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**Interest rate pass-through in the euro area: The
effect of financial crisis**

Bachelor thesis

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Abstract

In this study we analyze the impact of the financial crisis on interest rate pass-through in the euro area. By applying a wide range of econometric techniques, including both univariate and multivariate models to estimate cointegration relationships between retail and policy rates and related short-term adjustment processes we find out that the financial crisis has led to the increased spread between market and policy rates, which has not been corrected by central bank policies so far. We also find evidence of cross-country heterogeneity in both pre-crisis pass-through and crisis effects. In addition to this, for many retail rates we find an evidence of two-way Granger causality with respect to policy rates, indicating the accommodative policy of ECB following the market disruptions. We also estimate the timing of shocks to transmission mechanism and our results suggest that they are not distributed tightly around September 2008, but rather vary widely across the sample.

Abstrakt

Práce se zabývá dopadem finanční krize na transmisní mechanismus úrokových sazeb v krajinách eurozóny. Aplikováním škály ekonometrických metod pro odhadování kointegračních vztahů mezi trhovými úrokovými mírami a mírami stanovenými centrální bankou docházíme k závěru, že krize přispěla ke zvýšení rozpětí v dlouhodobém vztahu mezi úrokovými sazbami a doteď nedošlo k jeho návratu na předkrizovou úroveň. Naše výsledky také ukazují přetrvávající heterogenitu mezi členskými krajinami v transmisním mechanismu a to jak před finanční krizí, tak i po ní. Pro některé úrokové sazby navíc nacházíme dvousměrnou Grangerovu kauzalitu, indikující akomodativní politiku ECB. Studie se také zabývá odhadováním času šoků v transmisním mechanismu a výsledky naznačují, že jejich distribuce není úzce koncentrovaná kolem září 2008, jak by se dalo očekávat, nýbrž jejich načasování je velice různorodé.

Klíčová slova

monetární politika, finanční krize, transmisní mechanismus úrokových sazeb, transmise monetární politiky, centrální banky

Keywords

monetary policy, financial crisis, interest rate pass-through, monetary transmission, central banks

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Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague 13.5.2015

Jakub Rybák

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Bachelor Thesis Proposal

In this thesis we plan to study the development of interest-rate transmission mechanism of monetary policy, i.e. the relationship between money market rates and bank interest rates during the financial crisis of 2008 in the euro area, focusing on cross-country differences, mainly between peripheral and core countries and effects of particular policies (such as OMT). In order to analyse the above-mentioned relationship, Engle-Granger cointegration method will be applied.

The working hypotheses are as follows:

1. Interest rate-pass through in euro area become less complete during the financial crisis of 2008 due to the turmoil on the financial markets
2. The heterogeneity in IRPT among eurozone countries was intensified during the financial crisis and its nature diverged between peripheral and core countries
3. The extent of pass through differs between various bank rates

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Acronyms

DOLS	Dynamic Ordinary Least Squares
ECB	European Central Bank
EONIA	Euro Overnight Index Average
Euribor	Euro Interbank Offered Rate
IR	Interest Rate
IRPT	Interest Rate Pass-Through
OLS	Ordinary Least Squares
VAR	Vector Autoregression
VECM	Vector Error-Correction Model

I. Introduction

The policy-induced changes in monetary policy stance affect aggregate real variables, such as unemployment and output through various channels, the most important ones being credit channel, expectations, asset price, exchange rate and interest rate channel. The interest rate channel concerns the transmission of central bank interest rates, that is, the interest rates at which banks can borrow funds from central bank, to the money market and retail rates. Due to the stickiness of price level changes in nominal interest rate lead to changes in the real interest rate and thus influence costs of borrowing and lending which in turn affects levels of borrowing by both households and firms, as inter-temporal consumption decisions are altered and number of investment projects yielding sufficient returns changes, thus altering the aggregate demand in the economy which further translates to unemployment and output levels.

The ability of monetary authorities to steer the money market rates, and thus also the retail rates which are closely tied to them, stems from their monopoly power over the supply of high-powered money. For example, should private financial institutions not follow the increase in the official rate, central bank by altering the amount of outstanding money supply can drive banks to the situation of insufficient liquidity and thus force them to borrow at the policy rate and hence the rates on the loans their grant to private sector would adjust accordingly. Because banks are aware that this is the case, they should automatically follow the policy rate changes. This would not be the case if the market for currency issuance did not have a monopoly structure, that is, if there would exist alternative entities producing perfect substitutes to monetary base.

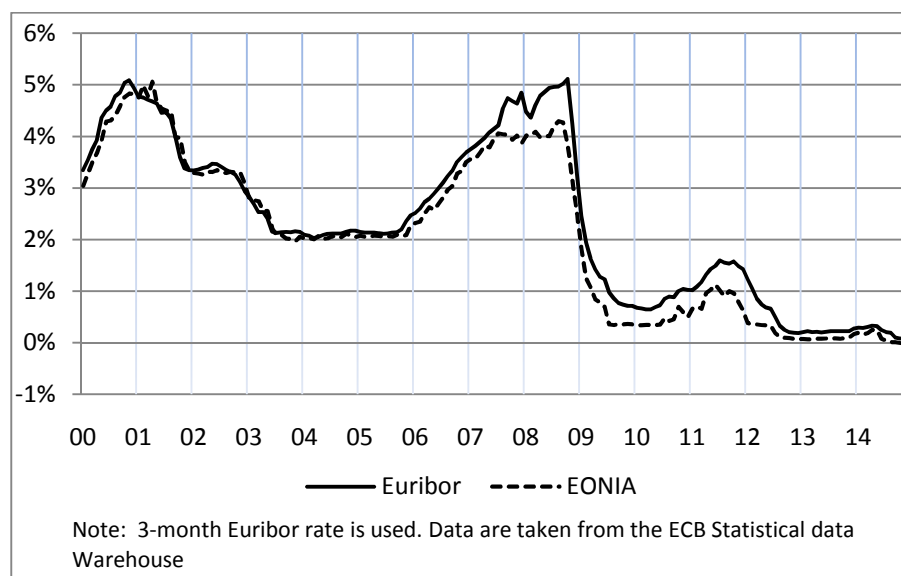
The relationship between market and official rates is thus consistent with both economic theory and empirical findings (these will be mentioned in the subsequent section). Moreover, Angeloni, Mojon, Kashyap, and Terlizzese (2002) as well as other studies have found out that interest rate channel is the most important one in the Euro area. For this, reason, its functioning is of key importance for the conduct of monetary policy and its impairment could result in a significant reduction of monetary authorities' control

over the economy and thus call for non-standard measures to regain this control. In addition to this, European economy is highly bank-dependent, with 70% of external financing of non-financial private sector provided by banks, compared to only less than 20% in the US (Cour-Thimann and Winkler, 2013) and banks are the main agents for channeling funds from savers to borrowers (ECB, 2007), which increases the importance of interest rate transmission mechanism, especially in periods of economic downturn.

Our main interest in the following study is to empirically assess the effect of financial crisis on the interest rate pass-through (henceforth labelled IRPT). Financial crisis has brought about both the depressed aggregate demand, causing slump in economic growth and spike in unemployment rates, and sharp drop in the values of real estate and financial assets, especially mortgage-backed securities and thus has led to deterioration of banks' balance sheets. Moreover, the uncertainty in the system has substantially increased, especially after the fall of Lehman Brothers, which has led to the freeze of the interbank market. Given the environment of falling aggregate demand and collateral values, deteriorating balance sheets and limited access to external funds, banks appear to have tightened their lending standards and increased lending rates. The monetary authorities, on the other hand, have responded by decreasing the main refinancing rate in order to ease the credit conditions for banks as well as non-financial sector.

The Chart 1 below illustrates the developments in the interbank lending market and monetary policy stance by plotting the EONIA rate (Euro OverNight Index Average) and 3-month Euribor rate, against which retail bank rates are often priced or indexed to, between 2000 and 2014. As figure illustrates, a close relationship between the two series that prevailed prior to market disruptions broke down with the onset of financial crisis, and persisted since then, although recently the series seem to converge again.

Chart 1 EONIA and 3-month Euribor rate



This suggests reduced ability of monetary authorities to control market rates and in turn to influence the real economic activity in times where such power is needed most urgently. This pattern is not specific to euro area and similar trend took place in the USA, United Kingdom and other developed countries and the need for correction of transmission mechanism has led central banks to adopt supportive measures, such as extension of the maturity of liquidity provision and of collateral eligibility, introduction of full-allotment fixed-rate tenders, foreign exchange swaps with other central banks, narrowing of the corridors around the main policy rate and extending maturities of monetary operations.

Apart from studying long-run relationship between policy rates and retail rates, we will also analyze impacts of the crisis on the adjustment speed, that is the speed at which disequilibrium between the rates is corrected.

We have already mentioned that interest-rate pass through may depend on the trajectory that the economy has taken after 2008 and on its characteristics. For example, financial institutions in a country experiencing higher output decline are likely incurring higher write downs and defaults on loans and thus may be more reluctant to follow decreases of policy rates. Also countries whose banks rely more on interbank financing, or have heavily invested in the markets that collapsed, such as real estate market, are more likely

charge

high

er mark-ups.

Due to the large heterogeneity within the euro area and significant differences in economic performance of individual countries following the 2008 crisis, it therefore also seems possible that interest rate transmission mechanism might become increasingly diverse, implying high pass-through in some countries and low in others. Thus, we will study lending rates individually for each country, which will then allow us to compare changes in the pass through between them.

In our analysis, we also focus on various kinds of lending rates, specifically loans for house purchase, consumption loans and loans to non-financial corporations and different maturities and thus we will be able to see whether the change in transmission is specific to any maturity or loan type.

In addition to this, based on data we will also examine timing of the shock to the IRPT, that is, whether the shock indeed occurred with the fall of Lehman Brothers or it took place later/after the September 2008.

We will also discuss the completeness of the pass through, that is whether retail interest rates adjust 1:1 to changes in the policy rate, or whether they tend to undershot or overshot the policy rate.

Our study contributes to the existing literature in a number of ways. First of all, we use an up-to-date data set, which gives us an opportunity to account for recent developments as well as work with larger samples than previous studies. Moreover, we do not restrict our analysis on purely univariate or multivariate models and by applying Toda-Yamamoto test for cointegration we formally assess which modelling technique is preferable for each time series. We also relax the often-used assumption about the timing of shock and determine it based on data themselves.

The study is organized as follows: section II. provides an overview of existing literature on the topic and is followed by part III. in which data employed are described in greater detail. The methodology and results are then described in sections IV. and V. respectively and section VI. concludes.

II. Literature review

The pioneering studies in the area of interest rate transmission, which recognized the prominent role of interest rates in monetary policy operations, probably start with the McCalum's (1983) response to Sims (1980). Sims, upon observing that when interest rate is taken into account monetary aggregates (and unexpected changes in their outstanding stocks) explain only negligible proportion of variation in the real variables¹, concluded that adopting the monetarist rule may not have the desired real effects and the hinted on the inconsistency of monetarist theory with this empirical evidence. McCalum in his note proposed a different interpretation and on theoretical grounds suggested that monetary policy may work mainly through interest rates, rather than monetary aggregates as was previously thought. This hypothesis was later supported by findings of Bernanke and Blinder (1988), who found out that the federal funds rate is both a very good indicator of monetary policy and a predictor of real variables and document impact of its movements on loans and deposits. Afterwards, the interest rate channel established itself as one of the main channels of monetary transmission.

In Europe, the launch of the common currency and hence the establishment of common monetary policy has led to an increased interest in monetary transmission. For this purpose a research network for studying transmission in the euro area called The Monetary Transmission Network was established in 1999. The main conclusions confirmed the role of interest-rate channel as the dominant channel of transmission (ECB, 2010). In a related study, Angeloni, Kashyap and Mojon (2003) tested the hypothesis that IRC completely characterizes the transmission and could not reject it for a few countries, while the IRC was found substantial in almost all of them. The complete findings of MTN can be found in Angeloni, Kashyap and Mojon (2003). Later studies, for example that of Chatelain et al. (2003), confirmed these findings and the importance of interest rate channel.

¹ The study was published in times when monetarism was still widely discussed, hence the focus on monetary aggregates

The first stream of literature on IRPT focuses on euro area as a whole and especially at the beginning of the millennium the frequently discussed question was the effect of introduction of the common currency on IRPT.

For example, De Bondt (2002) uses monthly data from 1996 to 2001 for euro area and error-correction model of IRPT based on a marginal cost pricing framework including switching and asymmetric information costs and checks the robustness of results by examining VAR impulse responses and sub-sample estimates. He finds that the proportion of pass-through reaches its maximum at 50% within one month and much higher in the long-run, most notable for lending rates for which it reaches close to 100%. In addition to this, the study finds an evidence for cointegration between retail bank and comparable market interest rates.

These results are confirmed in De Bondt (2005), where relationship between overnight interest rate (EONIA) and retail rates is analyzed using univariate ECM as well as multivariate models VECM and VAR on monthly data between 1996 and 2001 for euro area. In addition to confirming results of the previous study, the paper also finds the decreasing influence of official rates on market rates with increasing maturities and quicker pass-through in the euro-area since the introduction of the euro.

These two studies also include a comprehensive overview of previous research done on IRPT.

Another often discussed question is the degree of similarity between euro area countries and the evolvement of these differences after the introduction of euro.

The cross-country comparison of IRPT and its evolution after the establishment of EMU is for example studied in Sander and Kleimeier (2004), who use monthly data for 10 EMU countries over the period 1993-2002. They use threshold autoregressive model and thus allow for asymmetries in interest rate adjustment and confirm the cross-country heterogeneity in IRPT. By analysing the determinants of pass-through process, they suggest that these heterogeneities may be mitigated by nominal, real and structural convergence between countries. They also point to the beneficial effect of increased competition in the banking sector on interest rate pass-through.

In a similar nature, Toolsema, Sturm and de Haan, (2002) on their analysis of 6 EMU countries note that there are still significant differences in the speed and size of pass-through and find only a weak evidence of convergence of IRPT characteristics across countries.

Yet another dimension often studied is whether the pass-through is different among various interest rates as well, either based on the maturities of underlying loans or the conditions upon which they are agreed (for example who is the counterparty, whether they are backed by collateral or what are they used for).

Applying ECM framework on the period from 1979 to 1998, Mojon (2000) finds substantial heterogeneity in IRPT across ERM countries, but also provides rational for their convergence, based on the decreased volatility of money market and increased competition brought about by establishment of EMU/euro area. Moreover, the study points out also substantial differences in PT across markets, with short-term credit rates typically responding faster than mortgages or deposit rates.

Sorensen and Werner (2006) also explore the heterogeneity of pass-through among euro area countries and different interest rates. Using the sample of ten euro area countries over the period from 1999 to 2004 they estimate a panel error-correction model using dynamic seemingly unrelated regression (DSUR) method. The results point out to different degree of pass-through between different classes of interest rates, with rate on corporate loans reacting most efficiently to changes in central bank IR, followed by mortgage loans and the least responsive are consumer loans. The pass-through is found to be incomplete and sluggish and the paper points to the substantial heterogeneity among the countries, with competition in the banking sector as its most significant determinant.

There are several reasons that may give rise to the observed cross-country heterogeneity. Out of these, differences in conventions and practices, fiscal and regulatory arrangements, which are to a large extent implemented at the national level, market structure, credit risk and collateral practices are likely the leading determinants (ECB, 2006).

Cross-country heterogeneity may be also attributed to a large extent to different levels of competitiveness among financial institutions, with higher competitiveness associated with lower spreads and faster transmission (Van Leuvenstein et al., 2008).

The studies of IRPT generally agree on the presence of sluggishness of retail interest rates in their adjustment and this phenomenon is usually attributed to the high costs of such behaviour. This may arise due to the menu costs, that is, fixed costs of changing the retail rate that bank must incur, which may lead to reluctance to pass small interest rate changes or to smoothing official rate by financial institutions (Hoffmann and Mizen, 2004). Another reason may be the existence of search and switching costs and associated adverse selection problem, which makes unilateral interest rate decreases undesirable for banks (Calem and Mester, 1995; Calem, Gordy and Mester, 2006). Yet another factor that may play its role is the provision of implicit insurance to risk-averse borrowers in the form of charging below-market interest rates when market rates are high for which banks are compensated when market rates are low, and renegotiation of loans at lower interest rates to distressed borrowers during the periods of high interest rates (Berger and Udell, 1992).

At least in some credit categories, the interest-rate stickiness may also be a result of market structure in the banking sector, specifically whether its nature is oligopolistic or tend to be closer to more competitive forms of market, implying difference about price-determination, since in the former the banks are price makers, in the latter price takers. Moreover, the differences between the stickiness in individual categories may be also attributable to the more broad structure of market for funds. For example, while corporations often have access to non-bank sources of financing than bank loans, for example bond issuance or equity issuance, the households do not generally possess these options and thus must rely solely on banks (ECB, 2009).

With the onset of the financial crisis, the literature has also focused on its effects on the transmission mechanism. Illes and Lombardi (2013) study the development of transmission in 4 euro area countries plus USA and UK and conclude that while difference between lending rates to the non-financial corporate sector and policy rates is close to pre-crisis level in the US and Germany, it remains higher in peripheral countries.

The study by Arnold and van Ewijk (2014) finds out that the crisis has contributed to the financial fragmentation of euro area, causing divergence of lending and deposit rates across countries, and identifies the increased heterogeneity of sovereign risks as a key driving force of this development.

The disruption in the transmission of monetary policy after the fall of Lehman Brothers in 2008 is also confirmed by the study of Gambacorta, Illes and Lombardi (2014) who find an evidence for increased mark-up charged by banks over the policy rate and suggest that this occurred mainly due to the increased risk premiums and worsened financial conditions of banks.

Aristei and Gallo (2014) focus on the pass-through from money market rates to lending rates to households and non-financial corporations and point to the reduction in the degree of pass-through for both loan categories, but especially for loans to households.

Hristv, Hulsewig and Wollmershaeuser (2012) asses the changes in transmission mechanism and complement their analysis based on VAR models also by DSGE simulations. They find out that while the IRPT was relatively complete before 2008 it became less so in the period between 2008 and 2011 and this result seems to hold across both lending and deposit rates as well as various maturity types.

III. Data

We use data on 3 main categories of retail lending rates:

- Loans for consumption (excluding revolving loans and overdrafts, convenience and extended credit card debt) to households and non-profit institutions serving households
- Lending for house purchase to households and non-profit institutions serving households
- Loans to non-financial corporations

and these will be also referred to as 1st, 2nd and 3rd loan category respectively

Each of these categories is then split into 3 subcategories depending on the maturity of loans. These three categories are:

- Less than 1 year
- 1-5 years
- Over 5 years

and will be referred to as short-term, medium-term and long-term loans respectively.

Data are taken from MFI (Monetary Financial Institutions) statistics of the European Central Bank, which uses harmonized data and thus make our results for individual countries comparable. Dataset starts at either January 2000 (1st category of loans) or January 2003 (2nd and 3rd category) and end at December 2014. The length of individual time series varies by country.

Our sample is unbalanced not only across loan categories but also within the categories, meaning that within one loan category the countries for which the data are available can be different for different maturities.

Since some of the time series are rather short, we exclude the ones which cover less than 8 years. In some cases the series involve single gaps, with which we deal following the suggestion given by Ryan and Giles (1998) and replace missing observations with the last recorded observation before the gap.

Following the work of Ciccarelli et al. (2010), EONIA is used as a measure of ECB's monetary policy. Data for it are taken from the ECB Statistical Data Warehouse.

To illustrate the developments of interest rate pass-through prior and after the crisis the Charts 2 to 4 below show the evolution of spread between retail rates for euro area (changing composition) and EONIA.

The behaviour of spreads is fairly homogenous across groups and maturities, with significant increase recorded between 2008 and 2009 followed by a partial correction afterwards, but in general the spreads remained elevated compared to the pre-crisis period.

It also appears that consumption loans have generally the highest spread of the three categories and are also the most volatile category. It also exhibits the most pronounced differences between maturity types.

As far as the timing of shock is considered, the major jump in the spread seems to occur in the late 2008 and early 2009. Another adverse shock seems to have taken place between 2011 and 2012, reversing the slight improvement that occurred after 2008.

Chart 2 EONIA spread, loans for consumption to households and non-profits serving households

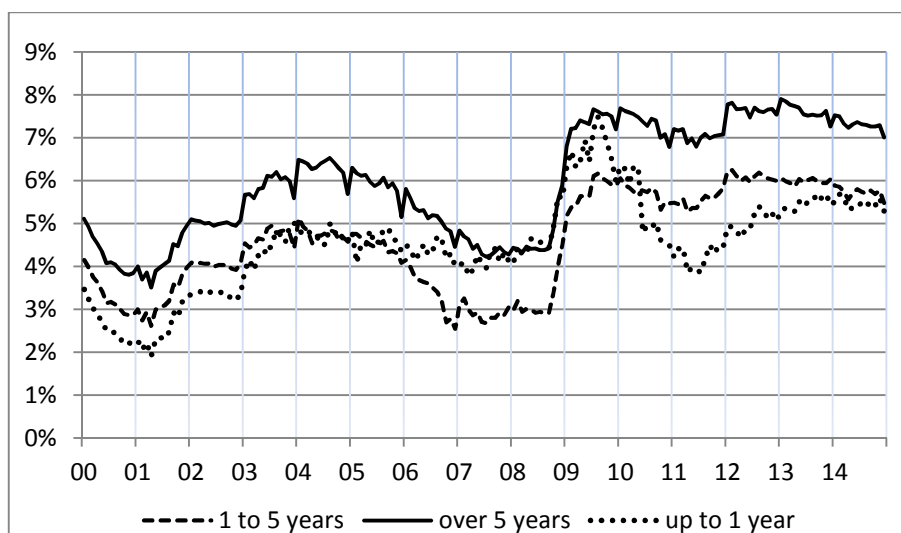


Chart 3 EONIA spread, loans for house purchase for households and non-profits serving households

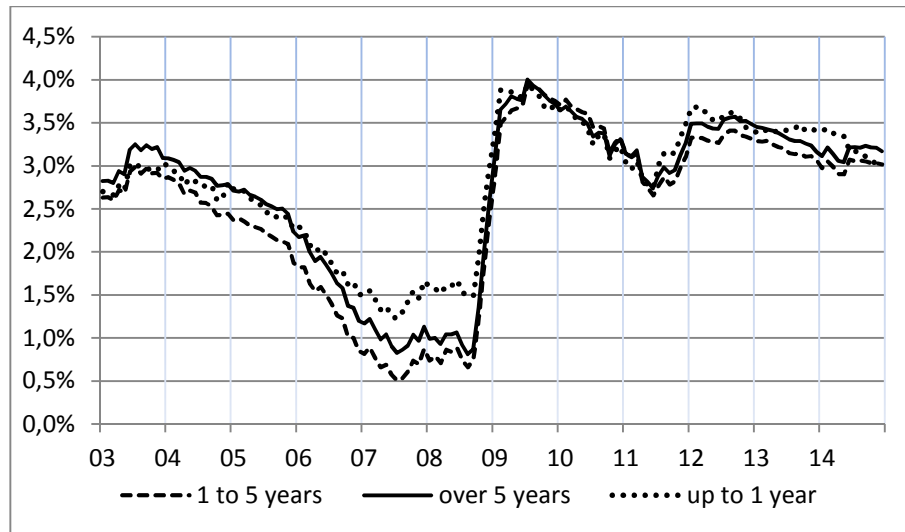
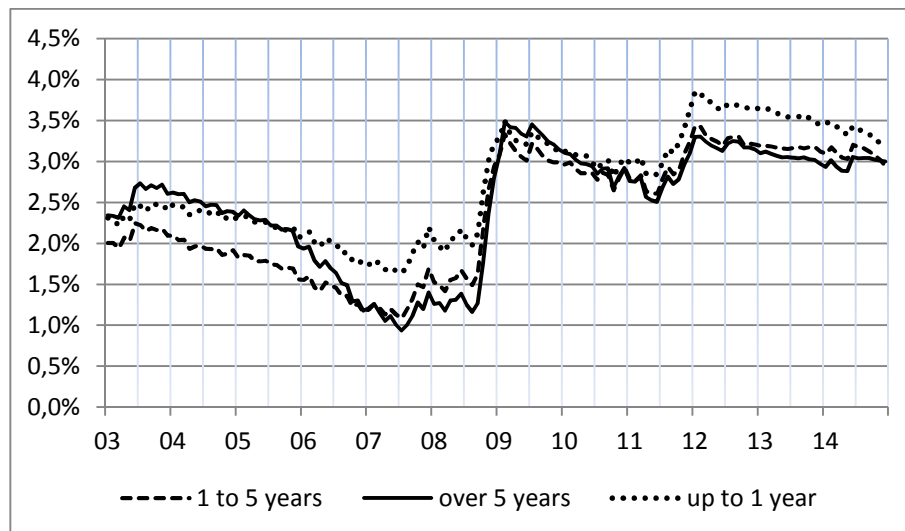


Chart 4 EONIA spread, total loans to non-financial corporations



IV. Methodology

Our analysis will rest on the notion of cointegration, that is finding a long-run relationship between market and policy rates, and a number of different approaches will be suggested to test our hypotheses. The following two sections will be divided into sub-sections depending on which approach is applied.

Unit root testing

Since we are looking for linear combination of variables integrated of order one that has no unit root, we must first check whether the underlying variables are indeed $I(1)$.

To test the presence of unit-root in the time series we employ Dickey-Fuller t-test (DF-GLS) (without trend) as proposed by Elliott, Rothenberg, and Stock (1996), an augmented Dickey-Fuller test performed on time series transformed by generalized least squares regression. This test has significantly higher power than augmented Dickey-Fuller test (as the study above has shown). The hypotheses are analogous to that of D-F test:

$H_0: x_t$ is $I(1)$

$H_1: x_t$ is $I(0)$

In the procedure, lags of first-differenced variable are included. We use Schwert criterion (Schwert (1989)) to determine the maximal lag length and then modified Akaike and Schwartz information criteria to find the optimal lag from the selected range. Thus we obtain two results for each time series (one for each IC). We conclude that time series is $I(0)$ and thus exclude it from our analysis if at least one of the criteria rejects the null hypothesis at 5% confidence interval. The excluded time series are as follows:

Table 1 Excluded I(0) time series

Category	Excluded TS
Loans for consumption to households and non profits serving households maturity 1 to 5 years	
Loans for consumption to households and non profits serving households maturity over 5 years	Finland
Loans for consumption to households and non profits serving households maturity up to 1 year	
Loans for house purchase to households and non profits serving households maturity 1 to 5 years	
Loans for house purchase to households and non profits serving households maturity over 5 years	
Loans for house purchase to households and non profits serving households maturity up to 1 year	Latvia(Euro), Slovenia
Total loans to non financial corporation maturity 1 to 5 years	Portugal
Total loans to non financial corporation maturity over 5 years	
Total loans to non financial corporation maturity up to 1 year	Greece, Portugal

We also try an alternative, in which we set maximum lag at 6 rather than according to Schwert criterion (which chooses in our case mostly lag 12 or 13), but results are not significantly altered.

The critical values for the test for 1% significance level are interpolated from Elliott, Rothenberg, and Stock (1996), while that for 5 and 10% are taken from Cheung and Lai (1995).

Univariate framework

Firstly, we will analyze the cointegration and possible change in interest rate pass-through in univariate framework. To do so we need to assume that EONIA determines the level of market interest rates but not the other way round and thus that the cointegration relationship is one of the following form:

$$ir_t = \alpha_1 EONIA_t + \beta_1' \times X_1 + v_t$$

rather than

$$EONIA_t = \alpha_2 ir_t + \beta_2' \times X_2 + u_t$$

Where β_1, β_2 are $(k \times 1)$ vectors of coefficients and X_1, X_2 are $(k \times 1)$ vectors of explanatory variables other than EONIA.

In the first case we test for the order of integration in v_t while in the second we are interested in u_t . Although asymptotically the tests for unit root on the residuals of these two equations are equivalent, due to the limited sample size we cannot rely on this result in our analysis.

For now, we will proceed with this restrictive assumption, whose plausibility as well as empirical treatment will be explored in greater detail later on.

Engle-Granger procedure

In the first approach we apply the Engle-Granger procedure (Engle and Granger, 1987) to estimate a long-run relationship between EONIA and market rates. Let us start with the following long-term relationship between EONIA and market interest rates:

$$ir_t = \gamma_0 + \gamma_1 eon_t + \gamma_2 D_t + v_t$$

Where ir and eon_t denote the market interest rate and EONIA respectively (both are $I(1)$ as we checked in the previous section), and D_t denotes dummy variable taking on value 1 starting from September 2008 to indicate the presence of the financial crisis. In this way we are setting the date of structural break in long-term relationship at September 2008.

The long-run equation can be estimated by OLS, since if the cointegration relationship holds, and u_t is stationary, the OLS estimator is super-consistent, i.e. $\hat{\gamma}_1$ and $\hat{\gamma}_2$ converge to the true parameter values at a rate proportional to the inverse of the sample size (rather than the inverse of its square root as is usually the case), hence the estimator converges to the true value more quickly than if the variables are stationary. This also implies that asymptotic distributions in EG procedure, when using the OLS

estimates, will be identical to those obtained when the true values of parameters are applied (Stock, 1987).

By applying this specification we allow the change in the intercept at the onset of the financial crisis in long-run responses. This is equivalent to the increased spread between market and policy rates (as figures in the previous section would suggest) but leaving the degree of IRPT unchanged by the crisis.

We then carry out the Augmented Engle-Granger cointegration test, which differs from the standard Engle-Granger test by adding the lagged difference of residuals in the second-stage regression to account for autocorrelation in residuals. Thus, the second-step regression looks as follows (and is equivalent in its form to the ADF test):

$$\Delta \hat{v}_t = \delta \hat{v}_{t-1} + \sum_{i=1}^k \rho_i \Delta \hat{v}_{t-i} + u_t$$

where u_t is a white noise error term and our interest lies in coefficient δ . When selecting the number of lags we start with the maximum of 6 and obtain the optimal lag number by testing down.

P-values for this test are obtained from MacKinnon (1991).

We also try the alternative specification of long-term relationship:

$$ir_t = \gamma_0 + \gamma_1 eon_t + \gamma_2 D_t + \gamma_3 D_t eon_t + v_t$$

In which we allow also for the change in the degree of pass-through but the results are not altered significantly.

The results of this procedure are reported in Tables 10.1-12.3 in Appendix A.

Gregory-Hansen procedure

One disadvantage of the above-described approach is that we set the break period arbitrarily at September 2008. While this date is chosen to coincide with the fall of Lehman Brothers, and thus the period when the disruption is most likely to be, it may not coincide with the date when market disruptions actually hit the economies in our

sample, since it may have taken some time for shock to fully propagate through the markets. For this reason, we will now relax this assumption and determine the break date based on the data rather than economic events. To do this, we apply the Gregory-Hansen test with structural shifts as proposed in Gregory and Hansen (1996).

Consider the long-run relationship of the following form::

$$ir_t = \gamma_0 + \gamma_1 eon_t + u_t$$

Where ir_t and eon_t are I(1) and u_t is I(0). This specification is time invariant in the sense that the long-run relationship between the two variables is stable over time. However, it may occur (as we assume in our case) that at some unknown time long run relationship shifts and remains unchanged thereafter.

Let us define a dummy variable:

$$\varphi_t = \begin{cases} 0, & t \leq [n\tau] \\ 1, & t > [n\tau] \end{cases}$$

Where $\tau \in (0,1)$ is unknown and denotes the relative timing of the shift and $[]$ denotes the integer part.

We will consider two types of shift as described in Gregory and Hansen (1996):

Model 1: Level shift (C)

$$ir_t = \alpha_0 + \alpha_1 \varphi_t + \beta_0 eon_t + u_t$$

In this case, the shift leads to a change in the intercept (from α_0 to $\alpha_0 + \alpha_1$) while the slope coefficient remains unchanged. Thus, the equilibrium relationship shifts parallelly. In our case it would imply the change in the long-run spread between market interest rate and central bank rate but no change in the proportion in which market rate corresponds to EONIA.

Model 2: Regime shift (C/S)

$$ir_t = \alpha_0 + \alpha_1 \varphi_t + \beta_0 eon_t + \varphi_t \beta_1 eon_t + u_t$$

Here, both slope and constant change following the shift (from β_0 to $\beta_0 + \beta_1$ and from α_0 to $\alpha_0 + \alpha_1$ respectively) and equilibrium relationship thus rotates as well as shifts. Hence we allow for both change in the long-run spread between market interest rate and central bank rate and for change in the proportion to which level of market rates correspond to that of EONIA.

For both of these specifications we expect positive coefficient for EONIA (in the latter case also positive sum of the coefficients on EONIA and $\varphi_t eon_t$), since we expect market rates to move in the same direction as EONIA. We also generally expect positive intercept (or at least non-negative), reflecting existence of spread between market rates and EONIA.

The hypotheses are as usually:

H_0 : no cointegration

H_1 : cointegration is present

The critical values for the test were tabulated by Gregory and Hansen by modifying Mackinnon (1991) procedure. There are three different test statistics computed: Z_t^* , Z_α^* and ADF^* and the null hypothesis of no cointegration is rejected if their values are below the corresponding critical values.

These test statistics are defined as follows:

$$\begin{aligned} Z_t^* &= \inf_{t \in T} Z_t(\tau) \\ Z_\alpha^* &= \inf_{t \in T} Z_\alpha(\tau) \\ ADF^* &= \inf_{t \in T} ADF(\tau) \end{aligned}$$

Where T is any compact subset of $(0,1)$ in our case it is chosen to be $(0.15,0.85)$. It specifies the fraction of data range at either end that are skipped when examining the possible breakpoints.

Hence, the breakpoint is chosen to minimize the statistics considered and test statistics is then the value of statistics at this point. Thus we can end up with 3 different dates for each country and each type of shift (regime or break).

The maximum number of lags for ADF test is set to 6 and the optimum number is determined by Akaike information criterion.

The break dates with corresponding significance levels indentified by this approach can be found in Tables 13.1-15.3, Appendix B, and Figures 7.1-9.3 in Appendix B then plot the distribution of these dates (note that for each country 3 dates are included since we have 3 test statistics for their determination).

After finding the break dates and testing for cointegration we proceed with estimating the error-correction model of the following form:

$$\Delta ir_t = \beta_0 + \beta_1 \times \Delta eon_t + (\varphi_{t-1} \beta_3 + \beta_2) \times erct_{t-1} + v_t$$

which can be rewritten for the purposes of estimation as follows:

$$\Delta ir_t = \beta_0 + \beta_1 \times \Delta eon_t + \varphi_{t-1} \beta_3 \times erct_{t-1} + \beta_2 \times erct_{t-1} + v_t$$

Where $erct_t$ denotes the error-correction of the above-described form, and it is in fact the residual from the long-run equation, which depends on whether we consider regime or level shift.

By including the interaction term between dummy and error correction term in the equation we also allow for a change in the speed of adjustment caused by the crisis, with positive (and statistically significant) coefficient indicating deterioration in the speed of adjustment while negative coefficient representing improvement in the speed.

For error-correction model we require the convergence of the system, i.e. the disequilibrium from previous period should be corrected in the present period, rather than amplified. Thus, we require the negative and statistically significant coefficient on

error-correction term. We also require the sum of coefficients for interaction term and error correction term to be negative, for exactly same reasons (since after the structural shift coefficient on error correction term is the sum of these two coefficients).

To avoid problems with autocorrelation and heteroscedasticity, which would invalidate the test statistics, heteroscedasticity and autocorrelation robust Newey-West standard errors are calculated, where number of lags of autocorrelation is determined by the rule of thumb given in Stock and Watson (2011), which follows from the work of Andrews (1991):

$$k = 0.75 \times \sqrt[3]{T} , \text{ rounded to an integer}$$

Where k is the number of lags in autoregressive process and T is a number of observations.

Dynamic OLS

We have previously mentioned that if variables are $I(1)$ and cointegrated, OLS estimator is superconsistent. This is in contrast with the situation when variables are stationary, since in that case the requirements for consistency of OLS include zero correlation between error term and explanatory variables. Thus, in the previous case we do not need to worry about endogeneity of regressors in sufficiently large samples as long as cointegration is present. However, in case when the sample is of limited size, the bias can be substantial (Stock, 1987) (Banerjee et al, 1986).

This can be corrected by introducing vastly augmented cointegration regression, also called dynamic ordinary least squares, an approach suggested by Stock and Watson (1993), which guarantees strict exogeneity of regressors by adding leads and lags of differences of explanatory variables.

Another advantage of this approach is that unlike the two models applied before, now we can draw inference on long-run coefficients.

In our case the model takes on the following form:

Let $y_t = (y_{1t}; y'_{2t})'$ be a vector of cointegrated variables and D_t be a matrix of deterministic terms. In our case we have:

$$y_{1t} = ir_t$$

$$y_{2t} = (eonia; Dummy)'$$

$$D_t = 1$$

Let the cointegrating vector be normalized as $\beta = (1; -\beta_2)$

The augmented cointegrating relationship then has the following form:

$$y_{1t} = \alpha D_t + \beta_2' \times y_{2,t} + \sum_{i=-p}^p \gamma_i' \times \Delta y_{2,t-i} + u_t$$

which yields an efficient estimator of β_2 when estimated by OLS.

Thus we estimate:

$$ir_t = \alpha + \beta_1 eonia_t + \beta_2 Dummy + \sum_{i=-l}^l \gamma_{1,i} \Delta eonia_{t-i} + \sum_{i=-m}^m \gamma_{2,i} \Delta Dummy_{t-i} + u_t$$

Newey-west HAC standard errors are reported to deal with heteroscedasticity and autocorrelation.

DOLS, unlike ECM, does not provide the estimation of short-term adjustment coefficients, but only of the cointegration vector. As the specification above indicates, we allow for level shifts only in this case. The reason for this choice is that inclusion of another right hand side variables would eat up many degrees of freedom, as both leads and lags of its first differences would have to be included.

The maximum lead/lag length for each variable is set to 4. All combinations of lags are then tested and one yielding the lowest value of Akaike's and Schwarz's Bayesian information criterion is chosen. In case when these two criteria point to different model specifications, we select the one with the lowest number of explanatory variables.

The cointegration is then assessed by testing residuals for the presence of unit root. This is done by applying the ADF test on residuals. Following the Ng and Perron (1995) approach the number of lags (p) is determined as follows:

1. Set an upper bound p_{max} for p . This is done by the Schwert (1989) criterion
2. Estimate the ADF test regression with $p = p_{max}$
3. If the absolute value of the t-statistic for testing the significance of the last lagged difference is greater than 1.6 then set $p = p_{max}$ and perform the ADF test. Otherwise, reduce the lag length by one and repeat the process.

Since we are applying the ADF test on residuals, we include neither time trend nor constant and thus the estimated equation has the following form:

$$\Delta \hat{e}_t = \phi \hat{e}_{t-1} + \sum_{i=1}^p \beta_i \Delta \hat{e}_{t-i} + u_t$$

And the hypotheses are:

$$H_0: \phi = 0$$

$$H_1: \phi < 0$$

Or in other words, the null hypothesis is that the time series contains unit root, while the alternative is the stationarity of the process.

The results for cointegration are reported in Tables 31.1-33.3 and the long-run coefficients, together with associated p-values can be found in Tables 34.1-36.3.

Multivariate framework

In the previous discussion we have assumed that market interest rates are influenced by the central bank policy rate but not the other way round. This has allowed us to use univariate models and normalized cointegration relationships on EONIA. While this assumption is often employed in the existing literature, it is not straightforward that it holds in our case as well, due to couple of reasons.

Firstly, we are focusing on the period of financial crisis, in which, as was already mentioned, functioning of the transmission mechanism was impaired. In order to improve the transmission mechanism, ECB conducted a number of non-standard measures, such as switching from variable rate tenders to the full allotment fixed rate tender, narrowing its interest rate corridor, extending the list of eligible collateral and counterparties and lengthened the maturity of its longer-term refinancing operations

(LTROs) (ECB, 2011). Moreover, the empirical evidence suggests that these measures were indeed effective in narrowing the credit spreads, supporting the supply of credit to private sector and interbank lending as well as overall economic activity (Giannone et al., 2012) (Lenza et al., 2010).

Another reason, albeit one whose importance is likely to be very limited, follows from the definition of EONIA, which is an interest rate at which banks provide loans to each other with a duration of 1 day rather than the rate set directly by the ECB. Thus, there may be a two-way relationship between this and market rates.

To tackle this issue empirically we will rely on the notion of the so-called Granger causality, a concept originally introduced in Granger (1969) which can be stated as follows: variable x_t is said to Granger-cause variable y_t if past values of x_t contain information for predicting y_t that is above and beyond those contained in the past values of y_t .

Toda-Yamamoto Granger causality test

In this section we will assume the following long-run relationship between EONIA and market rates:

$$ir_t = \gamma_0 + \gamma_1 eon_t + \gamma_2 Dummy_t + v_t$$

Where $Dummy_t$ denotes a dummy variable taking on value 1 after the September 2008 and 0 otherwise. Thus, by including it we allow for a shift in the long-term relationship.

The implied VAR model takes on the following form:

$$y_t = \sum_{i=1}^k \beta_i \times y_{t-i} + \phi D_t + u_t$$

Where $y_t = (eon_t ; ir_t)'$, D_t is a vector of deterministic terms, including constant and dummy variable, β_i and ϕ are 2x2 matrices and u_t is an error term.

The Toda-Yamamoto method is then applied as follows:

1. Optimal number of lags in VAR model is determined: this is done using information criteria, specifically we look for minimal values of Akaike's information criterion (AIC), Schwarz's Bayesian information criterion (SBIC), and the Hannan and Quinn information criterion (HQIC). In the case of disagreement about the optimal number of lags among them, we select the median value.
2. Check model adequacy: using the lag determined in above-described way we check for autocorrelation of residuals up to 4th order using the Lagrange multiplier test for autocorrelation in the residual of VAR models introduced in Johansen (1995). If there is an evidence for autocorrelation in any of the 4 orders, we add an additional lag to VAR model and perform the test again. The iterations stop once the null hypothesis of no autocorrelation is not rejected for orders 1 to 4. Thus the number of lags (denoted k) is determined
3. After autocorrelation has been removed, the model is estimated. If the last lags are insignificant in both equations, number of lags is decreased by 1. This is repeated until at least one last lag is statistically significant. In order for model to be as unrestricted as possible, the lag lengths are the same for both equations.
4. VAR model using one additional lag in each equation is estimated
5. Test for Granger causality: to determine whether ir Granger-causes eon we test the hypothesis that the coefficients of the first k lags of ir are zero in the equation for eon using the standard Wald test. The rejection of null hypothesis thus serves as evidence of Granger-causality. (We repeat the step 4 with exchanged roles of variables).

Johansen test & VECM

Our approach here to a certain extent follows the one used by (Belke et al, 2013) and uses multivariate cointegration test as introduced by Johansen (1988, 1991).

Let the long-run relationship between retail rate and EONIA be described as:

$$ir_t = \gamma_0 + \gamma_1 eon_t + \gamma_2 Dummy_t + v_t$$

Let $y_t = (eon_t ; irr_t)'$

Associated VAR with k lags:

$$y_t = \sum_{i=1}^k \beta_i \times y_{t-i} + \phi D_t + u_t$$

Where β_i is 2x2 matrix, ϕ is 2x2 and D_t is a matrix of deterministic terms, which includes a constant and dummy variable, both of which are restricted to the cointegration space.

And associated vector error correction model is:

$$\Delta y_t = \Pi \times y_{t-k} + \sum_{i=1}^{k-1} \Gamma_i \times \Delta y_{t-i} + \phi D_t + u_t$$

where

$$\Pi = \left(\sum_{i=1}^k \beta_i \right) - I; \Gamma_i = \left(\sum_{j=1}^i \beta_j \right) - I$$

Where I is 2x2 identity matrix.

Π is a long-run matrix since in equilibrium all differenced terms are 0 and expected value of the error terms is zero as well. The existence and number of cointegrating vectors is determined by the rank of matrix Π , which is by definition a square matrix, in our case 2x2.

Let us for a while consider a more general case, with $\Pi \in M(n \times n)$

Given that y_t is a vector of I(1) variables and in order for u_t to be I(0) we need Πy_{t-1} to be I(0) as well. This can occur in three distinct cases:

- If there is no cointegration relationship between variables and Π is therefore a zero matrix with 0 rank
- If variables are stationary, which occurs when Π has full rank (since we need I(0) variables on both RHS and LHS of the equation). The long-run values of variables can be then derived from the system of k equations of k unknowns as given by Π

- $rank(\Pi) = m \in [1, n - 1]$, which corresponds to the existence of m different cointegration relationships between variables

Since the rank of matrix corresponds to the number of nonzero eigenvalues (and hence eigenvector associated with them) the test statistics will be based on them. The test statistics and associated hypotheses are as follows:

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^g \ln(1 - \hat{\lambda}_i)$$

H_0 : # of cointegrating vectors $\leq r$

H_1 : # of cointegrating vectors $> r$

$$\lambda_{max}(r, r + 1) = -T \ln(1 - \hat{\lambda}_{r+1})$$

H_0 : # of cointegrating vectors = r

H_1 : # of cointegrating vectors = $r + 1$

Both of the statistics are increasing in $\hat{\lambda}_i$ and thus the larger is the eigenvalue, the larger is the test statistics.

In our analysis, we will focus on the trace test, since it is more robust to non-normality in terms of skewness and excess kurtosis (Cheung and Lai, 1993), which seems to be an issue in our model.

Suppose that $rank(\Pi) = r, r < n$

Then we can write Π as a product: $\Pi = \alpha \times \beta', \alpha \in M(n \times r), \beta \in M(n \times r)$

Where β gives the cointegrating vectors, while α describes the adjustment process in each equation

However, note that this factorization is not unique, since for any non-singular matrix $A, A \in M(r \times r)$ the following holds: $\alpha \times \beta' = \alpha A A^{-1} \beta' = \alpha A \times [\beta(A^{-1})]' = \alpha^* \times (\beta^*)'$

For this reason, we need to impose some additional restriction in order to find the α and β . In our case we use the normalization of cointegration vector on market interest rates (thus the coefficients on market IRs are 1).

Using the factorization introduced above we can rewrite the VECM as:

$$\Delta y_t = \alpha \beta' y_{t-k} + \sum_{i=1}^{k-1} \Gamma_i \times \Delta y_{t-i} + \phi D_t + u_t$$

And we can also decompose D_t into components that enter cointegrating vector (dummy variable in our case) denoted D_t^c , and those that remain in the short-run equations: D_t^s . Similarly, matrix of coefficients is broken into ϕ^c and ϕ^s , the first of which we decompose along the lines already described, and hence we can rewrite the VECM once again as:

$$\Delta y_t = \alpha(\beta' y_{t-k} + \beta^{D'} D_t^c) + \sum_{i=1}^{k-1} \Gamma_i \times \Delta y_{t-i} + \phi^s D_t^s + u_t$$

Which is equivalent to:

$$\Delta y_t = \alpha \tilde{\beta}' \tilde{y}_{t-1} + \sum_{i=1}^{k-1} \Gamma_i \times \Delta y_{t-i} + \phi^s D_t^s + u_t$$

Where $\tilde{\beta} = (\beta', \beta^{D'})'$ and $\tilde{y}_{t-1} = (y_{t-1}', D_t^c)'$

In the specification for which the results are reported the D_t^s actually contains no elements, since both constant and dummy variable are restricted to the cointegration space and thus contained in D_t^c . We have also estimated an alternative model, in which constant is unrestricted and thus is in D_t^s . We report the results for the former specification, since it appears more reasonable based on both data (market interest rates have no linear trend and their differences have mean around zero) and economic reasoning (there is no reason why the above-mentioned characteristics of data should occur in reality). However, the alternative specification does not alter our results significantly and conclusions presented below thus hold for both.

Vectors $\tilde{\beta}$ and α are reported in Tables 40.1-45.3 in the Appendix E.

Before turning to the discussion of results obtained by the above-described estimation techniques, let us note that both Johansen test for cointegration and Toda-Yamamoto Granger causality test rely on asymptotic properties and can thus be sensitive to specification errors in small samples. Thus the results presented below should be interpreted with caution.

V. Results

Engle-Granger procedure

The results of cointegration testing are reported in Tables 10.1-12.3 in Appendix A. As we can see the evidence of such relationship is rare among time series studied. This can have three reasons. The first one is that this inference is a reliable one and that no such relationship exists in reality. However, this would contradict both results of previous studies as well as the economic theory. The second reason for this kind of result may be our limited sample size. Although each series has at least 96 observations (8 years of monthly data) this may not be enough to conduct a valid estimation (at least not with this method). The last reason may be that the long-run relationship is wrongly specified and these last two issues will be addressed in the following sections.

Gregory-Hansen procedure

The dates of structural shifts as identified by G-H method are given in Tables 13.1-15.3, while figures 7.1-9.3 plot the distribution of dates across years. The results for cointegration are given in Tables 16.1-18.3 (note that in these table the significance levels rather than test statistics are reported), long-run coefficients can be found in Tables 19.1-21.3 for regime shifts and in Tables 22.1-24.3 for level shifts, while coefficients for the ECM models are reported in Tables 25.1-27.3 for regime shifts and in Tables 28.1-30.3 for level shifts.

The distribution of break dates as identified by Gregory-Hansen technique suggests that the shift in long-term relationship between EONIA and market interest rates did not occur at September 2008 for all loans but instead varies widely across categories and maturities. While for loans to non-financial corporation the distribution is centered on 2008 for both regime and level shifts, it is less so for loans for house purchase, with

high frequency on later years but clear dominance of crisis years. This also holds for long-term consumption loans, but for shorter maturities the frequency is distributed over the whole range of years, with shifts found in both pre and post-crisis periods. This points out that the arbitrary choice of September 2008 may not be optimal.

When comparing evidence for cointegration across categories and maturity rates, it can be seen that the first category performs the best, with cointegration found in majority of cases across all maturities, while for the other two categories the cointegration is found a bit less often. In addition to this, cointegration seems to be found more often for loans with shorter maturities. The following Table 2 illustrates this point.

Table 2 % of cointegrated series (GH)

Category	Maturity	% cointegrated
Loans for consumption to households and non profits serving households	1 to 5	66.7%
	over 5	62.5%
	up to 1	66.7%
Loans for house purchase to households and non profits serving households	1 to 5	53.8%
	over 5	30.8%
	up to 1	41.7%
Total loans to non financial corporations	1 to 5	38.5%
	over 5	28.6%
	up to 1	63.6%

Note: Table gives the % time series that were found to be cointegrated by at least 1 test statistics (zt/za/adf) in at least 1 type of shift (level/regime) at 10% significance level or lower

As already noted, the coefficient on interacted term allows us to see impact of crisis on the speed of adjustment in case of disequilibrium. Its positive sign implies deterioration (or slowing down) in adjustment while negative sign implies improvement and 0 coefficient no change in the speed of adjustment.

Overall, there are 7 cases of improvement in the speed of IRPT and 14 slow-downs when considering regime shifts and 6 improvements and 20 slow-downs when considering level shifts. For regime shifts the changes occur mostly in the first category of loans and this also holds for improvements in the speed when levels are considered.

However, deterioration in the speed of adjustment occur across all loans categories for level shifts.

Turning now to the long-run relationships, we will discuss evidence on level and regime shifts in more detail. First of all, we expect positive sign of EONIA coefficient, implying that increase/decrease of EONIA is followed by the movement of retail rate in the same direction. The coefficient equal to 1 indicates full pass-through, while coefficient lower than 1 implies only partial pass-through. The coefficients on dummy and interaction term indicate the effects of financial crisis on the IRPT, with negative sign for interaction term and positive coefficient for dummy variable indicating worsening of the transmission in the long-run and vice-versa for improvement.

The following table (Table 3) summarizes the results of estimating long-term relationships by plotting the number of time series fulfilling the basic criteria (cointegration and sign restrictions on coefficients), where for each variable we count equation estimated using zt za or adf statistics from Gregory-Hansen procedure as separate case.

Table 3 Categorization of long-term relationships

Category	Maturity	Regime				Level	
		1	2	3	4	1	4
1st cat	1 to 5	7	6	3	0	11	3
	over 5	4	1	0	4	5	4
	up to 1	6	1	3	3	8	10
2nd cat	1 to 5	2	2	0	0	4	3
	over 5	0	3	0	1	2	1
	up to 1	2	1	0	2	5	8
3rd cat	1 to 5	6	3	0	2	14	0
	over 5	2	0	0	3	5	0
	up to 1	9	9	0	8	16	8
Total		38	26	6	23	70	37

Where 1-4 indicate the category based on the coefficient signs as follows:

Table 4 Definitions of categories

REGIME			
	Dummy	Interaction	Meaning
1	+	-	Worsening in IRPT
2	+	+	increased spread, IRPT more complete
3	-	-	decreased spread, IRPT less complete
4	-	+	improvement in IRPT
LEVEL			
	Dummy	Interaction	Meaning
1	+	-	worsening in IRPT
4	-	+	improvement in IRPT

Thus, while cases 1 and 4 are border cases, 2 and 3 are intermediate in the sense that it cannot be said whether effect of crisis on the IRPT was positive or negative overall.

In the case of regime shifts, it seems that the case 1 and thus the deterioration slightly prevails relative to case 4 when loans of short and medium term maturities are taken into account. However, many time series also exhibit improvement or intermediate cases. Actually the second most common case overall, after deterioration, is the case 2 which represents increased spread but higher pass through. This is in accordance with the intuition we got from the initial plots of interest rate series and in these cases while monetary policy introduced improved the degree of pass-through (actually to higher levels than before crisis), it failed to correct the spread between market and policy rates, which can be probably attributed to high risks still present in the economy and problems of financial sector in many countries.

For level shifts we only have border cases and here the deterioration clearly dominates the improvement, especially for longer maturities. This again suggests that the financial crisis deteriorated the pass-through and the policies have not so far managed to correct it. Note that in case of level shifts we in fact only allow for spread changes, and thus informally speaking the category 1 contains both category 1 and 2 for regime shifts. The results are thus consistent for the two specifications.

The point of deteriorating pass-through is illustrated in Chart 4 and 5 on the case of Austria. The first figure shows the actual development of interest rates (first category of loans, maturity 1-5 years) against the fitted interest rates, that is interest rates that would prevail after August 2008 (identified as the time of structural break for Austria) should

the IRPT remain unchanged. As can be seen the interest rate would fall substantially lower than they did, implying easier stance of monetary policy for the country. The second figure shows the fitted and actual month-on-month differences in interest rates (the fitted values are calculated using the real values of Austria rates for disequilibrium measure or in other words they show given the actual values from last month, what change in interest rate would be predicted by pre-crisis relationship for this month). As can be seen, for each year the pre-crisis relationship indicated need for interest rate decrease, but the actual interest rates did not follow this rule. Moreover, we can see the substantial variability in month-to-month changes, which probably can be attributed to increased uncertainty and frequent changes in economic outlook.

Chart 5 Actual and fitted interest rates, Austria, 1st category, maturity 1-5 years

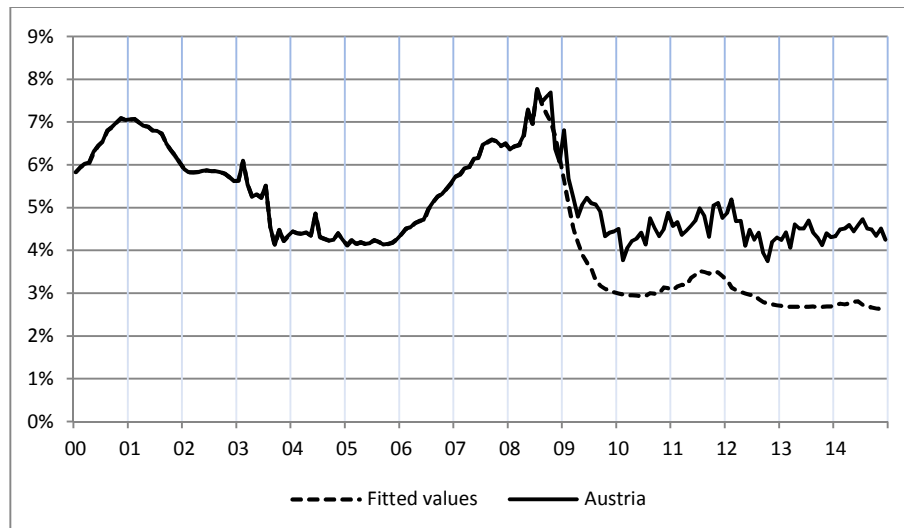
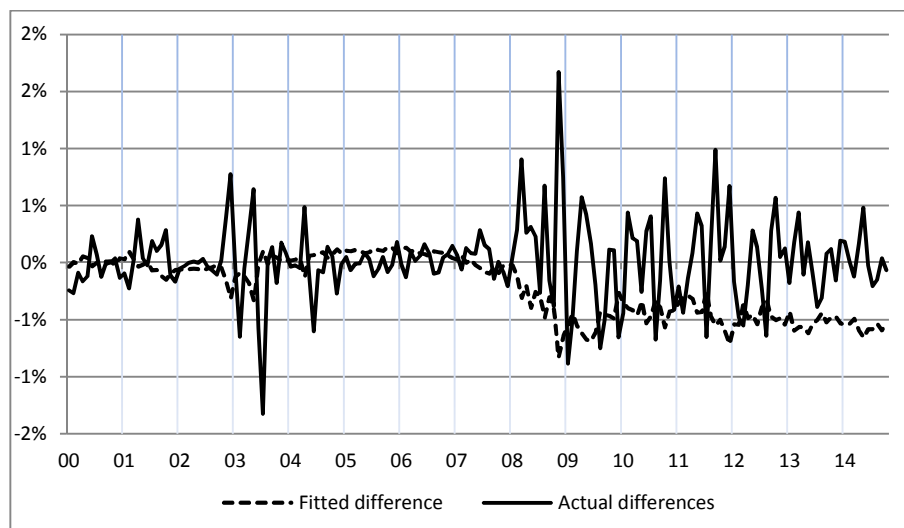


Chart 6 Actual and predicted m-o-m changes in interest rate Austria, 1st loan category, maturity 1-5 years



In order to assess the presence of interest-rate stickiness the tables below (Table 5 and 6) plot summary statistics for long run coefficients of cointegrated series. The results indicate that indeed market rates adjust less than proportionally to EONIA and that individual characteristics of long-run pass through relationships as measured by coefficients vary widely within our sample.

Table 5 Summary statistics of long-run coefficients, regime shifts

Regime Shifts								
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za
Average	0.587	2.065	-0.078	4.901	0.562	1.261	0.401	4.599
Max	1.241	16.236	2.27	10.229	1.241	16.236	10.456	10.213
Min	-0.182	-3.343	-2.318	0.529	-0.588	-3.343	-2.011	0.529
St Dev	0.378	4.75	1.131	2.986	0.448	3.542	1.887	2.674

Regime Shifts			
	Dummy_adf	Interac~f	const_adf
Average	2.137	0.865	5.624
Max	15.211	10.456	10.071
Min	-3.343	-1.546	0.547
St Dev	4.346	2.56	2.78

Table 6 Summary statistics of long-run coefficients, level shifts

Level Shifts									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
Average	0.427	1.447	5.080	0.529	1.171	4.392	0.355	1.599	5.480
Max	1.053	17.819	11.879	1.245	17.819	12.146	1.032	16.391	11.865
Min	-1.706	-7.762	1.321	-1.706	-7.762	0.504	-1.702	-6.707	1.321
St Dev	0.569	4.424	3.006	0.508	3.653	3.025	0.566	4.247	2.925

Dynamic OLS

The cointegration results are reported in Tables 31.1-33.3 while long-term coefficients and associated p-values can be found in Tables 34.1-36.3 in Appendix C.

The results indicate that most of the retail interest rates are cointegrated with EONIA, implying an existence of long-term relationship between the two variables. Overall, almost $\frac{3}{4}$ of series are cointegrated with EONIA.

The % for individual categories and maturities are as follows:

Table 7 % of cointegrated series (DOLS)

% of series that are cointegrated			
Cat/Mat	1 to 5	>5	<1
1st cat	91.7%	87.5%	86.7%
2nd cat	62.5%	47.1%	69.2%
3rd cat	75.0%	70.6%	80.0%

As the table illustrates, the % for the latter two categories decreases with maturity, while for the first category it is highest for medium-term loans, followed by long term loans and it is the lowest for short term loans (note, however, that for this class of loans we have the smallest number of time series available, especially for long-term loans we have only 8 while in other two categories we have 18 and this low number can distort our results).

The following Table 8 contains means of long-term coefficients for various loan categories and maturities, when only those time series that were found to be cointegrated with EONIA are taken into account (for the first loan category, maturity 1-5 years for Dummy mean, Latvia was excluded since the coefficient was abnormally high, 19.5).

Table 8 Long-run coefficient means (DOLS)

EONIA			
	1 to 5	>5	<1
1st cat	0.47	0.42	0.60
2nd cat	0.70	0.81	0.73
3rd cat	0.91	0.78	0.73
Dummy			
1st cat	0.93	1.10	1.79
2nd cat	0.98	0.70	1.06
3rd cat	1.02	0.37	0.86
const			
1st cat	5.97	6.14	5.58
2nd cat	2.99	2.21	3.48
3rd cat	2.43	2.78	2.79

The result indicate that the 3rd loan category performs best in terms of pass-through, since for maturities up to 1 year it enjoys the highest degree of IRPT (together with 2nd category), lowest pre-crisis spread with respect to EONIA and also lowest adverse effect of financial crisis on spread size. Similar conclusions hold for maturity between 1 and 5 years (although here the effect of crisis is approximately equal to that for 2nd category) and it also performs best in terms of crisis effect when maturity over 5 years is taken into account, although here the 2nd loan category has lower spread and equal degree of pass-through.

The worst performing, on the other hand, is the 1st category which exhibits the lowest average degree of pass-through, the highest spread and the worst impact of the financial crisis on spread size.

One of the possible explanation of this phenomenon may be the extent to which counterparties have access to alternative financing. Event though the European economy is highly bank-dependent, the non-financial corporations still have access to alternative sources of funding, such as bond and equity markets, to a much larger extent than households do. This leads to higher competition in credit markets for corporations than to households, which can in turn drive interest rate spreads down and mitigate the adverse impact of crisis on spread. It can also cause the policy rates to propagate more fully to lending rates.

In addition to this, the consumption loans tend to be more risky, since they are not backed by any collateral (in contrast to loans for house purchase) or complemented by borrower's own funds which would ensure coincidence of interest of lenders and borrowers and hence provide borrowers with the correct incentives and reduce moral hazard (in contrast to loans to non-financial corporations). This may lead to higher spread as well as higher sensitivity to market developments, especially in times of adverse developments in terms of risk and uncertainty.

It is difficult to compare individual categories along similar lines, sine no such clear pattern emerges. Pass-through is most complete in medium term loans for 3rd category, long-term loans for second and short-term loans for the first category, the short-term

loans seem to be most adversely affected ones by crisis in second and first loan category and appear to have the highest average spread in the last two categories.

One of the possible causes of relatively clear results when comparing individual loan categories on one hand, and unclear outcomes when looking at various maturities on the other, may be that the characteristics of long-run relationships between retail rates and EONIA are determined to a larger extent by loan type rather than its maturity.

But what is evident from the table above (and confirmed by inspecting the individual estimates) is that maybe apart from the medium term loans to non-financial corporations the pass through is incomplete, which is consistent with our finding in the previous section.

As was already noted the effect of financial crisis on IRPT can be judged by the size and significance of Dummy coefficient. Based on our results in Tables 34.1-36.3 we can see that in most cases the dummy variable is significant and has positive sign, implying that the financial crisis significantly increased the spread between market and central bank rates. There are some exception to this, for example in the first category of loans the spread actually decreased across all maturities in Germany, and for short-term and medium-term loans in Italy. Both of these countries had very high spreads relative to other prior to the crisis.

While the cointegration was found in majority of cases, it is worth comparing categories with each other. In this respect, we can see that for the second category of loans, i.e. loans for house purchase, the relationship between EONIA and market rates is found much less often than in other two categories (it has more TS that are not cointegrated, and even those that are cointegrated quite few have counterintuitive signs or p-value above 0.1 for EONIA). This would imply that while the ECB policy rate can influence market rates in the first and third markets, in many countries lending rates for house purchase are decoupled from it. One of the possible explanations is that the market for housing is relatively unique over this period, since it exhibited boom prior to crisis, followed by a substantial bust. Thus, banks' pricing of loans may have been driven mainly by other factors (for example expectations of rising prices prior to 2008 and pessimistic expectations regarding the market afterwards). However, this interpretation is questionable when individual countries are assessed, since some with large boom and bust cycles are cointegrated, for example Ireland and Spain. The counterargument can

be that due to the severity of bust and importance of real estate market for the whole economy, specific policies were undertaken in these countries to correct this, while in other countries housing market might have been left on its own to adjust.

The following matrix contains the summary statistics on long run coefficients (again, only cointegrated series are considered).

Table 9 Summary statistics for long-run coefficients (DOLS)

		1 to 5 years			Over 5 years			Up to 1 year		
		EONIA	Dummy	const	EONIA	Dummy	const	EONIA	Dummy	const
1st category	Mean	0.461	0.930	6.092	0.424	1.097	6.135	0.727	1.056	3.481
	Max	0.977	2.712	9.550	0.755	3.406	8.567	1.473	5.967	6.501
	Min	-0.212	-1.205	2.420	0.083	-0.617	3.100	-0.306	-2.310	1.330
	St dev	0.342	1.334	2.350	0.273	1.376	1.838	0.624	2.219	1.763
2nd category	Mean	0.704	0.979	2.992	0.814	0.702	2.209	0.727	1.056	3.481
	Max	1.391	5.212	5.906	1.307	2.185	3.055	1.473	5.967	6.501
	Min	-0.097	-1.478	0.042	0.473	-0.129	1.144	-0.306	-2.310	1.330
	St dev	0.481	1.735	1.590	0.234	0.856	0.718	0.624	2.219	1.763
3rd category	Mean	0.908	1.025	2.429	0.783	0.373	2.775	0.730	0.864	2.793
	Max	2.089	2.837	4.137	1.425	2.544	4.362	1.450	2.401	5.270
	Min	0.439	-0.689	1.172	0.205	-0.835	1.480	0.320	-0.201	1.357
	St dev	0.421	1.083	0.945	0.325	0.886	0.989	0.290	0.795	1.079

Note: Latvia was deleted as an outlier from the first loan category and medium maturity type

As can be seen even for the same category of loans and maturity type, we can get very different results depending on which country we select for our analysis, since both standard deviation and man-mix ranges of individual coefficient estimates are substantial. This points to a large cross-country heterogeneity in the long-run pass through mechanism, which is again consistent with results obtained when applying Gregory-Hansen procedure.

Toda-Yamamoto Granger causality test

The results of the test can be found in Tables 37.1-39.3 in Appendix D and are as follows: the two-way Granger causality could not be rejected in 38 cases, while 1 way causality assumption seems to hold in 66 cases. In 22 cases no causality was found at all and in two cases the causality seems to run only from market interest rates to EONIA, which seems highly implausible (especially since these two cases are Slovakia and

Latvia). (The reason why these 2 result might arise is high number of lags when compared to sample size).

Given this, the approach will be following: for 66 series for which our relationship holds we will stick to the conclusions made by the previous tests, while for the 38 series where two-way causality was found we will perform Johansen test and estimate a vector error-correction model.

Johansen test & VECM

First of all, Johansen test confirms the existence of cointegration for all variables concerned apart from Belgium (1st category, long-term loans), Finland (2nd category, long-term loans), Latvia (3rd category, long-term loans) and Belgium (3rd category, short-term loans). In these cases the rank of long-run matrix is two, which would imply stationarity of variables. This contradicts our previous results from unit root testing and thus while we report VECM results for these series, they should be taken into account with caution.

When considering the specifically to the short-term adjustment coefficients from vector error-correction model (vectors α), which are reported in Tables 40.1-42.3 in Appendix E, for the proper adjustments towards the equilibrium to take place we expect them to have opposite signs in the two equations (if they are both significant). We can see that this requirement is fulfilled here. Note, however, that while this requirement is straightforward from the modelling point of view, it is less so from the economic one (which one should be positive?).

The significance levels indicate that market interest rates actually do not react significantly to the disequilibrium, while EONIA does (and we have already provided reasons why it may be the case). However, while market interest rates do not react to disequilibrium, the coefficients on changes in EONIA (not reported) are statistically significant. This would mean that market interest rates follow the changes in policy rates but do not correct the existing disequilibria.

While this outcome may appear counterintuitive at the first glance, in fact it may not be so. The fact that bank lending rates are high relative to the policy rates (we focus on this cases as it prevailed during the period studied, as we have illustrated before), does not necessarily imply that bank should automatically decrease the rates charged, since they probably depend to a much larger extent on the characteristics of counterparties, for example their solvency, value of collateral, in case of corporate loans the projects themselves and other factors. Even more importantly, especially the longer-term loans the rates are highly dependent on the expected future values of these variables.

The disequilibrium relative to long-run levels is probably not very important determinant of these factors. On the other hand, decreases in policy rates themselves are, since they imply an easier stance of monetary policy and thus are associated with higher expected output growth, lower unemployment and possibly rising wages and asset prices (we have previously discussed how the changes in policy rates propagate through lending rates, however, these effects are likely to arise even without initial changes in market rates thanks to other channels of transmission, such as expectations or exchange rate channel).

Thus, it seems reasonable that lending rates decrease in response to decreases in policy rates, which are associated with better economic outlook rather than to disequilibria themselves.

Let us now turn to the cointegration vectors (Tables 43.1-45.3, Appendix E) describing long-term relationships between market rates and EONIA. We expect the sign on EONIA to be negative, since we expect positive relationship between EONIA and market rates. Following similar reasoning, negative sign of Dummy variable represents increased spread and thus worsening in the IRPT, while the opposite is true for positive coefficient.

As we can see the results clearly indicate significant increase in the spreads during the financial crisis, implying worsening in the IRPT. This supports our previous conclusions obtained from the univariate models. We also again obtain a large cross-country differences in individual estimates, which is in accordance with heterogeneity found before.

V. Conclusion

In our study we have applied a wide range of econometric techniques, including both univariate and multivariate models, for identifying and estimating the cointegration relationships, as well as the short-run adjustment processes to analyze relationship between lending rates and central bank policy rate before and after the financial crisis in the euro area. The dataset employed allows direct comparisons of estimation results both between countries and various maturity rates.

Our findings indicate that the financial crisis has adversely affected the interest rate pass-through and was reflected primarily in the increased spread between market and policy rates, rather than change in the adjustment speed or degree of IRPT, which can be probably attributed to higher risk and uncertainty, and that this development has not been corrected so far by policies implemented by the ECB.

When comparing different loan categories, we arrive to conclusion that loans to non-financial corporations perform the best in terms of market spread, completeness of pass-through and effects of financial crisis, while loans for consumption perform the worst. This may be caused by higher degree of competition in the former credit market and higher risk and uncertainty in the latter.

In addition to this, we find a limited evidence of long-run relationship between loans for house purchase and EONIA over the period studied, which can be caused by the unique developments in the property markets over this period, characterized by pre-crisis boom followed by post-crisis bust.

For more than quarter of the time series studied we find an evidence for the two-way Granger causality between retail and policy rates, which seems to reflect the accommodative policies carried out by ECB, which specifically focused on easing credit market conditions and improving transmission mechanism of monetary policy. Moreover, in the following analysis we have found that these retail rates react more to

changes in policy rate than to the existing disequilibria. One possible explanation for such behavior can be that current and expected overall economic performance matters more for retail interest rates than differences between the rates at which banks lend funds and the rate at which they can access funding from the central bank.

We have also found substantial cross-country heterogeneity in terms of spread, completeness of pass-through as well as effect of the financial crisis on IRPT. This points to the asymmetric effects of single monetary policy on individual member states and poses a problem for the monetary authorities, especially during the period in which monetary policy is highly countercyclical and accommodative, since it creates possibility for further divergence of economic performance of individual countries.

Last but not least, our estimates of the timing of shock to the IRPT suggest that while for non-financial corporations the shock seems to indeed occur mostly in September 2008, the shocks to loans for housing purchases as identified by alternative specifications and for various countries seem to be more dispersed, with many occurring even after this date and this is even more true for consumption loans. This indicates the possibility that even though the ECB acted aggressively to repair the transmission mechanism after the collapse of Lehman Brothers, it may have been too late for some countries and loan categories, and for even more of them it did not prevent more severe shocks to occur at later dates.

Our results also confirm the conclusions reached by previous studies about the incompleteness and sluggishness of the interest rate pass-through.

While our analysis sheds some light on the effects of financial crisis on the monetary transmission, there is still some room for its improvement. For example, econometric models can be modified to allow for asymmetric adjustment of market rates depending on the direction of change in the policy rate or more shocks can be taken into account, which would relax the assumption of occurrence of at most one shock which we have maintained throughout our study. Also, while we have estimated the effects of crisis, we have not made any formal analysis on the determinants of its impact in various countries, loan categories or maturity types and this also remains a topic for further research.

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Appendix A Engle-Granger method

Table 10.1-10.3 Cointegration, 1st loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

1-5 years		Over 5 years		Up to 1 year	
AustriaEuro	10	AustriaEuro	0	AustriaEuro	0
BelgiumEuro	0	BelgiumEuro	0	BelgiumEuro	0
GermanyEuro	0	GermanyEuro	0	GermanyEuro	0
SpainEuro	0	SpainEuro	0	EstoniaEuro	0
FinlandEuro	0	FranceEuro	0	SpainEuro	0
FranceEuro	0	GreeceGREuro	0	FinlandEuro	0
GreeceGREuro	5	ItalyEuro	0	FranceEuro	0
ItalyEuro	0	Euroareach~o	0	GreeceGREuro	0
LatviaEuro	0			IrelandEuro	0
LatviaLatv~s	0			ItalyEuro	0
PortugalEuro	0			Lithuanial~s	0
SloveniaEuro	10			LatviaEuro	0
Euroareach~o	0			PortugalEuro	0
				SloveniaEuro	0
				Euroareach~o	0

Table 11.1-11.3 Cointegration, 2nd loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

1-5 years		Over 5 years		Up to 1 year	
AustriaEuro	10	AustriaEuro	0	AustriaEuro	0
BelgiumEuro	0	BelgiumEuro	0	BelgiumEuro	0
CzechRepub~K	5	GermanyEuro	0	GermanyEuro	0
GermanyEuro	0	EstoniaEuro	0	EstoniaEuro	0
EstoniaEuro	0	SpainEuro	0	SpainEuro	0

SpainEuro	0	FinlandEuro	0	FinlandEuro	0
FinlandEuro	0	FranceEuro	0	FranceEuro	0
FranceEuro	0	GreeceGREuro	0	GreeceGREuro	0
GreeceGREuro	0	Hungaryfor~t	0	IrelandEuro	0
IrelandEuro	0	IrelandEuro	0	ItalyEuro	0
ItalyEuro	0	ItalyEuro	0	Lithuanial~s	0
LatviaEuro	0	LatviaEuro	0	Latvialats	0
Latvialats	0	Latvialats	0	Netherland~o	0
SloveniaEuro	0	PortugalEuro	10	Euroareach~o	0
SlovakiaEuro	0	SloveniaEuro	0		
Euroareach~o	0	SlovakiaEuro	0		
		Euroareach~o	0		

Table 12.1-12.3 Cointegration, 3rd loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

1-5 years		Over 5 years		Up to 1 year	
AustriaEuro	0	AustriaEuro	0	AustriaEuro	0
BelgiumEuro	0	BelgiumEuro	0	BelgiumEuro	10
GermanyEuro	0	GermanyEuro	0	Bulgarialev	0
EstoniaEuro	0	EstoniaEuro	10	CzechRepub~K	0
SpainEuro	0	SpainEuro	0	GermanyEuro	0
FinlandEuro	0	FinlandEuro	0	EstoniaEuro	0
FranceEuro	0	FranceEuro	0	SpainEuro	0
GreeceGREuro	0	GreeceGREuro	0	FinlandEuro	0
IrelandEuro	0	IrelandEuro	0	FranceEuro	0
ItalyEuro	0	ItalyEuro	0	IrelandEuro	0
Lithuanial~s	0	LithuaniaL~s	0	ItalyEuro	0
LatviaEuro	0	LatviaEuro	0	Lithuanial~s	0
Latvialats	0	LatviaLatv~s	0	LatviaEuro	0
Netherland~o	0	Netherland~o	0	Latvialats	0
SloveniaEuro	0	SloveniaEuro	0	SloveniaEuro	0
SlovakiaEuro	0	SlovakiaEuro	0	SlovakiaEuro	5
Euroareach~o	0	Euroareach~o	0	Euroareach~o	0

Appendix B Gregory-Hansen procedure

Table 13.1-13.3 Shift dates, 1st loan category

Notes:

- Dates are in the form MM-YY
- *, ** and *** denote 10%, 5% and 1% significance of cointegration respectively

Maturity 1 to 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	5-08***	11-08***	1-08***	8-08***	5-08***	6-08***
BelgiumEuro	5-10	12-08	9-12	6-13	12-09	9-12
GermanyEuro	12-05**	2-06**	5-05**	2-05***	2-06***	8-05***
SpainEuro	2-11	12-10	11-09*	7-11**	7-11**	1-09
FinlandEuro	12-10	2-11	1-09	2-11**	2-11**	12-09*
FranceEuro	6-04	1-03*	5-12	1-03	7-03	10-04
GreeceGREuro	3-06***	2-06***	2-06***	3-11***	12-03***	2-02**
ItalyEuro	11-09***	1-10***	2-10***	1-10**	1-05**	11-10**
LatviaEuro	1-09***	1-09***	2-09**	9-09***	9-09***	9-08***
LatviaLatv~s	1-09***	9-09***	2-09**	9-08	9-08	3-08
PortugalEuro	9-07***	5-07***	3-08***	1-07***	1-07***	8-08***
SloveniaEuro	5-08***	12-07***	6-06***	12-06***	12-06***	7-07***
Euroareach~o	12-04	12-04	12-04	12-03**	12-03**	12-03

Maturity over 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	11-08***	7-08***	7-09***	7-08***	7-08***	7-08***
BelgiumEuro	7-10	12-09	5-10	12-09**	12-09**	9-10**
GermanyEuro	12-10***	6-11***	6-09***	9-12***	9-12***	9-12***
SpainEuro	6-08***	6-08***	6-08***	9-08***	9-08***	9-08***
FranceEuro	7-11	10-11	2-12	9-03	10-02	2-03
GreeceGREuro	9-12***	11-12***	11-13***	2-12***	2-12***	2-13***
ItalyEuro	2-11*	11-10	9-09	9-11**	9-11**	2-11**
Euroareach~o	11-08***	12-07***	12-11***	12-11***	12-11***	12-11***

Maturity up to 1 year						
	reg_zt	reg_zα	reg_αdf	lev_zt	lev_zα	lev_αdf
AustriaEuro	6-08**	9-08**	9-07	9-08***	9-08***	9-08***
BelgiumEuro	9-13***	12-12***	4-13***	8-13***	8-13***	7-13***
GermanyEuro	1-10***	8-10***	5-10***	7-12**	8-12**	5-08
SpainEuro	7-10	7-10	8-10	7-10***	7-10***	9-10***
FinlandEuro	7-10***	12-09***	12-07***	11-10***	12-09***	12-09***
FranceEuro	11-02	1-03	2-03	8-02	8-03	8-03
GreeceGREuro	1-08*	1-08*	2-08*	3-08***	9-08***	4-08***
ItalyEuro	5-05***	5-05***	12-05***	2-09***	2-03***	12-02**
LatviaEuro	5-10***	6-10***	6-13***	6-12***	6-12***	6-13***
LatviaLatv~s	6-10***	7-10***	8-10***	8-10***	8-10***	8-10***
PortugalEuro	7-07	2-07	3-07	2-07***	2-07***	3-07***
SloveniaEuro	2-13	11-13	2-13	4-13	4-13	11-13
Euroareach~o	10-10	2-10	7-05	1-11*	10-11*	5-02
AustriaEuro	5-08***	7-08***	3-07**	7-08***	7-07***	3-06***
BelgiumEuro	7-10	12-09	12-05***	12-09	12-09	12-02

Table 14.1-14.3 Shift dates, 2nd loan category

Notes:

- Dates are in the form MM-YY
- *, ** and *** denote 10%, 5% and 1% significance of cointegration respectively

Maturity 1 to 5 years						
	reg_zt	reg_zα	reg_αdf	lev_zt	lev_zα	lev_αdf
AustriaEuro	9-06	9-06	9-06	8-08	8-08	8-08
BelgiumEuro	9-11	2-10	6-10	2-09	11-08	3-08
CzechRepub~K	2-10**	10-05*	8-12**	2-10**	2-09**	5-12**
GermanyEuro	9-11	4-10*	6-10*	11-11	11-11	5-12
EstoniaEuro	3-09	3-08	4-08	2-07	3-08	4-08
SpainEuro	10-10	7-10	3-09	4-11	8-11	8-11
FinlandEuro	6-08*	8-08**	6-08*	11-07	7-08	6-08
FranceEuro	12-09	1-10	6-10	12-09	10-04	6-12
GreeceGREuro	1-05	1-05	4-05	1-05	1-05	4-05
IrelandEuro	1-11*	8-11***	9-11***	8-11***	8-11***	9-11***
ItalyEuro	5-08	7-08	7-08	5-08	7-08	7-08
Lithuanial~s	5-08	11-08***	9-11	5-08	5-08	6-08
LatviaEuro	11-08***	11-08***	12-08***	7-08	7-08	8-08
Latvialats	9-07	12-10	6-10	11-07	12-10	7-10
Netherland~o	5-12	7-08	3-08	3-12	2-13	7-12
SloveniaEuro	3-08	8-08**	6-08	5-08	6-08	4-08
SlovakiaEuro	12-08**	11-08***	1-09***	11-08***	11-08***	1-07**
Euroareach~o	9-11	1-10	5-10	11-11	11-11	8-12

Maturity over 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	8-11	3-10	3-10	8-11	11-11	9-11
BelgiumEuro	8-11	4-10	3-12	5-13	5-13	2-13
GermanyEuro	5-09	5-09	4-09	7-12	2-09	6-12
EstoniaEuro	4-08	10-08***	4-08	4-08	4-08	4-08
SpainEuro	5-11	5-08	4-08	8-11	3-08	3-08
FinlandEuro	11-07	8-08**	5-08	9-10	6-08	3-08
FranceEuro	2-09*	1-06	5-09	2-09	2-05	8-05
GreeceGREuro	5-09	6-09	5-09	5-11	3-10	4-11
Hungaryfo~nt	5-09	5-09	4-09	2-13	9-05	12-12
IrelandEuro	3-09	3-09	1-09	12-06*	11-08	8-06
ItalyEuro	3-08	8-08	4-08	8-11	8-11	9-11
Lithuanial~s	9-11	5-08	9-11	11-07	4-08	4-08
LatviaEuro	9-10	11-08	10-08	8-11	6-12	9-11
Latvialats	10-07	7-10	10-11	11-08	10-10	3-11
Netherland~o	11-06**	5-09**	8-12***	10-07	10-04	2-13**
PortugalEuro	4-08	8-08**	5-08	5-10	11-09	4-10
SloveniaEuro	3-08	8-08	5-08	3-08	6-08	4-08
SlovakiaEuro	8-11	1-09**	1-09**	4-13	7-08	6-08
Euroareach~o	1-07***	8-09	1-10	11-11	1-10	9-11

Maturity up to 1 year						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	6-08	9-08	9-08	12-11	12-11	9-11
BelgiumEuro	3-11	7-09	3-08**	3-11	5-08	3-08
GermanyEuro	9-10	7-10	5-10	11-11	8-10	9-11
EstoniaEuro	11-08***	11-08***	12-08***	8-08	11-08*	4-08
SpainEuro	2-13	2-13	2-13	2-13**	2-13**	2-13**
FinlandEuro	7-08**	8-08**	7-08**	7-08*	7-08*	7-08*
FranceEuro	2-10	1-10	1-11	1-11	1-11	1-13
GreeceGREuro	6-05	12-05	4-05	5-05*	5-05*	4-05
IrelandEuro	1-11**	8-11***	8-11***	8-11***	8-11***	8-11***
ItalyEuro	8-07*	8-07*	9-07*	1-08**	1-08**	9-07**
Lithuanial~s	6-10	6-10	2-10	6-10	6-10	2-10*
Latvialats	6-10***	6-10***	9-10***	6-10***	6-10***	9-10***
Netherland~o	12-08**	12-08**	10-08**	7-08*	7-08*	8-08*
Euroareach~o	5-08	5-08	5-08	7-11	12-09	9-11

Table 15.1-15.3 Shift dates, 3rd loan category

Notes:

- Dates are in the form MM-YY

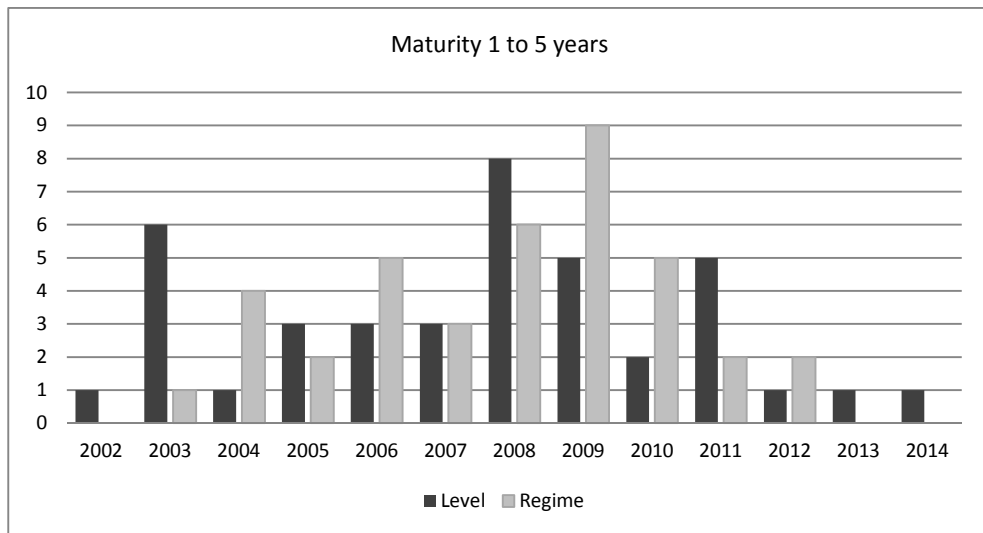
- *, ** and *** denote 10%, 5% and 1% significance of cointegration respectively

Maturity 1 to 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	7-08	8-08	6-08	6-09	10-04	11-09
BelgiumEuro	10-08**	10-08**	7-08*	11-08**	11-08**	10-08**
GermanyEuro	11-08	11-08	12-08	1-13	1-13	1-13
EstoniaEuro	5-08	10-08**	5-08	5-08	6-08	3-08
SpainEuro	1-08	1-08	2-08	6-08	7-08	7-08
FinlandEuro	11-08***	11-08***	9-08**	6-08*	7-08**	3-08
FranceEuro	11-08**	11-08**	8-08	11-12	10-12	10-12
GreeceGREuro	1-11	1-11	12-10	9-11**	8-11**	8-11**
Hungaryfo~nt	6-08	7-08	7-08	11-07	6-08	1-08
IrelandEuro	4-09	1-09	2-09	3-12	2-12	2-12
ItalyEuro	3-08	5-08	4-08	3-08	5-08	4-08
Lithuanial~s	7-08	8-08	7-08	7-08	5-12	7-08
LatviaEuro	9-07	6-10	8-10	4-08	6-10	8-10
Latvialats	11-07*	10-04***	11-07*	10-04	10-04	11-04
Netherland~o	12-08***	12-08***	12-08***	11-08***	11-08***	12-08***
PortugalEuro	1-09	11-08**	11-07	11-08***	11-08***	11-08***
SloveniaEuro	1-08	6-08	3-08	1-08	6-08	3-08

Maturity over 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	6-08	8-08	7-08	2-13	11-09	9-11
BelgiumEuro	7-13	5-10	5-10	7-13	11-08	8-13
GermanyEuro	5-09	6-09	5-09	11-11	4-09	9-11
EstoniaEuro	3-08	10-08***	3-08	3-08	5-08	4-08
SpainEuro	3-08	6-08	3-08	5-08	6-08	3-08
FinlandEuro	5-08	8-08**	4-08	5-08	5-08	3-08
FranceEuro	12-09	12-09	4-08	12-09	12-09	10-11
GreeceGREuro	1-11	9-11	10-10	1-11	1-11	10-10
IrelandEuro	11-07	7-08*	6-07**	11-07	6-08*	6-08*
ItalyEuro	3-08	5-08	4-08	3-08	5-08	4-08
Lithuanial~s	11-07	5-08	3-08	11-07	5-08	3-08
LatviaEuro	7-08*	8-08*	9-08*	7-12	6-12	11-12
LatviaLatv~s	9-07	6-10	6-10	9-07	6-10	5-10
Netherland~o	11-07***	5-09	5-09	5-09	3-05	5-09
PortugalEuro	6-09	3-08	4-08	3-08	3-08	4-08
SloveniaEuro	1-09	12-08	11-07	1-09	11-08	11-07
SlovakiaEuro	11-08***	11-08***	2-09	11-08***	11-08***	6-07*
Euroareach~o	5-08	7-08	4-08	9-10	12-04	9-11

Maturity up to 1 year						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	7-08**	8-08**	8-08**	1-08	7-08	7-08
BelgiumEuro	8-08***	8-08***	6-08***	7-08***	7-08***	5-08***
GermanyEuro	11-08	11-08	1-09	5-12	5-12	2-13
EstoniaEuro	2-11	12-08*	12-08	4-12	4-12	5-12
SpainEuro	1-09***	1-09***	2-09	7-08	7-08	1-08
FinlandEuro	12-07	6-08***	12-07***	12-07*	6-08*	12-07*
FranceEuro	11-08	11-08	8-08	7-08	7-08	10-12
IrelandEuro	12-11*	8-11**	8-11*	8-11**	8-11**	8-11**
ItalyEuro	2-12***	2-12***	3-12***	4-12*	2-12*	3-12*
Lithuanial~s	5-08*	11-08	3-08	5-08	5-08	3-08
LatviaEuro	9-08	11-08	7-08	8-08	8-08	9-12
Latvialats	5-10	4-10	4-10	5-10	4-10	4-10
Netherland~o	11-08	11-08**	9-12	5-12	5-12	9-12
SloveniaEuro	1-08***	4-08***	1-08**	11-08***	11-08***	12-08**
SlovakiaEuro	1-08	12-07	12-07	11-08*	11-08*	11-08*
Euroareach~o	11-07***	1-08***	1-08*	11-07**	1-08**	1-08**

Chart 7.1-7.3 Distribution of shifts, 1st loan category



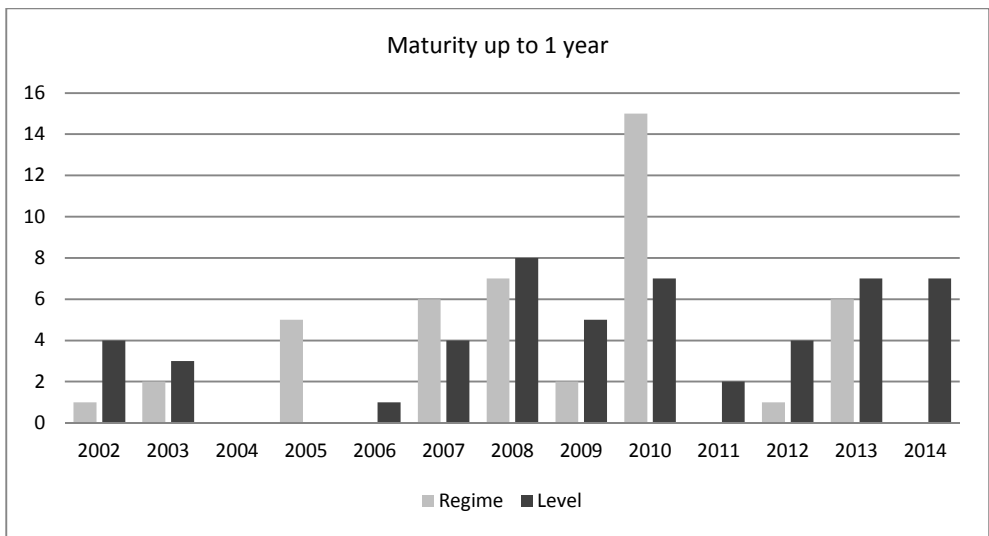
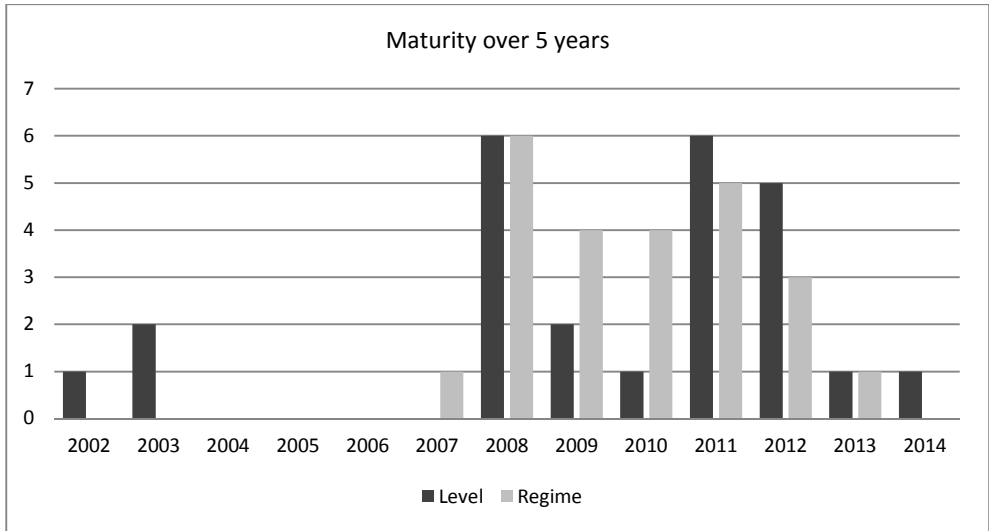
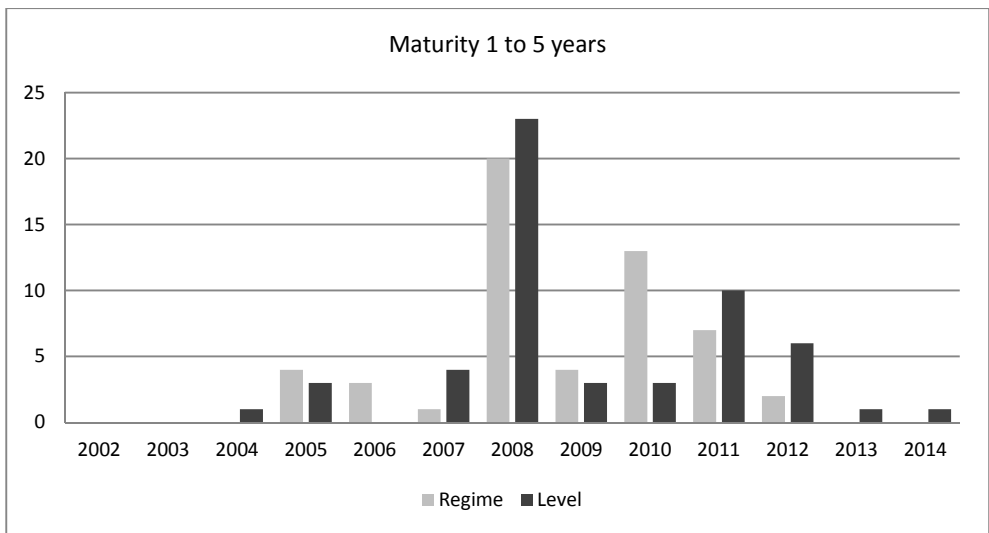


Chart 8.1-8.3 Distribution of shifts, 2nd loan category



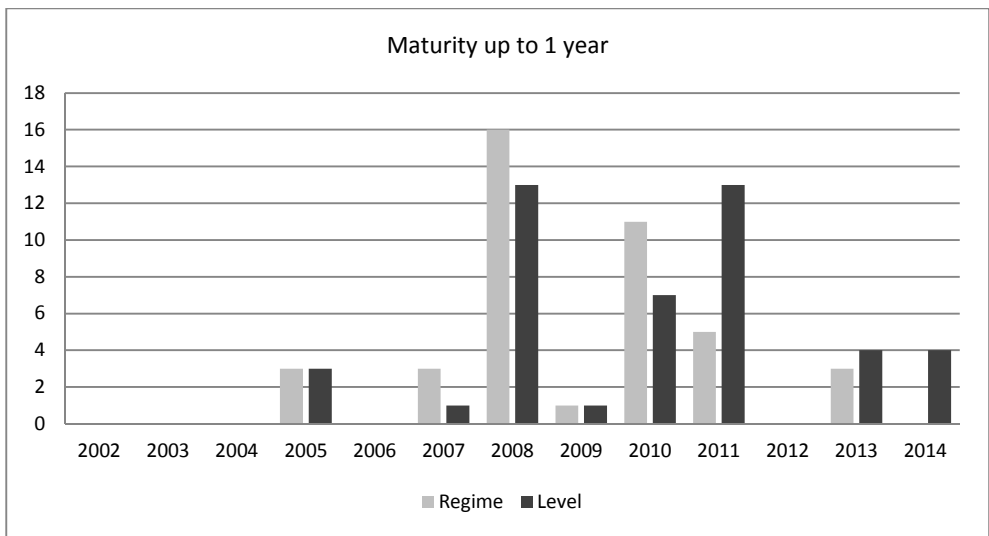
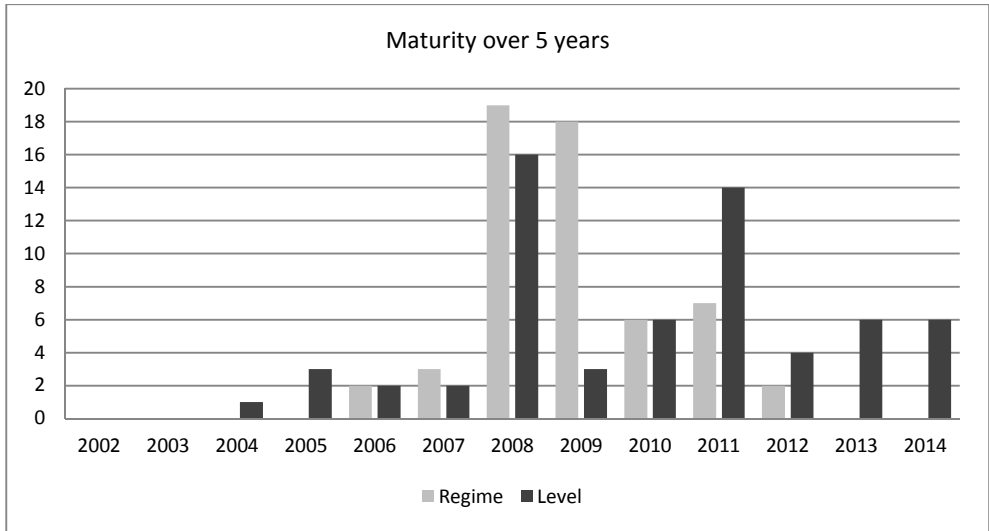
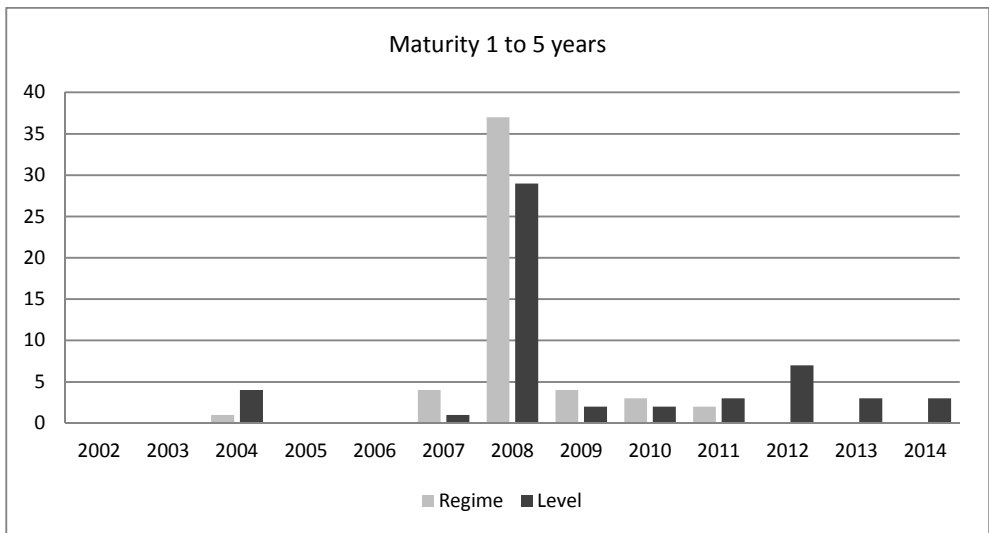


Chart 9.1-9.3 Distribution of shifts, 3rd loan category



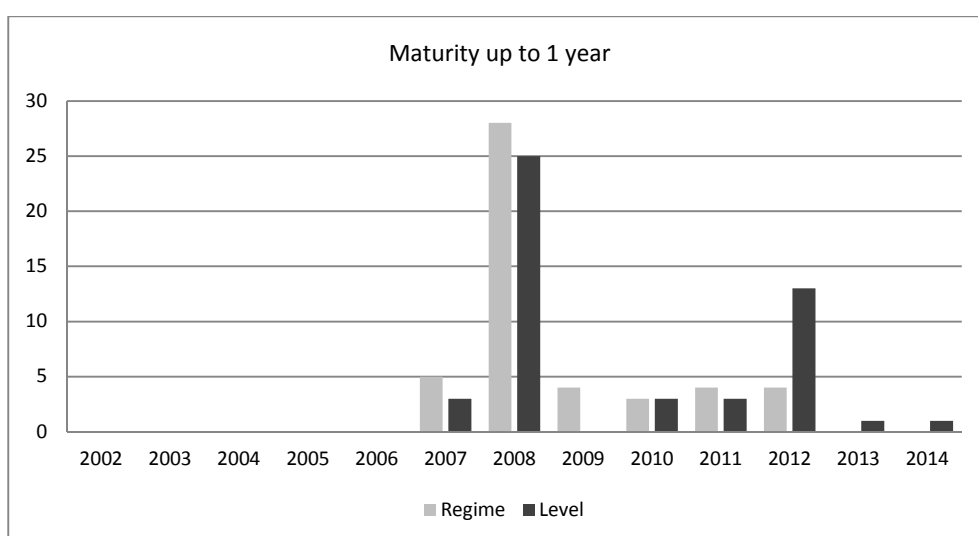
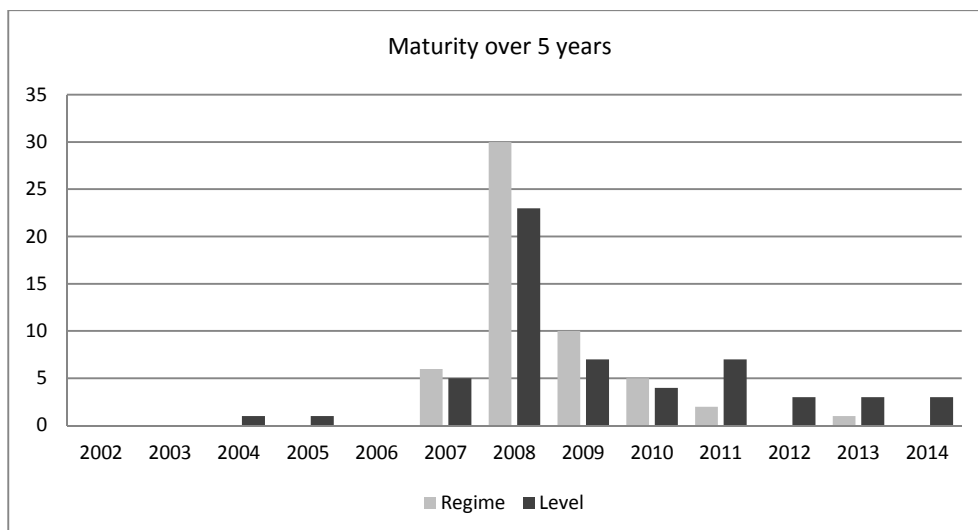


Table 16.1-16.3 Cointegration, 1st loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

Maturity 1 to 5 years						
	reg_zt	reg_za	reg_adf	lev_zt	lev_za	lev_adf
AustriaEuro	1	1	1	1	1	1
BelgiumEuro	0	0	0	0	0	0
GermanyEuro	10	5	10	5	5	5
SpainEuro	10	0	0	0	0	0
FinlandEuro	0	0	0	0	0	0

FranceEuro	0	0	0	0	0	0
GreeceGREuro	0	10	0	0	0	0
ItalyEuro	0	0	0	10	0	0
LatviaEuro	10	1	1	10	1	1
LatviaLatv~s	0	0	0	0	0	0
PortugalEuro	5	10	10	5	5	5
SloveniaEuro	0	1	1	10	1	1
Euroareach~o	0	0	0	0	0	0

Maturity over 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	0	1	1	0	1	1
BelgiumEuro	0	0	0	0	0	0
GermanyEuro	0	1	1	0	1	1
SpainEuro	1	1	1	1	1	1
FinlandEuro	1	1	1	1	1	1
FranceEuro	0	0	0	0	0	0
GreeceGREuro	5	1	5	1	1	1
ItalyEuro	0	0	0	0	0	0
Euroareach~o	0	1	1	0	1	1

Maturity up to 1 year						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	0	0	0	10	0	0
BelgiumEuro	1	1	1	1	1	1
GermanyEuro	10	0	0	0	0	0
EstoniaEuro	1	1	1	1	1	1
SpainEuro	0	0	0	10	10	10
FinlandEuro	0	0	0	0	0	0
FranceEuro	0	0	0	10	0	10
GreeceGREuro	0	1	0	0	5	0
IrelandEuro	0	1	1	0	1	1
ItalyEuro	1	1	1	1	1	1
LithuaniaL~s	0	1	1	5	1	1
LatviaEuro	0	0	0	0	0	0
PortugalEuro	0	0	0	0	0	0
SloveniaEuro	0	0	0	0	0	0
Euroareach~o	0	0	0	0	0	0

Table 17.1-17.3 Cointegration, 2nd loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected.

Maturity 1 to 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	0	1	0	0	1	0
BelgiumEuro	0	0	0	0	0	0
CzechRepub~K	5	0	0	5	0	0
GermanyEuro	0	10	0	0	0	0
EstoniaEuro	0	0	0	0	10	0
SpainEuro	0	0	0	0	0	0
FinlandEuro	0	0	0	0	0	0
FranceEuro	0	0	0	0	0	0
GreeceGREuro	0	0	0	0	0	0
IrelandEuro	10	0	0	5	5	0
ItalyEuro	0	0	0	0	0	0
LithuaniaL~s	0	0	0	0	0	0
LatviaEuro	5	5	10	0	0	0
LatviaLats	0	0	0	0	0	0
NetherlandsEuro	0	0	0	0	0	0
SloveniaEuro	0	10	0	0	5	0
SlovakiaEuro	0	0	0	0	5	5
EuroareaEuro	0	0	0	0	0	0

Maturity over 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	0	0	0	0	0	0
BelgiumEuro	0	0	0	0	0	0
GermanyEuro	0	0	0	0	0	0
EstoniaEuro	0	5	0	0	5	0
SpainEuro	0	5	0	0	5	0
FinlandEuro	0	0	0	0	0	0
FranceEuro	0	0	0	0	0	0
GreeceGREuro	0	0	0	0	0	0
HungaryEuro	0	0	0	0	0	0
IrelandEuro	0	0	0	0	0	0
ItalyEuro	0	0	0	0	0	0
LithuaniaL~s	0	0	0	0	0	0
LatviaEuro	0	0	0	0	0	0
LatviaLats	0	0	0	0	0	0
NetherlandsEuro	0	1	0	0	10	0
PortugalEuro	10	1	0	0	1	0

SloveniaEuro	0	0	0	0	0	0
SlovakiaEuro	0	0	0	0	0	0
Euroareach~o	0	0	0	0	0	0

Maturity up to 1 year						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	0	0	0	0	0	0
BelgiumEuro	0	5	0	0	1	0
GermanyEuro	0	0	0	0	0	0
EstoniaEuro	0	0	0	0	0	0
SpainEuro	0	1	10	1	5	10
FinlandEuro	0	0	0	0	0	0
FranceEuro	0	0	0	0	0	0
GreeceGREuro	0	0	0	10	0	0
IrelandEuro	5	0	0	5	5	5
ItalyEuro	0	0	0	0	0	0
Lithuanial~s	0	0	0	0	0	0
LatviaEuro	0	1	1	10	1	1
Latvialats	0	1	1	0	1	1
Netherland~o	0	0	0	10	10	10
SloveniaEuro	5	10	0	1	5	0
Euroareach~o	0	0	0	0	0	0

Table 18.1-18.3 Cointegration, 3rd loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

Maturity 1 to 5 years						
	reg_zt	reg_zs	reg_adf	lev_zt	lev_zs	lev_adf
AustriaEuro	0	0	0	0	0	0
BelgiumEuro	0	0	0	0	0	0
GermanyEuro	0	0	0	0	0	0
EstoniaEuro	0	0	0	0	0	0
SpainEuro	0	0	0	0	0	0
FinlandEuro	0	10	0	0	10	0
FranceEuro	0	0	0	0	0	0
GreeceGREuro	0	0	0	0	10	0
IrelandEuro	0	0	0	0	0	0
ItalyEuro	0	0	0	0	0	0
Lithuanial~s	0	0	0	0	0	0

LatviaEuro	0	10	0	0	0	0
LatviaLats	0	0	0	0	0	0
NetherlandsEuro	0	0	0	0	0	0
PortugalEuro	0	5	0	0	0	0
SloveniaEuro	0	0	0	5	5	0
SlovakiaEuro	0	10	0	5	5	10
EuroareaEuro	0	0	0	0	0	0

Maturity over 5 years						
	reg_zt	reg_za	reg_adf	lev_zt	lev_za	lev_adf
AustriaEuro	0	0	0	0	0	0
BelgiumEuro	0	0	0	0	0	0
GermanyEuro	0	0	0	0	0	0
EstoniaEuro	5	5	0	0	10	0
SpainEuro	0	0	0	0	10	0
FinlandEuro	0	0	0	0	0	0
FranceEuro	0	0	0	0	0	0
GreeceGREuro	0	0	0	0	0	0
IrelandEuro	0	0	0	0	0	0
ItalyEuro	0	0	0	0	0	0
LithuaniaEuro	0	0	0	0	10	0
LatviaEuro	0	0	0	0	0	0
LatviaLats	0	0	0	0	0	0
NetherlandsEuro	0	0	0	0	0	0
PortugalEuro	0	10	0	0	10	0
SloveniaEuro	0	0	0	0	0	0
SlovakiaEuro	0	0	0	0	0	0
EuroareaEuro	0	0	0	0	0	0

Maturity up to 1 year						
	reg_zt	reg_za	reg_adf	lev_zt	lev_za	lev_adf
AustriaEuro	0	0	0	0	10	0
BelgiumEuro	5	1	5	5	1	5
BulgariaEuro	0	0	0	0	0	0
CzechRepublicEuro	0	0	0	0	0	0
GermanyEuro	0	10	0	0	0	0
EstoniaEuro	0	0	0	10	10	10
SpainEuro	0	0	0	0	0	0
FinlandEuro	0	10	0	10	10	0
FranceEuro	0	0	0	0	0	0
GreeceGREuro	0	0	0	0	0	0

IrelandEuro	0	0	0	0	0	0
ItalyEuro	0	0	0	0	0	0
Lithuanial~s	0	0	0	0	0	0
LatviaEuro	0	10	10	0	0	0
LatviaLats	0	0	0	0	0	0
Netherland~o	0	0	0	0	0	0
PortugalEuro	0	0	0	0	0	0
SloveniaEuro	0	0	0	5	5	10
SlovakiaEuro	5	1	5	1	1	5
Euroareach~o	0	0	0	0	0	0

Table 19.1-19.3 Long-run coefficients, regime shifts, 1st loan category

Note: the stars indicate the significance of cointegration rather than that of variables (the method does not allow to draw inference on variables in long-run relationship). Thus, *** indicate that cointegration is statistically significant at 1% significance level, ** represents 5% level and * stand for 10%

Maturity 1-5 years, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	1.007***	1.914***	-0.235***	2.34***	1.007***	1.914***	-0.235***	2.34***	0.994***	1.918***	-0.305***	2.368***
BelgiumEuro	0.24	-1.15	0.35	6.72	0.12	-1.56	0.47	7.16	0.37	-0.82	1.50	6.19
GermanyEuro	0.242*	-0.652*	-0.102*	5.806*	0.242**	-0.652**	-0.102**	5.806**	0.222*	-0.731*	-0.079*	5.891*
SpainEuro	0.334*	2.815*	-1.286*	7.391*	0.33	2.82	-1.29	7.39	0.65	3.57	-2.03	6.29
FinlandEuro	0.72	2.54	-1.43	3.79	0.72	2.54	-1.43	3.79	0.76	2.42	-1.78	3.65
FranceEuro	0.55	0.12	-0.31	5.72	0.40	-0.45	-0.15	6.31	0.40	-0.41	2.41	5.80
GreeceGREuro	0.98	0.91	-0.94	7.88	0.952*	0.805*	-0.913*	7.988*	0.99	0.97	-0.95	7.82
ItalyEuro	-0.09	-0.84	-0.19	8.67	-0.05	-0.72	-0.23	8.55	-0.05	-0.72	-0.23	8.55
LatviaEuro	0.213*	16.236*	2.095*	6.733*	0.213***	16.236***	2.095***	6.733***	0.047***	15.211***	4.047***	7.291***
LatviaLatv~s	0.64	5.20	-0.28	15.87	0.64	5.20	-0.28	15.87	0.43	4.54	-0.27	16.58
PortugalEuro	0.135**	1.675**	0.037**	9.878**	0.135*	1.675*	0.037*	9.878*	0.189*	1.75*	0.084*	9.766*
SloveniaEuro	0.72	2.50	-0.46	4.56	0.719***	2.504***	-0.456***	4.555***	0.538***	2.117***	-0.459***	4.977***
Euroareach~o	0.31	-0.14	-0.12	6.25	0.31	-0.14	-0.12	6.25	0.32	-0.07	-0.14	6.18

Maturity over 5 years, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	0.73	0.988	-0.052	3.159	0.73***	0.988***	-0.052***	3.159***	0.726***	0.946***	0.019***	3.178***
BelgiumEuro	0.127	-1.912	0.286	9.522	0.127	-1.912	0.286	9.522	0.127	-1.912	0.286	9.522
GermanyEuro	0.141	-0.719	0.568	8.311	0.141***	-0.719***	0.568***	8.311***	0.064***	-0.917***	0.683***	8.581***
SpainEuro	0.75***	3.82***	-0.636***	5.537***	0.75***	3.82***	-0.636***	5.537***	0.75***	3.82***	-0.636***	5.537***
FinlandEuro	0.396***	3.546***	0.006***	4.151***	0.396***	3.546***	0.006***	4.151***	0.396***	3.546***	0.006***	4.151***

FranceEuro	0.295	-0.26	0.62	6.196	0.296	-0.462	2.249	6.191	0.271	-0.608	2.657	6.279
GreeceGREuro	-0.182**	-2.126**	1.355**	10.229**	0.177***	-2.165***	1.349***	10.213***	-0.127**	-2.17**	1.636**	10.071**
ItalyEuro	0.246	1.671	-0.597	7.006	0.26	1.703	-0.73	6.959	0.299	1.639	-0.953	6.84
Euroareach~o	0.15	-0.201	0.293	7.814	0.15***	-0.201***	0.293***	7.814***	0.146***	-0.358***	0.945***	7.834***

Maturity up to 1 year, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	0.69	0.894	-0.091	3.751	0.69	0.894	-0.091	3.751	0.687	0.926	-0.197	3.759
BelgiumEuro	0.286***	-1.268***	2.27***	5.903***	0.286***	-1.268***	2.27***	5.903***	0.286***	-1.268***	2.27***	5.903***
GermanyEuro	0.309*	0.358*	-2.318*	4.647*	0.303	0.337	-2.312	4.669	0.33	0.433	-2.339	4.576
EstoniaEuro	0.859***	11.827***	-1.275***	5.785***	0.843***	11.912***	-1.114***	5.841***	0.889***	11.649***	-1.546***	5.68***
SpainEuro	0.22	-1.939	-1.106	8.615	0.22	-1.939	-1.106	8.615	0.843	0.512	0.417	6.32
FinlandEuro	0.96	0.196	-0.437	3.3	0.99	0.33	-0.47	3.167	0.99	0.33	-0.47	3.167
FranceEuro	0.9	2.783	-0.388	3.392	0.9	2.783	-0.388	3.392	0.908	2.796	-0.384	3.375
GreeceGREuro	1.316	1.177	-1.379	7.336	1.219***	0.79***	-1.279***	7.731***	1.517	2.035	-1.574	6.486
IrelandEuro	0.633	2.873	-2.011	4.026	0.633***	2.873***	-2.011***	4.026***	0.303***	2.004***	0.592***	5.052***
ItalyEuro	0.373***	-3.343***	-0.496***	9.311***	0.373***	-3.343***	-0.496***	9.311***	0.373***	-3.343***	-0.496***	9.311***
LithuaniaL~s	-0.588	3.282	-0.113	8.434	-0.588***	3.282***	-0.113***	8.434***	-0.445***	3.613***	-0.241***	8.097***
LatviaEuro	-0.94	6.449	5.209	10.147	-0.94	6.449	5.209	10.147	-0.919	7.15	3.157	10.085
PortugalEuro	0.83	2.176	-1.172	5.921	0.825	2.162	-1.123	5.94	0.841	0.872	-0.692	6.503
SloveniaEuro	0.851	1.113	-0.163	3.674	0.821	1.051	-0.149	3.742	0.808	1.04	-0.184	3.771
Euroareach~o	0.188	-1.065	-0.668	6.59	0.188	-1.065	-0.668	6.59	0.06	-1.072	0.63	6.582

Table 20.1-20.3 Long-run coefficients, regime shifts, 2nd loan category

Note: the stars indicate the significance of cointegration rather than that of variables (the method does not allow to draw inference on variables in long-run relationship). Thus, *** indicate that cointegration is statistically significant at 1% significance level, ** represents 5% level and * stand for 10%

Maturity 1-5 years, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	-0.197	-1.343	0.453	4.132	-0.197***	-1.343***	0.453***	4.132***	-0.197	-1.343	0.453	4.132
BelgiumEuro	0.113	-0.68	0.54	4.16	0.012	-1.006	0.492	4.555	0.043	-0.921	0.46	4.44
CzechRepub~K	-0.004**	-0.478**	-0.066**	6.312**	-9.13	-19.659	9.232	25.477	0.119	-0.092	0.305	5.916
GermanyEuro	0.125	-1.139	0.881	4.257	0.037*	-1.345*	0.871*	4.543*	0.049	-1.33	0.858	4.504
EstoniaEuro	0.535	0.33	-0.62	3.932	0.667	0.757	-0.038	3.302	0.68	0.784	-0.042	3.272
SpainEuro	0.344	1.853	-1.138	4.336	0.365	1.898	-1.222	4.269	0.475	1.99	-1.398	3.926
FinlandEuro	0.774	-0.009	0.194	1.797	0.799	0.023	0.235	1.739	0.774	-0.009	0.194	1.797
FranceEuro	-0.089	-1.272	0.642	4.564	-0.076	-1.241	0.629	4.525	-0.037	-1.171	0.588	4.405

GreeceGREuro	0.561	-0.596	-0.24	4.905	0.561	-0.596	-0.24	4.905	0.671	-0.301	-0.353	4.602
IrelandEuro	0.752*	0.7*	-0.475*	2.451*	0.744	0.649	-0.228	2.475	0.743	0.629	-0.11	2.48
ItalyEuro	0.558	0.24	0.095	3.453	0.579	0.275	0.106	3.405	0.579	0.275	0.106	3.405
Lithuanial~s	1.012	2.11	-0.077	2.312	1.081	1.63	1.375	2.207	-0.01	-2.877	2.213	6.033
LatviaEuro	0.878**	1.231**	0.397**	3.051**	0.878**	1.231**	0.397**	3.051**	0.862*	1.109*	0.561*	3.123*
Latvialats	0.618	0.696	0.167	5.719	-0.15	-3.756	0.561	8.642	-0.381	-4.409	0.875	9.392
Netherland~o	0.218	-0.595	1.347	4.212	0.305	0.053	0.183	3.884	0.264	-0.015	0.16	3.977
SloveniaEuro	0.823	0.371	0.118	3.081	0.897*	0.494*	0.207*	2.894*	0.869	0.462	0.13	2.969
SlovakiaEuro	1.569	6.033	-0.921	-0.48	1.615	6.306	-1.207	-0.672	1.412	5.439	-0.698	0.093
Euroareach~o	0.198	-0.835	0.634	4.029	0.102	-1.054	0.604	4.339	0.125	-1.018	0.58	4.267

Maturity over 5 years, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	0.51	-1.039	0.815	3.435	0.369	-1.409	0.695	3.886	0.369	-1.409	0.695	3.886
BelgiumEuro	0.111	-0.545	0.538	4.139	0.059	-0.711	0.463	4.346	0.119	-0.572	0.964	4.106
GermanyEuro	-0.173	-1.733	0.897	5.87	-0.173	-1.733	0.897	5.87	-0.198	-1.816	0.941	5.95
EstoniaEuro	0.79	0.024	0.219	2.115	0.862**	-0.004**	0.654**	1.944**	0.79	0.024	0.219	2.115
SpainEuro	0.486	-0.632	0.418	2.908	0.703**	0.438**	0.153**	2.101**	0.688	0.412	0.148	2.135
FinlandEuro	0.694	-0.31	0.224	1.976	0.776	-0.195	0.325	1.789	0.744	-0.227	0.251	1.863
FranceEuro	-0.26	-1.761	0.753	5.469	0.849	0.627	-0.68	3.21	-0.19	-1.524	0.602	5.247
GreeceGREuro	0.113	-1.573	0.866	4.712	0.13	-1.52	0.824	4.661	0.113	-1.573	0.866	4.712
Hungaryfo~nt	-1.02	-4.631	2.545	14.854	-1.02	-4.631	2.545	14.854	-1.08	-4.826	2.664	15.04
IrelandEuro	0.753	0.758	-0.391	2.021	0.753	0.758	-0.391	2.021	0.788	0.86	-0.377	1.906
ItalyEuro	0.529	-0.201	0.187	3.369	0.569	-0.153	0.256	3.278	0.537	-0.186	0.189	3.351
Lithuanial~s	0.06	-2.76	1.778	5.345	0.977	1.747	-0.029	2.014	0.06	-2.76	1.778	5.345
LatviaEuro	0.546	-0.979	0.893	3.539	0.657	-0.441	0.823	3.151	0.653	-0.379	0.666	3.148
Latvialats	0.625	-0.219	0.363	5.52	-0.129	-4.822	1.993	8.285	0.242	-3.794	2.053	7.018
Netherland~o	-0.153	-0.756	0.217	5.387	-0.07***	-0.625***	0.418***	5.155***	0.038	-0.365	0.455	4.82
PortugalEuro	0.786*	-0.504*	0.337*	2.168*	0.814***	-0.52***	0.511***	2.105***	0.793	-0.499	0.356	2.153
SloveniaEuro	1.002	0.174	0.184	2.858	1.083	0.311	0.275	2.653	1.039	0.252	0.179	2.767
SlovakiaEuro	0.015	-0.833	0.772	5.481	0.562	1.186	0.482	3.621	0.562	1.186	0.482	3.621
Euroareach~o	-0.098	-1.511	0.464	5.12	0.084	-1.213	0.52	4.67	0.145	-1.063	0.454	4.484

Maturity up to 1 year, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	0.441	-1.151	0.557	3.916	0.487	-1.144	0.759	3.81	0.487	-1.144	0.759	3.81
BelgiumEuro	0.402	-0.271	0.009	3.601	0.001**	-1.773**	0.288**	5.113**	1.271	3.371	-0.666	-0.012
GermanyEuro	0.433	-1.071	0.598	4.314	0.422	-1.097	0.624	4.35	0.404	-1.142	0.646	4.405
EstoniaEuro	1.248	1.236	0.455	1.674	1.248	1.236	0.455	1.674	1.213	1.039	0.641	1.82
SpainEuro	0.254	3.486	10.456	4.322	0.254***	3.486***	10.456***	4.322***	0.254*	3.486*	10.456*	4.322*
FinlandEuro	0.847	0.219	0.137	1.47	0.859	0.233	0.16	1.441	0.847	0.219	0.137	1.47
FranceEuro	-0.045	-1.004	0.57	4.517	-0.046	-0.992	0.57	4.519	0.008	-0.897	0.457	4.352
GreeceGREuro	3.143	4.601	-2.861	-0.568	3.186	4.814	-2.909	-0.81	3.08	4.441	-2.797	-0.395

IrelandEuro	0.845**	0.754**	-0.597**	2.617**	0.839	0.715	-0.432	2.639	0.839	0.715	-0.432	2.639	
ItalyEuro	0.516	0.795	-0.016	3.654	0.516	0.795	-0.016	3.654	0.532	0.828	-0.024	3.617	
Lithuanial~s	0.157	-4.267	0.165	5.999	0.157	-4.267	0.165	5.999	-0.131	-5.169	0.459	6.967	
LatviaEuro	-1.713	-8.908	11.748	11.892	-	1.713***	-8.908***	11.748***	11.892***	-1.707***	-7.446***	7.824***	11.875***
LatviaIats	-3.283	-15.43	1.999	22.266	-	3.283***	-15.43***	1.999***	22.266***	-2.733***	-13.757***	1.412***	20.501***
Netherland~o	0.697	1.207	-0.087	2.718	0.697	1.207	-0.087	2.718	0.7	1.242	-0.089	2.683	
SloveniaEuro	0.322**	0.964**	0.207**	3.796**	0.403*	1.161*	0.143*	3.592*	0.457	1.294	0.109	3.452	
Euroareach~o	0.309	-0.575	0.283	4.144	0.309	-0.575	0.283	4.144	0.309	-0.575	0.283	4.144	

Table 21.1-21.3 Long-run coefficients, regime shifts, 3rd loan category

Note: the stars indicate the significance of cointegration rather than that of variables (the method does not allow to draw inference on variables in long-run relationship). Thus, *** indicate that cointegration is statistically significant at 1% significance level, ** represents 5% level and * stand for 10%.

Maturity 1-5 years, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	0.425	-0.655	0.387	3.342	0.437	-0.648	0.428	3.315	0.412	-0.675	0.372	3.374
BelgiumEuro	1.129	1.823	-0.163	0.531	1.129	1.823	-0.163	0.531	1.152	2.007	-0.36	0.415
GermanyEuro	0.531	-0.144	0.586	3.088	0.531	-0.144	0.586	3.088	0.525	-0.206	0.683	3.118
EstoniaEuro	0.851	0.597	0.101	2.66	0.915	0.565	0.509	2.506	0.851	0.597	0.101	2.66
SpainEuro	0.839	1.828	-0.283	1.653	0.839	1.828	-0.283	1.653	0.853	1.857	-0.289	1.62
FinlandEuro	0.914	0.591	0.246	1.707	0.914*	0.591*	0.246*	1.707*	0.892	0.596	0.159	1.744
FranceEuro	0.506	-0.425	0.638	3.253	0.506	-0.425	0.638	3.253	0.479	-0.36	0.358	3.305
GreeceGREuro	0.75	1.628	-1.052	3.802	0.75	1.628	-1.052	3.802	0.752	1.634	-1.098	3.795
IrelandEuro	0.866	0.21	0.113	2.672	0.874	0.218	0.132	2.654	0.874	0.218	0.132	2.654
ItalyEuro	0.774	0.968	-0.998	2.387	0.854	1.167	-0.835	2.129	0.821	1.095	-0.928	2.235
Lithuanial~s	1.065	2.158	-0.101	2.573	1.139	2.315	-0.118	2.395	1.106	2.249	-0.12	2.474
LatviaEuro	0.6	-0.2	0.387	3.865	0.62*	-0.182*	0.44*	3.819*	0.6	-0.2	0.387	3.865
LatviaIats	1.113	1.433	0.096	4.479	-0.234	-5.332	1.202	9.431	-0.151	-5.151	1.085	9.167
Netherland~o	0.369	-0.887	0.32	3.638	0.96	0.229	-0.319	2.548	0.369	-0.887	0.32	3.638
PortugalEuro	0.711	1.763	-1.351	2.909	0.711**	1.763**	-1.351**	2.909**	0.688	1.69	-1.331	2.982
SloveniaEuro	1.167	3.037	-0.403	1.05	1.167	3.037	-0.403	1.05	1.167	3.037	-0.403	1.05
SlovakiaEuro	1.115	2.468	-0.534	1.122	1.214*	2.831*	-0.591*	0.745*	1.076	2.558	-0.501	1.039
Euroareach~o	0.643	0.558	-0.001	2.647	0.694	0.654	-0.002	2.532	0.662	0.595	-0.002	2.604

Maturity over 5 years, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	0.47	-0.566	0.312	3.026	0.488	-0.556	0.372	2.986	0.48	-0.554	0.329	3.004

BelgiumEuro	0.259	-0.734	0.737	4.018	0.16	-0.859	0.689	4.383	0.16	-0.859	0.689	4.383
GermanyEuro	0.048	-1.636	0.809	4.972	0.07	-1.565	0.767	4.903	0.048	-1.636	0.809	4.972
EstoniaEuro	0.768**	-0.035**	0.185**	2.564**	0.845**	-0.006**	0.494**	2.382**	0.768	-0.035	0.185	2.564
SpainEuro	0.841	1.542	-0.196	1.59	0.883	1.619	-0.196	1.497	0.841	1.542	-0.196	1.59
FinlandEuro	0.787	0.123	0.151	1.752	0.814	0.144	0.228	1.689	0.777	0.108	0.145	1.773
FranceEuro	0.212	-0.898	0.31	4.049	0.212	-0.898	0.31	4.049	0.143	-0.945	0.35	4.211
GreeceGREuro	0.504	0.539	0.057	4.102	0.479	0.382	0.66	4.186	0.515	0.57	0.005	4.067
IrelandEuro	0.72	0.105	0.084	2.761	0.787	0.23	0.086	2.61	0.653	-0.036	0.129	2.911
ItalyEuro	0.799	0.462	0.033	2.292	0.819	0.498	0.036	2.247	0.809	0.481	0.033	2.269
LithuaniaI~s	0.967	2.045	-0.088	2.515	1.254	2.7	-0.286	1.826	1.199	2.59	-0.287	1.956
LatviaEuro	0.606	-0.694	0.43	3.606	0.62	-0.683	0.475	3.572	0.636	-0.687	0.559	3.536
LatviaLatv~s	0.66	-0.171	0.316	5.135	-0.035	-4.119	1.118	7.719	-0.035	-4.119	1.118	7.719
Netherland~o	0.07	-1.262	0.392	4.718	0.198	-0.996	0.447	4.372	0.198	-0.996	0.447	4.372
PortugalEuro	0.699	0.509	-0.356	2.859	0.818*	0.896*	-0.117*	2.391*	0.823	0.903	-0.113	2.38
SloveniaEuro	0.949	1.174	-0.195	1.713	1.002	1.361	-0.226	1.52	0.895	1.213	-0.162	1.689
SlovakiaEuro	1.208	2.311	-0.5	0.76	1.208	2.311	-0.5	0.76	1.033	1.692	-0.388	1.395
Euroareach~o	0.313	-0.637	0.301	3.831	0.331	-0.608	0.318	3.789	0.305	-0.65	0.298	3.849

Maturity up to 1 year, regime shift												
	EONIA_zt	Dummy_zt	Interac~t	const_zt	EONIA_za	Dummy_za	Interac~a	const_za	EONIA_adf	Dummy_adf	Interac~f	const_adf
AustriaEuro	0.751	-0.068	0.202	2.261	0.757	-0.071	0.243	2.245	0.757	-0.071	0.243	2.245
BelgiumEuro	1.241**	1.895**	-0.316**	0.529**	1.241***	1.895***	-0.316***	0.529***	1.236**	1.898**	-0.363**	0.547**
Bulgarialev	-0.054	-2.797	2.45	9.517	-0.063	-2.793	2.507	9.551	-0.054	-2.797	2.45	9.517
CzechRepub~K	0.574	0.395	0.104	2.681	0.618	0.312	0.503	2.594	0.558	0.364	0.108	2.718
GermanyEuro	0.721	-0.077	0.38	3.201	0.721*	-0.077*	0.38*	3.201*	0.709	-0.166	0.519	3.249
EstoniaEuro	0.211	-2.106	1.777	5.069	0.797	0.293	1.47	3.053	0.797	0.293	1.47	3.053
SpainEuro	1.018	2.082	-0.5	1.531	1.018	2.082	-0.5	1.531	0.961	1.912	-0.503	1.716
FinlandEuro	0.806	0.107	0.055	1.863	0.843*	0.179*	0.052*	1.778*	0.806	0.107	0.055	1.863
FranceEuro	0.853	0.058	0.405	1.965	0.853	0.058	0.405	1.965	0.833	0.114	0.187	2.002
GreeceGREuro	0.749	2.361	-0.648	4.271	0.433	1.518	-0.134	5.262	0.603	1.866	-0.36	4.739
IrelandEuro	0.933	0.37	-0.104	2.927	0.94	0.408	-0.216	2.904	0.94	0.408	-0.216	2.904
ItalyEuro	0.652	0.885	0.679	3.671	0.652	0.885	0.679	3.671	0.641	0.852	0.684	3.705
LithuaniaI~s	1.035	1.5	0.134	2.497	1.141	1.114	1.521	2.307	0.972	1.379	0.118	2.647
LatviaEuro	0.797	0.327	0.53	3.414	0.824*	0.194*	0.965*	3.375*	0.699*	0.155*	0.476*	3.647*
LatviaIats	-0.495	-7.047	1.603	9.964	-0.563	-7.183	1.632	10.179	-0.563	-7.183	1.632	10.179
Netherland~o	0.772	-0.255	0.386	2.581	0.772	-0.255	0.386	2.581	0.759	-0.448	0.538	2.633
PortugalEuro	0.837	2.429	-1.125	3.033	0.527	1.629	0.805	4.021	0.77	2.207	-0.998	3.246
SloveniaEuro	1.137	4.517	-0.922	0.914	1.178	4.601	-0.916	0.812	1.137	4.517	-0.922	0.914
SlovakiaEuro	0.961**	1.873**	-0.346**	1.285**	0.952***	1.852***	-0.343***	1.308***	0.952**	1.852**	-0.343**	1.308**
Euroareach~o	0.676	0.475	0.001	2.996	0.708	0.544	-0.027	2.925	0.708	0.544	-0.027	2.925

Table 22.1-22.3 Long-run coefficients, level shifts, 1st loan category

Note: the stars indicate the significance of cointegration rather than that of variables (the method does not allow to draw inference on variables in long-run relationship). Thus, *** indicate that cointegration is statistically significant at 1% significance level, ** represents 5% level and * stand for 10%

Maturity 1-5 years, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.927***	1.546***	2.614***	0.927***	1.546***	2.614***	0.927***	1.546***	2.614***
BelgiumEuro	0.403	-0.896	6.066	0.252	-0.995	6.675	0.37	-0.689	6.173
GermanyEuro	0.162**	-0.935**	6.086**	0.163**	-0.925**	6.046**	0.16**	-0.947**	6.082**
SpainEuro	0.306	2.355	7.466	0.306	2.355	7.466	0.436	2.248	6.997
FinlandEuro	0.677	2.193	3.93	0.677	2.193	3.93	0.673	1.61	3.911
FranceEuro	0.261	-1.003	6.854	0.261	-1.003	6.854	0.275	-0.892	6.688
GreeceREuro	0.561	0.31	8.42	0.176	-2.088	10.755	0.132	-2.543	11.458
ItalyEuro	-0.054*	-0.821*	8.559*	0.123	-0.872	8.674	-0.06	-0.829	8.578
LatviaEuro	0.518*	17.819*	5.842*	0.518***	17.819***	5.842***	-0.006***	16.391***	7.178***
LatviaLatv~s	0.413	4.651	16.304	0.413	4.651	16.304	0.413	4.651	16.304
PortugalEuro	0.16**	1.764**	9.802**	0.16**	1.764**	9.802**	0.254**	1.964**	9.575**
SloveniaEuro	0.158*	1.257*	5.831*	0.158***	1.257***	5.831***	0.233***	1.272***	5.761***
Euroareach~o	0.206	-0.506	6.621	0.206	-0.506	6.621	0.208	-0.495	6.589

Maturity over 5 years, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.724	0.946	3.181	0.724***	0.946***	3.181***	0.716***	0.928***	3.199***
BelgiumEuro	0.14	-1.786	9.49	0.14	-1.786	9.49	0.14	-1.786	9.49
GermanyEuro	0.162	-0.566	8.239	0.162***	-0.566***	8.239***	0.187***	-0.529***	8.152***
SpainEuro	0.625***	3.139***	5.962***	0.625***	3.139***	5.962***	0.625***	3.139***	5.962***
FinlandEuro	0.396***	3.548***	4.15***	0.396***	3.548***	4.15***	0.396***	3.548***	4.15***
FranceEuro	0.234	-0.542	6.695	0.23	-0.602	6.788	0.234	-0.542	6.695
GreeceREuro	-0.181***	-2.001***	10.227***	-0.176***	-2.04***	10.211***	-0.126***	-2.013***	10.069***
ItalyEuro	0.225	1.449	7.052	0.225	1.449	7.052	0.225	1.449	7.052
Euroareach~o	0.147	-0.271	7.833	0.147***	-0.271***	7.833***	0.148***	-0.208***	7.828***

Maturity up to 1 year, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.66*	0.763*	3.848*	0.649	0.73	3.882	0.66	0.763	3.848
BelgiumEuro	0.288***	-1.037***	5.901***	0.288***	-1.037***	5.901***	0.288***	-1.037***	5.901***
GermanyEuro	0.54	1.262	3.825	0.54	1.262	3.825	0.269	-0.432	4.77
EstoniaEuro	0.824***	11.305***	5.884***	0.813***	11.459***	5.925***	0.844***	11.003***	5.81***

SpainEuro	0.189*	-2.392*	8.702*	0.189*	-2.392*	8.702*	0.256*	-2.15*	8.467*
FinlandEuro	0.545	-1.479	4.939	0.545	-1.458	4.914	0.545	-1.458	4.914
FranceEuro	0.857*	2.412*	3.591*	0.857	2.412	3.591	0.857*	2.412*	3.591*
GreeceGREuro	0.946	1.132	7.117	0.061**	-3.67**	12.146**	0.033	-3.88	12.47
IrelandEuro	0.407	2.038	4.744	0.407***	2.038***	4.744***	0.303***	2.06***	5.051***
ItalyEuro	0.351***	-3.56***	9.365***	0.351***	-3.56***	9.365***	0.351***	-3.56***	9.365***
Lithuanial~s	-0.664**	2.991**	8.695**	-0.664***	2.991***	8.695***	-0.664***	2.991***	8.695***
LatviaEuro	-0.937	6.947	10.141	-0.937	6.947	10.141	-0.917	7.456	10.082
PortugalEuro	0.78	1.783	6.087	0.78	1.783	6.087	0.231	-1.534	8.901
SloveniaEuro	0.696	0.697	4.073	0.664	0.631	4.149	0.583	0.574	4.246
Euroareach~o	0.17	-1.339	6.642	0.17	-1.339	6.642	0.641	1.222	4.31

Table 23.1-23.3 Long-run coefficients, level shifts, 2nd loan category

Note: the stars indicate the significance of cointegration rather than that of variables (the method does not allow to draw inference on variables in long-run relationship). Thus, *** indicate that cointegration is statistically significant at 1% significance level, ** represents 5% level and * stand for 10%.

Maturity 1-5 years, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.257	-0.086	2.933	0.257***	-0.086***	2.933***	0.257	-0.086	2.933
BelgiumEuro	0.197	-0.097	3.888	0.656	1.586	2.038	0.32	0.523	3.226
CzechRepub~K	-0.007**	-0.509**	6.321**	-0.165	-0.934	6.838	0.11	-0.111	5.942
GermanyEuro	0.139	-0.959	4.217	0.139	-0.959	4.217	0.166	-0.952	4.132
EstoniaEuro	0.545	0.558	3.539	0.636*	0.659*	3.395*	0.647	0.677	3.372
SpainEuro	0.28	1.435	4.514	0.273	1.462	4.558	0.273	1.462	4.558
FinlandEuro	0.851	0.273	1.574	0.905	0.393	1.439	0.897	0.378	1.457
FranceEuro	-0.052	-0.971	4.471	0.173	-1.041	4.582	0.093	-0.765	3.99
GreeceGREuro	0.323	-1.118	5.425	0.323	-1.118	5.425	0.32	-1.065	5.362
IrelandEuro	0.741**	0.595**	2.483**	0.741**	0.595**	2.483**	0.742	0.606	2.482
ItalyEuro	0.622	0.437	3.277	0.641	0.474	3.233	0.641	0.474	3.233
Lithuanial~s	0.952	1.913	2.497	0.952	1.913	2.497	1.003	2.043	2.35
LatviaEuro	0.8	1.223	3.236	0.8	1.223	3.236	0.843	1.332	3.115
Latvialats	0.758	0.973	5.442	-0.132	-3.5	8.602	-0.316	-3.933	9.209
Netherland~o	0.223	-0.414	4.201	0.223	-0.611	4.199	0.217	-0.501	4.217
SloveniaEuro	0.949	0.754	2.704	0.968**	0.798**	2.653**	0.933	0.714	2.749
SlovakiaEuro	1.245	4.766	0.504	1.245**	4.766**	0.504**	0.064**	2.647**	3.09**
Euroareach~o	0.209	-0.702	3.999	0.209	-0.702	3.999	0.24	-0.698	3.904

Maturity over 5 years, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.522	-0.845	3.409	0.528	-0.851	3.384	0.524	-0.844	3.4
BelgiumEuro	0.15	-0.483	4.005	0.15	-0.483	4.005	0.142	-0.486	4.03
GermanyEuro	0.158	-0.82	4.838	-0.134	-1.324	5.79	0.153	-0.822	4.852
EstoniaEuro	0.963	0.583	1.591	0.963**	0.583**	1.591**	0.963	0.583	1.591
SpainEuro	0.504	-0.479	2.855	0.781**	0.705**	1.878**	0.781	0.705	1.878
FinlandEuro	0.75	-0.349	1.948	0.92	0.309	1.381	0.9	0.263	1.433
FranceEuro	-0.172	-1.265	5.222	0.185	-0.948	4.805	0.179	-0.891	4.73
GreeceGREuro	0.37	-0.75	3.929	0.282	-0.929	4.216	0.367	-0.753	3.939
Hungaryfo~nt	-0.092	-2.43	11.979	0.03	-2.766	13.542	-0.11	-2.364	12.032
IrelandEuro	0.591	0.362	2.336	0.732	0.581	2.054	0.581	0.343	2.357
ItalyEuro	0.535	-0.381	3.434	0.535	-0.381	3.434	0.536	-0.381	3.43
Lithuanial~s	0.825	1.498	2.318	0.919	1.593	2.176	0.919	1.593	2.176
LatviaEuro	0.582	-0.703	3.434	0.582	-0.867	3.419	0.581	-0.716	3.435
Latvialats	1.264	1.454	3.805	0.027	-3.735	7.835	0.143	-3.573	7.437
Netherland~o	0.045	-0.214	4.873	0.064*	-0.55*	5.181*	0.047	-0.341	4.794
PortugalEuro	0.824	-0.561	2.18	0.75***	-0.763***	2.409***	0.814	-0.589	2.212
SloveniaEuro	1.156	0.678	2.378	1.199	0.771	2.269	1.166	0.696	2.355
SlovakiaEuro	0.068	-0.809	5.311	0.47	1.187	3.809	0.436	1.1	3.908
Euroareach~o	0.287	-0.595	4.034	0.17	-0.853	4.422	0.283	-0.599	4.05

Maturity up to 1 year, level shift										
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf	
AustriaEuro	0.64	-0.847	3.381	0.64	-0.847	3.381	0.636	-0.829	3.4	
BelgiumEuro	0.403	-0.267	3.6	0.649***	0.942***	2.398***	0.613	0.855	2.498	
GermanyEuro	0.507	-0.745	4.078	0.455	-0.82	4.267	0.506	-0.73	4.087	
EstoniaEuro	1.177	1.224	1.877	1.387	1.817	1.23	1.034	0.825	2.319	
SpainEuro	0.261***	4.485***	4.309***	0.261**	4.485**	4.309**	0.261*	4.485*	4.309*	
FinlandEuro	0.927	0.475	1.249	0.927	0.475	1.249	0.927	0.475	1.249	
FranceEuro	0.024	-0.721	4.314	0.024	-0.721	4.314	0.095	-0.715	4.078	
GreeceGREuro	0.307*	-1.588*	5.586*	0.307	-1.588	5.586	0.307	-1.616	5.62	
IrelandEuro	0.832**	0.613**	2.653**	0.832**	0.613**	2.653**	0.832**	0.613**	2.653**	
ItalyEuro	0.542	0.791	3.631	0.542	0.791	3.631	0.511	0.772	3.67	
Lithuanial~s	0.165	-4.194	5.98	0.165	-4.194	5.98	-0.106	-4.954	6.901	
LatviaEuro	-1.706*	-7.762*	11.879*	-	1.706***	-7.762***	11.879***	-1.702***	-6.707***	11.865***
Latvialats	-3.208	-14.451	22.085	-	3.208***	-14.451***	22.085***	-2.684***	-13.082***	20.387***
Netherland~o	0.575*	0.907*	3.016*	0.575*	0.907*	3.016*	0.606*	0.982*	2.932*	
SloveniaEuro	0.577***	1.613***	3.13***	0.591**	1.598**	3.136**	0.56	1.605	3.147	
Euroareach~o	0.43	-0.314	3.829	0.342	-0.549	4.112	0.431	-0.319	3.825	

Table 24.1-24.3 Long-run coefficients, level shifts, 3rd loan category

Note: the stars indicate the significance of cointegration rather than that of variables (the method does not allow to draw inference on variables in long-run relationship). Thus, *** indicate that cointegration is statistically significant at 1% significance level, ** represents 5% level and * stand for 10%

Maturity 1-5 years, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.475	-0.5	3.268	0.606	-0.517	3.264	0.505	-0.435	3.174
BelgiumEuro	0.975	1.186	1.167	0.975	1.186	1.167	0.978	1.233	1.115
GermanyEuro	0.448	-0.602	3.375	0.448	-0.602	3.375	0.448	-0.602	3.375
EstoniaEuro	0.928	0.85	2.424	0.947	0.895	2.372	0.896	0.782	2.503
SpainEuro	0.717	1.363	2.025	0.748	1.429	1.948	0.748	1.429	1.948
FinlandEuro	0.887	0.661	1.748	0.904*	0.699*	1.704*	0.852	0.59	1.831
FranceEuro	0.505	-0.575	3.28	0.501	-0.577	3.29	0.501	-0.577	3.29
GreeceGREuro	0.714	1.356	3.916	0.715*	1.346*	3.908*	0.715	1.346	3.908
IrelandEuro	0.892	0.349	2.578	0.938	0.436	2.474	0.899	0.353	2.569
ItalyEuro	0.696	0.76	2.627	0.701	0.767	2.612	0.701	0.767	2.612
Lithuanial~s	0.982	1.89	2.827	1.048	2.013	2.678	1.01	1.936	2.769
LatviaEuro	0.835	0.57	3.189	0.556	-0.712	4.124	0.835	0.57	3.189
Latvialats	1.221	1.303	4.522	-0.188	-4.743	9.322	-0.113	-4.628	9.076
Netherland~o	0.644	-0.47	3.244	0.644	-0.47	3.244	0.643	-0.459	3.232
PortugalEuro	0.311	0.694	3.594	0.621	1.598	3.171	0.624	1.644	3.175
SloveniaEuro	1.053**	2.581**	1.378**	1.053**	2.581**	1.378**	1.059	2.567	1.399
SlovakiaEuro	1.032**	2.077**	1.321**	1.032**	2.077**	1.321**	1.032*	2.077*	1.321*
Euroareach~o	0.642	0.555	2.65	0.693	0.651	2.535	0.66	0.59	2.608

Maturity over 5 years, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.611	-0.342	2.655	0.519	-0.469	2.952	0.604	-0.24	2.68
BelgiumEuro	0.26	-0.661	4.017	0.691	1.371	2.318	0.263	-0.666	4.008
GermanyEuro	0.346	-0.721	4.045	0.108	-1.207	4.816	0.343	-0.718	4.059
EstoniaEuro	0.918	0.443	2.113	0.939*	0.494*	2.055*	0.927	0.466	2.087
SpainEuro	0.735	1.182	1.895	0.758*	1.228*	1.841*	0.696	1.11	1.982
FinlandEuro	0.889	0.437	1.471	0.889	0.437	1.471	0.872	0.402	1.512
FranceEuro	0.229	-0.753	4.004	0.229	-0.753	4.004	0.355	-0.427	3.599
GreeceGREuro	0.506	0.561	4.097	0.506	0.561	4.097	0.515	0.572	4.067
IrelandEuro	0.79	0.301	2.578	0.826	0.365	2.499	0.826	0.365	2.499
ItalyEuro	0.824	0.536	2.225	0.843	0.573	2.181	0.833	0.553	2.205
Lithuanial~s	0.889	1.804	2.746	1.032*	1.965*	2.515*	0.964	1.828	2.678

LatviaEuro	0.742	-0.496	3.252	0.74	-0.493	3.258	0.753	-0.5	3.221
LatviaLatv~s	0.934	0.596	4.416	0.008	-3.571	7.618	-0.036	-3.669	7.757
Netherland~o	0.237	-0.746	4.265	0.437	-0.627	4.103	0.237	-0.746	4.265
PortugalEuro	0.731	0.636	2.627	0.731*	0.636*	2.627*	0.743	0.66	2.599
SloveniaEuro	0.908	0.982	1.845	0.968	1.2	1.602	0.75	0.761	2.125
SlovakiaEuro	1.055	1.672	1.248	1.055	1.672	1.248	0.691	1.001	2.064
Euroareach~o	0.439	-0.334	3.511	0.5	-0.384	3.614	0.473	-0.227	3.4

Maturity up to 1 year, level shift									
	EONIA_zt	Dummy_zt	const_zt	EONIA_za	Dummy_za	const_za	EONIA_adf	Dummy_adf	const_adf
AustriaEuro	0.833	0.232	2.024	0.868*	0.311*	1.935*	0.868	0.311	1.935
BelgiumEuro	0.893**	0.559**	1.875**	0.893***	0.559***	1.875***	0.871**	0.513**	1.931**
Bulgarialev	0.187	-2.049	8.633	1.866	5.411	1.916	1.688	4.655	2.765
CzechRepub~K	0.643	0.615	2.485	0.36	-0.862	3.453	0.335	-0.763	3.53
GermanyEuro	0.639	-0.424	3.471	0.639	-0.424	3.471	0.663	-0.401	3.402
EstoniaEuro	0.294*	-1.666*	4.789*	0.294*	-1.666*	4.789*	0.302*	-1.661*	4.762*
SpainEuro	0.813	1.469	2.008	0.813	1.469	2.008	0.676	1.22	2.312
FinlandEuro	0.851*	0.235*	1.744*	0.877*	0.283*	1.686*	0.851	0.235	1.744
FranceEuro	0.907	0.377	1.795	0.907	0.377	1.795	0.736	-0.433	2.352
GreeceGREuro	0.614	1.769	4.683	0.426	1.459	5.277	0.107	0.955	5.603
IrelandEuro	0.937	0.356	2.911	0.937	0.356	2.911	0.937	0.356	2.911
ItalyEuro	0.632	0.904	3.731	0.654	0.972	3.668	0.642	0.935	3.702
Lithuania~s	1.138	1.844	2.174	1.138	1.844	2.174	1.069	1.693	2.35
LatviaEuro	0.978	1.026	2.884	0.978	1.026	2.884	0.532	-1.016	4.377
Latvialats	-0.433	-6.259	9.812	-0.497	-6.376	10.017	-0.497	-6.376	10.017
Netherland~o	0.752	-0.391	2.653	0.752	-0.391	2.653	0.76	-0.398	2.632
PortugalEuro	0.226	1.02	4.185	0.574	1.864	3.844	0.682	1.649	3.484
SloveniaEuro	0.947**	3.382**	1.732**	0.947**	3.382**	1.732**	0.973*	3.427*	1.694*
SlovakiaEuro	0.947***	1.582***	1.434***	0.947***	1.582***	1.434***	0.947**	1.582**	1.434**
Euroareach~o	0.677	0.477	2.994	0.687	0.483	2.982	0.687	0.483	2.982

Table 25.1-25.3 ECM coefficients, regimes shifts, 1st loan category

Maturity 1 to 5 years												
	L.	D.	L.	D.	L.	D.	L.	D.	L.	D.	L.	D.
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.299	-0.334	0.250	-0.003	-0.299	-0.334	0.250	-0.003	-0.329	-0.266	0.176	-0.005
p-value	0.001	0.010	0.039	0.876	0.001	0.010	0.039	0.876	0.000	0.030	0.143	0.754
BelgiumEuro	-0.093	0.013	0.033	-0.029	-0.191	0.128	-0.019	-0.030	-0.145	0.095	-0.054	-0.032
p-value	0.336	0.911	0.796	0.200	0.086	0.308	0.872	0.198	0.000	0.210	0.594	0.138

GermanyEuro	-0.253	0.064	0.037	-0.009	-0.253	0.064	0.037	-0.009	-0.376	0.189	0.036	-0.009
p-value	0.178	0.750	0.592	0.421	0.178	0.750	0.592	0.421	0.038	0.331	0.604	0.415
SpainEuro	-0.107	-0.369	0.256	0.011	-0.107	-0.369	0.256	0.011	-0.211	0.153	0.214	0.004
p-value	0.003	0.061	0.098	0.616	0.003	0.061	0.098	0.616	0.000	0.065	0.213	0.862
FinlandEuro	-0.057	-0.210	0.372	-0.005	-0.057	-0.210	0.372	-0.005	-0.048	-0.142	0.346	-0.006
p-value	0.016	0.027	0.001	0.906	0.016	0.027	0.001	0.906	0.037	0.081	0.003	0.872
FranceEuro	-0.272	0.180	0.037	-0.016	-0.103	-0.019	-0.015	-0.017	-0.088	0.081	0.016	-0.017
p-value	0.043	0.223	0.669	0.109	0.334	0.876	0.835	0.083	0.000	0.173	0.805	0.059
GreeceGREuro	-0.091	-0.025	0.087	-0.034	-0.088	-0.030	0.088	-0.034	-0.093	-0.022	0.089	-0.034
p-value	0.076	0.750	0.621	0.290	0.097	0.701	0.624	0.291	0.065	0.777	0.614	0.291
ItalyEuro	-0.178	0.034	0.008	-0.020	-0.166	0.010	0.007	-0.020	-0.166	0.010	0.007	-0.020
p-value	0.000	0.700	0.933	0.278	0.000	0.920	0.942	0.291	0.000	0.920	0.942	0.291
LatviaEuro	-0.229	-0.135	-2.306	0.074	-0.229	-0.135	-2.306	0.074	-0.430	0.324	-3.657	0.030
p-value	0.047	0.501	0.016	0.661	0.047	0.501	0.016	0.661	0.014	0.223	0.036	0.824
LatviaLatv~s	-0.235	0.152	-1.572	0.008	-0.235	0.152	-1.572	0.008	-0.232	0.174	-1.742	0.004
p-value	0.037	0.216	0.004	0.898	0.037	0.216	0.004	0.898	0.001	0.026	0.008	0.941
PortugalEuro	-0.461	0.337	-0.090	0.001	-0.461	0.337	-0.090	0.001	-0.417	0.310	-0.026	0.001
p-value	0.003	0.039	0.763	0.983	0.003	0.039	0.763	0.983	0.005	0.046	0.929	0.974
SloveniaEuro	-0.783	0.625	0.207	0.005	-0.783	0.625	0.207	0.005	-0.813	0.679	0.181	0.005
p-value	0.000	0.000	0.231	0.900	0.000	0.000	0.231	0.900	0.000	0.000	0.383	0.900
Euroareach~o	-0.591	0.436	0.019	-0.008	-0.591	0.436	0.019	-0.008	-0.484	0.339	0.025	-0.008
p-value	0.005	0.045	0.734	0.303	0.005	0.045	0.734	0.303	0.021	0.116	0.670	0.321

Maturity over 5 years																
	L.				D.				L.				D.			
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf				
AustriaEuro	-0.446	-0.164	0.109	-0.008	-0.446	-0.164	0.109	-0.008	-0.459	-0.151	0.058	-0.009				
p-value	0.000	0.378	0.428	0.748	0.000	0.378	0.428	0.748	0.000	0.411	0.687	0.718				
BelgiumEuro	-0.248	-0.049	-0.296	-0.036	-0.248	-0.049	-0.296	-0.036	-0.248	-0.049	-0.296	-0.036				
p-value	0.014	0.721	0.251	0.367	0.014	0.721	0.251	0.367	0.014	0.721	0.251	0.367				
GermanyEuro	-0.485	-0.103	0.135	-0.005	-0.485	-0.103	0.135	-0.005	-0.551	0.184	0.150	-0.004				
p-value	0.000	0.631	0.095	0.798	0.000	0.631	0.095	0.798	0.000	0.335	0.116	0.818				
SpainEuro	-0.310	0.054	0.331	0.008	-0.310	0.054	0.331	0.008	-0.310	0.054	0.331	0.008				
p-value	0.021	0.765	0.026	0.603	0.021	0.765	0.026	0.603	0.021	0.765	0.026	0.603				
FinlandEuro	-0.317	-0.118	-0.026	0.004	-0.317	-0.118	-0.026	0.004	-0.317	-0.118	-0.026	0.004				
p-value	0.020	0.529	0.940	0.958	0.020	0.529	0.940	0.958	0.020	0.529	0.940	0.958				
FranceEuro	-0.090	0.062	-0.033	-0.014	-0.091	0.032	-0.030	-0.014	-0.082	0.056	-0.027	-0.014				
p-value	0.000	0.253	0.639	0.205	0.000	0.664	0.663	0.211	0.001	0.434	0.694	0.205				
GreeceGREuro	-0.312	-0.143	0.013	-0.022	-0.311	-0.273	0.019	-0.022	-0.275	-0.151	0.029	-0.023				
p-value	0.000	0.243	0.972	0.595	0.000	0.026	0.959	0.605	0.001	0.401	0.937	0.578				
ItalyEuro	-0.208	0.125	0.039	-0.001	-0.224	0.019	-0.001	-0.001	-0.253	0.189	-0.013	-0.002				
p-value	0.003	0.233	0.749	0.944	0.001	0.888	0.995	0.973	0.001	0.035	0.918	0.905				
Euroareach~o	-0.442	0.079	-0.021	-0.006	-0.442	0.079	-0.021	-0.006	-0.488	0.360	-0.106	-0.008				
p-value	0.000	0.652	0.731	0.630	0.000	0.652	0.731	0.630	0.000	0.027	0.188	0.502				

Maturity up to 1 year												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.131	-0.139	0.306	-0.002	-0.131	-0.139	0.306	-0.002	-0.125	-0.104	0.259	-0.003
p-value	0.006	0.077	0.000	0.830	0.006	0.077	0.000	0.830	0.015	0.192	0.000	0.738
BelgiumEuro	-0.842	0.443	-0.456	-0.050	-0.842	0.443	-0.456	-0.050	-0.842	0.443	-0.456	-0.050
p-value	0.000	0.045	0.092	0.309	0.000	0.045	0.092	0.309	0.000	0.045	0.092	0.309
GermanyEuro	-0.340	0.208	0.125	-0.003	-0.333	0.193	0.126	-0.003	-0.322	0.190	0.121	-0.003
p-value	0.000	0.012	0.390	0.867	0.000	0.023	0.385	0.882	0.000	0.021	0.400	0.866
EstoniaEuro	-0.129	-0.627	-0.502	0.022	-0.129	-0.773	-0.614	0.023	-0.130	-0.468	-0.397	0.019
p-value	0.003	0.000	0.572	0.867	0.003	0.000	0.459	0.885	0.003	0.005	0.682	0.877
SpainEuro	-0.189	-0.044	-0.110	-0.014	-0.189	-0.044	-0.110	-0.014	-0.404	0.267	0.168	-0.012
p-value	0.001	0.695	0.725	0.775	0.001	0.695	0.725	0.775	0.004	0.073	0.516	0.809
FinlandEuro	-0.042	-0.021	0.606	-0.005	-0.010	-0.063	0.597	-0.006	-0.010	-0.063	0.597	-0.006
p-value	0.724	0.861	0.000	0.631	0.934	0.612	0.000	0.619	0.934	0.612	0.000	0.619
FranceEuro	-0.173	0.038	0.053	-0.004	-0.173	0.038	0.053	-0.004	-0.172	0.043	0.061	-0.004
p-value	0.013	0.647	0.556	0.804	0.013	0.647	0.556	0.804	0.009	0.587	0.491	0.809
GreeceGREuro	-0.095	0.009	0.136	-0.064	-0.096	-0.003	0.137	-0.064	-0.086	-0.006	0.099	-0.065
p-value	0.025	0.890	0.568	0.046	0.029	0.964	0.575	0.049	0.023	0.920	0.663	0.049
IrelandEuro	-0.281	-0.546	0.526	0.024	-0.281	-0.546	0.526	0.024	-0.338	-0.613	0.603	0.024
p-value	0.001	0.000	0.024	0.706	0.001	0.000	0.024	0.706	0.001	0.003	0.046	0.689
ItalyEuro	-0.486	0.332	-0.076	-0.025	-0.486	0.332	-0.076	-0.025	-0.486	0.332	-0.076	-0.025
p-value	0.004	0.028	0.674	0.460	0.004	0.028	0.674	0.460	0.004	0.028	0.674	0.460
Lithuanial~s	-0.166	-0.426	-2.018	-0.002	-0.166	-0.426	-2.018	-0.002	-0.162	-0.435	-2.017	-0.002
p-value	0.072	0.011	0.000	0.983	0.072	0.011	0.000	0.983	0.066	0.009	0.000	0.984
LatviaEuro	-0.117	-0.155	-0.989	0.074	-0.117	-0.155	-0.989	0.074	-0.118	-0.252	-1.018	0.071
p-value	0.074	0.104	0.255	0.588	0.074	0.104	0.255	0.588	0.070	0.011	0.245	0.616
PortugalEuro	-0.109	-0.031	0.423	-0.008	-0.108	-0.112	0.413	-0.007	-0.223	0.181	0.504	-0.006
p-value	0.008	0.661	0.034	0.723	0.008	0.192	0.041	0.744	0.003	0.025	0.017	0.771
SloveniaEuro	-0.432	0.262	0.367	-0.002	-0.447	0.254	0.359	-0.002	-0.319	0.031	0.254	-0.003
p-value	0.002	0.058	0.002	0.911	0.002	0.086	0.001	0.923	0.003	0.844	0.073	0.835
Euroareach~o	-0.079	-0.074	0.133	-0.005	-0.079	-0.074	0.133	-0.005	-0.594	0.469	0.070	-0.005
p-value	0.025	0.508	0.111	0.752	0.025	0.508	0.111	0.752	0.000	0.001	0.333	0.721

Table 26.1-26.3 ECM coefficients, regimes shifts, 1st loan category

Maturity 1 to 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.015	-0.071	-0.008	-0.017	-0.015	-0.071	-0.008	-0.017	-0.035	-0.011	-0.049	-0.019
p-value	0.416	0.015	0.873	0.040	0.416	0.015	0.873	0.040	0.004	0.505	0.222	0.038
BelgiumEuro	-0.056	0.191	-0.026	-0.010	-0.065	0.079	-0.029	-0.010	-0.060	0.071	-0.029	-0.010
p-value	0.000	0.000	0.308	0.117	0.001	0.250	0.306	0.105	0.000	0.008	0.250	0.100
CzechRepub~K	-0.068	-0.158	0.048	-0.010	-0.051	-0.055	0.031	-0.010	-0.069	0.000	0.050	-0.010
p-value	0.001	0.055	0.012	0.015	0.153	0.432	0.163	0.067	0.001	.	0.010	0.020
GermanyEuro	-0.028	0.055	0.030	-0.018	-0.033	0.042	0.028	-0.018	-0.029	0.030	0.028	-0.018
p-value	0.000	0.000	0.127	0.000	0.000	0.006	0.178	0.000	0.000	0.005	0.156	0.000
EstoniaEuro	-0.186	0.121	0.054	-0.008	-0.188	0.145	0.054	-0.008	-0.187	0.138	0.054	-0.007
p-value	0.013	0.178	0.656	0.616	0.012	0.105	0.657	0.618	0.013	0.115	0.654	0.626
SpainEuro	0.003	-0.239	0.300	0.010	0.002	-0.029	0.303	0.009	0.013	-0.063	0.315	0.009
p-value	0.913	0.008	0.000	0.363	0.937	0.773	0.000	0.423	0.570	0.557	0.000	0.367
FinlandEuro	-0.250	0.025	0.254	-0.015	-0.252	0.041	0.256	-0.015	-0.250	0.025	0.254	-0.015
p-value	0.000	0.728	0.001	0.076	0.000	0.521	0.001	0.077	0.000	0.728	0.001	0.076
FranceEuro	-0.058	-0.065	-0.072	-0.018	-0.056	-0.138	-0.070	-0.019	-0.059	-0.030	-0.080	-0.018
p-value	0.000	0.771	0.051	0.000	0.000	0.440	0.055	0.000	0.000	0.172	0.031	0.000
GreeceGREuro	0.012	-0.068	0.213	-0.012	0.012	-0.068	0.213	-0.012	0.012	-0.068	0.213	-0.012
p-value	0.702	0.133	0.000	0.140	0.702	0.133	0.000	0.140	0.708	0.133	0.000	0.140
IrelandEuro	-0.073	-0.274	0.591	-0.004	-0.090	-0.320	0.586	-0.005	-0.090	0.232	0.587	-0.004
p-value	0.006	0.409	0.000	0.609	0.004	0.621	0.000	0.572	0.004	0.050	0.000	0.599
ItalyEuro	-0.105	-0.063	0.195	-0.011	-0.107	-0.073	0.196	-0.011	-0.107	-0.073	0.196	-0.011
p-value	0.001	0.273	0.001	0.099	0.000	0.209	0.001	0.096	0.000	0.209	0.001	0.096
LithuaniaI~s	-0.040	0.026	-0.393	-0.034	-0.038	0.030	-0.381	-0.033	-0.042	-0.030	-0.395	-0.035
p-value	0.153	0.564	0.040	0.197	0.165	0.463	0.050	0.197	0.036	0.585	0.027	0.171
LatviaEuro	-0.039	-0.145	0.225	-0.005	-0.039	-0.145	0.225	-0.005	-0.040	-0.116	0.222	-0.005
p-value	0.149	0.054	0.005	0.645	0.149	0.054	0.005	0.645	0.136	0.119	0.005	0.638
Latvialats	-0.037	0.015	-0.932	-0.040	-0.052	0.000	-0.987	-0.041	-0.121	0.076	-0.943	-0.040
p-value	0.347	0.786	0.003	0.462	0.120	.	0.001	0.426	0.021	0.225	0.000	0.430
Netherland~o	-0.058	0.000	0.053	-0.014	-0.094	0.080	0.015	-0.015	-0.068	0.060	0.041	-0.014
p-value	0.025	.	0.323	0.041	0.001	0.084	0.766	0.030	0.006	0.098	0.437	0.040
SloveniaEuro	-0.223	0.079	0.178	-0.014	-0.227	0.080	0.173	-0.015	-0.228	0.088	0.167	-0.014
p-value	0.000	0.245	0.211	0.370	0.000	0.204	0.223	0.354	0.000	0.188	0.245	0.367
SlovakiaEuro	-0.008	-0.101	0.152	0.012	-0.007	-0.124	0.152	0.012	-0.008	-0.024	0.153	0.011
p-value	0.725	0.222	0.467	0.607	0.725	0.083	0.465	0.602	0.702	0.875	0.464	0.619
Euroareach~o	-0.050	0.075	0.070	-0.015	-0.055	0.034	0.069	-0.016	-0.052	0.035	0.066	-0.016
p-value	0.000	0.000	0.000	0.000	0.000	0.116	0.001	0.000	0.000	0.013	0.000	0.000

Maturity over 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.089	0.066	0.118	-0.019	-0.093	0.066	0.118	-0.019	-0.090	0.045	0.114	-0.019
p-value	0.000	0.003	0.020	0.004	0.000	0.013	0.038	0.010	0.000	0.124	0.027	0.004
BelgiumEuro	-0.042	0.091	-0.010	-0.012	-0.058	0.017	-0.014	-0.012	-0.026	0.000	-0.004	-0.012
p-value	0.002	0.000	0.545	0.004	0.018	0.816	0.445	0.002	0.206	.	0.840	0.005
GermanyEuro	-0.006	0.005	-0.001	-0.016	-0.006	0.005	-0.001	-0.016	-0.006	0.005	-0.001	-0.016
p-value	0.058	0.643	0.834	0.000	0.058	0.643	0.834	0.000	0.054	0.629	0.837	0.000
EstoniaEuro	-0.256	0.101	-0.036	-0.023	-0.255	0.097	-0.023	-0.023	-0.258	0.102	-0.035	-0.023
p-value	0.000	0.079	0.719	0.071	0.000	0.111	0.817	0.062	0.000	0.064	0.722	0.062
SpainEuro	-0.093	0.049	-0.004	-0.020	-0.087	0.025	0.009	-0.020	-0.091	0.015	0.007	-0.020
p-value	0.000	0.182	0.957	0.053	0.001	0.425	0.910	0.081	0.000	0.588	0.931	0.069
FinlandEuro	-0.221	0.084	0.197	-0.018	-0.233	0.088	0.178	-0.019	-0.228	0.093	0.182	-0.018
p-value	0.000	0.130	0.004	0.031	0.000	0.028	0.005	0.012	0.000	0.062	0.006	0.021
FranceEuro	-0.056	-0.131	-0.067	-0.017	-0.047	-0.126	-0.052	-0.017	-0.056	-0.109	-0.069	-0.017
p-value	0.000	0.128	0.087	0.000	0.039	0.124	0.170	0.002	0.000	0.230	0.083	0.000
GreeceGREuro	-0.029	-0.027	0.177	-0.015	-0.030	0.062	0.176	-0.015	-0.029	-0.027	0.177	-0.015
p-value	0.060	0.317	0.000	0.000	0.048	0.162	0.000	0.001	0.060	0.317	0.000	0.000
Hungaryfo~nt	-0.021	0.038	-0.158	-0.038	-0.021	0.038	-0.158	-0.038	-0.021	0.040	-0.158	-0.038
p-value	0.233	0.216	0.120	0.097	0.233	0.216	0.120	0.097	0.245	0.185	0.121	0.097
IrelandEuro	-0.076	0.019	0.524	-0.001	-0.076	0.019	0.524	-0.001	-0.069	-0.052	0.526	-0.001
p-value	0.031	0.776	0.000	0.823	0.031	0.776	0.000	0.823	0.039	0.397	0.000	0.857
ItalyEuro	-0.142	-0.059	0.171	-0.015	-0.146	-0.075	0.172	-0.015	-0.144	-0.099	0.175	-0.015
p-value	0.000	0.214	0.003	0.013	0.000	0.130	0.002	0.009	0.000	0.012	0.001	0.009
Lithuanial~s	-0.042	0.045	-0.477	-0.031	-0.031	-0.030	-0.449	-0.031	-0.034	0.001	-0.449	-0.031
p-value	0.066	0.021	0.005	0.276	0.178	0.230	0.010	0.299	0.124	0.970	0.011	0.300
LatviaEuro	-0.098	0.078	0.239	-0.013	-0.153	-0.018	0.184	-0.014	-0.090	0.116	0.246	-0.013
p-value	0.014	0.058	0.001	0.233	0.002	0.810	0.008	0.173	0.003	0.001	0.000	0.230
Latvialats	-0.053	0.088	-0.796	-0.055	-0.049	0.050	-0.765	-0.055	-0.050	0.000	-0.776	-0.056
p-value	0.140	0.090	0.012	0.267	0.080	0.082	0.011	0.252	0.063	.	0.008	0.240
Netherland~o	-0.043	0.073	0.014	-0.010	-0.052	0.089	0.010	-0.010	-0.035	0.000	0.014	-0.010
p-value	0.000	0.001	0.180	0.000	0.000	0.000	0.283	0.000	0.000	.	0.117	0.000
PortugalEuro	-0.253	0.080	-0.080	-0.026	-0.253	0.081	-0.071	-0.026	-0.254	0.069	-0.078	-0.026
p-value	0.000	0.089	0.484	0.013	0.000	0.048	0.533	0.008	0.000	0.122	0.492	0.009
SloveniaEuro	-0.227	0.068	0.192	-0.019	-0.230	0.061	0.192	-0.019	-0.230	0.063	0.185	-0.019
p-value	0.000	0.206	0.055	0.135	0.000	0.213	0.052	0.108	0.000	0.227	0.066	0.122
SlovakiaEuro	-0.026	0.082	-0.005	-0.003	-0.039	0.069	-0.019	-0.003	-0.021	0.000	0.000	-0.003
p-value	0.171	0.002	0.933	0.772	0.086	0.118	0.737	0.699	0.231	.	0.996	0.743
Euroareach~o	-0.039	-0.030	0.076	-0.016	-0.062	0.006	0.057	-0.016	-0.057	0.078	0.058	-0.016
p-value	0.039	0.307	0.009	0.000	0.000	0.836	0.006	0.000	0.000	0.000	0.002	0.000

Maturity up to 1 year												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.129	-0.048	0.208	-0.022	-0.132	-0.008	0.206	-0.022	-0.106	0.043	0.242	-0.021
p-value	0.000	0.408	0.023	0.007	0.000	0.913	0.022	0.007	0.000	0.312	0.005	0.005
BelgiumEuro	-0.150	-0.024	-0.164	-0.018	-0.141	-0.024	-0.139	-0.017	-0.131	-0.005	-0.129	-0.017
p-value	0.000	0.761	0.022	0.184	0.000	0.746	0.067	0.239	0.000	0.948	0.083	0.269
GermanyEuro	-0.100	0.092	0.176	-0.016	-0.101	0.049	0.176	-0.016	-0.094	0.135	0.179	-0.016
p-value	0.000	0.230	0.004	0.015	0.000	0.515	0.004	0.015	0.000	0.000	0.002	0.017
EstoniaEuro	-0.142	0.040	0.302	-0.014	-0.142	0.040	0.302	-0.014	-0.145	0.069	0.297	-0.014
p-value	0.021	0.637	0.057	0.494	0.021	0.637	0.057	0.494	0.020	0.420	0.060	0.496
SpainEuro	-0.031	0.000	0.228	0.019	-0.031	0.000	0.228	0.019	-0.031	0.000	0.228	0.019
p-value	0.081	.	0.000	0.655	0.081	.	0.000	0.655	0.081	.	0.000	0.655
FinlandEuro	-0.262	-0.209	0.287	-0.012	-0.260	-0.215	0.292	-0.012	-0.262	-0.209	0.287	-0.012
p-value	0.000	0.034	0.001	0.193	0.000	0.034	0.001	0.205	0.000	0.034	0.001	0.193
FranceEuro	-0.087	-0.226	-0.124	-0.017	-0.086	-0.129	-0.125	-0.016	-0.076	0.068	-0.122	-0.016
p-value	0.001	0.030	0.078	0.044	0.001	0.243	0.077	0.045	0.000	0.008	0.073	0.052
GreeceGREuro	-0.071	-0.114	0.104	-0.033	-0.068	-0.103	0.162	-0.032	-0.059	-0.105	0.166	-0.032
p-value	0.094	0.253	0.364	0.232	0.100	0.291	0.160	0.230	0.059	0.289	0.130	0.218
IrelandEuro	-0.138	-0.368	0.614	0.002	-0.122	0.552	0.621	-0.001	-0.214	-0.278	0.571	0.001
p-value	0.031	0.456	0.000	0.834	0.035	0.158	0.000	0.922	0.006	0.327	0.000	0.950
ItalyEuro	-0.161	-0.326	0.012	-0.010	-0.161	-0.326	0.012	-0.010	-0.154	0.000	0.099	-0.008
p-value	0.000	0.002	0.913	0.646	0.000	0.002	0.913	0.646	0.001	.	0.450	0.700
Lithuanial~s	-0.158	-0.542	-1.118	-0.073	-0.158	-0.542	-1.118	-0.073	-0.156	-0.364	-1.096	-0.071
p-value	0.008	0.060	0.031	0.351	0.008	0.060	0.031	0.351	0.008	0.198	0.035	0.375
LatviaEuro	-0.730	0.000	-5.774	-0.074	-0.730	0.000	-5.774	-0.074	-0.730	0.000	-5.774	-0.074
p-value	0.000	.	0.035	0.889	0.000	.	0.035	0.889	0.000	.	0.035	0.889
Latvialats	-0.334	0.195	-6.253	-0.096	-0.334	0.195	-6.253	-0.096	-0.333	0.000	-6.307	-0.096
p-value	0.016	0.223	0.023	0.855	0.016	0.223	0.023	0.855	0.016	.	0.021	0.852
Netherland~o	-0.064	0.029	0.269	-0.007	-0.064	0.029	0.269	-0.007	-0.069	0.050	0.269	-0.007
p-value	0.169	0.699	0.003	0.553	0.169	0.699	0.003	0.553	0.141	0.535	0.003	0.548
SloveniaEuro	-0.255	-0.033	-0.889	-0.010	-0.235	-0.071	-0.823	-0.008	-0.227	-0.093	-0.804	-0.008
p-value	0.005	0.798	0.053	0.900	0.006	0.551	0.065	0.920	0.006	0.436	0.062	0.923
Euroareach~o	-0.114	0.021	0.154	-0.014	-0.114	0.021	0.154	-0.014	-0.114	0.021	0.154	-0.014
p-value	0.000	0.769	0.001	0.031	0.000	0.769	0.001	0.031	0.000	0.769	0.001	0.031

Table 27.1-27.3 ECM coefficients, regimes shifts, 3rd loan category

Maturity 1 to 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.189	-0.116	0.199	-0.015	-0.189	-0.111	0.202	-0.015	-0.184	-0.165	0.206	-0.015
p-value	0.002	0.227	0.070	0.090	0.002	0.249	0.066	0.093	0.003	0.133	0.062	0.082
BelgiumEuro	-0.267	-0.059	0.246	-0.012	-0.267	-0.059	0.246	-0.012	-0.269	-0.048	0.239	-0.012
p-value	0.000	0.407	0.000	0.146	0.000	0.407	0.000	0.146	0.000	0.439	0.000	0.137
GermanyEuro	-0.087	0.004	0.281	-0.011	-0.087	0.004	0.281	-0.011	-0.086	0.002	0.280	-0.011
p-value	0.027	0.946	0.000	0.116	0.027	0.946	0.000	0.116	0.029	0.974	0.000	0.117
EstoniaEuro	-0.129	-0.056	0.206	-0.014	-0.127	-0.055	0.217	-0.014	-0.129	-0.056	0.206	-0.014
p-value	0.020	0.454	0.019	0.260	0.020	0.550	0.018	0.261	0.020	0.454	0.019	0.260
SpainEuro	-0.025	0.110	0.362	-0.004	-0.025	0.110	0.362	-0.004	-0.019	0.095	0.366	-0.004
p-value	0.322	0.630	0.000	0.691	0.322	0.630	0.000	0.691	0.436	0.755	0.000	0.713
FinlandEuro	-0.123	-0.040	0.406	-0.008	-0.123	-0.040	0.406	-0.008	-0.131	-0.122	0.402	-0.008
p-value	0.026	0.694	0.000	0.370	0.026	0.694	0.000	0.370	0.021	0.128	0.000	0.371
FranceEuro	-0.245	0.128	0.025	-0.016	-0.245	0.128	0.025	-0.016	-0.248	0.130	0.017	-0.016
p-value	0.000	0.115	0.705	0.047	0.000	0.115	0.705	0.047	0.000	0.064	0.793	0.048
GreeceGREuro	-0.008	0.013	0.517	0.007	-0.008	0.013	0.517	0.007	-0.028	-0.047	0.500	0.007
p-value	0.656	0.817	0.000	0.469	0.656	0.817	0.000	0.469	0.282	0.716	0.000	0.476
IrelandEuro	-0.242	0.204	0.284	-0.008	-0.248	0.236	0.280	-0.008	-0.238	0.183	0.291	-0.008
p-value	0.000	0.068	0.001	0.494	0.000	0.026	0.001	0.466	0.000	0.078	0.001	0.492
ItalyEuro	-0.139	0.108	0.372	-0.001	-0.153	0.102	0.356	-0.002	-0.128	0.063	0.384	-0.001
p-value	0.005	0.129	0.000	0.917	0.013	0.149	0.000	0.877	0.005	0.382	0.000	0.944
Lithuanial~s	-0.031	-0.066	-0.288	-0.021	-0.033	-0.058	-0.289	-0.021	-0.031	-0.066	-0.288	-0.021
p-value	0.181	0.141	0.045	0.458	0.167	0.185	0.051	0.457	0.181	0.141	0.045	0.458
LatviaEuro	-0.124	-0.222	0.323	-0.015	-0.120	-0.228	0.338	-0.015	-0.124	-0.222	0.323	-0.015
p-value	0.015	0.146	0.025	0.287	0.018	0.141	0.018	0.296	0.015	0.146	0.025	0.287
Latvialats	-0.076	0.038	-1.484	-0.057	-0.074	0.078	-1.467	-0.056	-0.074	0.089	-1.468	-0.056
p-value	0.158	0.519	0.012	0.534	0.153	0.034	0.010	0.526	0.154	0.018	0.009	0.527
Netherland~o	-0.118	-0.130	0.451	-0.009	-0.063	-0.100	0.458	-0.009	-0.118	-0.130	0.451	-0.009
p-value	0.001	0.189	0.001	0.183	0.084	0.177	0.000	0.243	0.001	0.189	0.001	0.183
PortugalEuro	-0.006	-0.020	0.351	0.004	-0.006	-0.020	0.351	0.004	-0.004	-0.013	0.354	0.004
p-value	0.868	0.650	0.000	0.751	0.868	0.650	0.000	0.751	0.868	0.683	0.000	0.744
SloveniaEuro	-0.003	-0.102	0.555	0.016	-0.003	-0.102	0.555	0.016	-0.003	-0.102	0.555	0.016
p-value	0.844	0.117	0.000	0.070	0.844	0.117	0.000	0.070	0.844	0.117	0.000	0.070
SlovakiaEuro	-0.009	-0.279	0.583	0.014	-0.013	-0.082	0.574	0.013	-0.022	-0.171	0.557	0.013
p-value	0.569	0.001	0.000	0.094	0.425	0.567	0.000	0.133	0.300	0.245	0.000	0.140
Euroareach~o	-0.122	0.001	0.275	-0.007	-0.116	-0.018	0.288	-0.007	-0.122	0.001	0.275	-0.007
p-value	0.014	0.993	0.000	0.367	0.017	0.850	0.000	0.385	0.014	0.993	0.000	0.367

Maturity over 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.212	-0.035	0.180	-0.015	-0.220	0.026	0.174	-0.015	-0.221	0.027	0.172	-0.015
p-value	0.000	0.701	0.050	0.030	0.000	0.724	0.057	0.031	0.000	0.712	0.060	0.031
BelgiumEuro	-0.020	0.000	0.108	-0.013	-0.067	0.116	0.087	-0.013	-0.067	0.116	0.087	-0.013
p-value	0.243	.	0.000	0.011	0.017	0.032	0.000	0.006	0.017	0.032	0.000	0.006
GermanyEuro	-0.027	-0.003	0.146	-0.015	-0.026	0.004	0.147	-0.015	-0.027	-0.003	0.146	-0.015
p-value	0.021	0.921	0.001	0.000	0.025	0.893	0.001	0.000	0.021	0.921	0.001	0.000
EstoniaEuro	-0.297	0.086	0.080	-0.017	-0.291	0.001	0.102	-0.017	-0.297	0.086	0.080	-0.017
p-value	0.000	0.165	0.310	0.121	0.000	0.982	0.206	0.115	0.000	0.165	0.310	0.121
SpainEuro	-0.056	-0.044	0.223	-0.006	-0.054	-0.046	0.227	-0.006	-0.054	-0.046	0.227	-0.006
p-value	0.095	0.561	0.001	0.600	0.100	0.529	0.000	0.603	0.100	0.529	0.000	0.603
FinlandEuro	-0.227	0.031	0.197	-0.014	-0.229	0.043	0.198	-0.014	-0.230	0.043	0.194	-0.014
p-value	0.000	0.562	0.002	0.071	0.000	0.396	0.002	0.069	0.000	0.371	0.002	0.067
FranceEuro	-0.157	-0.002	-0.009	-0.014	-0.157	-0.002	-0.009	-0.014	-0.149	0.159	-0.011	-0.013
p-value	0.000	0.982	0.832	0.033	0.000	0.982	0.832	0.033	0.000	0.437	0.805	0.036
GreeceGREuro	-0.049	0.020	0.317	-0.004	-0.050	0.074	0.316	-0.004	-0.171	-0.010	0.189	-0.006
p-value	0.109	0.927	0.000	0.658	0.099	0.452	0.000	0.664	0.000	0.898	0.003	0.477
IrelandEuro	-0.277	-0.010	0.277	-0.012	-0.271	0.010	0.296	-0.012	-0.270	-0.044	0.297	-0.012
p-value	0.000	0.906	0.000	0.113	0.000	0.888	0.000	0.134	0.000	0.440	0.000	0.130
ItalyEuro	-0.192	0.065	0.230	-0.008	-0.194	0.032	0.227	-0.008	-0.190	0.075	0.232	-0.008
p-value	0.000	0.363	0.006	0.360	0.000	0.702	0.006	0.345	0.000	0.264	0.006	0.370
Lithuanial~s	-0.031	0.024	-0.310	-0.017	-0.042	-0.057	-0.369	-0.019	-0.042	-0.057	-0.369	-0.019
p-value	0.251	0.741	0.070	0.590	0.116	0.058	0.031	0.537	0.116	0.058	0.031	0.537
LatviaEuro	-0.216	0.021	0.230	-0.020	-0.218	0.044	0.228	-0.020	-0.218	0.065	0.230	-0.020
p-value	0.000	0.770	0.004	0.070	0.000	0.527	0.004	0.071	0.000	0.392	0.004	0.072
LatviaLatv~s	-0.063	-0.028	-0.719	-0.049	-0.064	0.019	-0.710	-0.048	-0.067	0.001	-0.736	-0.048
p-value	0.261	0.547	0.040	0.339	0.156	0.603	0.024	0.321	0.165	0.985	0.031	0.325
Netherland~o	-0.048	-0.147	0.251	-0.011	-0.057	-0.047	0.247	-0.011	-0.057	-0.047	0.247	-0.011
p-value	0.000	0.001	0.000	0.001	0.000	0.502	0.000	0.001	0.000	0.502	0.000	0.001
PortugalEuro	-0.092	-0.008	0.306	-0.004	-0.223	0.068	0.160	-0.007	-0.084	-0.064	0.317	-0.004
p-value	0.058	0.914	0.000	0.718	0.000	0.411	0.132	0.484	0.046	0.339	0.000	0.739
SloveniaEuro	-0.035	-0.116	0.604	0.007	-0.044	-0.030	0.592	0.006	-0.050	-0.081	0.585	0.006
p-value	0.256	0.005	0.000	0.547	0.180	0.667	0.000	0.610	0.073	0.185	0.000	0.603
SlovakiaEuro	-0.069	0.021	0.505	0.008	-0.069	0.021	0.505	0.008	-0.149	0.025	0.388	0.006
p-value	0.119	0.814	0.000	0.475	0.119	0.814	0.000	0.475	0.025	0.734	0.000	0.578
Euroareach~o	-0.153	-0.005	0.119	-0.013	-0.156	0.009	0.118	-0.013	-0.151	0.011	0.122	-0.013
p-value	0.000	0.921	0.004	0.022	0.000	0.821	0.003	0.020	0.000	0.832	0.003	0.026

Maturity up to 1 year												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.295	0.045	0.299	-0.012	-0.293	0.043	0.303	-0.012	-0.295	0.045	0.299	-0.012
p-value	0.001	0.677	0.001	0.147	0.001	0.699	0.001	0.149	0.001	0.677	0.001	0.147
BelgiumEuro	-0.462	0.016	0.331	-0.010	-0.462	0.016	0.331	-0.010	-0.476	0.099	0.316	-0.010
p-value	0.000	0.920	0.007	0.341	0.000	0.920	0.007	0.341	0.000	0.465	0.010	0.325
Bulgarialev	-0.024	0.027	0.017	-0.027	-0.028	0.050	0.010	-0.027	-0.013	0.000	0.033	-0.026
p-value	0.245	0.413	0.908	0.098	0.204	0.208	0.941	0.098	0.381	.	0.814	0.101
CzechRepub~K	-0.080	0.000	0.147	-0.010	-0.074	-0.059	0.162	-0.010	-0.065	0.072	0.168	-0.010
p-value	0.023	0.995	0.079	0.372	0.021	0.395	0.046	0.361	0.007	0.010	0.031	0.397
GermanyEuro	-0.208	-0.057	0.426	-0.008	-0.208	-0.057	0.426	-0.008	-0.208	-0.068	0.423	-0.008
p-value	0.000	0.575	0.000	0.142	0.000	0.575	0.000	0.142	0.000	0.517	0.000	0.144
EstoniaEuro	-0.130	0.050	0.472	-0.014	-0.180	0.010	0.458	-0.014	-0.136	0.022	0.476	-0.014
p-value	0.227	0.530	0.109	0.795	0.127	0.959	0.136	0.788	0.214	0.816	0.104	0.793
SpainEuro	0.001	-0.016	0.486	0.000	0.001	-0.016	0.486	0.000	-0.016	-0.001	0.462	-0.001
p-value	0.954	0.685	0.000	0.999	0.954	0.685	0.000	0.999	0.530	0.991	0.000	0.957
FinlandEuro	-0.305	0.152	0.519	-0.006	-0.296	0.167	0.530	-0.005	-0.305	0.152	0.519	-0.006
p-value	0.000	0.163	0.000	0.505	0.000	0.109	0.000	0.538	0.000	0.163	0.000	0.505
FranceEuro	-0.280	-0.044	0.251	-0.010	-0.280	-0.044	0.251	-0.010	-0.281	0.048	0.243	-0.010
p-value	0.000	0.636	0.001	0.237	0.000	0.636	0.001	0.237	0.000	0.590	0.001	0.242
GreeceGREuro	0.038	-0.041	0.471	0.008	0.010	-0.054	0.445	0.008	0.013	0.001	0.446	0.007
p-value	0.020	0.296	0.000	0.310	0.476	0.423	0.000	0.392	0.406	0.983	0.000	0.414
IrelandEuro	-0.166	0.000	0.560	-0.006	-0.187	0.380	0.543	-0.006	-0.187	0.380	0.543	-0.006
p-value	0.001	.	0.000	0.576	0.000	0.029	0.000	0.525	0.000	0.029	0.000	0.525
ItalyEuro	-0.030	0.000	0.436	-0.003	-0.030	0.000	0.436	-0.003	-0.067	0.065	0.385	-0.004
p-value	0.109	.	0.001	0.770	0.109	.	0.001	0.770	0.047	0.308	0.001	0.696
Lithuanial~s	-0.023	-0.027	-0.063	-0.030	-0.024	0.081	-0.071	-0.029	-0.035	0.136	-0.099	-0.028
p-value	0.448	0.650	0.729	0.295	0.420	0.388	0.695	0.305	0.177	0.000	0.564	0.289
LatviaEuro	-0.281	-0.018	-0.024	-0.021	-0.283	0.024	-0.032	-0.021	-0.287	0.028	-0.039	-0.021
p-value	0.003	0.893	0.908	0.488	0.003	0.871	0.876	0.479	0.003	0.827	0.851	0.480
Latvialats	-0.111	0.085	-0.542	-0.049	-0.111	0.124	-0.542	-0.048	-0.112	0.095	-0.538	-0.049
p-value	0.106	0.153	0.525	0.636	0.106	0.042	0.524	0.643	0.109	0.125	0.528	0.640
Netherland~o	-0.322	-0.036	0.495	-0.009	-0.322	-0.036	0.495	-0.009	-0.165	0.000	0.565	-0.007
p-value	0.000	0.761	0.000	0.206	0.000	0.761	0.000	0.206	0.004	.	0.000	0.312
PortugalEuro	0.030	-0.048	0.463	0.006	0.002	-0.863	0.423	0.004	-0.044	0.034	0.371	0.004
p-value	0.149	0.256	0.000	0.619	0.891	0.026	0.000	0.742	0.344	0.598	0.000	0.801
SloveniaEuro	-0.011	0.049	0.325	0.018	-0.012	0.013	0.324	0.018	-0.010	-0.021	0.327	0.019
p-value	0.485	0.821	0.003	0.144	0.462	0.957	0.003	0.141	0.531	0.912	0.003	0.127
SlovakiaEuro	-0.032	-0.225	0.529	0.007	-0.034	-0.120	0.527	0.006	-0.034	-0.120	0.527	0.006
p-value	0.215	0.010	0.000	0.436	0.203	0.057	0.000	0.460	0.203	0.057	0.000	0.460
Euroareach~o	-0.182	0.155	0.331	-0.007	-0.180	0.158	0.334	-0.007	-0.170	0.123	0.347	-0.007
p-value	0.003	0.068	0.000	0.375	0.003	0.073	0.000	0.376	0.005	0.200	0.000	0.397

Table 28.1-28.3 ECM coefficients, level shifts, 1st loan category

Maturity 1 to 5 years																
	L.				D.				L.				D.			
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf				
AustriaEuro	-0.251	-0.170	0.443	0.001	-0.251	-0.170	0.443	0.001	-0.282	-0.117	0.439	0.001				
p-value	0.008	0.178	0.011	0.946	0.008	0.178	0.011	0.946	0.001	0.391	0.010	0.961				
BelgiumEuro	-0.128	-0.058	-0.042	-0.037	-0.228	0.202	-0.086	-0.026	-0.146	0.100	-0.055	-0.031				
p-value	0.006	0.442	0.664	0.091	0.001	0.019	0.418	0.214	0.000	0.265	0.582	0.141				
GermanyEuro	-0.249	0.072	0.053	-0.008	-0.184	-0.001	0.045	-0.009	-0.314	0.130	0.041	-0.009				
p-value	0.032	0.599	0.409	0.446	0.300	0.996	0.521	0.413	0.061	0.475	0.549	0.421				
SpainEuro	-0.103	-0.242	0.295	0.009	-0.103	-0.242	0.295	0.009	-0.146	0.066	0.266	0.003				
p-value	0.003	0.095	0.048	0.682	0.003	0.095	0.048	0.682	0.004	0.343	0.083	0.880				
FinlandEuro	-0.053	-0.220	0.432	0.001	-0.053	-0.220	0.432	0.001	-0.044	-0.144	0.361	-0.006				
p-value	0.021	0.020	0.000	0.980	0.021	0.020	0.000	0.980	0.054	0.048	0.002	0.876				
FranceEuro	-0.180	0.077	0.001	-0.014	-0.019	-0.108	-0.029	-0.018	-0.153	0.159	-0.018	-0.016				
p-value	0.000	0.232	0.990	0.170	0.825	0.277	0.675	0.072	0.000	0.008	0.823	0.104				
GreeceGREuro	-0.102	0.030	0.153	-0.023	-0.108	-0.005	0.147	-0.033	-0.084	-0.036	0.054	-0.040				
p-value	0.046	0.642	0.331	0.464	0.038	0.944	0.430	0.286	0.075	0.614	0.708	0.222				
ItalyEuro	-0.179	0.027	0.002	-0.020	-0.300	0.172	-0.074	-0.013	-0.164	0.000	0.009	-0.020				
p-value	0.000	0.762	0.984	0.304	0.000	0.024	0.480	0.485	0.000	0.999	0.925	0.286				
LatviaEuro	-0.256	-0.079	-2.540	0.069	-0.256	-0.079	-2.540	0.069	0.083	-0.402	-1.934	0.138				
p-value	0.028	0.695	0.007	0.686	0.028	0.695	0.007	0.686	0.406	0.048	0.049	0.429				
LatviaLatv~s	-0.311	0.242	-0.668	0.017	-0.311	0.242	-0.668	0.017	-0.313	0.247	-0.731	0.019				
p-value	0.000	0.008	0.129	0.792	0.000	0.008	0.129	0.792	0.000	0.006	0.100	0.770				
PortugalEuro	-0.461	0.339	-0.088	0.001	-0.461	0.339	-0.088	0.001	-0.416	0.316	-0.025	-0.001				
p-value	0.003	0.038	0.769	0.982	0.003	0.038	0.769	0.982	0.005	0.038	0.932	0.981				
SloveniaEuro	-0.752	0.690	0.223	-0.010	-0.752	0.690	0.223	-0.010	-0.794	0.626	0.234	-0.015				
p-value	0.000	0.000	0.259	0.797	0.000	0.000	0.259	0.797	0.000	0.000	0.201	0.707				
Euroareach~o	-0.329	0.189	0.042	-0.005	-0.329	0.189	0.042	-0.005	-0.315	0.169	0.035	-0.007				
p-value	0.009	0.177	0.434	0.555	0.009	0.177	0.434	0.555	0.012	0.220	0.526	0.435				

Maturity over 5 years																
	L.				D.				L.				D.			
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf				
AustriaEuro	-0.445	-0.164	0.125	-0.008	-0.445	-0.164	0.125	-0.008	-0.428	-0.180	0.195	-0.007				
p-value	0.000	0.374	0.367	0.753	0.000	0.374	0.367	0.753	0.001	0.346	0.201	0.779				
BelgiumEuro	-0.253	-0.034	-0.310	-0.036	-0.253	-0.034	-0.310	-0.036	-0.253	-0.034	-0.310	-0.036				
p-value	0.012	0.806	0.228	0.367	0.012	0.806	0.228	0.367	0.012	0.806	0.228	0.367				
GermanyEuro	-0.478	0.008	0.127	-0.004	-0.478	0.008	0.127	-0.004	-0.434	0.037	0.130	-0.004				
p-value	0.000	0.971	0.113	0.808	0.000	0.971	0.113	0.808	0.001	0.856	0.102	0.839				
SpainEuro	-0.256	0.158	0.407	0.006	-0.256	0.158	0.407	0.006	-0.256	0.158	0.407	0.006				

p-value	0.041	0.226	0.001	0.724	0.041	0.226	0.001	0.724	0.041	0.226	0.001	0.724
FinlandEuro	-0.317	-0.118	-0.026	0.004	-0.317	-0.118	-0.026	0.004	-0.317	-0.118	-0.026	0.004
p-value	0.020	0.529	0.940	0.958	0.020	0.529	0.940	0.958	0.020	0.529	0.940	0.958
FranceEuro	-0.099	0.103	-0.037	-0.013	-0.110	0.118	-0.057	-0.012	-0.086	0.085	-0.029	-0.011
p-value	0.000	0.064	0.612	0.248	0.000	0.033	0.393	0.271	0.001	0.184	0.680	0.315
GreeceGREuro	-0.312	-0.154	0.011	-0.021	-0.311	-0.284	0.016	-0.022	-0.275	-0.166	0.027	-0.023
p-value	0.000	0.263	0.976	0.601	0.000	0.048	0.965	0.613	0.001	0.388	0.941	0.584
ItalyEuro	-0.203	0.073	0.043	-0.001	-0.198	0.061	0.045	-0.001	-0.186	0.036	0.052	0.000
p-value	0.004	0.347	0.713	0.967	0.004	0.446	0.696	0.956	0.010	0.671	0.654	0.979
Euroareach~o	-0.455	0.076	-0.077	-0.007	-0.455	0.076	-0.077	-0.007	-0.469	0.418	-0.103	-0.005
p-value	0.000	0.634	0.304	0.557	0.000	0.634	0.304	0.557	0.000	0.029	0.186	0.678

Maturity up to 1 year																
	L.				D.				L.				D.			
	resid_zt	interac~t	EONIA_zt	const_zt	resid_zt	interac~a	EONIA_zt	const_zt	resid_adf	interac~f	EONIA_adf	const_adf	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.121	-0.108	0.341	-0.001	-0.115	-0.141	0.328	-0.002	-0.123	-0.093	0.340	-0.001				
p-value	0.015	0.172	0.000	0.887	0.024	0.075	0.000	0.859	0.017	0.259	0.000	0.873				
BelgiumEuro	-0.843	0.578	-0.464	-0.052	-0.843	0.578	-0.464	-0.052	-0.843	0.578	-0.464	-0.052				
p-value	0.000	0.067	0.089	0.310	0.000	0.067	0.089	0.310	0.000	0.067	0.089	0.310				
GermanyEuro	-0.183	0.047	0.114	0.001	-0.183	0.048	0.114	0.001	-0.313	0.257	0.026	0.004				
p-value	0.005	0.577	0.395	0.967	0.005	0.571	0.395	0.964	0.000	0.002	0.819	0.844				
EstoniaEuro	-0.128	-0.624	-0.464	0.020	-0.128	-0.769	-0.574	0.021	-0.129	-0.466	-0.360	0.018				
p-value	0.003	0.000	0.598	0.876	0.003	0.001	0.485	0.893	0.003	0.005	0.708	0.886				
SpainEuro	-0.186	-0.040	-0.094	-0.014	-0.186	-0.040	-0.094	-0.014	-0.196	0.015	-0.114	-0.016				
p-value	0.001	0.698	0.764	0.770	0.001	0.698	0.764	0.770	0.010	0.873	0.713	0.767				
FinlandEuro	-0.047	-0.013	0.606	-0.005	-0.025	-0.046	0.603	-0.006	-0.025	-0.046	0.603	-0.006				
p-value	0.555	0.871	0.000	0.630	0.766	0.610	0.000	0.622	0.766	0.610	0.000	0.622				
FranceEuro	-0.174	0.074	0.137	-0.006	-0.174	0.074	0.137	-0.006	-0.172	0.072	0.137	-0.005				
p-value	0.012	0.352	0.120	0.746	0.012	0.352	0.120	0.746	0.009	0.350	0.120	0.762				
GreeceGREuro	-0.092	0.038	0.144	-0.046	-0.109	0.008	0.190	-0.062	-0.107	0.007	0.145	-0.063				
p-value	0.018	0.450	0.474	0.217	0.010	0.904	0.457	0.055	0.006	0.910	0.524	0.056				
IrelandEuro	-0.110	-0.636	0.799	0.096	-0.110	-0.636	0.799	0.096	-0.338	-0.612	0.601	0.025				
p-value	0.225	0.000	0.004	0.187	0.225	0.000	0.004	0.187	0.001	0.003	0.047	0.684				
ItalyEuro	-0.480	0.341	-0.067	-0.025	-0.480	0.341	-0.067	-0.025	-0.480	0.341	-0.067	-0.025				
p-value	0.006	0.024	0.722	0.467	0.006	0.024	0.722	0.467	0.006	0.024	0.722	0.467				
Lithuanial~s	-0.157	-0.425	-1.959	0.006	-0.157	-0.425	-1.959	0.006	-0.124	-0.468	-1.966	0.000				
p-value	0.089	0.011	0.000	0.960	0.089	0.011	0.000	0.960	0.204	0.006	0.000	0.999				
LatviaEuro	-0.117	-0.146	-0.991	0.075	-0.117	-0.146	-0.991	0.075	-0.118	-0.244	-1.020	0.072				
p-value	0.074	0.128	0.256	0.581	0.074	0.128	0.256	0.581	0.071	0.016	0.245	0.610				
PortugalEuro	-0.108	-0.054	0.462	-0.006	-0.108	-0.059	0.463	-0.006	-0.172	0.130	0.443	0.002				
p-value	0.008	0.485	0.017	0.784	0.009	0.445	0.017	0.785	0.034	0.125	0.037	0.903				
SloveniaEuro	-0.396	0.218	0.373	-0.002	-0.418	0.229	0.358	-0.004	-0.319	0.033	0.174	-0.006				
p-value	0.001	0.087	0.001	0.877	0.002	0.108	0.001	0.831	0.001	0.824	0.273	0.744				
Euroareach~o	-0.076	-0.021	0.138	-0.005	-0.076	-0.021	0.138	-0.005	-0.171	0.053	0.097	-0.006				
p-value	0.030	0.770	0.102	0.763	0.030	0.770	0.102	0.763	0.055	0.582	0.205	0.667				

Table 29.1-29.3 ECM coefficients, level shifts, 2nd loan category

Maturity 1 to 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac ^t	EONIA_zt	const_zt	resid_za	interac ^a	EONIA_za	const_za	resid_adf	interac ^f	EONIA_adf	const_adf
AustriaEuro	-0.039	0.033	-0.056	-0.017	-0.039	0.033	-0.056	-0.017	-0.029	-0.111	-0.036	-0.021
p-value	0.010	0.208	0.175	0.079	0.010	0.208	0.175	0.079	0.099	0.206	0.450	0.063
BelgiumEuro	-0.069	0.311	-0.030	-0.008	-0.065	0.205	-0.028	-0.005	-0.062	0.236	-0.028	-0.007
p-value	0.001	0.000	0.271	0.206	0.009	0.005	0.297	0.429	0.035	0.000	0.293	0.337
CzechRepub ^K	-0.068	-0.111	0.049	-0.010	-0.067	0.009	0.050	-0.010	-0.069	0.000	0.050	-0.010
p-value	0.001	0.291	0.012	0.017	0.003	0.851	0.008	0.051	0.001	.	0.010	0.020
GermanyEuro	-0.029	0.044	0.030	-0.017	-0.043	0.061	0.023	-0.013	-0.034	0.046	0.025	-0.016
p-value	0.000	0.000	0.124	0.000	0.000	0.000	0.131	0.000	0.000	0.000	0.148	0.000
EstoniaEuro	-0.129	0.146	0.146	-0.015	-0.174	0.148	0.080	-0.007	-0.171	0.142	0.082	-0.007
p-value	0.078	0.180	0.197	0.497	0.024	0.088	0.517	0.649	0.027	0.092	0.503	0.659
SpainEuro	0.004	0.022	0.305	0.008	0.004	0.068	0.305	0.005	0.023	-0.058	0.331	0.018
p-value	0.872	0.645	0.000	0.471	0.871	0.068	0.000	0.689	0.329	0.242	0.000	0.043
FinlandEuro	-0.246	0.112	0.262	-0.015	-0.258	0.125	0.244	-0.015	-0.257	0.102	0.243	-0.015
p-value	0.000	0.145	0.001	0.095	0.000	0.071	0.002	0.076	0.000	0.154	0.002	0.080
FranceEuro	-0.058	-0.065	-0.072	-0.018	-0.062	0.031	-0.099	-0.016	-0.061	0.069	-0.079	-0.016
p-value	0.000	0.767	0.050	0.000	0.000	0.442	0.011	0.005	0.000	0.000	0.034	0.001
GreeceGREuro	-0.013	-0.023	0.198	-0.012	-0.013	-0.023	0.198	-0.012	-0.012	-0.021	0.197	-0.012
p-value	0.593	0.525	0.000	0.124	0.593	0.525	0.000	0.124	0.617	0.583	0.000	0.124
IrelandEuro	-0.073	-0.219	0.590	-0.002	-0.090	-0.150	0.586	-0.005	-0.090	-0.251	0.586	-0.005
p-value	0.005	0.261	0.000	0.811	0.004	0.672	0.000	0.564	0.004	0.199	0.000	0.547
ItalyEuro	-0.108	-0.005	0.192	-0.011	-0.109	-0.020	0.192	-0.011	-0.109	-0.020	0.192	-0.011
p-value	0.001	0.928	0.001	0.100	0.000	0.728	0.001	0.098	0.000	0.728	0.001	0.098
LithuaniaI ^s	-0.046	0.037	-0.417	-0.034	-0.047	0.062	-0.419	-0.032	-0.048	0.192	-0.429	-0.029
p-value	0.098	0.417	0.028	0.187	0.077	0.273	0.025	0.215	0.054	0.033	0.018	0.249
LatviaEuro	-0.041	-0.065	0.211	-0.006	-0.041	-0.065	0.211	-0.006	-0.045	-0.056	0.207	-0.006
p-value	0.103	0.121	0.007	0.582	0.103	0.121	0.007	0.582	0.075	0.254	0.009	0.584
LatviaI ^{ats}	-0.044	0.040	-0.955	-0.038	-0.052	0.000	-0.987	-0.041	-0.102	0.060	-0.993	-0.049
p-value	0.274	0.458	0.002	0.486	0.120	.	0.001	0.426	0.063	0.327	0.000	0.338
NetherlandsEuro	-0.058	0.000	0.053	-0.014	-0.108	0.143	0.004	-0.010	-0.073	0.169	0.036	-0.012
p-value	0.025	.	0.323	0.041	0.000	0.000	0.928	0.109	0.003	0.010	0.482	0.078
SloveniaEuro	-0.232	0.132	0.165	-0.013	-0.231	0.141	0.161	-0.015	-0.232	0.138	0.160	-0.014
p-value	0.000	0.031	0.257	0.401	0.000	0.030	0.262	0.354	0.000	0.034	0.269	0.374
SlovakiaEuro	-0.008	-0.019	0.153	0.011	-0.008	-0.030	0.152	0.011	-0.009	0.150	0.151	0.013
p-value	0.720	0.803	0.468	0.614	0.721	0.675	0.472	0.611	0.660	0.174	0.466	0.585
Euroareach ^o	-0.051	0.065	0.069	-0.015	-0.065	0.076	0.061	-0.011	-0.054	0.069	0.066	-0.014
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.004	0.000	0.004	0.002	0.001

Maturity over 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interact	EONIA_zt	const_zt	resid_za	interact ^a	EONIA_za	const_za	resid_adf	interact ^f	EONIA_adf	const_adf
AustriaEuro	-0.089	0.063	0.118	-0.019	-0.109	0.102	0.096	-0.011	-0.093	0.104	0.109	-0.017
p-value	0.000	0.005	0.020	0.004	0.000	0.000	0.040	0.118	0.000	0.001	0.027	0.010
BelgiumEuro	-0.046	0.157	-0.010	-0.009	-0.077	0.136	-0.017	-0.003	-0.026	0.000	-0.004	-0.012
p-value	0.001	0.000	0.511	0.013	0.000	0.001	0.103	0.417	0.206	.	0.840	0.005
GermanyEuro	-0.009	0.026	0.000	-0.013	-0.007	0.009	-0.001	-0.016	-0.009	0.027	0.000	-0.013
p-value	0.000	0.000	0.963	0.000	0.031	0.509	0.848	0.000	0.000	0.000	0.967	0.000
EstoniaEuro	-0.265	0.188	-0.049	-0.023	-0.250	0.160	-0.028	-0.021	-0.268	0.184	-0.056	-0.023
p-value	0.000	0.001	0.604	0.073	0.000	0.002	0.767	0.104	0.000	0.000	0.553	0.058
SpainEuro	-0.095	0.069	-0.009	-0.019	-0.086	0.069	0.013	-0.020	-0.093	0.059	-0.001	-0.020
p-value	0.000	0.008	0.903	0.061	0.001	0.045	0.878	0.083	0.000	0.049	0.994	0.068
FinlandEuro	-0.240	0.145	0.173	-0.015	-0.237	0.153	0.167	-0.019	-0.231	0.140	0.180	-0.018
p-value	0.000	0.008	0.004	0.044	0.000	0.001	0.008	0.012	0.000	0.004	0.005	0.022
FranceEuro	-0.056	-0.101	-0.070	-0.017	-0.068	-0.015	-0.115	-0.018	-0.094	0.070	-0.157	-0.014
p-value	0.000	0.142	0.082	0.000	0.000	0.678	0.011	0.000	0.000	0.100	0.002	0.002
GreeceGREuro	-0.037	0.042	0.176	-0.012	-0.035	0.045	0.176	-0.013	-0.037	0.048	0.176	-0.012
p-value	0.002	0.038	0.000	0.014	0.013	0.095	0.000	0.002	0.003	0.020	0.000	0.013
Hungaryfo ^{nt}	-0.026	0.079	-0.158	-0.020	-0.017	0.070	-0.183	-0.023	-0.017	0.071	-0.142	-0.030
p-value	0.122	0.000	0.085	0.412	0.355	0.018	0.051	0.378	0.333	0.004	0.144	0.219
IrelandEuro	-0.149	0.124	0.483	-0.005	-0.087	0.001	0.522	-0.001	-0.150	0.133	0.480	-0.006
p-value	0.001	0.151	0.000	0.457	0.022	0.986	0.000	0.823	0.001	0.110	0.000	0.399
ItalyEuro	-0.153	0.090	0.170	-0.010	-0.156	0.119	0.167	-0.010	-0.156	0.110	0.165	-0.010
p-value	0.000	0.051	0.001	0.094	0.000	0.005	0.002	0.101	0.000	0.005	0.002	0.075
Lithuanial ^{ns}	-0.022	0.055	-0.403	-0.029	-0.034	0.015	-0.456	-0.031	-0.036	-0.006	-0.458	-0.031
p-value	0.295	0.155	0.018	0.353	0.149	0.624	0.009	0.304	0.112	0.835	0.008	0.297
LatviaEuro	-0.110	0.099	0.225	-0.008	-0.138	0.142	0.203	-0.001	-0.090	0.116	0.246	-0.013
p-value	0.003	0.023	0.001	0.474	0.000	0.006	0.002	0.950	0.003	0.001	0.000	0.229
Latvialats	-0.069	0.085	-0.843	-0.037	-0.051	0.043	-0.773	-0.053	-0.053	0.000	-0.750	-0.056
p-value	0.060	0.047	0.004	0.478	0.070	0.149	0.009	0.275	0.076	.	0.014	0.253
Netherland ^o	-0.049	0.080	0.013	-0.009	-0.043	0.094	0.006	-0.007	-0.035	0.000	0.014	-0.010
p-value	0.000	0.000	0.180	0.000	0.000	0.000	0.536	0.004	0.000	.	0.117	0.000
PortugalEuro	-0.259	0.141	-0.080	-0.023	-0.252	0.168	-0.068	-0.027	-0.258	0.157	-0.082	-0.025
p-value	0.000	0.027	0.461	0.018	0.000	0.134	0.557	0.014	0.000	0.036	0.459	0.015
SloveniaEuro	-0.232	0.135	0.187	-0.019	-0.236	0.144	0.173	-0.020	-0.235	0.141	0.175	-0.020
p-value	0.000	0.011	0.058	0.141	0.000	0.005	0.072	0.111	0.000	0.008	0.075	0.123
SlovakiaEuro	-0.030	0.085	-0.009	-0.001	-0.043	0.091	-0.026	-0.002	-0.027	0.000	-0.009	-0.003
p-value	0.101	0.001	0.865	0.956	0.064	0.007	0.636	0.780	0.211	.	0.873	0.728
Euroareach ^o	-0.069	0.068	0.052	-0.011	-0.065	0.081	0.055	-0.015	-0.057	0.056	0.057	-0.016
p-value	0.000	0.000	0.003	0.001	0.000	0.000	0.006	0.000	0.000	0.000	0.002	0.000

Maturity up to 1 year												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac ^t	EONIA_zt	const_zt	resid_za	interac ^a	EONIA_za	const_za	resid_adf	interac ^f	EONIA_adf	const_adf
AustriaEuro	-0.132	0.134	0.211	-0.008	-0.133	0.142	0.211	-0.008	-0.108	0.140	0.236	-0.018
p-value	0.000	0.000	0.007	0.321	0.000	0.000	0.006	0.339	0.000	0.000	0.005	0.014
BelgiumEuro	-0.150	0.005	-0.165	-0.018	-0.139	0.059	-0.144	-0.016	-0.131	-0.002	-0.129	-0.017
p-value	0.000	0.950	0.022	0.185	0.000	0.596	0.047	0.276	0.000	0.974	0.083	0.269
GermanyEuro	-0.111	0.113	0.167	-0.010	-0.102	0.024	0.175	-0.016	-0.098	0.096	0.175	-0.014
p-value	0.000	0.000	0.002	0.147	0.000	0.615	0.004	0.015	0.000	0.001	0.002	0.037
EstoniaEuro	-0.137	-0.029	0.294	-0.014	-0.144	0.023	0.294	-0.013	-0.148	0.063	0.283	-0.012
p-value	0.021	0.796	0.050	0.493	0.020	0.787	0.056	0.494	0.012	0.519	0.054	0.565
SpainEuro	-0.031	0.000	0.228	0.019	-0.031	0.000	0.228	0.019	-0.031	0.000	0.228	0.019
p-value	0.081	.	0.000	0.655	0.081	.	0.000	0.655	0.081	.	0.000	0.655
FinlandEuro	-0.265	-0.184	0.280	-0.012	-0.266	-0.177	0.280	-0.012	-0.265	-0.184	0.280	-0.012
p-value	0.000	0.081	0.002	0.192	0.000	0.084	0.002	0.194	0.000	0.081	0.002	0.192
FranceEuro	-0.092	0.023	-0.137	-0.015	-0.092	0.021	-0.137	-0.016	-0.076	0.067	-0.122	-0.016
p-value	0.000	0.751	0.052	0.080	0.000	0.773	0.052	0.081	0.000	0.009	0.073	0.052
GreeceGREuro	-0.080	-0.075	0.039	-0.034	-0.075	-0.099	0.055	-0.037	-0.076	-0.106	0.088	-0.034
p-value	0.056	0.396	0.767	0.204	0.063	0.278	0.650	0.164	0.048	0.288	0.453	0.197
IrelandEuro	-0.135	0.125	0.616	-0.003	-0.122	0.138	0.621	0.000	-0.161	0.108	0.600	-0.006
p-value	0.033	0.162	0.000	0.812	0.035	0.723	0.000	0.998	0.026	0.369	0.000	0.600
ItalyEuro	-0.136	-0.376	0.101	-0.007	-0.136	-0.376	0.101	-0.007	-0.154	0.000	0.099	-0.008
p-value	0.001	0.001	0.419	0.730	0.001	0.001	0.419	0.730	0.001	.	0.450	0.700
LithuaniaL ^{ts}	-0.157	-0.511	-1.115	-0.074	-0.157	-0.511	-1.115	-0.074	-0.156	-0.338	-1.092	-0.072
p-value	0.008	0.078	0.032	0.346	0.008	0.078	0.032	0.346	0.008	0.219	0.037	0.369
LatviaEuro	-0.730	0.000	-5.774	-0.074	-0.730	0.000	-5.774	-0.074	-0.730	0.000	-5.774	-0.074
p-value	0.000	.	0.035	0.889	0.000	.	0.035	0.889	0.000	.	0.035	0.889
LatviaL ^{ats}	-0.334	0.184	-6.254	-0.097	-0.334	0.184	-6.254	-0.097	-0.333	0.000	-6.307	-0.096
p-value	0.016	0.288	0.023	0.853	0.016	0.288	0.023	0.853	0.016	.	0.021	0.852
NetherlandsEuro	-0.071	0.095	0.266	-0.007	-0.071	0.095	0.266	-0.007	-0.071	0.102	0.268	-0.007
p-value	0.133	0.315	0.003	0.545	0.133	0.315	0.003	0.545	0.128	0.274	0.003	0.534
SloveniaEuro	-0.240	-0.054	-0.826	-0.007	-0.229	-0.081	-0.794	-0.006	-0.232	-0.086	-0.824	-0.011
p-value	0.009	0.666	0.068	0.927	0.010	0.497	0.073	0.937	0.004	0.464	0.056	0.890
Euroareach ^o	-0.130	0.090	0.143	-0.011	-0.123	0.074	0.149	-0.013	-0.130	-0.004	0.139	-0.015
p-value	0.000	0.265	0.001	0.036	0.000	0.430	0.001	0.036	0.000	0.955	0.001	0.017

Table 30.1-30.3 ECM coefficients, level shifts, 3rd loan category

Maturity 1 to 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.188	-0.043	0.201	-0.015	-0.197	0.085	0.196	-0.013	-0.187	0.020	0.203	-0.015
p-value	0.002	0.689	0.068	0.110	0.002	0.295	0.080	0.156	0.003	0.874	0.067	0.104
BelgiumEuro	-0.278	0.058	0.227	-0.012	-0.278	0.058	0.227	-0.012	-0.280	0.078	0.223	-0.012
p-value	0.000	0.337	0.000	0.129	0.000	0.337	0.000	0.129	0.000	0.204	0.000	0.127
GermanyEuro	-0.097	0.096	0.272	-0.007	-0.097	0.096	0.272	-0.007	-0.095	0.093	0.272	-0.007
p-value	0.001	0.056	0.000	0.368	0.001	0.056	0.000	0.368	0.001	0.082	0.000	0.387
EstoniaEuro	-0.141	0.069	0.181	-0.015	-0.129	0.038	0.199	-0.014	-0.141	0.069	0.181	-0.015
p-value	0.008	0.260	0.038	0.246	0.013	0.543	0.020	0.259	0.008	0.260	0.038	0.246
SpainEuro	-0.026	0.250	0.351	-0.007	-0.025	0.248	0.356	-0.008	-0.020	0.258	0.368	-0.005
p-value	0.319	0.327	0.000	0.552	0.336	0.267	0.000	0.524	0.422	0.542	0.000	0.653
FinlandEuro	-0.135	0.014	0.389	-0.009	-0.133	0.010	0.390	-0.009	-0.141	0.049	0.384	-0.009
p-value	0.012	0.845	0.000	0.350	0.013	0.891	0.000	0.349	0.011	0.532	0.000	0.348
FranceEuro	-0.227	0.217	0.045	-0.004	-0.227	0.217	0.045	-0.004	-0.227	0.217	0.045	-0.004
p-value	0.000	0.000	0.478	0.600	0.000	0.000	0.478	0.600	0.000	0.000	0.483	0.603
GreeceGREuro	-0.007	-0.028	0.517	0.008	-0.007	-0.027	0.517	0.008	-0.012	0.004	0.514	0.006
p-value	0.719	0.465	0.000	0.379	0.712	0.507	0.000	0.388	0.612	0.913	0.000	0.533
IrelandEuro	-0.238	0.192	0.288	-0.009	-0.250	0.229	0.276	-0.008	-0.239	0.185	0.290	-0.008
p-value	0.000	0.061	0.001	0.432	0.000	0.018	0.002	0.468	0.000	0.066	0.001	0.491
ItalyEuro	-0.048	0.065	0.476	-0.004	-0.041	0.042	0.484	-0.002	-0.048	0.066	0.476	-0.004
p-value	0.179	0.345	0.000	0.749	0.264	0.555	0.000	0.865	0.171	0.330	0.000	0.747
LithuaniaL~s	-0.035	-0.008	-0.296	-0.021	-0.037	-0.021	-0.311	-0.021	-0.035	-0.008	-0.296	-0.021
p-value	0.140	0.800	0.040	0.467	0.127	0.536	0.034	0.458	0.140	0.800	0.040	0.467
LatviaEuro	-0.134	-0.025	0.295	-0.015	-0.130	-0.014	0.309	-0.016	-0.134	-0.025	0.295	-0.015
p-value	0.008	0.839	0.045	0.312	0.004	0.909	0.028	0.353	0.008	0.839	0.045	0.312
LatviaLats	-0.086	0.081	-1.538	-0.043	-0.074	0.077	-1.467	-0.056	-0.075	-0.046	-1.526	-0.059
p-value	0.132	0.051	0.010	0.632	0.153	0.033	0.010	0.525	0.163	0.827	0.010	0.529
NetherlandsEuro	-0.109	-0.009	0.452	-0.009	-0.084	-0.064	0.440	-0.010	-0.112	-0.007	0.451	-0.009
p-value	0.000	0.925	0.001	0.290	0.010	0.352	0.001	0.201	0.000	0.944	0.001	0.288
PortugalEuro	-0.011	-0.026	0.354	0.008	0.009	-0.039	0.374	0.010	-0.003	-0.012	0.355	0.004
p-value	0.680	0.547	0.001	0.636	0.695	0.311	0.000	0.546	0.890	0.679	0.000	0.740
SloveniaEuro	-0.003	-0.092	0.552	0.015	-0.003	-0.092	0.552	0.015	-0.003	-0.097	0.551	0.016
p-value	0.796	0.098	0.000	0.077	0.796	0.098	0.000	0.077	0.805	0.070	0.000	0.064
SlovakiaEuro	-0.011	-0.414	0.578	0.011	-0.014	-0.103	0.569	0.013	-0.015	-0.011	0.574	0.013
p-value	0.501	0.003	0.000	0.193	0.397	0.420	0.000	0.130	0.446	0.821	0.000	0.172
EuroareachEuro	-0.122	0.028	0.276	-0.008	-0.118	0.087	0.285	-0.007	-0.122	0.028	0.276	-0.008
p-value	0.013	0.764	0.000	0.366	0.014	0.402	0.000	0.369	0.013	0.764	0.000	0.366

Maturity over 5 years												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac ^t	EONIA_zt	const_zt	resid_za	interac ^a	EONIA_za	const_za	resid_adf	interac ^f	EONIA_adf	const_adf
AustriaEuro	-0.221	0.116	0.173	-0.011	-0.222	0.117	0.173	-0.014	-0.227	0.159	0.169	-0.011
p-value	0.000	0.104	0.051	0.090	0.000	0.327	0.059	0.043	0.000	0.019	0.057	0.118
BelgiumEuro	-0.020	0.000	0.108	-0.013	-0.113	0.181	0.068	-0.007	-0.085	0.140	0.084	-0.002
p-value	0.243	.	0.000	0.011	0.000	0.000	0.007	0.120	0.000	0.000	0.000	0.784
GermanyEuro	-0.034	0.050	0.145	-0.011	-0.027	-0.020	0.146	-0.015	-0.019	0.008	0.148	-0.015
p-value	0.001	0.001	0.001	0.002	0.018	0.593	0.001	0.000	0.091	0.788	0.001	0.000
EstoniaEuro	-0.305	0.167	0.070	-0.017	-0.299	0.155	0.076	-0.016	-0.308	0.164	0.066	-0.016
p-value	0.000	0.011	0.365	0.122	0.000	0.010	0.317	0.134	0.000	0.007	0.391	0.128
SpainEuro	-0.055	-0.023	0.226	-0.006	-0.055	0.009	0.226	-0.006	-0.055	-0.037	0.226	-0.006
p-value	0.097	0.771	0.000	0.604	0.095	0.914	0.000	0.592	0.096	0.648	0.000	0.599
FinlandEuro	-0.234	0.129	0.186	-0.014	-0.235	0.135	0.184	-0.014	-0.232	0.138	0.190	-0.014
p-value	0.000	0.011	0.003	0.074	0.000	0.008	0.003	0.071	0.000	0.010	0.002	0.075
FranceEuro	-0.157	-0.002	-0.009	-0.014	-0.157	-0.002	-0.009	-0.014	-0.153	0.148	-0.013	-0.011
p-value	0.000	0.985	0.832	0.033	0.000	0.985	0.832	0.033	0.000	0.010	0.773	0.081
GreeceGREuro	-0.050	-0.047	0.316	-0.004	-0.051	0.117	0.315	-0.004	-0.171	-0.017	0.190	-0.006
p-value	0.107	0.731	0.000	0.672	0.095	0.138	0.000	0.694	0.000	0.827	0.003	0.477
IrelandEuro	-0.274	-0.033	0.279	-0.012	-0.273	-0.007	0.293	-0.012	-0.272	-0.021	0.293	-0.012
p-value	0.000	0.624	0.000	0.109	0.000	0.903	0.000	0.131	0.000	0.741	0.000	0.131
ItalyEuro	-0.186	0.033	0.240	-0.008	-0.190	0.005	0.236	-0.008	-0.190	0.008	0.235	-0.008
p-value	0.000	0.635	0.004	0.369	0.000	0.957	0.004	0.351	0.000	0.922	0.004	0.351
LithuaniaL ^{ts}	-0.035	0.048	-0.324	-0.017	-0.045	-0.036	-0.389	-0.019	-0.046	0.000	-0.380	-0.018
p-value	0.198	0.346	0.058	0.589	0.093	0.302	0.021	0.537	0.086	0.997	0.026	0.550
LatviaEuro	-0.218	0.163	0.231	-0.012	-0.217	0.161	0.231	-0.013	-0.217	0.168	0.233	-0.012
p-value	0.000	0.015	0.005	0.257	0.000	0.016	0.005	0.254	0.000	0.015	0.004	0.305
LatviaLatv ^{ts}	-0.065	0.008	-0.721	-0.048	-0.064	0.019	-0.710	-0.048	-0.067	-0.035	-0.760	-0.048
p-value	0.245	0.885	0.039	0.345	0.156	0.597	0.024	0.321	0.160	0.488	0.023	0.328
Netherland ^o	-0.054	-0.027	0.248	-0.012	-0.072	0.062	0.219	-0.009	-0.051	-0.023	0.249	-0.011
p-value	0.000	0.572	0.000	0.001	0.000	0.097	0.000	0.035	0.000	0.701	0.000	0.005
PortugalEuro	-0.214	0.040	0.170	-0.007	-0.221	0.033	0.164	-0.007	-0.214	0.098	0.170	-0.006
p-value	0.000	0.556	0.087	0.499	0.000	0.670	0.123	0.478	0.000	0.480	0.088	0.585
SloveniaEuro	-0.036	-0.105	0.601	0.007	-0.047	-0.078	0.588	0.006	-0.050	-0.076	0.585	0.006
p-value	0.245	0.033	0.000	0.547	0.170	0.256	0.000	0.617	0.073	0.215	0.000	0.604
SlovakiaEuro	-0.070	0.005	0.500	0.009	-0.070	0.005	0.500	0.009	-0.137	0.011	0.411	0.007
p-value	0.114	0.951	0.000	0.471	0.114	0.951	0.000	0.471	0.039	0.890	0.000	0.568
Euroareach ^o	-0.163	0.068	0.114	-0.011	-0.169	0.130	0.107	-0.009	-0.165	0.066	0.112	-0.011
p-value	0.000	0.288	0.005	0.028	0.000	0.003	0.007	0.066	0.000	0.180	0.006	0.031

Maturity up to 1 year												
	L.		D.		L.		D.		L.		D.	
	resid_zt	interac~t	EONIA_zt	const_zt	resid_za	interac~a	EONIA_za	const_za	resid_adf	interac~f	EONIA_adf	const_adf
AustriaEuro	-0.294	0.136	0.299	-0.012	-0.302	0.138	0.288	-0.012	-0.302	0.138	0.288	-0.013
p-value	0.001	0.195	0.001	0.157	0.001	0.188	0.002	0.145	0.001	0.187	0.002	0.144
BelgiumEuro	-0.468	0.064	0.319	-0.010	-0.468	0.064	0.319	-0.010	-0.478	0.106	0.312	-0.011
p-value	0.000	0.639	0.009	0.327	0.000	0.639	0.009	0.327	0.000	0.416	0.010	0.317
Bulgarialev	-0.046	0.090	-0.006	-0.006	-0.097	0.179	-0.095	-0.013	-0.038	0.000	-0.001	-0.027
p-value	0.022	0.004	0.965	0.747	0.000	0.000	0.497	0.441	0.185	.	0.993	0.087
CzechRepub~K	-0.084	0.042	0.139	-0.010	-0.086	0.092	0.149	-0.002	-0.075	0.073	0.157	-0.006
p-value	0.014	0.423	0.094	0.371	0.001	0.033	0.046	0.894	0.001	0.040	0.037	0.664
GermanyEuro	-0.173	0.166	0.447	-0.001	-0.173	0.166	0.447	-0.001	-0.168	0.155	0.448	-0.002
p-value	0.000	0.027	0.000	0.843	0.000	0.027	0.000	0.843	0.000	0.059	0.000	0.823
EstoniaEuro	-0.130	0.159	0.474	0.000	-0.153	0.208	0.480	0.033	-0.136	0.166	0.478	0.008
p-value	0.231	0.088	0.102	0.992	0.198	0.071	0.098	0.498	0.222	0.085	0.099	0.871
SpainEuro	-0.017	0.020	0.460	-0.001	-0.017	0.020	0.460	-0.001	-0.039	0.049	0.426	-0.002
p-value	0.517	0.764	0.000	0.952	0.517	0.764	0.000	0.952	0.176	0.466	0.000	0.855
FinlandEuro	-0.300	0.163	0.523	-0.006	-0.294	0.196	0.532	-0.005	-0.300	0.163	0.523	-0.006
p-value	0.000	0.149	0.000	0.513	0.000	0.047	0.000	0.543	0.000	0.149	0.000	0.513
FranceEuro	-0.281	0.138	0.236	-0.010	-0.281	0.138	0.236	-0.010	-0.288	0.158	0.230	-0.010
p-value	0.000	0.058	0.001	0.272	0.000	0.058	0.001	0.272	0.000	0.031	0.002	0.242
GreeceGREuro	0.036	-0.052	0.469	0.009	0.010	-0.034	0.444	0.008	0.013	0.004	0.446	0.007
p-value	0.028	0.132	0.000	0.270	0.479	0.694	0.000	0.402	0.407	0.945	0.000	0.418
IrelandEuro	-0.182	0.000	0.548	-0.005	-0.187	0.377	0.543	-0.006	-0.187	0.377	0.543	-0.006
p-value	0.001	.	0.000	0.590	0.000	0.031	0.000	0.526	0.000	0.031	0.000	0.526
ItalyEuro	-0.030	0.000	0.436	-0.003	-0.030	0.000	0.436	-0.003	-0.034	0.013	0.431	-0.004
p-value	0.109	.	0.001	0.770	0.109	.	0.001	0.770	0.188	0.777	0.000	0.741
LithuaniaI~s	-0.030	-0.006	-0.098	-0.030	-0.029	-0.025	-0.097	-0.031	-0.036	0.213	-0.116	-0.025
p-value	0.334	0.900	0.597	0.285	0.308	0.714	0.599	0.269	0.206	0.000	0.521	0.369
LatviaEuro	-0.290	0.127	-0.074	-0.021	-0.278	0.104	-0.066	-0.019	-0.262	0.151	-0.006	-0.010
p-value	0.002	0.217	0.713	0.482	0.002	0.315	0.740	0.514	0.002	0.134	0.970	0.744
Latvialats	-0.111	0.087	-0.542	-0.049	-0.111	0.126	-0.542	-0.048	-0.116	0.097	-0.568	-0.036
p-value	0.106	0.144	0.525	0.636	0.106	0.039	0.524	0.643	0.100	0.134	0.504	0.733
Netherland~o	-0.258	0.305	0.528	0.003	-0.258	0.305	0.528	0.003	-0.165	0.000	0.565	-0.007
p-value	0.000	0.013	0.000	0.704	0.000	0.013	0.000	0.704	0.004	.	0.000	0.312
PortugalEuro	0.011	-0.074	0.423	0.016	0.002	-0.009	0.423	0.005	-0.009	0.037	0.418	-0.001
p-value	0.645	0.027	0.000	0.287	0.877	0.947	0.000	0.720	0.705	0.384	0.000	0.929
SloveniaEuro	-0.011	0.043	0.326	0.017	-0.011	0.069	0.329	0.016	-0.010	0.052	0.329	0.018
p-value	0.519	0.671	0.003	0.248	0.498	0.515	0.002	0.237	0.535	0.827	0.003	0.144
SlovakiaEuro	-0.030	-0.101	0.525	0.009	-0.031	-0.087	0.527	0.009	-0.031	-0.087	0.527	0.009
p-value	0.241	0.096	0.000	0.338	0.249	0.099	0.000	0.345	0.249	0.099	0.000	0.345
Euroareach~o	-0.179	0.110	0.331	-0.007	-0.178	0.116	0.334	-0.007	-0.181	0.175	0.329	-0.010
p-value	0.004	0.158	0.000	0.380	0.004	0.158	0.000	0.383	0.002	0.056	0.000	0.267

Appendix C Dynamic OLS

Table 31.1-31.3 Cointegration, 1st loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

1 to 5 years		over 5 years		up to 1 year	
AustriaEuro	10	AustriaEuro	5	AustriaEuro	0
BelgiumEuro	0	BelgiumEuro	10	BelgiumEuro	5
GermanyEuro	10	GermanyEuro	5	GermanyEuro	1
SpainEuro	5	SpainEuro	5	EstoniaEuro	10
FinlandEuro	5	FranceEuro	5	SpainEuro	1
FranceEuro	10	GreeceGREuro	0	FinlandEuro	10
GreeceGREuro	1	ItalyEuro	1	FranceEuro	1
ItalyEuro	1	Euroareach~o	1	GreeceGREuro	10
LatviaEuro	1			IrelandEuro	0
LatviaLatv~s	5			ItalyEuro	5
PortugalEuro	1			Lithuanial~s	5
SloveniaEuro	1			LatviaEuro	5
Euroareach~o	10			PortugalEuro	10
				SloveniaEuro	5
				Euroareach~o	5

Table 32.1-32.3 Cointegration, 2nd loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

1 to 5 years		over 5 years		up to 1 year	
AustriaEuro	5	AustriaEuro	0	AustriaEuro	0
BelgiumEuro	10	BelgiumEuro	10	BelgiumEuro	1
GermanyEuro	0	GermanyEuro	0	GermanyEuro	0
EstoniaEuro	10	EstoniaEuro	0	EstoniaEuro	5
SpainEuro	0	SpainEuro	5	SpainEuro	10
FinlandEuro	1	FinlandEuro	10	FinlandEuro	1
FranceEuro	0	FranceEuro	0	FranceEuro	5
GreeceGREuro	1	GreeceGREuro	0	GreeceGREuro	1

IrelandEuro	5
ItalyEuro	1
Lithuanial~s	10
LatviaEuro	5
Latvialats	5
Netherland~o	0
SloveniaEuro	0
SlovakiaEuro	1
Euroareach~o	0

IrelandEuro	1
ItalyEuro	5
Lithuanial~s	5
LatviaEuro	0
Latvialats	10
Netherland~o	0
PortugalEuro	5
SloveniaEuro	0
SlovakiaEuro	10
Euroareach~o	0

IrelandEuro	10
ItalyEuro	0
Lithuanial~s	5
Latvialats	5
Netherland~o	1
Euroareach~o	0

Table 33.1-33.3 Cointegration, 3rd loan category

Note: Numbers indicate the significance level for cointegration. Specifically, 1 means that the null hypothesis of no cointegration is rejected at 1% significance level, 5 stands for 5% and 10 represents 10%. On the other hand, 0 denotes that null hypothesis cannot be rejected

1 to 5 years	
AustriaEuro	1
BelgiumEuro	5
GermanyEuro	0
EstoniaEuro	0
SpainEuro	5
FinlandEuro	5
FranceEuro	0
GreeceGREuro	5
IrelandEuro	5
ItalyEuro	0
Lithuanial~s	5
LatviaEuro	10
Latvialats	5
Netherland~o	5
SloveniaEuro	1
SlovakiaEuro	5
Euroareach~o	1

over 5 years	
AustriaEuro	5
BelgiumEuro	0
GermanyEuro	0
EstoniaEuro	10
SpainEuro	5
FinlandEuro	5
FranceEuro	0
GreeceGREuro	1
IrelandEuro	5
ItalyEuro	0
Lithuanial~s	5
LatviaEuro	10
LatviaLatv~s	5
Netherland~o	10
PortugalEuro	5
SloveniaEuro	10
SlovakiaEuro	0
Euroareach~o	10

up to 1 year	
AustriaEuro	1
BelgiumEuro	1
GermanyEuro	0
EstoniaEuro	10
SpainEuro	1
FinlandEuro	1
FranceEuro	5
IrelandEuro	5
ItalyEuro	1
Lithuanial~s	10
LatviaEuro	0
Latvialats	10
Netherland~o	0
SloveniaEuro	1
SlovakiaEuro	1
Euroareach~o	1

Table 34.1-34.3 Long-run coefficients, 1st loan category

Maturity 1-5 years						
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.977	0.000	1.682	0.000	2.420	0.000
BelgiumEuro	0.474	0.083	-0.022	0.982	5.770	0.000
GermanyEuro	0.153	0.045	-0.635	0.002	5.786	0.000
SpainEuro	0.589	0.000	2.712	0.000	6.322	0.000
FinlandEuro	0.829	0.000	2.023	0.000	3.286	0.000
FranceEuro	0.550	0.000	0.488	0.018	5.246	0.000
GreeceGREuro	0.530	0.027	0.127	0.828	8.347	0.000
ItalyEuro	-0.212	0.006	-1.205	0.000	9.079	0.000
LatviaEuro	0.545	0.210	19.516	0.000	4.785	0.001
LatviaLatv~s	0.670	0.008	5.020	0.000	15.711	0.000
PortugalEuro	0.289	0.027	2.011	0.000	9.550	0.000
SloveniaEuro	0.604	0.000	2.056	0.000	4.859	0.000
Euroareach~o	0.301	0.000	0.044	0.745	6.023	0.000

Maturity over 5 years						
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.741	0.000	0.986	0.000	3.100	0.000
BelgiumEuro	0.755	0.038	0.805	0.555	6.972	0.000
GermanyEuro	0.083	0.034	-0.617	0.000	8.567	0.000
SpainEuro	0.680	0.000	3.406	0.000	5.728	0.000
FinlandEuro	0.367	0.007	2.861	0.000	4.146	0.000
FranceEuro	0.417	0.000	0.397	0.076	5.732	0.000
GreeceGREuro	-0.005	0.983	-0.351	0.579	9.790	0.000
ItalyEuro	0.183	0.044	0.972	0.000	7.069	0.000
Euroareach~o	0.164	0.000	-0.032	0.778	7.766	0.000

Maturity up to 1 year						
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.673	0.000	0.777	0.000	3.790	0.000
BelgiumEuro	0.356	0.121	-0.002	0.998	5.682	0.000
GermanyEuro	0.192	0.004	-0.726	0.013	5.004	0.000
EstoniaEuro	1.143	0.015	9.945	0.000	4.527	0.001
SpainEuro	1.015	0.000	0.854	0.127	5.812	0.000
FinlandEuro	1.010	0.000	0.851	0.017	2.405	0.000
FranceEuro	1.017	0.000	2.808	0.000	3.063	0.000
GreeceGREuro	0.932	0.004	1.375	0.099	6.908	0.000
IrelandEuro	0.354	0.031	1.156	0.004	4.665	0.000
ItalyEuro	0.429	0.000	-2.768	0.000	9.128	0.000
Lithuanial~s	-0.344	0.383	2.849	0.009	8.467	0.000

LatviaEuro	0.475	0.398	7.720	0.000	4.449	0.005
PortugalEuro	0.346	0.072	-0.101	0.851	7.436	0.000
SloveniaEuro	0.775	0.000	0.836	0.000	3.876	0.000
Euroareach~o	0.398	0.000	-0.323	0.254	5.831	0.000

Table 35.1-35.3 Long-run coefficients, 2nd loan category

	Maturity 1-5 years					
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.064	0.498	-0.725	0.030	3.434	0.000
BelgiumEuro	0.587	0.000	1.332	0.004	2.274	0.000
GermanyEuro	0.066	0.317	-0.819	0.000	4.479	0.000
EstoniaEuro	0.551	0.000	0.173	0.502	3.791	0.000
SpainEuro	0.277	0.015	0.988	0.000	4.439	0.000
FinlandEuro	0.830	0.000	0.100	0.179	1.662	0.000
FranceEuro	-0.091	0.233	-0.973	0.000	4.577	0.000
GreeceGREuro	-0.097	0.219	-1.478	0.000	5.906	0.000
IrelandEuro	0.670	0.000	0.249	0.060	2.607	0.000
ItalyEuro	0.639	0.000	0.408	0.000	3.207	0.000
Lithuanial~s	1.391	0.000	2.877	0.001	1.204	0.167
LatviaEuro	0.926	0.000	1.458	0.000	2.927	0.000
Latvialats	1.243	0.000	1.155	0.212	4.411	0.000
Netherland~o	0.380	0.000	0.272	0.032	3.685	0.000
SloveniaEuro	0.912	0.000	0.441	0.049	2.938	0.000
SlovakiaEuro	1.368	0.000	5.212	0.000	0.042	0.946
Euroareach~o	0.157	0.007	-0.591	0.002	4.165	0.000

	Maturity over 5 years					
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.593	0.000	-0.460	0.002	3.215	0.000
BelgiumEuro	0.473	0.000	0.978	0.008	2.752	0.000
GermanyEuro	-0.129	0.026	-1.343	0.000	5.819	0.000
EstoniaEuro	0.933	0.000	0.225	0.433	1.847	0.000
SpainEuro	0.853	0.000	0.660	0.000	1.714	0.000
FinlandEuro	0.853	0.000	-0.005	0.947	1.592	0.000
FranceEuro	-0.163	0.003	-1.258	0.000	5.200	0.000
GreeceGREuro	0.222	0.001	-1.032	0.000	4.464	0.000
IrelandEuro	0.727	0.000	0.582	0.000	2.056	0.000
ItalyEuro	0.646	0.000	0.057	0.655	3.055	0.000
Lithuanial~s	1.307	0.000	2.185	0.001	1.144	0.083
LatviaEuro	0.762	0.000	0.049	0.852	2.904	0.000
Latvialats	1.262	0.000	0.494	0.603	4.336	0.000

Netherland~o	-0.059	0.138	-0.432	0.003	5.115	0.000
PortugalEuro	0.981	0.000	-0.129	0.116	1.693	0.000
SloveniaEuro	1.123	0.000	0.261	0.259	2.665	0.000
SlovakiaEuro	0.722	0.000	1.940	0.000	2.974	0.000
Euroareach~o	0.145	0.001	-0.888	0.000	4.516	0.000

Maturity up to 1 year						
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.644	0.000	-0.589	0.002	3.377	0.000
BelgiumEuro	0.383	0.000	-0.375	0.122	3.656	0.000
GermanyEuro	0.536	0.000	-0.452	0.002	4.014	0.000
EstoniaEuro	1.379	0.000	1.712	0.000	1.330	0.000
SpainEuro	-0.149	0.633	0.567	0.383	5.234	0.000
FinlandEuro	0.848	0.000	0.195	0.008	1.473	0.000
FranceEuro	0.076	0.293	-0.363	0.148	4.145	0.000
GreeceGREuro	-0.306	0.002	-2.310	0.000	6.501	0.000
IrelandEuro	0.692	0.000	0.001	0.994	3.015	0.000
ItalyEuro	0.631	0.000	0.798	0.000	3.472	0.000
Lithuanial~s	1.413	0.000	0.149	0.905	1.689	0.186
LatviaEuro	1.339	0.005	5.967	0.000	2.919	0.018
Latvialats	1.473	0.061	4.359	0.125	6.314	0.003
Netherland~o	0.633	0.000	1.104	0.000	2.832	0.000
SloveniaEuro	0.947	0.000	1.665	0.038	2.669	0.001
Euroareach~o	0.400	0.000	-0.346	0.001	3.930	0.000

Table 36.1-36.3 Long-run coefficients, 3rd loan category

Maturity 1-5 years						
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.505	0.000	-0.405	0.014	3.135	0.000
BelgiumEuro	0.890	0.000	0.879	0.000	1.462	0.000
GermanyEuro	0.590	0.000	0.232	0.142	2.902	0.000
EstoniaEuro	0.980	0.000	0.842	0.000	2.369	0.000
SpainEuro	0.810	0.000	1.546	0.000	1.786	0.000
FinlandEuro	0.910	0.000	0.671	0.000	1.694	0.000
FranceEuro	0.601	0.000	0.004	0.978	2.991	0.000
GreeceGREuro	0.614	0.000	0.551	0.007	4.137	0.000
IrelandEuro	0.918	0.000	0.265	0.019	2.536	0.000
ItalyEuro	0.710	0.000	0.497	0.002	2.469	0.000
Lithuanial~s	1.392	0.000	2.527	0.000	1.753	0.002
LatviaEuro	0.710	0.000	0.123	0.755	3.615	0.000
Latvialats	2.089	0.000	2.069	0.032	2.459	0.011
Netherland~o	0.439	0.000	-0.689	0.000	3.503	0.000
PortugalEuro	0.645	0.000	1.199	0.000	2.959	0.000
SloveniaEuro	1.073	0.000	2.837	0.000	1.172	0.000

SlovakiaEuro	1.023	0.000	2.195	0.000	1.245	0.000
Euroareach~o	0.689	0.000	0.578	0.000	2.557	0.000

Maturity over 5 years						
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.566	0.000	-0.318	0.005	2.790	0.000
BelgiumEuro	0.764	0.000	1.650	0.002	2.011	0.001
GermanyEuro	0.102	0.052	-1.249	0.000	4.875	0.000
EstoniaEuro	0.874	0.000	0.114	0.500	2.367	0.000
SpainEuro	0.858	0.000	1.359	0.000	1.592	0.000
FinlandEuro	0.879	0.000	0.281	0.000	1.532	0.000
FranceEuro	0.264	0.000	-0.627	0.000	3.911	0.000
GreeceGREuro	0.560	0.000	0.578	0.000	3.867	0.000
IrelandEuro	0.787	0.000	0.167	0.074	2.637	0.000
ItalyEuro	0.835	0.000	0.398	0.000	2.240	0.000
Lithuanial~s	1.425	0.000	2.544	0.000	1.480	0.002
LatviaEuro	0.691	0.000	-0.443	0.132	3.437	0.000
LatviaLatv~s	1.275	0.000	0.279	0.696	3.933	0.000
Netherland~o	0.205	0.000	-0.835	0.000	4.362	0.000
PortugalEuro	0.806	0.000	0.699	0.000	2.472	0.000
SloveniaEuro	0.854	0.000	0.846	0.000	1.987	0.000
SlovakiaEuro	1.046	0.000	1.693	0.000	1.211	0.000
Euroareach~o	0.402	0.000	-0.422	0.000	3.623	0.000

Maturity up to 1 year						
	EONIA	p-value	Dummy	p-value	const	p-value
AustriaEuro	0.805	0.000	0.116	0.113	2.099	0.000
BelgiumEuro	0.826	0.000	0.367	0.000	2.069	0.000
GermanyEuro	0.749	0.000	0.148	0.005	3.109	0.000
EstoniaEuro	0.797	0.000	1.086	0.015	2.890	0.000
SpainEuro	0.662	0.000	1.227	0.000	2.303	0.000
FinlandEuro	0.829	0.000	0.153	0.019	1.799	0.000
FranceEuro	0.934	0.000	0.343	0.002	1.762	0.000
GreeceGREuro	0.320	0.000	1.289	0.000	5.270	0.000
IrelandEuro	0.877	0.000	0.018	0.873	3.051	0.000
ItalyEuro	0.326	0.000	-0.201	0.356	4.447	0.000
Lithuanial~s	1.450	0.000	2.333	0.000	1.357	0.059
LatviaEuro	0.913	0.000	0.871	0.001	3.066	0.000
Latvialats	1.880	0.000	0.876	0.417	2.971	0.007
Netherland~o	0.819	0.000	0.000	0.996	2.459	0.000
PortugalEuro	0.441	0.000	1.344	0.000	3.844	0.000
SloveniaEuro	0.401	0.001	2.401	0.000	2.967	0.000
SlovakiaEuro	0.708	0.000	1.196	0.000	1.937	0.000
Euroareach~o	0.663	0.000	0.415	0.000	3.033	0.000

Appendix D Granger causality

Table 37.1-37.3 Granger causality 1st loan category

Notes: In the first column of each table we test whether EONIA Granger-causes the market interest rate, with value 1 indicating evidence for such relationship while 0 indicating its lack. The second column reports results on whether market interest rate Granger-causes EONIA.

Maturity 1 to 5 years		
	EONIA	var
AustriaEuro	1	1
BelgiumEuro	0	0
GermanyEuro	1	0
SpainEuro	1	0
FinlandEuro	1	0
FranceEuro	1	0
GreeceGREuro	0	0
ItalyEuro	0	0
LatviaEuro	0	1
PortugalEuro	0	0
SloveniaEuro	1	0
Euroareach~o	1	0

Maturity over 5 years		
	EONIA	var
AustriaEuro	1	0
BelgiumEuro	1	1
GermanyEuro	1	0
SpainEuro	1	0
FranceEuro	1	1
GreeceGREuro	1	0
ItalyEuro	1	0
Euroareach~o	1	0

Maturity up to 1 year		
	EONIA	var
AustriaEuro	1	1
BelgiumEuro	0	0
GermanyEuro	0	0
EstoniaEuro	0	0
SpainEuro	0	0
FinlandEuro	1	1
FranceEuro	1	1
GreeceGREuro	0	0
IrelandEuro	1	0
ItalyEuro	1	0
Lithuanial~s	0	0
LatviaEuro	0	0
PortugalEuro	1	1
SloveniaEuro	1	1
Euroareach~o	0	0

Table 38.1-38.3 Granger causality, 2nd loan category

Note: Belgium was excluded from the last maturity type due to the limited sample size relative to the number of lags

Note: In the first column of each table we test whether EONIA Granger-causes the market interest rate, with value 1 indicating evidence for such relationship while 0 indicating its lack. The second column reports results on whether market interest rate Granger-causes EONIA.

Maturity 1 to 5 years		
	EONIA	var
AustriaEuro	1	0

Maturity over 5 years		
	EONIA	var
AustriaEuro	1	0

Maturity up to 1 year		
	EONIA	var
AustriaEuro	1	0

BelgiumEuro	1	0
GermanyEuro	1	0
EstoniaEuro	1	0
SpainEuro	1	0
FinlandEuro	1	1
FranceEuro	0	0
GreeceGREuro	1	0
IrelandEuro	1	1
ItalyEuro	1	0
Lithuanial~s	0	0
LatviaEuro	1	0
Netherland~o	1	0
SloveniaEuro	1	1
SlovakiaEuro	0	1
Euroareach~o	1	0

BelgiumEuro	1	1
GermanyEuro	1	0
EstoniaEuro	1	1
SpainEuro	1	1
FinlandEuro	1	1
FranceEuro	1	0
GreeceGREuro	1	0
IrelandEuro	1	1
ItalyEuro	1	0
Lithuanial~s	0	0
LatviaEuro	1	0
Netherland~o	1	1
PortugalEuro	1	0
SloveniaEuro	1	1
SlovakiaEuro	0	0
Euroareach~o	1	0

GermanyEuro	1	0
EstoniaEuro	1	0
SpainEuro	0	0
FinlandEuro	1	0
FranceEuro	0	0
GreeceGREuro	1	1
IrelandEuro	1	0
ItalyEuro	1	0
Lithuanial~s	0	0
Netherland~o	1	0
Euroareach~o	1	0

Table 39.1-39.3 Granger causality, 3rd loan category

Note: In the first column of each table we test whether EONIA Granger-causes the market interest rate, with value 1 indicating evidence for such relationship while 0 indicating its lack. The second column reports results on whether market interest rate Granger-causes EONIA.

Maturity 1 to 5 years		
	EONIA	var
AustriaEuro	1	1
BelgiumEuro	1	0
GermanyEuro	1	1
EstoniaEuro	1	1
SpainEuro	1	0
FinlandEuro	1	1
FranceEuro	1	0
GreeceGREuro	1	0
IrelandEuro	1	0
ItalyEuro	1	0
Lithuanial~s	0	0
LatviaEuro	1	0
Netherland~o	1	0
SloveniaEuro	1	1
SlovakiaEuro	1	0
Euroareach~o	1	0

Maturity over 5 years		
	EONIA	var
AustriaEuro	1	1
BelgiumEuro	1	1
GermanyEuro	1	1
EstoniaEuro	1	1
SpainEuro	1	0
FinlandEuro	1	1
FranceEuro	1	0
GreeceGREuro	1	0
IrelandEuro	1	0
ItalyEuro	1	0
Lithuanial~s	1	0
LatviaEuro	1	1
Netherland~o	1	1
PortugalEuro	1	0
SloveniaEuro	1	0
SlovakiaEuro	1	1
Euroareach~o	1	1

Maturity up to 1 year		
	EONIA	var
AustriaEuro	1	1
BelgiumEuro	1	1
GermanyEuro	1	0
EstoniaEuro	0	0
SpainEuro	1	1
FinlandEuro	1	0
FranceEuro	1	0
IrelandEuro	1	1
ItalyEuro	1	0
Lithuanial~s	0	0
LatviaEuro	1	1
Netherland~o	1	0
SloveniaEuro	1	0
SlovakiaEuro	1	0
Euroareach~o	1	0

Appendix E Johansen test & VECM

Table 40.1-40.3 VECM α vectors, 1st loan category

1 to 5 years		
Equation	Austria	EONIA
Coefficient	-0.057	0.107
std. Error	0.039	0.019
t-ratio	-1.447	5.681
p-value	0.150	0.000

Over 5 years				
Equation	Belgium	EONIA	France	EONIA
coefficient	-0.002	0.051	-0.006	0.017
std. error	0.027	0.008	0.003	0.003
t-ratio	-0.055	6.743	-1.867	5.293
p-value	0.956	0.000	0.064	0.000

Up to 1 year										
Equation	Austria	EONIA	Finland	EONIA	France	EONIA	Portugal	EONIA	Slovenia	EONIA
coefficient	-0.001	0.103	0.003	0.015	-0.022	0.066	-0.001	-0.004	-0.015	0.066
std. Error	0.017	0.019	0.004	0.003	0.020	0.011	0.003	0.001	0.023	0.013
t-ratio	-0.033	5.510	0.806	5.109	-1.137	6.242	-0.527	-5.049	-0.679	5.168
p-value	0.974	0.000	0.421	0.000	0.257	0.000	0.599	0.000	0.498	0.000

Table 41.1-41.3 VECM α vectors, 2nd loan category

1 to 5 years						
Equation	Finland	EONIA	Ireland	EONIA	Slovenia	EONIA
coefficient	-0.004	-0.082	-0.005	-0.013	-0.007	0.073
std. error	0.008	0.016	0.002	0.002	0.015	0.012
t-ratio	-0.509	-5.081	-1.898	-5.407	-0.461	6.043
p-value	0.612	0.000	0.060	0.000	0.646	0.000

	Over 5 years													
Equation	Belgium	EONIA	Estonia	EONIA	Spain	EONIA	Finland	EONIA	Ireland	EONIA	Netherlands	EONIA	Slovenia	EONIA
coefficient	-0.002	0.061	0.002	0.091	-0.002	0.198	-0.006	0.088	0.019	0.064	0.007	-0.254	0.009	0.120
std. error	0.002	0.009	0.003	0.014	0.009	0.031	0.008	0.019	0.008	0.011	0.005	0.036	0.014	0.017
t-ratio	-0.901	6.969	0.738	6.314	-0.209	6.409	-0.679	4.612	2.250	5.842	1.534	-7.025	0.660	7.058
p-value	0.371	0.000	0.463	0.000	0.835	0.000	0.498	0.000	0.026	0.000	0.130	0.000	0.511	0.000

	Up to 1 year	
Equation	Greece	EONIA
coefficient	-0.056	-0.074
std. error	0.031	0.011
t-ratio	-1.814	-6.483
p-value	0.072	0.000

Table 42.1-42.3 VECM α vectors, 3rd loan category

	1 to 5 years									
Equation	Austria	EONIA	Germany	EONIA	Estonia	EONIA	Finland	EONIA	Slovenia	EONIA
coefficient	0.021	-0.159	0.002	-0.028	-0.023	0.102	-0.002	0.161	0.000	0.041
std. Error	0.021	0.024	0.002	0.005	0.011	0.017	0.014	0.029	0.007	0.007
t-ratio	1.027	-6.726	0.981	-6.128	-2.032	5.984	-0.111	5.509	0.035	5.890
p-value	0.306	0.000	0.328	0.000	0.045	0.000	0.912	0.000	0.972	0.000

	Over 5 years (1)									
Equation	Austria	EONIA	Belgium	EONIA	Germany	EONIA	Estonia	EONIA	Finland	EONIA
coefficient	-0.008	-0.188	-0.003	0.083	-0.004	-0.110	0.004	0.141	0.004	0.105
std. Error	0.019	0.029	0.005	0.013	0.004	0.017	0.012	0.022	0.007	0.022
t-ratio	-0.418	-6.452	-0.562	6.608	-1.107	-6.436	0.302	6.366	0.561	4.893
p-value	0.677	0.000	0.577	0.000	0.270	0.000	0.763	0.000	0.576	0.000

	Over 5 years (2)							
Equation	Latvia	EONIA	Netherlands	EONIA	Slovakia	EONIA	Euro_area	EONIA
coefficient	-0.002	0.013	-0.002	-0.127	-0.016	-0.065	-0.009	-0.236
std. error	0.002	0.002	0.005	0.019	0.015	0.011	0.011	0.033
t-ratio	-0.838	5.932	-0.369	-6.690	-1.099	-5.696	-0.830	-7.048
p-value	0.404	0.000	0.713	0.000	0.277	0.000	0.408	0.000

	Up to 1 year							
Equation	Austria	EONIA	Belgium	EONIA	Spain	EONIA	Latvia	EONIA
coefficient	-0.001	-0.044	0.014	0.152	-0.001	0.034	0.001	0.003
std. error	0.007	0.009	0.027	0.023	0.004	0.006	0.001	0.000
t-ratio	-0.121	-5.167	0.539	6.621	-0.171	5.861	0.485	6.450
p-value	0.904	0.000	0.591	0.000	0.865	0.000	0.628	0.000

Table 43.1-43.3 β cointegration vectors, 1st loan category

1 to 5 years	
	Austria
coefficient	1,0000
st. error	(0,00000)
	EONIA
coefficient	-1,3314
st. error	(0,085174)
	const
coefficient	-1,3318
st. error	(0,28997)
	Dummy
coefficient	-2,7160
st. error	(0,27313)

Over 5 years		
	Belgium	France
coefficient	1,0000	1,0000
st. error	(0,00000)	(0,00000)
	EONIA	EONIA
coefficient	-2,6545	-3,4879
st. error	(0,30968)	(0,57683)
	const	const
coefficient	1,5050	4,2319
st. error	(1,4867)	(1,9645)
	Dummy	Dummy
coefficient	-8,7824	-9,1397
st. error	(1,4484)	(1,8172)

Up to 1 year					
	Austria	Finland	France	Portugal	Slovenia
coefficient	1,0000	1,0000	1,0000	1,0000	1,0000
st. error	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)
	EONIA	EONIA	EONIA	EONIA	EONIA
coefficient	-1,1246	-3,9758	-1,5468	10,063	-1,4781
st. error	(0,094913)	(0,66070)	(0,14811)	(2,1999)	(0,15438)
	const	const	const	const	const
coefficient	-2,3682	7,6539	-1,3810	-41,239	-1,8462
st. error	(0,32254)	(2,2581)	(0,50320)	(7,5112)	(0,47280)
	Dummy	Dummy	Dummy	Dummy	Dummy
coefficient	-2,1390	-11,140	-4,4630	32,862	-2,7677
st. error	(0,30337)	(2,1382)	(0,47305)	(7,0964)	(0,43845)

Table 44.1-44.3 β cointegration vectors, 2nd loan category

1 to 5 years			
	Finland	Ireland	Slovenia
coefficient	1,0000	1,0000	1,0000
st. error	(0,00000)	(0,00000)	(0,00000)
	EONIA	EONIA	EONIA
coefficient	-0,15267	3,4969	-1,8997
st. error	(0,14729)	(0,82408)	(0,16101)
	const	const	const
coefficient	-3,7911	-15,332	0,70515
st. error	(0,45030)	(2,5301)	(0,58614)
	Dummy	Dummy	Dummy
coefficient	1,8389	11,839	-3,7982
st. error	(0,39279)	(2,3379)	(0,53325)

Over 5 years							
	Belgium	Estonia	Spain	Finland	Ireland	Netherlands	Slovenia
coefficient	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
st. error	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)
	EONIA	EONIA	EONIA	EONIA	EONIA	EONIA	EONIA
coefficient	-1,9548	-1,9631	-1,2943	-1,5045	-1,5424	0,52833	-1,9122
st. error	(0,26070)	(0,17026)	(0,060895)	(0,10869)	(0,15577)	(0,087497)	(0,10967)
	const	const	const	const	const	const	const
coefficient	3,4810	2,0285	-0,47306	0,27942	0,38218	-7,0754	0,36992
st. error	(1,0947)	(0,61426)	(0,17765)	(0,32914)	(0,47617)	(0,39337)	(0,41007)
	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy
coefficient	-6,4079	-3,6773	-1,5438	-1,5233	-2,8864	2,0891	-2,9865
st. error	(0,95852)	(0,53703)	(0,14704)	(0,29140)	(0,43977)	(0,33577)	(0,36993)

Up to 1 year	
	Greece
coefficient	1,0000
st. error	(0,00000)
	EONIA
coefficient	0,78379
st. error	(0,15077)
	const
coefficient	-7,8725
st. error	(0,46667)
	Dummy
coefficient	3,5194
st. error	(0,41262)

Table 45.1-45.3 β cointegration vectors, 3rd loan category

1 to 5 years					
	Austria	Germany	Estonia	Finland	Slovenia
coefficient	1,0000	1,0000	1,0000	1,0000	1,0000
st. error	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)
	EONIA	EONIA	EONIA	EONIA	EONIA
coefficient	-0,22045	2,5051	-1,7393	-1,2049	-3,2748
st. error	(0,065692)	(0,42245)	(0,11397)	(0,058591)	(0,51560)
	const	const	const	const	const
coefficient	-4,0308	-12,081	0,23199	-0,86674	6,3921
st. error	(0,20190)	(1,2528)	(0,38463)	(0,17673)	(1,6728)
	Dummy	Dummy	Dummy	Dummy	Dummy
coefficient	1,2172	6,8650	-2,9369	-1,3797	-9,7676
st. error	(0,17856)	(0,99908)	(0,33319)	(0,15981)	(1,5098)

Over 5 years									
	Austria	Belgium	Germany	Estonia	Finland	Latvia	Netherlands	Slovakia	Euro_area
coefficient	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
st. error	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)	(0,00000)
	EONIA	EONIA	EONIA	EONIA	EONIA	EONIA	EONIA	EONIA	EONIA
coefficient	-0,34472	-1,7426	0,21445	-1,4939	-1,4059	-5,8697	0,15113	0,80353	-0,24866
st. error	(0,058249)	(0,23389)	(0,10333)	(0,093372)	(0,10912)	(0,85306)	(0,075638)	(0,28494)	(0,048297)
	const	const	const	const	const	const	const	const	const
coefficient	-3,4730	2,0977	-5,9381	-0,024773	0,052023	13,580	-5,5880	-8,4418	-4,1033
st. error	(0,17751)	(0,89260)	(0,33594)	(0,34080)	(0,32215)	(2,7673)	(0,23757)	(1,0415)	(0,14662)
	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy
coefficient	0,95464	-4,9508	2,2313	-2,2542	-1,6594	-14,653	1,8826	5,1349	0,86178
st. error	(0,15531)	(0,71185)	(0,26650)	(0,30640)	(0,27733)	(2,5046)	(0,20963)	(1,0124)	(0,12467)

Up to 1 year				
	Austria	Belgium	Spain	Latvia
coefficient	1,0000	1,0000	1,0000	1,0000
st. error	(0,00000)	(0,00000)	(0,00000)	(0,00000)
	EONIA	EONIA	EONIA	EONIA
coefficient	0,39063	-1,4213	-2,6606	-22,929
st. error	(0,23488)	(0,087479)	(0,32350)	(3,5402)
	const	const	const	const
coefficient	-5,7118	0,24528	3,0708	67,440
st. error	(0,71260)	(0,37347)	(0,94049)	(11,456)
	Dummy	Dummy	Dummy	Dummy
coefficient	3,1782	-2,4901	-6,0214	-64,314
st. error	(0,64272)	(0,34087)	(0,83921)	(10,534)