

AGE AND TERRITORIAL DISTRIBUTION VS. BALANCE OF NON-SAVINGS DEPOSITES OF INDIVIDUAL CUSTOMERS

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Purpose: The purpose of the research was an attempt of conducting cross-sectional analysis indicating the distribution of individual customer deposits that are stored on non-savings accounts taking into in the adopted arrangements regarding age, location end balance.

Design/methodology/approach: In the paper an analysis of data reflecting a structure of individual customers with non-savings deposits, whose average monthly balance exceeded PLN 6 thousand, is presented. Particularly the study covers the age and territorial sections as well as the gradation of balance height resulting from the amount of stored deposits. Both the quantitative and balance amount aspects of bank accounts were examined and reported.

Findings: Potential investors, bond issuers (treasury, municipal, etc.) seeking capital may seek capital among individuals and address their offer and issue prospectuses to them. The search for potential individual investors should be focused in particular in the indicated voivodships and age segments.

Originality/value: The basic content of the article is new with an original approach to analyzing data from non-savings accounts in comparison of three parameters: age, bill value and territorial distribution.

Keywords: non-saving deposits, account structure, bank account buffer.

1. Introduction

The article presents research outcomes based on analysis of data defining a structure of individual customers with non-savings deposits (Strzelecka, 2010; Iwanicz-Drozdowska, 2008). According to the latest report describing the financial situation of the household sector published by the National Bank of Poland (*Pol. Narodowy Bank Polski, NBP*), it can be assumed that a certain part of financial surplus is not allocated to additional current consumption and is not invested either. This surplus remains as an increasing account buffer of funds on interest-free current accounts of individual customers (Kolasa, 2017).

The research assumptions were that financial surpluses over PLN 6 thousand are financial surpluses which, without damage to the current functioning of an average household, can be invested in the broadly understood capital market, for example in the form of short- and long-term investments (Dziawgo, 2006; Fatuła, 2007).

The account buffer above PLN 6 thousand was designated to the accounts whose average monthly balance exceeded the assumed quota threshold. Therefore, the values that were a permanent financial surplus, and not a temporary one resulting from the current financial movements in the accounts reflecting mainly the inflow of remuneration based on the employment relationship, were analysed.

As part of the research, more than 860,000 non-savings accounts of individual customers were analysed, whose total balance was over PLN 15 billion.

2. Age categories according to Statistics Poland (GUS)

The age categories were taken into account in accordance with the GUS classification of 31st December 2018 (<https://stat.gov.pl/obszary...>).

The age ranges adopted for the study are presented in the Table 1. In relation to the GUS classification, the age categories including the youngest for which it is not possible to run an independent bank account are omitted.

Table 1.

Age classes

Age	Age	Age
0-4 years old	35-39	70-74
5-9	40-44	75-79
10-14	45-49	80-84
15-19	50-54	85-89
20-24	55-59	90-94
25-29	60-64	95-99
30-34	65-69	100 and more

Source: <https://stat.gov.pl/obszary-tematyczne/ludnosc/ludnosc/ludnosc-stan-i-struktura-oraz-ruch-naturalny-w-przekroju-terytorialnym-w-2018-r-stan-w-dniu-31-xii,6,25.html>.

3. Input data and their preliminary classification

The age of an account holder was determined on the basis of the date of birth of the main bank account holder, which means that in the case of an account having several co-owners, only the data of the main holder were relevant. Within the process of obtaining data for the research it was not possible to obtain a differentiator that would indicate those accounts that are assigned

to one holder and that have many owners. Taking into consideration the division into age categories that are used by Statistics Poland (GUS, 2018), the categories grouped every 5 years were taken to the analysis except that all persons up to the age of 14 and persons above 100 years old were classified into individual groups.

"Voivodship" category data were established on the basis of the main account holder's registered place of residence, which means that in the case of an account having several co-owners, only the main owner's data were relevant.

Data for the "Gender" category were based on the gender of the main holder, which means that in the case of an account having several co-owners, only the main owner's data were relevant.

The study covered 860,141 non-savings bank accounts in total (current accounts) with an average monthly account buffer of at least PLN 6 thousand.

Input data were classified according to several categories, including: balance, age, gender, territorial location (municipality, district, voivodship – *Pol. gmina, powiat, województwo*).

The bank balance category was analysed by classes. The set was divided into 9 classes (in PLN thousand) which is reflected in Table 2.

Table 2.

The average account balance classes

No.	The class in PLN thousand
1	6.00-7.49
2	7.50-9.99
3	10.00-14.99
4	15.00-29.99
5	30.00-49.99
6	50.00-99.99
7	100.00-249.99
8	250.00-499.99
9	500 and more

Source: own elaboration.

4. Analysis by individual categories

Comparisons were made for four different categories in which the respective classes were specified.

1. Balance category – divided into classes as described in point 2.
2. Age category – divided into classes as described in point 3.
3. Gender category – women/men.
4. Voivodship category – according to the territorial division of the country into 16 voivodships.

The study presents three basic sets for class pairs, respectively:

1. Balance – Age.
2. Balance – Voivodship.
3. Age – Voivodship.

Each class pair was analysed in two different systems:

1. By value – the sum of values of balances included in a class.
2. Quantitative – the number of accounts included in a class scale.

4.1. Balance – Age

The Balance – Age matrix (Table 3) illustrates the intersection of age classes and balance amount classes in a value system. Such a system indicates the points at which the highest amounts were accumulated. It can be noted that the highest increase occurs in the group of people aged 25-29, i.e. in the period after the end of education. In this age group, the largest accumulation of capital is located in relatively low balances with values of PLN 10-29.99 thousand. In the age classes of 35-54, the accumulated capital remains at approximately the same level, except that the accumulation of this capital is located in the balance classes of PLN 15-99.99 thousand.

Table 3.

Matrix of balances by age and class of balances

Balance PLN thousand /Age	6.00-7.49	7.50-9.99	10.00- 14.99	15.00- 29.99	30.00- 49.99	50.00- 99.99	100.00- 249.99	250.00- 499.99	500 and more	Total
10-14	13	0	22	48	42	0	0	0	0	125
15-19	1,031	1,090	1,793	1,430	998	663	0	711	0	7,714
20-24	16,478	20,910	23,891	27,799	11,111	11,564	6,345	2,705	519	121,323
25-29	52,557	73,650	110,278	170,262	91,490	68,453	26,692	4,860	4,520	602,762
30-34	71,605	107,097	169,857	303,084	196,449	175,097	81,963	14,858	10,737	1,130,747
35-39	79,571	117,043	192,765	345,893	225,726	214,952	141,722	33,043	11,573	1,362,287
40-44	77,945	120,751	194,901	345,820	223,463	211,740	150,214	38,624	13,135	1,376,592
45-49	81,374	128,313	209,482	368,071	228,320	203,465	141,319	32,972	13,769	1,407,086
50-54	101,332	155,907	257,209	434,910	258,956	238,332	152,150	35,730	22,687	1,657,211
55-59	128,724	197,606	322,780	548,172	327,175	285,409	172,104	43,768	25,523	2,051,260
60-64	133,213	200,774	318,100	517,527	308,148	275,064	159,456	38,478	13,568	1,964,329
65-69	101,636	151,832	224,584	344,978	190,590	169,113	101,697	26,565	23,001	1,333,996
70-74	71,017	103,436	147,179	199,827	106,036	88,808	60,984	13,093	17,542	807,923
75-79	65,260	97,986	138,842	188,211	88,689	68,045	42,289	10,627	14,500	714,450
80-84	47,853	71,807	107,935	157,923	76,809	60,640	34,658	8,474	1,379	567,477
85-89	26,297	41,250	66,072	103,315	57,796	45,127	28,357	8,642	1,456	378,312
90-94	8,738	13,869	23,470	38,605	21,658	20,123	12,119	3,561	643	142,787
95-99	1,462	2,219	3,776	6,793	3,999	3,166	3,043	1,320	0	25,777
100 and more	115	281	502	956	456	501	1,019	0	617	4,445
Total	1,066,220	1,605,822	2,513,436	4,103,623	2,417,913	2,140,260	1,316,130	318,030	175,168	15,656,602

Source: own elaboration.

The highest accumulation of capital occurs in classes of people aged 55-64, i.e. in the last years of professional activity. In these age groups, the biggest amount of capital is accumulated on accounts in which the average monthly balance is in the range of PLN 15-29.99 thousand. Basically, the accounts with average monthly balances exceeding PLN 250 thousand occur in almost all age groups (except 10-14 and 95-99 years old). Nevertheless, these accounts represent only 0.14% of the total number of accounts analysed (1,172 accounts) and the value of the account buffer constitute 3.15% of the total balances (PLN 493.2 million).

In the highest age classes (over 70 years old), the account buffer of non-savings deposits is gradually decreasing, which is associated with both consumption of savings and deaths among the population.

In this dimension, it can be noted that the peak of capital accumulation occurs at the intersection of age class of 55-59 years old in the group of accounts with balances of PLN 15-29.99 thousand (Figure 1).

In the quantitative approach (Figure 2), the largest number of accounts is found at the intersection of age class of 50-59 years old and average balances of PLN 10-29.99 thousand.

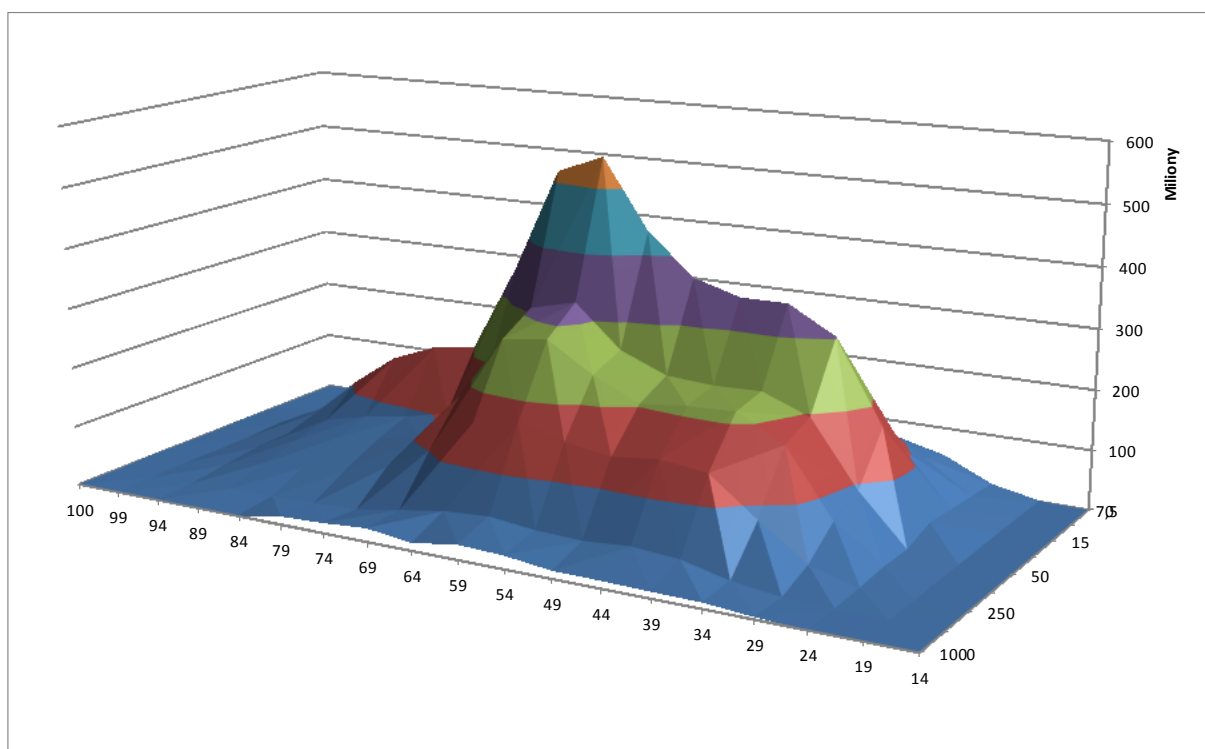


Figure 1. Distribution of balance amounts in terms of age and class of balances. Source: own elaboration.

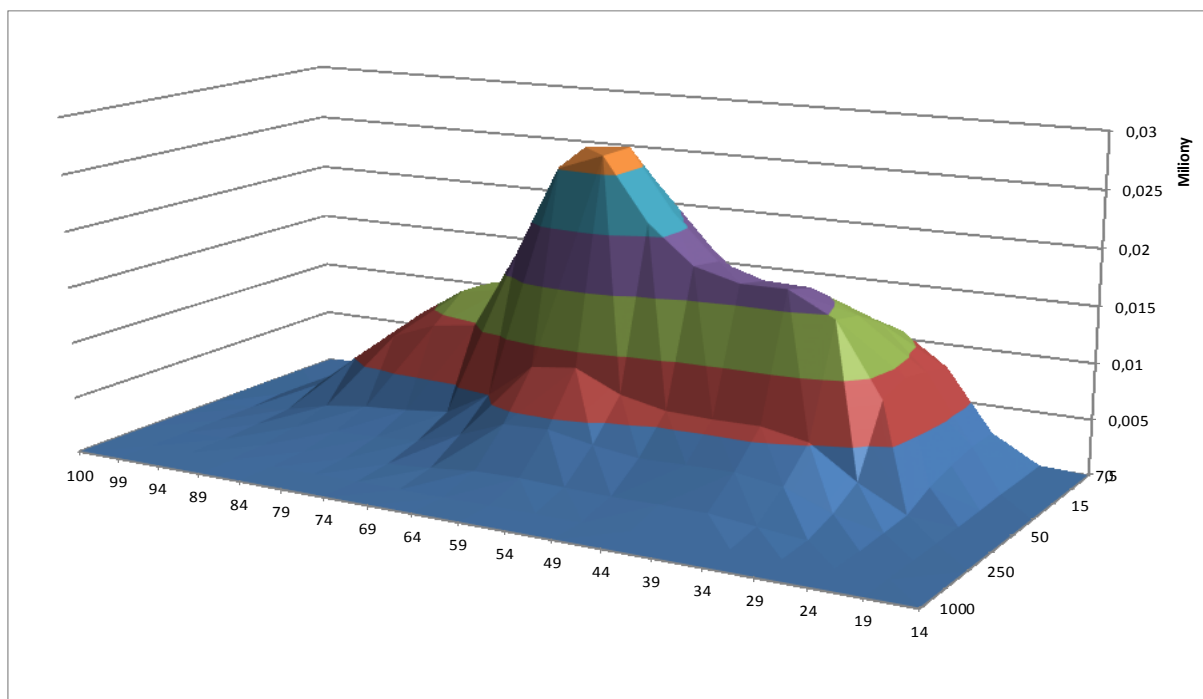


Figure 2. Distribution of the accounts in terms of age and class of balances. Source: own elaboration.

4.2. Balance –Voivodship

The matrix of balances (Table 4) by class of balances – voivodship presents voivodships in which the largest value of non-savings deposits was accumulated. The Mazowieckie voivodship is definitely the leader here. In this voivodship, the biggest amount of non-savings capital was accumulated on accounts with an average balance in the class of PLN 15-29.99 thousand. The high values of account balances can be found in the Śląskie and Wielkopolskie voivodships.

Table 4.

Matrix of balances by voivodship and class of balances

Balance in PLN thousand /Voivodship	6.00-7.49	7.50-9.99	10.00-14.99	15.00-29.99	30.00-49.99	50.00-99.99	100.00-249.99	250.00-499.99	500 and more	Total
opolskie	22,816	34,116	49,585	74,263	39,427	37,085	19,727	2,932	1,305	281,254
świętokrzyskie	27,648	40,855	64,748	101,143	57,438	50,283	23,934	6,073	4,475	376,595
podlaskie	31,473	44,870	69,241	103,084	56,224	45,611	30,288	5,962	2,373	389,124
lubuskie	30,152	43,441	66,305	106,246	57,287	52,641	29,869	2,944	3,099	391,985
podkarpackie	36,662	55,639	84,293	133,809	75,859	61,477	32,644	5,209	3,719	489,310
warmińsko-mazurskie	42,006	61,747	95,999	144,641	81,478	74,572	41,511	7,788	2,149	551,890
zachodnio-pomorskie	43,538	64,719	103,817	172,509	99,966	88,421	59,090	13,082	3,765	648,906
lubelskie	49,927	73,811	112,639	182,651	98,580	84,626	44,135	9,650	5,756	661,774
pomorskie	49,821	74,616	113,088	182,061	99,904	88,179	62,132	11,112	3,262	684,174
kujawsko-pomorskie	60,847	90,189	137,319	214,066	129,248	108,215	71,165	18,194	2,714	831,956
małopolskie	73,702	108,942	170,538	279,004	156,696	131,616	80,126	21,500	4,335	1,026,460
łódzkie	85,192	126,137	196,647	308,427	177,562	150,992	85,537	21,951	4,196	1,156,642
dolnośląskie	88,538	133,168	206,120	330,985	198,346	170,887	101,205	23,378	15,238	1,267,863
wielkopolskie	114,055	172,739	277,660	467,788	282,424	249,718	151,053	36,678	18,643	1,770,759
śląskie	139,842	209,121	316,012	484,767	259,067	216,815	122,063	23,430	20,336	1,791,453
mazowieckie	170,002	271,714	449,425	818,180	548,407	529,122	361,652	108,149	79,805	3,336,457
Total	1,066,220	1,605,822	2,513,436	4,103,623	2,417,913	2,140,260	1,316,130	318,030	175,168	15,656,602

Source: own elaboration.

The largest capital buffer accumulation in all voivodships is located in the range of PLN 15-29.99 thousand and the peak in this group is recognized in the Mazowieckie voivodship (Figure 3).

The voivodships with the highest value of accumulated deposits are Wielkopolskie, Śląskie and Mazowieckie which accumulate 44% of the account buffer in value approach and 42% in quantity approach. In turn, the voivodships with the lowest value of accumulated deposits (Opolskie, Świętokrzyskie, Podlaskie) accumulate 7% of the account buffer in terms of value and also 7% in quantity approach. In all voivodships there are cases of current accounts with an average monthly balance exceeding PLN 0.5 million.

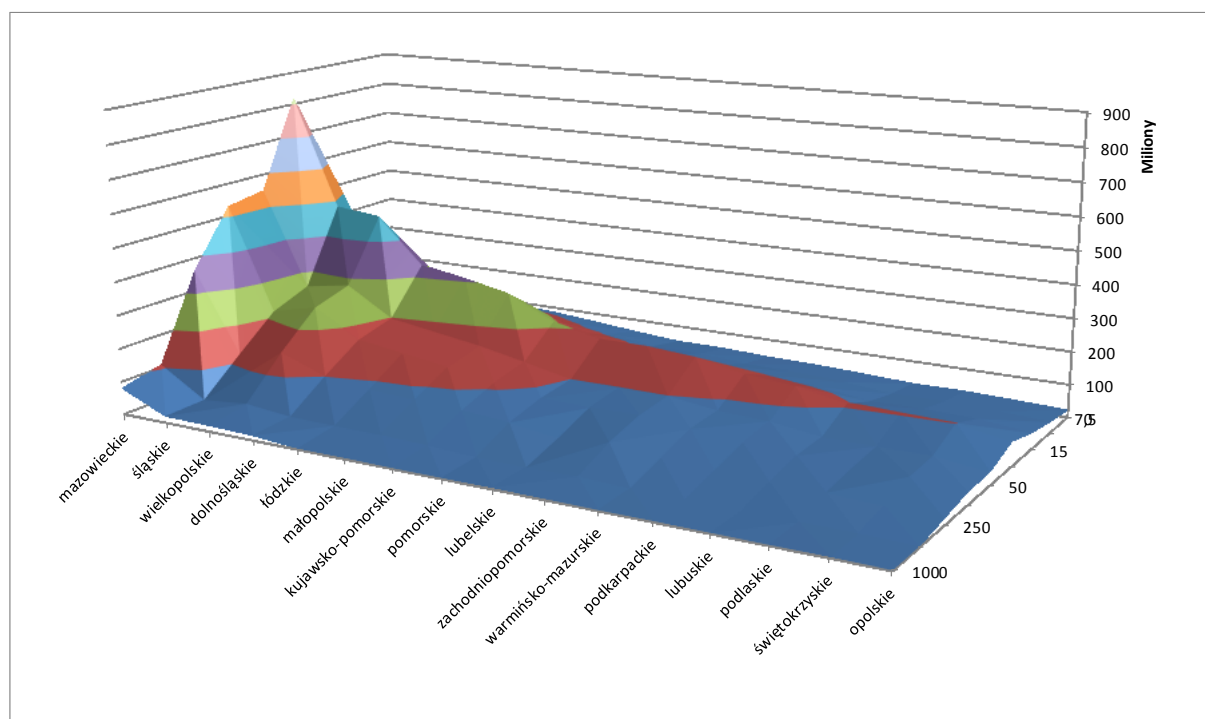


Figure 3. Distribution of balance values by voivodship and balance classes. Source: own elaboration.

4.3. Age –Voivodship

The matrix (Table 5) by age class – voivodship class indicates age classes in division into voivodships in which the largest value of non-savings deposits was accumulated. The leader here is the aforementioned Mazowieckie voivodeship. In this voivodship the most non-savings capital was accumulated on the accounts of people aged 55-64. These age classes also hold relatively most non-savings deposits in other voivodships.

The peak of capital accumulation in this approach occurs at the intersection of dimensions of people aged 55-59 having accounts in the Mazowieckie voivodeship (Figure 4). The Mazowieckie voivodship accumulates the largest balances in almost all age groups. An interesting anomaly is the class of the youngest holders of non-saving deposits located in the Warmińsko-Mazurskie voivodeship who have accumulated the biggest amount of capital in their age group. This anomaly was created by one high-value account.

Table 5.
Matrix of balances in terms of age and voivodship

Age /Voivodship	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-99	100 and more	Razem
opolskie	0	108	1,954	9,535	18,698	23,664	26,762	26,534	32,000	35,165	34,830	24,876	15,558	14,204	9,672	5,702	1,743	233	16	281 254
świętokrzyskie	0	233	3,330	20,512	32,239	37,789	35,576	37,427	42,766	49,068	45,903	27,004	15,218	13,393	8,808	5,139	1,940	235	16	376 595
podlaskie	0	214	5,938	23,959	38,737	42,321	35,471	36,196	41,759	47,852	39,531	28,146	16,375	14,091	9,050	7,172	1,802	502	7	389 124
lubuskie	0	157	2,964	12,656	28,359	34,171	35,570	34,626	43,056	53,924	53,274	34,906	18,545	17,669	11,714	7,531	2,355	460	49	391 985
podkarpackie	0	118	5,403	26,014	47,663	51,286	47,116	49,361	52,586	60,031	53,058	32,100	19,694	19,119	14,553	8,252	2,677	238	44	489 310
warmińsko-mazurskie	42	291	6,499	29,827	45,283	50,373	49,571	53,193	63,206	73,895	65,890	37,934	22,901	21,270	16,393	10,916	3,650	717	39	551 890
zachodnio-pomorskie	0	502	3,625	20,969	40,621	55,609	53,894	53,920	67,889	90,617	89,497	58,607	33,210	35,047	23,602	15,672	4,910	684	33	648 906
lubelskie	0	224	6,996	35,086	67,640	73,091	65,301	65,744	75,891	84,697	71,083	42,781	24,030	19,956	15,301	9,752	3,712	417	71	661 774
pomorskie	6	316	6,271	29,756	50,645	60,849	56,583	58,303	71,636	90,492	83,326	56,478	33,539	30,902	26,926	18,438	8,398	1,207	104	684 174
kujawsko-pomorskie	0	293	6,407	34,714	66,633	79,457	71,201	73,904	92,250	107,360	103,937	67,832	41,604	33,749	27,522	17,124	6,644	1,221	106	831 956
małopolskie	0	472	10,369	51,821	84,838	90,624	92,841	87,747	106,351	122,317	118,407	85,269	52,930	46,162	36,916	26,938	10,151	1,771	538	1 026 460
łódzkie	10	918	8,656	44,748	91,662	102,864	102,040	100,199	125,415	153,019	142,129	102,173	54,436	46,774	38,713	29,507	11,016	2,088	277	1 156 642
dolnośląskie	0	492	6,319	31,503	72,448	98,471	94,396	96,840	137,448	175,308	186,930	126,392	70,229	69,221	54,423	34,141	11,202	1,590	512	1 267 863
wielkopolskie	0	805	11,518	59,660	118,026	157,236	161,560	174,148	192,123	242,017	238,595	167,541	85,012	66,543	49,668	31,329	12,463	2,260	254	1 770 759
śląskie	29	910	13,106	56,868	109,457	140,188	167,692	187,342	208,151	245,725	222,732	146,660	106,629	85,844	56,285	30,124	11,243	2,314	154	1 791 453
mazowieckie	38	1,662	21,968	115,135	217,798	264,295	281,020	271,603	304,686	419,773	415,207	295,298	198,014	180,505	167,932	120,575	48,882	9,841	2,228	3 336 457
Total	125	7,714	121,323	602,762	1,130,747	1,362,287	1,376,592	1,407,086	1,657,211	2,051,260	1,964,329	1,333,996	807,923	714,450	567,477	378,312	142,787	25,777	4,445	15 656 602

Source: own elaboration.

People aged 55-64 living in the Wielkopolskie, Śląskie and Mazowieckie voivodships hold 11% of the value and amount of non-savings deposits accumulated.

Quantitative analysis (which was not presented in the tables or graphically in this study) indicates that the largest number of accounts is in the same place as the peak value shown in the value analysis.

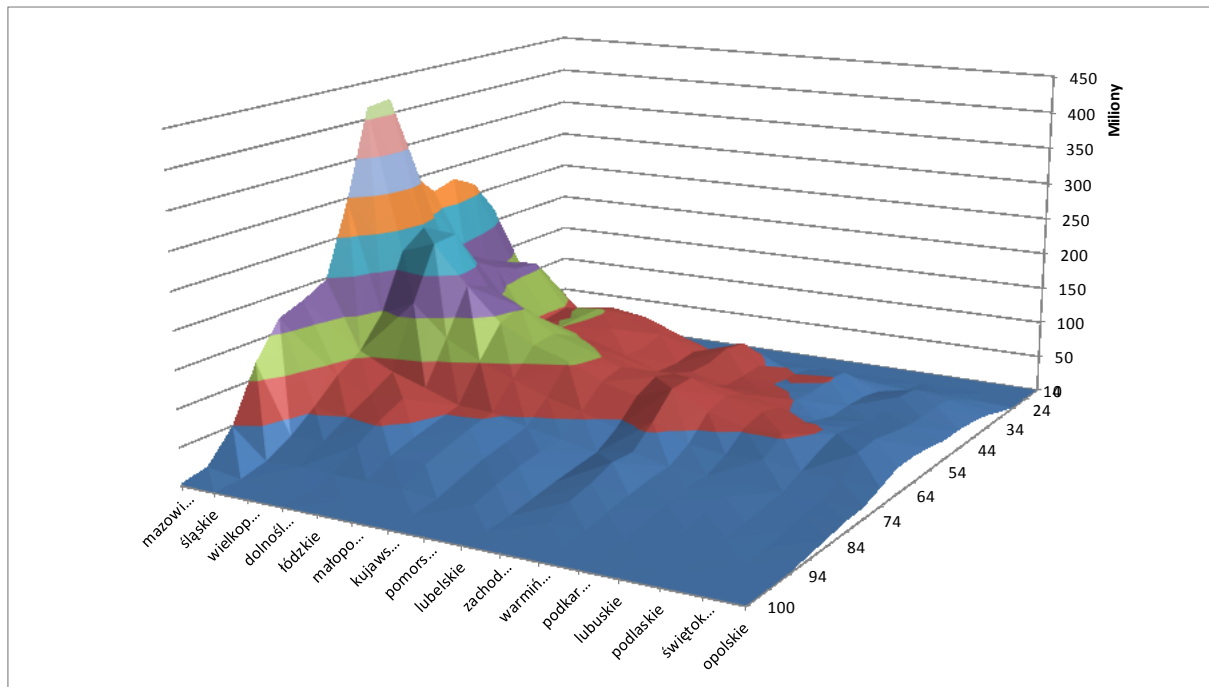


Figure 4. Distribution of balance values by voivodship and age. Source: own elaboration.

5. Conclusions

The three largest voivodships have the largest value of non-savings deposits. People with the largest uninvested savings are usually men aged 55-65. It should be noted that for the purposes of this study, it has been assumed that non-savings funds occur if the average monthly balance of the current account is over PLN 6 thousand. Hence, a surplus over this amount can be invested.

Potential investors, bond issuers (treasury, municipal, etc.) seeking capital may seek capital among individuals and address their offer and issue prospectuses to them. The search for potential individual investors should be focused in particular in the indicated voivodships and age segments.

The study shows that even among very young people (up to 19 years old) there are people who permanently hold significant financial assets on their current accounts.

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