EasyChair Preprint

№ 4725

FORFAITING Model Along the Route Port of Bandar-Imam - Dostyk st. (KTZh)

Zhaken Kuanyshbayev

December 9, 2020

FORFAITING model along the route port of Bandar-Imam - Dostyk st. (KTZh)

Zhaken Kuanyshbayev [1]

[1]L.N. Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan

Email address: lev-49-07@mail.ru

*Corresponding author

To cite this article:

Authors Name. Paper Title. *International Journal of XXXXXX.* Vol. x, No. x, 2017, pp. x-x. doi: 10.11648/j.xxx.xxxxxxxx.xx.

Received: MM DD, 2017; **Accepted**: MM DD, 2017; **Published**: MM DD, 2017

Abstract: The article describes the procedure for determining the transportation fee for the transportation of crude oil in a special rolling stock based on a technique with a tariff fracture and a through-shoulder scheme. The proposed route of the cargo train is the port Bandar-Imam to the Dostyk station (Republic of Kazakhstan). As you know, Dostyk station is a border station, the freight trains continue along the route to Alashankou station (People's Republic of China). It is not possible to make settlements on the railways of the Republic of China because of the lack of a road map. Therefore, in the calculations it was limited to this border station. On the basis of the received researches the comparison of vans is carried out on the route port Bandar-Imam – Dostyk station. The author proposes a forfaiting model to stimulate freight rail traffic.

Keywords: Tariffs for freight transportation, the procedure for determining the freight charge, a scheme with a tariff fracture, a cross-arm scheme, intermodal transport, tenge, Swiss franc, EuroNur, supranational currency, forfaiting, profit.

1. Introduction. After the collapse of the Soviet Union, separate independent states were formed. With gaining independence, each state has its own currency. For example, in the Republic of Kazakhstan - tenge, in the Russian Federation - ruble, etc. The appearance of national currencies made it difficult to determine the freight charges for freight rail transportation. Because the railways of Kazakhstan are an international transport corridor, there was an idea of a supranational currency [1, 2, 3, 4]. In 2014, I patented the supranational currency *EuroNur* for the organization of intermodal transportation. Based on the supranational currency, author's certificates were obtained for the formation of a number of transport corridors: the Pacific corridor (port of Lianyungang); the Middle East corridor (port of Bandar-Abbas); the Black Sea corridor (port of Poti); the Central Asian corridor (Galaba station) [6, 7, 8, 9, 10, 10, 11]. In addition, a number of works have been published that reveal the essence of determining the freight charges by the method of the tariff fracture and the through-the-shoulder method based on the supranational currency EuroNur [5, 6]. Determination of the freight charges by the through-the-shoulder scheme is based on the methodology of the Single Transit Tariff (STT) and the International Transit Tariff (ITT) [12].

Main body. Consider the proposed model of Forfaiting crediting in the intermodal transport system involving the railways of the Islamic Republic of Iran, the Republic of Turkmenistan, the Republic of Uzbekistan and the Republic of Kazakhstan. For transportation, the cargo is automobile gasoline; rolling stock - a specialized wagon (tank); tariff distance according to the through-the-shoulder scheme 4560km; 2 tariff class. We will present the calculations of the determination of the freight charge according to the scheme with the tariff fracture and the through-the-shoulder scheme. Figure 1 shows the definition of the freight charge along the route Sary-Agach st. - Dostyk st. by rail of the Republic of Kazakhstan. As can be seen from the calculations, the freight charge is 2905.14*ChF*.

Imagine the route and the freight charge through the border crossing SARAKHS (exp.), Figure 1-3.

Fig.1. The freight charge along the route Sary-Agach st. – Dostyk st. (Republic of Kazakhstan)

Figure 2 shows the definitions of the transportation fee along the route Khojadawlet st.- Keles st. by rail of the Republic of Uzbekistan. The transportation fee for this route is 2101.50*ChF*.

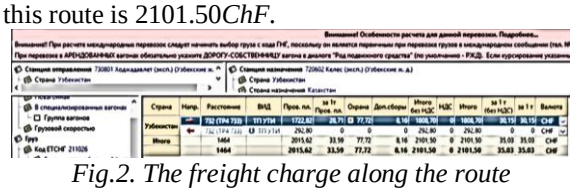

Fig.2. The freight charge along the route Khojadavlet st.– Keles st. (Republic of Uzbekistan)

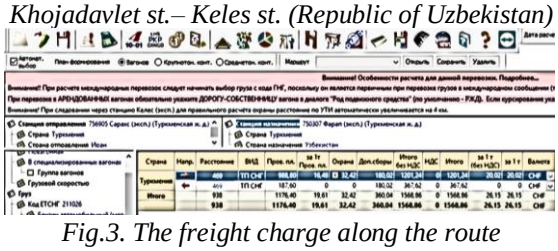

Fig.3. The freight charge along the route Sarakhs st. – Farap st. (Republic of Turkmenistan)

Let's present the comparison table for the transportation fee along the route port of Bandar-Imam - Dostyk st. (KTZh) (Fig. 1-3). For convenience, the calculations are given in a tabular form (Table 1).

Table 1. Comparison of freight charges by the route port of Bandar-Imam – Dostyk st., through the border crossing Sarakhs st.

№	Name of stations	Tariff distance, *km*	Freight charge, *ChF*	
			scheme with the tariff fracture	through-the-shoulder scheme
1	Dostyk st. – Sary-Agach st.(Kazakhstan)	1831,0	2905,14	-
2	Keles st. – Khojadavlet st. (Uzbekistan)	732,0	2101,50	-
3	Farap st. – Sarakhs st. (Turkmenistan)	469,0	1569,86	-
4	Sarakhs st. – p. Bandar-Imam (Iran)	1528,0	34,70*60= 2082,0	-
5	p. Bandar-Imam – Dostyk st. (Kazakhstan)	4560,0	-	106,1*60= 6366,0
6	Total:	4560,0	8658,05	6366,0

Note: the specific tariff rate of the route Sarakh st. - port of Bandar-Imam - 34.70ChF/t; port of Bandar-Imam - Dostyk st.- 106.1ChF/t.

It should be noted that the presented calculations for the port of Bandar-Imam-Dostyk station were carried out through the border crossing of the Sarakhs station. Calculations show that, the freight charge according to the through-the-shoulder scheme gives an economic effect in comparison with the scheme with a tariff fracture. The economic effect is 8658.05-6366.0 = 2292.05*ChF*. To be able to lend for the *forfaiting* model, it is important to structure the freight charges on the railways of the countries participating in the international rail service. If we distribute the received profit from transportation of one tank on the countries of participants in proportion to the tariff distance, then we get (Table 2):

Table 2. Structuring of freight charges

№	*Name of stations*	*Tariff distance, km*	*Structuring of freight charges, ChF*
1	Dostyk st. – Sary-Agach st. (Kazakhstan)	1831,0 (40,15%)	920,25
2	Keles st. - Khojadavlet st. (Uzbekistan)	732,0 (16,05%)	367,87
3	Farap st. – Sarakhs st. (Turkmenistan)	469,0 (10,28%)	235,62
4	Sarakhs st. – port of Bandar-Imam (Iran)	1528,0 (33,52%)	768,31
5	Port of Bandar-Imam - Dostyk station (Kazakhstan)	4560,0	
6	*Total:*	*4560,0*	*2292,05*

The received profit is distributed between the railways by the participants of the international railway communication during the transportation of one tank. Let's make calculations for the transportation of one million tons of crude oil.

***(1 000 000/60)*2295,05=38 250 833,34** *ChF*

The proposed loan model proposes to pay for the transportation of crude oil by railways of the Republic of Uzbekistan and the Republic of Turkmenistan. As a percentage of the freight charges by rail of the participating countries from the total amount of the economic effect, in absolute figures it amounts to (Table 3):

Table 3. The scheme of forfaiting by railways of the participating countries

№	*Name of stations*	*Tariff distance, km*	*Structuring of freight charges, ChF*	*The profit per one million tons of crude oil, ChF*
1	Dostyk st. – Sary-Agach st. (Kazakhstan)	1831,0 (40,15 %)	920,25	15 337 500,0
2	Keles st. - Khojadavlet st. (Uzbekistan)	732,0 (16,05 %)	367,87	*6 131 166,66*
3	Farap st. – Sarakhs st. (Turkmenistan)	469,0 (10,28 %)	235,62	*3 927 000*

4	Sarakhs st. – port of Bandar-Imam (Iran)	1528,0 (33,52 %)	768,31	12 855 166,68
5	Port of Bandar-Imam - Dostyk station (Kazakhstan)	4560,0		
6	*Total:*	*4560,0*	*2292,05*	***38 250 833,34***

Thus, we can conclude that the model of forfaiting can be applied to the railways of the Republic of Uzbekistan and the Republic of Turkmenistan. The proposed loan model provides for a deferred payment for 2-3 years. This is achieved by an appropriate agreement between the railway communication participants. The proposed loan model provides for a margin of 7-9% with a deferred payment for 2-3 years.

Imagine a route through the border crossing of Inche-Borun-Akayla (exp.), Figure 4.

Figure 4. Scheme of the route port of Bandar-Imam – Dostyk st., through the border crossing of Ince-Borun-Akayla (exp.)

We will determine the freight charge of the route port of Bandar-Imam – Dostyk st., through the border crossing Ince-Borun-Akayla (exp.), by the method of the Single Transit Tariff (STT). The tariff distance is 5683 km. The specific tariff rate is 131.40*ChF*. Then for the wagon loading the freight charge will be 131.40 * 60 = *7884.0ChF*.

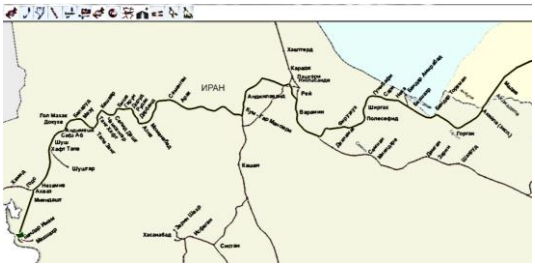

Figure 5. The scheme of the route p.Bandar-Imam - Akayla st. (exp.), (Iran)

For determining the freight charge of the route port of Bandar-Imam - Akayla station (Iran) we use a technique of Uniform Transit Tariff (UTT). Tariff distance is *1230,0km*. The specific tariff rate is *27.80 ChF/t*. Then for the carriage shipment the freight charge will be 27.80*60=*1668.0 ChF*.

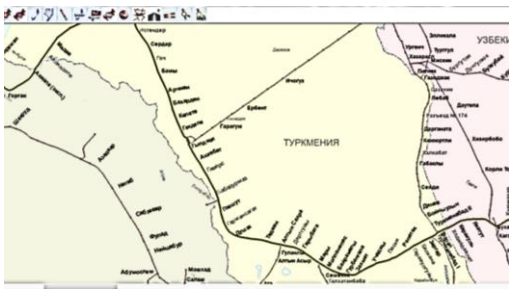

Figure 6. Scheme of the route Akayla st. - Farap st. (Turkmenistan)

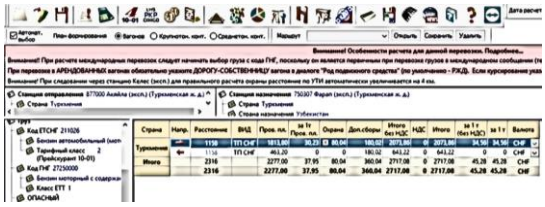

Figure 7. The freight charge of the route Akayla st.- Farap st. (Turkmenistan)

The freight charge of the route Akayla station - Farap station (Turkmenistan) is *2717,08ChF*.

Figure 8. Scheme of the route Khojadawlet st. - Keles st. (Uzbekistan)

Figure 9. The freight charge of the route Khojadawlet st. - Keles st. (Uzbekistan)

The freight charge of the route Khojadawlet st. - Keles st. (Uzbekistan) is *2,189.06ChF*.

Figure 10. Scheme of the route Sary-Agach st. - Dostyk st. (Kazakhstan)

Figure 11. The freight charge of the route

Sary-Agach st. - Dostyk st.(Kazakhstan)

The freight charge of the route Sary-Agach st. - Dostyk st. (Kazakhstan) is *2905.14 ChF*.

The results of calculations for the indicated route is presented in a tabular form (Table 4).

Table 4. Comparison of freight charges by the route port of Bandar-Imam – Dostyk st., through the border crossing Akayla st.

№	Name of stations	Tariff distance, *km*	Freight charge, *ChF*	
			scheme with the tariff fracture	through-the-shoulder scheme
1	port of Bandar-Imam – Akayla st., Iran	1230,0	1668,0	-
2	Akayla st. – Farap st., Turkmenistan	1158,0	2717,08	-
3	Khojadawlet st. - Keles st., Uzbekistan	1464,0	2189,06	-
4	Sary-Agach st. - Dostyk st., Kazakhstan	1831,0	2905,14	-
5	port of Bandar-Imam – Dostyk st.	5683,0	-	7884,0
6	*Total:*	-	*9479,28*	***7884,0***

The economic effect by the through-the-shoulder scheme is 9479.28-7884.0 = *1595.28 ChF* (Table 5).

Table 5. Structuring of freight charges by the route p. Bandar-Imam- Dostyk st., through the border crossing Akayla st.

№	*Name of stations*	*Tariff distance, km*	*Structuring of freight charges, ChF*
1	port of Bandar-Imam – Akayla st., Iran	1230,0 (21,64%)	345,218
2	Akayla st. – Farap st., Turkmenistan	1158,0 (20,37%)	324,955
3	Khojadawlet st. - Keles st., Uzbekistan	1464,0 (25,75%)	410,784
4	Sary-Agach st. - Dostyk st., Kazakhstan	1831,0 (32,24%)	514,323
5	port of Bandar-Imam – Dostyk st.	5683,0	
6	*Total:*	-	***1595,28***

The received profit is distributed between the railways by the participants of the international railway communication during the transportation of one tank. Let's make calculations for the transportation of one million tons of crude oil [12].

(1 000 000/60)*1595,28= 26 588 000,0ChF

The proposed loan model proposes to pay for the transportation of crude oil by railways of the Republic of Uzbekistan and the Republic of Turkmenistan. As a percentage of the freight charges by rail of the participating countries from the total amount of the economic effect, in absolute figures this amounts to (Table 6).

Table 6. The scheme of forfaiting by railways of the participating countries through the border crossing Akayla st.

№	*Name of stations*	*Tariff distance, km*	*Structuring of freight charges, ChF*	*The profit per one million tons of crude oil, ChF*
1	port of Bandar-Imam – Akayla st., Iran	1230,0 (21,64%)	345,218	5 753 643,2
2	Akayla st. – Farap st., Turkmenistan	1158,0 (20,37%)	324,955	*5 415 975,6*
3	Khojadawlet st. - Keles st., Uzbekistan	1464,0 (25,75%)	410,784	*6 846 410,0*
4	Sary-Agach st. - Dostyk st., Kazakhstan	1831,0 (32,24%)	514,323	8 571 971,2
5	port of Bandar-Imam – Dostyk st.	5683,0		
6	*Total:*	*5683,0*	***1595,28***	*26 588 000, 0*

Conclusions: Thus, as in the case of the organization of the international communication through the border crossing Sarakhs (exp.), the proposed route through Akayla station will make it possible to use the model of forfaiting to the railways of the Republic of Uzbekistan and the Republic of Turkmenistan. The proposed loan model provides for a deferred payment for 2-3 years. This is achieved by an appropriate agreement between the railway communication participants. The proposed loan model provides for a margin of 7-9% with a deferred payment

for 2-3 years. The railway of the Republic of Turkmenistan can be credited for the amount of ***5 415 975,6ChF***, the railway of the Republic of Uzbekistan - ***6,846,410.0ChF***. Then, taking into account the bank margin of 7%, it will be for the Republic of Turkmenistan - ***5 795 093.892ChF***; for the Republic of Uzbekistan - ***7 325 658.7ChF***.

In the forfaiting model, repayment of a loan can be made not only by calculations in currency, but also by items of mass demand, spare parts for machines and equipment, food products, medicines, etc.

Acknowledgments (Благодарности). I express my gratitude to Dana Alimsurova for the undergraduate of the Department of Organization of Transportation of the Eurasian National University L.N. Gumilyov for the assistance rendered in preparing the manuscript of the article.

References:

1. Zh.M. Kuanyshbayev. Supranational currency EvroNur (EvroNur). Certificate of state registration of rights to the object of copyright. The entry in the register No. 1928 of November 12, 2014.

2. Zh.M. Kuanyshbayev, M.I. Arpabekov, Suprnational currecy EvroNur «ENGINEERING. TECHNOLOGIES. EDUCATION. SECURIITY». 28-29 mai 2015, Veliko Tarnovo: Bulgaria. Volume 5. Thery of education, upbringing and scien-tificresearche. Leadership. Public sciences. Lingistics. Know-ledge. Creativity. Unnovations. ISSN: 1310-3946. P.52-60. 1п.л.

3. Zh.M. Kuanyshbayev, M.I. Arpabekov. Logistics in transport. Monograph. Palmarium Academic Publishing is a trademark of: LAP LAMBERT Academic Publishing GmbH & Co. KG. Heinrich –Bocking –Str. 6-8, 66121 Saarbrucken, Germany, 2015. 247 p. Тираж – 100 экз.

4. Zh.M. Kuanyshbayev, A. Aukeshova. Definition of the freight according the scheme with the tariff change and thouch shoulder. Science and world, international scientific journal:Volgograd № 3 (19), 2015.- P. 44-50. (0,37п.л.). **IF=0,326 Global impact Factor 2013, Australia.**

5. Zh.M. Kuanyshbayev, Т.Б. Suleimenov, E.S. Eshimbay. Designing of logistic schemes for the carriage of goods on railway transport (st.N.Tagil-st. Zhezkazgan). Science and world, international scientific journal: Volgograd No. 3 (19), 2015.-P.50-55. (0.31 p.p.). IF = 0.326 Global impact Factor 2013, Australia.

6. Ж.М. Куанышбаев, M.I. Arpabekov. The engineering of logistic schemes in transportation of metal products**.** Ecology, environment and conservation, Ref. No. EEC – F- 125**. SJR=0.103.**

7. Zh.M. Kuanyshbayev, N.K. Aidikenova, A.D. Kasymzhanov. Certificate of state registration of rights to an object of copyright entitled "Packaging material for the transport of petroleum products", as. Issued by the Committee on Intellectual Property Rights of the Ministry of Justice of the Republic of Kazakhstan. The entry in the register for No. 1668 of December 13, 2013 - 5c. 0.3 p.p.

8. Zh.M. Kuanyshbayev, N.K. Aidikenova, I.M. Zhanatov A certificate of state registration of rights to an object of copyright, entitled "Methodology for determining the freight charges for railway transport," avt. Certificate. Issued by the Intellectual Property Rights Committee of the Ministry of Justice of the Republic of Kazakhstan. The entry in the register for No. 421 of 31.03. 2014g-12s. 0.75 pp.

9. Zh.M. Kuanyshbayev, M.I. Arpabekov, M.B. Temirbolatova Designing logistic schemes for the transport of ferrochromium along the route Zh.Zholkuduk - st. Amsterdam. Certificate of state registration of rights to the object of copyright. The entry in the register No. 1679 of July 10, 2017.

10. Zh.M. Kuanyshbayev, Zh.B. Sermuhanov Designing of logistical schemes on the route of Aksu station (KTZh) - art. Lianyungang (PRC). Certificate of state registration of rights to the object of copyright. The entry in the register No. 1680 of July 10, 2017.

11. Zh.M. Kuanyshbayev, D.K. Alimsurov. Formation of the Black Sea transport corridor (Pavlodar - Poti). Certificate of state registration of rights to the object of copyright. The entry in the register No. 041 from February 15, 2018.

12. UNIFIED TRANSIT TARIFF (with amendments and additions as of 01.01.2014). Official publication. OSZhD Committee, Warsaw. 99p.