
Employees of the Global Labor Market and the Polish Social Security System

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Abstract:

Purpose: The aim of this article is to determine whether privileging a professional group in the national social security system - persons working at sea (officers and ratings) and therefore on the global labor market - is justifiable for the national economy. Privileges would be to adopt rules for collecting social security contributions a way different than the one commonly used. Its assessment would be taken from the economic point of view. Thus, the assessment of economic rationality of creating a gap in the social security system for people working at sea is the basic theme of the research presented in the article.

Approach/Methodology/Design: The characteristics of the modern maritime labor market was based on a review of the literature. The analysis of reports on ship operating costs indicated a key element which is the cost of crew employment. A comparative analysis of crew employment costs resulting from the Polish social security system and a selected social system attractive for seafarers showed huge disproportions. The next step was to calculate the benefits and costs of applying non-common rules. These rules were prepared by Polish ship management companies.

Findings: The results of the conducted research clearly show that the introduction of reliefs for Polish seafarers in the Polish legal system will not be a burden on the Polish budget, but it will also generate revenues that the budget is currently deprived of also.

Practical Implications: The research results clearly show that the introduction of separate regulations for people employed on ships, i.e. on the global labor market, will generate favorable conditions for shipping operations in Poland and for registering ships under the Polish flag. This, in turn, thanks to high multipliers of shipping activities can translate into faster development of the maritime service and production sphere.

Originality/Value: The results precisely indicate positive, from the economic point of view, effects of creating a gap in the social security system for seafarers, highly qualified employees of the global labor market.

Keywords: Shipping industry, global labor market, cost of ship operations, social benefits.

JEL classification: F66, H55, J32, R49.

Paper Type: Research study.

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1. Introduction

Maritime transportⁱ is an important element of the national economy, even for countries without access to the seaⁱⁱ. The most obvious reasons, i.e. the function of moving loads and people, has been encapsulated with many other features that are crucial for any economy with access to the sea. First of all, it is the core of the broadly defined maritime industry (Council of Canadian Academies, 2017; Fernández-Macho *et al.*, 2015). Shipping is a source of demand for other types of activities - the marine technology industry (shipbuilding, maritime and subsea construction and installation, service sectors for shipping: ports and entities involved in logistics activities as well as services related to legal, financial, insurance and business consulting. In view of the shrinking economic resources on land, many initiatives are underway for more complete use of sea resources.

For these activities - shipping as a service provider of process services is the supply side. In addition to the value chains of traditional activities (trade service), including freight and people transport, coastal and deep-sea fisheries, exploitation of raw materials from shelf and coastal waters, the European Commission named new forms of activity in the marine environment. This "blue growth" includes: 1) blue energy (new technologies which offer supply of clean energy e.g. tidal barrage, wave power, ocean thermal energy conversion), 2) aquaculture, 3) maritime, coastal and cruise tourism, 4) marine mineral resources (exploitation and mining minerals, but not from shelf and shallow waters, but from the ocean floor, 5) blue biotechnology (COM(2017) 494 final, 2012). Traditional and innovative types of economic activity require an adequate labor resource. This applies not only to ship crews. Inland navigation services are highly developed activities. In some aspects of land organization, maritime experience is necessary, for example in the case of work requiring technical knowledge of ship operation or having the rights arising from the STCW Conventionⁱⁱⁱ. In many positions in shipping companies, maritime experience is an asset in the recruitment process - it guarantees knowledge of the issues of ship operation, teamwork skills and many other features that have the effect on work at sea. The issue of having maritime personnel (not only in terms of knowledge, but also competences and skills that are correlated with maritime practice) is a key issue for countries with access to the sea.

According to Sornn-Friese & Ørts Hansen (2012) maritime practice is the most efficient and effective way of education for positions in which onshore education or employment of foreign seafarers will not be able to replace lost maritime skills (Sornn-Friese and Ørts Hansen, 2012), numerous initiatives both at the widest - global forum [e.g. IMO^{iv} (IMO, 2008)], at the level of state organizations [e.g. the EU (COM(2005/C 157/05), 2005)], sectoral organizations [e.g. ECSA^v (ECSA, 2019)] or finally various attempts to solve the problem of the risk of loss of maritime competence by individual countries. The article will present proposals prepared by Polish shipping entrepreneurs (owners and ship managers), the purpose of which is to

improve the situation of Polish officers and ratings working at sea and to create favorable conditions for registering ships under the Polish flag.

2. Polish Shipping Industry between the Central Planned and the Market Economy

The characteristic of the organization of shipping in Poland requires a historical context. Without reference to the past, it would be difficult to explain the discrepancy between various elements of the shipping sector in Poland - e.g. a small number of ships registered under the Polish flag and a relatively large educational base in the field of maritime training, and the largest number of officers in the European Union (Drewry Maritime Research, 2015).

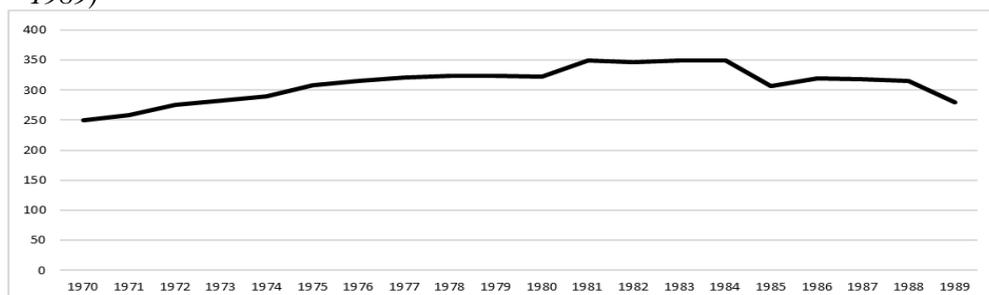
2.1 Shipping Industry before the Transformation

Before the transformation of the political system (1989), shipping in Poland operated at the interface of two economic and legal orders. On the one hand, enterprises – ship owners operated like any other state-owned enterprises. The goal was not to maximize profit, but to operate to support the national economy under a self-sufficient policy (Roe, 2018). On the other hand, partners of these state-owned enterprises were private entities operating in the market economy conditions. Unfortunately, cooperation with the external environment did not translate into good functioning of Polish shipping companies. They had a fleet of inefficient ships. This was the result of the way Polish shipyards operated (the main supplier) - which, as state-owned enterprises, were not motivated to search for new solutions in the sphere of offered products and work organization. The low quality of the fleet translated into its operating costs. But high operating costs were levelled by low crew costs, despite the higher than usual number of crew members. Salaries on Polish ships were much lower than the market salary for work at sea.

Despite this, the Polish fleet was not an important player on the global market for transporting goods by sea. The main reason was the purpose of the fleet - serving the self-sufficient Polish economy and the economies of other countries associated under the CMEA (Council for Mutual Economic Assistance). This did not exclude the Polish fleet from the transport market at all. The possibility of obtaining revenues in foreign currency was, especially from the mid-1970s, of great importance, although serving its own foreign trade (and that of the countries associated in the CMEA) was a priority. This approach to its own fleet meant that the companies operating the fleet did not develop competences necessary to conduct shipping activities. In view of the above, it may be puzzling that with high operating costs of the fleet, a lack of maritime skills, Polish enterprises were able to compete on the free transport market. It was possible thanks to the fact that the state - the owner of enterprises accepted any losses. The result of the activity did not matter, because the losses (even at the level indicating bankruptcy in the market economy) were covered from the central budget (Roe, 2018).

The lack of economic basis for operation and development of the fleet did not prevent its expansion. Especially, from the late 1970s, the goal of fleet growth was primarily to earn so called hard currencies.

Figure 1. Number of ships that belonged to the Polish state-owned enterprises (1970 – 1989)



Source: Polish Maritime News [in] (Roe, 2018).

It was extremely important because a huge debt Poland owed Western countries and banks. The effect of achieving this goal was a huge fleet (Figure 1).

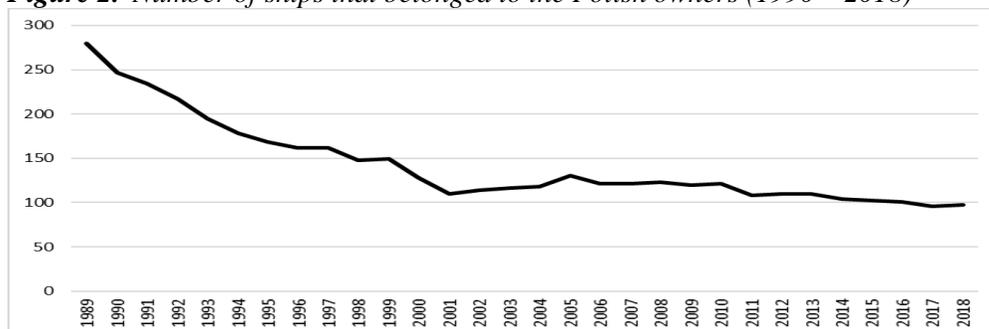
2.2 Quantitative Changes in the Polish Fleet

At the turn of 1989 and 1990, political transformation was initiated in Poland, which resulted in the transition from a centrally planned economy to a market economy. The consequence of the changes was the departure of financing business operations. In addition, there were problems in enterprises themselves - large investment programs started in the 1980s, based on loans, caused that enterprises fell into a debt spiral. In addition, the lack of appropriate competences, irrational management, too big land assets and extensive administration led to the sale of ships, first and foremost - the most economically effective. The processes of marginalization of Polish shipping companies also resulted from changes in the shipping market - revolutionary technological changes in the sea transport market, which definitely negatively affected the level of competitiveness of the fleet offered by Polish carriers (Figure 2).

Currently, according to the available official statistics, the fleet of vessels (above 1000 GT) belonging to Polish entities has stabilized at the level of 97 units, in total 2602 thousand of DWT (2018) (Statistics Poland and Statistical Office in Szczecin, 2019). Bulk carriers (almost 60%) and general cargo ships (ca. 15%) have the largest share in the total tonnage. However, only 19 vessels are registered in the Polish Register, which constitutes 20% of the fleet of Polish entities. Mainly older ships are registered under the Polish flag (the average age is almost 39 years), under foreign flags ships are definitely younger - the average is less than 12 years (Statistics Poland and Statistical Office in Szczecin, 2019). Registering Polish (due to the owner) ships under foreign flags is associated with many negative economic effects. The state budget

does not receive any fees for ship registration, for Flag State Control, for taxes (on business operations or tonnage tax).

Figure 2. Number of ships that belonged to the Polish owners (1990 – 2018)



Source: GUS and OSM, 2019.

However, the biggest problem arising from the operation of the fleet of Polish enterprises under foreign flags is the lack of social and health insurance for Polish seafarers. Negative effects translate into the state budget situation – a loss of income from social security contributions and the situation of seafarers - no security in the event of retirement age or in the event of a sudden loss of work capacity. There is a question of strength and importance of maritime personnel for the Polish national economy. According to the UNCTAD data from 2015, there are over 25,000 Polish officers on the global labor market at sea and almost 7,000 ratings (UNCTADstat, 2015).

This means a work resource of over 32 thousand. Considering less than 17 million professionally active, Polish seafarers constitute 2‰ of Polish labor resources; nevertheless, they are an exceptional resource. Apart from the cost of training an officer (it is primarily the public cost - most officers are educated in public colleges), seafarers have competences, skills, and experience impossible to get at work on land. These are unique and decisive national advantages - maritime competences. Without these competences, the shipping sector and the sectors around and for shipping can start to shrink. Where it is impossible to withdraw from operations (e.g. the state from administering seaports, managing seawater in the Polish economic zone), it may be necessary to employ foreigners. Hence the need for joint action of: the state, shipping companies, trade unions and seafarers themselves for such changes in the social security system with regard to seafarers that it would be profitable for enterprises - owners or ship managers to register ships under the Polish flag.

3. Reasons for Low Attractiveness of the Polish Flag

The reason for registering ships under a flag other than the Polish flag (usually a flag of convenience) are crew maintenance costs. The provisions of Polish labor law apply on ships flying the Polish flag, and this means numerous wage burdens related not

only to the tax system but also to the social and health insurance system. Differences in wages paid by the employer and received by the employee can be traced based on the data in Table 1.

Table 1. Insurance contribution and funds payments – burden of PLN 10,000 payroll (present law regulations)

Insurance contribution and on fund payments			Burden of payroll PLN 10,000	
Insurances/ funds	Interest rate of contribution [%]		employee	employer
	employee	employer		
I	II	III	IV	V
Old-age pension insurance	9.76	9.76	976.00	976.00
Disability and survivor's pension insurance	1.50	6.50	150.00	650.00
Sickness insurance	2.45	-	245.00	0.00
Work accident insurance	-	2.26	0.00	226.00
TOTAL: social benefits			1371.00	1852.00
Health contribution	9.00	-	776.61	0.00
TOTAL: health contribution			776.61	0.00
Labor Fund	-	2.45	0.00	245.00
Wage Guarantee Fund	-	0.10	0.00	10.00
The Old-age Bridging Pensions Fund	-	1.50	0.00	150.00
The State Fund for Rehabilitation of Disabled People (PLN/ 1 employer)	-	ca. 100.00	0.00	100.00
TOTAL: payment on fund			0.00	505.00
TOTAL: social benefits and funds' payments			2174.61	2357.00
Employer's earnings			7 852.39	-
Personnel cost (paid by employee)			-	12357.00
Sum of contributions paid by employer and employee			4504.61	
Sum of contributions paid by employer and employee (% of gross remuneration)			44.60%	

Source: Own elaboration.

Table 1 includes approximate wage costs charged on the remuneration of an employee employed on the basis of the Polish labor law. Assuming that the crew member's remuneration is PLN 10,000 (approx. EUR 2,400 or USD 2,600), all burdens incurred by the employee and employer are currently estimated based on this amount. The employee pays contributions for social security (retirement, disability, sickness) and health insurance. This means that of the gross amount of PLN 10,000, he will receive an amount lower by almost PLN 2,200. On the employer's side, the burden is no less: it also includes contributions for retirement and disability insurance, instead of sickness accident premiums. Employers contribute to the funds: labor fund, guaranteed employee benefits fund, bridging retirement fund and the state rehabilitation fund for the disabled. The total amount of burdens incumbent on the

employer is over PLN 2,300. Adding up the amounts paid to the state budget for the remuneration of PLN 10,000 - it turns out that they constitute almost 45% of this amount - a total of PLN 4,504.61. The difference between the amount paid by the employer and the amount received by the seafarer is attractive for neither party.

The shipping sector is a global activity with unlimited possibilities to optimize the costs incurred by the ship owner, including the costs of employing crews. The solution to the issue of too high wage burdens in one country is to find a country with more favorable labor law also relating to work on a ship. Registering a ship under the flag of a given country then may contribute to a significant reduction of crew costs (Piniella et al., 2015).

Considering the Bahamian register (it has the largest number of ships owned by Polish entities), the cost of acquiring a seafarer and the income of this seafarer will be identical. The lack of regulations concerning social insurance causes that the amount of the remuneration amounting to PLN 10,000 in the contract is at the same time the cost of the employer and the income of the employee. The rational decision from the point of view of employer (owner, ship managers) to register a ship under a foreign flag leads to a loss in the state budget revenues and the lack of social and health protection of employees (officers and ratings).

4. Actions Aimed at Decreasing Costs of Crews under the Polish Flag

4.1 Activities Undertaken within the European Union

State actions in the area of reducing the payroll burden of crews supporting the activities of shipping companies will be any form of state aid. Although public aid is prohibited in the European Union (Poland has been a member since 2004), other rules apply to shipping.

Shipping in the European Union is treated in a special way: it provides 90% of goods in EU trade relations with countries from other continents and handles 40% of intra-EU trade. Due to high (compared to the global average) wage, insurance, social standards etc. applicable on ships under EU flags, operating ships in such conditions is unprofitable, sometimes even impossible. Hence the "escape" of owners and ship managers under a flag of convenience. Thanks to this, crew costs, which constitute a significant part of ship operating costs (30-50%) can be reduced (Drewry Maritime Research, 2015; Stopford, 2009).

A loss of ships under the national flags of countries - EU members will create many problems (Skrzyszewska and Waśniewska, 2019). Therefore, already in 1989 the first joint document on aid for shipping industry was created: *A future for the Community shipping industry - measures to improve the operating conditions of Community shipping* (COM(96) 81 final, 1996), which announced the introduction of incentives for Community ship owners to be interested in registering ships under EU flags and

employing Community citizens. The Commission also proposed other solutions aimed at increasing competitiveness of the EU fleet. One of the directions was to increase technical efficiency of the fleet while reducing the number of crews.

In addition, a decision was made to rigorously check the third-country flag vessels calling at the Community ports for strict compliance with all safety, environmental and employment standards as well as crew living conditions in accordance with the relevant International Maritime Organization (IMO) and International Labor Organization (ILO) conventions. The assumptions contained in the document were not implemented and in 1997 the European Commission announced a new shipping aid program: *Community guidelines on State aid to maritime transport* (EC(97/C 205/05), 1997).

The document adopted solutions not used before. Public aid was allowed to offset operating costs of EU flag vessels, in relation to open registers, for each flag separately. Once again, it turned out that the proposed actions did not result in inhibiting the reflagging of ships from European to open registers, so further attempts were made to reverse trends unfavorable to European shipping. The European Commission announced further additional programs:

- in 2004: *Community guidelines on State aid to maritime transport*, OJ C 013, 17.01.2004 (COM(2004) 43, 2004);
- in 2009: *Guidelines on State aid to ship management companies*, OJ C 132, 11.06.2009;(COM(2009/C 132/06), 2009);
- in 2017: *Community guidelines on State aid to maritime transport*, OJ C120, 13/04/2017 (COM(2017/c 120/03), 2017).

The above-mentioned documents, published every few years, introduced changes adapting the binding legal regulations to the economic reality, which in the case of sea transport is characterized by high dynamics of changes.

4.2 Activities Undertaken by Polish Shipping Companies

As part of state aid for the maritime transport sector, few changes were introduced in Poland. They consisted of:

- exemption of seafarers (working at least 183 days on Polish ships) from income tax,
- introduction of tonnage tax to the Polish tax system.

These solutions did not bring any effects measured by the growth of the Polish fleet under the Polish flag (Figure 2). Shipping companies were most awaiting provisions on the basis of which it would be possible to reduce the cost of employing seafarers. To meet the expectations of shipping entrepreneurs, associations, and unions with

representatives of various companies prepared various solutions, the best of which were prepared by representatives of Polish ship management companies. Amendments to the provisions on social security were proposed in such a way that ships managed by Polish companies on which Polish seafarers work are not treated on an equal footing with enterprises operating in Poland, but that they are better adapted to the conditions of competition on the global shipping market. The employer would be obliged to pay the amount about 2% higher than specified in the contract, and the seafarer would receive a slightly over 5% lower salary.

Table 2. Insurance contribution and funds payments – burden of PLN 10,000 payroll (proposed changes in law regulations)

Insurance contribution and on fund payments Insurances/ funds	Burden of payroll PLN 10,000	
	employee	employer
I	II	III
Old-age pension insurance	253.76	0.00
Disability and survivor's pension insurance	39.00	0.00
Sickness insurance	63.70	0.00
Work accident insurance	0.00	0.00
TOTAL: Social benefits	356.64	0.00
Health contribution	201.92	0.00
TOTAL: Health contribution	201.92	0.00
Labor Fund	0.00	63.70
Wage Guarantee Fund	0.00	2.60
The Old-age Bridging Pensions Fund	0.00	39.00
The State Fund for Rehabilitation of Disabled People (PLN/1 employer)	0.00	100.00
TOTAL: Payment on fund	0.00	205.30
TOTAL: Social benefits and funds' payments	558.38	205.30
Employer's earnings	9441.62	-
Personnel cost (paid by employee)	-	10205.30
Sum of contributions paid by employer and employee		763.68
Sum of contributions paid by employer and employee (% of gross remuneration)		7.64%

Source: Own elaboration.

The proposed change was presented in the form of a bill that introduces a new, reduced basis for calculating contributions to retirement and disability pension insurance for seafarers employed on Polish ships. The amount of the basis for calculating the premium will correspond to the amount of the minimum remuneration, determined on the basis of the regulations laid down by the Council of Ministers, and not to the amount of the remuneration resulting from the contract.

The new basis for calculating pension and disability pension contributions will also be the basis for calculating contributions for sickness and accident insurance of these

seafarers. The project also assumes a reduction to zero of the rates of social security contributions for seafarers that the shipowner is obliged to pay (i.e. contributions for retirement, disability, and accident insurance). However, in order not to violate employees' rights, it was proposed that this part of contributions should be financed by the state budget through the Social Insurance Institution. The effects of such legislative solutions are presented in Table 2.

For the same amount of the remuneration as in Table 1, at which the employer incurred the cost of employment approx. 20% higher than fixed in the contract, the employee received approx. 20% lower remuneration than specified in the contract. After the proposed changes, the situation of both sides would change radically. However, it is an attractive solution, because the seafarer gains access to benefits, to which he is not entitled if he is not insured by the employer under the employment relationship.

5. The Effects of Changes in Law Reducing the Cost of Employing Seafarers

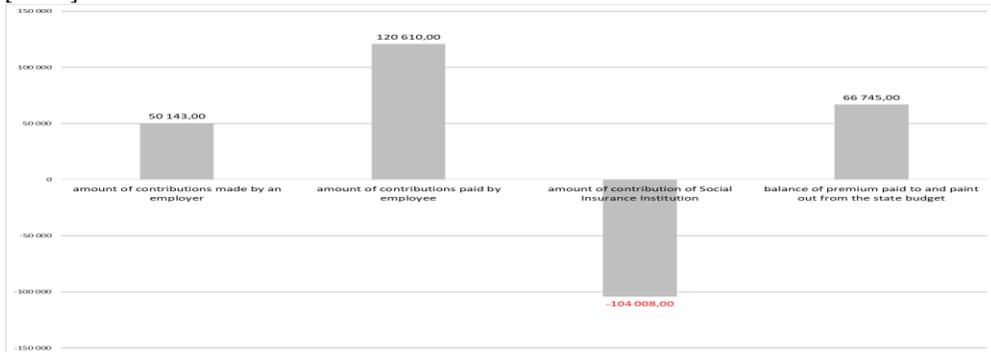
In the presented solution, a part of the costs is covered by the state budget, so this is public aid, but due to the solutions adopted in the EU for the shipping sector - completely legal and allowed. Creating such possibilities has consequences - both for the state budget itself and for uniformity of the social insurance system. Therefore, the rationality of the proposed solution should be assessed in two ways.

5.1 The Effects of the Proposed Changes on the State Budget

For the purposes of this article, assessment of the financial impact on the state budget will be limited only to the issue of inflows and expenditure of cash related to social and health insurance for Polish seafarers. This assumption is necessary, because the proposed solutions create direct, indirect, and induced effects that would be generated by shipping and would bring additional revenues to the state budget. According to Oxford Economics, the shipping investment multiplier is 2.6, which means considerable benefits for investors and the state budget when ships return to the Polish flag (Oxford Economics, 2017). Considering only allocation of public money to the social security system dedicated to seafarers, the calculations will be made for one ship only to check the balance of potential revenues and expenses of the budget due to the use of reductions in contributions made by employers. Calculations will be based on a handy size ship, with 18 seafarers' crew.

Several such units belong to Polish enterprises, but they are registered under foreign flags. Using the solutions proposed by the association of shipping companies, the monthly burden on the employer for employing seafarers under the Polish flag would amount to PLN 4,719.

Figure 3. Balance of monthly payments and expenses from the state budget related to the operation of 1 handy size ship under the Polish flag after the change of law [PLN]



Source: Own calculations.

Seafarers paying insurance premiums would contribute another 10,051 PLN to the budget, in total the budget would benefit from the insurance of one ship's crew PLN 14,230. The amount paid by the budget (instead of employers is PLN 8,667. The total effect of budget benefits and costs from the changed basis for calculating contributions and covering part of contributions by the State would be at PLN 5,563 per month level and more than PLN 66,000 per fiscal year (Figure 3).

5.2 Effects of the Proposed Changes on the Existing Social Security System

Can a breach be made for one professional group in the social security system? Every gap in this system is a kind of threat both for the system and for public finances (Cristea and Thalassinos, 2016; Thalassinos *et al.*, 2019). In this way, various professional groups characterized by specificity of work that distinguishes them from workforce in general, are encouraged to formulate expectations and then demands for special treatment in the social security system.

In the Polish social security system, the basis for calculating employee contributions is the income of the employee, i.e. the total amount of remuneration obtained under various contracts and the value of benefits received in kind. In addition to such a solution, there are several exceptions in Polish law - departures from the current employee contribution base. The legislator has defined four possible, commonly used, bases for calculating contributions:

- the amount of the minimum wage (this is also proposed in the regulations prepared by the association of shipping companies),
- 60% of the projected average monthly salary,
- 30% of the minimum wage,

- all income from employment, excluding allowances and benefits for members of the foreign service performing their official duties at a foreign establishment (Dz. U. 1998 Nr 137 poz. 887).

The application of the above mentioned rates is dedicated either to persons in special conditions - e.g. persons caring for a child (including those on a parental leave) who previously conducted business activity, persons using programs dedicated to beginning entrepreneurs and persons who started business activity (Marcu *et al.*, 2018; Noja and Cristea, 2018). The listed groups, regardless of the sector in which they operate or have conducted business activity, may benefit from concessions (1- 3). The second group of employees whose basis for calculating insurance premiums is not correlated with the amount of income are employees - members of the foreign service (concession 4) and non-professional soldiers performing active military service and clerics subject to social insurance (Dz. U. 1998 Nr 137 poz. 887).

Then, the question arises – why people working at sea, and therefore certainly abroad, and enduring many inconveniences associated with working in high-risk conditions, associated with separation from relatives (as well as foreign service employees) cannot be treated like other professional groups with concessions in the determined basis for insurance premiums? In turn, taking into account the second criterion on the basis of which concessions are granted - creation of new entities, activation on the labor market and at the same time creation of new jobs - whether in the case of seafarers, and therefore key persons for shipping activity, this relief cannot be applied? Shipping creates a huge number of jobs in shipping sectors. According to the data from Oxford Economics - one job on board generates 2.5 to almost 3 jobs on land: direct, indirect and induced effects are therefore significant (Oxford Economics, 2017).

6. Concluding Remarks

The results of the conducted research clearly indicates that the introduction of concessions for Polish seafarers in the Polish legal system will not be a burden on the Polish budget, but moreover will generate revenues that the budget is currently deprived of. The introduction of separate regulations for people employed on ships, i.e. on the global labor market, will generate favorable conditions for shipping operations in Poland and for registering ships under the Polish flag. This, in turn, thanks to high multipliers of shipping activities can translate into faster development of the maritime service and production sphere.

Threats that may appear in connection with the proposed solutions relate to two issues: effects for the state budget (the article deals only with the aspect related to payments to the budget and costs borne by the budget due to the introduction of preferential solutions in the field of social security contributions) and to create a gap in the social security system. The results of the analysis precisely indicate positive, from an economic point of view, budget effects due to the gap (already existing) in the social security system for seafarers - highly qualified employees of the global labor market.

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Notes:

ⁱ *In the article the term „maritime transport” and „shipping” will be used interchangeably. visual works through digital formats. Converted into supranational legal standards at the*

ⁱⁱ *In the ranking „Leading Maritime Nations of the World” 2018 prepared by Menon Economics and DNV GL, among 30 countries included in the ranking, Switzerland was ranked 27th (Menon Economics and DNV GL, 2018).*

ⁱⁱⁱ *STCW Convention –International Convention on Standards of Training, Certification and Watchkeeping for Seafarers.*

^{iv} *IMO – International Maritime Organization, an organization for Maritime Affairs, operating from 1948 under the auspices of the United Nations, associating 174 countries.*

^v *ECSC – European Community Shipowners’ Associations.*