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SIGNIFICANT ROLE OF HOUSEHOLD DEPOSITS IN STABILITY FUNDING OF THE EURO AREA CREDIT INSTITUTIONS – MYTH OR TRUE?

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The last financial crisis raised the question whether it is possible to provide stable funding for banking systems to protect them against further destabilization. The Capital Requirements Directive and Regulation "CRD IV/CRR" points out its sources – household deposits, under normal and stressed conditions. This paper presents the results of empirical analysis on the stability of household deposits placed in monetary financial institutions (MFIs) in the Euro area, in years 2006-2012. Its aim is to assess the adequacy of new liquidity norms described in CRR: Liquidity Coverage Ratio and Net Stable Funding Ratio. The paper discusses differences in the ability of individual nations to accumulate deposits and disparities among banking systems in availability of funds considered by regulator as stable. It reveals geographical variation of household preferences regarding to the duration and value of located sums per capita. It also proves the diversified impact of the phases of the last financial crisis on the values of household deposits located in the Eurozone MFIs.

Keywords: Household deposits, Banks, Credit institutions, Monetary financial institutions, Liquidity norms, LCR, NSFR.

Introduction

The recent global financial crisis definitively verified the stance of the supervisory authorities on the optimal funding structure of credit institutions.1 It was caused by the observation that only long-term, diversified and invulnerable funds ensure the safety of banking systems. The new liquidity regulations of the "package CRD IV/CRR"2 pay particular attention to household deposits, emphasizing their stable nature, both under normal and stressed conditions.

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[1] The term "credit institution" is defined in Article 4 of the Regulation of the European Parliament and of the Council (EU) No 575/2013, OJ.L. 2013.176.01.0001.01.ENG.

[2] The "package CRDIV/CRR" contains: Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 in access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC; Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements on credit institutions and investment firms and amending Regulation (EU) No 648/2012

This paper3 aims to analyse the variability and geographical diversity of household deposits placed in monetary financial institutions and to assess the impact of evolving financial and economic background of years 2006-2012 on presented features in sixteen Eurozone member states: Austria, Belgium, Cyprus, Finland, France, Greece, Spain, the Netherlands, Ireland, Luxembourg, Malta, Germany, Portugal, Slovakia, Slovenia and Italy. Those countries are varied in a multidimensional space of characteristics such as: economic development, intensity of the recent financial crisis, household budget constraints, propensity to save, etc. It is likely that the local features impact the extent of fluctuations of deposits, and thus the funding structure of credit institutions, by affecting household finance decisions.

Hypothesis:

Household deposits are affected by some local (national) factors. This should be reflected in the single liquidity regulations for credit institutions, delegating a part of decision making process from European to national supervisory authorities.

The research is based on the ECB's and the Eurostat's empirical data, adopted for the following analyses:

1. Cross-sectional, in which the statistical series include 17 EU countries (each country is the statistical unit);
2. Dynamic set which contains figures for individual countries in analyzed period (the unit of time is the statistical unit).

Both studies – for the Euro area and individual member states - were performed with the following set of information:

- total HH deposits (ECB monthly data),
- HH deposits redeemable up to 3 month (ECB monthly data),
- HH deposits redeemable over 3 month (ECB monthly data),
- HH deposits with agreed maturity up to 2 years (ECB monthly data),
- HH deposits with agreed maturity over 2 years (ECB monthly data),
- ON HH deposits (ECB monthly data),
- MFI balance sheet total (ECB monthly data),
- population (Eurostat annual data).

It should be noted that household deposits still constitute an important part of MFIs' balance sheet total. In 2012, deposits exceeding 20% of entities' aggregated total debt and equity were recognized in 11 countries: Austria, Belgium, Cyprus, Greece, Spain, the Netherlands, Germany, Portugal, Slovakia, Slovenia and Italy (Figure 1). In four other - Finland, France, Malta and the Netherlands - they constituted

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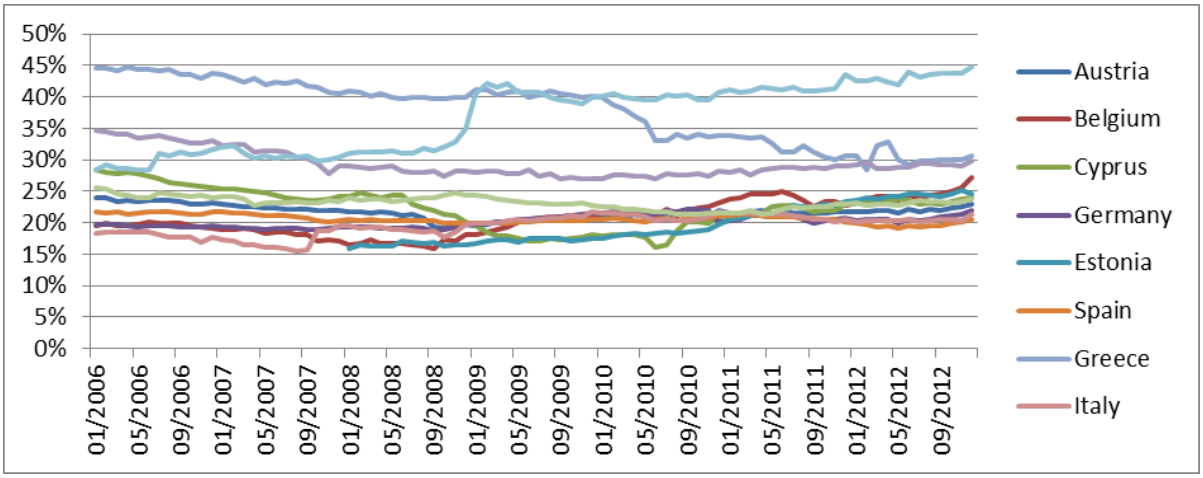
(http://ec.europa.eu/internal_market/bank/regcapital/legislation_in_force_en.htm). The "package" implements the solutions of Basel II and Basel III.

[3] This working paper presents the results of a study, which is a part of research project funded by the National Science Centre in Poland.

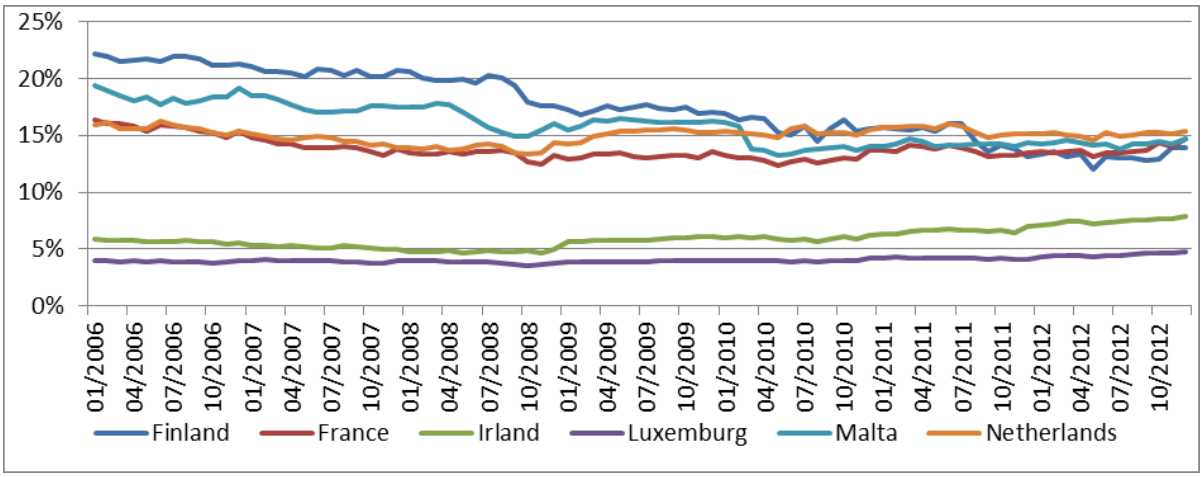
about 15% of those total values (Figure 2). Only for Luxemburg and Ireland household deposits were identified as less significant source of funding. All this prove the importance of post–crisis single liquidity regulations for banking systems in the Eurozone.

Figure 1. The share of household deposits in MFIs' balance sheet total in individual EU countries, in years 2006-2012 (exceeding 20% in 2012)



Source: Own calculations based on ECB's data.

Figure 2. The share of household deposits in MFIs' balance sheet total in individual EU countries, in years 2006-2012 (below 20% in 2012)



Source: Own calculations based on ECB's data.

Post-crisis liquidity norms for credit institutions

Until 2007, a rapid development of financial markets did not favour the interest of households in owning deposits, so credit institutions used to rely on wholesale funding. The situation has changed during the last

financial crisis, when individuals tended to have risk aversion and banks – strong demand on diversified funding, including retail.

The destabilisation of the financial system has contributed to undertake international efforts to create common, free from defects regulatory environment. The Basel III has laid the foundations for the development of the European Union "package CRD IV/CRR", adopted by the European Parliament in April 2013. According to the regulator, single set of rules for the internal market seems essential for their proper functioning. Moreover, it limits the risk of regulatory arbitrage. The transitional periods should ensure the smooth implementation of the new liquidity standards and avoid uncertainty on the market. Prudential requirements are included in the Capital Requirement Regulation to guarantee their implementation in a single form throughout the European Union. This document stresses their importance for the increase of confidence to credit institutions, especially in the period of destabilization, and for the elimination of any distortions in market competition. It also emphasizes the significance of the proper regulatory environment for the protection of individuals – the owners of deposits.

CRR draws attention to the adequacy of the funding structure of credit institutions, which should be based on stable instruments under both normal and stressed conditions. The importance of household deposits for credit institutions' liquidity is emphasized in the mandatory standards - Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR)4.

Liquidity Coverage Ratio5 refers to the short-term stress of impaired liquidity, lasting no longer than 30 days. The indicator is described by the following formula:

$$LCR = \frac{HQLA}{TNLO_{30\ days}} \geq 100\% \qquad (1)$$

where:
HQLA – high quality liquid assets,
$TNLO_{30\ days}$ – total net liquidity outflows during 30-day period.

The percentage weights included in the denominator inform about the scale of cash outflows relating, among others, to retail deposits. Such outflows are based on a combined idiosyncratic and market-wide stress scenario. The rate of outflow for retail deposits covered by guarantee system is at least 5%, and for the remaining - it is at least 10%. For those taken in third countries with higher percentages, their application will be required. These are the lowest minimum rates among all accepted for the liabilities of credit institutions. Moreover, the regulator foresaw the possibility of exclusion from the calculation of outflows of selected categories of retail deposits6. The European Banking Authority was obliged to introduce, until 1 of January 2014, the guidelines on the coefficients for specific types of deposits which existence is due to the specific behaviour of local depositors. The adequacy of percentage wages will remain the subject of the ECB's observations.

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[4] LCR will be introduced in 2015, but transitional period to 2018 was announced. NSFR will take effect in 2018.

[5] LCR will be introduced in stages: 60% of the requirement - in 2015, 70% of the requirement - from 1 January 2016, 80% of the requirement - from 1 January 2017, 100% of the requirement - from 1 January 2018.

[6] See the Article 421 of the Regulation of the European Parliament and of the Council (EU) No 575/2013, OJ.L. 2013.176.01.0001.01.ENG.

In addition to covering the need for 30-day liquidity, credit institutions are required to have a funding structure that guarantees their stability in long-term. This stems from the tendency of entities to have long-term assets. The Net Stable Funding Ratio (NSRF) presents the relation between available and required stable funding, as follows (2):

$$NSFR = \frac{ASF}{RSF} \geq 100\% \quad (2)$$

where:
ASF - available stable funding,
RSF - required stable funding.

The important element of the available stable funding are retail deposits. Their quality has been made dependent, as in the LCR, on the circumstances of their location and the relationship between credit institution and depositor. It has been assumed that the EBA will be monitoring and reporting on the adequacy of the solutions adopted for the sources of stable funding, the method for determining the amounts of available and required funding, and in particular the percentage weights.

Recognition of retail deposits as banks' stable funding under all conditions (including stress), raises serious doubts and encourages to analyse their variability over time. Evaluation of their diversity in a group of countries will allow to identify the geographic disparities in their availability of credit institutions.

Some facts on HH deposits in the Euro area

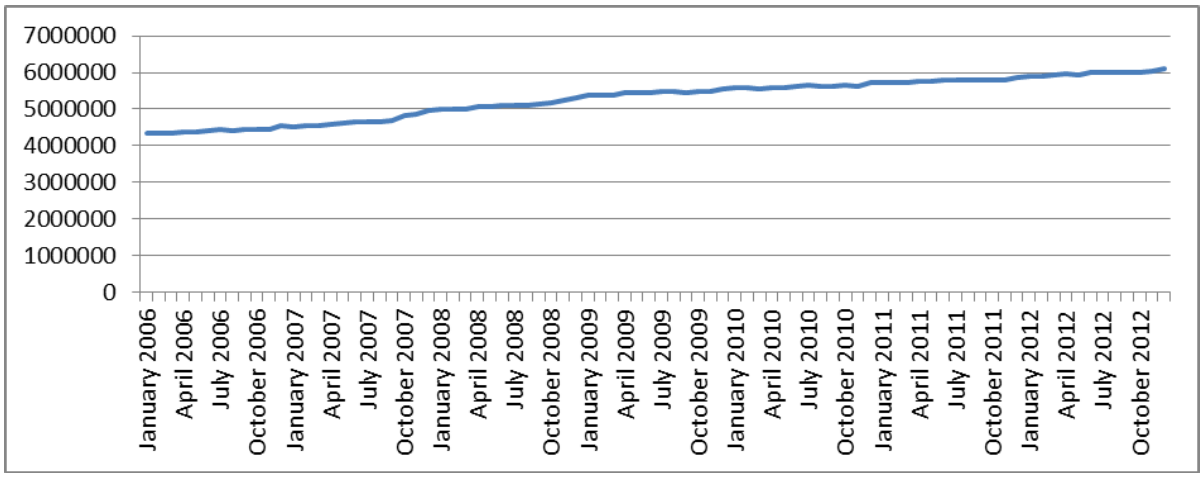
The characteristics of household deposits placed in MFIs in years 2006-2012, was carried out on the basis of aggregate variables for the 16 Eurozone countries. The set of information includes the characteristics of the deposits7, which comes from the European Central Bank and the size of the countries' population published by the Eurostat8.

In analysed period, the total value of household deposits in the Euro area has been constantly growing. The highest increases were observed for the years: 2008 and 2009 (Figure 3). They were induced by reorganisation of national deposit guarantee schemes, which aim was to prevent credit institutions from falling confidence of depositors after the banking crisis in the USA.

[7] The European Central Bank indicates following categories of household deposits: *deposits redeemable at notice* - savings deposits for which the holder must respect a fixed period of notice before withdrawing the funds. In some cases there is the possibility of withdrawing on demand a certain fixed amount in a specified period or of early withdrawal subject to the payment of a penalty; *deposits with an agreed maturity* - mainly time deposits with a given maturity that, depending on national practices, may be subject to the payment of a penalty in the event of early withdrawal. Some non-marketable debt instruments, such as non-transferable (retail) certificates of deposit, are also included; *overnight* - deposits, which can be converted into cash at the request of the depositor or may be paid by check or otherwise, including their transfer to another account. http://sdw.ecb.europa.eu/browse.do?node=2116082.

[8] http://epp.eurostat.ec.europa.eu.

Figure 3. HH deposits in the Euro area, in years 2006-2012 (EUR million)



Source: Own calculations based on ECB's data.

Regardless of the prevailing economic and financial conditions, the total value of household deposits in the Euro area remained under strong influence of funds located in: Germany, France, Italy and Spain9. Therefore, the MFIs from these countries distinguished the greatest potential in terms of the accumulation of deposits. However, for single years of analysed period, characterized by specific financial and economic background, there were slightly different percentage shares of deposits in highlighted states. It should be noted, that in analyzed 6-year period, two of those countries (Italy and Spain) were characterized by outstandingly high values of variability measure V_s10 (Table 2), which raises the doubts on the significance of this part of deposits for the stability funding of the Eurozone banking system.

The evaluation of household propensity to hold deposits in MFIs in the Euro area should take into consideration the differences in population size. Therefore, in this part, the value of deposits is calculated per capita. Static analysis of the evolution of the various categories of household deposits in the Eurozone in selected years: 2006, 2008 and 201211 demonstrates their high diversity, expressed in the coefficient of variation *Vs* (Table 1). This ratio exceeds 100% in all cases, with the exception of *total deposits per capita* and *deposits with agreed maturity over 2 years per capita* in 2012. Thus it confirms a clear inconsistency of surveyed countries in the developments in deposits per capita. In the Eurozone, households were mainly interested in short-term deposits, regardless of the prevailing economic and financial conditions. In 2006, the average value of the *total deposits per capita* amounted to EUR 18 094.2, representing mainly *deposits with agreed maturity up to 2 years* (6 EUR 275.5), *overnight* (6 879.5 EUR) and *deposits redeemable up to 3 months* (3 282.6 EUR). In 2008, the worsening situation in the financial market and individual reforms of deposit guarantee schemes contributed to the increase of this value to EUR 20 059.5. The biggest changes were observed in the *deposits with agreed maturity up to 2 years per capita*,

[9] The percentage shares of domestic household deposits in total household deposits of the Euro area were: for Germany - 30% in 2012, 29% of 2008 and 31% in 2006; for France - 19% in 2012, 20% in 2008, 21% in 2006; for Italy - 14% in 2012, 13% in 2008, 11% in 2006; for Spain - 12% in 2012, 13% in 2008 and 12% in 2006. Calculated on the ECB's data.

[10] The coefficient of variation is expressed by the following formula: $V_s = \frac{standard\ deviation}{arythmetic\ mean} \times 100\%$.

[11] These years were characterized by different conditions on financial market and in economies (2006 – period of growth; 2008 – banking crisis, 2012 – sovereign debt crisis and economic constraints).

leading to partially offset the differences between countries, as evidenced in lower variation (*Vs)*. A slight decrease was also seen in the values of *deposits redeemable up to 3 months per capita*. In 2012, the average level of *total deposits per capita* was higher and significantly less diverse in a group of countries in the Euro area than those in 2008. However, there was a tendency of deposits' shifting from longer- term (*deposits with agreed maturity up to 2 years*) to shorter-term (*overnight per capita* and *redeemable up to 3 months per capita*). This leads to the conclusion that the households might assume the possibility of spending or investing their savings and surplus funds in financial assets, in particular in those countries where recovery was observed on the market. The growing importance of shorter-term deposits has not been confirmed in all 16 countries. This is demonstrated by the coefficients *Vs*, which values are higher than those obtained for year 2008.

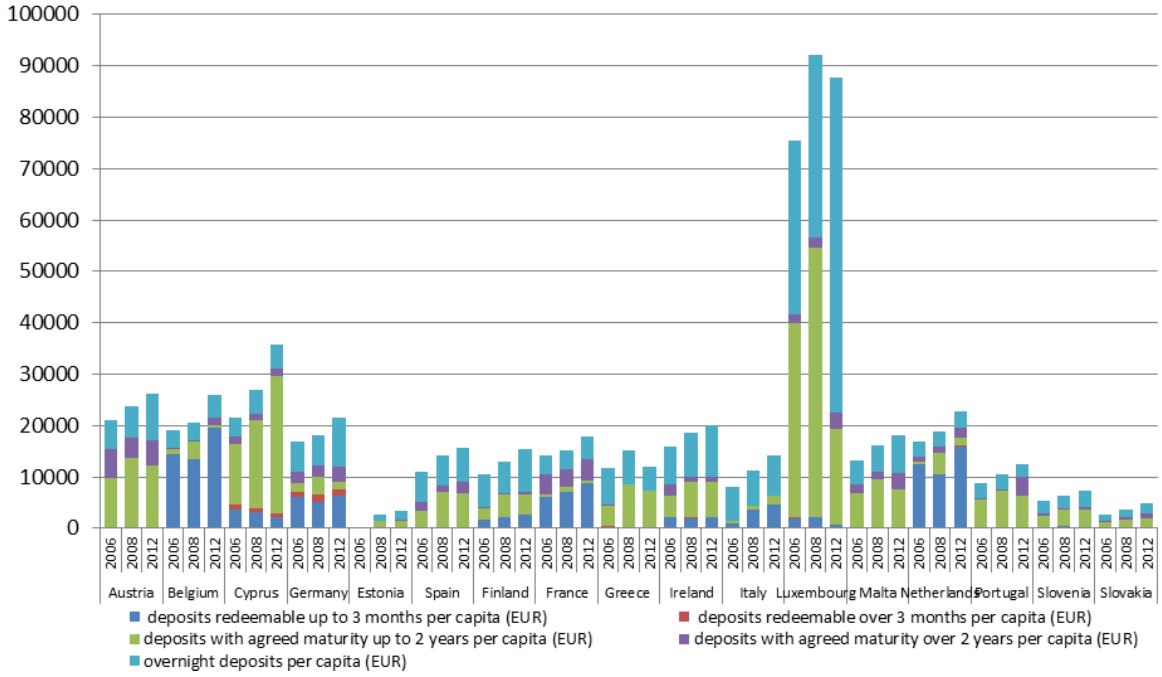
Table 1. Descriptive statistics of HH deposits per capita in the Euro area, in years: 2006, 2008 and 2012

Year	Value	Total HH deposits per capita	HH deposits redeemable up to 3 M per capita	HH deposits redeemable over 3 M per capita	HH deposits with maturity up to 2Y per capita	HH deposits with maturity over 2Y per capita	ON HH deposits per capita
2006	average*	18094.2	3282.6	153.6	6275.5	1503.0	6879.5
	minimum*	2706.6	0.0	0.0	396.9	21.0	1142.8
	maximum*	84536.0	15123.0	1082.0	42413.0	5568.0	37885.0
	V_s (%)	103.1	142.5	228.7	164.4	104.3	123.5
2008	average*	20059.5	3048.1	157.0	8969.0	1154.1	6731.2
	minimum*	2655.1	0.0	0.0	603.0	14.1	1273.9
	maximum*	100029.0	13892.0	1269.0	56996.0	4069.0	38550.0
	V_s (%)	108.4	134.4	234.6	147.9	106.6	125.8
2012	average*	21251.9	3749.0	146.2	6373.5	1864.0	9119.1
	minimum*	3487.4	0.0	0.0	496.4	33.0	1771.5
	maximum*	87688.0	19618.0	1162.0	26834.0	4992.0	65144.0
	V_s (%)	89.2	157.3	217.3	111.1	81.5	161.1

*in EUR Source: Own calculations based on ECB's data.

Figure 4, presenting the values and structure of deposits per capita in individual Eurozone countries in 2006, 2008 and 2012 also draws attention to their heterogeneous sensitivity to changing macroeconomic conditions. In 2006, *total deposits per capita* clearly differed from those observed in 2008 and 2012. However, in all three years they were generally dominated by short-term deposits: *overnight*, *redeemeble up to 3 months* and *with agreed maturity up to 2 years term*. In 2008, the financial crisis contributed to the increase in the total amount of deposits in banks, mainly due to the *deposits with agreed maturity up to 2 years*. Moreover, in countries of the largest values of long-term deposits, such as Austria, France and Malta, there was observed significant decrease of their percentage share in total amounts. After 4 years of tensions on the financial market, in the analysed Euro area countries, there were reported higher values of *total deposits per capita*, with the exception of Greece and Luxembourg. There was also noted an increase in the importance of *deposits with agreed maturity over 2 years* in Luxembourg, Austria, the Netherlands, Belgium, Germany, Finland, Spain, Portugal, Greece, Slovenia and Slovakia and Malta.

Figure 4. Values and a structure of total HH deposits per capita in individual countries in the Euro area, in years: 2006, 2008 and 2012 (EUR million)

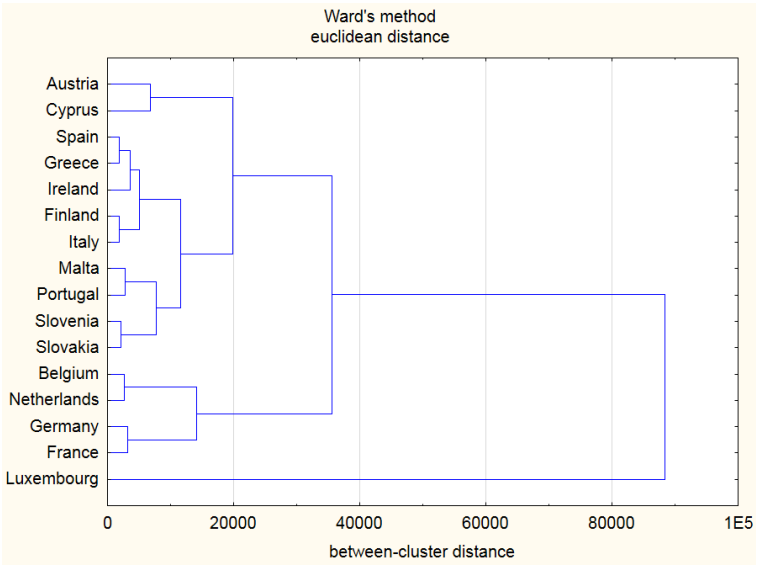


Source: Own calculations based on ECB's data.

Identifying similarities between countries' HH deposits

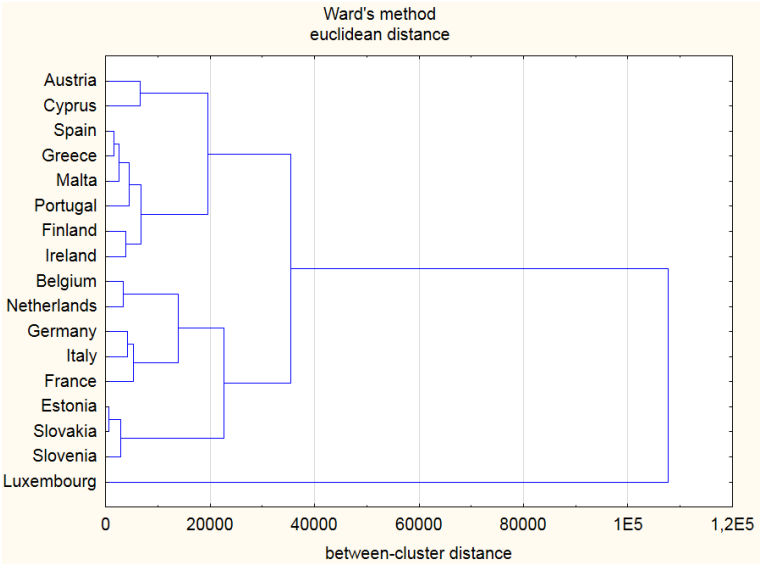
Multivariate differentiation of the Eurozone member states encourages to inside their relatively homogeneous subgroups, in terms of the values of household deposits. Comparing the tree diagrams for years: 2006, 2008 and 2012 (Figures 5-7), the similarities between the following countries: Belgium and the Netherlands; Slovakia and Slovenia, can be clearly seen despite the changes in the economic situation and the difficulties prevailing on the financial market. Moreover, Germany and France were in one subgroup in all analyzed years. In 2006, they formed one subset with Belgium and the Netherlands. Two years later, however, this collection has been increased by Italy, and in 2012 - by Finland. Therefore, it can be seen targeted changes in household deposits per capita in some countries. They demonstrate the ongoing structural transformation of the Eurozone in terms of the formation of the deposits over time, as well as persistent difference of Luxembourg.

Figure 5. Tree diagram for the EA member states, due to the level of household deposits per capita located in MFIs in 2006



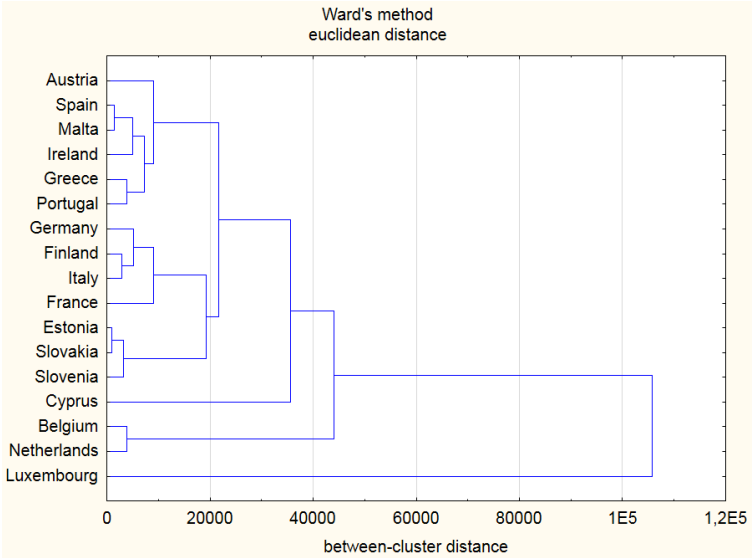
Source: Own calculations based on ECB's data.

Figure 6. Tree diagram for the EA member states, due to the level of household deposits per capita located in MFIs in 2008



Source: Own calculations based on ECB's data.

Figure 7. Tree diagram for the EA member states, due to the level of household deposits per capita located in MFIs in 2012



Source: Own calculations based on ECB's data.

On the basis of above analyses it was possible to indicate differences in the formation of deposits in a group of 16 countries. There were identified countries where evolving destabilization was a kind of incentive for households to have deposits and member states in which, despite of improving deposit guarantee schemes and the lack of alternative investments on the financial market, individuals began to reduce their receivables from MFIs (Luxembourg and Greece). In the case of Greece, this particular situation was caused by the need to spend savings on consumption, due to the increasing unemployment rate and deteriorating living conditions. In the group, there are also visible differences in the structure of deposits. In some member states the value of funds invested for shorter period increased over time, at the expense of those allocated for longer. In some other countries, an intensifying destabilization motivated to have mainly long-term deposits and resign from possessing other.

Under these circumstances, there is a reason to challenge the assumed stability of household deposits in liquidity standards. In the case where the stability is identified with constancy and durability over time, any significant change - regardless of their direction - should be the subject of observation. In order to illustrate the differences in variability of household deposits to the changes in the economic and financial background of years 2006-2012, the coefficients of variation *Vs* are calculated for each country (Table 2). In the analyses of socio-economic phenomena, the result of more than 20% is considered as significant fluctuation of the variable.

Table 2. Coefficients of variation (V_s) for HH deposits in individual countries, in years: 2006-2012

Wyszczególnienie	V_s (%)
Austria	9,41
Belgium	12,61
Cyprus	17,31
Finland	16,51
France	8,55
Germany	9,88
Greece	16,59
Ireland	13,77
Italy	22,69
Luxemburg	5,98
Malta	11,89
the Netherlands	11,97
Portugal	13,65
Slovakia	19,21
Slovenia	13,66
Spain	15,79

Source: Own calculations based on ECB's data.

The measure points different sensitivity of deposits, which turns out to be the strongest in: Italy, Slovakia, Cyprus, Greece, Finland, and Spain, while the weakest - in Luxembourg and Germany. In the case of Italy coefficient exceeds the accepted limit, indicating high variability of local deposits. Because the fluctuations were observed throughout the seven-year period, I made an attempt to determine the circumstances under which the changes were intensified. For this purpose, the following sub-periods became separated:

- P1: IQ 2007 - IIIQ 2007 (pre-crisis);
- P2: IV Q 2007 - IIIQ 2008 (the crisis in the US up to the collapse of Lehman Brothers Holdings Inc.);
- P3: IV Q 2008 - IV Q 2010 (the crisis after the collapse of Lehman Brothers Holdings Inc. up to the implementation of higher limit of guaranteed deposits - EUR 100 000, by the EU member states),
- P4: IQ 2011 - IV Q 2012 (the sovereign debt crisis and evolving economic instability).

The period P0 (IQ 2006 - IV Q 2006) was the basis of comparison and identified the time of relatively stable growth.

This analysis was conducted for selected countries:

- representing sub-groups: Germany, Slovakia and the Netherlands;
- generating economic and financial problems for the Eurozone: Portugal, Spain, Greece;
- different from the rest: Luxembourg.

On the basis of dynamic models, I made an attempt to explain the changes in the *total household deposits* under evolving economic and financial background, introducing above explanatory variables.

I was testing the following regression models12:

• linear:

$$y_i = \alpha_0 + \sum_{j=1}^{4} \alpha_j P_{ij} + \varepsilon_i \quad (3)$$

• exponential:

$$y_i = e^{(\alpha_0 + \sum_{j=1}^{4} \alpha_j P_{ij} + \varepsilon_i)}, \quad (4)$$

which, after logarithmic transformation gives:

$$\ln y_i = \alpha_0 + \sum_{j=1}^{4} \alpha_j P_{ij} + \varepsilon_i \quad (5)$$

where:

P_{ij} – participation of the i-th quarter to the the j-th sub-period (j = 1,2,3,4). The basis of comparison is a sub-period P0;

y_i – values of deposits observed in in the i-th quarter (i = 1,2, ..., 24);

ε_i – residual.

In Germany, the best results in statistical terms were obtained in exponential model (Table 3). It explains 94% of the developments in *total household deposits* in the years 2006-2012. All sub-periods: P1-P4 proved to be statistically significant, but the largest change in the dependent variable was recorded in the sub-period P4. It was higher on average by 25.9% then the value of deposits in a period of relative stability, which was the basis of comparison. Slightly less impact on the level of deposits had period P3 with the events occurred. The order of the impact of temporary variables leads to the conclusion that the evolving instability in economic and financial background accounted an important incentive for households in Germany to accumulate surplus funds on accounts in the MFI.

Table 3. Exponential regression of *Total HH Deposits in Germany (IQ 2006 – IVQ 2012)* on Covariates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	14.14	0.01	1282.37	0.000000
P4	0.23	0.01	17.20	0.000000
P3	0.15	0.01	11.31	0.000000
P2	0.06	0.01	3.99	0.000573
P1	0.02	0.02	1.04	0.307990
R-squared 0.94 F-Statistic 104.85 S.E. of regression 0.02				

Source: Own calculations based on ECB's data.

Similar conclusions can be drawn on household deposits in the Netherlands (Table 4). The linear regression model includes three statistically significant time variables. The explained variable underwent significant increase with evolving destabilization, starting from sub-period P2. A phase preceding the financial crisis in the Eurozone and characterized only by symptoms of impending imbalances proved to be statistically insignificant. The equation explained 93% of the variation in total deposits.

[12] G.S. Maddala: Introduction to Econometrics. Wiley&Sons Ltd., West Sussex 2009; M. Wozniak: General Statistics. Cracow University of Economics, Cracow 2004.

Table 4. Linear regression of Total HH Deposits in the Netherlands (IQ 2006 – IVQ 2012) on Covariates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	282141.20	4895.33	57.63	0.000000
P4	90463.40	5995.52	15.09	0.000000
P3	60909.30	5883.40	10.35	0.000000
P2	28044.40	6567.77	4.27	0.000287
R-squared 0.93 F-Statistic 75.47 S.E. of regression 9790.6				

Source: Own calculations based on ECB's data.

As shown in Table 5, the largest changes in deposits placed in Luxembourg, in relation to the period specified as the basis of comparison - occurred in the period P2. The last two sub-periods affected the value of the analysed variable with similar extent. It was higher on average by more than EUR 5 billion then in the underlying comparison period. It should be noted that in this part of the analysis, the defined intervals did not reveal a decline in the value of deposits, which was recorded at the end of 2012. It led to the formation of the value of dependent variable at lower level than that recorded at the end of year 2008.

Table 5. Linear regression of Total HH Deposits in Luxemburg (IQ 2006 – IVQ 2012) on Covariates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	39844.00	721.91	55.19	0.000000
P2	7295.40	968.55	7.53	0.000000
P4	5385.50	884.16	6.09	0.000003
P3	5186.00	867.63	5.98	0.000004
P1	3627.00	1250.39	2.90	0.008059
R-squared 0.73 F-Statistic 15.60 S.E. of regression 1443.8				

Source: Own calculations based on ECB's data.

In the case of Spain, all time variables significantly influenced the developments in the dependent variable (Table 6). The strength of the impact of sub-periods was increased along with the evolution of instability. During the sovereign debt crisis, the value of deposits stored in the MFI was higher on average by EUR 212 198.1 million then in the period of relative growth. This model allows to explain 95% of the variability of the analyzed phenomenon. In Portugal, the impact of the poor situation on the financial market revealed during P2 and intensified in the subsequent sub-periods (Table 7). The value of household deposits in P2 was higher than in the period of comparison by approx. EUR 12 billion, in P3 - approx. EUR 24 billion, while in P4 - approx. EUR 36 billion. Similarly to the equation for deposits in Spain, the model explained 95% of the variability in household deposits.

Table 6. Linear regression of Total HH Deposits in Spain (IQ 2006 – IVQ 2012) on Covariates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	518253.2	9853.52	52.60	0.000000
P4	212198.1	12068.04	17.58	0.000000
P3	187285.6	11842.45	15.81	0.000000
P2	111114.6	13219.88	8.41	0.000000
P1	54966.8	17066.79	3.22	0.003787
R-squared 0.95				
F-Statistic 101.88				
S.E. of regression 19707.00				

Source: Own calculations based on ECB's data.

Table 7. Linear regression of Total HH Deposits in Portugal (IQ 2006 – IVQ 2012) on Covariates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	93398.67	1335.44	69.94	0.000000
P4	36456.21	1766.62	20.64	0.000000
P3	24562.33	1724.04	14.25	0.000000
P2	11859.33	1980.78	5.99	0.000004
R-squared 0.95				
F-Statistic 158.25				
S.E. of regression 3271.10				

Source: Own calculations based on ECB's data.

The linear model of Slovakian household deposits explains 97% of the variability in total deposits and points out the significance of the impact of all temporary variables (Table 8). There is a repeating conclusion that the escalating turmoil led to more significant changes in dependent variable.

Table 8. Linear regression of Total HH Deposits in Slovakia (IQ 2006 – IVQ 2012) on Covariates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	14885.00	378.19	39.36	0.000000
P4	10432.00	463.19	22.52	0.000000
P3	7900.33	454.53	17.38	0.000000
P2	3309.00	507.40	6.52	0.000001
P1	1429.00	655.05	2.18	0.039621
R-squared 0.97				
F-Statistic 179.32				
S.E. of regression 756.38				

Source: Own calculations based on ECB's data.

The results for Greece did not confirm statistically significant impact of sub-period P4 on the value of total deposits (Table 9). However, it is worth mentioning that there occurred a marked reduction in the total value of household deposits in MFIs (Figure 2). The model explains 84% of the variability of deposits containing two statistically significant independent variables - P3 and P2. During the banking crisis and interventions aimed at restoring the balance, the average value of household deposits exceeded their level from the period of comparison .

Table 9. Linear regression of Total HH Deposits in Greece (IQ 2006 – IVQ 2012) on Covariates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	134674.00	5011.98	26.87	0.000000
P3	52950.60	6023.65	8.79	0.000000
P2	28587.00	6724.27	4.25	0.000301
R-squared 0.84				
F-Statistic 29.23				
S.E. of regression 10024.00				

Source: Own calculations based on ECB's data.

Summary

The analyses of household deposits per capita in the 16 member states of the Euro area points the differences in the mechanisms of their formation, in chosen years. The study proves the existence of sharp disparities in the values and structure of deposits per capita in individual states, but also identifies relatively homogeneous sub-groups, such as: Belgium and the Netherlands; France and Germany; Slovakia and Slovenia. The grouping of units also indicates the presence of countries with targeted developments in deposits, which belonged to different subsets in each year, and the continuing distinctiveness of Luxembourg. If we put aside the disparities in the size of the population and analyze the evolution of the structure of the aggregated value of household deposits in the group od states, we can clearly see unequal access of MFIs to the funds recognized by the regulator as stable. The study also confirms different preferences of nations in duration of placement while rising instability. The regression models present statistically significant differences in the developments in the values of household deposits in sub-periods: P1, P2, P3, P4, which are characterized by diverse financial and economic condition. The results tend to the conclusion that in 2006-2012 there were substantial changes in values and structure of household deposits in 16 Eurozone member states. Thus it is advisable to delegate a part of decisions on the outflow percentages to the national supervisory authorities, to ensure the effectiveness of the single liquidity regulations.

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