotel.	PPP
	Integrated transport hub construction incl. coach terminal, bus platforms, park and ride car park facility and Poznan Główny train station.	PPP
	Construction of a 9 km-long tunnel within Melbourne Metro Rail facilitating more trains to be operated per day.	PPP

Construction of rail container terminal in Belarus

A rail terminal will be built in Great Stone – Belarus-China industrial park under the leadership of Duisport together with its partners China Merchants China-Belarus, the Belarus state-owned railway and the Swiss company Hupac.



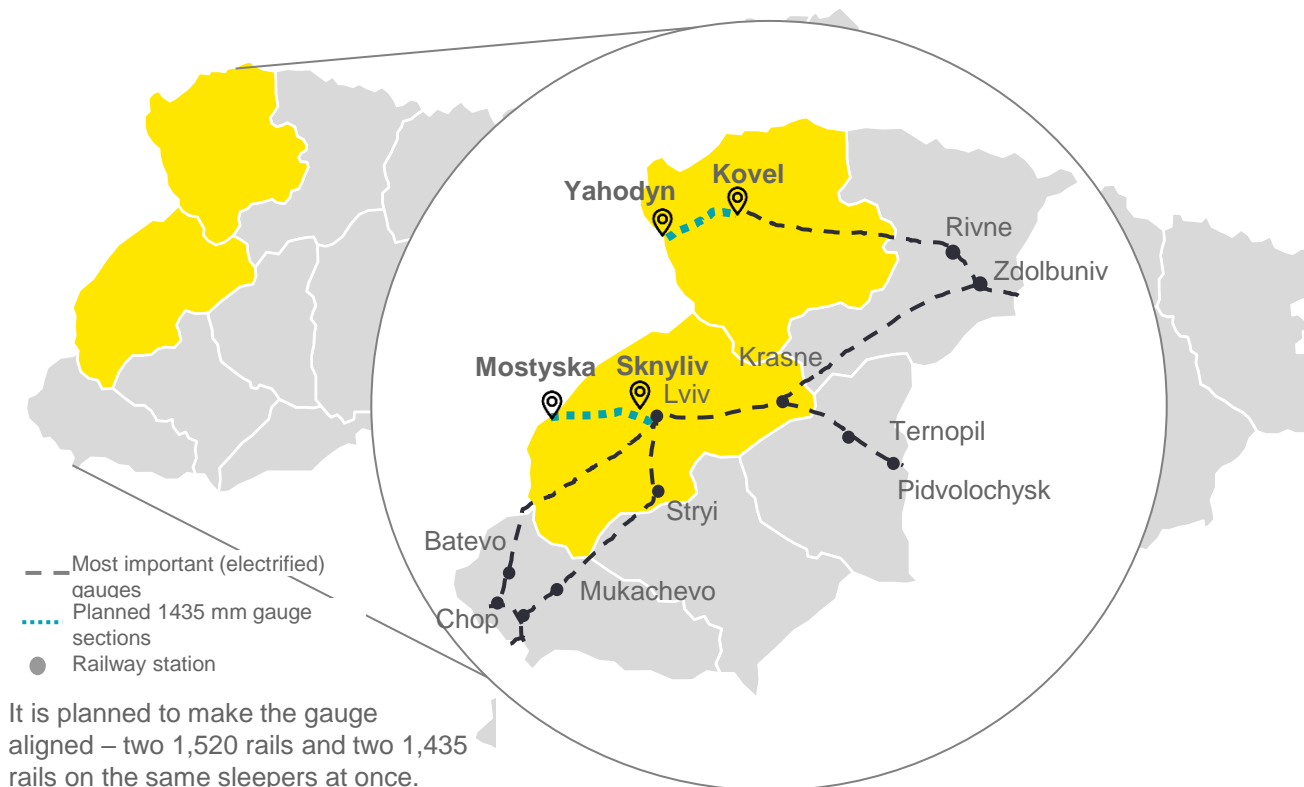
Source: duisport, public sources

The 80-hectare logistics parcel will include a 30-hectare bimodal terminal with an initial annual handling capacity of 180,000 standard containers (TEU), which can be increased up to 500,000 TEU. The other 50 hectares will be used for attracting logistics companies.

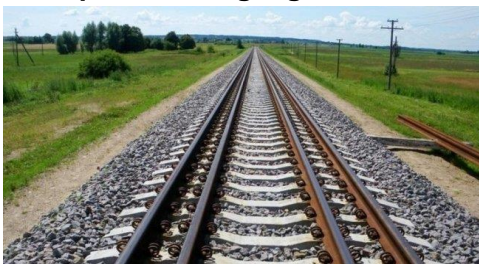
It is expected that the terminal will be commissioned in 2021.

2.1.4. Railways

Europeanization of Ukrainian railways will promote international trade with Ukraine but requires additional investment

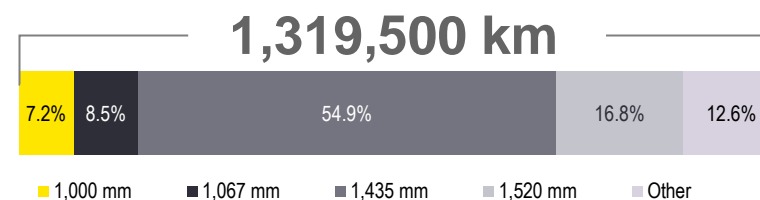


Example of 4-rail gauge



Source: Open sources

World's railway decomposition by gauge widths



Source: Central Intelligence Agency, EY calculations and analysis

Need for railway modernization

Ukrainian rail fleet moves on 1,520 mm gauge that has remained in Ukraine since the times of the USSR. At the same time, most gauges in the world, including the EU, are narrower - 1,435 mm.

Laying the gauges according to European standards will make it possible to depart trains directly to Europe from Lviv without changing wheel pairs. Such modernization will create a stimulus to develop production and create multimodal transport hubs near new railways.

Recent projects in Ukraine

There are already two projects in place. The first one provides for the construction of a gauge from Sknyliv (a suburb of Lviv) to Mostyska station (near the border with Poland) with a length of about 69 km with a CapEx of UAH 900 m. The second is expected to connect industrial city Kovel (Volyn region) with Yahodyn (near the border with Poland). The length is 70 km with an approximate CapEx of USD 54.2 m

Potentially, Ukrainian authorities consider the opportunity to construct 1,435 mm gauges to Kyiv, Odesa, Lviv, Kharkiv and Dnipro.

European/International gauge

More than half of the railways in the world have 1,435 mm gauge. It is widely used in CWE, NA, Africa and the Far East, while 1,520 mm gauge remained mainly in the Eastern European countries. Other types of gauges are used mostly in SA (1,000 mm) and Middle East (1,676 mm).

2.1.4. Railways

Current legislative framework and legislative initiatives in rail infrastructure

Association Agreement between the European Union and Ukraine and Plan of Measures for Implementation of the Association Agreement approved by Resolution of the CMU No. 1106 dated 25 October 2017

- ▶ Indicates that the conditions of mutual market access in rail transport should be governed by possible future special rail and transport agreements
- ▶ Provides for alignment with EU standards, in particular with [Directive 2004/49/EC](#) (was repealed by [Directive \(EU\) 2016/798](#)), [Directive 91/440/EEC](#) and [Directive 95/18/EC](#) (were repealed by [Directive 2012/34/EU](#)) until 31 October 2022, in particular:
 - ▶ Equal access for carriers to use of railway infrastructure
 - ▶ Railway carriers licensing authority and system, establishing equal access for carriers to use of railway infrastructure
 - ▶ Equal competition in the rail transport market
 - ▶ A single entity shall not control both railway infrastructure and rail transport means
 - ▶ Independent management of railway company PJSC “Ukrzaliznytsia” (UZ)

Law of Ukraine "On Railway Transport" (No. 273/96-BP dated 4 July 1996)

- ▶ Determines the economic and financial principles of the railway transport operation, has the rules governing transport support of foreign economic relations of Ukraine and rights and obligations of railway transport enterprises
- ▶ Public main railway lines and technological structures located on them are state-owned property. These objects are assigned to UZ based on the economic management title and are not subject to privatization
- ▶ UZ may not alienate, transfer into use, lease, leasing, concession, management, pledge, contribute to the authorized (composed) capital of business entities the state property transferred to UZ based on the economic management title, as well as perform any other transactions which may result in alienation of such property

Law of Ukraine "On Peculiarities of the Establishment of a Joint-Stock Company of Public Railway Transport" (No. 4442-VI dated 23 February 2012)

- ▶ Says that JSC of Public Railway Transport is established upon the decision of the CMU
- ▶ Has the rules governing the status and transactions with public railway transport property, the formation of the authorized capital and management/operation of the railway company
- ▶ The procedure for writing off, alienation, transfer into use, lease, concession, disposal of property contributed to the authorized capital and acquired by the railway company is determined by the CMU

Law of Ukraine "On Transport" (No. 232/94-BP dated 10 November 1994) has the rules governing the composition of rail lands and rail transport

Law on Licensing of Types of Business Activities (No. 222-VIII dated 2 March 2015) mandates to obtain licenses for carrying out business on transportation of passengers, hazardous cargo and hazardous waste by rail

Charter of Railways of Ukraine approved by Resolution of the CMU No. 457 dated 6 April 1998 defines rights and obligations of railway companies, as well as legal entities and individuals using railway transport

National Transport Strategy of Ukraine 2030 approved by Decree of the CMU No. 430-p dated 30 May 2018

- ▶ Provides for partial reorientation from freight traffic to rail and inland waterway transport
- ▶ Mentions the mechanism for admission of carriers of various forms of ownership (licensing, safety certification) to the market of railway transportation (is not implemented yet)
- ▶ Mentions the structural reform of UZ, namely financial and organizational separation of the infrastructure operator and the carrier (is not implemented yet)

Rules of Transportation of Passengers, Luggage, Cargo and Post by Railway Transport of Ukraine approved by Order of the Ministry of Transport and Communications of Ukraine No. 1196 dated 27 December 2006 set out the provisions for transportation of passengers, luggage, cargo and post by public railways

Draft Law of Ukraine "On Railway Transport of Ukraine" No. 1196 dated 29 August 2019 provides carriers with access to the railway transport infrastructure on a non-discriminatory basis, subject to obtaining a safety certificate and/or authorization certificate and the Draft Law of Ukraine "On Railway Transport of Ukraine" No. 1196-1 dated 6 September 2019 (alternative) provides a newly established National Transport Regulatory Commission with additional functions (licensing, control over non-discriminatory access to strategic infrastructure, etc.). Also, this Draft Law provides for a new type of mandatory insurance (liability insurance of the carrier for damage caused to life, the health of passengers and third parties)

These draft laws are developed to approximate national legislation to the EU acquis and open a railway market. The European Commission, in its [Association Implementation Report on Ukraine](#), emphasized these drafts remain blocked in Parliament

The Parliament Committee on the European Integration says that these drafts shall be revised to be in line with the Directives No. [2004/49](#), [91/440](#), [2008/57](#), [2007/59](#), [95/18](#)

2.1.5. Airports



2.1.5. Airports

Ukraine has an extensive air infrastructure, but most of it is publicly owned and requires maintenance and/or renovation in the short and medium-term



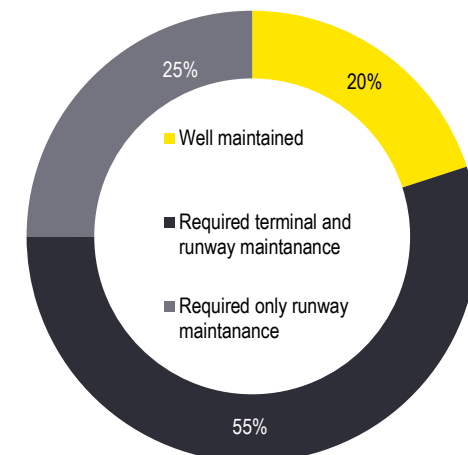
Runways ownership

All the runways, as strategic objects, belongs to the public side, with no regard to the owner or operator of the airport terminals. Thus, the airports' development highly depends on the readiness of the state to invest in runway rehabilitation, whether it is needed.

Main facts

- ▶ After the collapse of the USSR, Ukraine inherited 50 airports. Currently, only 20 of them are in operation;
- ▶ Kyiv Boryspil airport is the leading Ukrainian airport. It accounts for more than half of Ukrainian passenger air traffic;
- ▶ About 98% of passenger traffic and virtually all cargo traffic are concentrated in 7 major airports (Boryspil, Kyiv (Zhuliany), Lviv, Odesa, Kharkiv, Zaporizhia and Dnipro)
- ▶ Given the absence of systematic capital investments in air infrastructure, most of the regional airports need heavy maintenance work;

Air infrastructure deterioration



Source: MIU, public sources, EY analysis

2.1.5. Airports

COVID-19 affected both Ukrainian and global aviation. Despite the beginning of the industry recovery, the prospects are blurred

Main facts about COVID-19 impact on industry

Since the escalation of COVID-19 to a pandemic, countries across the world have implemented lockdowns and stay-at-home orders as well as border closures. COVID-imposed restrictions have threatened the global aviation industry.

Global effect of COVID-19

-66% PAX

Expected traffic decrease in 2020

Source: IATA, Airports Council International (ACI)

\$84 b

Expected collective net loss to airlines in 2020

27% of

European airports are facing bankruptcy

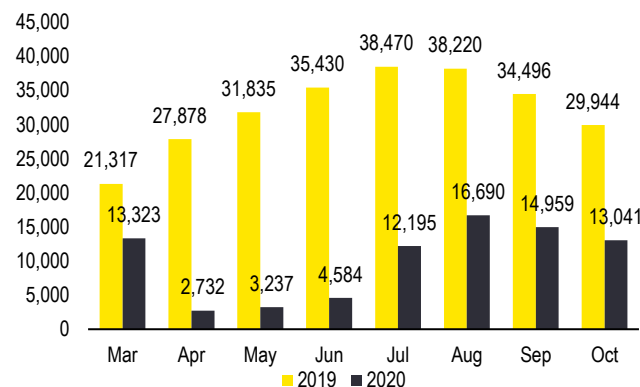
COVID impact in Ukraine

According to IATA's projections, Ukrainian air traffic may reduce by 55% in 2020.

Almost 80% of airport revenues are directly related to traffic volumes. Thus, the income of airports collapses with the traffic. According to the last available data from the largest Ukrainian airports:

- Boryspil (KBP) – has monthly direct losses of UAH 130-150 mln. 80% of personnel are in a mode of forced idle time, receiving a percentage of their wage.
- Zhuliany (IEV) – was facing insolvency, had to lay off 50% of its personnel to avoid bankruptcy.

Air/Dep flights in Ukraine



Lock-down in Ukraine

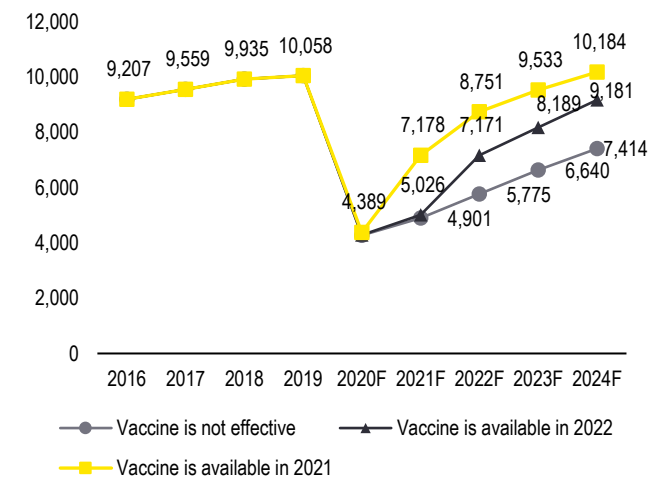
From 18 March Ukraine has ceased civil air connections. The restrictions were lifted at the beginning of June, when GOU resumed domestic connections and, in two weeks, – international ones.

Future prospects

Recovery of the air industry from COVID-19 consequences highly depends on the availability of vaccines/therapies with proven success in treating COVID-19.

EUROCONTROL has published three scenarios for the future of European air transportation

Forecast of Air/Dep flights in the EU28



Source: EUROCONTROL (as of Nov. 2020)

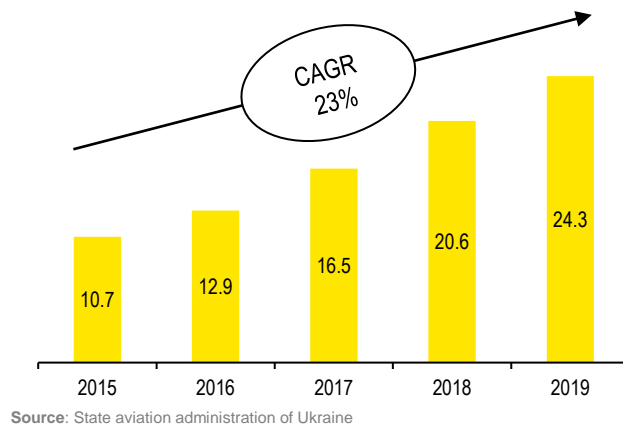
A full recovery is expected no earlier than in mid-2023, according to the best scenario (vaccine is available in mid-2021). Other scenarios are:

- A vaccine is available in mid-2022, full recovery in 2026;
- A vaccine is not effective, recovery in 2029.

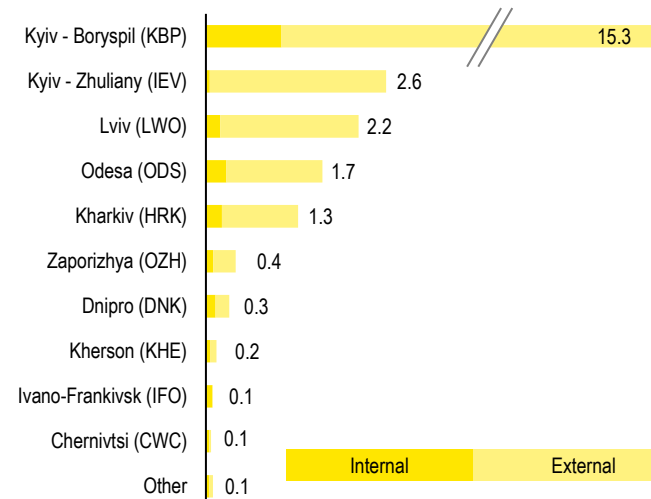
2.1.5. Airports

Ukrainian air traffic has been consistently growing for the last years. The main factor was the increased penetration of European Low-Cost carriers

Traffic, Ukrainian airports 2015 – 2019, m PAX



Traffic, top 10 Ukrainian airports 2019, m PAX



Main facts

Ukrainian air market supply doubled in 2015-2019. Macroeconomic development and increased penetration of Low-Cost Carriers (LCCs) (i.e., Wizz Air and Ryanair) were the main factors driving air traffic growth in Ukraine.

Structure of Ukrainian international air connections in 2018



Source: Ukraineinvest

- ▶ Out of 33 new routes opened by airlines from Ukrainian cities in 2019, 29 were opened by international companies.
- ▶ New Ukrainian airlines SkyUp was introduced in 2018 as a low-cost national operator.
- ▶ The five largest Ukrainian airports (KBP, IEV, LWO, ODS, HRK) benefited the most from the expansion/entrance of LCCs, augmenting their presence in the international market.
- ▶ Smaller airports have developed domestic traffic more than international due to their infrastructure constraints and the need to fill up Boryspil airport.

International seats dominate supply at the most significant airports. According to the State Statistic Service of Ukraine, in 2017 (last available), 90% of Ukrainians travelling abroad are directed towards Europe:

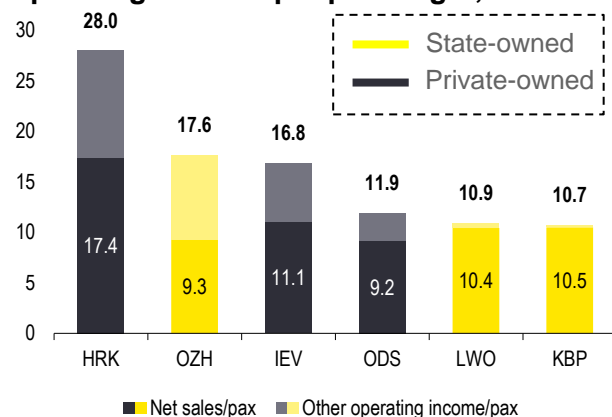
- ▶ 37.8% to Poland;
- ▶ 16.6% to the Russian Federation;
- ▶ 11.8% to Hungary;
- ▶ 6.4% to the Republic of Moldova.
- ▶ Other relevant countries are Belarus (4.5%), Turkey (4.5%), Romania (4.0%), Slovakia (3.2%), Egypt (2.8%) and Germany (1.3%)

There is still an obvious potential for further development of LCCs in Ukraine as low-cost airlines have a limited presence compared to other more mature markets, mainly in secondary airports, like OZH, DNK, KHE, IFO.

2.1.5. Airports

Public operated airports are being prepared for partial or full Concession, as they are less effective or poorly managed and require capital investments

Operating revenue per passenger, USD/PAX



Source: EMIS, EY analysis

Drawbacks of state ownership

Although net sales per passenger are similar among the airports, state airports have a lower share of Other operating income in their revenue.

The reason is that as public-owned enterprises, they have specific procedures for the assignment of a new tenant and fixed rents according to the activity, area and type of product.

The public side dominates the Ukrainian aviation market: 77% of air traffic falls on state or municipal airports. Despite the considerable market share, state airports at the operational level are less efficient than private airports due to their relatively low flexibility.

The GOU is interested in attracting private investors in airports of all types of ownership.

Boryspil (KBP)

The largest airport in Ukraine. It is being prepared for a concession of its non-core infrastructure.

Due to a lack of systematic capital investment, the airport risks reaching a bottleneck of its annual capacity. The Airport strategy suggests that 3.4 EUR b is required to ensure its development.



Traffic in 2019 – 15.3 m PAX



Market share – 63%



57.9 % EBITDA margin
UAH 156 m of net income

Lviv (LWO)

Aviation hub for 7 regions of western Ukraine, situated in a strategic position, close to the border with Eastern European countries.

The Airport is proposed for a concession. Currently, the team of international consultants finished the pre-feasibility study.



Traffic in 2019 – 2.1 m PAX



Market share – 9%.



35 % EBITDA margin
UAH 23.1 m of net income

Municipal airports

There are 13 small and medium regional airports. Infrastructure constraints prevent them from effective growth.

The most typical problems are poorly maintained runways and lack of modern navigational systems.



Traffic in 2019 – 1.2 m PAX



Market share – 5%



Differs from airport to airport

Source: CTS, EMIS, USPA, publicly available data, EY calculations and analysis

2.1.5. Airports

The government of Ukraine is interested in air infrastructure development: involvement of private parties are considered in line with budget subsidies

Air infrastructure developments in Ukraine

Given the poor state of the air infrastructure, GOU is considering various ways to ensure capital investment in airports. The key ones are concessions of the small and medium regional airports and budget subsidies to the largest ones.

To ensure sources of stable investments into air infrastructure, GOU plans to create an Airport Fund. The funds from it will be directed to the construction of new airports and repair of existing ones. It is proposed to replenish the Fund with the excise tax on aviation gasoline. According to the Minister, it is expected to allow repairing two airports per year.

. GOU is interested in aviation infrastructure development. At the same time, the state is not able to provide the necessary amount of capital investments on its own.

The involvement of a private party accompanies most recent developments

Concessions

Regional airports

The MIU is considering pilot concessions of regional airports. Currently, the team of international consultants finished a pre-feasibility study. The airports proposed for concessions are:

- Lviv (LWO),
- ▶ Zaporizhia (OZH),
 - ▶ Rivne (RWN),
 - ▶ Kherson (KHE),
 - ▶ Chernivtsi (CWC).

Budget subsidies

Dnipro

In 2019 the GOU announced the reconstruction of the airport infrastructure. The expected amount of capital investments in 2021 is about UAH 2 b.

The Government is going to build a new runway. It will be 3200 meters long, with a modern navigation system.

The new infrastructure will allow receiving aircraft of all types, even in foggy conditions.

Simultaneously, a private investor is building new civilian and VIP terminals in the airport.

Odesa

The airport is being reconstructed. From 2017, the GOU invested around UAH 3.9 b in the construction of a new runway.

The new runway is 2800 meters long and 45 meters wide with the modern navigational system.










The new infrastructure will allow receiving aircraft category D, designed for medium- and long-range flights.

At the same time, a private investor built a new civil terminal, which was fully operational in Dec 2019.

2.1.5. Airports

European practice shows that the most common way of attracting private parties into the air infrastructure sector is PPP under a concession agreement











Ukrainian airports are not the only ones that face problems with infrastructure development. Recent experience of Eastern European countries shows that one of the main ways to solve such problems is a concession.

Bulgarian case	Montenegro case	Serbian case
<p>Bulgarian government awarded a concession contract to run the largest international airport in the country:</p> <p>Sofia (SOF) – 7.1 m PAX.</p> <p>The Serbian government decided to privatize the airport and “Sof Connect” (French-German consortium) won the bidding contest, taking on the concession in Jul 2020.</p> <p>Current plans include the redevelopment and upgrades of both terminals of the venue. Terminal 1 will be entirely renovated, while Terminal 2 will be modernized with state-of-the-art technology. Furthermore, safety measures around the airport will be tightened through improvements to the passport control system and the introduction of more regular security checks.</p>	<p>Montenegro`s government plans to award a concession contract to run the only two international airports in the country:</p> <p>Podgorica (TGD) – 1.25 m PAX, and</p> <p>Tivat (TIV) – 1.2 m PAX.</p> <p>On July 25th, 2019, Montenegro`s government (GOM) adopted the Concession Act, and on July 29, 2019, the Ministry formed the Bid Commission that conducts the process of selecting a private partner for the Project through open, international, competitive tender.</p> <p>The GOM is seeking private sector expertise and investment capabilities to expedite the rehabilitation program of the Montenegro Airports, to successfully support tourism as one of the most important industries of Montenegro and a vital engine of growth.</p>	<p>Serbian government awarded a concession contract to run the largest international airport in the country:</p> <p>Belgrade (BEG) – 6.1 m PAX</p> <p>The Serbian government decided to privatize the airport and “VINCI” (global airports operator) - won the bidding contest, taking on the concession in Feb 2019.</p> <p>VINCI pledged to transform the airport into a major aviation hub in southeast Europe. Through a EUR 730 m investment plan, the goal is to grow passenger numbers to 15 m by 2043.</p> <p>The contract includes the financing, operation, maintenance, extension and renovation of the terminal and the existing airport runways.</p>
 Period – 35 years	 Period – 30 years	 Period – 25 years
 Investments – EUR 608 m	 Investments – EUR 200 m	 Investments – EUR 730 m
 Form of cooperation – Concession	 Form of cooperation – Concession	 Form of cooperation – Concession

Source: CTS, EMIS, USPA, publicly available data, EY calculations and analysis

2.1.5. Airports

Among the two mechanisms currently considered by the GOU, the only concession is attractive for FDI

	Concessions		Traditional public procurement	
Time required	<ul style="list-style-type: none"> ▶ Is a long term process, requires from 1.5 to 3 years for full realization. 		<ul style="list-style-type: none"> ▶ Quick wins. 	
Budget efficiency	<ul style="list-style-type: none"> ▶ Concession is required to have a positive investment value for the State and private investor. Budget efficiency is examined and measured in detail in a feasibility study. 		<ul style="list-style-type: none"> ▶ There is no guarantee that this mechanism has a positive investment value for the State, as budget efficiency is not examined in detail. 	
Obligations for the parties	<ul style="list-style-type: none"> ▶ All the obligations, restrictions and penalties are predetermined under the concession agreement, protecting both the private and public side. 		<ul style="list-style-type: none"> ▶ Obligations, restrictions and penalties are not specified, as there is no agreement signed. Both parties have no guarantee that either will fulfil its obligations. 	
Assets ownership	<ul style="list-style-type: none"> ▶ Both newly constructed and renovated facilities remain in State ownership under the concession agreement. 		<ul style="list-style-type: none"> ▶ Private side reserves the right of ownership of constructed facilities. 	
Competition and transparency	<ul style="list-style-type: none"> ▶ Concession agreement is concluded under open and transparent concurs. 		<ul style="list-style-type: none"> ▶ Investments without any transparent concur between potentially interested private parties. 	



Is attractive for FDI



Is not attractive for FDI

Concessions are more attractive for FDI and more effective than traditional procurement

Although the development of the concession agreement takes more time and resources, it allows the public sector to improve budget efficiency and mitigate risks related to the design, construction and maintenance of the asset. At the same time, all the assets remain in the State ownership, taking away the concerns of the public sector on losing a profitable asset.

Concession is more attractive for foreign investors because of transparency and fair competition. This mechanism allows creating a level-playing field through clear rules and obligations for both partners.

2.1.5. Airports

Current legislative framework and legislative initiatives in air infrastructure

Association Agreement between the European Union and Ukraine and Plan of Measures for Implementation of the Association Agreement approved by Resolution of the CMU No. 1106 dated 25 October 2017

- ▶ Signing of the [European Common Aviation Area \(ECAA\) agreement](#) was meant to be completed before 31 December 2018. In October 2020, MIU's representatives reinstated the initiative to sign the ECAA agreement with the EU in the near future
- ▶ The ECAA Agreement sets common security standards and liberalizes market relations in aviation and provides more efficient and safer airspace use. This Agreement guarantees high standards of safety and security across Europe through the uniform application of rules. ECAA allows all European airlines to operate direct flights to Ukraine from anywhere in Europe and vice versa
- ▶ Provides for cooperation in the development of sectoral strategies based on the national transport policy for air transport

Convention on International Civil Aviation 1944 (Chicago Convention) determines safety standards (SARPs) of the International Civil Aviation Organization

Air Code of Ukraine (No. 3393-VI dated 19 May 2011)

- ▶ Has the rules for the use of Ukrainian airspace, the status of airfields and airports, as well as rules related to civil and state types of aircraft
- ▶ Provides that airfields and airfield facilities (runways, taxiways, platforms, other elements of airfields) that ensure flight safety are in the state or municipal ownership are not subject to alienation, sale and privatization
- ▶ Integral property complexes and separate infrastructure objects designated for handling services as well as non-aviation objects may be transferred into lease and concession if their designated purpose remains unchanged
- ▶ State or municipal airfields and airfield objects (runways, taxiways, aprons and other airfield elements) can be transferred to a private investor under the PPP/concession agreement, lease agreement or some other agreement executed under the dedicated rules set by Ukrainian law
- ▶ The state is entitled to terminate the concession, lease or management agreement if the airport or airfield is not used in accordance with its designated purpose or the airfield is not certified for more than three years
- ▶ The list, amount and procedure for payment of airport charges and fees and the procedure for using funds of the [State Special Purpose Fund for Financing National Expenditures on Aviation Activities and Participation of Ukraine in International Aviation Organizations](#) (SAAU Fund) are determined by the CMU (**Resolution of CMU No. 819 dated 29 September 1993**)

- ▶ Indicates that the aviation rules of Ukraine are developed in accordance with the standards and practices of the International Civil Aviation Organization and should set out the types of ground handling services, conditions for granting access to airport infrastructure and objects, rules on interactions between persons providing the ground handling services
- ▶ Sets out the list of handling services subject to mandatory certification (e.g., fueling services, aviation security services, servicing passengers, baggage, cargo and mail)

Law of Ukraine "On Transport" (No. 232/94-BP dated 10 November 1994) has the rules related to the composition of air transport and air lands

Law on Licensing of Types of Business Activities (No. 222-VIII dated 2 March 2015) mandates to obtain licenses for the carriage of passengers, hazardous cargo and hazardous waste by air

Law of Ukraine "On Alienation of Land Plots and Other Objects of Immovable Property Located on Them in Private Ownership for the Social Needs and on the Grounds of Public Necessity" (No. 1559-VI dated 17 November 2009) provides the procedure for obtaining the land plots for social purposes to carry out the construction works

State Target Program of Airport Development until 2023 approved by Resolution of CMU No. 126 dated 24 February 2016 refers to different forms of PPP for development of airports and provides for signing of the CAA agreement in 2016

National Transport Strategy of Ukraine 2030 approved by Resolution of CMU No. 430-p dated 30 May 2018 provides for reconstruction of runways and comprehensive modernization of equipment at regional airports for the purposes of operating medium-haul aircraft

Concept for Development of the Boryspil International Airport until 2045 approved by Decree of CMU No. 293-p dated 8 May 2019

- ▶ Provides for the allocation of an additional 600 ha of land for the development of the airport's infrastructure
- ▶ Provides for construction of a separate road from the south part of the airport to its industrial and technical zone. Mentions the possibility of construction of an underground railway to the airport's central terminal
- ▶ Provides for an increase in the volume of passenger traffic through the airport to 53.9 m per year
- ▶ Provides for investments in an airport of approx. EUR 3.4 b

2.1.6. Roads



2.1.6. Roads

Ukraine has a wide and diversified road infrastructure that covers the whole country but requires massive investments in the rehabilitation process



Road type

- International
- National
- Regional

9,311 km

**International roads
total length**

Source: WB, Ukravtodor

7,175 km

**National roads,
total length**

8,493 km

**Regional roads
total length**

Main facts

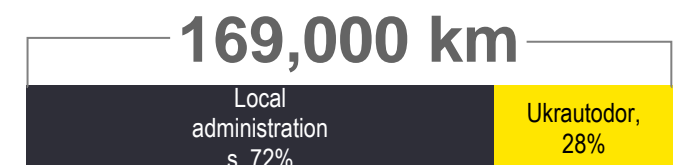
- ▶ Most of Ukraine's road infrastructure was built in the 1960s and 1970s. Since 1991, it has been poorly maintained and underinvested
- ▶ Ukraine's road network infrastructure requires massive investments and their effective use (Approximately USD 40+ b and 5 years are needed to rebuild this infrastructure)

Sector Governance

MIU is a key state institution that develops and ensures implementation of the state policy for road complex;

Responsibility for the maintenance of Ukrainian roads is divided among local administrations and central government. The state is responsible only for the maintenance of the national roads.

Road maintenance responsibility



Source: MIU, EY analysis

State Road Agency of Ukraine (Ukravtodor) is the main executive body in the sphere of state roads construction, renovation and development, represented in all the regions of Ukraine.

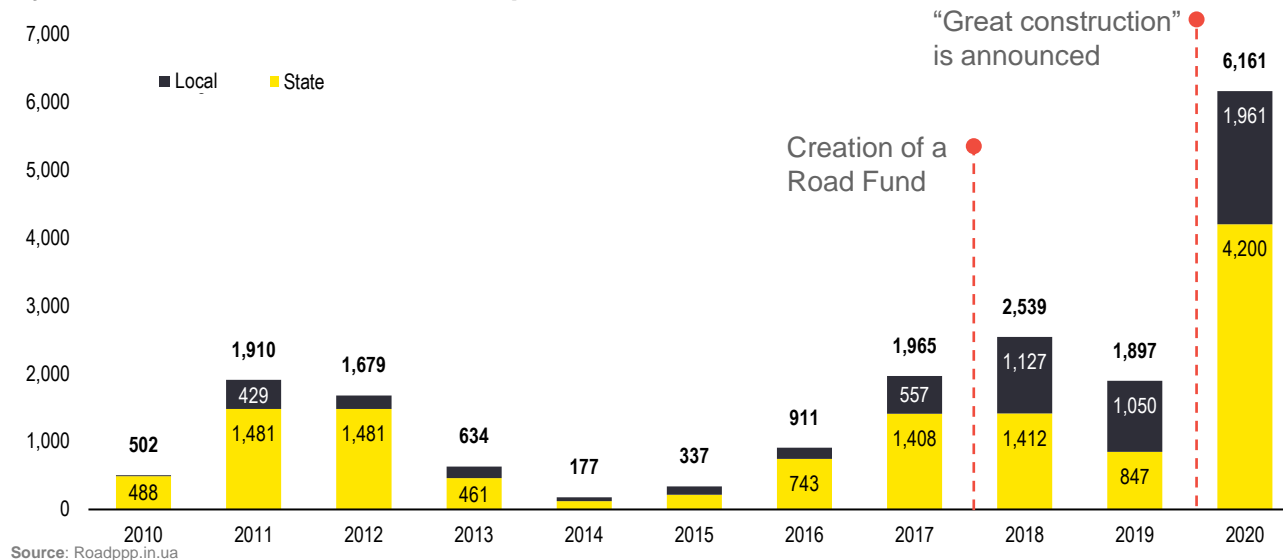
2.1.6. Roads

The government gradually increases public financing of road network rehabilitation, but that is not enough to fulfil the investment needs

Public financing of the road sector

- ▶ Given the poor condition of road infrastructure and lack of financial resources, in 2017, Ukrainian state institutions created the State Road Fund to ensure stable funding for the road sector.
- ▶ In 2019, The President of Ukraine launched a Great Construction program aimed at implementing major projects and attracting large investments into the road sector. GOU expects to make road improvements in more than 6,000 km.

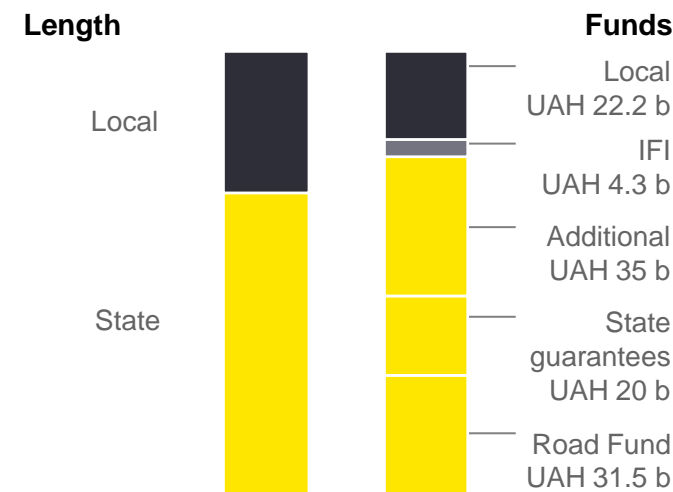
Dynamics of state and local road improvement, km



- ▶ The “Great Construction” is a very ambitious program. However, it will not cover the whole investment need gap alone. The expected funding gap until 2039 will constitute UAH 441 bn.
- ▶ According to the WB calculations, the RF existing revenue sources used to generate RF income will be just sufficient in the long term to cover the RF’s non-capital expenditure. New capital construction would need to be funded either by RF income generated from charging the road users (annual vehicle registration fees, vignettes, tolling, etc.) or from the involvement of the private sector.

Road budget in 2020

The main sources of funding for road construction are The Road Fund (RF), which is replenished by excise taxes and direct government target programs. In addition, Ukraine attracts funding under state guarantees and funding from IFIs.



The overall operational responsibility for managing RF expenditures rests with:

- ▶ Ukravtodor (60% to national roads);
- ▶ State Oblast Administrations (35% to local roads);
- ▶ Ministry of Infrastructure (5% to road safety programs).

2.1.6. Roads

A new road PPP program will propose new projects for private capital with bankable structure and attractive returns and may attract FDI

New road PPP program

In October 2020, the GOU announced the Road PPP program, aiming at engaging the private sector in Ukraine's existing road network through PPP contracts to facilitate quality road network upgrades and long-term maintenance through private investment.

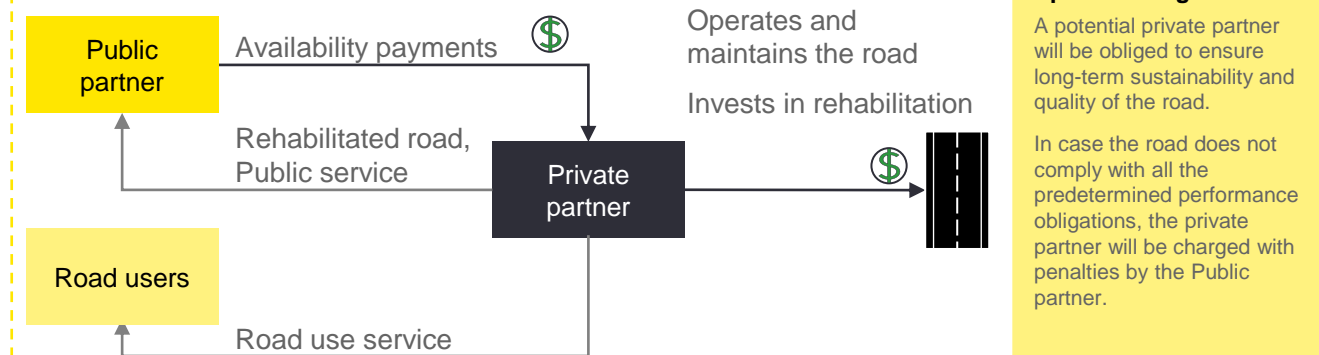
Key features of proposed PPP program

	Phase 1	Phase 2	Phase 3
# Projects	6 projects	7-9 projects	8-10 projects
Timeline	2020-2023	2023-2025	2025-2030
Total length	1,300 km+	1,400-1,600 km	1,600-1,800 km
Potential Investments	USD 1.5 – 2b	USD 2-3 b	USD 4-5 b

Source: MIU

To ensure attractiveness to investors, Phase 1 will be based on an availability payment mechanism. It is a transparent model, which is widely used all over the world. This allows potential investor to plan their future cash flows if the PPP object meets predetermined obligations.

Availability fee structure



Source: MIU

Specific obligations

A potential private partner will be obliged to ensure long-term sustainability and quality of the road.

In case the road does not comply with all the predetermined performance obligations, the private partner will be charged with penalties by the Public partner.

Phase 1 in details



Source: MIU

- ▶ Phase 1 will start with 2-3 pilot projects. The remaining projects are to start with 6-9 months lag.
- ▶ The phase will consist of only brownfield projects as they have a lower risk profile compared to greenfield ones;
- ▶ The phase complexity will increase gradually, allowing to build up the capacity of key players and to make long-term plans based on the timing of the projects.

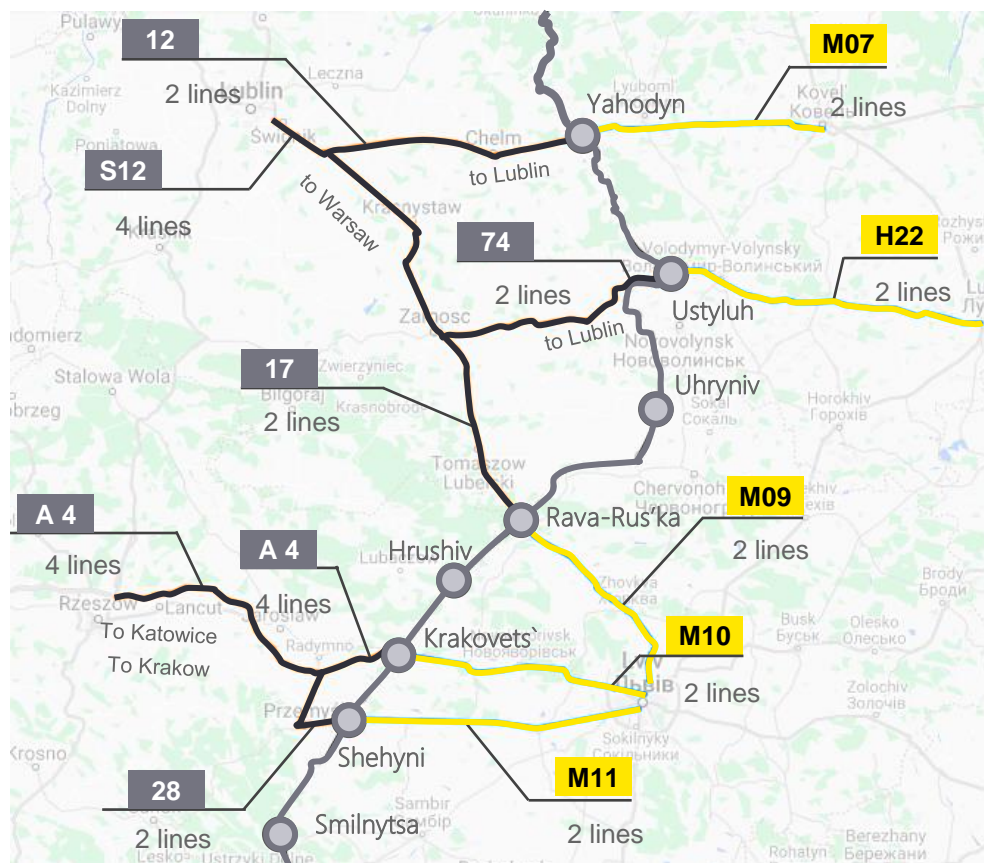
Other landmark projects

- ▶ Other landmark projects, such as Kyiv Ring Road, bridges in Kremenchuk and Mykolaiv, are planned for the near future. Loans are expected from external sources to finance these projects, but the PPP mechanism may be suitable as well.

2.1.6. Roads

Existing border infrastructure and control procedures limit trade activities with the EU. Road developments should be matched to GOU plans on them

Ukraine-Poland border control points and surrounding roads



Source: State Migration Service of Ukraine, public sources

State-imposed barriers

Traffic on key routes of western Ukraine is limited by the capacity of border crossing points, which have reached the limit of their design capacity and do not allow to increase traffic on the roads. Consequently – there is no potential for either private or public investments in those roads.

Capacity of border control points

Control point	Passing time, hours (for trucks)**	Transit capacity, vehicles/day		
		Private vehicles	Trucks	Autobuses
Yahodyn	09:12	3 000	800	75
Ustyluh	-	700	-	44*
Uhryniv	-	564*	2*	13*
Rava-Rus'ka	09:39	3 850	250	100
Hrushiv	-	1 008	-	-
Krakovets`	08:36	2 000	500	100
Shehyni	06:39	2 200	120	150
Smilnytsa	-	763*	31*	5*

*Actual data for 1Q2020

**Actual data on passing the customs control of trucks until 03.07.2020.

Source: State Migration Service of Ukraine (SMSU), public sources

To mitigate the existing gaps, the GOU is already planning to renovate the control points and increase their transit capacity.

2.1.6. Roads

Current legislative framework and legislative initiatives in road infrastructure (1/3)

Association Agreement between the European Union and Ukraine and Plan of Measures for Implementation of the Association Agreement approved by Resolution of the CMU No. 1106 dated 25 October 2017

- ▶ Indicates that the conditions of mutual market access in road transport should be governed by possible future special road transport agreements
- ▶ Provides for alignment with the EU standards, in particular with [Directive 2008/96/EC](#) until 2024 (improvement of road infrastructure safety provisions), [Directive 2004/52/EC](#) and [Commission Decision 2009/750/EC](#) until 2024 (electronic road toll systems), [Directive 1999/62/EC](#) until a decision is made to impose a duty or fee for the use of infrastructure (public roads toll for heavy-duty vehicles)

Law of Ukraine "On Road Transport" (No. 2344-III dated 5 April 2001)

- ▶ Provides for state regulation and control of road transport, development of road transport and investment policy, classification and registration of vehicles
- ▶ Says that state authorities support the development of roads by creating conditions for providing social services for road transport, purchase of vehicles, stimulating development of the road market of relevant services
- ▶ Investment policy in road transport is implemented by executive authorities on a competitive basis in the manner prescribed by the CMU (was not implemented)
- ▶ Investment projects in road transport are implemented by business entities by using their internal resources, external investment resources, as well as borrowed funds

Law of Ukraine "On Motor Roads" (No. 2862-IV dated 8 September 2005)

- ▶ Provides for classification of public roads, functions of state authorities on the management of roadways, the procedure for transfer of public roadways to the toll roads category
- ▶ Says that public roads may be granted into a concession
- ▶ Says that construction of buildings, road service facilities, gas stations and other works within the lane of roads are carried out subject to permission from the State Agency of Motor Roads of Ukraine (Ukravtodor) and in agreement with the National Police
- ▶ The length of alternative roads (their sections) for free transportation of vehicles should not exceed the 2x length of the toll roads, except for cases where bridges and tunnels make up more than half of the toll road

Law of Ukraine "On Road Traffic" (No. 3353-XII dated 30 June 1993)

- ▶ Establishes the rules for construction, reconstruction and repair of roads, streets and railway crossings and the basic requirements for activities of owners of roads, streets and railway crossings
- ▶ Organizations developing standard or individual projects for construction, reconstruction and repair of roads must be compliant with road safety and environmental requirements, taking into account the specific needs of individuals with disabilities. Cutting down on expenditures by limiting the measures affecting road safety is prohibited
- ▶ Projects for construction, reconstruction and repair of roads, streets and railway crossings are subject to examination and approval by state supervisory authorities

Law on the List of Business Permits (No. 3392-VI dated 19 May 2011) requires the approval of projects for construction, reconstruction and repair of roads, railway crossings, road service complexes and other structures within the right-of-way or red lines of city streets and roads

Law of Ukraine "On Sources of Road Industry Financing in Ukraine" (No. 1562-XII dated 18 September 1991) provides for the financing of costs related to construction, reconstruction, repair and maintenance of public roads and rural roads of Ukraine

Law on Concession (No. 155-IX dated 3 October 2019)

- ▶ Concessions in road infrastructure may provide for the construction and further operation of public roads
- ▶ The concessionaire may set different fare rates, not exceeding the maximum rates set by the CMU
- ▶ For each road concession, the CMU sets the maximum rates (for example, for [Lviv-Krakovets](#) and [Lviv-Brody](#))
- ▶ The concessionaire makes concession payments if the traffic intensity on the road exceeds the expected according to the results of the reporting year

2.1.6. Roads

Current legislative framework and legislative initiatives in road infrastructure (2/3)

[Law of Ukraine "On Transport" \(No. 232/94-BP dated 10 November 1994\)](#) provides for the composition of road transport and road lands

[Law on Licensing of Types of Business Activities \(No. 222-VIII dated 2 March 2015\)](#) mandates to obtain licenses for the carriage of passengers, hazardous cargo and hazardous waste by road and for international transportation of passengers and cargo by road

[Law of Ukraine "On Alienation of Land Plots and Other Objects of Immovable Property Located on Them in Private Ownership for the Social Needs and on the Grounds of Public Necessity" \(No. 1559-VI dated 17 November 2009\)](#)

- ▶ Land for the road construction may be received by:
 - ▶ Voluntary buyout with the consent of the owner under a sale and purchase agreement (within 3 years from the date of the decision on buyout)
 - ▶ Compulsory buyout for public needs / on the grounds of public necessity by a court decision (in 6 months from the date of the decision on buyout)
- ▶ Decision on the compulsory buyout of land is made by municipal state administrations (if the location of the land is on the territory of one district), regional state administrations (if the land is on the territory of two or more districts) or CMU (if the land is located in two or more regions)
- ▶ Value of land plot may be reimbursed in cash or by other land or real estate and determined on the basis of its expert monetary valuation approved by an executive authority or municipal authority or established by a court decision

[Concept of Targeted Economic Program for Development of Public Roads of State Significance for 2018-2022 approved by Decree of CMU No. 34-p dated 11 January 2018](#) provides for recovery and development of public roadways of state significance for their integration into European transport systems and increase in traffic security level, speed, comfort and profitability of transportations

[Strategy for Road Safety until 2020 approved by Decree of the CMU No. 481-p dated 14 June 2017, Plan of Measures for Implementation of the Strategy for Road Safety until 2020 approved by Decree of the CMU No. 231-p dated 28 March 2018 and State Program of Traffic Safety Increase in Ukraine until 2020 approved by Resolution of the CMU No. 435 dated 25 April 2018](#)

- ▶ Sets out a system of automatic fixation of violations of traffic rules (in the process)
- ▶ Provides for the development of a national interactive map of public roads until 2020 (not implemented)

- ▶ Provides for the development of the Concept and the National program of infrastructural decisions for vulnerable road users until 2020 (not implemented)

[Concept of Reforming the System of Public Administration of Public Roads approved by Decree of the CMU No. 1096 dated 20 August 2008 \(with amendments under the Decree of the CMU No. 432-p dated 31 March 2015\) and Plan of Measures for Implementation of the Concept of Reforming the System of Public Administration of Public Roads approved by Decree of the CMU No. 739 dated 3 August 2011 \(with amendments under the Decree of the CMU No. 432-p dated 31 March 2015\)](#)

- ▶ Provide for the development of the PPP mechanisms, in particular, construction and/or operation of roadways under concession arrangements, the introduction of payment for the use of roadways
- ▶ Provide for improving the mechanism of cooperation with international financial organizations
- ▶ Provide for the establishment of the State Road Fund (was implemented)
- ▶ Provide for implementation of standard forms of contracts of International Federation of Consulting Engineers (FIDIC) in the construction sector (was not implemented)
- ▶ Provide for implementation of long-term contracts on maintenance of roads of national importance, in particular, based on the final performance of works
- ▶ Examples of long-term contracts are [Output - and Performance-based Road Contracts \(OPRC\)](#) issued by the WB to provide its clients with an alternative to the traditional methods of procuring road reconstruction, rehabilitation and maintenance of existing roads. Under OPRC, most payments to be made to the contractor are based on measured "outputs" reflecting the target conditions of the roads under contract, expressed through "Service Levels"
- ▶ Only one OPRC pilot project was implemented to support the completion of the rehabilitation effort of the M06 Kyiv-Chop [Roadway](#) to European standards. The contract [provides for](#) management and maintenance, reconstruction works, road improvement works and emergency works for 7 years

[National Transport Strategy of Ukraine until 2030 approved by Decree of the CMU No. 430-p dated 30 May 2018](#)

- ▶ Provides for the short-, medium- and long-term planning of road development
- ▶ Provides for implementation of long-term contracts for maintenance of roads based on [their work and final results](#)

2.1.6. Roads

Current legislative framework and legislative initiatives in road infrastructure (3/3)

Procedure for Compensation for Free Travel on Roadways Constructed on Concession Terms and the Compensation Amount approved by Resolution of the CMU No. 11 dated 5 January 2021

- ▶ Free travel on roads constructed under the concession agreement is allowed for:
 - ▶ Vehicles of public authorities, ambulances and other transport under the conditions specified in the concession agreement
 - ▶ Vehicles of individuals and companies in case of emergency (catastrophes, epidemic, epizootic and natural disasters)
- ▶ The concessionaire may receive compensation for expenses on operation and maintenance of road that are not covered by the availability payments or one-time toll for the period of free travel during the case of emergency
- ▶ The amount of compensation does not include the unearned income for the period of free travel during the emergency case
- ▶ The calculation of the amount of compensation is carried out during the feasibility stage of the concession project and is taken into account during determination of the availability payment, one-time travel toll and financial indicators of the concession project

The Maximum Amount of One-Time Tolls on Roadways Constructed on Concession Terms approved by Resolution of the CMU No. 1312 dated 23 December 2020 sets out the toll rates for different types of transport (for example, the toll rate for cars is EUR 0.023 per km)

List of Public Roadways of State Importance approved by Resolution of the CMU No. 55 dated 30 January 2019 determines the list of international and national roads of state importance, as well as their indexes and length

Uniform Rules for Repair and Maintenance of Roads, Streets, Railway Crossings, Rules for Their Use and Protection approved by Resolution of the CMU No. 198 dated 30 March 1994 provide for repair and maintenance of road facilities (except railway relocations) in state-owned property carried out by the State Agency of Motor Roads of Ukraine (Ukravtodor) and road facilities in municipal property carried out by the relevant municipal road maintenance organizations. The regulation needs to be revised to comply with the latest legislative changes

Resolution of the CMU "On Measures for Preservation of Public Roadways" No. 316 dated 27 June 2007 provides for the procedure for carrying out dimensional and weight control, the rates of tolls for heavy trucks and the procedure for temporarily restricting or

prohibiting the movement of vehicles on public roads

General Conditions for Execution and Performance of Capital Construction Contracts, approved by Resolution of CMU No. 668 dated 1 August 2005

- ▶ These conditions are mandatory for consideration during the execution and performance of respective contracts regardless of the sources of construction funding or the form of ownership of an employer or a contractor
- ▶ Rules established by the international agreements override the provisions of this Resolution (for example, FIDIC standards)

Ukrainian Road PPP Program

- ▶ The main objective of the Program is to launch a PPP mechanism for road projects in Ukraine
- ▶ Provides for the mechanism of payment for operational readiness, i.e., financing by a private investor of construction and long-term maintenance of selected roads. Upon completion of the initial works, the private investor will receive a fee for operational readiness (the amount agreed in the contract, which depends on the private investor's compliance with certain efficiency standards (KPIs) and technical requirements)
- ▶ The first part of the Program is aimed at changing Ukrainian legislation, the second part is concentrated on the preparation and implementation of the pilot road projects

Draft Law of Ukraine "On Multimodal Transportation" No. 4258 dated 23 October 2020 (is being considered by the Parliament)

- ▶ Determines multimodal transportation as the cargo transfer by two and more types of transport based on multimodal transportation agreement, which will allow to carry out the transportation of cargo with one shipping document
- ▶ Promotes development of multimodal terminals (production and transshipment complex which is used during multimodal transportation to change modes of transport, loading, unloading, storage of goods, etc.) through state support mechanisms
- ▶ During the provision of multimodal cargo transportation services, the responsibility of the multimodal transport operator for the cargo covers the period from acceptance of the cargo to its delivery

2.1.7. Conclusions



2.1.7. Conclusions

Problems for the labor market are the decline in employment due to COVID consequences and lack of soft skills among the existing workforce

Labor supply and demand

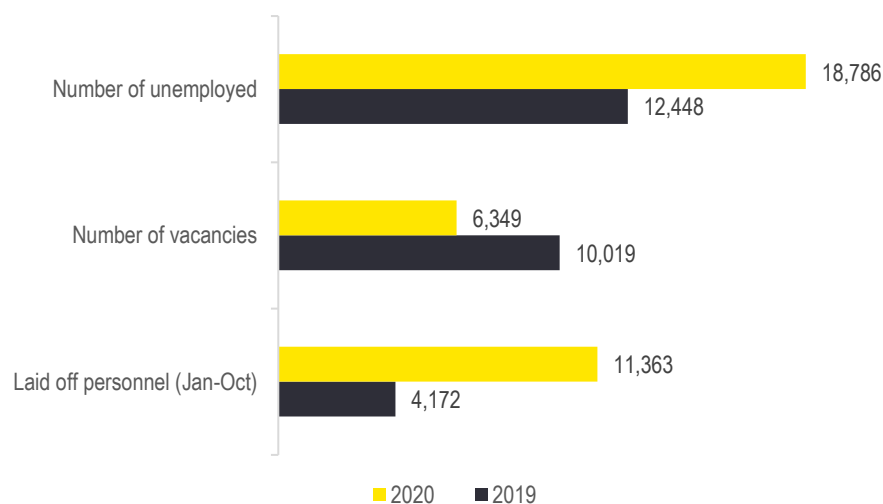
The infrastructure sector currently employs up to 620 thousand people¹. This labor pool has slightly decreased over the last 4 years. Within the Infrastructure sector, Port Infrastructure and Airport Infrastructure subsectors require more skilled employees.

According to the official statistics, there is 2,300 staff working in the Port Infrastructure subsector. At the same time, the real number of Ukrainian personnel employed in this subsector may be higher, as the majority of seafarers are employed mainly by foreign companies. Ukraine is considered to be one of the TOP-5 largest seafarer supply countries².

About 16 ths staff worked in Airport Infrastructure in 2019¹. Nevertheless, COVID-19 had a significant negative impact on the Airport Infrastructure and the sector overall. The number of personnel who were laid off during Jan-Oct 2020 is much higher than for the same period in 2019 (170% more¹) within the Infrastructure sector. Due to the decreasing volumes of air transportation, Boryspil airport planned to decrease its headcount by 19%, Kyiv Airport - by 50% (as of July 2020).

Source: 1. State Statistics Service of Ukraine; 2. BIMCO, BIMCO/ICS Manpower report

Number of laid off personnel, vacancies and unemployed candidates within Infrastructure sector as of 1st November



Source: The State Statistics Service of Ukraine

The number of vacancies in the sector is rather high (6,349 as of the 1st November 2020) and remains among TOP-5 sectors by the number of vacancies despite a 63% drop compared to the same period last year. The gap between supply and demand for these positions is growing, as there are 3 unemployed candidates per vacancy (vs 1.2 in November 2019)¹. Moreover, employers do not plan to increase headcount in the nearest time.

There are several issues regarding the labor market within this sector:

- Due to the similar requirements of English-levels skills, international certification, etc., local talent in Air transportation subsector may be competitive on the global market. The global demand for the new personnel in aviation will constitute up to 2,405 ths (475 ths for Europe)². Considering the lower level of remuneration in Ukraine, outbound migration of personnel within this subsector may be considered as a significant risk
- Railways subsector suffers from a shortage of specialists and high turnover caused by the low remuneration levels and tough working conditions. The situation can be managed through the promotion of the subsector among youth, adjusting monetary remuneration to the general market levels together with sector reform and innovation

Source: 1. The State Statistics Service of Ukraine; 2. Boeing, Pilot and technician outlook 2020–2039;

2.1.7. Conclusions

While wages in Ukraine are lower than in some neighboring countries, the attractiveness of infrastructure professions for young people is ambiguous

Future perspectives

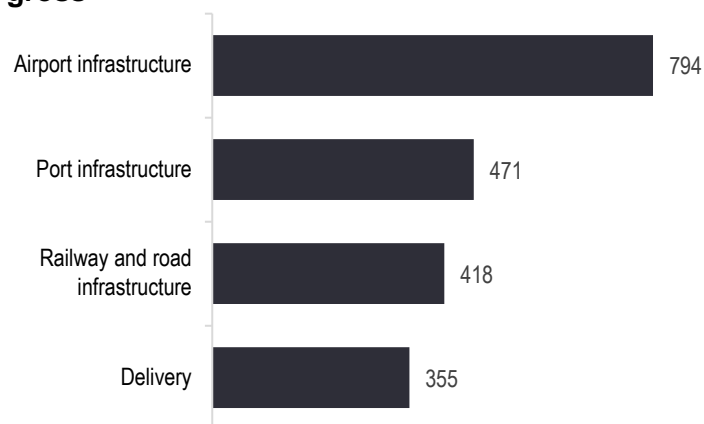
Although global demand for workforce in the sector is high and expected to grow, in Ukraine, it lacks attractiveness among youth, which may lead to problems with succession and shortage of qualified specialists in the future. However, the situation is different depending on the subsector.

The number of people who have obtained an educational degree in the infrastructure field of study is lower than the number of people admitted to study, while the share of those people out of the total is the same (~5%)¹. This trend differs depending on the subsector:

- We observe the growing attractiveness of Air Infrastructure, as the share of people admitted to study is higher, that the share of people who have obtained an educational degree (8% vs 5% of those within Infrastructure field of study)
- This trend is opposite for Port Infrastructure, as the share of people admitted to study is lower (24% vs 30% of those within Infrastructure field of study)

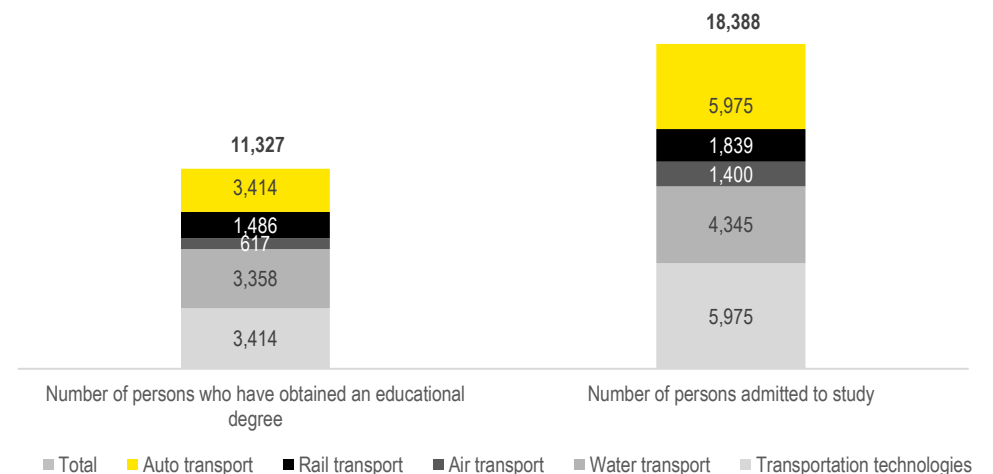
Source: 1. State Statistics Service of Ukraine.

Average monthly wages per subsectors as of September 2020, USD gross



Sources: State Statistics Service of Ukraine, National Bank of Ukraine

Number of people, who obtained higher education degree and admitted to study in Infrastructure field of study, 2020



Source: State Statistics service of Ukraine

Salaries in specified sectors

The highest wages are in the Airport Infrastructure subsector (USD 794 monthly gross in September 2020), while the Delivery subsector has the lowest wages (USD 355 monthly in September 2020). Such a gap may be explained by higher requirements for specific technical skills in the Airport Infrastructure subsector.

Salaries of the Port Infrastructure subsector employees in Ukraine are significantly lower than in some of neighboring (e.g., a low rank seaman in Ukraine earns about USD 5,000 annually vs USD 16,000 for an equal position in Poland¹). This trend may trigger labor migration abroad

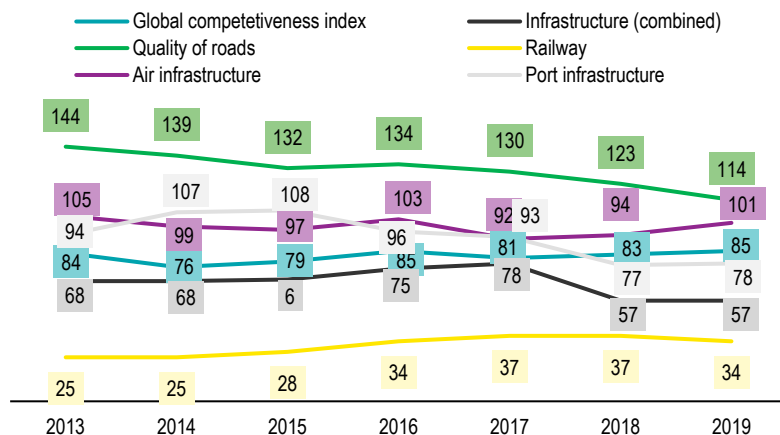
Similar to seafarers, Ukrainian aircrew staff also have much lower salaries than their peers abroad (e.g., an Airline Pilot in Ukraine earns a gross of USD 18,000 annually vs gross USD 42,252 in Poland¹), which causes labor migration (mainly to Africa and Asia)

Source: 1. salaryexpert.com

2.1.7. Conclusions

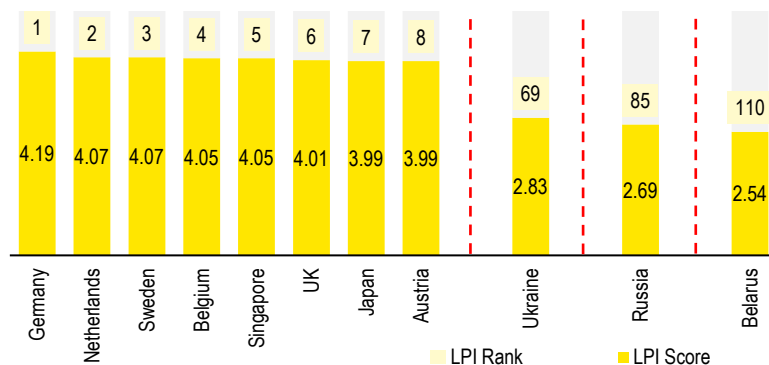
Ukraine is strengthening its position in the global infrastructure ratings, breaking out of the Soviet past, but there is still an area for improvement

Global competitiveness index (GCI) 2019 - Infrastructure



The Global Competitiveness Index is annually provided by the World Economic Forum. Infrastructure is 1 of 12 the pillars that affect the overall ranking. It is further decomposed by subsectoral rankings

Top countries by LPI 2018

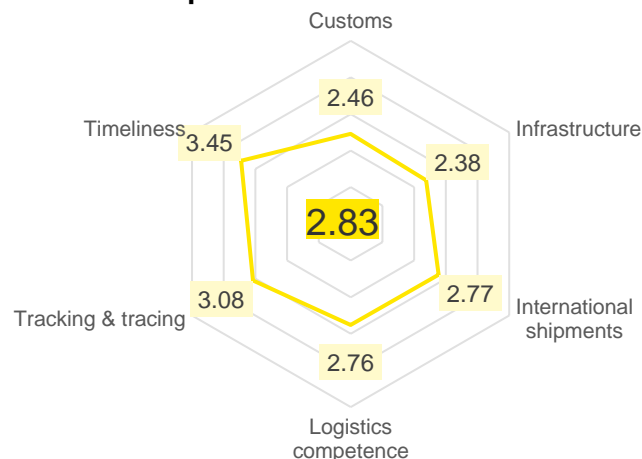


World Bank Logistics Performance Index is a benchmarking index created to identify the challenges and opportunities of countries' infrastructure in their performance on trade, logistics, and infrastructure

Past and prospective rating drivers

- ▶ In the latest ratings, Ukrainian infrastructure was graded for 57th place in GCI 2019 (Global Competitiveness Index) and 69th place in LPI 2018 (Logistics Performance Index), which are the main global ratings that characterize the development of national infrastructure and published annually by the World Economic Forum and World Bank respectively;
- ▶ According to the WB and WEF rankings, Ukraine takes low scores due to a high level of physical and functional obsolescence of infrastructure assets. Moreover, additional scores were lowered due to undeveloped logistics infrastructure and lack of transport and logistics centers;
- ▶ Despite the downgrade of the global competitiveness rating, the infrastructure development indicator has grown by 21 positions since 2017 and remains stably high compared to the historical level;
- ▶ International comparisons in the rating of logistics efficiency in 2018 show that Ukraine took place between Serbia and Egypt, and in the post-Soviet space became the third after Estonia (3.31 points and 36th place) and Lithuania (3.02 points and 54th place).

LPI decomposition for Ukraine 2018



According to GCI, the competitive position of Ukraine remain stable, while the scores within the infrastructure component are growing. The key supporting factors were the development of road facilities and port infrastructure. At the same time, Ukraine's decrease in scores of rail infrastructure is observed. WB LPI indicates that the quality of infrastructure remains a key constraining factor of logistic development.

2.1.7. Conclusions

Considering described analysis, we identified the following key factors influencing the potential attractiveness of the sector for investors



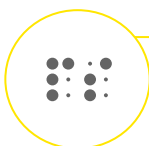
Attractive business models for private investors

Ukrainian infrastructure projects in all sectors may ensure stable profitability provided by steady cargo flow (export/import) and revenues tied to hard currency in some segments (ports and airports). This conclusion is supported by recent deals in the port sector.



Liberalized market regulations

There is no government regulation of prices in some sub-sectors of infrastructure. For example, stevedoring companies and airport terminals can set any price for their services that they deem fair.



Wide range of public assets for PPPs/privatization

Ukraine has its own "investment menu" in the main infrastructure sectors. The GOU has identified over 20 potential projects in rail, water, road and aviation with various proposed PPP models.



Modern PPP and concession legislation

In October 2019, the Verkhovna Rada adopted the new Concession Law, which lays down a modern legal framework that allows to implementation of concession projects according to the best practices.



Public attention and support

Both President, Government and society support infrastructure rehabilitation. Thus, there is a lot of attention to the sector and transparent rules of relationships between public and private side.

High foreign attention to PPP projects

310 participants

From 43 countries and 38 companies attended the Road PPP Program event

Value of deals in port sector in 2019-2020

USD 1,600 m +

According to the public available information

Number of declared PPP projects in infrastructure

More than 20

According to Priority projects till 2023 approved by CMU



Volodymyr Zelensky, President of Ukraine

We have announced the first tenders for the concession of the Olvia and Kherson seaports. We are also preparing new tenders for Ukrainian airports and seaports, as well as concession projects for the road.

<https://mtu.gov.ua/en/news/31123.html>

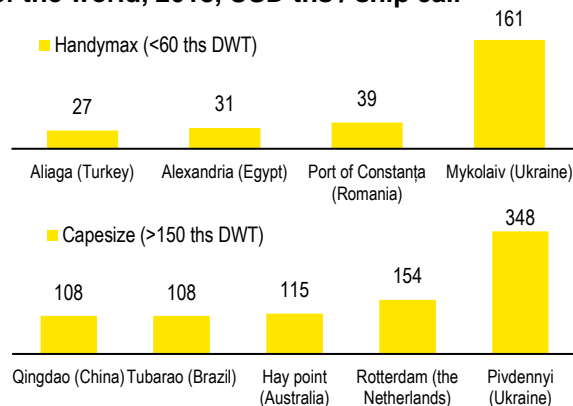
2.1.7. Conclusions

Despite the overall attractiveness of the infrastructure sector, the following gaps and barriers constrain its development potential: Market

Inefficient tariff systems

Tariffs of natural infrastructure monopolies (UZ, USPA, Ukraerokh, etc.) largely impact the Ukrainian economy. However, the lack of independent authority responsible for tariffs and other regulatory measures slow down the reform. UZ tariffs divided by classes of cargoes despite the absence of the difference in costs, USPA port duties, one of the highest in the region, were not recalculated according to a clear methodology for years. The same issue is relevant to airport duties. Thus, the establishment of the National Transport Regulatory Committee and implementation of best practices in tariff-setting is critical for both the economic sustainability of state-owned companies as well as the competitiveness of the Ukrainian economy.

Port dues for ships of different classes in ports of the world, 2018, USD ths / ship call



Source: USPA, Economic Recovery Center

Funding gap

As it was previously mentioned, there is a lack of dedicated budget resources for infrastructure development. Thus, the GOU has plans to create special state-budget funds to fulfill the existing investment gap.

The last example of such a fund is the Road Fund, created in 2018. Despite its accumulates record amounts of budget resources to road infrastructure, it is still not enough.

Funding gap in the RF until 2039, UAH bn

Cash inflows

1,977

Cash outflows

1,537

Gap

-441

Source: Ukravtodor

To resolve the funding issue, the GOU may use different options:

- Implement additional sources of funding, e.g., road user charges (annual vehicle registration fee, vignettes, distance-based charges, etc.)
- Create new dedicated funds (airport, railway, etc.)
- Involve the private sector in PPP projects
- Allow private investments in public infrastructure on the compensation basis

Unfinished reforms

Currently, most state-owned strategic enterprises operate on outdated models of development and their development is limited by the financial resources of the state. However, internal conflict of interests, issues with governance, cross-subsidizing of loss-making activities impacts the whole sector.

Thus, initiated transformations of key SOEs should be finished as soon as possible:



USPA Strategy 2025

- The transformation of USPA into JSC operating on a market basis will allow diversifying the sources of funding for port infrastructure development projects.
- Transition to the Port-Landlord model involving private operators in the management of state port assets through concession or partial privatization.



UZ transformation

UZ plans to complete the division into 3 operators - freight, passenger and infrastructure - by the end of 2021. Thus it will be possible to solve the problems of inactive and rarely used infrastructure, restructure a large number of non-core assets, optimize the whole range of operating costs, attract private investments into renovation and modernization of infrastructure.

2.1.7. Conclusions

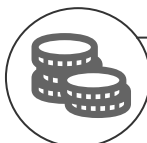
Despite the overall attractiveness of the infrastructure sector, the following gaps and barriers constrain its development potential: Legal – PPP



Need for transition options from certain agreements to PPPs (concession)

The current rules for transition from lease to concession are quite complicated and have procedural flaws (e.g., there are inconsistencies/unclearities in the sequence of certain procedural stages and milestones, there are no separate rules for direct negotiation and signing procedure). These rules also do not allow for the possibility for converting joint activity into the concession

Potential remedies: (i) further updates in the procedure for transfer from lease to concession; (ii) adding the procedural rules for transfer from joint activity to concession



Limitations on the concession of rail infrastructure

Public main railway lines and technological structures (e.g., railway stations and public tracks, technological power supply devices) are state-owned (assigned to JSC "Ukrzaliznytsia" based on the economic management title) and may not be privatized, leased and transferred into concession.

There is an initiative to attract investments to the project of high-speed railway traffic in Ukraine

Potential remedies: unlock the PPP mechanisms for attracting investment in railway modernization



Blocked availability payments and absence of long-term budget commitments

Lack of mechanism of availability payments in airport PPP projects due to Ukrainian budget system with a short-term (1-year) planning

Potential remedies: the legislation needs to be changed to launch the mechanism of availability payments allowing to take the long-term budget commitments, which should boost interest in PPP projects in the airport sector



Lack of regulation on toll roads in concession

The concessionaire should make concession payments if the traffic intensity on the road exceeds the expected intensity, which is indicated in the concession agreement, according to results of the reporting year (Paragraph 2 of Article 43 of Law on Concession). However, the issue of traffic intensity calculations by concessionaire is not clearly regulated. There is only a general "DSTU" standard for traffic calculations and it is not clear whether it is applicable to toll roads

Also, there is no legislative mechanism for collecting payments from the toll roads (in EU, Directive 2004/52/EC sets out the European electronic toll service and establishes the types of technologies for electronic toll systems to finance road infrastructure or to collect road usage fees)

Potential remedies: develop methodology for determining the traffic intensity on toll roads and the procedure for collecting payments on toll roads; further implement the provisions of Directive 2004/52/EC on the interoperability of electronic road toll systems

2.1.7. Conclusions

Despite the overall attractiveness of the infrastructure sector, the following gaps and barriers constrain its development potential: Legal – Land

Transferring water fund lands into use



To start construction works in the ports, the relevant entity should have the ownership or use the title to the land plot at the bottom of the water

Ukrainian law separates the land plot and the water object above such land plot as two separate objects. The mandates of authorities that issue permits for water lands use for seaports are overlapping

Municipal councils or district/regional state administrations take the decision on transferring the land plot into use (Articles 123 and 186-1 of [the Land Code](#)), which includes the following steps:

- ▶ Submitting a motion on issuing the permit to develop land allotment documents to the municipal councils or district/regional state administrations and obtaining this permit within one month
- ▶ Executing agreement on the development of land allotment documents and filing them to the State Agency of Water Resources of Ukraine for further approval within six months from executing the agreement
- ▶ Passing state examination of the land allotment documents by municipal councils or district/regional state administrations and taking the decision on transferring the land plot into use

For the water area of seaports, the CMU is responsible for decisions on transferring the seaport water area into use (Article 14 of [the Water Code](#))

Potential remedies: consider revision of water and land use legislation in order to unify the procedure for transferring water fund lands into use and ensure consistency in functions of the relevant authorities

Inefficient procedure for a buyout of land plots for the new transport infrastructure construction



A land plot for the development of transport infrastructure may be received by the voluntary buyout for public needs under a purchase agreement subject to consent from the owner(s) of the land plot or by the compulsory buyout procedure for public necessity

The buyout rules are quite complex and have certain regulatory and practical flaws and issues, particularly:

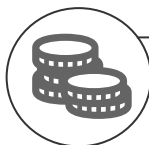
- ▶ A partial buyout of a land plot (voluntary or compulsory) under [the Law](#) requires approval from the land plot owner to develop respective project land documentation. If the owner does not provide the [approval](#) for a partial buyout, the compulsory buyout of the entire land plot would be required. This may lead to additional expenses on making compensation to the land plot owner
- ▶ [The Law](#) provides that in case of the compulsory buyout, the owner should obtain the equivalent land plot and house (if the latter was built on the respective land plot) unless otherwise is agreed with the owner. There are no clear criteria for determining the equivalent land plot and no clear rules on how to proceed in case there is no equivalent land plot and the owner does not agree to take money for compensation
- ▶ The buyout of land plots may require changes in the master layout plans of the relevant territories. These changes are made by the local authorities under the complex and time-consuming procedure. This may cause significant delays in the overall buyout process
- ▶ There are additional steps in the buyout procedure provided by [the Land Code](#), which involve obtaining approval for the planned object's location and area of the required land plot from the respective authorities and land plot owners. After these approvals are obtained, the owner's approval needs to be procured to start the buyout negotiation procedure

Potential remedies: simplify the rules which require obtaining multiple approvals from the land plot owner in case of a voluntary buyout, streamline the procedure for a partial buyout of land plots and procedure for changing master layout plans, revise the rules for obtaining prior approval for the object location from the land plot owner, shorten the terms for considering cases on compulsory alienation of land plots for public necessity

2.1.7. Conclusions

Despite the overall attractiveness of the infrastructure sector, the following gaps and barriers constrain its development potential: Legal – Other

Absence of mechanism for compensation of the private investments in public infrastructure objects



Due to lack of funds, private investments into public infrastructure objects on a future compensation basis may unlock investment projects. However, in all types of infrastructure, procedures are not regulated appropriately and thus, do not work in practice. E.g., for ports:

- ▶ [The Law of Ukraine "On Sea Ports"](#) (Article 23) provides for a possibility to construct state-owned hydrotechnical facilities with private investments with compensation of the cost to the investor. However, there is no procedure for how such investments and compensation may be made
- ▶ Under paragraph 5 of the Transition Provisions of this Law, the hydrotechnical facilities that were constructed before June 2013 were to be transferred to the USPA. However, the investors need to provide documents confirming their title (which is often problematic) and must be compensated for their investments
- ▶ The procedure for compensation of investments in strategic seaport infrastructure has not yet been approved. The procedure is now published by the MIU for public consideration
- ▶ Because of the lack of compensation procedure, the historical strategic infrastructure assets have not been transferred to USPA and have an uncertain legal status

Potential remedies: develop the rules for making and compensating investments into port infrastructure going forward, as well as develop the procedure for compensating historical investments to ensure the transfer of the assets to USPA so that they can be further developed

Lack of regulation on the implementation of FIDIC standards

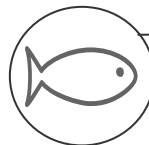


Rules established by the international agreements, which override provisions of Ukrainian regulations, are applied

For construction and reconstruction of the public roadways, the principles and conditions of FIDIC standards may apply under the procedure approved by the CMU (was not approved)

Potential remedies: development and approval of the CMU procedure for application of FIDIC standards

Unregulated stevedoring business in fishing ports and at the shipyards



Sea fishing ports are regulated by the [Law of Ukraine "On Fishery, Industrial Fishing and Protection of Water Bioresources"](#)

Reportedly, the sea fishing ports are processing the same cargo as stevedoring companies due to a reduction in the flow of fish products to Ukraine. Certain shipyards provide business activity on cargo transshipment as stevedoring companies without a relevant legislative framework. [The Law of Ukraine "On Sea Ports"](#) does not regulate their activity, so the law has gaps in governing the provision of services by the fish ports and shipyards acting as stevedoring companies

Potential remedies: consider the development of the relevant legislative framework for transshipment services provided by entities that do not have the status of seaport operators (stevedoring companies)

Lack of rules for access to the handling services market



[The Air Code of Ukraine](#) provides that the aviation rules should set out the types of ground handling services and rules for carrying out such services

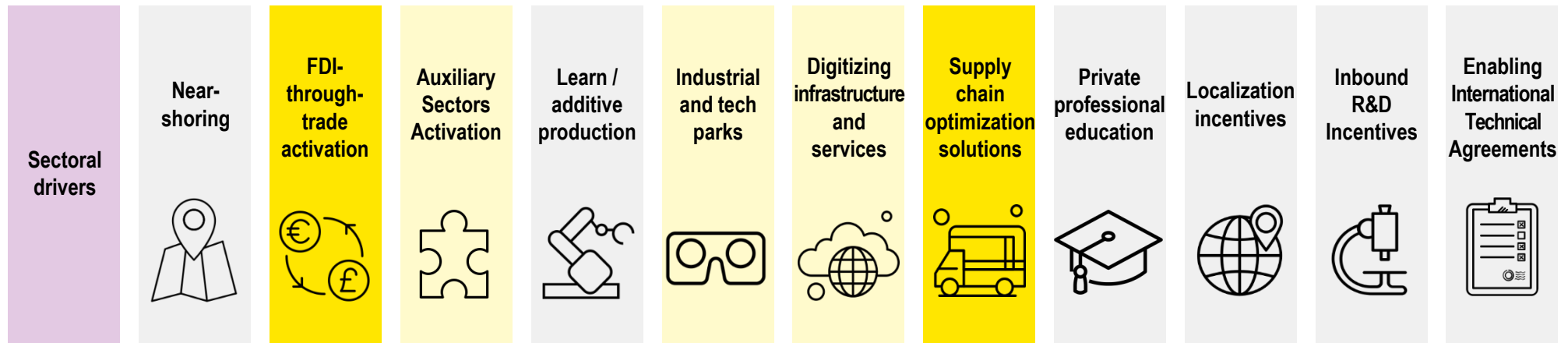
Development of the ground handling rules is also part of approximation of Ukraine's legislation with EU regulations (particularly, [EU Directive 96/67/EC of 15 October 1996 on access to the ground handling market at Community airports](#))

[The SAAU](#) prepared the draft aviation rules for access to the handling services market. These draft rules, however, have not been approved

Potential remedies: approving the aviation rules for access to the handling services market

2.1.7. Conclusions

Moreover, by applying predefined measures within the subsector, it is possible to achieve FDI activation for other sectors in the long-term (1/3)



Creation of new free-trade zones

Elimination of customs tariffs and non-tariff barriers should increase the volume of international trade and encourage traders to invest in faster and more safe infrastructure.

Multimodality

Increase in the number of container block trains and logistics centers due to the development of EU-China Multimodal transportation.

Increase in freight quotas

Increase in the permitted volume of trade within existing trade agreements to encourage foreign partners to construct capacity for transportation of increased volumes of goods.

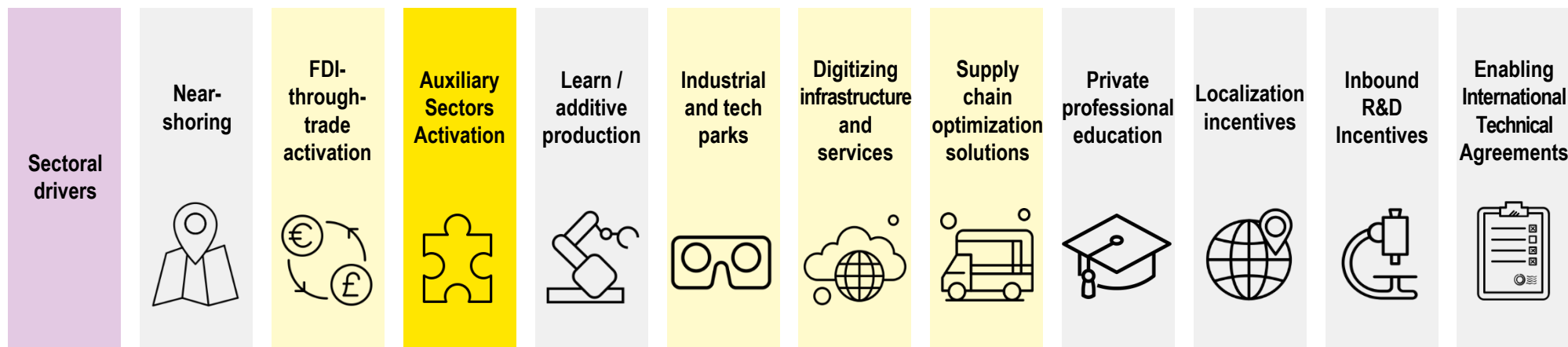
Clusterization

The location of clusters near infrastructure facilities will stimulate the formation of additional cargo handling facilities for cost and time optimization.

Mechanisms to achieve described FDI activators: 1) Public Private partnerships and Privatizations in the sector; 2) Development of existing facilities; 3) Transferring from lease to concession.

2.1.7. Conclusions

Moreover, by applying predefined measures within the subsector, it is possible to achieve FDI activation for other sectors in the long-term (2/3)



Construction machinery manufacturing

Consistent implementation of large infrastructure programs, like the “Great construction,” creates incentives for localization of construction machinery manufacturing in the short and mid-term.

Retail and wholesale activity

Infrastructure improvement will create an attractive environment for capital investments, as safe and efficient infrastructure is critical to the trade industry and the communities it serves.

Fleet manufacturing

The renewed infrastructure will create prerequisites for the fleet expansion (public transport, private cars, railcars, aircraft, barges, etc.), creating incentives for FDI in its manufacturing.

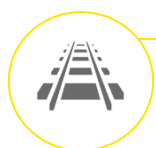
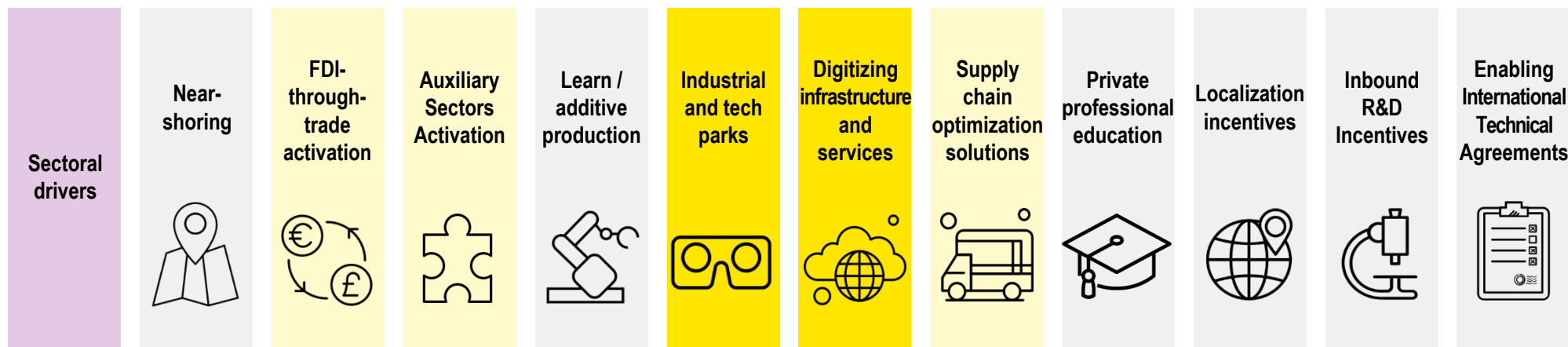
Industrial parks

Just as industrial parks stimulate the improvement of neighboring infrastructure, the modern infrastructure itself creates the preconditions for the development of new industrial parks.

Mechanisms to achieve described FDI activators: 1) Industrial parks development, 2) JVs or agreements on localization, 3) Greenfield construction projects for new facilities

2.1.7. Conclusions

Moreover, by applying predefined measures within the subsector, it is possible to achieve FDI activation for other sectors in the long-term (3/3)



Extension of supportive infrastructure

The development of concentrated industrial production centers will require the creation of high-quality modern infrastructure, including restoration and construction of tracks and access roads.



Smart infrastructure becomes more user-friendly

Implementation of smart tickets and other smart solutions take the market out of the shadows, making it more transparent, predictable and attractive for investments.



Growing demand for cargo handling facilities

To ensure the completeness of the production cycle, industrial parks will stimulate the construction of logistics hubs, cargo receiving, handling and dispatching facilities and warehouses.



IoT and self driving vehicles

Implementation of self driving and remote-control vehicles will require the development of road infrastructure (new marking, safeguarding measures, renovation) potentially on a PPP basis.

Mechanisms to achieve described FDI activators: 1) Industrial parks development, 2) Development of existing facilities

2.1.7. Conclusions

International foreign investment conferences and other industry events

Event	Location	Place	Next dates	Description
EBA Infrastructure day	-	Online	December 3, 2020	The achievements and challenges of Ukraine's infrastructure sector in 2020
ICAO Aviation Data and Analysis Seminar	Regulators, Air Navigation Service Providers (ANSPs), Aerodrome Operators, Aircraft Operators, International Organizations and Industry	Paris, France	December 15 – 17, 2020;	Current situation and trends of aviation in EU region, synergies between aviation, tourism and trade. New challenges and needs of the industry
Port Development South East Asia Summit	More than 200 representatives from the port industry and authorities from East Asia	Bangkok, Thailand	January 27 - 28, 2021	Discussion of port projects by port authorities & Operators, development of Ports to boost Regional Trade. Future of waterways, dredging and quay structure
IATA World Cargo Symposium	Over 1000 senior expert representatives of airlines, freight forwarders, airports and Regulators	Istanbul, Turkey	March 9 – 11, 2021	The aspects related to Technology & Innovation, Security & Customs, Cargo Operations and Sustainability
Ukrainian transport infrastructure forum	Annual meeting with participation of EIB, MIU representatives and top managers of key market players	Kyiv, Ukraine	March 23, 2021	Overview of the transport infrastructure sector and key Government priorities, PPP and concessions, the potential role of the private sector in port development
Ukrainian ports forum	Annual meeting with participation of MIU, international organizations (IMO, ESPO IAPH) and key market players	Odesa, Ukraine	May 2021	Coordination of the positions of public and private management in the issues of solving urgent problems of the maritime industry.
Central and Eastern Europe infrastructure Week	100 – 500 government officials, investors, infrastructure sector representatives	Kyiv, Ukraine	May 27, 2021	This event will focus on the available investment opportunities of the CEE countries infrastructure market, including private, public, and Public-Private Partnership investments
European Environmental Ports Conference 2021	Senior representatives from the global port community and shipping companies, environmental policy-makers, academic experts, consultants	Rotterdam, the Netherlands	June 16 - 17, 2021	Discussion on how ports are adapting to the current environmental regulations & policies placed in the port Industry. The environmental development of technology & innovation in the port industry. Development of container shipment
PPP AIRPORT INVESTMENTS SUMMIT 2021	Event dedicated exclusively to Public-Private Partnerships in the Airports sector	Istanbul, Turkey	June 16 - 17, 2021	Overview of best operational practices, innovative financing solutions to discovering new strategies and technologies, smart & passenger-friendly airport expansion projects within the private-public sector
7th Railway Forum Berlin 2021	Regular meeting of 1,400 decision-makers and experts from the railway industry	Berlin, Germany	September 7 - 8, 2021	Expansion of the the railway system, digitization and automation, international competition in Railway industry
GAD World	550+ representatives of airports, investors, financiers, regulators, governments and airlines	Zurich, Switzerland	November 28 - December 2, 2021	One of the most popular global airport privatization and investment forums
UITP Global Public Transport Summit	Over 300 professional speakers, 2,400 attendees from all over the globe	Melbourne, Australia	December 17 - 19, 2021	Hybrid conference/exhibition event, gathering place for public transport professionals to share ideas, innovate and make meaningful connections
9th European Aviation Conference	Meeting of industry stakeholders and government officials from across Europe and around the world	Heilbronn, Germany	December, 2021	Policy-relevant issues in aviation, best practices and practical solutions to challenges facing the aviation industry.

Source: organizers' websites and other open sources

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ED None.

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