

Breakthrough Technologies of Financing Pensions Based on the Supply Chain Strategy in the Russian Federation

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Abstract -In this paper, the latest technologies of the insurance and funded section of old-age pension financing in the Russian Federation are discussed. For this purpose the supply chain strategies and new technologies effects were considered on the economic performance of companies. The modelling of the funded section of the pension for people with different incomes has been implemented. The advantages of new technology in comparison to the existing procedure of old-age pension financing were presented.

Keywords-The technology of financing of old-age pensions, working citizens, pensioners, supply chain strategy, funded section of the pension, budgets, financial system, economic models.

Conflict of Interest Information

We, the authors of the research, declare with full responsibility the absence of any partial or complete and actual or potential conflict of interest with any third party which can arise after the publication of this article. This statement relates to the scientific work development, the information collection and processing, the article writing and preparing, decision for the manuscript publication.

1. Introduction

The current situation with the payments to the Pension Fund of the Russian Federation (PFR) does not motivate working people to undertake high-performance labor as the funded section of the pension has been frozen since 2014. The amount of insurance pension, that working people get, has not been identified due to the individual pension coefficient. In the case of a pensioner's death, their insurance pension that has been accumulated throughout their employment is not inherited; thus, it does not improve their families' wealth without supply chain strategy. According to International Labor Organisation data, Russia was ranked 66th with regards to the average wage in ruble equivalent (33,128 RUB) in June 2018. It lags behind Switzerland (1st place with 341,209 RUB) with more than 10 times lesser average pay. Payments to the Compulsory Medical Insurance Fund as well as

to the Pension Fund directly depend on this wage. According to our estimation [1, 2], more than 29 million of working age citizens in Russia (35% the Russian working-age population) are in the “shadows” and do not make any payments to the Pension Fund. The authors have thus created breakthrough technology to help finance old-age pensions that motivate working people to undertake high-performance labor and encourage them to come out from the “shadows”. The essence of the method is the algorithm of forming the funded section of the pension, which is stored as a deposit in the bank and becomes pensioner's property after retirement. In addition the insurance pension section is hereditary transmitted.

2. Literature Review

The authors have studied a great number of scientific works devoted to the problem of financing pensions. It is necessary to note that most of the authors pay excessive attention to the legal aspect of the problem and do not analyze the amounts of the pensions and the factors that influence them. [3] carries out a comparative legal analysis of the pension system of Russia and China; identifies the basic differences, peculiarities and modern trends in pension system reorganization in both countries but disregards the factors that influence old-age pension formation and does not propose new methods of financing pensions in the Russian Federation. [4] compares the modern pension systems of the USA and Russia and the stages of the formation of the European pension system. [5] model medical care and education benefits' influence on the expected amount, structure and distribution of the Chinese social security system. They admit to the importance of the effective use of benefits in the Chinese sphere of medical care and education to mitigate inequality and empower disadvantaged groups, especially children. At the same time, [5] almost do not study the problem of pension financing although this kind of social payment also influences the citizens' welfare. Article [1] presents the

results of modeling the average insurance and funded sections of the labor pension per worker over 40 years of employment and the advantages of the new breakthrough technology when compared to the existing procedure of old-age pension financing in the Russian Federation. The authors support the idea of the financing of old-age pension, presented in the research made by [6], in which the minimal amount of The Central Provident Fund (CPF) necessary for the old-age pension financing in Singapore was modeled. The Literature Review shows that there are no researches devoted to the development and implementation of the promising new technology of the old-age pension financing based on the individual deposit accounts in the Russian Federation. In addition, there is a necessity to study the methods of implementation of the effective foreign experience in pension financing in the Russian practice on the basis of the mathematic and economic models that clearly present the cash flow movement and provide the scientific foundation for the expectations and effectiveness of the breakthrough technologies.

3. Methodology

In the research the insurance and funded sections of old-age pension are modeled for five groups of working citizens that earn minimal, medium and high salaries, that is 59,931 RUB, 71,000 RUB and 127,006 RUB, respectively. In accordance with the Federal Service of State Statistics data wages of 127,006 RUB are average for the tenth group of the working citizens (with the highest salary). According to the represented system of old-age pension financing each employed person saves his pension himself from the beginning of his career. That means that as soon as he starts working, his individual model of the insurance and funded pension is being formed in order to personalize the pension on his individual account. The system of the procedure is presented in Tables 1, 2, 4, 5 and 6 of the research. The fundamental distinctive feature of the presented technology of old-age pension financing is that pension contributions are not transferred to PFR, but to the working citizens' bank accounts. From the very beginning of his career the working citizen realizes how his pension is formed and how much it will be. The modeling results presented in the research can be implemented only in terms of 40 years of the average working career and 20 years of the post-retirement survival. The data from the Internet PFR site [7] were used as the reference

information for the presented technology approbation.

4. Results

The modeling of the insurance and funded sections of old-age pension. Table 1 shows the results of modeling of the insurance and funded sections of old-age pension for the citizens who earn the minimal wage. The modeling was developed for 40 years of employment starting from 2019 to 2058 (column 2). In the process of the modeling a minimal wage (column 3) annually increases by 1.5%. At present the insurance method is used for pension financing; thus, the pension system transfer to the presented financing technology will take the transition period equal to 20 years of the post-retirement survival [7]. The first 20 years the pension contributions transferred to the bank account must be automatically drawn from the bank account and transferred to PFR to provide pensions to the retired citizens in accordance with the current scheme [8-10]. After 20 years (2039, table 1) the pension contribution begins to be stored in the working citizen's account (column 7, line 22); that comprises 3,357.3 RUB per month. In 2040 the sum on the account will comprise: 3,357.3 (line 22, column 6) + 3,407.66 (line 23, column 6) = 6,764.96 RUB (line 23, column 7) etc.; by 2058 it will comprise 77,633.15 RUB per month. The total pension for the working citizen with a minimal wage for 40 years of employment consists of the PFR contributions for the first 20 years (column 4) and the funded section (column 10). In accordance with Table 1 it comprises 1,143,155.40 RUB (line 41, column 10). The insurance section of the pension stored for 20 years is defined as the amount of the monthly contributions for 20 years (the sum of the values from column 6, lines 2 to 21) multiplied by 12 months and comprises 2,017,442.12 RUB (column 11, line 22). The total pension contributions and savings for 40 years of employment will comprise: $1,143,155.40 + 2,017,442.12 = 3,160,597.52$ RUB. As a result, the average pension per month for 20 years of post-retirement survival can comprise $(1,143,155.40 + 1.66 * 2,017,442.12) : 20 : 12 = 18,717.12$ RUB (the last line, Table 1), where the value 1.66 is the exceeding number of working citizens over the number of pensioners in RF: $1.66 = 72,392,000$ (the number of the working citizens) : $43,500,000$ (the number of pensioners). The fundamental distinctive feature of the presented technology of old-age pension

financing from the current one is the fact that the insurance pension is transferred to PFR only within the first 20 years. After 20 years the contributions begin to be saved. That means that working citizens

with even a minimal wage will have the savings; that is the significant motivation to come out of the “shadows” (to show the real wage and make contributions to PFR) [11,12].

Table 1. The results of modeling the average insurance and funded sections of the labor pension per worker with minimal wage in 40 years of employment

Line Number	Year	Minimal wage per month, RUB	PFR contribution for one pensioner per month, RUB	Oil and gas revenues transferring to PFR for one pensioner per month, RUB	PFR contribution from one employed person plus oil and gas revenues for one pensioner per month, RUB (insurance pension)	Funded section of transferring in 20 years of employment for one employed person per month, RUB	Average insurance pension per month, RUB.	Funded section of pension for one employed person at the year-end, RUB	Funded section of pension for one employed with capitalized interest at the year-end, RUB	Annual PFR contribution, RUB.
1	2	3	4	5	6	7	8	9	10	11
1	2018	11,163.00	2,455.86	5,144	7,599.86		13,762.00			91,198.32
2	2019	11,330.45	2,492.70	5,144	7,636.70		14,762.00			91,640.37
3	2020	11,500.40	2,530.09	5,144	7,674.09		15,762.00			92,089.06
4	2021	11,672.91	2,568.04	5,144	7,712.04		16,762.00			92,544.48
5	2022	11,848.00	2,606.56	5,144	7,750.56		17,762.00			93,006.72
6	2023	12,025.72	2,645.66	5,144	7,789.66		18,762.00			93,475.90
7	2024	12,206.11	2,685.34	5,144	7,829.34		18,973.86			93,952.12
.....										
20	2037	14,812.75	3,258.81	5,144	8,402.81		23,025.77			100,833.66
21	2038	15,034.94	3,307.69	5,144	8,451.69		23,371.16			101,420.25
22	2039	15,260.47	3,357.30		3,357.30	3,357.30		40,287.63	41,093.38	$\Sigma=2,017,442.12$
23	2040	15,489.37	3,407.66		3,407.66	6,764.96		81,179.58	83,625.04	
.....										
39	2056	19,655.79	4,324.27		4,324.27	68,789.04		825,468.42	993,684.16	
40	2057	19,950.63	4,389.14		4,389.14	73,178.17		878,138.08	1,067,280.89	
41	2058	20,249.89	4,454.98		4,454.98	77,633.15		931,597.79	1,143,155.40	
Average pension at post-retirement survival (20 years) per month, RUB										
18,717.12										

The presented technology of old-age pension financing provides the annual increase of the pension. For

citizens who will start their careers in 2028 and will retire in 2068 the average pension will comprise

20,282.58 RUB; for those who will start working in 2038 the average pension will comprise 22,099.35 RUB [13-16]. The calculations are similar to Table 1. For the citizens with a medium wage (Table 2) the funded section of the pension for 40 years of employment will comprise 4,442,463.91 RUB (line 41, column 10). Pension for 40 years of employment is calculated similar to the pension for the citizens with the minimal wages (see the calculations above) and

Table 2. The results of modeling the average insurance and funded sections of the labor pension per worker with the medium wage in 40 years of employment

Line number	Year	Medium wage per month, RUB.	PFR contribution for one pensioner per month, RUB.	Oil and gas revenues transferring to PFR for one pensioner per month, RUB	PFR contribution from one employed person plus oil and gas revenues for one pensioner per month, RUB (insurance pension)	Funded section of transferring in 20 years of employment for one employed person per month, RUB	Average insurance pension per month, RUB	Funded section of pension for one employed person at the year-end, RUB.	Funded section of pension for one employed with capitalized interest at the year-end, RUB	Annual PFR contribution, RUB
1	2	3	4	5	6	7	8	9	10	11
1	2018	43,381.00	9,543.82	5,144	14,687.82		13,762.00			176,253.84
2	2019	44,031.72	9,686.98	5,144	14,830.98		14,762.00			177,971.73
3	2020	44,692.19	9,832.28	5,144	14,976.28		15,762.00			179,715.38
4	2021	45,362.57	9,979.77	5,144	15,123.77		16,762.00			181,485.19
5	2022	46,043.01	10,129.46	5,144	15,273.46		17,762.00			183,281.55
.....										
20	2037	57,564.45	12,664.18	5,144	17,808.18		23,025.77			213,698.15
21	2038	58,427.92	12,854.14	5,144	17,998.14		23,371.16			215,977.70
22	2039	59,304.34	13,046.95		13,046.95	13,046.95		156,563.45	159,694.72	$\Sigma=4,098,795.10$
23	2040	60,193.90	13,242.66		13,242.66	26,289.61		315,475.34	324,978.75	
24	2041	61,096.81	13,441.30		13,441.30	39,730.91		476,770.92	495,999.81	
.....										
39	2056	76,385.19	16,804.74		16,804.74	267,323.94		3,207,887.28	3,861,597.45	
40	2057	77,530.97	17,056.81		17,056.81	284,380.75		3,412,569.04	4,147,604.79	
41	2058	78,693.93	17,312.67		17,312.67	301,693.42		3,620,321.02	4,442,463.91	
Average pension at post-retirement survival (20 years) per month, RUB										
46,860.27										

Comparing Tables 2 and 3 we define the important factor encouraging 29 million citizens to come out of

comprises 46,860.27 RUB per month (the last line, Table 2). The same as for the citizens with a minimal wage, the annual pension increase for the citizens with a medium wage is provided. For the citizens who will start their careers in 2028 the pension will comprise 52,875.07 RUB; for those who will start working in 2038 the pension will comprise 60,829.48 RUB. The calculations are similar to Tables 1 and 2 [17-21].

the “shadows”. In Table 3, in contrast to Table 2, the increase in the number of working citizens is provid-

ed (column 3, Table 3), due to the working citizens who come out of the “shadows” [22, 23].

That increases the average contribution to PFR for one pensioner. It is presented in Table 2, line 2, column 4 – 9,686.98RUB; in Table 3, line 2, column 7 – 10,298.23RUB; Table 2, line 3 – 9,832.28 RUB; Table 3 – 11,763.68 RUB etc.; Table 2, line 41 (2058); Table 2 – 17,312.67 RUB and Table 3 – 28,811.46 RUB. In other words with the annual similar modeled wage the contribution for one pensioner increases in the first 20 years of employment (the insurance pension) from 12,854.14 RUB to 21,391.66 RUB (66.42%), in total for 20 years for 56.64%.

As a result, each retiring citizen in 20 years of employment will have larger insurance pension than he contributed due to the increase of the working citi-

zens’ number paying to PFR in comparison to the number of pensioners. For the working citizens with the wage of 59,931 RUB (it is average for the ninth group according to the Federal Service of State Statistics data [37]), the funded section of the pension is being formed from the first year (2019), – Table 4, column 11 – 55,897.88 RUB [24].

The funded pension with capitalized interests (243,212.82 RUB, column 11) will exceed the average insurance pension in RF (19,840.56 RUB, column 8, and line 10) in more than 12 times by 2027. This amount will be enough for these citizens to provide monthly average insurance pension contribution to PFR for a year in case if they stop working for some reason [25].

Table 3. The results of modeling the average insurance and funded sections of the labor pension per worker in 40 years of employment

Line number	Year	Working citizens, PFR contribution, people.	Average wage, RUB.	All working citizens’ PFR contributions per year, million RUB	The number of pensioners, people	Average PFR contribution for one pensioner per month, RUB	Oil and gas revenues transferring to PFR for one pensioner per month, RUB	PFR contribution from one employed person plus oil and gas revenues for one pensioner per month, RUB	Average insurance pension per month, RUB	Funded section of pension for one employed person at the year-end, RUB.	Funded section of pension for one employed with capitalized interest at the year-end, RUB.
1	2	3	4	5	6	7	8	9	10	11	12
1	2018	43,344,892	43,381.00	4,964,110.28	43,500,000	9,543.82	5,144.25	14,688.07	13,762.00	11,112.84	11,112.84
2	2019	46,244,892	44,031.72	5,375,678.42	43,500,000	10,298.23	5,144.25	15,442.48	14,762.00	19,278.66	19,664.23
3	2020	52,044,892	44,692.19	6,140,640.71	43,500,000	11,763.68	5,144.25	16,907.93	15,762.00	33,029.81	34,083.69
4	2021	57,844,892	45,362.57	6,927,341.86	43,500,000	13,270.77	5,144.25	18,415.02	16,762.00	52,866.05	54,998.33
5	2022	63,644,892	46,043.01	7,736,262.69	43,500,000	14,820.43	5,144.25	19,964.68	17,762.00	79,298.17	83,059.06

6	202 3	69,44 4,892	46,73 3.66	8,567, 892.90	43,50 0,000	16,413. 59	5,144.2 5	21,557.8 4	18,7 62.0 0	112,848.22	118,941.29
7	202 4	72,39 2,000	47,43 4.66	9,065, 469.61	43,50 0,000	17,366. 80	5,144.2 5	22,511.0 5	18,9 73.8 6	155,294.50	164,615.32
8	202 5	72,39 2,000	48,14 6.18	9,201, 451.31	43,50 0,000	17,627. 30	5,144.2 5	22,771.5 5	19,2 58.4 7	197,451.52	210,907.78
9	202 6	72,39 2,000	48,86 8.37	9,339, 473.80	43,50 0,000	17,891. 71	5,144.2 5	23,035.9 6	19,5 47.3 4	239,314.93	257,826.62
.....											
35	205 2	72,39 2,000	71,96 8.92	13,754 ,337.3 0	43,50 0,000	26,349. 30	5,144.2 5	31,493.5 5	28,7 87.5 6	12,08824.0 6	1,725,891.22
36	205 3	72,39 2,000	73,04 8.46	13,960 ,652.4 0	43,50 0,000	26,744. 54	5,144.2 5	31,888.7 9	29,2 19.3 7	12,40857.1, 0	1,793,082.74
37	205 4	72,39 2,000	74,14 4.18	14,170 ,062.4 0	43,50 0,000	27,145. 71	5,144.2 5	32,289.9 6	29,6 57.6 7	1,272,444.6 8	1,861,163.73
38	205 5	72,39 2,000	75,25 6.35	14,382 ,613.2 0	43,50 0,000	27,552. 90	5,144.2 5	32,697.1 5	30,1 02.5 3	1,303,580.1 1	1,930,145.14
39	205 6	72,39 2,000	76,38 5.19	14,598 ,352.9 0	43,50 0,000	27,966. 19	5,144.2 5	33,110.4 4	30,5 54.0 7	1,334,256.6 1	2,000,038.08
40	205 7	72,39 2,000	77,53 0.97	14,817 ,328.0 0	43,50 0,000	28,385. 69	5,144.2 5	33,529.9 4	31,0 12.3 8	1,364,467.3 0	2,070,853.74
41	205 8	72,39 2,000	78,69 3.93	15,039 ,588.2 0	43,50 0,000	28,811. 47	5,144.2 5	33,955.7 2	314, 77.5 6	1,394,205.1 9	2,142,603.46

Table 4. The results of the insurance and funded sections of the labor pension modeling per worker with wage of 59,931 RUB in 40 years of employment

Line number	Year	Average wage in the group with the highest wage per month, RUB.	Number of months with the rate of 22%	Number of months with the rate of 10%	PFR contribution for one pensioner per month, RUB	Oil and gas revenues transferring to PFR for one pensioner per month, RUB.	PFR contribution from one employed person plus oil and gas revenues for one pensioner per month, RUB (insurance pension)	Average insurance pension per month, RUB	Average funded section of pension for one employed person at the year-end, RUB.	Funded section of pension for one employed with capitalized interest at the year-end, RUB.	Annual PFR contribution, RUB
1	2	3	4	5	6	7	8	9	10	11	12
1	2018	59,931.00	12	0	13,184.82	5,144	18,328.82	13,762.00	54,801.84	55,897.88	165,144.00
2	2019	60,829.97	12	0	13,382.59	5,144	18,526.59	14,762.00	99,976.95	103,094.44	177,144.00
.....											
10	2027	68,524.50	12	0	15,075.39	5,144	20,219.39	19,840.56	208,334.77	243,212.82	238,086.66
11	2028	69,552.37	12	0	15,301.52	5,144	20,445.52	20,138.16	212,023.07	251,839.14	241,657.96
.....											
20	2037	79,525.49	12	0	17,495.61	5,144	22,639.61	23,025.77	204,432.03	293,801.21	276,309.29
21	2038	80,718.37	12	0	17,758.04	5,144	22,902.04	23,371.16	198,802.59	293,935.21	280,453.93
22	2039	81,929.14	12	0	18,402.91		18,402.91		419,637.56	525,065.59	$\Sigma=4,969,158.56$
23	2040	83,158.08	12	0	18,525.81		36,928.72		641,947.26	762,322.79	
24	2041	84,405.45	12	0	18,650.55		55,579.27		865,753.80	1,005,851.92	
.....											
38	2055	103,966.90	10	2	20,606.69		330,885.06		4,169,423.30	5,163,231.44	
39	2056	105,526.40	10	2	20,762.64		351,647.70		4,418,574.98	5,520,630.79	
40	2057	107,109.30	10	2	20,920.93		372,568.63		4,669,626.14	5,887,115.58	
41	2058	108,715.94	9	3	21,081.59		393,650.22		4,922,605.26	6,262,896.60	
Average pension at post-retirement survival (20 years) per month, RUB											
60,465.42											

The authors presented in their work [1] the necessity to legislate the hereditary transmission of the insur-

ance pension section after the citizen's retirement. In the given research they present another, more moti-

vating approach, such as: to transmit hereditary the insurance section of pension that exceeds the sum necessary for the annual monthly transfer of the average insurance pension. There is an example above for 2027. That means that as soon as there is a sum on the account (column 11) necessary for the annual monthly financing of the average insurance pension, the citizen can dispose the exceeding money on his own (to store on the deposit account or to get them for his needs). If the citizen stops working and as a result making PFR contributions, a part of his funded pension corresponded to the average insurance pension this year, will be transmitted to PFR monthly on a mandatory basis [26-28]. For example, the citizen stopped working in 2028 (Table 4). A part of his funded pension that is 243,212.82 RUB (column 11) will be transmitted monthly on a mandatory basis in (234,029.06 RUB) (the next year after the implementation of the financing technology). For the working citizens with high wage (Table 6) the funded section of the pension that exceeds the average annual insurance pension (column 9) will be accumulated in 2019 (343,473.51 RUB). For the 40 years of employment funded section will comprise 13,911,297.12 RUB. For that group of the working citizens the total pension for 40 years of employment consists of the average insurance pension for 20 years (column 9) and funded section 13,911,297.12 RUB (line 41, column

the amount correspondent to average insurance pension for 2028, that comprises 20,138.16 RUB (column 9) till he starts working again. The funded section of the pension would be spent, so it becomes a significant reason for him not to stop the career. The total pension of the working citizen with the wage 59,931 RUB for 40 years of employment consists of the sum of annual insurance payments for the first 20 years (column 6) multiplied by 12 and comprises 4,969,158.56 RUB. The calculation is presented in Table 4 column 12 [29, 30].

For the regions with the average wage 71,000 RUB per month (Moscow) and higher: Tyumen, Magadan, and Sakhalin; Nenets, Khanty-Mansiysk, Yamalo-Nenets and Chukotka Autonomous Regions (Table 5), the funded section of pension, that exceeds the average one (column 9), will be accumulated in 2020 (11). The sum of the average insurance pension is presented as total sum of monthly payments for 20 years (the total of the values of column 9, lines from 2 to 21) multiplied by 12 and comprises 4,969,158.56 RUB [31,32]. The total pension contributions and saving for 40 years of employment will comprise $4,969,158.56 + 13,911,297.12 = 18,880,455.68$ RUB. As a result, the average pension at post-retirement survival (20 years) will comprise $(13,911,297.12 + 1.66 \cdot 4,969,158.56) : 20 : 12 = 92,333.75$ RUB per month.

Table 5. The results of the insurance and funded sections of the labor pension modeling per worker with wage of 71,000 RUB in 40 years of employment

Line number	Year	Average wage in the group with the highest wage per month, RUB.	Number of months with the rate of 22%	Number of months with the rate of 10%	PFR contribution for one pensioner per month, RUB	Oil and gas revenues transferring to PFR for one pensioner per month, RUB.	PFR contribution from one employed person plus oil and gas revenues for one pensioner per month, RUB (insurance pension)	Average insurance pension per month, RUB	Funded section of pension for one employed person at the year-end, RUB	Funded section of pension for one employed with capitalized interest at the year-end, RUB.	Annual PFR contribution, RUB.
1	2	3	4	5	6	7	8	9	10	11	12
1	2018	71,000.00	12	0	15,620.00	5,144	20,764.00	13,762.00	84,024.00	85,704.48	165,144.00
2	2019	72,065.00	12	0	15,854.30	5,144	20,998.30	14,762.00	158,859.60	163,750.88	177,144.00

3	20 20	73,145. 98	12	0	16,092. 11	5,144	21,236. 11	15,76 2.00	224,548. 97	234,029. 06	189,144.0 0
4	20 21	74,243. 16	12	0	16,333. 50	5,144	21,477. 50	16,76 2.00	281,134. 93	296,427. 32	201,144.0 0
5	20 22	75,356. 81	12	0	16,578. 50	5,144	21,722. 50	17,76 2.00	328,660. 91	350,832. 37	213,144.0 0
.....											
20	20 37	94,213. 50	11	1	19,631. 35	5,144	24,775. 35	23,02 5.77	829,205. 27	1,068,94 2.00	276,309.2 9
21	20 38	95,626. 71	11	1	19,772. 67	5,144	24,916. 67	23,37 1.16	847,751. 38	1,109,23 7.88	280,453.9 3
22	20 39	97,061. 11	11	1	19,916. 11		19,916. 11		1,086,74 4.71	1,375,19 5.83	$\Sigma=4,969,1$ 58.56
23	20 40	98,517. 02	10	2	20,061. 70		39,977. 81		1,327,48 5.14	1,648,25 4.98	
24	20 41	99,994. 78	10	2	20,209. 48		60,187. 29		1,569,99 8.87	1,928,58 4.09	
.....											
37	20 54	121,34 8.91	8	4	22,344. 89		337,413 .57		4,896,71 4.16	6,318,45 4.57	
38	20 55	123,16 9.14	8	4	22,526. 91		359,940 .48		5,167,03 7.13	6,720,55 3.09	
39	20 56	125,01 6.68	8	4	22,711. 67		382,652 .15		5,439,57 7.15	7,132,95 4.97	
40	20 57	126,89 1.93	8	4	22,899. 19		405,551 .34		5,714,36 7.46	7,555,90 0.19	
41	20 58	128,79 5.31	8	4	23,089. 53		428,640 .87		5,991,44 1.83	7,989,63 4.05	
Average pension at post-retirement survival (20 years) per month, RUB											
67,660.16											

Table 6. The results of the insurance and funded sections of the labor pension modeling per worker with high wage in 40 years of employment

Line number	Year	Average wage in the group with the highest wage per month, RUB..	Number of months with the rate of 22%	Number of months with the rate of 10%	PFR contribution for one pensioner per month, RUB.	Oil and gas revenues transferring to PFR for one pensioner per month, RUB.	PFR contribution from one employed person plus oil and gas revenues for one pensioner per month, RUB (insurance pension)	Average insurance pension per month, RUB	Funded section of pension for one employed person at the year-end, RUB	Funded section of pension for one employed with capitalized interest at the year-end, RUB	Annual PFR contribution, RUB.
1	2	3	4	5	6	7	8	9	10	11	12
1	20 18	127,00 6.00	8	4	22,910. 60	5,144	28,054. 60	13,76 2.00	171,511. 20	174,941. 42	165,144.0 0
2	20 19	128,91 1.09	8	4	23,101. 11	5,144	28,245. 11	14,76 2.00	333,308. 51	343,473. 51	177,144.0 0

3	20 20	130,84 4.76	8	4	23,294. 48	5,144	28,438. 48	15,76 2.00	485,426. 22	505,503. 04	189,144.0 0
4	20 21	132,80 7.43	8	4	23,490. 74	5,144	28,634. 74	16,76 2.00	627,899. 13	660,935. 47	201,144.0 0
5	20 22	134,79 9.54	8	4	23,689. 95	5,144	28,833. 95	17,76 2.00	760,762. 58	809,674. 90	213,144.0 0
.....											
20	20 37	168,53 0.71	6	6	27,063, 07	5,144	32,207. 07	23,02 5.77	2,520,46 8.73	3,165,37 7.21	276,309.2 9
21	20 38	171,05 8.67	6	6	27,315. 87	5,144	32,459. 87	23,37 1.16	2,629,53 3.20	3,339,93 0.52	280,453.9 3
22	20 39	173,62 4.55	6	6	27,572. 45		27,572. 45		2,960,40 2.65	3,744,21 5.97	$\Sigma=4,969,1$ 58.56
23	20 40	176,22 8.92	6	6	27,832. 89		55,405. 35		3,294,39 7.35	4,159,77 4.89	
24	20 41	178,87 2.35	6	6	28,097. 23		83,502. 58		3,631,56 4.17	4,586,88 0.54	
.....											
39	20 56	223,63 1.95	5	7	32,573. 19		539,525 .86		9,103,84 3.49	12,585,0 34.64	
40	20 57	226,98 6.43	4	8	32,908. 64		572,434 .50		9,498,74 7.20	13,239,5 37.12	
41	20 58	230,39 1.22	4	8	33,249. 12		605,683 .62		9,897,73 6.67	13,911,2 97.12	
Average pension at post-retirement survival (20 years) per month, RUB											
92,333.75											

As it is presented in Table 1, the working citizens from the first group have wages lower than the average insurance pension [33]. This defines the imperfection of the current system of compulsory old-age pension insurance. The necessity for the employer to pay and for the employee to get a high wage is doubtful, as they must transfer 22% of it to PFR, and the pensioner will not get this money. The funded section of pension is frozen from 2014, the insurance section is not inherited (the family will not get the money) [34]. The current scoring system and the value of pension score are based not on the amount of money the working citizen contributes to PFR, but on the insurance period. As a result it becomes more profitable for the employer and the employee to pay and get a minimal wage and save "shadow" section in deposit account or buy the real estate to provide a decent old age. In addition the age of the retirement does not have the significant importance for the fourth and the fifth groups of the working citizens (having high income). What matters is the amount of money that they can save until the old age.

5. Discussion

1. As it is shown in the research [2] all the goods and services are produced and provided by the working citizens and the budgets of all the levels are also replenished by them. Consequently the breakthrough

goal of the Russian economy development is to encourage the working citizens for the effective labor. It would be fair that the social contributions (to the pension fund, medical care insurance fund and social insurance fund) that only the working citizens earn at the enterprises, would transfer not to the funds but on the working citizens' bank accounts starting with their career beginning. That breakthrough decision will motivate them to undertake high-performance labor and to encourage 29 million of citizens to come out of the "shadows".

2. In the process of insurance and fund pension modeling to move from the scoring system to the presented in the article tables (Tables from 1 to 6, except Table 3) that really make the pension formation personal. Such tables of the insurance and funded pension accounting should be developed for each working citizen and all the pensioners. Personalized tables of the insurance and funded sections of the labor pension modeling are similar in structure with Tables from 1 to 6, except Table 3. As far as the content is

concerned the difference is that for each working citizen the following aspects are taken into account:

The average wage per month in accordance with the employment year (column 3);

Correspondent PFR contributions (column 4);

Funded section of transferring (column 7);

Funded section of pension with capitalized interest (column 10);

Annual PFR contributions (column 11).

3. The authors propose to model and transfer to the citizens' property starting with the 21st year of the employment the funded section of the pension for the citizens with minimal to medium, medium and higher than medium to 59,931 RUB wage. This can encourage 29 million people to come out of the "shadows" and motivate all the working citizens to high-performance labor. For the working citizens with the wage higher than 59,931 RUB and to 71,000 RUB it is proposed to do it from the ninth year of employment, for those with the wage of 71,000 RUB to 127,006 RUB from the second year of employment and for those with the wage of 127,006 RUB from the first year of employment.

4. The presented above calculation shows that the working citizen that came out from the "shadows" and started making PFR contributions (in terms of transferring for not less than 20 years) will get higher insurance pension than the contributions he has made (56.64% maximum) due to the working citizens' number increase in comparison to the retired pensioners. That would be a significant motivation to move out from the "shadow".

5. The implementation of old-age pension modeling tables presented in the research makes pension accounting really personalized. In addition it motivates the working citizens to undertake high-performance labor and to come out from the "shadows" by early modeling the funded section of the pension and with the possibility to increase the insurance section up to 56.64% comparing with PFR contributions paid earlier.

6. As it was presented above, all the goods and services are produced and provided by the working citizens and the budgets of all the levels are also replenished by them. Consequently it would be fair and, what is more, profitable for the Russian economy development that the social contributions (including pension contributions) would transfer not to the funds but to the working citizens' bank accounts. That would help to achieve two main goals [35, 36]:

1. To overcome poverty and to increase the citizens' incomes, as 30% from the wage (social contributions) would finally be transferred to Russia citizens.
2. Dramatically reduce corruption. As the social contributions would be transferred to the citizens and not to the funds, there would be nothing to steal.

6. Conclusion

The results of the research motivate the working citizens to high-performance labor and to come out from the "shadows" by employing supply chain strategy. For the implementation of the breakthrough technologies of financing pensions in the Russian Federation it is necessary to legislate the following:

1. Pension contributions transferring not to PFR but to the working citizens' bank accounts starting from the beginning of their career.
2. Hereditary transmission of the insurance section of pension that exceeds the sum necessary for the annual monthly transfer of the average insurance pension.

The authors present the idea that it is possible to transfer all the social contributions (to the pension fund, medical care insurance fund and social insurance fund) not to the funds but to working citizens' bank accounts starting from their career beginning. That should improve the RF citizens' wealth. The effective tool to achieve this goal is the breakthrough technology of the Russian medical care financing based on the medical deposit accounts that is presented in the research [2, 37- 40].

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