

UDC 656.2.078(477)R. PITTMAN^{1*}

^{1*}U.S. Department of Justice, Antitrust Division, Economic Analysis Group, 450 5th St., NW, No. 9004, Washington, DC, 20530, USA, tel. +1 (202) 307 63 67, e-mail Russell.Pittman@usdoj.gov, ORCID 0000-0001-9498-0561

REFORMING AND RESTRUCTURING UKRZALIZNYTSIA: A CRUCIAL TASK FOR UKRAINIAN REFORMERS

Purpose. This article examines options available for Ukraine as the country considers proposals to reform and restructure Ukrzaliznytsia. **Methodology.** The basic restructuring options observed internationally are presented, and the literature concerning their impacts and effectiveness is reviewed. **Findings.** The creation of competition among freight train companies has been found to improve system performance, but the EU policy prescription of complete vertical separation may not be required in order to achieve this. The Americas-style policy of horizontal separation has also been found to improve system performance, and may be more appropriate for a country as large as Ukraine and a railway as dependent on freight operations as Ukrzaliznytsia. **Originality.** Most of the literature on railways restructuring focuses on vertical separation or third party access, while the focus here is on a policy option arguably more appropriate to Ukraine. **Practical value.** Ukraine's economy is dependent on the efficient shipment of bulk commodities such as coal, iron ore, steel, and grains – commodities that travel most economically over long distances by rail. The successful reform and restructuring of Ukrzaliznytsia will be a crucial part of Ukrainian economic reforms going forward.

Keywords: Ukrzaliznytsia; railways; reform; restructuring; vertical separation; horizontal separation; competition; investment

Introduction

If the Ukrainian economy is to be successfully restructured going forward, a restructured railway system will have to be part of the picture. Ukraine's economy depends on the production and sale of a number of bulk commodities, including coal, iron ore, steel, and agricultural products, that require shipment by rail in order to reach both domestic and export markets economically.

The Ukrainian Railway – Ukrzaliznytsia, UZ – was formed as a joint stock company in 2015 from what had been six separate regional railways, each with a good deal of autonomy. UZ suffers from aging locomotives and rolling stock as well as a badly depreciated infrastructure that causes traffic bottlenecks at crucial locations. An important first step in creating a viable railway going forward will be to find ways to attract investment into the system. Given competing demands on government resources, the international experience suggests that this will likely have to focus on private sector participation. Attracting private sector participation, in turn, will likely require a restructuring strategy that relies on market forces and competition rather than government decision makers to direct strategy and operations into the future.

In this paper we first discuss in more detail the crucial role that UZ plays in the Ukrainian economy. We follow with a survey of the world experience with railways restructuring: a large number of countries have already undertaken the task of converting aging government-owned monopoly railways into more dynamic and competitive transport enterprises, and their experience in very diverse settings may have important lessons to offer. We then examine the current state of rail reform plans in Ukraine. We conclude with discussions of an alternative path forward that seems most likely to be successful in Ukraine, based on both the experience elsewhere and the country's current situation.

Purpose

The purpose of this article is to examine the options available for Ukraine as the country considers proposals to reform and restructure Ukrzaliznytsia.

Methodology

For this purpose, we begin with a more detailed discussion of the crucial role that Ukrzaliznytsia plays in the economy of Ukraine. We follow with a review of the current literature regarding the international experience with railway costs and with different railway reform models.

Ukrainian Railways and the Ukrainian Economy. Ukraine's economy is based on the production of bulk commodities that generally travel most economically by rail – especially given the relatively poor condition of the country's road and highway system [3, 4, 8, 51]. Ukraine is among the top ten world producers of iron ore, steel, coking coal, wheat, corn, and sunflower oil. Coal (both utility and coking) is the leading commodity carried by rail, making up about a fourth of annual volume; steel, iron ore, and related products make up another quarter; and grains and building materials make up a good portion of the rest. Container traffic has a small but growing presence, especially as transit traffic. A good deal of the freight traffic originates in the east, including coal from the Donbas, iron ore and steel from the Kryvbas, and import and transit traffic from the Russian Federation.

The railway itself is the fourteenth largest in the world in track-km and the sixth most densely operated (as measured by ton-kilometers plus passenger kilometers per track-km). It is a freight-dominant railway, carrying the seventh highest total of ton-km of freight in the world (and not far behind Kazakhstan for sixth place). On the other hand, compared with the railways of other medium to large countries, UZ also carry a large number of passengers – around twenty percent of traffic, a considerably greater percentage than the Russian and Kazakh railways, for example. The combination of export traffic and transit traffic makes up 59 percent of the freight tonnage [9]; a significant portion of this has been freight originating in Russia and ultimately departing from Ukraine either by rail to the west (especially to Poland, the Slovak Republic, and Hungary) or by sea to the south (especially via greater Odessa).

As noted above, UZ was formed in 2015 from the six regional railways that had survived Ukraine's declaration of independence from the USSR in 1991, each of which had enjoyed a good deal of autonomy: the Donets Railway, the Lviv Railway, the Odessa Railway, the Southern Railway (Kharkiv), the Southwestern Railway (Kyiv), and the Near-Dnipro Railway (Dnipropetrovsk). (See Fig. 1.) The Donets, Near-Dnipro, and Odessa had traditionally been the most heavily used and the most important for freight, given their locations centered on coal mining (Donets), iron ore and steel production (Near-Dnipro), and port activities

(Odessa). Before the formation of JSC UZ in 2014, both international lenders and local reformers had expressed frustration at the inability of the central government and/or railway administration to impose more effective centralized control on these regional lines.

UZ freight tariffs are set on the same basis that was used when the Ukrainian railways were a part of Soviet Railways: on the old tariff book Tariff 10-01. As in Russia, Tariff 10-01 separates freight tariffs into three broad classes of commodities that may be roughly categorized as raw materials, intermediate goods, and final products:

- Class I commodities include coal, ores, timber, and construction materials such as sand, stone, and concrete.
- Class II includes oil, grain, fertilizers, food, and a broad collection of intermediate goods.
- Class III contains finished chemicals and metals, machinery, and most finished manufactured goods.

Individual tariffs in each category are then determined using a declining scale for distance of haul and adjusting for shipment size and charges for loading and unloading. The overall rationale behind the tariff structure is basically twofold: to encourage long-distance shipments at affordable rates, and to charge for shipping each commodity no more than a target percentage of its delivered price [22, 39].

Like many railways around the world, UZ is required to cross-subsidize loss-making passenger operations from the profits of its freight operations [5]. Also like many railways around the world, this requirement to cross-subsidize passenger operations has made it more difficult for the railway to devote sufficient resources to the maintenance of current equipment and the acquisition of new equipment [2]. Worse, weak corporate governance at UZ has led to a procurement system characterized by low quality inputs purchased at high cost [10]. Even more importantly, large, politically influential shippers pay preferential tariffs that at best cover only direct costs [11, 45]. The result is that the locomotive and rolling stock parks are heavily depreciated and generally in poor operating condition; likewise, the track infrastructure is heavily depreciated and exhibits costly bottlenecks in several regions of the country [10, 11, 12]. A high priority going forward will be a reform plan that is able to attract large flows of investment into infrastructure, locomotives, and rolling stock [2, 6, 7].



Fig. 1. Six Ukrainian Railways

The World Experience with Railways Restructuring. The decades of the 1990's and the 2000's were everywhere periods of neoliberal reform and privatization strategies in general and in the railways sector in particular [19]. As in other infrastructure sectors, railways reforms around the world have tended to focus both on the introduction of private-sector participation and on the possibilities for the creation of competition in the context of what has been traditionally considered a natural monopoly. Also as in other infrastructure sectors, economists around the world have tended to favor the structural separation of going concerns as a sort of default option – as the generally preferred method of restructuring to create competition among users of a network. It has only been recently that much scholarly attention has been paid to the potentially negative cost implications of this policy in industries as diverse as railways, electricity, telecommunications, and water [40, 41, 46, 55].

A great deal of the policy debate regarding railways restructuring has concerned the possible creation of competition among multiple train-operating companies over a monopoly track infra-

structure. With this possibility has come the question of whether such competition would be more effective in the presence of complete «vertical separation» between infrastructure and train operations, or whether a less drastic «third party access» regime – under which the incumbent UZ would remain vertically integrated but would be required to provide infrastructure access to independent train-operating companies under regulated terms and conditions – would be sufficient to support the introduction of competition, perhaps accompanied by some kind of «accounting separation» of the incumbent with the creation of an overall holding company. Although Britain's pioneering experience with complete vertical separation is generally considered a cautionary tale, the competition directorate of the European Community continues to push member countries in that direction.

As an alternative, minority voices in the debate have called for the creation of competition among multiple vertically integrated railway enterprises – a strategy sometimes termed «horizontal separation» to contrast it with «vertical separation» [7, 41]. Under such a strategy, each railway enterprise runs trains on only the infrastructure that it con-

ЕКОНОМІКА ТА УПРАВЛІННЯ

trols, but shippers hope to enjoy either «parallel competition» – competing railway lines serving the same origin-destination pairs, as is common in the United States and Canada – or «geographic competition» – competing railway lines radiating out from common points, as in Mexico and Argentina. Fig. 2 shows a stylized version of the Mexican railway system as it was restructured in the 1990's, with three vertically integrated companies competing mostly to carry freight in multiple directions between Mexico City and different ports and US gateways.

One notably successful aspect of the implementation of the horizontal separation model has been the attraction of private investments into these rail systems, initially in the form of bids for multi-decade franchise rights, and subsequently in the form of investments in to the infrastructure, locomotives, and rolling stock of the newly created vertically integrated railways. In both Brazil and Mexico, for example, the governments required the controlling rights of each franchise to be held by

domestic investors, but encouraged the participation of international investors. Table 1 shows the winning bids for the franchise rights that resulted from the franchising in the two countries and the lengths of the principal railways. I calculate that the ten franchised freight railways average just over 4000 track-km in length, and that the average winning bid was US\$95,700 per track-km, in late 1990's US\$.

Furthermore, in the fifteen years following the restructuring in Mexico, private investments into the system totaled over US\$6 billion – more than double the amount required and pledged by the consortia that won the [53].

As the railways reform debate has progressed and different options have been pursued in different countries, there come to be greater appreciation of the possibility that different reform strategies might be appropriate in different countries and environments. There has in many cases also come to be a differentiation in the strategic options pursued for freight and passenger operations [27].



Fig. 2. Geographic competition: the restructured Mexican railways

Table 1

Values of winning bids for Brazilian and Mexican rail concessions. Source: Campos (2001); Villa and Sacristán-Roy (2013); author's calculations.

	Date of Concession	Length (track-km)	Winning bid (US\$ million, at contemporaneous exchange rates)
Mexico			
Northeast	1997	4 296	\$1 400
Southeast	1998	1 484	\$322
Pacific-Northwest	1998	8 454	\$527
Brazil			
Oeste	1996	1 621	\$61.2
Centro-Leste	1996	7 080	\$310.7
Sudeste	1996	1 674	\$871.5
Tereza Cristina	1997	164	\$16.5
Sul	1997	6 586	\$193.4
Nordeste	1998	4 534	\$13.1
Paulista	1999	4 236	\$123.7
Totals		40,129	\$3 839
Average		4 013	\$384
Average omitting Tereza Cristina		4 441	\$425
Average US\$/km	\$95,700		
Average US\$/km, omitting Tereza Cristina	\$95,600		

Britain is a good example. As mentioned, that country has been one of the pioneers in the creation of competition in railways. Originally the focus was on complete vertical separation and the creation of competition among multiple independent train-operating companies in both the freight and passenger areas. However, eventually it came to be widely believed that in an era of both widespread automobile ownership and discount airlines, passenger rail was dependent on government subsidies simply to survive. In that case on-track passenger rail competition was not sustainable, and the focus of policy moved to the creation of competition for monopoly franchises to control particular regional passenger rail operations in the tradition of Chadwick [16] and Demsetz [23].

On the other hand, on the freight side the introduction of on-track competition has led to vigorous

duopoly competition between the old English, Welsh, and Scottish Railway (EWS, now a subsidiary of the German rail freight company DB Schenker) and Freightliner [36]. More generally, around the world, freight-dominant railway systems pay their own way without large-scale government subsidies, and in fact generally earn profits, pay taxes, and cross-subsidize passenger operations.

Empirical efforts to evaluate systematically the outcomes of the recent spate of railways reforms around the world, and especially to isolate the relative performance of different reform models, have been hampered by problems of data availability and quality, the short time period involved since reforms have been implemented, differences among railways sectors in different countries, and the possible endogeneity of reforms – both the re-

ЕКОНОМІКА ТА УПРАВЛІННЯ

form decision itself and the reform path chosen. The best and most recent studies suggest that most reform efforts have led to improved efficiency, though in addition to possible endogeneity one possible explanation here is simply that increased attention to industry structure and efficiency by itself leads to improvements. Among the more specific findings:

- Where competition has been created among multiple train-operating companies (TOC's) – so-called «above-the-rail» competition – for *passenger* operations, the European experience suggests that generally fares have been reduced and services have improved, but costs have increased, presumably reflecting the sacrifice of firm-level economies of density of operations [36, 37, 48].

- Where competition has been created above-the-rail for *freight*, the European experience has been more conspicuously successful, with incumbents in several countries rapidly losing market share to more nimble entrants [20, 24, 31].

- In general, reforms that have allowed additional TOC's to use the infrastructure have been found to increase operational efficiency as measured by data envelope analysis and stochastic production frontiers [21, 29, 49]. However, it is not at all certain that complete vertical separation is more conducive to the introduction of competition or to increased efficiency than is a third party access model, perhaps structured around accounting separation of the incumbent [35, 49].

- The alternative strategy of horizontal separation of freight railways – the creation of multiple competing vertically integrated freight railways – has in several cases succeeded in attracting a great deal of private investment into previously moribund state operated railways and diverted significant levels of traffic from road back to rail, to the benefit of shippers, the broader economy, and the environment [15, 25, 32, 52, 53].

- The vertical separation and third-party access models have mostly been applied in small-to-medium sized countries in Europe where passenger operations dominate the railways business. The horizontal separation model has mostly been applied in larger countries in the Americas where freight operations dominate the railways business – though some smaller Latin American countries have followed this strategy as well, including Colombia, Peru, and Uruguay [32, 41].

Of course any discussion of the restructuring of

existing railway enterprises raises the issue of the structure of railway costs. This is an issue that has been much examined in the empirical literature, though there are inevitably differences in results based on samples, assumptions, and techniques. We may summarize the discussion regarding three important aspects of railway cost functions as follows:

- It seems by now well established that there are economies of vertical integration in railways, and thus that complete vertical separation increases transactions costs and operating costs – though the magnitude of increase is very much in dispute. Vertical separation seems to increase costs more than otherwise a) in rail systems that are very densely operated, and b) in rail systems with a high proportion of freight traffic vis-à-vis passenger [27, 35]. The former likely reflects straightforward advantages of intrafirm rather than interfirm coordination of operations, while the latter likely reflects the greater track wear caused by heavy freight trains, and the difficulty of getting the inter-firm incentives set just right to address that problem [44].

- Economies of scale, *as measured by system size*, seem to be exhausted at relatively moderate scales of operation. Savignat and Nash [50] report a consensus in the literature that only relatively small railways operate at a level of unexhausted economies of system size, and Wilson [54] finds that at the mean of his sample, US class I railways are operating with slight diseconomies of system size. The results of Bitzan [13] suggest a flattening of the cost curve for system size at around 5 000 miles, while Chapin and Schmidt [17] also find a flattening of the cost curve, but at about twice that mileage level. More recently, Christensen Associates [18] conclude that all the major U.S. railways are operating in a range of constant returns to scale, and have been for many years. Note that the average size of the concessions granted in Brazil and Mexico was in the 4000-4500 track-km range (Table 1).

- It appears, on the other hand, that economies of scale *as measured by density of operations* persist in more railway settings. Econometric studies have generally found that most existing freight railways are operating at levels where economies of density are not yet exhausted; this is the conclusion of a review of the literature by Savignat and Nash [50] and of studies of US class I railways by

Wilson [54], Ivaldi and McCullough [29], and Bitzan [13]. Only recently has Christensen Associates [18] concluded that the major U.S. railways have likely exhausted all available economies of density, which is consistent with widespread reports of congestion and the difficulty of securing service on the major lines.

Findings

Ukraine by now has a long history of announced plans for restructuring the Ukrainian Railways, but unfortunately very little record of actually implementing changes [1]. Governments introduced detailed reform plans in 2006, then again in 2009, and then again in 2011, with the 2011 plan looking very much like the Russian plan: three stages of reforms, beginning with the creation of a single joint stock company Ukrzaliznytsia and the separation of the operating and regulatory functions of the existing railways, moving through the spin-off of noncore activities, the elimination of the requirement that freight operations cross-subsidize passenger operations, and the freeing of tariffs for goods enjoying a «competitive transport market», and concluding by 2019 with a system of «equal access to the infrastructure facilities for all economic entities». Thus far the creation of JSC UZ has been the only significant result of the reform plans.

Since there were apparently no plans in Ukraine (again as in Russia) to separate control of the incumbent infrastructure from the incumbent locomotives and train operation, the broad plan just described sounded like it might refer to an eventual third party access regime, with independent carriers owning their own locomotives and running their own trains over the UZ infrastructure. In fact, however, in both Ukraine and Russia one stated goal of the reforms was to allow privately owned and operated passenger trains, but not – or at least not mentioned – freight trains [42].

All this changed in 2015, as the Infrastructure Ministry under Andriy Pyvovarsky introduced legislation, enacted by the Rada, that would «corporatize» but not «privatize» JSC UZ while allowing entry into the market by independent train operating companies carrying either passengers or freight. UZ as the infrastructure operator would be required to provide non-discriminatory access to the infrastructure under a regulated set of tariffs,

which would be monitored and regulated by a National Commission on Transport Regulation. That new commission would also regulate some passenger and freight tariffs, but others would be freed. An infrastructure maintenance and investment fund would be created through a specified component of both shipper tariffs and access charges.

In other words, Ukraine has taken the first steps toward emulating the European rail restructuring model of third-party access (though not full vertical separation) regimes for both passenger and freight, with UZ continuing to operate its own trains in competition with independent TOC's.

This reform model clearly has the potential to stimulate significant improvements vis-à-vis the UZ status quo. As noted above, third-party, independent *freight* TOC's have offered quite effective competition to incumbent, vertically integrated TOC's in a number of European countries – beginning in the east in Poland and Romania, but gradually moving west, especially as German incumbent DB and French incumbent SNCF have begun offering services in other countries. Particularly in Eastern Europe, some of the new TOC's entering into freight service have been large shippers of bulk freight integrating backward into transport operations in order to create alternatives for shipping both their inputs and their outputs. The result has been new investments not only in rolling stock but also in locomotives, as well as increased options and improved service for shippers, thus strongly supporting economic growth.

It seems likely that a number of large Ukrainian shippers would be candidates for backward vertical integration into TOC's in order to improve the quality of their own logistics (or to obtain better service from UZ by threatening to do so), including the agribusinesses Kernel and Nibulon and coal miner and electricity generator DTEK. Similarly, based on their past and current strategies, one would expect not only Germany's DB and France's SNCF but also Poland's PKP and, in a hoped-for peaceful future, Russia's RZhD to be interested in extending their train operations into Ukraine, if given the opportunity.

The appearance of independent *passenger* TOC's seems less likely, though certainly not impossible. As noted above, in most countries passenger rail services would not survive without subsidies from either governments or freight operations, so the likelihood of the entry of a second

ЕКОНОМІКА ТА УПРАВЛІННЯ

passenger TOC into the market to offer competition to a (presumably government-subsidized) UZ passenger TOC seems not high. An exception might be at the high end of the market; in Russia, for example, two high quality TOC's have entered the popular Moscow-St. Petersburg market to offer high end service at unregulated rates [28, 34].

What about resources for investment into the infrastructure? This is where the international experience with the third party access reform model has been less conspicuously successful. As noted above, the Ukrainian plan calls for the formation and segregation of an investment fund that would be financed through a specified component of both shipper tariffs and access charges. If this mechanism works as intended, it could solve the common problem of the difficulty of funding state-owned railway infrastructure. However, based on worldwide experience, one may justifiably harbor doubts that both UZ management and the government will be able to show the discipline to use such a (potentially) large pot of funds for their intended purposes only [2, 41].

A sober prediction may be that the current Ukrainian reform plan may be quite successful in encouraging private investment in rolling stock and locomotives and in creating competition for freight railroad haulage and perhaps even passenger railroad service, but ultimately a disappointment in encouraging and protecting the infrastructure investments required for the successful operation of a modern, heavily used freight railway. Since, as noted at the beginning of this paper, this issue is likely to be a crucial one for the future effectiveness of UZ in contributing to Ukrainian economic reform and growth, this may be a serious drawback to the adoption of this reform model in Ukraine.

And this in turn may argue for consideration of an alternative reform plan: a Mexican-style division of the entire UZ enterprise into two or three independent, vertically integrated railway companies, competing for the business of shippers mostly at points commonly served but perhaps over some parallel lines as well. This option has been seriously discussed, though so far rejected, as a reform plan for RZhD in Russia [26], and it would appear to hold a number of attractions for Ukraine as well – though a number of complications as well. Fig. 3 shows one published version of a Russian scenario.

The main advantages of such a plan are straightforward to list: the creation of competition

for shippers, the maintaining of economies of vertical integration, and the likely willingness of private investors to offer significant bids for long-term franchise fees and, upon winning a franchise, to invest significant amounts into the maintenance and upgrading of their new railway infrastructures. As noted above, for the 10 railways franchised in the late 1990's in Brazil and Mexico, the winning bid was almost US\$100,000 per track-km. The International Transport Forum calculates that just under 50 percent of the substantial investments made by the two largest Mexican concessionaires between 2007 and 2012 were allocated to track infrastructure – about US\$1 billion total over that six-year period [38].

The most important points for originating traffic on UZ are the coal mining areas around Donetsk in the east and the iron ore and steel making areas around Dnipropetrovsk and Kryvyi Rih in the center-east. The port area around Odessa both originates and terminates a good deal of Black Sea freight. Generally, the heaviest freight flows go (or have gone until recently) directly between the Russian border, through the Donbas and the Kryvbas, and either to the Odessa port area in the south, to Kyiv in the center north, or to the western border crossings with Hungary, the Slovak Republic, and Poland.

Thus in the same way that both published scenarios for horizontal separation in the Russian railways begin with the notion of geographic competition based on multiple railways serving the coal-producing Kuzbas from different directions [26, 47], a promising basis for horizontal competition in the Ukrainian railways in a hoped-for peaceful future could be the creation of an east-facing railway connecting shippers originating coal, iron ore, and/or steel products with border crossings of the Russian Federation. RZhD would likely be one of several bidders for the franchise rights for this «Eastern Ukrainian Railway».

At the western termination points of this Eastern Ukrainian Railway, the track infrastructure serving multiple shippers could be jointly controlled – as it is in Mexico – by the railway companies competing to carry freight in both directions as well as either the regional or federal government and/or the most important shippers themselves. From those points at the western termination of the Eastern Ukrainian Railway, either one or two additional railway enterprises could be created. The

ЕКОНОМІКА ТА УПРАВЛІННЯ

map on the Fig. 4 adds two independent railways heading west from the coal and steel regions, with shippers at Kharkiv enjoying geographic competition from three railways heading in three different directions, shippers at Kyiv, Odessa, and points in the Donbas and Kryvbas served by two railways,

and both eastern and western borders served as well by two railways. Both large domestic shippers and foreign railway companies like Deutsche Bahn, PKP, and SNCF are potential bidders for the long-term franchise rights to such railways [43].

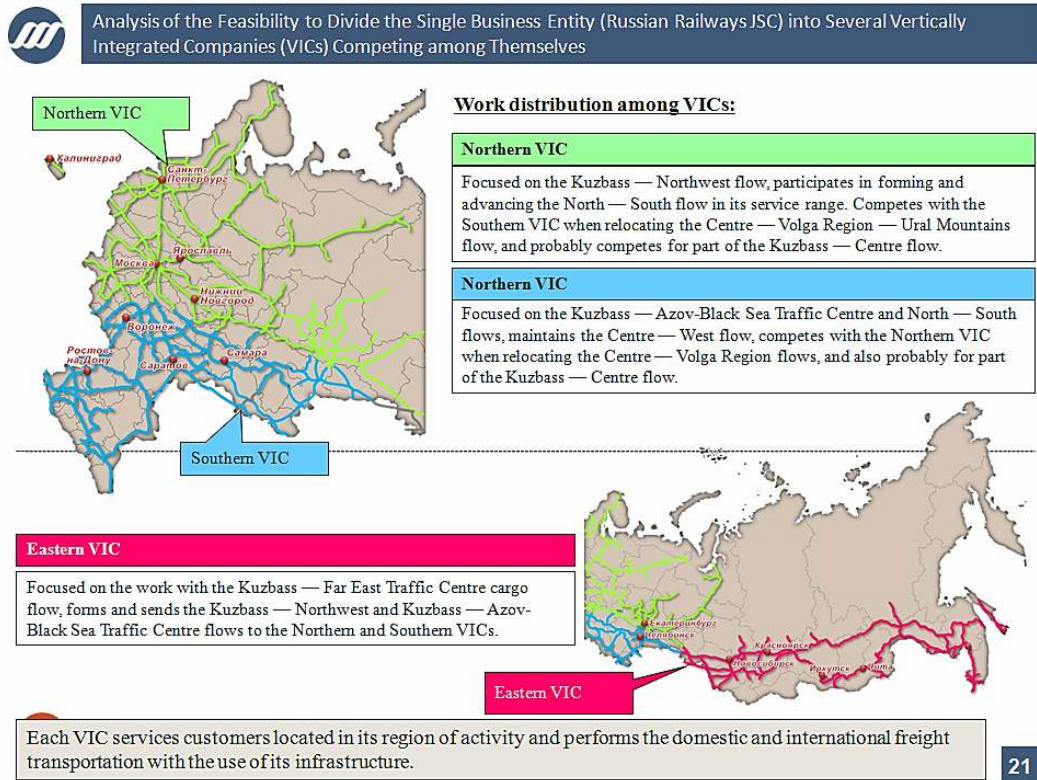


Fig. 3. One plan for a horizontally separated Russian railways system, from the Institute of Natural Monopolies Research, Moscow (RSPP, 2013)

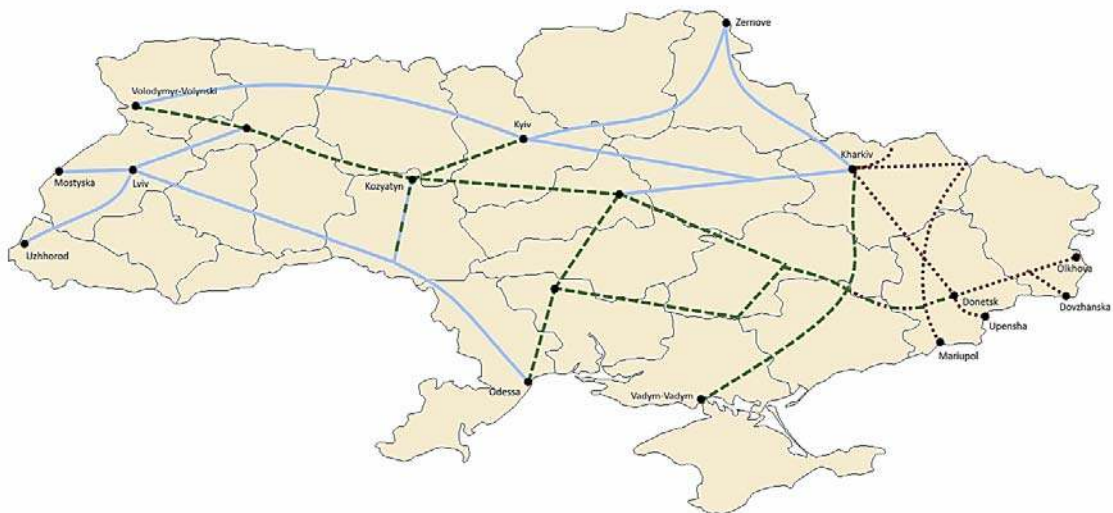


Fig. 4. One possible plan for three competing, horizontally separated railways in Ukraine

Obviously, however, much more work would have to be done to actually craft three (for example) potentially coherent railway enterprises from the overall national network.

Originality and Practical Value

For now, at least, Ukraine labors under the significant burden of active hostilities in its eastern region at the same time as politicians, activists, and analysts work to create and implement economic reforms that would successfully create a dynamic and productive market economy. At a time when even the overall outlines of the future Ukrainian economy are uncertain, the railways are not at the top of many lists for attention. Yet Ukraine's economy of resource extraction, heavy industry, and agriculture promises to be dependent the existence of a reliable railway system for quite a long time, and a successful effort to get railway reforms right would be an important step in that direction.

To date, the European experience with vertical separation and third-party access regimes has appeared to enjoy considerably greater influence in the Ukrainian railways reform debates (and the Russian, and the Kazakh) than has the North and South American experience with horizontal separation. This is probably unfortunate, since the size of the country as well as the dominance of freight in its railway operations arguably makes the latter experience more directly applicable, and more likely to be adaptable in a straightforward manner to the Ukrainian context. In particular, if the country continues along the basic path of the European railways reform agenda, it is likely to achieve the same results: increased private investment in roll-

ing stock, but continued dependence on the unreliable state budget for funding for both locomotives and infrastructure.

Conclusions

As conclusion I have argued here that the North and South American experience suggests that a country like Ukraine could use the horizontal separation strategy to carve two or three independent, vertically integrated freight railways from the existing system, railways of a size that has been shown to be viable in Brazil and Mexico, and that in a hoped-for peaceful future, international investors would likely be willing to bid large amounts for control rights to railway franchises so created as well as to then spend large amounts of their own capital to upgrade the competing regional railways. I have argued that the principal advantages of such a reform strategy are the creation of rail competition at multiple locations, the preservation of economies of vertical integration, and the likely elimination of the need for the Ukrainian railways to remain in the lengthy queue for government resources to upgrade and maintain the rolling stock, locomotives, and infrastructure.

Whether such a scenario is in fact the optimal path for the Ukrainian railways going forward is a question that clearly merits much deeper examination. The stakes at issue suggest that a simple decision to follow the previously adopted Russian-style reform plan may lock out the potential for much more promising options, and for a more dynamic and vibrant railway to support Ukrainian economic growth.

LIST OF REFERENCE LINKS

1. Гриценко, Н. В. Комплексний огляд реформування залізничного транспорту України / Н. В. Гриценко // Вісн. Дніпропетр. нац. ун-ту залізн. трансп. ім. акад. В. Лазаряна. – Дніпропетровськ, 2012. – Вип. 41. – С. 249–253.
2. Козаченко, Д. Реформи на запасній колії [Electronic resource] / Д. Козаченко, А. Верлан, О. Кутателадзе // Голос України. – 2015. – 22 жовт. – Available at: <http://www.golos.com.ua/article/260179>. – Title from the screen. – Accessed : 19.01.2017.
3. Логвінова, Н. О. Економіко-математичне обґрунтування розподілу поїздопотоків на напрямку залізничних перевезень з паралельними ходами Знам'янка–Одеса / Н. О. Логвінова // Наука та прогрес транспорту. – 2013. – № 2 (44). – С. 92–98. doi: 10.15802/stp2013/12994.
4. Макушенко, І. Модернізація тарифної системи Укрзалізниця – Quo Vadis? [Electronic resource] / І. Макушенко // VoxUkraine. – 2015. – Available at: <http://voxukraine.org/2015/11/06/modernizatsiya-taryfnoi-systemy-ukrzaliznytsi-quo-vadis-ua/>. – Title from Screen. – Accessed : 18.01.2017.

ЕКОНОМІКА ТА УПРАВЛІННЯ

5. Марценюк, Л. В. Вдосконалення процесу вантажних перевезень та механізму управління ними / Л. В. Марценюк, А. В. Вишнякова // Наука та прогрес транспорту. – 2014. – № 2 (50). – С. 41–48. doi: 10.15802/stp2014/23743.
6. Марценюк, Л. В. Вплив залізничного транспорту на розвиток національної економіки України / Л. В. Марценюк // Вісн. Дніпропетр. нац. ун-ту залізн. трансп. ім. акад. В. Лазаряна. – Дніпропетровськ, 2012. – Вип. 42. – С. 274–278.
7. Петренко, Е. А. Проблема монополізму на залізничному транспорті / Е. А. Петренко // Вісн. Дніпропетр. нац. ун-ту залізн. трансп. ім. акад. В. Лазаряна. – Дніпропетровськ, 2012. – Вип. 40. – С. 296–300.
8. Садловська, І. П. Аналіз сучасних вантажопотоків в Україні та напрями їх розвитку / І. П. Садловська // Вісн. Дніпропетр. нац. ун-ту залізн. трансп. ім. акад. В. Лазаряна. – Дніпропетровськ, 2012. – Вип. 42. – С. 317–324.
9. Фінансовий план ПАТ «Укрзалізниця» на 2016 рік [Electronic resource] / Міністерство інфраструктури України. – 2016. – Available at: <http://mtu.gov.ua/news/26510.html>. – Title from Screen. – Accessed : 18.01.2017.
10. Arslanov, M. Interview with the Deputy Minister of Infrastructure: How Ukrzaliznytsia Will Be Reformed [Electronic resource] / Centre for Transport Strategies. – 2015. – Available at: http://en.cfts.org.ua/articles/interview_with_the_deputy_minister_of_infrastructure_how_ukrzaliznytsia_will_be_reformed. – Title from the screen. – Accessed : 19.01.2017.
11. Arslanov, M. The Agenda: the Tasks Facing the New Head of the Infrastructure Ministry [Electronic resource] / Centre for Transport Strategies. – 2014. – Available at: http://en.cfts.org.ua/articles/the_agenda_the_tasks_facing_the_new_head_of_the_infrastructure_ministry. – Title from the screen. – Accessed : 19.01.2017.
12. Arslanov, M. Ukrzaliznytsia Steps On Its Brakes: Why Its Reform Has Slowed Down [Electronic resource] / M. Arslanov / Centre for Transport Strategies. – 2013. – Available at: http://en.cfts.org.ua/articles/ukrzaliznytsia_steps_on_its_brakes_why_its_reform_has_slowed_down. – Title from the screen. – Accessed : 19.01.2017.
13. Bitzan, J. D. The Structure of Railroad Costs and the Benefits/Costs of Mergers / J. D. Bitzan // Research in Transportation Economics. – 1999. – Vol. 5. – P. 1–52. doi: 10.1016/S0739-8859(99)80003-1.
14. Bonner, B. New infrastructure minister: «There will be no corruption» [Electronic resource] // KyivPost. – 2016. – Available at: <https://www.kyivpost.com/article/content/reform-watch/new-infrastructure-minister-there-will-be-no-corruption-here-412912.html>. – Title from the screen. – Accessed : 19.01.2017.
15. Campos, J. Lessons from railway reforms in Brazil and Mexico / J. Campos // Transport Policy. – 2001. – Vol. 8. – Iss. 2. – P. 85–95. doi: 10.1016/s0967-070x(01)00007-5.
16. Chadwick, E. Results of Different Principles of Legislation in Europe: of Competition for the Field as Compared with Competition within the Field of Service / E. Chadwick // J. of the Statistical Society of London. – 1895. – Vol. 22. – Iss. 3. – P. 381–420. doi: 10.2307/2338385.
17. Chapin, A. Do Mergers Improve Efficiency? Evidence from Deregulated Rail Freight / A. Chapin, S. Schmidt // J. of Transport Economics and Policy. – 1999. – Vol. 33, No. 2. – P. 147–162.
18. Christensen, L. R. An Update to the Study of Competition in the U.S. Freight Railroad Industry: Final Report / L. R. Christensen. – Washington, DC : Surface Transportation Board, 2010. – 147 p.
19. Competition in the Railway Industry: An International Comparative Analysis / ed. by J. Gómez-Ibáñez. – Northampton, MA : Edward Elgar Publishing, 2006. – 224 p.
20. Competition in Freight Railways: «Above-the-Rail» Operators in Central Europe and Russia / R. Pittman, O. Diaconu, E. Šip [et al.] // J. of Competition Law and Economics. – 2007. – Vol. 3. – Iss. 4. – P. 673–687. doi: 10.1093/joclec/nhm028.
21. Couto, A. The determinants of efficiency and productivity in European railways / A. Couto, D. Graham // Applied Economics. – 2009. – Vol. 41. – Iss. 22. – P. 2827–2851. doi: 10.1080/00036840801949782.
22. Dementiev, A. Reforming Russian Railways: Introduction of Competition and New Regulatory Challenges [Electronic resource] / A. Dementiev // Competition and Ownership in Land Passenger Transport: Selected Papers from the 9th Intern. Conf. / eds. Rosario Macario, Jose Manuel Viegas, David A. Hensher. – Amsterdam : Elsevier, 2006. – Available at: https://www.hse.ru/data/302/314/1234/AD_reform.pdf. – Title from the screen. – Accessed : 19.01.2017.
23. Demsetz, H. Why Regulate Utilities? / H. Demsetz // J. of Law and Economics. – 1968. – Vol. 11. – Iss. 1. – P. 55–65. doi.org/10.1086/466643.

ЕКОНОМІКА ТА УПРАВЛІННЯ

24. Deville, X. Implementation of EU legislation on rail liberalization in Belgium, France, Germany and The Netherlands [Electronic resource] / X. Deville, F. Verduyn. – Brussels, 2012. – 160 p. – Available at: <https://www.nbb.be/doc/ts/publications/wp/wp221en.pdf>. – Title from the screen. – Accessed : 19.01.2017.
25. Estache, A. Privatization and Regulatory Reform in Brazil: The Case of Freight Railways / A. Estache, A. Goldstein, R. Pittman // *J. of Industry, Competition and Trade*. – 2001. – Vol. 1. – Iss. 2. – P. 203–235. doi: 10.1023/A:1012834715715.
26. Evaluation of Most Feasible Infrastructure and Transportation Operations Integration Model // Destination Freight Transportation Services Market Model Implementation Until 2015 : Proc. Conf. / Russian Union of Industrialists and Entrepreneurs, Transport and Transport Infrastructure Committee. – Moscow, 2013.
27. EVES-Rail: Economic Effects of Vertical Separation in the Railway Sector [Electronic resource] : CER (Community of European Railways and Infrastructure Companies) / D. Van de Velde, C. Nash, A. Smith, [et. al]. – Brussels, 2012. – Available at: http://www.cer.be/sites/default/files/publication/EVES-Rail_-_Final__v6.4.3_SUMMARY.pdf. – Title from the screen. – Accessed : 19.01.2017.
28. Features and Peculiarities of the Russian Passenger Rail Market Development / E. M. Razumovskaya, L. V. Lapidus, T. S. Mishakin, M. L. Popov // *Mediterranean J. of Social Sciences*. – 2014. – Vol. 5, No. 18. – P. 165–170. doi: 10.5901/mjss.2014.v5n18p165.
29. Friebe, G. Railway (De) Regulation: A European Efficiency Comparison / G. Friebe, M. Ivaldi, C. Vibes // *Economica*. – 2010. – Vol. 77. – Iss. 305. – P. 77–91. doi: 10.1111/j.1468-0335.2008.00739.x.
30. Ivaldi, M. Density and Integration Effects on Class I U.S. Freight Railroads / M. Ivaldi, G. J. Mc Cullough // *J. of Regulatory Economics*. – 2001. – Vol. 19. – Iss. 2. – P. 161–182. doi: 10.1023/A:1011149324027.
31. Knieps, G. Competition and the Railroads: A European Perspective / G. Knieps // *J. of Competition Law and Economics*. – 2013. – Vol. 9. – Iss. 1. – P. 53–169. doi: 10.1093/joclec/nhs040.
32. Kogan, J. Latin America: Competition for concessions / J. Kogan // *Competition in the Railway Industry. An Intern. Comparative Analysis* / eds. by J. A. Gómez-Ibáñez, Ginés de Rus. – Northampton, MA : Edward Elgar Publishing, 2006. – P. 153–176. doi: 10.4337/9781847202949.00016.
33. Krasnikov, D. Rail administration chief says need for modernization ‘immense’ [Electronic resource] / D. Krasnikov // *KyivPost*. – 2016. – Available at: <https://www.kyivpost.com/article/content/reform-watch/rail-administration-chief-says-need-for-modernization-immense-421463.html>. – Title from the screen. – Accessed : 19.01.2017.
34. Lazarev, A. Russian Railways: Reform is in the Home Stretch / A. Lazarev // *RZD-Partner International*. – 2012. – № 29. – P. 16–17.
35. Mizutani, F. Does vertical separation reduce cost? An empirical analysis of the rail industry in European and East Asian OECD countries / F. Mizutani, S. Uranishi // *J. of Regulatory Economics*. – 2013. – Vol. 43. – Iss. 1. – P. 31–59. doi: 10.1007/s11149-012-9193-4.
36. Nash, C. Comparing Three Models for Introduction of Competition into Railways / C. Nash, J. E. Nilsson, H. Link // *J. of Transport Economics and Policy*. – 2013. – Vol. 47, pt. 2. – P. 191–206.
37. Nash, C. Competition in Rail Passenger Services [Electronic resource] : Slide Presentation / C. Nash // Institute for Transport Studies, University of Leeds. – Leeds, 2011. – Available at: http://www.fedea.net/transporte/PDF/ii_workshop/Presentation_Chris%20Nash.pdf. – Title from Screen. – Accessed : 27.01.2017.
38. Peer Review of Railway Freight Development in Mexico [Electronic resource] : Report of the International Transport Forum / S. Perkins, P. Amos, J. Kohon, L. S. Thompson. – Paris, 2014. – Available at: <http://www.tgaassoc.com/publications.html>. – Title from Screen. – Accessed : 16.01.2017.
39. Pittman, R. Blame the Switchman? Russian Railways Restructuring after Ten Years / R. Pittman // *The Oxford Handbook of the Russian Economy* / eds. by M. Alexeev, S. Weber. – Oxford : Oxford University Press, 2013. – 864 p. doi: 10.1093/oxfordhb/9780199759927.013.0001.
40. Pittman, R. Make or buy on the Russian railway? Coase, Williamson, and Tsar Nicholas II / R. Pittman // *Economic Change and Restructuring*. – 2007. – Vol. 40. – Iss. 3. – P. 207–221. doi: 10.1007/s10644-007-9024-2.
41. Pittman, R. Options for Restructuring the State-Owned Monopoly Railway / R. Pittman // *Research in Transportation Economics*. – 2007. – Vol. 20. – P. 179–198. doi: 10.1016/S0739-8859(07)20007-1.
42. Pittman, R. Railways Restructuring and Ukrainian Economic Reform / R. Pittman // *Man and the Economy*. – 2015. – Vol. 2. – Iss. 1. – P. 87–107. doi: 10.1515/me-2015-0006.
43. Pittman, R. Restructuring the Ukrainian Railway: Low Hanging Fruit for the Country’s Fiscal Needs [Electronic resource] // *VoxUkraine*. – 2015. – Available at: <http://voxukraine.org/2015/01/17/restructuring-the-ukrainian-railway-low-hanging-fruit-for-the-countrys-fiscal-needs/>. – Title from Screen. – Accessed : 16.01.2017.

ЕКОНОМІКА ТА УПРАВЛІННЯ

44. Pittman, R. Structural Separation to Create Competition? The Case of Freight Railways / R. Pittman // *Review of Network Economics*. – 2005. – Vol. 4. – Iss. 3. – P. 181–195. doi: 10.2202/1446-9022.1072.
45. Pittman, R. The freight railways of the former Soviet Union, twenty years on: Reforms lose steam / R. Pittman // *Research in Transportation Business & Management*. – 2013. – No. 6. – P. 99–115. doi: 10.1016/j.rtbm.2012.11.010.
46. Pittman, R. Vertical Restructuring (or Not) of the Infrastructure Sectors of Transition Economies / R. Pittman // *J. of Industry, Competition and Trade*. – 2003. – Vol. 3. – Iss. 1-2. – P. 5–26. doi: 10.1023/A:1025418218566.
47. Pittman, R. What Next for Russian Railways Restructuring? [Electronic resource] // SlideShare. – 2013. – Available at: <http://www.slideshare.net/NewEconomicSchool/russian-railways-russell-pittman30sept2013>. – Title from Screen. – Accessed : 16.01.2017.
48. Preston, J. Evaluating the long term impacts of transport policy: The case of passenger rail privatization [Electronic resource] / J. Preston, D. Robins // *Research in Transportation Economics*. – 2013. – Vol. 39. – Iss. 1. – P. 14–20. doi: 10.1016/j.retrec.2012.05.019.
49. Sánchez, P. C. Vertical and Horizontal Separation in the European Railway Sector: Effects on Productivity [Electronic resource] / P. C. Sánchez, J. M. P. Monsálvez, L. S. Martínez ; Instituto Valenciano de Investigaciones Económicas. – Valencia, Spain, 2008. – Available at: http://www.fbbva.es/TLFU/dat/dt1208_vertical%20and%20horizontal_web.pdf. – Title from the screen. – Accessed : 19.01.2017.
50. Savignat, M. G. The Case for Rail Reform in Europe: Evidence from Studies of Production Characteristics of the Rail Industry / M. G. Savignat, C. Nash // *Intern. J. of Transport Economics*. – 1999. – Vol. 26, No. 2. – P. 201–217.
51. Shkliar, A. Ukrzaliznytsia's New Tariff Policy: How to Find a Balance with the National Economy [Electronic resource] / A. Shkliar // *VoxUkraine*. – 2015. – Available at: <http://voxukraine.org/2015/10/19/ukrzaliznytsias-new-tariff-policy-how-to-find-a-balance-with-the-national-economy/>. – Title from screen. – Accessed : 16.01.2017.
52. Thompson, L. S. Liberalization and Commercialization of the World's Railways: Progress and Regulatory Issues / L. S. Thompson. – Paris, 2009. – 33 p.
53. Villa, J. Privatization of Mexican railroads: Fifteen years later / J. Villa, E. Sacristán-Roy // *Research in Transportation Business & Management*. – 2013. – Vol. 6. – P. 45–50. doi: 10.1016/j.rtbm.2012.11.012.
54. Wilson, W. W. Cost Savings and Productivity in the Railroad Industry / W. W. Wilson // *J. of Regulatory Economics*. – 1997. – Vol. 11. – Iss. 1. – P. 21–40. doi:10.1023/A:1007946111577.
55. Xu, Yi-Chong. Electricity Reform in China, India and Russia: The World Bank Template and the Politics of Power / Yi-Chong Xu. – Cheltenham, UK ; Northampton, MA : Edward Elgar Publishing, 2004. – 359 p.

Р. ПИТТМАН^{1*}

^{1*}Міністерство Юстиції США, Антитрестовський відділ, група економічної експертизи, 450 5th St., NW, No. 9004, Washington, DC, 20530, USA, тел. +1 (202) 307 63 67, ел. пошта Russell.Pittman@usdoj.gov, ORCID 0000-0001-9498-0561

РЕФОРМУВАННЯ ТА РЕСТРУКТУРИЗАЦІЯ УКРЗАЛІЗНИЦІ: КЛЮЧОВЕ ЗАВДАННЯ ДЛЯ УКРАЇНСЬКИХ РЕФОРМАТОРІВ

Мета. У даній статті розглядаються варіанти реформування та реструктуризації Укрзалізниці, доступні для України. **Методика.** Наведені основні варіанти реструктуризації, отримані шляхом аналізу літературних джерел, які стосуються міжнародного досвіду реформування залізничного транспорту. **Результати.** Створення конкуренції серед вантажних залізничних компаній поліпшує продуктивність системи, але досягнення вказаного результату не вимагає в усіх випадках реалізації політики ЄС стосовно повного вертикального розподілу діяльності залізниць. Було встановлено, що політика горизонтального розподілу, яка застосовується на залізницях США, також сприяє підвищенню продуктивності системи і може бути більш ефективною для країни такого розміру, як Україна та для такої залізничної компанії, як Укрзалізниця (котра переважно залежить від вантажних перевезень). **Наукова новизна.** Велика частина літератури із реструктуризації залізниць зосереджена на вертикальному розподілі або доступу третіх сторін, у той час як в даній роботі фокус знаходиться на тому варіанті політики, який, можливо, більш підходить для України. **Практична значимість.** Економіка України залежить від ефективного транспортування навалних ванта-

ЕКОНОМІКА ТА УПРАВЛІННЯ

жів, таких як вугілля, залізна руда, сталь, зерно – товарів, які на далекій відстані найбільш економічно вигідніше перевозити залізницею. Успішне реформування та реструктуризація Укрзалізниці буде важливою частиною майбутніх українських економічних реформ.

Ключові слова: Укрзалізниця; залізниці; реформування; реструктуризація; вертикальний розподіл; горизонтальний розподіл; конкуренція; інвестиції

Р. ПИТТМАН^{1*}

^{1*}Министерство Юстиции США, Антитрестовский отдел, группа экономической экспертизы, 450 5th St., NW, No. 9004, Washington, DC, 20530, USA, тел. +1 (202) 307 63 67, эл. почта Russell.Pittman@usdoj.gov, ORCID 0000-0001-9498-0561

РЕФОРМИРОВАНИЕ И РЕСТРУКТУРИЗАЦИЯ УКРЗАЛИЗНЫЦИ: КЛЮЧЕВОЕ ЗАДАНИЕ ДЛЯ УКРАИНСКИХ РЕФОРМАТОРОВ

Цель. В данной статье рассматриваются варианты реформирования и реструктуризации Укрзалізниці, доступные для Украины. **Методика.** Приведены основные варианты реструктуризации, полученные путем анализа литературных источников, касающихся международного опыта реформирования железнодорожного транспорта. **Результаты.** Было установлено, что создание конкуренции среди грузовых железнодорожных компаний улучшает производительность системы, но достижение указанного результата не требует во всех случаях реализации политики ЕС в отношении полного вертикального распределения деятельности железных дорог. Было установлено, что политика горизонтального распределения, которая применяется на железных дорогах США, также способствует повышению производительности системы и может быть более эффективной для страны такого размера, как Украина и для такой железнодорожной компании, как Укрзалізниця (которая в основном зависит от грузовых перевозок). **Научная новизна.** Большая часть литературы по реструктуризации железных дорог сосредоточена на вертикальном распределении или доступе третьих сторон, в то время как в данной работе фокус находится на том варианте политики, который, возможно, более подходит для Украины. **Практическая значимость.** Экономика Украины зависит от эффективной транспортировки навалочных грузов, таких как уголь, железная руда, сталь, зерно – товаров, которые на дальние расстояния наиболее экономически выгоднее перевозить по железной дороге. Успешное реформирование и реструктуризация Укрзалізниці будет важной частью будущих украинских экономических реформ.

Ключевые слова: Укрзалізниця; железные дороги; реформирование; реструктуризация; вертикальное распределение; горизонтальное распределение; конкуренция; инвестиции

REFERENCES

1. Gritsenko, N. V. (2012). A comprehensive review of railway reform in Ukraine. *Bulletin of Dnipropetrovsk National University of Railway Transport*, 41, 249-253.
2. Kozachenko, D., Verlan, A., & Kutateladze, O. (2015, October 22). Reformy na zapasniі kolii. *Holos Ukrainy*. Retrieved from <http://www.golos.com.ua/article/260179>
3. Logvinova, N. O. (2013). Economic and mathematical justification of train traffic volume distribution on the direction of rail transportation with parallel runnings Znamenka–Odessa. *Science and Transport Progress*, 2(44), 92-98. doi: 10.15802/stp2013/12994
4. Makushenko, I. (2015, November 6) Tariff System Modernization UZ. *VoxUkraine*. Retrieved from <http://voxukraine.org/2015/11/06/moreznizatsiya-taryfnoi-sistemy-ukrzeliznytsi-quo-vadis-ua/>
5. Martsenyuk, L. V., & Vyshniakova, A. V. (2014). Improvement of freight transportation process and their management mechanism. *Science and Transport Progress*, 2(50), 41-48. doi: 10.15802/stp2014/23743
6. Martsenyuk, L. V. (2012). Impact of rail transport in the development of the national economy of Ukraine. *Bulletin of Dnipropetrovsk National University of Railway Transport*, 42, 274-278.
7. Petrenko, E. A. (2012). The problem of monopoly in rail transport. *Bulletin of Dnipropetrovsk National University of Railway Transport*, 40, 296-300.
8. Sadlovska, I. P. (2012). Analysis of modern cargo flows in Ukraine and directions of their development. *Bulletin of Dnipropetrovsk National University of Railway Transport*, 42, 317-324.
9. Ministry of Infrastructure of Ukraine. (2016, April 01). *Finansovyi plan PAT «Ukrzeliznytsia» na 2016 rik*. Retrieved from <http://mtu.gov.ua/news/26510.html>

ЕКОНОМІКА ТА УПРАВЛІННЯ

10. Arslanov, M. (2015). Interview with the Deputy Minister of Infrastructure: How Ukrzaliznytsia Will Be Reformed. *Centre for Transport Strategies*. Retrieved from http://en.cfts.org.ua/articles/interview_with_the_deputy_minister_of_infrastructure_how_ukrzaliznytsia_will_be_reformed
11. Arslanov, M. (2014). The Agenda: the Tasks Facing the New Head of the Infrastructure Ministry. *Centre for Transport Strategies*. Retrieved from http://en.cfts.org.ua/articles/the_agenda_the_tasks_facing_the_new_head_of_the_infrastructure_ministry
12. Arslanov, M. (2013). Ukrzaliznytsia Steps On Its Brakes: Why Its Reform Has Slowed Down. *Centre for Transport Strategies*. Retrieved from http://en.cfts.org.ua/articles/ukrzaliznytsia_steps_on_its_brakes_why_its_reform_has_slowed_down
13. Bitzan, J. D. (1999). The Structure of Railroad Costs and the Benefits/Costs of Mergers. *Research in Transportation Economics*, 5, 1-52. doi: 10.1016/S0739-8859(99)80003-1
14. Bonner, B. (2016). New infrastructure minister: «There will be no corruption». *KyivPost*. Retrieved from <https://www.kyivpost.com/article/content/reform-watch/new-infrastructure-minister-there-will-be-no-corruption-here-412912.html>
15. Campos, J. (2001). Lessons from railway reforms in Brazil and Mexico. *Transport Policy*, 8(2), 85-95. doi: 10.1016/s0967-070x(01)00007-5
16. Chadwick, E. (1895). Results of Different Principles of Legislation in Europe: of Competition for the Field as Compared with Competition within the Field of Service. *Journal of the Statistical Society of London*, 22(3), 381-420. doi: 10.2307/2338385.
17. Chapin, A., & Schmidt, S. (1999). Do Mergers Improve Efficiency? Evidence from Deregulated Rail Freight. *Journal of Transport Economics and Policy*, 33(2), 147-162.
18. Christensen, L. R. (2010). *An Update to the Study of Competition in the U.S. Freight Railroad Industry: Final Report*. Washington, DC: Surface Transportation Board.
19. Gómez-Ibáñez, J. (Ed.). (2006). *Competition in the Railway Industry: An International Comparative Analysis*. Northampton, MA: Edward Elgar Publishing.
20. Pittman, R., Diaconu, O., Šip, E., Tomova, A., & Wronka, J. (2007). Competition in Freight Railways: «Above-the-Rail» Operators in Central Europe and Russia. *Journal of Competition Law and Economics*, 3(4), 673-687. doi: 10.1093/joclec/nhm028
21. Couto, A., & Graham, D. (2009). The determinants of efficiency and productivity in European railways. *Applied Economics*, 41(22), 2827-2851. doi: 10.1080/00036840801949782
22. Dementiev, A. (2006). Reforming Russian Railways: Introduction of Competition and New Regulatory Challenges. In R. Macario, J. M. Viegas, D. A. Hensher (Eds.), *Competition and Ownership in Land Passenger Transport: Selected Papers from the 9th Intern. Conf.* Amsterdam: Elsevier. Retrieved from https://www.hse.ru/data/302/314/1234/AD_reform.pdf
23. Demsetz, H. (1968). Why Regulate Utilities? *Journal of Law and Economics*, 11(1), 55-65. doi: 10.1086/466643.
24. Deville, X., & Verduyn, F. (2012). *Implementation of EU legislation on rail liberalization in Belgium, France, Germany and the Netherlands*. Brussels: National Bank of Belgium. Retrieved from <https://www.nbb.be/doc/ts/publications/wp/wp221en.pdf>
25. Estache, A., Goldstein, A., & Pittman, R. (2001). Privatization and Regulatory Reform in Brazil: The Case of Freight Railways. *Journal of Industry, Competition and Trade*, 1(2), 203-235. doi: 10.1023/A:1012834715715
26. Evaluation of Most Feasible Infrastructure and Transportation Operations Integration Model. (2013). *Proceedings of the International Destination Freight Transportation Services Market Model Implementation Until 2015*, Moscow.
27. Van de Velde, D., Nash, C., Smith, A., Mizutani, F., Uranishi, S., Lijesen, M., & Zschoche, F. (2012). *EVES-Rail: Economic Effects of Vertical Separation in the Railway Sector*. Report to: CER (Community of European Railways and Infrastructure Companies). Amsterdam. Retrieved from http://www.cer.be/sites/default/files/publication/EVES-Rail_-_Final_v6.4.3_SUMMARY.pdf
28. Razumovskaya, E. M., Lapidus, L. V., Mishakin, T. S., & Popov, M. L. (2014). Features and Peculiarities of the Russian Passenger Rail Market Development. *Mediterranean Journal of Social Sciences*, 5(18), 165-170. doi: 10.5901/mjss.2014.v5n18p165
29. Friebel, G., Ivaldi, M., & Vibes, C. (2010). Railway (De) Regulation: A European Efficiency Comparison. *Economica*, 77(305), 77-91. doi: 10.1111/j.1468-0335.2008.00739.x
30. Ivaldi, M., & Mc Cullough, G. J. (2001). Density and Integration Effects on Class I U.S. Freight Railroads. *Journal of Regulatory Economics*, 19(2), 161-182. doi: 10.1023/A:1011149324027

ЕКОНОМІКА ТА УПРАВЛІННЯ

31. Knieps, G. (2013). Competition and the Railroads: A European Perspective. *Journal of Competition Law and Economics*, 9(1), 153-169. doi: 10.1093/joclec/nhs040
32. Kogan, J. (2006). Latin America: Competition for concessions. In J. A. Gómez-Ibáñez, Ginés de Rus (Eds.), *Competition in the Railway Industry. An Intern. Comparative Analysis* (pp. 153-176). Northampton, MA: Edward Elgar Publishing. doi: 10.4337/9781847202949.00016
33. Krasnikov, D. (2016, August 20). Rail administration chief says need for modernization ‘immense’. *KyivPost*. Retrieved from <https://www.kyivpost.com/article/content/reform-watch/rail-administration-chief-says-need-for-modernization-immense-421463.html>
34. Lazarev, A. (2012). Russian Railways: Reform is in the Home Stretch. *RZD-Partner International*, 29, 16-17.
35. Mizutani, F., & Uranishi, S. (2013). Does vertical separation reduce cost? An empirical analysis of the rail industry in European and East Asian OECD countries. *Journal of Regulatory Economics*, 43(1), 31-59. doi: 10.1007/s11149-012-9193-4
36. Nash, C., Nilsson, J. E., & Link, H. (2013). Comparing Three Models for Introduction of Competition into Railways. *Journal of Transport Economics and Policy*, 47(2), 191-206.
37. Nash, C. (2011). Competition in Rail Passenger Services. (Slide Presentation). Institute for Transport Studies, University of Leeds, Leeds. Retrieved from http://www.fedea.net/transporte/PDF/ii_workshop/Presentation_Chris%20Nash.pdf
38. Perkins, S., Amos, P., Kohon, J., & Thompson, L. S. (2014). Peer Review of Railway Freight Development in Mexico. *Report of the International Transport Forum, Paris*. Retrieved from <http://www.tgaassoc.com/publications.html>
39. Pittman, R. (2013). Blame the Switchman? Russian Railways Restructuring after Ten Years. In M. Alexeev, S. Weber (Eds.), *The Oxford Handbook of the Russian Economy*. Oxford: Oxford University Press. doi: 10.1093/oxfordhb/9780199759927.013.0001
40. Pittman, R. (2007). Make or buy on the Russian railway? Coase, Williamson, and Tsar Nicholas II. *Economic Change and Restructuring*, 40(3), 207-221. doi:10.1007/s10644-007-9024-2
41. Pittman, R. (2007). Options for Restructuring the State-Owned Monopoly Railway. *Research in Transportation Economics*, 20, 179-198. doi: 10.1016/S0739-8859(07)20007-1
42. Pittman, R. (2015). Railways Restructuring and Ukrainian Economic Reform. *Man and the Economy*, 2(1), 87-107. doi: 10.1515/me-2015-0006
43. Pittman, R. (2015). Restructuring the Ukrainian Railway: Low Hanging Fruit for the Country’s Fiscal Needs. *VoxUkraine*. Retrieved from <http://voxukraine.org/2015/01/17/restructuring-the-ukrainian-railway-low-hanging-fruit-for-the-countrys-fiscal-needs/>
44. Pittman, R. (2005). Structural Separation to Create Competition? The Case of Freight Railways. *Review of Network Economics*, 4(3), 181-195. doi: 10.2202/1446-9022.1072
45. Pittman, R. (2013). The freight railways of the former Soviet Union, twenty years on: Reforms lose steam. *Research in Transportation Business & Management*, 6, 99-115. doi: 10.1016/j.rtbm.2012.11.010
46. Pittman, R. (2003). Vertical Restructuring (or Not) of the Infrastructure Sectors of Transition Economies. *Journal of Industry, Competition and Trade*, 3(1-2), 5-26. doi: 10.1023/A:1025418218566
47. Pittman, R. (2013). What Next for Russian Railways Restructuring? *SlideShare*. Retrieved from <http://www.slideshare.net/NewEconomicSchool/russian-railways-russell-pittmannes30sept2013>
48. Preston, J., & Robins, D. (2013). Evaluating the long term impacts of transport policy: The case of passenger rail privatization. *Research in Transportation Economics*, 39(1), 14-20. doi: 10.1016/j.retrec.2012.05.019
49. Sánchez, P. C., Monsálvez, J. M. P., & Martínez, L. S. (2008). *Vertical and Horizontal Separation in the European Railway Sector: Effects on Productivity*. Bilbao: Fundacion BBVA. Retrieved from http://www.fbbva.es/TLFU/dat/dt1208_vertical%20and%20horizontal_web.pdf
50. Savignat, M. G., & Nash, C. (1999). The Case for Rail Reform in Europe: Evidence from Studies of Production Characteristics of the Rail Industry. *International Journal of Transport Economics*, 26(2), 201-217.
51. Shkliar, A. (2015). Ukrzaliznytsia’s New Tariff Policy: How to Find a Balance with the National Economy. *VoxUkraine*. Retrieved from <http://voxukraine.org/2015/10/19/ukrzaliznytsias-new-tariff-policy-how-to-find-a-balance-with-the-national-economy/>
52. Thompson, L. S. (2009). Liberalization and Commercialization of the World’s Railways: Progress and Regulatory Issues. *Forum Paper International Transport Forum*, 6, Paris. Retrieved from <http://www.itf-oecd.org/sites/default/files/docs/09fp06.pdf>
53. Villa, J., & Sacristán-Roy, E. (2013). Privatization of Mexican railroads: Fifteen years later. *Research in Transportation Business & Management*, 6, 45-50. doi: 10.1016/j.rtbm.2012.11.012

ЕКОНОМІКА ТА УПРАВЛІННЯ

54. Wilson, W. W. (1997). Cost Savings and Productivity in the Railroad Industry. *Journal of Regulatory Economics*, 11(1), 21-40. doi:10.1023/A:1007946111577
55. Xu, Yi-Chong. (2004). *Electricity Reform in China, India and Russia: The World Bank Template and the Politics of Power*. Cheltenham, UK; Northampton, MA: Edward Elgar Publishing.

Prof. D. M. Kozachenko, D. Sc. (Tech.) (Ukraine) recommended this article to be published

Accessed: Oct. 30, 2016

Received: Jan. 04, 2017