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Regional Versus Global Integration of Euro-Zone Retail Banking Markets: Understanding the Recent Evidence from Price-Based Integration Measures[1]

by

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Abstract

This study investigates the current state of euro-zone banking market integration by comparatively applying convergence and cointegration measures to mortgage and corporate loan markets. As an innovation to the literature, convergence measures are exposed to a difference-in-differences methodology which allows separating euro zone-specific from global integration effects. We find that euro-zone convergence of retail banking interest rates has so far largely been a result of integrating wholesale markets after the elimination of exchange rate risks. Moreover, some convergence is found to be part of a global process rather than euro zone-specific. After 1999 some evidence for stronger integration is detected for a restricted "convergence club" excluding Germany, Ireland and Belgium. We conclude in favor of using margin-convergence measures and cointegration measure for assessing the regional integration progress in relation to global banking market integration.

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1. Introduction

The European single market project has promised to create a regionally integrated retail banking market. After it became increasingly evident that a unified European banking market was emerging only slowly – if at all – (Centeno and Mello 1999, Kleimeier and Sander 2000, Economic and Financial Council 2002, Schüler and Heinemann 2002), the unifying potential of a single currency and a single central bank has often been highlighted (see e.g. Padoa-Schioppa 2000). Although more recent evidence reveals first signs of a more integrated euro-zone retail banking market after the introduction of the Euro, these developments are often restricted to some segments of retail banking such as lending to corporations (Kleimeier and Sander 2003, Baele et al. 2004). Meanwhile, global integration of financial markets has also increased considerably. For example, cross-border lending as well as cross-border mergers and acquisitions between the euro zone and the rest of the world have at times been more flourishing than within the euro zone.[2] Thus, a first and largely unexplored issue that we will address in this paper is to what extent the observed increases in integration are regional or global phenomena.

According to a recent survey article (Baele et al. 2004) evidence on banking market integration can be obtained from quantity-based, price-based and news-based measures of integration.[3] Quantity-based measures focus on institutional characteristics such as cross-border banking activities, the number and market shares of foreign banks, or bank mergers. Such studies typically conclude that the integration process is still very incomplete (see e.g. Cabral et al. 2002). Particularly, there is still only very limited evidence of cross-border loans and deposits to non-banks within the euro zone but recent studies found a slightly increasing

[2] For example, from 1995 to 1999 85% of all euro zone bank mergers were domestic, reflecting national consolidation mainly among small banks. Among the remaining 15% cross-border mergers, those involving a non-euro zone bank dominated with 10%. This latter share has increased even further to 17% in the first half of 2000 (ECB 2000). For cross-border retail activities in the loan and deposit markets Manna (2004) reveals the prominent role of the UK: UK-euro zone cross-border activities relative to all cross-border activities amount to 25% to 30% in both markets.

trend towards more cross-border lending which seems, however, to be driven by non-euro zone banks.[4] Price-based measures of integration often use the law of one price as a point of reference and are, consequently, focusing on the evolution and potential convergence of retail banking interest rate levels. These studies typically find some evidence for integration, which is, however, difficult to reconcile with the obtained cross-border lending picture, which signals a lack of integration. Alternative price-based measures are either focusing on bank margins or are using cointegration methodology. Margins offer a better understanding of the (impact of the) integration process than retail rate levels in periods when market interest rate are converging due to a reduction and final elimination of the exchange rate risks in a monetary union. Only under the condition of a monetary union, both approaches are equivalent. Although the current research (Cabral et al. 2002, Freixas 2003, and Baele et al. 2004) shows some reductions in margins, the significant differences remaining across countries point to the fragmented nature of retail markets. Cointegration studies do not require full convergence of banking product prices, i.e. they explicitly allow for heterogeneity in banking products across countries and for a lack of homogeneity in the data base (Centeno and Mello 1999, Kleimeier and Sander 2000 and 2003, Schüler and Heinemann 2002). These studies typically find less signs for an integrated euro-zone banking market than studies using convergence measures. However, some of these studies also find first signs for more integration in the EMU-period, particularly with reference to lending to the corporate sector. Kleimeier and Sander (2003) hypothesize that these co-movements of interest rates are predominantly a potential consequence of the already highly integrated euro-zone money (and bonds) market under the condition that these retail interest rates react uniformly to changes in

[3] For a detailed overview of different integration measures see also Adam et al. (2002) Table 4.1 or Schüler and Heinemann (2002) Table 1.

[4] For example, the share of cross border loans and deposits to/from the euro zone non-financial sector amounted to 2.3% and 6.0% of all loans in 1998 but has hardly changed to 3.2% and 5.2% in 2002, respectively. In contrast, interbank and security market cross-border activities have been steadily increasing over time and reached shares between 10% and 35% in 2002 (Manna 2004). Furthermore Baele et al. (2004) report that the

market rates. Thus, the second issue we will address in this paper is to give a comparative evaluation of convergence and cointegration measures of integration.

According to Baele et al. (2004: 61) "the proportion of interest rate changes that is explained by common factors provides an alternative measure of the degree of integration". The common factor chosen in these news-based-measure studies is typically a market interest rate either in a benchmark country or in the whole euro zone. Some studies select as the common factor market interest rates that are most closely related to the retail interest rate under investigation (De Bondt 2002, De Bondt et al. 2003, and Baele et al. 2004). Other studies opt for a money market rate as the common (monetary policy) factor (Mojon 2000, Heinemann and Schüler 2003, Sander and Kleimeier 2002, 2004, Toolsema et al. 2002). Despite considerable differences in the methodological approach[5], such pass-through studies typically find very limited evidence for integration in lending to households and mortgage lending. The situation is slightly better for corporate loans and time deposits. Most importantly, there is some evidence for increasing integration in the latter markets.[6] Thus, the third issue we will address in this paper is to provide an evaluation of the role of wholesale market integration for retail banking market integration.

Our study will address these three issues by investigating and comparing global and regional integration of mortgage and short-term corporate loan markets by means of three price-based integration measures: those measuring price convergence, those measuring convergence of bank margins and those using cointegration methodology. We collect mortgage and corporate loan rates for each of the euro-zone countries including Austria,

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share of cross-border loans from non-euro zone banks (approximately 8% of all domestic loans in 2002) is higher than the share of cross-border loans from euro zone banks (approximately 4%).

[5] For a comparison of both approaches and a suggestion for a unifying approach see Sander and Kleimeier (2004).

[6] Note that the results that Baele et al. (2004) obtain from their news-based approach also stand in contrast to their price-convergence results. Their analysis indicates segmentation for consumer and mortgage rates and more integration for short and long corporate loan rates and time deposits. Their convergence analysis, on the other hand, concludes differently. Here the cross-sectional standard deviation at the end of the sample period is largest

Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, and Spain and for selected non-euro zone countries including Australia, Canada, Japan, Switzerland, United Kingdom, and the USA. For all these countries monthly interest rates are available for a sample period of January 1995 to December 2002. Margins are calculated over the 10-year bond yield in case of mortgages and 3-months money market rate in case of short-term corporate loans. See Table A1 of the appendix for details.[7] Instead of a simple before-after analysis of price and margin convergence measures we apply a difference-in-differences approach. This approach – presented here for the first time for retail banking markets – avoids the mistake of over-identifying euro-zone convergence and provides results for euro-zone convergence that can truly be attributed to the European integration efforts rather than being part of a global integration process (chapter 2). Secondly, we conduct various and extensive cointegration analyses for which we also compare the global with the regional euro-zone evolution (chapter 3). This allows us, third, to explicitly compare both, convergence and cointegration measures of integration (chapter 4). Our analysis will show that despite some euro zone-specific convergence the lack of integration in retail markets is still severe. Further wholesale market integration together with a more homogeneous pass-through process appear to be essential conditions for eliminating unexploited cross-border arbitrage. We thus discuss these issues in more detail in chapter 5. Chapter 6 concludes.

2. Price convergence measures of integration

2.1. Advantages and disadvantages of price convergence measures

Price-based measures have been advocated for a variety of reason, but particularly because these data are readily and more easily available and are typically more accurate than

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for short corporate loans and consumer loans (2.0), somewhat lower for long corporate loans (1.5), and low for mortgages and time deposits (0.5).

quantity-based measures. They also allow for a more straightforward interpretation and may be better able to reveal long-term trends. Adam et al. (2002) therefore suggest using retail rate convergence measures to monitor the progress in European retail banking market integration. The European Commission (2004) has followed this suggestion in its annual Financial Integration Monitor report. For a first impression, consider the development of nominal retail interest rates in the euro zone as presented in Panel A and C of Figure 1. There appears to be some convergence which has mostly taken place in the mid-1990s. Whereas country differences are smallest at the end of 2002 for mortgage rates, short-term corporate loan rates still show differences of up to 6.2%. Within a sub-group of euro-zone countries excluding Germany, Ireland, and Belgium, however, these rates seem to be more aligned. Nevertheless, after more than 10 years of regulatory integration efforts starting with the 2nd banking directive (BD) in 1993 and five years after the introduction of the single currency, full convergence of interest rates has not yet been reached in retail banking markets.

[insert Figure 1 about here]

For a more formal statistical test, two measures of convergence have been suggested: σ- and β-convergence. σ-convergence measures whether or not interest rates have become more similar over time when compared to each other or to a benchmark rate. In contrast, β-convergence measures the speed with which national interest rates converge. This latter measure has been borrowed from the economic growth literature. In the context of economic growth, countries with low initial levels of economic development should show higher economic growth than countries with high initial levels of economic development. With

[7] Due to the often short- to medium-term nature of the respective national mortgage rates, we also calculate margins over the 3-months money market rate. Unless otherwise indicated, the results for these margins do not differ substantially from those for mortgage margin over bond yields.

respect to banking market integration this implies that countries with initially relatively high interest rates should show faster downward adjustment than countries with already low interest rates. Consequently, both measures are complementary and can provide differing insights. As Adam et al. (2002) note, β-convergence can be consistent with σ-divergence. Full convergence should however not even be expected for two major reasons: First, the current database (prior to the changes introduced recently in the MFI statistics[8]) is so heterogeneous that cross-country comparisons can easily be misleading. Second, even if we had a good database, differences in banking products, borrower default risks etc. would still imply that loan portfolios would not necessarily be comparable across countries and thus price differentials should be expected. Thus, given the non-applicability of the law of one price in the strict sense in the retail banking market it can be argued that σ-convergence is a more realistic integration test (Freixas 2003).

Up to date, convergence measures have mostly been applied to euro-zone countries only, though some studies including Adam et al. (2002) report results for a sample including non-euro zone countries. However, a part or all of the convergence of euro-zone interest rates shown in Figure 1 could be caused by globally falling interest rate levels. In particular, mortgage rates have not only converged across the euro zone but also on a global level. As such, a clear differentiation between euro zone-specific and globally occurring convergence is needed. Moreover, a short reflection shows that price convergence can only be applied under the condition of a single currency where exchange rate risks are eliminated. Consider a difference (D) between two retail bank rates (BR) of two countries A and B. This difference can be decomposed into a difference (D1) of market rates MR (such as short-term money market rates) and differences in spread of the bank rate over that market rate (D2):

$$D = MR_A - MR_B + [(BR_A - MR_A) - (BR_B - MR_B)] = D_1 + D_2$$

[8] For details on these interest rates that are collected in a comparable fashion by all central banks of the euro

Within the euro zone after 1.1.1999 exchange rate risks as measured by D_1 equal (almost) zero. For the post-1999 euro zone it is thus sufficient to explore the integration progress by focusing on retail rates. But since these convergence measures fail to take into account exchange rate risk, they can neither benchmark against the pre-euro period nor against developments in countries outside the euro zone. To do so, integration measures based on the differences in bank margins D_2 are more informative as they are corrected for exchange rate expectations. Figure 1 reveals that mortgage rate margins have fallen in the euro zone and are by the end of 2002 more in line with global levels. In contrast, short-term corporate loan margins appear to be more stable over time and with the exceptions of Germany, Ireland, and Belgium, euro-zone margins are by late 2002 in line or even below global levels.

2.2. A difference-in-differences approach to price and bank-margin convergence

A difference-in-differences approach (DD) analysis can benchmark against both the pre-euro period and non-euro zone countries. Thus it avoids the mistake of over-identifying euro-zone convergence and provides results for euro-zone ß- and σ-convergence that can truly be attributed to the European integration efforts. The main reason for the lack of such DD studies can be found in the lack of comparable non-euro zone data. However, as mortgage rates and short-term corporate loan rates are readily available and probably the most comparable retail lending rates available, these two rates provide valuable material for a policy evaluation study.

For measuring convergence we apply both ß- and σ–convergence measures in models of differing complexity: First, for the whole sample period; second, allowing for differences before and during EMU; and third, in form of a DD analysis allowing for time- and region-specific patterns. For reason of comparability with existing studies we conduct the DD

zone see European Central Bank (2003).

approach for retail interest rate levels first before conducting the more realistic and more revealing DD analysis for bank lending margins. From the above discussion it is, however, obvious that focusing on retail rate levels is only appropriate for the euro-zone markets under the single currency. For all three models, σ-convergence employs the monthly standard deviation across interest rates (SD) as an integration proxy. For β-convergence, recall that countries with large deviations (in absolute terms) are expected to converge faster than countries with relatively small deviations. As such, β-convergence commonly focuses on the positive or negative deviation of each national interest rate from a mean or benchmark rate.

To analyze convergence in its simplest form for the full sample period, the following two regressions for σ- and β-convergence can be estimated[9]:

$$SD_t = a_1 + b_1\, T + \varepsilon_t \tag{1}$$

$$\Delta z_{c,r,t+12} = d_1\, z_{c,r,t} + \varepsilon_{c,r,t} \tag{2}$$

In equation (1) T indicates a trend. In equation (2) $z_{c,r,t}$ is defined as the difference in month t between the retail interest rate of country c and the average retail interest rate or margin in region r to which country c belongs. The change in this deviation is measured by $\Delta z_{c,r,t+12} = z_{c,r,t+12} - z_{c,r,t}$.[10]

In order to investigate whether euro-zone convergence continued or even increased during the EMU period, dummies can be included in the σ- and β-convergence regressions respectively such that

$$SD_t = a_1 + a_2\, D_{EMU} + b_1\, T + b_2\, T\, D_{EMU} + \varepsilon_t \tag{3}$$

$$\Delta z_{c,r,t+12} = d_1\, z_{c,r,t} + d_2\, z_{c,r,t}\, D_{EMU} + \varepsilon_{c,r,t} \tag{4}$$

[9] Both the σ- and β-convergence analysis is based on a methodology suggested by Slaughter (2001). He applies this methodology to per capita income convergence before and after trade liberalization.
[10] $\Delta z_{c,r,t+12}$ indicates the change over the coming 12 months. Note that we employ rolling samples of overlapping 12-months changes.

where D_{EMU} is the dummy equal to 1 for observations t during the EMU period.[11] A negative b_2 or d_2 coefficient indicates additional convergence during the EMU period.

To order to benchmark the convergence process in the euro zone against global trends, a DD analysis is employed based on the following panel regressions:

$$SD_{r,t} = a_1 + a_2 D_{EMU} + a_3 D_r + a_4 D_{r,EMU} + b_1 T + b_2 T D_{EMU} + b_3 T D_r + b_4 T D_{r,EMU} + \varepsilon_{r,EMU,t} \quad (5)$$

$$\Delta z_{c,r,t+12} = d_1 z_{c,r,t} + d_2 z_{c,r,t} D_{EMU} + d_3 z_{c,r,t} D_r + d_4 z_{c,r,t} D_{r,EMU} + \varepsilon_{c,r,t} \quad (6)$$

Two additional dummies are included: D_r is a cross-sectional dummy equal to 1 if the dependent variable is measured for region r = euro zone. $D_{r,EMU}$ is a compound dummy equal to 1 for region r = euro zone and for observations belonging to the EMU period. As such SD and Δz are calculated for euro zone and non-euro zone countries separately. σ- and β-convergence can now be differentiated by region and period based on the estimated coefficients. The results of the DD regressions (5) and (6) are shown in Table 1 for σ- and β-convergence of rates as well as margins.[12] The actual convergence coefficients are given by region and time together with tests for differences.

[insert Table 1 about here]

As could already be expected from the inspection of Figure 1, convergence is found for interest rate *levels.* For example, for euro-zone mortgage rates the simple analysis of regression (1) with an estimated coefficient of b_1 = -0.026 and d_1 = -0.270 would lead to this conclusion as both coefficients are negative and significant. The DD analysis, however,

[11] In order to clearly separate the pre-EMU from the EMU period and in order to create two sample periods of equal length, the pre-EMU period is defined as $z_{c,r,t}$ for t = 1/95 to 12/97 and the EMU period as t = 1/99 to 12/01. Note that for any t in 1998 the range over which $\Delta z_{c,r,t+1}$ is calculated falls partly into 1999. As such, this period is excluded.

[12] Details on the simpler models of regressions (1) to (4) are presented in Tables A2 and A3 of the appendix.

provides a more differentiated and exact picture. For mortgage rates, σ-convergence occurs but is limited to the pre-EMU period. In other words, no reduction in standard deviation was achieved under the single currency. On the other hand, β-convergence occurs in both periods and is even stronger under the single currency. For short-term corporate loan rates, both σ- and β-convergence are limited to the pre-EMU period and divergence occurs under the single currency. So far, our euro-zone results are broadly consistent with findings by Adam et al., who find evidence in favor of σ-convergence for corporate lending rates and σ- and β-convergence for mortgages. However, how much of this convergence or divergence is euro zone-specific? A look at the non-euro zone results reveals that σ- and β-convergence can be found outside the euro zone in both periods and for both rates. As such, the results reported in the literature so far, overestimate euro-zone convergence as global processes are not properly taken into account. In particular, the absence of mortgage-rate σ-convergence and the σ-divergence of corporate loan rates under the single currency has to be contrasted with converging global interest rates. Overall we conclude that σ- and β-convergence can be observed for the euro zone but it appears also to be – at least in part – a global phenomenon.

The finding that much of the euro zone-specific σ-convergence takes place in the pre-EMU period lead us to conclude that progressively disappearing exchange rate risks prior to the introduction of the single currency are an important driving factor. Thus, only by looking on *lending margins* we can obtain evidence whether convergence in the pre-EMU period can somehow be related to the impact of an integration process. Turning directly to the DD analysis and contrasting the euro zone with the non-euro zone mortgage margins reveals that σ-convergence is much stronger globally in the pre-EMU period. As such no euro zone-specific σ-convergence can be found. This stands in contrast to the *mortgage-rate level* results where about 50% of the σ-convergence was found to be euro zone-specific. This difference between rates and margins strongly suggests that the driving forces of retail rate convergence were of macro-economic rather than micro-economic nature. However, the β-convergence results for euro-zone mortgage margins reveal a convergence process that is present over the whole investigation period and is even increasing in the EMU period. However, non-euro zone β-convergence is about twice as high. Thus compared to a global benchmark, euro-zone mortgage margins exhibit relatively less β-convergence (rather than more as might be concluded when looking at mortgage rates).[13] This result might therefore indicate that convergence of margins is not so much driven by euro zone-specific processes such as measures to promote a single banking market, but by a global process of financial innovation and competition.

Regarding corporate loan margins, the results reveal euro zone-specific σ- and β-convergence only in the pre-EMU period. In contrast to corporate loan rates, however, the estimated coefficients are far less negative, indicating less convergence. As such, part of the observed convergence in interest rate levels is again likely to be due to the elimination of exchange rate uncertainty and overall falling interest rate levels. This interpretation is confirmed when looking at Panel G of Figure 1 where margins appear to converge only slightly and then only for a subgroup of euro-zone countries. Note that after 1998, β-convergence could also be observed for the non-euro zone, while for σ-convergence even some divergence is visible. Since the graphical picture reveals the existence of a "convergence-club" for corporate loans, we also conducted the analysis for a restricted euro zone excluding Germany, Belgium and Ireland. Interestingly, for these countries, both corporate rates and corporate rate margin are continuing to converge under the single currency on both measures.[14]

[13] The results for mortgage margins over money market rates differ. Whereas the estimated coefficients are the same for the euro zone, they are lower for the non-euro zone. This leads to the conclusions that 6% of the pre-EMU convergence and 25% of the EMU convergence is euro zone-specific.

[14] Details are listed in Tables A1 to A4 in the appendix.

The results of our case study of the mortgage and short-term corporate loan markets thus indicate that most of the convergence took place before 1999. The comparison of rates and margins strongly suggests that the driving forces of integration were macro-economic factors such as the integration of money markets which were taking place in anticipation of the single currency. Simple euro zone-only results of σ- and β-convergence might indeed paint the picture of convergence – but the more appropriate DD analysis reveals that only a fraction of this convergence is euro zone-specific. Further convergence of margins did not occur under the single currency, and if it occurred – such as ß-convergence of mortgage margins – it may rather be attributed to a change in the global competitive environment. Thus, the results from our DD-analysis are somewhat in line with the evidence from quantity-based measures of integration, which paint a more pessimistic picture of the state of European retail banking market integration than simple convergence studies. However, we could also document the existence of a "convergence-club" subgroup in the corporate loan market. This particular phenomenon suggests that further in-depth studies of determinants of convergence might be needed.

3. Cointegration of retail banking market prices

Retail banking markets may resist full convergence due to differences in national default risk, cultural influences in bank-client relationship, country-specific strategic bank behavior, the lack of cross-border lending, the lack of international bank mergers, and – at least up to January 1999 – differing monetary policy conditions. Consequently, one may not even expect the law of one price to hold in this market. Therefore, as first advocated in Kleimeier and Sander (2000) an alternative is to employ the concept of cointegration to analyze the state of market integration in retail banking when lending rates are tied together by a long-term equilibrium relationship that does not demand strict price- or productequalization. Cointegration analyses consider a setting where time series of individual variables “can wander extensively and yet some pairs of series may be expected to move so they do not drift too far apart” (Engle and Granger 1987). This long-run cointegration relationship can be expressed on a bivariate level as

$$y_t = c_1 + c_2 x_t + u_t \quad (7)$$

where y indicates the retail bank rate in one country and x a benchmark-retail bank rate of another country or a regional average, while u_t indicates the (estimated) error correction term. In the following we conduct cointegration analyses for regional and global mortgage and corporate lending rates which allows a direct comparison with the previously presented convergence results.

Looking first at the cointegration evidence obtained in our previous work (Kleimeier and Sander 2000 and 2003) over a relatively long period from 1985 to 2002 we can identify different phases of cointegration in the euro zone. Whereas it appears that the retail lending markets are weakly cointegrated before 1993, these links disappear in the mid-1990s. Around the introduction of the single currency, however, cointegration seems to appear again – at least in some retail markets, especially in the short-term corporate loan markets. Roughly speaking, cointegration analysis leads to a ‘yes–no-yes’ integration pattern over time to which the changes – in particular the ERM crises in 1992/93 – in the exchange rate regime appear to be most important. For the more recent period of the 1990s the role of the single currency is central to the analysis and is by most authors believed to introduce a shift in the structural relationships. Note, however, that as Kleimeier and Sander (2003) have shown for retail lending and deposit rates between 1995 and 2002, the break occurs in many retail markets well before January 1999, thus pointing towards an anticipation of the EMU.

In order to be directly able to compare our earlier convergence results to those of a cointegration analysis, we conduct cointegration analyses for all our euro zone and non-euro zone countries and for the same retail lending markets, the mortgage and the corporate loan market. While Kleimeier and Sander (2000, 2003) have investigated the cointegration relationship of an individual country against the remaining weighted average of the region, Schüler and Heinemann (2002) have argued in favor of investigating bilateral cointegration relationships. Since both analyses can provide complementary, though not contradictive results, we conduct here both types of analyses. In order to take the structural breaks and convergence processes explicitly into account, we estimate rolling cointegration regressions for five sub-periods of four years each.[15] As such we obtain cointegration results for sub-periods of January 1995 to December 1998, January 1996 to December 1999, etc.

Methodologically, the unit root characteristics of the individual, interest rate time series have to be established first.[16] Then we test for cointegration based on equation (7) using the usual Durbin-Watson, Dickey-Fuller, and Augmented Dickey-Fuller tests. To establish the speed of adjustment of interest rates back to the long-run equilibrium, we also estimate an error-correction-model (ECM) in a two step procedure. We first estimate an unrestricted VAR model as

$$\Delta y_t = \alpha_0 + \chi_0 y_{t-1} + \omega_0 x_{t-1} + \sum_{j=1}^{4} \chi_j \Delta x_{t-j} + \sum_{j=1}^{4} \omega_j \Delta y_{t-j} + \varepsilon_t \tag{8}$$

Second, we then estimate the ECM as

$$\Delta u_t = \alpha + \lambda u_{t-1} + \sum_{j=1}^{4} \chi_j \Delta x_{t-j} + \sum_{j=1}^{4} \omega_j \Delta y_{t-j} + \varepsilon_t \tag{9}$$

where u_t is the estimated error of the cointegration regression and only the significant lags of Δx and Δy from equation (8) are included. The coefficient λ indicates the estimated speed of adjustment.

[15] We are thereby consistent with other studies that estimate rolling cointegration regressions in order to illustrate the development of the cointegration over time (see e.g. Brada et al. 2005).
[16] See Table A5 of the appendix for detailed unit roots results.

The results are summarized in Table 2.[17] Both mortgage and corporate loan rates show the earlier mentioned yes-no-yes- pattern of bilateral cointegration within the euro zone. For mortgages, cointegration drops from 29 relationships in the pre-EMU sub-period from January 1995 to December 1998 (reflecting 32% of the possible 90 bilateral relationships among the 10 national rates) to as few as 12 only to increase to 40 (44%) during the last, EMU sub-period. Corporate loan rates show a similar pattern but reveal overall higher level of cointegration reaching 57 (63%) bilateral cointegration relationships under the single currency. Cointegration relative to the euro-zone average reveals a similar pattern for corporate loan rates. During the last rolling period from 1999 to 2002 only 2 countries, Finland and Germany, are not cointegrated with the euro-zone average. On the other hand, very little cointegration can be found for mortgage rates. The cointegration relationships reported in Panel B of Table 2 refer mainly to French rates.[18]

[insert Table 2 about here]

In order to illustrate the current state of (co)integration in the retail banking markets, Table 3 highlights the cointegration and speed of adjustment results for the EMU period. Consider first bilateral cointegration: Within the euro-zone's mortgage markets, cointegration is mainly driven by Finland, France, Italy, and Spain[19] whereas Germany does not seem to drive cointegration. The Irish mortgage market seems to be the one, which is least integrated with any other euro-zone market. As expected, cointegration is much more pronounced in corporate loan markets and speed of adjustment is higher here. Germany's limited role

[17] See Tables A6 and A7 of the appendix for details on the cointegration estimation.

[18] We also investigated a very early sample period from January 1990 to December 1993. These results are, however, not fully comparable as no mortgage rates are available for Austria or Italy and as short-term corporate loan rates are missing for Austria. Overall, the yes-no-yes-shape observed in Table 2 appears to extend into the early period of the 1990s as well. In contrast to the end of the 1990s, however, mortgage rates show higher levels of cointegration than short-term corporate loan rates.

remains: German corporate loan rates affect only Belgian rates. On the other hand, German rates do not respond to any other national rate. As such, this result corresponds with the earlier finding of a restricted "convergence-club" – however, here for both the corporate loan and mortgage market. We therefore also conducted a separate analysis with a restricted sample which shows that for corporate loan rates, there are cointegration relationships between 78% of all possible bilateral country-pairs within the restricted euro zone but only 44% within the outlier group of Belgium, Germany, and Ireland. Cointegration is also more complete with an average cointegration coefficient of -0.57 for the convergence club compared to the -0.31 for the outlier countries. For mortgage a similar picture emerges with 53% of all cointegration relationships and an average coefficient of -0.35 within the convergence club compared to 11% and -0.20 for the outlier countries.[20]

Consider now cointegration relative to the euro-zone average: The most interesting result is that UK lending rates are not cointegrated neither with individual euro-zone countries nor the euro-zone average but with the US rates, suggesting that the UK shows more similarities with the US than with the euro zone. In contrast, Swiss retail markets show some weak signs of cointegration with some euro-zone member countries. Somewhat puzzling are the results for Japanese rates. Note however, that the Japanese results could be driven by the poor unit root characteristics of the series.

[insert Table 3 about here]

4. Comparing convergence and cointegration measures of integration

[19] That is, we find cointegration and significant speed of adjustment when these national rates are considered as the independent variable in the cointegration regression.

[20] Furthermore, our findings regarding Germany question the established approach of using a German rate as a benchmark or common factor. We are thereby in line with Dunne et al. (2002) who based on Granger causality analysis propose French and Italian rates as alternatives to German rates.

When comparing the results of convergence and cointegration measures of integration the most important difference is found in the integration assessment of both, mortgage and corporate loan markets. Simple price convergence measures indicate that mortgage markets are the most integrated of all euro-zone retail lending markets. Looking at margins, however, shows that convergence did either not take place, was part of a more global process rather than a euro zone-specific one, or occurred only to a smaller euro-zone convergence club in the case of corporate loans. Cointegration analysis, however, additionally reveals that under the single currency both mortgage and corporate lending rates are now more closely related within this convergence club.

Consolidating these results reveals a weakness of the price-convergence measures in the context of euro-zone retail banking: Whereas the convergence of money market rates in anticipation of and under the single currency has provided a picture of overall convergence of nominal retail banking rates, the image of lack of integration that the quantity-based approaches clearly show is only consistently reflected in margin-convergence and cointegration analyses. Loan products as well as lender and borrower behavior remain different across the euro zone. In such an environment, simple price-convergence measures of integration are not well suited. It would indeed be surprising if in a market with different loan products or lending risks, interest rates were equal. In such a setting, cointegration measures of integration are more useful as they allow for these differences across national retail markets. On the other hand, cointegration measures will not be very useful when many structural changes are taking place over time. After the 1992/93 ERM crises and during the run-up towards the introduction of the single currency, some of the pre-1992 established cointegration relationships disappeared as exchange rate readjusted, inflation convergence occurred, and finally the fulfillment of the Maastricht criteria was envisaged. During this time, convergence measures reveals some progress in establishing a more uniform euro-zone retail banking market while cointegration analysis is not yet able to establish stable long-term relationships. However, in a structurally stable environment, cointegration measures are able to reveal important and detailed integration properties.

In sum, the comparison of convergence and cointegration measures of integration lead us to the following conclusions: Although price-convergence measures can provide an easy way to monitor some progress in integrating market, they may miss to benchmark against the rest of the world. Here exchange rate risks are present and convergence measures based on margins are therefore more appropriate to evaluate the impact of regional policies on banking market integration. Cointegration measures can - under stable conditions - help to identify a lack of integration on a bilateral and multilateral base. In contrast to Adam et al. (2002) we therefore advocate margin-convergence and cointegration measures to monitor the progress in European retail banking market integration and benchmark it against global retail banking developments.

5. Retail banking integration by means of wholesale banking integration

Retail banking still relies on geographic proximity to the customer and is characterized by substantial information asymmetries so that local banks often have a comparative advantage in screening local borrowers. This limits the emergence of an integrated retail banking market. Thus, the here documented lack of integration, i.e. the still segmented markets, provide diversification opportunities for the bank's loan portfolio as risk and return differ across national banking markets. Nevertheless, some integration is taking place and convergence of retail interest rates is documented. All in all, the above analyses suggest that the convergence and integration process observed in euro-zone retail markets is indeed largely driven by wholesale market integration. Two mechanisms are eventually the most relevant ones: the transmission of monetary impulses onto retail banking (lending) interest rates and the evolution towards a well-functioning euro-zone secondary market for loans.

Regarding the first mechanism the pass-through of interest rate changes onto retail interest rate is most relevant. Given the almost fully integrated money market in the euro zone it is clear that a full and homogeneous pass-through of interest rate changes onto retail rates would be sufficient to make the latter obey the law of one price within the euro zone. As such, pass-through studies provide information about banking market integration. Most of these studies find that the pass-through is typically the fastest and most homogeneous with respect to lending to corporations, while with respect to consumer lending the pass-through is most heterogeneous. These results are directly correlated with the evidence on (the lack of) retail market integration. In Sander and Kleimeier (2004) we particularly investigated the results of a pass-through study with respect to its integration implications. While the general conclusion is that the national pass-through processes are still highly divergent, we were nevertheless able to identify some convergence of the pass-through process with a particularly in the short-term corporate loan market. Moreover, the single monetary policy regime, in particular a reduced money market rate volatility, appears to have been helpful in homogenizing monetary transmission. Furthermore, in a more recent study using Euribor interest rate futures to proxy interest rate expectations (Kleimeier and Sander 2005) we find that if monetary policy changes are anticipated this might also have a homogenizing impact on the pass-through. In sum, one can conclude that a tendency towards a more homogeneous transmission process within the euro zone goes some way in creating a more homogeneous retail banking market. The conduct of monetary policy plays an important role here, but national characteristic may resist full convergence for a longer period of time.

A second avenue towards more integration may be provided by the creation and fast development of a secondary market for loans. As suggested by the ECB (2002b) securitization might thus provide additional integration effects. Securitization in Europe currently amounts to 150 billion euro but is as such still underdeveloped in especially when compared to the US.[21] Looking therefore at the effects that securitization had on the US retail banking markets and there in particular on the mortgage markets can provide valuable lessons. In the US, securitization first occurred in the mortgage market in the 1970s. A second wave took place in 1980s, which also marked the establishment of the government-sponsored agencies, GNMA, FNMA and FHLMC who took a leading role in the development. Private securitizing firms have joined the market and securitization has been steadily rising. Whereas on 5% of consumer loans were securitized in 1989, this percentage had risen to 30% in 2000. Major types of securitized loans now include student, manufactured housing, home equity, credit card, and auto loans. Securitization is, however, still most pronounced in the mortgage market where 46% of all mortgages were securitized in 2000 (Estrella 2002).

Two main types of benefits from mortgage securitization have been advocated for the US and could thus eventually be expected in Europe: First, benefits from the deepening of the mortgage market and second, benefits from the broadening of the mortgage market. Regarding the first benefit, it appears that increased securitization is correlated with lower interest rate spreads on mortgages. Kolari et al. (1998, p. 679) find that "a 10% increase in the level of securitization as a proportion of total mortgage origination reduces the yield spread on home mortgage loans by as much as 20 basis points in the long run". However, some authors question the causality pattern and argue that low spreads may have led to more securitization.[22] Regarding the second benefit, Katz (1997) argues that cross-sectional

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[21] The legal and regulatory changes adopted during the 1990s, in particular the allowance of special purpose vehicles and financial vehicle corporations, were crucial in fostering the creation of many new financial instruments. This has contributed to the growth of securitization in particular in Belgium, Spain and Portugal. However, national patterns prevail and differences include the type of debt that is securitized (household versus corporate debt), the maturity of the created securities (short- versus long-term) and the relative quantities of securitized debt.

[22] See e.g. Estrella (2002) who argues on the base of a study by Heuson, Passmore, and Sparks (2001), that low mortgage rates cause more securitization. As such the negation correlation might not necessarily have to be interpreted as consumer benefits.

dispersion in mortgage rates in the US is negatively related to securitization. Whereas regional mortgage rates differed by 100 basis points or more, they have become much more homogeneous. She believes that banks in the US use securitization to reduce their sensitivity to local economic shocks. Due to their superior knowledge of market conditions, property values, and creditworthiness of borrowers, banks still concentrate their loan origination in particular regions or industries. These loans, however, do not stay on the balance sheet but are securitized and sold to banks anywhere in the country. As a consequence "[m]oney can flow from regions with idle deposits to those with excess loan demand, and thus mortgage rates are more similar across the country."

This US evidence thus implies that increasing securitization in the euro zone may help to generate the so far still elusive integration benefits and could eventually lead to further convergence of retail lending rates in a market where banks and bank lending can remain domestic in nature. However, as noted before, the first effect is disputed and might require further research. Moreover, eventual benefits would have to be weighted against potential costs. For example, securitization is believed to affect the stability of the banking sector. While on the one hand, stability is increased as banks can hold more diversified portfolios and are less dependent on the local economy (Katz 1997), stability is on the other hand decreased if securitization is used for regulatory capital arbitrage (Jones 2000) or leads to insufficient monitoring of borrowers.[23]

Finally, securitization can have an impact on the effectiveness of monetary policy transmission, in particular with respect to the pass-through mechanism. Estrella (2002) finds a stronger effect of monetary policy on mortgage rates due to increased securitization. However, as securitization allows banks to continue their lending activities even under monetary tightening as securitized loans do not need to be funded by deposits, monetary

[23] Lisieri et al. (2001) report evidence for a free-rider problem in UK mortgage markets in the 1980s.

policy seems to have very little effect on output. Kuttner (2000) provides empirical evidence that banks do indeed use securitization as a monetary policy buffer. He finds that in their reaction to monetary policy, securitization volume moves in the opposite direction to bank loan volume. Thus, consumers might benefit as credit crunches are avoided.

6. Conclusions

Twelve years after the launch of the single market project and five years after the introduction of the single currency the evolving empirical evidence supports the view of still fragmented retail markets with strong national characteristics. The evidence of convergence of retail banking markets is largely a result of integrating money and bonds markets in anticipation of the single currency. Important structural changes in the euro-zone retail banking markets can indeed be identified but should largely be attributed to the single currency and the impact of the single monetary policy. As such, three major conclusions emerge. First, without further changes in regulation and/or the competitive environment the convergence process might now slow down considerably or even come to a halt. Secondly, obtaining further integration effects and thus convergence may only be possible by more integration of wholesale markets through secondary loan markets and securitization. However, regulators have to judge whether the potential benefits of such activities outweigh the potential risks and cost. Finally, retail-banking activities tend to remain localized. As such, monitoring and eventually regulating competition in these markets will remain a major concern for policy makers.

Appendix

[insert tables A1 to A7 about here]

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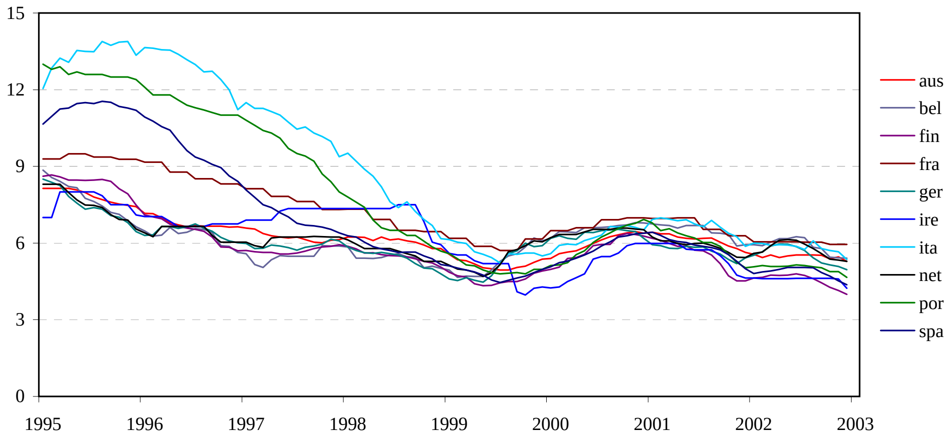
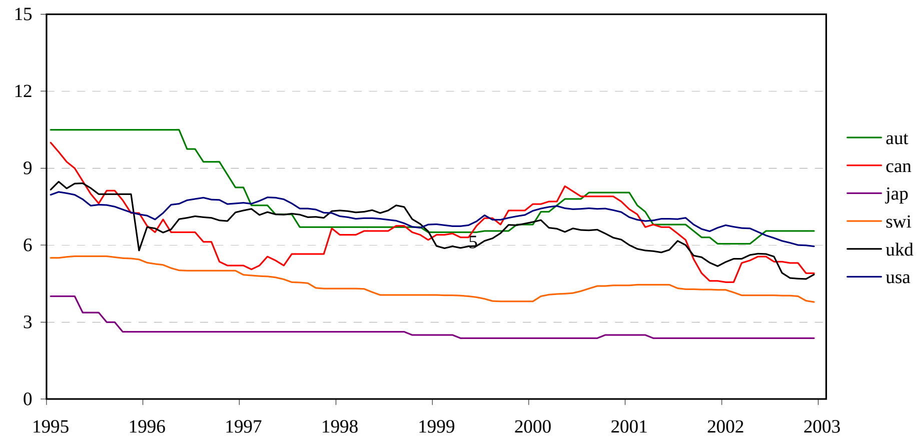
Figure 1: Eurozone and non-eurozone retail loan rates and margins

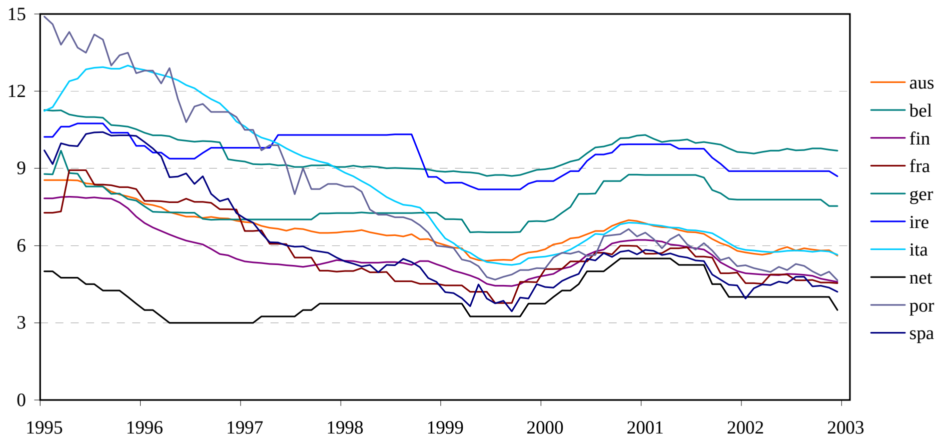
Panel A: Eurozone mortgage rates



Panel B: Non-eurozone mortgage rates



Panel C: Eurozone short-term corporate loan rates



Panel D: Non-eurozone short-term corporate loan rates

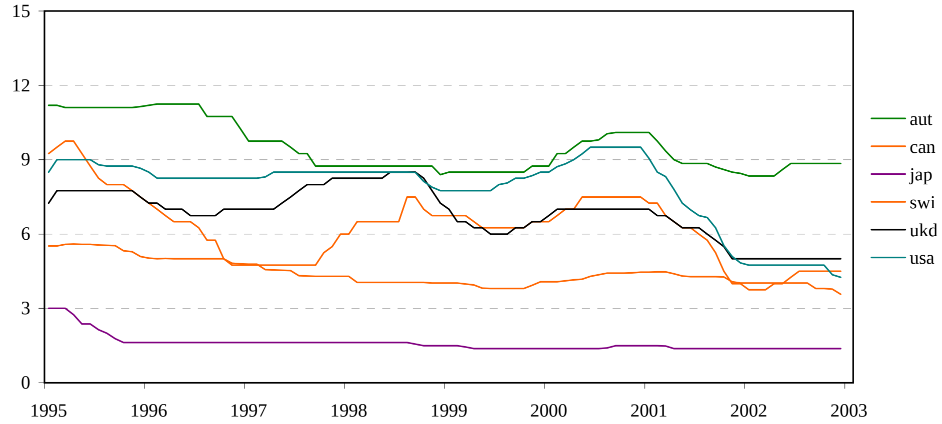
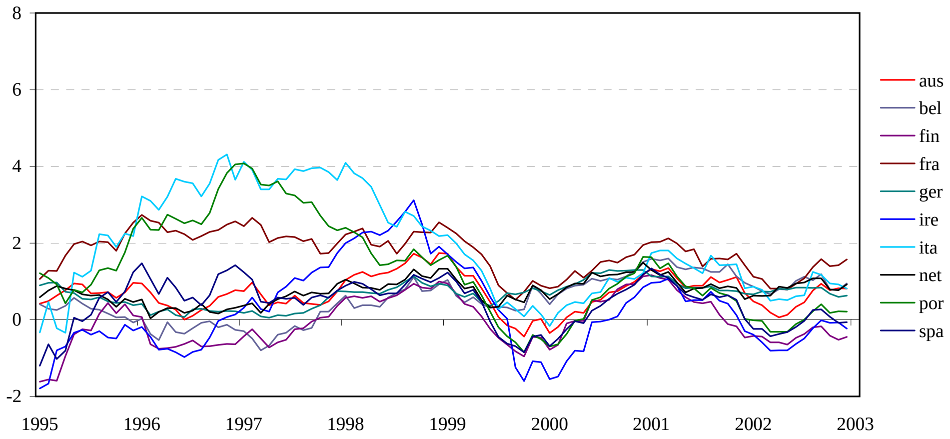
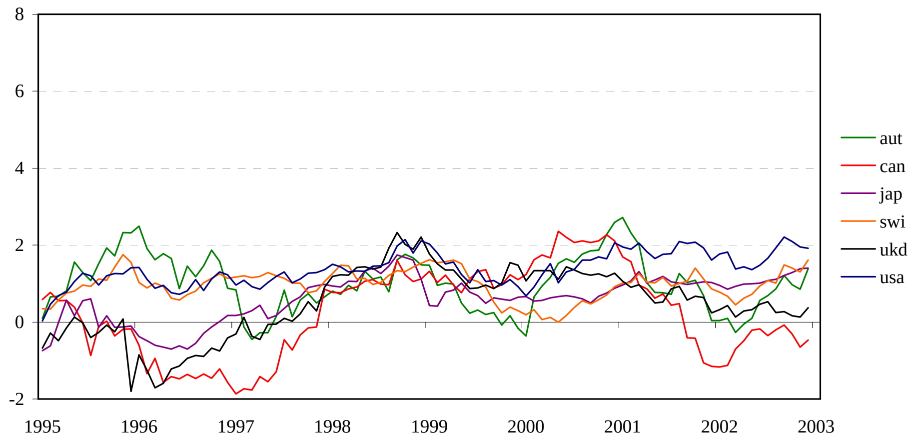


Figure 1 continued: Eurozone and non-eurozone retail loan rates and margins

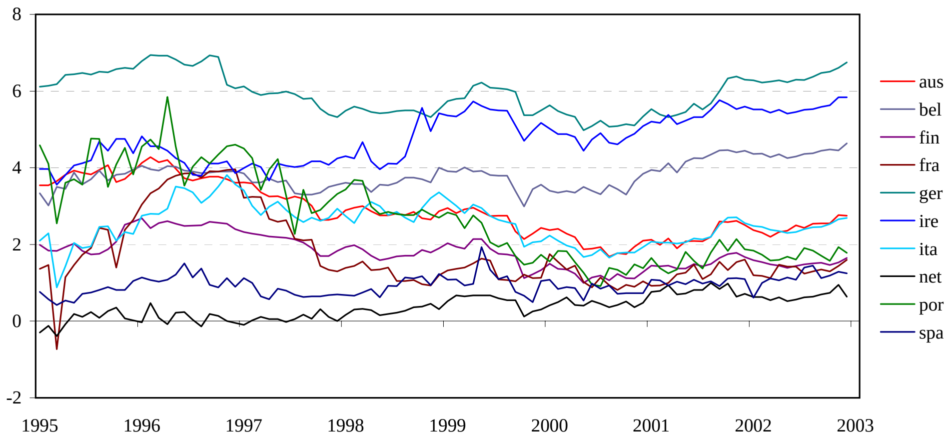
Panel E: Eurozone mortgage rate margins over 10-year government bond yield



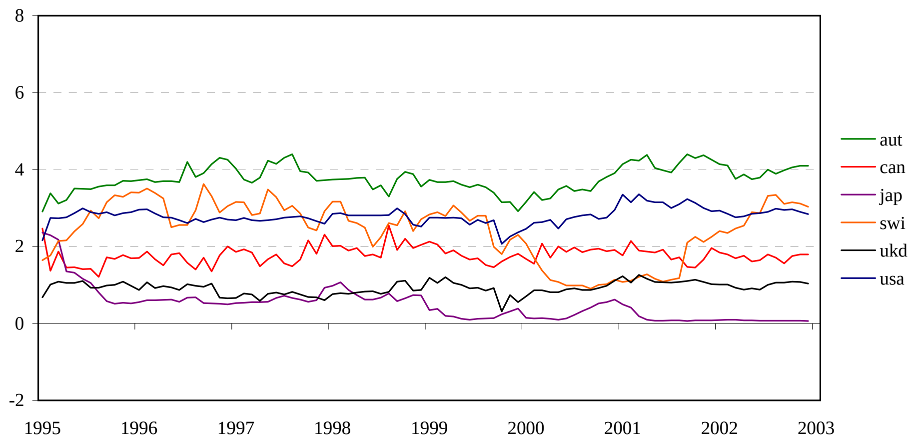
Panel F: Non-eurozone mortgage rate margins over 10-year government bond yield



Panel G: Eurozone short-term corporate loan rate margins over 3-months money market rate



Panel H: Non-eurozone short-term corporate loan rate margins over 3-months money market rate



Note: The countries are abbreviated as follows: aus=Austria, bel=Belgium, fin=Finland, fra=France, ger=Germany, ire=Ireland, ita=Italy, net=netherlands, por=Portugal, spa=Spain for the eurozone and aut=Australia, can=Canada, jap=Japan, swi=Switzerland, ukd=United Kingdom, usa=United States of America for the non-eurozone. On the x-achsis, the numbers are placed such that they indicate the beginning of the year.

Table 1: Differences in regional convergence based on differences-in-differences analysis

Panel A: Mortgage rates

convergence coefficient for region	σ-convergence pre-EMU period	σ-convergence EMU period	β-convergence pre-EMU period	β-convergence EMU period
eurozone	-0.041*	0.000	-0.257*	-0.504*
non-eurozone	-0.020*	-0.012*	-0.170*	-0.108*

F-test for differences across coefficients	F-test	signif	F-test	signif
eurozone versus non-eurzone pre-EMU convergence	40.173	0.0%	10.909	0.0%
eurozone versus non-eurzone EMU convergence	13.140	0.0%	28.507	0.0%
pre-EMU versus EMU eurozone convergence	152.191	0.0%	11.834	0.0%
pre-EMU versus EMU non-eurozone convergence	5.633	1.9%	3.690	5.5%

Panel B: Short-term corporate loan rates

convergence coefficient for region	σ-convergence pre-EMU period	σ-convergence EMU period	β-convergence pre-EMU period	β-convergence EMU period
eurozone	-0.021*	0.006*	-0.155*	0.026
non-eurozone	-0.007*	-0.012*	-0.074*	-0.087*

F-test for differences across coefficients	F-test	signif	F-test	signif
eurozone versus non-eurzone pre-EMU convergence	30.070	0.0%	12.213	0.0%
eurozone versus non-eurzone EMU convergence	50.618	0.0%	15.330	0.0%
pre-EMU versus EMU eurozone convergence	114.961	0.0%	44.973	0.0%
pre-EMU versus EMU non-eurozone convergence	3.520	6.2%	0.277	59.8%

Panel C: Mortgage rate margins over 10-year government bond yield

convergence coefficient for region	σ-convergence pre-EMU period	σ-convergence EMU period	β-convergence pre-EMU period	β-convergence EMU period
eurozone	-0.003	0.000	-0.251*	-0.471*
non-eurozone	-0.145*	0.010*	-0.490*	-0.795*

F-test for differences across coefficients	F-test	signif	F-test	signif
eurozone versus non-eurzone pre-EMU convergence	8.970	0.3%	17.665	0.0%
eurozone versus non-eurzone EMU convergence	6.081	1.5%	9.302	0.2%
pre-EMU versus EMU eurozone convergence	0.487	48.6%	8.900	0.3%
pre-EMU versus EMU non-eurozone convergence	37.928	0.0%	10.258	0.1%

Panel D: Short-term corporate loan rate margins over 3-months money market rate

convergence coefficient for region	σ-convergence pre-EMU period	σ-convergence EMU period	β-convergence pre-EMU period	β-convergence EMU period
eurozone	-0.008*	0.006*	-0.109*	0.026
non-eurozone	0.003*	0.006*	-0.025	-0.101*

F-test for differences across coefficients	F-test	signif	F-test	signif
eurozone versus non-eurzone pre-EMU convergence	66.001	0.0%	7.220	0.7%
eurozone versus non-eurzone EMU convergence	0.297	58.6%	14.639	0.0%
pre-EMU versus EMU eurozone convergence	109.816	0.0%	47.767	0.0%
pre-EMU versus EMU non-eurozone convergence	3.275	7.2%	3.408	6.5%

Notes: Based on F-tests, *, **, and *** indicate that the convergence estimates are significantly different from zero at 1%, 5%, and 10% significance level, respectively. Pre-EMU period refers to the time from 1.1.1995 to 31.12.1998 whereas EMU period refers to 1.1.1999 to 31.12.2002. The eurozone includes the countries Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, Portugal, and Spain. The non-eurozone includes the countries Australia, Canada, Japan, Switzerland, the United Kingdom, and the USA. The convergence coefficients are calculated based on equations (5) and (6). In particular, σ-convergence in the non-euro zone in the pre-EMU period is given by b_1. Convergence in the non-euro zone in the EMU period is given by (b_1 + b_2) convergence in the euro zone in the pre-EMU period is given by (b_1 + b_3), and finally convergence in the euro zone in the EMU period is given by (b_1 + b_2 + b_3 + b_4). In a corresponding manner ß-convergence can be calculated using d_1 to d_4.

Table 2: Summary of rolling cointegration analysis

		mortgage rates					short-term corporate loan rates				
		1995-1998	1996-1999	1997-2000	1998-2001	1999-2002	1995-1998	1996-1999	1997-2000	1998-2001	1999-2002
Panel A: Bilateral cointegration											
number of cointegration relationships	**among eurozone countries**	**29**	**12**	**12**	**20**	**40**	**23**	**14**	**13**	**31**	**57**
	eurozone vs non-eurozone countries	26	9	7	8	17	29	16	9	18	24
	among non-eurozone countries	11	5	0	1	6	3	2	2	1	9
% of cointegration relationships	**among eurozone countries**	**32%**	**13%**	**13%**	**22%**	**44%**	**26%**	**16%**	**14%**	**34%**	**63%**
	eurozone vs non-eurozone countries	22%	8%	6%	7%	14%	24%	13%	8%	15%	20%
	among non-eurozone countries	37%	17%	0%	3%	20%	10%	7%	7%	3%	30%
average speed of adjustment	**among eurozone countries**	**-0.17**	**-0.31**	**-0.21**	**-0.33**	**-0.35**	**-0.18**	**-0.33**	**-0.39**	**-0.36**	**-0.49**
	eurozone vs non-eurozone countries	-0.24	-0.17	-0.27	-0.12	-0.28	-0.19	-0.29	-0.35	-0.32	-0.27
	among non-eurozone countries	-0.31	-0.15		0.00	-0.19	-0.12	-0.39	-0.24	-0.25	-0.23
Panel B: Cointegration relative to eurozone											
number of cointegration relationships	**eurozone countries**	**2**	**1**	**1**	**2**	**2**	**5**	**2**	**1**	**3**	**8**
	non-eurozone countries	2	0	0	0	1	1	1	1	1	1
% of cointegration relationships	**eurozone countries**	**20%**	**10%**	**10%**	**20%**	**20%**	**50%**	**20%**	**10%**	**30%**	**80%**
	non-eurozone countries	33%	0%	0%	0%	17%	17%	17%	17%	17%	17%
average speed of adjustment	**eurozone countries**	**-0.30**	**-0.32**	**-0.57**	**-0.27**	**-0.33**	**-0.24**	**-0.36**	**-0.76**	**-0.30**	**-0.40**
	non-eurozone countries	-0.23				-0.25	-0.13	-0.23	-0.30	-0.44	-0.20

Notes: For countries included in euro zone and non-euro zone see Table 1. Cointegration is estimated for all possible country pairs. As such for the 10 euro zone rates 90 possible cointegration relationship can exist. To calculate the average speed of adjustment, observations are deleted when no cointegration exists and observations are set to zero when cointegration exists but the coefficient is insignificant.

Table 3: Cointegration and speed of adjustment from 1999 to 2002

	Austria	Belgium	Finland	France	Germany	Ireland	Italy	Netherlands	Portugal	Spain	Australia	Canada	Japan	Switzerland	United Kingdom	USA	eurozone average
Panel A: Mortgage rates																	
Austria				-0.36			-0.50								-0.08		
Belgium	-0.34		-0.28	-0.37		-0.20	-0.43		-0.31	-0.37	-0.17			-0.32			-0.36
Finland				-0.67						-0.21							
France	-0.43	-0.22	-0.45				-0.38		-0.43	-0.52							-0.30
Germany			-0.31	-0.30				-0.41									
Ireland							-0.33							-0.34			
Italy	-0.53		-0.20	-0.41		-0.29			-0.34	-0.52				-0.48			
Netherlands			-0.25	-0.36	-0.39		-0.22			-0.28							
Portugal			0.00	-0.34			-0.28			-0.34							
Spain			0.00	-0.44			-0.45		-0.34								
Australia																	
Canada																	
Japan	-0.27	-0.20	-0.27	-0.29	-0.19	-0.32	-0.27	-0.20	-0.34	-0.31	0.00	-0.22		-0.28	-0.20	-0.21	-0.25
Switzerland	-0.20						-0.45										
United Kingdom																-0.21	
USA																	
Panel B: Short-term corporate loan rates																	
Austria			-0.30	-0.51				-0.49	-0.73	-0.54				0.00			-0.25
Belgium				-0.29	-0.30	-0.56				-0.40							-0.48
Finland	-0.32			-0.42				-0.53	-0.67	-0.50				0.00			
France	-0.58	-0.41	-0.57			-0.42	-0.39	-0.75	-0.69	-0.69				-0.51			-0.44
Germany		0.00															
Ireland		-0.37		-0.37			-0.45	-0.26		-0.51							-0.54
Italy				-0.28		-0.30		-0.39	-0.42	-0.48							0.00
Netherlands	-0.45	0.00	-0.64	-0.72		-0.26	-0.52		-0.60	-0.86				-0.30			-0.56
Portugal	-0.79		-0.78	-0.63		-0.36	-0.39	-0.63		-0.42			-0.21	-0.63			-0.29
Spain	-0.74	-0.46	-0.47	-0.70	0.00	-0.70	-0.75	-0.94	-0.49		-0.28			-0.33			-0.67
Australia																	
Canada															-0.27		
Japan	-0.30	-0.22	-0.28	-0.26	-0.21	-0.20	-0.27	-0.28	-0.31	-0.29	-0.22	-0.22		-0.26	-0.19	-0.23	-0.20
Switzerland	0.00		-0.40	-0.39				0.00	-0.69	0.00							
United Kingdom												-0.30				-0.21	
USA															-0.21		

Note: This table reports the estimated speed of adjustment coefficient based on the ECM model for the period of 1999 to 2002. The rows and columns are structured such that starting from a cointegration regression of $y = \alpha + \beta x$, the series for y are listed by row and the series for x are listed by column. A blank cell indicates that no cointegration was found. A value of 0.00 indicates that cointegration exists but that the speed of adjustment coefficient is not significantly different from zero at the 5% level. Regarding the last column note that for all euro zone countries the analysis is conducted relative to the average rate of the remaining euro zone.Results for y=x are not reported and these fields are highlighted in grey.

Table A1: Data description

Country	Source[1]	Description[2]	Code	Weight[3]
Panel A: Mortgage rates				
Austria	ECB	Loans for house purchase at variable rate	N2	3.01
Belgium	ECB	Mortgage loans with amortisation	N2	3.90
Finland	ECB	Housing loans to households	N2	1.69
France	DS	FR housing loans - fixed-rate loans curn	FRLPHSE%	20.99
Germany	ECB	Mortgage loans (5 years fixed rate)	N2	30.55
Ireland	ECB	Variable mortgage lending to households	N2	1.14
Italy	ECB	Loans over 18 months to households	N2	20.15
Netherlands	ECB	Mortgage loans from credit institutions	N2	5.74
Portugal	ECB	Loans for house purchase: loans and advances to private individuals with maturity over 5 years	N2	2.39
Spain	ECB	Mortgage loans for house purchase over 3 years	N2	10.44
Australia	CB	F05 indicator lending rates - Housing Loan - Variable rate - standard bank loans	FILRHLVBS	0.00
Canada	DS	CN interest rates: 1 year mortgage rate,CH.bank (end month)	CNB14050	0.00
Japan	DS	JP city banks housing loans floating rate	JPFHOUSE	0.00
Switzerland	DS	SW mortgage rate - new mortgages (12 cantonal banks) NADJ	SWKY4013F	0.00
United Kingdom	ECB	Fixed rate mortgage loans, 2 years	N2.2	0.00
USA	DS	US new home mortgages - contract interest rate	USYMICN1	0.00
Panel B: Short-term corporate loan rates				
Austria	ECB	Loans to enterprises	N4	3.01
Belgium	ECB	Bank advances in current account for professional use	N4-2	3.90
Finland	IFS	Average bank lending rate - Central bank: bulletin	60b	1.69
France	ECB	Discount, overdrafts and other short-term loans	N4	20.99
Germany	IFS	Current acct. credit to 1 mill - Central bank: bulletin	60b	30.55
Ireland	ECB	Overdrafts and term loans up to 1 year – AA rate/ lending to firms	N4	1.14
Italy	ECB	Interest on loans up to 18 months - all customers	N4-1	20.15
Netherlands	ECB	Bank base rate, enterprises	N4	5.74
Portugal	ECB	Loans to private non-financial enterprises with 91 to 180 days maturity	N4-2	2.39
Spain	ECB	Variable rate; monthly reviewable	N4	10.44
Australia	DS	AU major banks lending rate to small/mediu businesses (EP)	AUBSLOAN	0.00
Canada	DS	CN chartered banks' prime rate (end period)	CNBANKR.	0.00
Japan	DS	JP short-term prime rate (EP)	JPSPRIME	0.00
Switzerland	IFS	Lending rate - Central bank: bulletin	60b	0.00
United Kingdom	DS	UK major banks prime lending rate (EP)	UKBANKR.	0.00
USA	DS	US prime rate charged by banks	USPRIME.	0.00
Panel C: 10-year government bond yields				
Austria	DS	OE harmonised government 10-year bond yield (Eurostat)	OEESSFUB	
Belgium	DS	BG harmonised government 10-year bond yield (Eurostat)	BGESSFUB	
Finland	DS	FN harmonised government 10-year bond yield (Eurostat)	FNESSFUB	
France	DS	FR harmonised government 10-year bond yield (Eurostat)	FRESSFUB	
Germany	DS	BD harmonised government 10-year bond yield (Eurostat)	BDESSFUB	
Ireland	DS	IR harmonised government 10-year bond yield (Eurostat)	IRESSFUB	
Italy	DS	IT harmonised government 10-year bond yield (Eurostat)	ITESSFUB	
Netherlands	DS	NL harmonised government 10-year bond yield (Eurostat)	NLESSFUB	
Portugal	DS	PT harmonised government 10-year bond yield (Eurostat)	PTESSFUB	
Spain	DS	ES harmonised government 10-year bond yield (Eurostat)	ESESSFUB	
Australia	DS	AU commonwealth government bond yield 10 year (EP)	AUGBOND.	
Canada	DS	CN government bond yield: over 10 years (end month)	CNGBOND.	
Japan	DS	JP government 10-yearYEAR bond yield (SUSP) (Eurostat)	JPESSFUB	
Switzerland	DS	SW Switzerland 10 yr govt. bond yield (ECON, EP)	SWGBOND.	
United Kingdom	DS	UK harmonised government 10-year bond yield (Eurostat)	UKESSFUB	
USA	DS	US government 10-year bond yield (SUSP) (Eurostat)	USESSFUB	
Panel D: 3-months money market rates				
Austria	DS	OE interbank offered rate: three month (NCB)	OEINTER3	
Belgium	DS	BG three month interbank offered rate (EP) (NCB)	BGINTER3	
Finland	DS	FN HELIBOR - 3 month (mth.avg.) (NCB)	FNINTER3	
France	DS	FR PIBOR / EURIBOR - 3-month (mth.avg.) (OECD)	FRINTER3	
Germany	DS	BD FIBOR - 3 month (mth.avg.) (NCB)	BDINTER3	
Ireland	DS	IR three month interbank offered rate (EP) (NCB)	IRINTER3	
Italy	DS	IT interbank deposit rate-average on 3-months deposits (NCB)	ITINTER3	
Netherlands	DS	NL interbank three month: offered rate (EP) (NCB)	NLINTER3	
Portugal	DS	PT LISBon interbank offer rate - 3 month (EP) (NCB)	PTINTER3	
Spain	DS	ES interbank rate - 3 month (weighted average, EP) (Ministerio De Economia y Hacienda)	ESINTER3	
Australia	DS	AU interbank rate - 3 month (EP) (NCB)	AUINTER3	
Canada	DS	Canada treasury bill 3 mth. (BOC) - middle rate (Statistics Canada)	CNTBB3M	
Japan	DS	JP 3 month money market rate (Eurostat)	JPESSFON	
Switzerland	DS	SW three month interbank rate: bid rate (NCB)	SWINTER3	
United Kingdom	DS	UK interbank rate - 3 month (mth.avg.) (Financial Times)	UKINTER3	
USA	DS	US US 3 month interbank rate (London) (mth.avg.) (DS)	USINTER3	

[1] Datasources are the European Central Bank (ECB), Datastream (DS), and the International Financial Statistics (IFS). [2] In Panel C and D the original datasource is indicated in parentheses. NCB indicates the national central bank. [3] Weight used in cointegration analysis for eurozone average rates. Note that weights are re-calculated to sum to 100 when a country is excluded from the average. Source: OECD Economic Outlook 73, Volume 2003/1, June, page 190, Weighting scheme for aggregate measures, based on 1995 GDP and purchasing power parities.

Table A2: σ-convergence

		euro zone		restricted euro zone		non-euro zone		Differences-in-Differences Analysis: non-euro zone versus euro zone	Differences-in-Differences Analysis: non-euro zone versus restricted euro zone
regression equation		1	3			1	3	5	5
coefficient	of independent variable								
Panel A: Mortgage rates									
a_1	constant	2.410	2.820			2.468	2.671	2.671	
		(30.019)	(37.816)			(54.123)	(48.123)	(40.636)	
a_2	D_{EMU}		-2.323				-0.036	0.036	
			(-11.101)				(-0.230)	(0.194)	
a_3	$D_{eurozone}$							0.149	
								(1.601)	
a_4	$D_{eurozone,EMU}$							-2.359	
								(-9.042)	
b_1	trend	-0.026	-0.041			-0.009	-0.020	-0.020	
		(-17.786)	(-15.292)			(-11.222)	(-9.929)	(-8.384)	
b_2	trend*D_{EMU}		0.041				0.008	0.008	
			(10.875)				(2.811)	(2.373)	
b_3	trend*$D_{eurozone}$							-0.020	
								(-6.338)	
b_4	trend*$D_{eurozone,EMU}$							0.033	
								(7.045)	
adjusted R^2		0.768	0.902			0.568	0.685	0.911	
Panel B: Short-term corporate loan rates									
a_1	constant	2.643	2.922	3.296	3.716	3.215	3.193	3.193	3.193
		(56.294)	(86.742)	(39.799)	(60.161)	(71.592)	(50.643)	(63.169)	(51.164)
a_2	D_{EMU}		-1.531		-2.728		0.373	0.373	0.373
			(-16.189)		(-15.734)		(2.108)	(2.629)	(2.130)
a_3	$D_{eurozone}$							-0.271	0.522
								(-3.790)	(5.919)
a_4	$D_{eurozone,EMU}$							-1.904	-3.101
								(-9.489)	(-12.516)
b_1	trend	-0.011	-0.021	-0.035	-0.050	-0.007	-0.007	-0.007	-0.007
		(-12.877)	(-17.676)	(-23.753)	(-22.636)	(-9.198)	(-3.227)	(-4.025)	(-3.260)
b_2	trend*D_{EMU}		0.027		0.0454		-0.005	-0.005	-0.005
			(16.088)		(14.622)		(-1.504)	(-1.876)	(-1.520)
b_3	trend*$D_{eurozone}$							-0.014	-0.042
								(-5.484)	(-13.535)
b_4	trend*$D_{eurozone,EMU}$							0.032	0.050
								(8.909)	(-11.307)
adjusted R^2		0.634	0.907	0.856	0.960	0.468	0.484	0.882	0.955
Panel C: Mortgage rate margins over 10-year government bond yield									
a_1	constant	1.331	1.222			0.826	1.116	1.116	
		(21.728)	(15.714)			(12.860)	(14.341)	(14.348)	
a_2	D_{EMU}		-0.685				-1.184	-1.184	
			(-3.137)				(-5.420)	(-5.423)	
a_3	$D_{eurozone}$							0.106	
								(0.961)	
a_4	$D_{eurozone,EMU}$							0.500	
								(1.618)	
b_1	trend	-0.010	-0.003			-0.003	-0.015	-0.015	
		(-9.196)	(-1.020)			(-2.389)	(-5.252)	(-5.255)	
b_2	trend*D_{EMU}		0.003				0.024	0.024	
			(0.698)				(6.156)	(6.159)	
b_3	trend*$D_{eurozone}$							0.012	
								(2.995)	
b_4	trend*$D_{eurozone,EMU}$							-0.021	
								(-3.861)	
adjusted R^2		0.468	0.558			0.047	0.311	0.495	
Panel D: Short-term corporate loan rate margins over 3 months money market rate									
a_1	constant	1.776	1.981	1.659	1.691	1.129	1.092	1.092	1.092
		(64.586)	(81.849)	(46.560)	(40.940)	(43.466)	(34.918)	(39.055)	(29.815)
a_2	D_{EMU}		-0.619	-0.013	-0.765		-0.389	-0.389	-0.390
			(-9.114)	(-20.708)	(-6.601)		(-4.431)	(-4.956)	(-3.784)
a_3	$D_{eurozone}$							0.889	0.599
								(22.474)	(11.554)
a_4	$D_{eurozone,EMU}$							-0.230	-0.376
								(-2.073)	(-2.587)
b_1	trend	0.000	-0.008		-0.013	0.000	0.003	0.003	0.003
		(1.004)	(-9.714)		(-8.773)	(0.391)	(2.755)	(3.082)	(2.353)
b_2	trend*D_{EMU}		0.0145		0.009		0.003	0.003	0.003
			(12.108)		(4.450)		(1.618)	(1.810)	(1.382)
b_3	trend*$D_{eurozone}$							-0.011	-0.016
								(-8.124)	(-8.657)
b_4	trend*$D_{eurozone,EMU}$							0.012	0.007
								(6.130)	(2.571)
adjusted R^2		0.000	0.619	0.818	0.880	-0.009	0.281	0.928	0.833

Notes: The dependent variable is the monthly standard deviation across the national rates or margins. The sample period ranges from January 1995 to December 2002. For each regression variable, the first row reports the estimated coefficient and the second row reports the t-test statistic against zero. For euro zone and non-euro zone countries see notes to Table 1. The restricted euro zone countries do not include Belgium, Germany, and Ireland. The number of observations are 96 for regression 1 and 3 and 192 for regression 5.

Table A3: β-convergence

		euro zone		restricted euro zone		non-euro zone		Differences-in-Differences Analysis	
								non-euro zone versus euro zone	non-euro zone versus restricted euro zone
regression equation		2	4	2	4	2	4	6	6
number of observations		720	720	504	504	432	432	1152	936
coefficient	of independent variable								
Panel A: Mortgage rates									
d_1	z_t	-0.270	-0.257			-0.144	-0.170	-0.170	
		(-17.593)	(-16.454)			(-8.492)	(-7.636)	(-8.195)	
d_2	$z_t * D_{EMU}$		-0.248				0.061	0.061	
			(-3.608)				(1.790)	(1.921)	
d_3	$z_t * D_{r=eurozone}$							-0.087	
								(-3.303)	
d_4	$z_t * D_{r=eurozone,EMU}$							-0.309	
								(-3.923)	
adjusted R^2		0.301	0.312			0.143	0.148	0.249	
Panel B: Short-term corporate loan rates									
d_1	z_t	-0.095	-0.154	-0.213	-0.215	-0.080	-0.074	-0.074	-0.074
		(-8.273)	(-11.423)	(-17.81)	(-17.189)	(-5.355)	(-3.632)	(-4.273)	(-4.407)
d_2	$z_t * D_{EMU}$		0.181		0.045		-0.013	-0.013	-0.013
			(7.645)		(0.836)		(-0.448)	(-0.527)	(-0.543)
d_3	$z_t * D_{r=eurozone}$							-0.081	-0.141
								(-3.495)	(-6.073)
d_4	$z_t * D_{r=eurozone,EMU}$							0.194	0.058
								(5.240	(0.789)
adjusted R^2		0.087	0.154	0.378	0.378	0.062	0.061	0.108	0.192
Panel C: Mortgage rate margins over 10-year government bond yield									
d_1	z_t	-0.282	-0.251			-0.572	-0.490	-0.49	
		(-10.954)	(-9.089)			(-13.365)	(-9.870)	(-9.877)	
d_2	$z_t * D_{EMU}$		-0.220				-0.305	-0.305	
			(-2.985)				(-3.200)	(-3.203)	
d_3	$z_t * D_{r=eurozone}$							0.239	
								-4.203	
d_4	$z_t * D_{r=eurozone,EMU}$							0.085	
								-0.0709	
adjusted R^2		0.143	0.152			0.293	0.308	0.218	
Panel D: Short-term corporate loan rate margins over 3-months money market rate									
d_1	z_t	-0.043	-0.109	-0.181	-0.182	-0.060	-0.025	-0.025	-0.025
		(-4.307)	(-8.040)	(-9.847)	(-9.009)	(-2.882)	(-0.862)	(-0.872)	(-0.876)
d_2	$z_t * D_{EMU}$		0.135		0.007		-0.076	-0.076	-0.076
			(6.961)		(0.139)		(-1.825)	(-1.846)	(-1.854)
d_3	$z_t * D_{r=eurozone}$							-0.084	-0.157
								(-2.687)	(-4.524)
d_4	$z_t * D_{r=eurozone,EMU}$							0.211	0.083
								-4.627	-1.291
adjusted R^2		0.025	0.086	0.162	0.160	0.019	0.024	0.062	0.099

Notes: The dependent variable is Δz_{t+12}. The sample period consists of a 3-year pre-EMU period from t = 1/95 to 12/97 and a 3-year EMU period from t = 1/99 to 12/01. For each regression variable, the first row reports the estimated coefficient and the second row reports the t-test statistic against zero. For euro zone and non-euro zone countries see notes to Table 1. The restrictied euro zone countries do not include Belgium, Germany, and Ireland.

Table A4: Differences in regional convergence based on differences-in-differences analysis for a restricted euro zone

Panel A: Short-term corporate loan rates				
	σ-convergence		β-convergence	
convergence coefficient for region	pre-EMU period	EMU period	pre-EMU period	EMU period
eurozone	-0.050*	-0.004**	-0.215*	-0.170*
non-eurozone	-0.007*	-0.012*	-0.074*	-0.087*
F-test for differences across coefficients				
eurozone versus non-eurzone pre-EMU convergence	183.18	0.0%	36.887	0.0%
eurozone versus non-eurzone EMU convergence	6.029	1.5%	1.413	23.5%
pre-EMU versus EMU eurozone convergence	209.388	0.0%	0.416	51.9%
pre-EMU versus EMU non-eurozone convergence	2.310	13.0%	0.295	58.7%

Panel B: Short-term corporate loan rate margins over 3-months money market rate				
	σ-convergence		β-convergence	
convergence coefficient for region	pre-EMU period	EMU period	pre-EMU period	EMU period
eurozone	-0.013*	-0.004*	-0.182*	-0.175*
non-eurozone	0.003**	0.005*	-0.025	-0.101*
F-test for differences across coefficients				
eurozone versus non-eurzone pre-EMU convergence	74.944	0.0%	20.465	0.0%
eurozone versus non-eurzone EMU convergence	25.214	0.0%	1.892	16.9%
pre-EMU versus EMU eurozone convergence	25.173	0.0%	0.019	89.1%
pre-EMU versus EMU non-eurozone convergence	1.909	16.9%	3.438	6.4%

See notes to Table 1. The restricted euro zone excludes Belgium, Germany, and Ireland.

Table A5: Unit root tests

			I(?)				I(?)					I(?)				I(?)	
national rate	t(level)	t(diff)	10%	5%	F(level)	F(diff)	10%	5%	corresponding eurozone average	t(level)	t(diff)	10%	5%	F(level)	F(diff)	10%	5%
Panel: Mortgage rates during whole period from January 1995 to December 2002																	
Austria	-2.01	-3.40	1	1	2.77	5.78	1	1	eurozone average excluding Austria	-1.05	-4.77	1	1	1.01	11.42	1	1
Belgium	-2.67	-5.20	0	1	4.53	13.53	1	1	eurozone average excluding Belgium	-1.39	-4.18	1	1	1.93	8.79	1	1
Finland	-2.29	-4.02	1	1	2.88	8.09	1	1	eurozone average excluding Finland	-1.42	-4.12	1	1	2.00	8.53	1	1
France	-0.96	-7.57	1	1	1.05	28.65	1	1	eurozone average excluding France	-1.56	-4.48	1	1	2.14	10.06	1	1
Germany	-2.98	-5.07	0	0	4.79	12.91	1	1	eurozone average excluding Germany	-1.02	-4.08	1	1	1.39	8.53	1	1
Ireland	-2.41	-6.53	1	1	3.12	21.53	1	1	eurozone average excluding Ireland	-1.46	-4.07	1	1	2.07	8.31	1	1
Italy	-0.66	-6.06	1	1	0.48	18.55	1	1	eurozone average excluding Italy	-1.95	-4.25	1	1	2.70	9.04	1	1
Netherlands	-3.06	-5.18	0	0	5.21	13.42	1	1	eurozone average excluding Netherlands	-1.36	-4.09	1	1	1.90	8.41	1	1
Portugal	-0.94	-3.61	1	1	1.03	6.51	1	1	eurozone average excluding Portugal	-1.47	-4.16	1	1	2.05	8.67	1	1
Spain	-1.84	-3.70	1	1	2.54	7.09	1	1	eurozone average excluding Spain	-1.46	-4.26	1	1	1.99	9.07	1	1
Australia	-1.09	-4.81	1	1	1.60	11.59	1	1	eurozone average	-1.45	-4.08	1	1	2.03	8.36	1	1
Canada	-2.29	-5.83	1	1	2.93	17.05	1	1	eurozone average	-1.45	-4.08	1	1	2.03	8.36	1	1
Japan	-5.19	-6.52	0	0	18.42	21.25	0	0	eurozone average	-1.45	-4.08	1	1	2.03	8.36	1	1
Switzerland	-1.45	-5.32	1	1	1.29	14.18	1	1	eurozone average	-1.45	-4.08	1	1	2.03	8.36	1	1
United Kingdom	-2.82	-7.30	0	1	3.99	26.64	1	1	eurozone average	-1.45	-4.08	1	1	2.03	8.36	1	1
USA	-2.16	-5.62	1	1	2.37	15.81	1	1	eurozone average	-1.45	-4.08	1	1	2.03	8.36	1	1
Panel: Short-term corporate lending rates during whole period from January 1995 to December 2002																	
Austria	-1.99	-3.63	1	1	2.50	6.62	1	1	eurozone average excluding Austria	-0.86	-4.01	1	1	0.65	8.04	1	1
Belgium	-2.06	-6.91	1	1	2.76	24.22	1	1	eurozone average excluding Belgium	-1.16	-3.64	1	1	0.97	6.68	1	1
Finland ifs	-2.37	-3.19	1	1	3.05	5.11	2	2	eurozone average excluding Finland	-1.21	-3.66	1	1	1.02	6.77	1	1
France	-1.38	-6.73	1	1	0.96	22.66	1	1	eurozone average excluding France	-1.30	-3.73	1	1	1.23	7.04	1	1
Germany	-1.99	-5.51	1	1	4.58	15.17	1	1	eurozone average excluding Germany	-1.21	-4.08	1	1	0.83	8.40	1	1
Ireland	-2.06	-5.14	1	1	2.12	13.24	1	1	eurozone average excluding Ireland	-1.21	-3.63	1	1	1.03	6.65	1	1
Italy	-1.64	-3.80	1	1	1.42	7.84	1	1	eurozone average excluding Italy	-1.25	-3.90	1	1	1.36	7.61	1	1
Netherlands	-1.91	-4.56	1	1	1.91	10.69	1	1	eurozone average excluding Netherlands	-1.13	-3.76	1	1	0.96	7.18	1	1
Portugal	-1.32	-10.70	1	1	2.99	57.34	1	1	eurozone average excluding Portugal	-1.24	-3.68	1	1	1.02	6.85	1	1
Spain	-0.83	-6.02	1	1	0.79	18.17	1	1	eurozone average excluding Spain	-1.26	-3.77	1	1	1.15	7.13	1	1
Australia	-1.43	-5.11	1	1	1.44	13.03	1	1	eurozone average	-1.22	-3.64	1	1	1.04	6.68	1	1
Canada	-2.17	-4.70	1	1	2.68	11.13	1	1	eurozone average	-1.22	-3.64	1	1	1.04	6.68	1	1
Japan	-6.35	-4.65	0	0	24.03	10.81	0	0	eurozone average	-1.22	-3.64	1	1	1.04	6.68	1	1
Switzerland	-1.50	-5.40	1	1	1.23	14.62	1	1	eurozone average	-1.22	-3.64	1	1	1.04	6.68	1	1
United Kingdom	-1.64	-3.71	1	1	1.42	6.96	1	1	eurozone average	-1.22	-3.64	1	1	1.04	6.68	1	1
USA	-0.90	-3.80	1	1	0.80	7.21	1	1	eurozone average	-1.22	-3.64	1	1	1.04	6.68	1	1

Notes: The critical values are -2.88 and -2.57 for the t-test and 6.49 and 5.47 for the F-test at 5% and 10% significance levels, respectively. "(level)" and "(diff)" indicate that the tests are based on regressions in levels and first differences, respectively.

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Panel A: Bilateral cointegration													
Austria	Belgium	1995	1998	2.56	11.91	0.67	19.64	0.40	-2.54	-2.64	yes	-0.20	-2.11
Austria	Belgium	1996	1999	2.20	2.92	0.69	5.17	0.11	-0.43		no	0.00	0.08
Austria	Belgium	1997	2000	4.59	7.43	0.23	2.08	0.05	-1.54	-1.92	no	-0.05	-1.54
Austria	Belgium	1998	2001	3.63	7.52	0.37	4.63	0.07	-1.17	-2.77	no	-0.02	-0.44
Austria	Belgium	1999	2002	2.24	5.85	0.57	9.09	0.16	-2.06	-3.04	no	-0.09	-1.81
Austria	Finland	1995	1998	2.82	19.93	0.60	28.05	0.33	-2.08	-3.51	yes	-0.26	-2.94
Austria	Finland	1996	1999	1.66	7.45	0.79	19.95	0.25	-1.72	-2.46	no	-0.18	-2.10
Austria	Finland	1997	2000	1.65	6.03	0.78	15.54	0.26	-2.65		no	-0.24	-1.90
Austria	Finland	1998	2001	2.15	8.52	0.69	14.71	0.22	-1.10		no	-0.06	-0.79
Austria	Finland	1999	2002	2.67	12.04	0.59	13.76	0.18	-1.21		no	-0.08	-1.30
Austria	France	1995	1998	1.52	3.99	0.64	13.82	0.11	-2.13	-2.52	no	-0.15	-2.61
Austria	France	1996	1999	2.12	10.27	0.54	19.32	0.27	-1.83	-2.59	no	-0.17	-2.23
Austria	France	1997	2000	1.77	4.83	0.60	11.26	0.21	-1.22	-2.38	no	-0.16	-2.19
Austria	France	1998	2001	-0.45	-1.01	0.96	14.13	0.61	-3.25	-3.45	yes	-0.35	-2.85
Austria	France	1999	2002	-0.71	-1.85	1.01	16.71	0.71	-3.15		yes	-0.36	-2.95
Austria	Germany	1995	1998	1.77	6.26	0.79	17.72	0.30	-2.05		no	-0.28	-3.15
Austria	Germany	1996	1999	1.96	3.38	0.72	7.15	0.12	-0.98	-1.82	no	-0.01	-0.24
Austria	Germany	1997	2000	3.58	5.98	0.40	3.85	0.07	-1.35		no	0.00	-0.03
Austria	Germany	1998	2001	3.68	6.33	0.38	3.74	0.07	-1.04	-2.50	no	-0.05	-1.15
Austria	Germany	1999	2002	3.12	5.76	0.45	4.78	0.10	-1.28	-2.07	no	-0.05	-0.98
Austria	Ireland	1995	1998	1.66	1.12	0.71	3.43	0.07	-2.60		no	-0.07	-1.99
Austria	Ireland	1996	1999	3.14	8.10	0.45	7.62	0.10	-2.05	-2.21	no	-0.10	-1.78
Austria	Ireland	1997	2000	4.11	15.74	0.29	6.90	0.10	-0.99		no	-0.11	-1.82
Austria	Ireland	1998	2001	4.26	13.87	0.28	5.26	0.07	-0.90		no	-0.13	-3.31
Austria	Ireland	1999	2002	3.06	7.73	0.52	6.72	0.14	-1.63		no	-0.23	-3.53
Austria	Italy	1995	1998	4.02	12.18	0.24	8.40	0.07	-2.93	-2.09	no	-0.15	-3.08
Austria	Italy	1996	1999	4.23	38.14	0.20	17.39	0.21	-1.76	-2.28	no	-0.08	-1.28
Austria	Italy	1997	2000	4.61	24.17	0.17	6.84	0.08	0.04	-1.97	no	-0.09	-2.19
Austria	Italy	1998	2001	3.70	11.14	0.32	6.53	0.09	-1.74		no	-0.12	-2.67
Austria	Italy	1999	2002	0.39	1.32	0.87	17.88	0.67	-2.99		yes	-0.50	-3.55
Austria	Netherlands	1995	1998	1.21	3.45	0.86	15.84	0.29	-1.95	-2.59	no	-0.19	-2.03
Austria	Netherlands	1996	1999	1.06	1.56	0.85	7.39	0.15	-1.09	-2.17	no	-0.02	-0.24
Austria	Netherlands	1997	2000	2.80	4.33	0.52	4.78	0.08	-1.64	-2.00	no	-0.03	-0.52
Austria	Netherlands	1998	2001	2.86	4.51	0.51	4.72	0.07	-1.00	-2.49	no	0.09	1.46
Austria	Netherlands	1999	2002	2.33	4.02	0.58	5.84	0.10	-1.22	-2.05	no	-0.05	-0.99
Austria	Portugal	1995	1998	4.10	16.51	0.26	10.92	0.06	-1.60		no	-0.06	-1.81
Austria	Portugal	1996	1999	4.30	35.78	0.22	15.40	0.14	-1.48	-2.18	no	-0.13	-2.57
Austria	Portugal	1997	2000	4.53	25.54	0.20	7.87	0.09	-0.45	-2.23	no	-0.16	-3.74
Austria	Portugal	1998	2001	2.79	11.65	0.52	12.90	0.17	-2.61	-1.89	no	-0.08	-1.23
Austria	Portugal	1999	2002	2.17	11.65	0.64	19.12	0.28	-1.93		no	-0.20	-2.48
Austria	Spain	1995	1998	4.23	25.79	0.30	15.81	0.09	-2.85	-2.51	no	-0.20	-2.89
Austria	Spain	1996	1999	4.11	29.14	0.29	14.43	0.11	-1.08	-1.62	no	-0.06	-1.23
Austria	Spain	1997	2000	3.18	14.06	0.46	12.06	0.13	-1.37	-1.66	no	-0.14	-2.41
Austria	Spain	1998	2001	1.44	9.10	0.79	27.89	0.53	-2.72		yes	-0.26	-2.38
Austria	Spain	1999	2002	1.85	11.53	0.72	24.06	0.34	-1.51		no	-0.25	-2.49
Austria	Australia	1995	1998	3.51	13.83	0.38	12.98	0.11	-1.96	-2.42	no	-0.14	-2.41
Austria	Australia	1996	1999	3.48	10.89	0.34	8.22	0.08	-0.65		no	-0.05	-1.06
Austria	Australia	1997	2000	2.35	3.23	0.50	4.85	0.08	-0.98	-1.51	no	-0.03	-0.86
Austria	Australia	1998	2001	2.91	4.06	0.42	4.11	0.05	-1.23	-1.78	no	-0.05	-1.32
Austria	Australia	1999	2002	2.38	4.37	0.48	6.13	0.07	-0.76		no	-0.03	-0.75
Austria	Canada	1995	1998	3.50	9.86	0.49	9.24	0.14	-0.82		no	-0.05	-0.84
Austria	Canada	1996	1999	8.63	10.57	-0.41	-3.16	0.07	-2.47		no	-0.09	-1.91
Austria	Canada	1997	2000	6.76	13.03	-0.13	-1.72	0.05	-0.60	-2.26	no	-0.07	-1.92
Austria	Canada	1998	2001	5.49	9.84	0.05	0.65	0.05	-1.01	-2.96	no	-0.07	-2.66
Austria	Canada	1999	2002	4.89	13.17	0.12	2.20	0.05	-0.72	-2.10	no	-0.05	-1.87
Austria	Japan	1995	1998	2.82	6.51	1.40	9.11	0.16	-1.20	-1.42	no	-0.04	-0.89
Austria	Japan	1996	1999	-7.75	-7.03	5.39	12.54	0.26	-2.75		no	-0.20	-1.95
Austria	Japan	1997	2000	-1.38	-1.21	2.89	6.38	0.12	-0.94		no	-0.16	-2.63
Austria	Japan	1998	2001	0.74	0.48	2.08	3.35	0.07	-0.90	-1.39	no	-0.06	-1.64
Austria	Japan	1999	2002	-3.08	-1.02	3.66	2.92	0.10	-1.28		no	-0.09	-2.02
Austria	Switzerland	1995	1998	0.70	1.85	1.25	16.06	0.11	-2.11		no	-0.13	-2.16
Austria	Switzerland	1996	1999	0.87	2.30	1.17	13.86	0.15	-1.34	-2.40	no	-0.10	-1.73
Austria	Switzerland	1997	2000	0.36	0.59	1.31	9.10	0.14	-1.20	-1.83	no	-0.17	-2.81
Austria	Switzerland	1998	2001	-2.02	-2.74	1.89	10.66	0.23	-1.35	-2.24	no	-0.15	-1.92
Austria	Switzerland	1999	2002	-2.10	-3.64	1.89	13.56	0.37	-2.02		no	-0.47	-3.15
Austria	United Kingdom	1995	1998	0.97	0.85	0.79	5.08	0.29	-2.11	-1.41	no	-0.12	-1.26
Austria	United Kingdom	1996	1999	0.99	0.93	0.74	4.82	0.07	-2.26		no	-0.07	-1.27
Austria	United Kingdom	1997	2000	1.71	2.27	0.61	5.55	0.10	-0.06	-1.73	no	0.01	0.11
Austria	United Kingdom	1998	2001	5.13	7.26	0.11	1.01	0.05	-0.86	-3.42	yes	-0.05	-2.31
Austria	United Kingdom	1999	2002	5.24	8.06	0.08	0.70	0.05	-0.61	-3.22	yes	-0.08	-3.20
Austria	USA	1995	1998	-1.13	-0.62	1.06	4.32	0.07	-1.38		no	-0.07	-1.78
Austria	USA	1996	1999	-1.02	-0.73	0.98	5.04	0.11	-2.20	-3.16	no	-0.06	-1.25
Austria	USA	1997	2000	0.18	0.14	0.79	4.24	0.09	-0.97	-1.55	no	-0.04	-1.01
Austria	USA	1998	2001	2.94	1.61	0.41	1.59	0.05	-0.98	-2.77	no	-0.01	-0.28
Austria	USA	1999	2002	2.94	2.92	0.40	2.74	0.06	-0.84	-2.10	no	-0.05	-1.96
Belgium	Austria	1995	1998	-2.76	-5.99	1.33	19.64	0.43	-3.02	-3.31	yes	-0.25	-2.57
Belgium	Austria	1996	1999	2.38	3.79	0.53	5.17	0.23	-1.17	-1.55	no	-0.08	-1.05
Belgium	Austria	1997	2000	3.44	3.17	0.38	2.08	0.09	-0.54		no	-0.02	-0.40
Belgium	Austria	1998	2001	0.96	0.90	0.85	4.63	0.08	-1.08	-1.89	no	-0.07	-1.63
Belgium	Austria	1999	2002	-0.35	-0.50	1.12	9.09	0.18	-2.66	-4.15	yes	-0.34	-3.80
Belgium	Finland	1995	1998	0.80	3.20	0.84	22.12	0.38	-3.37	-3.05	yes	-0.26	-2.49
Belgium	Finland	1996	1999	2.54	6.34	0.55	7.75	0.26	-1.03		no	-0.06	-0.75
Belgium	Finland	1997	2000	2.20	3.03	0.65	4.82	0.11	-0.98	-1.23	no	-0.07	-1.03
Belgium	Finland	1998	2001	1.85	2.72	0.76	6.05	0.10	-0.93	-1.80	no	-0.06	-1.23
Belgium	Finland	1999	2002	2.30	5.36	0.74	8.84	0.15	-2.50	-3.68	yes	-0.28	-3.73
Belgium	France	1995	1998	-0.40	-0.56	0.81	9.32	0.18	-3.00	-2.42	no	-0.19	-2.43

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Belgium	France	1996	1999	3.15	7.75	0.34	6.13	0.30	-1.37	-1.72	no	-0.18	-2.02
Belgium	France	1997	2000	5.05	5.48	0.09	0.69	0.09	-0.29		no	-0.01	-0.15
Belgium	France	1998	2001	0.56	0.42	0.82	4.02	0.12	-1.45	-1.87	no	-0.12	-2.60
Belgium	France	1999	2002	-1.55	-1.74	1.19	8.56	0.29	-2.68	-4.06	yes	-0.37	-3.37
Belgium	Germany	1995	1998	-1.05	-3.90	1.15	27.24	0.45	-2.00		yes	-0.15	-1.31
Belgium	Germany	1996	1999	1.05	3.56	0.80	15.46	0.60	-3.05		yes	-0.31	-2.78
Belgium	Germany	1997	2000	0.27	0.67	0.95	13.50	0.31	-1.55	-2.19	no	-0.20	-1.79
Belgium	Germany	1998	2001	0.06	0.12	1.04	11.92	0.19	-1.58		no	-0.14	-1.84
Belgium	Germany	1999	2002	0.48	1.12	0.98	13.14	0.24	-1.71		no	-0.17	-1.86
Belgium	Ireland	1995	1998	-0.79	-0.38	0.98	3.35	0.10	-3.60		yes	-0.10	-1.93
Belgium	Ireland	1996	1999	4.97	9.87	0.10	1.28	0.15	-1.47		no	-0.09	-1.43
Belgium	Ireland	1997	2000	6.64	14.30	-0.16	-2.08	0.10	-0.37	-0.66	no	-0.04	-0.80
Belgium	Ireland	1998	2001	6.78	11.87	-0.15	-1.52	0.07	-0.93	-1.66	no	-0.08	-1.92
Belgium	Ireland	1999	2002	4.60	6.12	0.29	1.95	0.08	-2.02	-3.88	yes	-0.20	-4.72
Belgium	Italy	1995	1998	2.82	5.27	0.31	6.52	0.09	-3.96		yes	-0.16	-2.59
Belgium	Italy	1996	1999	4.45	22.39	0.13	6.13	0.25	-1.04	-1.63	no	-0.12	-1.60
Belgium	Italy	1997	2000	6.10	17.54	-0.05	-1.24	0.09	-0.34		no	-0.05	-1.09
Belgium	Italy	1998	2001	5.89	8.48	0.00	0.05	0.06	-0.84	-1.66	no	-0.10	-2.70
Belgium	Italy	1999	2002	0.67	0.78	0.88	6.22	0.23	-2.68	-3.55	yes	-0.43	-4.53
Belgium	Netherlands	1995	1998	-1.96	-5.97	1.27	25.12	0.44	-2.41		yes	-0.20	-2.19
Belgium	Netherlands	1996	1999	0.41	0.95	0.88	12.07	0.35	-2.25		no	-0.14	-1.63
Belgium	Netherlands	1997	2000	-0.33	-0.64	1.02	11.65	0.17	-1.12		no	-0.11	-1.57
Belgium	Netherlands	1998	2001	-1.00	-1.82	1.19	12.63	0.15	-1.29		no	-0.09	-1.46
Belgium	Netherlands	1999	2002	-0.54	-1.23	1.13	14.95	0.23	-1.87		no	-0.06	-0.64
Belgium	Portugal	1995	1998	2.88	6.72	0.33	8.04	0.09	-2.63		no	-0.14	-2.57
Belgium	Portugal	1996	1999	4.55	22.30	0.13	5.46	0.23	-1.13	-1.67	no	-0.15	-1.79
Belgium	Portugal	1997	2000	5.88	16.66	-0.03	-0.56	0.09	-0.22		no	-0.07	-1.37
Belgium	Portugal	1998	2001	4.41	5.95	0.26	2.06	0.06	-1.00	-1.68	no	-0.07	-1.94
Belgium	Portugal	1999	2002	2.39	4.27	0.66	6.59	0.13	-2.64	-4.46	yes	-0.31	-4.65
Belgium	Spain	1995	1998	3.00	9.39	0.38	10.48	0.14	-3.62		yes	-0.18	-2.46
Belgium	Spain	1996	1999	4.24	21.03	0.20	7.07	0.29	-1.21	-2.16	no	-0.16	-1.76
Belgium	Spain	1997	2000	5.23	8.75	0.08	0.77	0.08	-0.30		no	-0.01	-0.17
Belgium	Spain	1998	2001	1.85	2.28	0.74	5.06	0.09	-1.20	-1.71	no	-0.10	-1.95
Belgium	Spain	1999	2002	1.71	3.26	0.82	8.31	0.16	-2.47	-4.63	yes	-0.37	-4.83
Belgium	Australia	1995	1998	2.01	4.55	0.50	9.75	0.14	-3.00		no	-0.18	-2.62
Belgium	Australia	1996	1999	3.41	11.65	0.29	7.66	0.32	-1.52	-2.02	no	-0.18	-2.04
Belgium	Australia	1997	2000	0.25	0.30	0.77	6.43	0.16	-2.35		no	-0.12	-1.66
Belgium	Australia	1998	2001	0.07	0.08	0.84	6.39	0.14	-0.85	-1.41	no	-0.05	-0.87
Belgium	Australia	1999	2002	1.86	2.27	0.61	5.13	0.11	-1.67	-3.27	yes	-0.17	-2.76
Belgium	Canada	1995	1998	1.28	3.12	0.74	12.25	0.25	-1.33		no	-0.11	-1.40
Belgium	Canada	1996	1999	4.78	6.12	0.13	1.07	0.14	-1.66		no	-0.10	-1.66
Belgium	Canada	1997	2000	2.38	4.81	0.50	6.74	0.17	-1.51		no	-0.07	-1.04
Belgium	Canada	1998	2001	3.52	4.60	0.35	3.17	0.06	-0.41	-0.85	no	-0.02	-0.52
Belgium	Canada	1999	2002	4.67	9.21	0.21	2.76	0.06	-1.81	-3.04	no	-0.10	-2.20
Belgium	Japan	1995	1998	0.30	0.58	2.12	11.51	0.34	-1.92		no	-0.11	-1.57
Belgium	Japan	1996	1999	0.43	0.23	2.02	2.75	0.16	-1.28	-1.52	no	-0.07	-1.11
Belgium	Japan	1997	2000	10.20	5.29	-1.80	-2.34	0.12	-0.46		no	-0.01	-0.26
Belgium	Japan	1998	2001	11.86	4.91	-2.42	-2.46	0.10	-1.15		no	-0.08	-1.71
Belgium	Japan	1999	2002	5.24	1.14	0.34	0.18	0.07	-1.55	-3.06	no	-0.13	-3.05
Belgium	Switzerland	1995	1998	-1.40	-1.80	1.58	9.88	0.16	-2.90		no	-0.16	-2.39
Belgium	Switzerland	1996	1999	2.62	4.30	0.67	4.94	0.25	-1.20	-2.24	no	-0.14	-1.75
Belgium	Switzerland	1997	2000	5.53	4.17	0.04	0.12	0.08	-0.24		no	-0.02	-0.56
Belgium	Switzerland	1998	2001	-1.76	-1.01	1.85	4.43	0.11	-1.20	-2.17	no	-0.15	-2.58
Belgium	Switzerland	1999	2002	-1.46	-1.03	1.82	5.29	0.14	-2.07	-3.53	yes	-0.32	-4.57
Belgium	United Kingdom	1995	1998	-2.43	-1.57	1.18	5.61	0.35	-2.70		no	-0.22	-2.30
Belgium	United Kingdom	1996	1999	2.95	2.76	0.39	2.50	0.16	-1.87		no	-0.18	-2.46
Belgium	United Kingdom	1997	2000	5.27	4.16	0.06	0.33	0.08	-0.14		no	-0.03	-0.65
Belgium	United Kingdom	1998	2001	7.23	6.82	-0.20	-1.24	0.08	-0.91	-1.84	no	-0.07	-1.81
Belgium	United Kingdom	1999	2002	4.17	4.77	0.32	2.17	0.06	-1.82	-3.11	no	-0.15	-3.56
Belgium	USA	1995	1998	-5.23	-2.06	1.54	4.52	0.06	-2.23	-1.55	no	-0.08	-2.03
Belgium	USA	1996	1999	0.00	0.00	0.77	4.33	0.18	-2.04	-2.38	no	-0.09	-1.19
Belgium	USA	1997	2000	-1.07	-0.59	0.94	3.73	0.10	-0.48	-1.69	no	-0.05	-0.94
Belgium	USA	1998	2001	-5.60	-2.48	1.63	5.11	0.11	-0.93		no	-0.04	-0.72
Belgium	USA	1999	2002	1.15	0.86	0.71	3.66	0.08	-1.91	-3.10	no	-0.15	-3.28
Finland	Austria	1995	1998	-4.08	-10.74	1.57	28.05	0.32	-2.03	-3.41	yes	-0.20	-2.33
Finland	Austria	1996	1999	-1.30	-3.77	1.13	19.95	0.25	-1.98	-2.77	no	-0.23	-2.56
Finland	Austria	1997	2000	-0.90	-2.22	1.07	15.54	0.26	-2.14		no	-0.43	-3.11
Finland	Austria	1998	2001	-1.63	-3.43	1.19	14.71	0.23	-0.95		no	-0.06	-0.84
Finland	Austria	1999	2002	-2.63	-4.66	1.36	13.76	0.18	-0.94		no	-0.18	-1.99
Finland	Belgium	1995	1998	-0.31	-1.01	1.09	22.12	0.35	-2.78	-2.61	no	-0.20	-2.11
Finland	Belgium	1996	1999	-0.18	-0.25	1.02	7.75	0.14	-0.62		no	-0.02	-0.25
Finland	Belgium	1997	2000	2.44	3.96	0.52	4.82	0.08	-1.00	-1.82	no	0.00	0.07
Finland	Belgium	1998	2001	1.90	3.33	0.58	6.05	0.10	-0.74	-2.03	no	-0.06	-1.25
Finland	Belgium	1999	2002	-0.08	-0.13	0.86	8.84	0.14	-1.53	-2.10	no	-0.11	-1.76
Finland	France	1995	1998	-1.68	-2.46	1.01	12.07	0.10	-1.71	-1.75	no	-0.10	-2.00
Finland	France	1996	1999	0.90	3.35	0.64	17.44	0.23	-1.94	-2.28	no	-0.15	-2.13
Finland	France	1997	2000	1.32	2.31	0.60	7.19	0.14	-0.81	-1.63	no	-0.18	-2.60
Finland	France	1998	2001	-2.75	-4.31	1.23	12.70	0.57	-2.78	-2.79	yes	-0.53	-3.94
Finland	France	1999	2002	-4.73	-8.99	1.55	18.72	0.94	-3.52	-3.54	yes	-0.67	-4.11
Finland	Germany	1995	1998	-1.49	-3.20	1.27	17.29	0.15	-1.61	-2.21	no	-0.05	-0.84
Finland	Germany	1996	1999	0.07	0.12	0.96	9.39	0.12	-1.59	-2.02	no	-0.02	-0.43
Finland	Germany	1997	2000	1.61	2.78	0.66	6.59	0.11	-0.75	-1.72	no	-0.03	-0.65
Finland	Germany	1998	2001	1.38	2.14	0.70	6.18	0.11	-0.84	-2.70	no	-0.01	-0.15
Finland	Germany	1999	2002	0.29	0.41	0.85	6.86	0.11	-1.35	-2.37	no	-0.05	-1.00
Finland	Ireland	1995	1998	-2.38	-1.02	1.24	3.80	0.09	-2.41	-2.58	no	-0.04	-0.90
Finland	Ireland	1996	1999	2.44	4.70	0.48	6.08	0.07	-2.40	-2.29	no	-0.12	-2.52
Finland	Ireland	1997	2000	3.86	10.44	0.25	4.24	0.06	0.28	-0.62	no	-0.11	-2.53

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Finland	Ireland	1998	2001	3.74	8.31	0.28	3.60	0.06	-0.61	-1.31	no	-0.12	-3.27
Finland	Ireland	1999	2002	1.13	1.88	0.78	6.65	0.12	-1.40	-1.91	no	-0.17	-2.56
Finland	Italy	1995	1998	2.22	4.02	0.38	7.94	0.04	-2.68	-1.82	no	-0.07	-2.15
Finland	Italy	1996	1999	3.38	24.51	0.24	16.62	0.16	-1.88	-2.26	no	-0.10	-1.65
Finland	Italy	1997	2000	4.31	15.93	0.14	4.14	0.06	0.44	-2.59	no	-0.07	-1.83
Finland	Italy	1998	2001	3.09	6.13	0.34	4.52	0.08	-0.89	-1.90	no	-0.17	-3.73
Finland	Italy	1999	2002	-2.02	-2.85	1.17	10.09	0.31	-1.99		no	-0.36	-3.26
Finland	Netherlands	1995	1998	-2.51	-4.69	1.40	16.94	0.18	-1.66	-2.02	no	-0.06	-0.86
Finland	Netherlands	1996	1999	-1.14	-1.69	1.14	9.93	0.14	-1.63	-2.71	no	-0.04	-0.44
Finland	Netherlands	1997	2000	0.60	1.01	0.81	8.11	0.11	-1.01	-2.20	no	-0.04	-0.77
Finland	Netherlands	1998	2001	0.21	0.31	0.88	7.66	0.11	-0.98	-2.57	no	-0.01	-0.27
Finland	Netherlands	1999	2002	-0.84	-1.12	1.02	7.95	0.11	-1.09	-2.13	no	-0.04	-0.86
Finland	Portugal	1995	1998	2.44	5.47	0.40	9.36	0.04	-1.28	-1.84	no	-0.05	-1.79
Finland	Portugal	1996	1999	3.52	21.23	0.25	12.89	0.11	-1.71	-2.33	no	-0.08	-1.63
Finland	Portugal	1997	2000	4.18	16.22	0.18	4.90	0.07	-0.10	-3.40	yes	-0.16	-3.93
Finland	Portugal	1998	2001	1.55	4.18	0.64	10.33	0.15	-2.06		no	-0.23	-2.73
Finland	Portugal	1999	2002	-0.29	-1.10	0.98	20.92	0.39	-2.32		no	-0.33	-1.98
Finland	Spain	1995	1998	2.51	8.84	0.47	14.58	0.07	-2.26	-2.14	no	-0.17	-3.04
Finland	Spain	1996	1999	3.18	20.71	0.35	16.15	0.13	-1.27	-1.78	no	-0.09	-1.79
Finland	Spain	1997	2000	2.72	7.48	0.46	7.46	0.08	-1.21	-2.67	no	-0.14	-2.79
Finland	Spain	1998	2001	-0.26	-0.88	1.01	18.97	0.36	-2.13		no	-0.64	-3.72
Finland	Spain	1999	2002	-0.68	-2.61	1.09	22.36	0.42	-2.29	-3.03	yes	-0.21	-2.23
Finland	Australia	1995	1998	1.38	3.17	0.60	11.98	0.09	-1.65	-2.28	no	-0.16	-3.45
Finland	Australia	1996	1999	2.27	6.64	0.44	9.83	0.10	-1.04	-1.42	no	-0.06	-1.34
Finland	Australia	1997	2000	0.68	0.87	0.67	6.04	0.13	-1.52	-1.96	no	-0.06	-1.29
Finland	Australia	1998	2001	-0.32	-0.45	0.81	7.95	0.16	-2.07	-2.18	no	-0.06	-0.82
Finland	Australia	1999	2002	-1.17	-1.92	0.91	10.36	0.21	-0.91	-1.49	no	-0.19	-2.37
Finland	Canada	1995	1998	1.01	1.96	0.83	10.85	0.14	-0.92		no	-0.05	-0.77
Finland	Canada	1996	1999	7.15	6.80	-0.25	-1.51	0.05	-2.58	-2.41	no	-0.09	-2.41
Finland	Canada	1997	2000	5.19	8.30	0.03	0.33	0.05	-0.15	-2.21	no	-0.07	-2.24
Finland	Canada	1998	2001	3.00	4.62	0.34	3.64	0.07	-1.33	-3.05	no	-0.03	-0.76
Finland	Canada	1999	2002	2.49	5.62	0.40	5.98	0.07	-0.75	-2.24	no	-0.03	-0.66
Finland	Japan	1995	1998	0.44	0.59	2.17	8.18	0.14	-1.15	-2.12	no	-0.03	-0.70
Finland	Japan	1996	1999	-9.48	-5.71	5.87	9.08	0.13	-2.65		no	-0.19	-2.65
Finland	Japan	1997	2000	-0.41	-0.26	2.32	3.60	0.06	0.08	-1.81	no	-0.11	-2.43
Finland	Japan	1998	2001	0.38	0.18	2.02	2.35	0.07	-0.60	-2.20	no	-0.10	-2.63
Finland	Japan	1999	2002	-9.49	-2.12	6.08	3.27	0.12	-1.13		no	-0.10	-1.65
Finland	Switzerland	1995	1998	-2.89	-3.99	1.94	13.05	0.08	-1.58	-2.10	no	-0.09	-2.05
Finland	Switzerland	1996	1999	-0.42	-0.82	1.35	11.69	0.13	-1.39	-2.33	no	-0.14	-2.27
Finland	Switzerland	1997	2000	0.07	0.07	1.26	5.99	0.10	-0.92	-2.36	no	-0.19	-3.11
Finland	Switzerland	1998	2001	-3.81	-3.17	2.20	7.62	0.18	-0.35	-1.43	no	-0.24	-2.65
Finland	Switzerland	1999	2002	-5.08	-4.11	2.47	8.25	0.18	-1.41	-1.97	no	-0.36	-3.89
Finland	United Kingdom	1995	1998	-2.89	-1.57	1.28	5.14	0.25	-1.93	-1.31	no	-0.12	-1.41
Finland	United Kingdom	1996	1999	0.46	0.34	0.74	3.78	0.05	-2.92		no	-0.11	-2.44
Finland	United Kingdom	1997	2000	1.69	1.69	0.54	3.73	0.07	0.72	-1.32	no	-0.03	-0.63
Finland	United Kingdom	1998	2001	3.87	4.24	0.23	1.61	0.06	-0.70	-3.56	yes	-0.06	-2.06
Finland	United Kingdom	1999	2002	1.98	2.27	0.52	3.58	0.07	-0.71	-1.92	no	-0.05	-1.32
Finland	USA	1995	1998	-4.46	-1.44	1.47	3.54	0.04	-1.21	-1.63	no	-0.04	-1.12
Finland	USA	1996	1999	-2.24	-1.28	1.08	4.46	0.08	-2.85	-2.59	no	-0.06	-1.25
Finland	USA	1997	2000	-1.55	-1.00	0.96	4.50	0.09	-0.36	-2.74	no	-0.08	-1.86
Finland	USA	1998	2001	-3.56	-1.71	1.26	4.27	0.09	-1.08	-1.82	no	-0.01	-0.24
Finland	USA	1999	2002	-2.51	-2.09	1.10	6.36	0.09	-1.02	-2.37	no	-0.06	-1.50
France	Austria	1995	1998	-0.33	-0.53	1.26	13.82	0.12	-1.33	-1.95	no	-0.06	-1.02
France	Austria	1996	1999	-2.69	-5.18	1.65	19.32	0.27	-1.83	-2.55	no	-0.09	-1.23
France	Austria	1997	2000	-0.34	-0.54	1.22	11.26	0.22	-1.67	-2.39	no	-0.13	-1.66
France	Austria	1998	2001	1.61	4.59	0.85	14.13	0.69	-3.78	-4.18	yes	-0.57	-4.70
France	Austria	1999	2002	1.50	5.16	0.85	16.71	0.76	-3.31		yes	-0.43	-3.60
France	Belgium	1995	1998	3.14	5.78	0.80	9.32	0.16	-1.61	-1.59	no	-0.05	-0.80
France	Belgium	1996	1999	-0.18	-0.14	1.33	6.13	0.18	-0.75		no	-0.03	-0.43
France	Belgium	1997	2000	6.18	6.76	0.11	0.69	0.06	-2.04	-1.73	no	-0.06	-1.82
France	Belgium	1998	2001	4.67	9.92	0.32	4.02	0.19	-2.29	-2.49	no	-0.14	-1.85
France	Belgium	1999	2002	3.25	8.89	0.51	8.56	0.33	-2.35	-2.89	yes	-0.22	-2.82
France	Finland	1995	1998	3.23	7.80	0.76	12.07	0.10	-0.96	-1.34	no	-0.03	-0.64
France	Finland	1996	1999	-0.27	-0.62	1.36	17.44	0.23	-1.67	-2.02	no	-0.11	-1.50
France	Finland	1997	2000	2.04	3.06	0.88	7.19	0.14	-2.01	-1.91	no	-0.19	-2.66
France	Finland	1998	2001	3.19	11.95	0.63	12.70	0.64	-3.41	-3.63	yes	-0.49	-3.37
France	Finland	1999	2002	3.44	21.89	0.57	18.72	0.99	-3.77	-3.76	yes	-0.45	-3.23
France	Germany	1995	1998	1.72	3.06	1.02	11.53	0.18	-2.30	-2.20	no	-0.08	-1.31
France	Germany	1996	1999	-0.69	-0.80	1.40	9.30	0.17	-1.15	-2.17	no	-0.04	-0.51
France	Germany	1997	2000	3.89	4.43	0.51	3.35	0.07	-1.96	-1.73	no	-0.07	-1.36
France	Germany	1998	2001	4.28	8.17	0.40	4.36	0.18	-2.12	-2.24	no	-0.09	-1.48
France	Germany	1999	2002	3.75	7.96	0.46	5.57	0.19	-1.67	-2.15	no	-0.09	-1.59
France	Ireland	1995	1998	3.95	1.76	0.58	1.87	0.04	-0.94	-1.03	no	-0.02	-0.54
France	Ireland	1996	1999	3.27	3.97	0.62	4.96	0.06	-1.81	-1.62	no	-0.06	-1.69
France	Ireland	1997	2000	4.40	11.40	0.39	6.37	0.14	-2.10	-2.23	no	-0.16	-2.64
France	Ireland	1998	2001	5.18	17.25	0.24	4.67	0.22	-1.83	-2.04	no	-0.16	-2.63
France	Ireland	1999	2002	4.09	10.60	0.45	5.95	0.26	-2.07	-2.59	no	-0.24	-3.39
France	Italy	1995	1998	3.42	17.87	0.42	25.18	0.46	-3.42	-2.42	yes	-0.39	-3.38
France	Italy	1996	1999	3.89	49.49	0.37	45.44	1.14	-4.47	-4.54	yes	-0.55	-3.77
France	Italy	1997	2000	4.47	30.65	0.31	16.57	0.35	-1.66	-1.83	no	-0.35	-4.32
France	Italy	1998	2001	4.32	15.64	0.34	8.17	0.32	-2.08	-2.26	no	-0.31	-4.20
France	Italy	1999	2002	1.86	4.76	0.74	11.58	0.60	-2.93	-2.47	yes	-0.38	-3.17
France	Netherlands	1995	1998	1.16	1.66	1.08	10.07	0.16	-1.73		no	-0.05	-0.85
France	Netherlands	1996	1999	-2.28	-2.20	1.63	9.29	0.22	-1.37	-2.07	no	-0.06	-0.71
France	Netherlands	1997	2000	2.78	2.92	0.68	4.26	0.10	-2.15	-1.64	no	-0.17	-3.16
France	Netherlands	1998	2001	3.54	6.19	0.52	5.29	0.22	-2.22	-2.30	no	-0.31	-3.78
France	Netherlands	1999	2002	3.10	6.07	0.56	6.41	0.25	-1.81	-2.24	no	-0.12	-1.72

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
France	Portugal	1995	1998	3.88	29.92	0.42	33.84	0.47	-2.44	-2.76	yes	-0.23	-2.74
France	Portugal	1996	1999	3.99	43.06	0.41	37.52	0.68	-3.26	-3.16	yes	-0.32	-2.80
France	Portugal	1997	2000	4.39	38.88	0.35	22.14	0.54	-2.68	-3.00	yes	-0.32	-3.48
France	Portugal	1998	2001	3.60	18.15	0.50	15.05	0.72	-3.19		yes	-0.48	-4.17
France	Portugal	1999	2002	3.16	16.67	0.58	17.00	0.78	-3.52	-3.51	yes	-0.43	-3.61
France	Spain	1995	1998	4.39	39.07	0.44	34.50	0.47	-2.42	-2.65	yes	-0.19	-1.72
France	Spain	1996	1999	3.63	25.90	0.54	27.12	0.37	-2.36	-2.67	no	-0.17	-2.09
France	Spain	1997	2000	2.53	16.81	0.73	28.74	0.92	-4.10	-3.68	yes	-0.41	-3.16
France	Spain	1998	2001	2.61	11.09	0.71	16.81	0.87	-3.79	-4.28	yes	-0.58	-4.48
France	Spain	1999	2002	2.87	17.00	0.66	20.85	1.01	-3.81	-3.92	yes	-0.52	-4.01
France	Australia	1995	1998	3.32	13.27	0.57	19.68	0.32	-1.66	-2.46	no	-0.14	-1.79
France	Australia	1996	1999	2.27	5.07	0.67	11.43	0.16	-1.17	-1.90	no	-0.06	-1.13
France	Australia	1997	2000	2.93	2.58	0.55	3.42	0.09	-1.22	-1.52	no	-0.05	-1.10
France	Australia	1998	2001	3.90	5.73	0.38	3.90	0.20	-2.54	-2.35	no	-0.15	-2.09
France	Australia	1999	2002	2.90	6.61	0.50	7.91	0.33	-1.93		no	-0.14	-1.74
France	Canada	1995	1998	5.16	7.24	0.45	4.25	0.05	0.15	-0.39	no	-0.03	-0.95
France	Canada	1996	1999	12.00	8.52	-0.75	-3.36	0.09	-2.46	-2.03	no	-0.12	-2.50
France	Canada	1997	2000	9.61	15.09	-0.42	-4.43	0.11	-1.23	-1.60	no	-0.08	-1.54
France	Canada	1998	2001	5.83	11.33	0.11	1.41	0.14	-2.06	-2.09	no	-0.13	-2.49
France	Canada	1999	2002	5.06	16.75	0.20	4.36	0.14	-1.31	-2.08	no	-0.08	-1.64
France	Japan	1995	1998	4.37	5.15	1.35	4.49	0.06	-0.27	-0.99	no	0.01	0.25
France	Japan	1996	1999	-13.78	-5.32	8.22	8.15	0.12	-2.02		no	-0.12	-1.89
France	Japan	1997	2000	-4.18	-2.76	4.38	7.26	0.16	-1.92		no	-0.13	-2.01
France	Japan	1998	2001	1.46	1.04	2.08	3.61	0.19	-1.70		no	-0.13	-2.27
France	Japan	1999	2002	-1.89	-0.69	3.44	2.99	0.16	-1.63		no	-0.12	-1.95
France	Switzerland	1995	1998	-0.93	-4.50	1.88	44.06	0.69	-2.99	-2.95	yes	-0.34	-2.76
France	Switzerland	1996	1999	-2.55	-7.75	2.22	30.07	0.46	-2.32	-2.55	yes	-0.23	-2.30
France	Switzerland	1997	2000	-2.27	-4.20	2.15	16.87	0.47	-2.37	-2.89	yes	-0.21	-2.16
France	Switzerland	1998	2001	-0.14	-0.17	1.61	8.05	0.33	-2.31	-2.13	no	-0.22	-2.75
France	Switzerland	1999	2002	-0.13	-0.19	1.57	9.36	0.34	-2.03	-2.75	no	-0.28	-3.67
France	United Kingdom	1995	1998	3.55	1.89	0.63	2.46	0.09	-0.76	-1.10	no	-0.03	-0.63
France	United Kingdom	1996	1999	0.68	0.34	0.96	3.25	0.05	-1.92		no	-0.06	-1.62
France	United Kingdom	1997	2000	0.57	0.55	0.92	6.08	0.16	-1.53	-1.70	no	-0.12	-1.70
France	United Kingdom	1998	2001	5.30	8.22	0.19	1.95	0.15	-1.76	-1.99	no	-0.08	-1.60
France	United Kingdom	1999	2002	4.98	8.80	0.23	2.45	0.13	-1.27	-2.09	no	-0.09	-1.97
France	USA	1995	1998	-5.07	-2.19	1.78	5.71	0.11	-1.06	-1.71	no	-0.04	-0.80
France	USA	1996	1999	-7.84	-3.75	2.09	7.25	0.17	-2.77		no	-0.17	-2.07
France	USA	1997	2000	-4.20	-2.69	1.53	7.05	0.18	-1.81		no	-0.11	-1.42
France	USA	1998	2001	2.25	1.37	0.61	2.63	0.16	-2.01	-1.98	no	-0.18	-2.92
France	USA	1999	2002	2.43	2.99	0.57	4.84	0.17	-1.42	-2.07	no	-0.17	-3.06
Germany	Austria	1995	1998	-1.16	-2.73	1.11	17.72	0.32	-2.35	-3.03	no	-0.13	-1.55
Germany	Austria	1996	1999	1.28	2.04	0.73	7.15	0.17	-1.00	-2.12	no	-0.05	-0.90
Germany	Austria	1997	2000	2.15	2.31	0.61	3.85	0.10	-1.07	-1.71	no	-0.05	-0.97
Germany	Austria	1998	2001	2.09	2.19	0.61	3.74	0.10	-1.07	-1.62	no	-0.05	-1.06
Germany	Austria	1999	2002	1.51	1.73	0.73	4.78	0.13	-2.04	-2.54	no	-0.24	-3.93
Germany	Belgium	1995	1998	1.23	6.49	0.82	27.24	0.45	-1.80		yes	-0.18	-1.79
Germany	Belgium	1996	1999	-0.19	-0.49	1.05	15.46	0.52	-2.68		yes	-0.20	-2.02
Germany	Belgium	1997	2000	0.92	2.59	0.84	13.50	0.30	-1.86		no	-0.22	-2.19
Germany	Belgium	1998	2001	1.34	3.67	0.73	11.92	0.21	-1.65		no	-0.26	-3.29
Germany	Belgium	1999	2002	0.81	2.17	0.80	13.14	0.26	-1.78		no	-0.28	-2.98
Germany	Finland	1995	1998	1.86	7.13	0.68	17.29	0.18	-2.04	-2.48	no	-0.04	-0.72
Germany	Finland	1996	1999	1.91	4.67	0.68	9.39	0.16	-1.18	-2.00	no	-0.12	-2.04
Germany	Finland	1997	2000	1.76	2.93	0.73	6.59	0.13	-1.24	-2.25	no	-0.10	-1.31
Germany	Finland	1998	2001	2.19	3.90	0.65	6.18	0.12	-1.13	-2.38	no	-0.06	-1.08
Germany	Finland	1999	2002	2.63	5.88	0.60	6.86	0.14	-2.42	-3.49	yes	-0.31	-4.02
Germany	France	1995	1998	0.36	0.70	0.73	11.53	0.20	-3.35	-3.57	yes	-0.23	-2.86
Germany	France	1996	1999	2.31	6.23	0.47	9.30	0.22	-1.17	-3.21	yes	-0.28	-3.51
Germany	France	1997	2000	3.10	3.97	0.38	3.35	0.09	-0.94	-1.91	no	-0.10	-2.21
Germany	France	1998	2001	0.88	0.81	0.73	4.36	0.13	-1.34	-1.87	no	-0.15	-2.94
Germany	France	1999	2002	0.11	0.11	0.88	5.57	0.17	-2.14	-3.25	yes	-0.30	-4.57
Germany	Ireland	1995	1998	0.86	0.48	0.76	3.03	0.08	-3.43	-1.37	yes	-0.05	-1.18
Germany	Ireland	1996	1999	4.33	7.84	0.21	2.56	0.09	-0.86	-1.75	no	-0.09	-2.26
Germany	Ireland	1997	2000	5.87	12.86	-0.03	-0.36	0.08	-0.84	-1.53	no	-0.10	-2.52
Germany	Ireland	1998	2001	6.13	12.66	-0.08	-1.01	0.09	-1.01	-1.72	no	-0.10	-2.29
Germany	Ireland	1999	2002	5.41	7.65	0.05	0.39	0.09	-1.63	-2.38	no	-0.18	-3.81
Germany	Italy	1995	1998	3.09	7.88	0.29	8.37	0.10	-5.00	-3.55	yes	-0.16	-2.59
Germany	Italy	1996	1999	4.09	23.12	0.18	9.67	0.19	-0.65	-2.94	no	-0.13	-2.06
Germany	Italy	1997	2000	5.26	16.15	0.06	1.42	0.08	-0.70	-1.53	no	-0.06	-1.60
Germany	Italy	1998	2001	5.19	8.99	0.07	0.80	0.08	-0.94	-1.63	no	-0.07	-1.70
Germany	Italy	1999	2002	2.71	2.79	0.49	3.07	0.12	-2.07	-3.03	no	-0.21	-3.50
Germany	Netherlands	1995	1998	-0.71	-3.86	1.09	38.27	0.52	-2.52		yes	-0.24	-2.12
Germany	Netherlands	1996	1999	-0.90	-3.34	1.12	24.77	0.56	-2.74	-3.05	yes	-0.23	-2.04
Germany	Netherlands	1997	2000	-0.65	-2.79	1.08	27.26	0.65	-2.96	-3.05	yes	-0.33	-2.14
Germany	Netherlands	1998	2001	-0.80	-4.16	1.11	33.48	0.89	-3.52	-3.53	yes	-0.36	-1.36
Germany	Netherlands	1999	2002	-0.73	-3.57	1.10	31.45	0.80	-4.03	-4.05	yes	-0.41	-2.99
Germany	Portugal	1995	1998	3.20	10.67	0.31	10.64	0.11	-3.03	-3.28	yes	-0.13	-2.54
Germany	Portugal	1996	1999	4.18	22.66	0.19	8.74	0.18	-0.82	-2.93	no	-0.22	-2.84
Germany	Portugal	1997	2000	5.09	15.93	0.09	1.99	0.08	-0.80	-1.62	no	-0.07	-1.77
Germany	Portugal	1998	2001	4.15	6.82	0.25	2.48	0.09	-1.09	-1.61	no	-0.09	-2.00
Germany	Portugal	1999	2002	3.17	5.29	0.45	4.20	0.13	-2.26	-2.67	no	-0.31	-4.06
Germany	Spain	1995	1998	3.53	13.99	0.33	11.43	0.14	-3.66	-3.30	yes	-0.17	-2.42
Germany	Spain	1996	1999	3.99	19.59	0.25	8.86	0.18	-1.29	-3.01	no	-0.19	-2.75
Germany	Spain	1997	2000	4.07	7.96	0.28	3.24	0.09	-1.03	-1.84	no	-0.09	-2.16
Germany	Spain	1998	2001	2.61	3.64	0.55	4.26	0.11	-1.18	-1.90	no	-0.06	-1.11
Germany	Spain	1999	2002	2.67	4.41	0.57	5.00	0.14	-2.16	-2.93	no	-0.28	-4.66
Germany	Australia	1995	1998	2.72	7.50	0.42	10.08	0.13	-2.66	-2.74	no	-0.13	-1.96
Germany	Australia	1996	1999	3.21	9.43	0.33	7.48	0.16	-1.40	-2.12	no	-0.11	-1.90

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Germany	Australia	1997	2000	0.42	0.54	0.75	6.87	0.21	-1.94	-2.16	no	-0.15	-2.13
Germany	Australia	1998	2001	0.26	0.38	0.77	7.78	0.25	-1.71		no	-0.16	-1.94
Germany	Australia	1999	2002	1.55	2.21	0.60	5.89	0.19	-1.97	-2.86	no	-0.29	-3.87
Germany	Canada	1995	1998	2.57	5.83	0.56	8.62	0.11	-0.01		no	0.01	0.18
Germany	Canada	1996	1999	6.53	7.24	-0.13	-0.90	0.09	-1.22	-1.70	no	-0.08	-2.07
Germany	Canada	1997	2000	3.97	6.57	0.26	2.90	0.08	-1.31	-1.64	no	-0.07	-1.82
Germany	Canada	1998	2001	2.54	4.75	0.46	5.85	0.10	-0.54	-1.77	no	0.00	-0.11
Germany	Canada	1999	2002	3.81	9.30	0.29	4.63	0.08	-2.23	-2.78	no	-0.19	-4.16
Germany	Japan	1995	1998	1.44	3.09	1.74	10.57	0.24	-1.08	0.10	no	-0.01	-0.13
Germany	Japan	1996	1999	-3.09	-1.58	3.44	4.53	0.11	-0.71	-1.43	no	-0.11	-2.21
Germany	Japan	1997	2000	6.36	3.32	-0.26	-0.34	0.08	-0.85	-1.54	no	-0.06	-1.48
Germany	Japan	1998	2001	8.24	3.90	-1.06	-1.23	0.09	-1.08	-1.72	no	-0.06	-1.45
Germany	Japan	1999	2002	7.20	1.73	-0.64	-0.37	0.09	-1.42	-2.16	no	-0.12	-2.73
Germany	Switzerland	1995	1998	-0.44	-0.77	1.40	11.87	0.17	-3.04	-3.49	yes	-0.14	-1.91
Germany	Switzerland	1996	1999	1.47	2.48	0.96	7.18	0.18	-0.96	-2.58	no	-0.22	-3.16
Germany	Switzerland	1997	2000	3.02	2.55	0.64	2.27	0.09	-0.97	-1.92	no	-0.10	-2.36
Germany	Switzerland	1998	2001	1.86	1.13	0.91	2.31	0.10	-1.03	-1.89	no	-0.12	-2.75
Germany	Switzerland	1999	2002	1.94	1.26	0.91	2.44	0.12	-1.84	-2.66	no	-0.31	-6.08
Germany	United Kingdom	1995	1998	-0.75	-0.57	0.96	5.33	0.30	-2.40	-1.72	no	-0.16	-1.80
Germany	United Kingdom	1996	1999	1.11	0.99	0.67	4.14	0.10	-1.49	-1.87	no	-0.12	-2.43
Germany	United Kingdom	1997	2000	2.89	2.58	0.41	2.52	0.07	-0.44	-1.01	no	-0.06	-1.42
Germany	United Kingdom	1998	2001	4.31	4.90	0.21	1.53	0.07	-0.90	-1.38	no	-0.05	-1.38
Germany	United Kingdom	1999	2002	2.62	3.76	0.52	4.42	0.09	-2.34		no	-0.21	-3.98
Germany	USA	1995	1998	-5.69	-3.07	1.61	6.48	0.08	-2.08		no	-0.08	-1.63
Germany	USA	1996	1999	-3.23	-2.73	1.23	7.59	0.18	-1.96	-2.99	no	-0.14	-2.14
Germany	USA	1997	2000	-3.94	-2.97	1.34	7.27	0.18	-1.43	-2.10	no	-0.16	-2.44
Germany	USA	1998	2001	-7.80	-6.06	1.91	10.46	0.32	-1.73		no	-0.13	-1.46
Germany	USA	1999	2002	-0.19	-0.17	0.85	5.47	0.11	-2.32	-2.68	no	-0.20	-3.62
Ireland	Austria	1995	1998	5.24	9.20	0.29	3.43	0.31	-1.56	-2.50	no	-0.15	-2.09
Ireland	Austria	1996	1999	-1.03	-1.03	1.24	7.62	0.13	-0.73	-1.26	no	-0.06	-0.95
Ireland	Austria	1997	2000	-4.21	-2.81	1.76	6.90	0.10	-0.84		no	-0.03	-0.52
Ireland	Austria	1998	2001	-2.17	-1.45	1.35	5.26	0.09	-1.29		no	-0.08	-1.52
Ireland	Austria	1999	2002	-0.35	-0.43	0.95	6.72	0.23	-1.89		no	-0.20	-2.42
Ireland	Belgium	1995	1998	5.93	15.70	0.20	3.35	0.32	-1.69	-2.75	no	-0.16	-2.19
Ireland	Belgium	1996	1999	4.54	2.93	0.35	1.28	0.06	0.90	-0.11	no	0.04	0.99
Ireland	Belgium	1997	2000	9.26	6.08	-0.55	-2.08	0.07	-0.96	-1.24	no	-0.04	-1.03
Ireland	Belgium	1998	2001	7.60	6.06	-0.32	-1.52	0.09	-1.40	-1.68	no	-0.10	-2.05
Ireland	Belgium	1999	2002	3.46	4.16	0.27	1.95	0.15	-1.46	-1.91	no	-0.08	-1.31
Ireland	Finland	1995	1998	5.92	17.63	0.19	3.80	0.33	-1.65	-2.72	no	-0.18	-2.40
Ireland	Finland	1996	1999	1.34	1.57	0.93	6.08	0.10	-0.37	-1.01	no	-0.02	-0.27
Ireland	Finland	1997	2000	0.09	0.06	1.12	4.24	0.06	-0.51	-0.88	no	-0.05	-1.05
Ireland	Finland	1998	2001	1.51	1.29	0.79	3.60	0.07	-1.36	-1.62	no	-0.08	-1.93
Ireland	Finland	1999	2002	1.88	3.88	0.63	6.65	0.20	-1.95	-2.32	no	-0.16	-2.12
Ireland	France	1995	1998	6.19	11.64	0.12	1.87	0.28	-1.22	-2.18	no	-0.15	-2.19
Ireland	France	1996	1999	2.40	2.87	0.56	4.96	0.10	-0.29	-1.09	no	-0.02	-0.29
Ireland	France	1997	2000	-1.97	-1.55	1.19	6.37	0.13	-1.39	-1.96	no	-0.06	-1.15
Ireland	France	1998	2001	-3.01	-1.61	1.33	4.67	0.15	-1.33	-1.92	no	-0.10	-1.61
Ireland	France	1999	2002	-1.09	-1.05	0.97	5.95	0.29	-2.13	-2.65	no	-0.20	-2.24
Ireland	Germany	1995	1998	5.79	12.56	0.22	3.03	0.31	-1.73	-2.83	no	-0.15	-2.20
Ireland	Germany	1996	1999	3.18	2.43	0.58	2.56	0.07	0.70	-0.46	no	0.03	0.74
Ireland	Germany	1997	2000	6.73	3.97	-0.11	-0.36	0.05	-0.92	-1.19	no	-0.04	-1.09
Ireland	Germany	1998	2001	7.16	4.96	-0.26	-1.01	0.08	-1.39	-1.74	no	-0.08	-1.73
Ireland	Germany	1999	2002	4.73	5.28	0.06	0.39	0.14	-1.14	-1.55	no	-0.08	-1.27
Ireland	Italy	1995	1998	6.71	20.45	0.04	1.45	0.27	-1.12	-2.08	no	-0.11	-1.68
Ireland	Italy	1996	1999	4.46	11.25	0.22	5.41	0.09	-0.38	-1.01	no	-0.02	-0.47
Ireland	Italy	1997	2000	2.62	6.50	0.46	8.93	0.14	-1.64	-1.92	no	-0.08	-1.32
Ireland	Italy	1998	2001	-0.12	-0.22	0.88	11.21	0.31	-2.33	-2.59	no	-0.15	-1.80
Ireland	Italy	1999	2002	-0.92	-1.29	0.98	8.47	0.40	-2.49		yes	-0.33	-3.26
Ireland	Netherlands	1995	1998	5.37	10.68	0.28	3.64	0.32	-1.81	-2.96	no	-0.16	-2.16
Ireland	Netherlands	1996	1999	1.57	1.04	0.84	3.30	0.09	0.69	-0.75	no	0.03	0.74
Ireland	Netherlands	1997	2000	5.48	2.82	0.11	0.32	0.05	-0.89	-1.19	no	-0.04	-1.04
Ireland	Netherlands	1998	2001	6.67	3.94	-0.17	-0.57	0.08	-1.37	-1.69	no	-0.08	-1.70
Ireland	Netherlands	1999	2002	4.19	4.09	0.15	0.87	0.14	-1.20	-1.64	no	-0.06	-1.03
Ireland	Portugal	1995	1998	6.76	23.02	0.04	1.49	0.27	-1.15	-2.15	no	-0.16	-2.44
Ireland	Portugal	1996	1999	4.62	11.53	0.23	4.95	0.09	-0.25	-0.88	no	-0.06	-1.14
Ireland	Portugal	1997	2000	2.92	6.37	0.47	7.18	0.10	-1.49	-1.74	no	-0.05	-1.02
Ireland	Portugal	1998	2001	-0.32	-0.47	1.02	8.83	0.16	-1.41		no	-0.09	-1.63
Ireland	Portugal	1999	2002	0.87	2.07	0.76	10.09	0.33	-2.28		no	-0.26	-2.75
Ireland	Spain	1995	1998	6.71	26.22	0.06	1.91	0.28	-1.16	-2.13	no	-0.13	-1.80
Ireland	Spain	1996	1999	4.80	9.89	0.25	3.65	0.07	0.02	-0.62	no	0.00	0.03
Ireland	Spain	1997	2000	0.98	1.17	0.88	6.17	0.09	-1.38	-1.51	no	-0.04	-0.83
Ireland	Spain	1998	2001	0.06	0.05	1.02	4.66	0.09	-1.21		no	-0.09	-1.85
Ireland	Spain	1999	2002	0.96	1.85	0.77	7.97	0.28	-2.32	-2.73	no	-0.22	-2.50
Ireland	Australia	1995	1998	6.80	19.71	0.04	1.12	0.27	-1.00	-2.03	no	-0.14	-2.14
Ireland	Australia	1996	1999	5.16	6.36	0.18	1.70	0.06	0.47	-0.27	no	0.02	0.49
Ireland	Australia	1997	2000	7.14	3.24	-0.15	-0.47	0.05	-0.99	-1.23	no	-0.04	-1.10
Ireland	Australia	1998	2001	6.10	3.31	-0.06	-0.21	0.07	-1.31	-1.68	no	-0.08	-1.67
Ireland	Australia	1999	2002	1.83	2.11	0.47	3.75	0.18	-1.50		no	-0.09	-1.28
Ireland	Canada	1995	1998	6.02	17.60	0.17	3.45	0.35	-1.64	-2.80	no	-0.21	-2.29
Ireland	Canada	1996	1999	11.55	8.89	-0.81	-3.90	0.16	-1.19		no	-0.06	-0.95
Ireland	Canada	1997	2000	11.86	11.81	-0.86	-5.78	0.16	-1.30		no	-0.10	-1.58
Ireland	Canada	1998	2001	7.08	5.82	-0.20	-1.14	0.08	-1.04	-1.59	no	-0.07	-1.37
Ireland	Canada	1999	2002	3.95	7.89	0.17	2.27	0.14	-1.30	-1.64	no	-0.02	-0.33
Ireland	Japan	1995	1998	5.72	13.95	0.52	3.62	0.34	-1.78	-2.74	no	-0.15	-1.84
Ireland	Japan	1996	1999	-17.76	-12.40	9.47	16.96	0.52	-2.50		yes	-0.27	-2.69
Ireland	Japan	1997	2000	-18.46	-14.30	9.80	19.06	0.66	-3.11	-3.91	yes	-0.46	-3.52
Ireland	Japan	1998	2001	-16.61	-9.24	9.10	12.43	0.53	-2.61		yes	-0.28	-2.73

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Ireland	Japan	1999	2002	-12.86	-3.62	7.48	5.05	0.35	-1.94		no	-0.17	-1.92
Ireland	Switzerland	1995	1998	6.03	10.10	0.24	1.94	0.28	-1.19	-2.19	no	-0.14	-2.14
Ireland	Switzerland	1996	1999	1.46	1.20	1.14	4.18	0.08	-0.31	-0.87	no	-0.01	-0.26
Ireland	Switzerland	1997	2000	-4.58	-2.35	2.54	5.51	0.10	-1.15	-1.49	no	-0.05	-0.91
Ireland	Switzerland	1998	2001	-2.54	-0.92	1.98	2.98	0.09	-1.10	-1.45	no	-0.06	-1.20
Ireland	Switzerland	1999	2002	-4.22	-3.94	2.25	8.69	0.40	-2.73		yes	-0.34	-3.46
Ireland	United Kingdom	1995	1998	3.25	4.65	0.54	5.63	0.60	-2.77		yes	-0.29	-2.83
Ireland	United Kingdom	1996	1999	-3.74	-2.44	1.49	6.69	0.20	-0.38		no	-0.04	-0.47
Ireland	United Kingdom	1997	2000	-4.77	-2.68	1.60	6.14	0.15	-1.18	-1.70	no	-0.11	-1.95
Ireland	United Kingdom	1998	2001	0.56	0.41	0.80	3.76	0.09	-1.31	-1.71	no	-0.06	-1.36
Ireland	United Kingdom	1999	2002	4.71	5.33	0.06	0.42	0.14	-1.13	-1.54	no	-0.06	-0.95
Ireland	USA	1995	1998	6.03	4.40	0.16	0.84	0.27	-1.00	-1.98	no	-0.13	-1.94
Ireland	USA	1996	1999	-0.63	-0.23	0.98	2.63	0.08	0.29		no	0.06	1.34
Ireland	USA	1997	2000	2.50	0.64	0.50	0.93	0.05	-0.84	-1.13	no	-0.01	-0.28
Ireland	USA	1998	2001	10.73	2.64	-0.71	-1.24	0.08	-1.30	-1.79	no	-0.08	-1.57
Ireland	USA	1999	2002	1.96	1.41	0.45	2.23	0.15	-1.43	-1.78	no	-0.12	-1.98
Italy	Austria	1995	1998	-5.62	-2.79	2.50	8.40	0.07	-0.94	-0.55	no	0.00	0.07
Italy	Austria	1996	1999	-17.22	-11.25	4.36	17.39	0.19	-1.48	-1.98	no	-0.09	-1.29
Italy	Austria	1997	2000	-10.24	-3.91	3.04	6.84	0.05	-0.18		no	-0.09	-2.12
Italy	Austria	1998	2001	-2.05	-1.54	1.48	6.53	0.09	-4.11		yes	-0.48	-7.01
Italy	Austria	1999	2002	0.37	1.16	1.01	17.88	0.76	-3.12		yes	-0.53	-3.83
Italy	Belgium	1995	1998	1.38	0.91	1.57	6.52	0.07	-1.04	-0.46	no	0.02	0.45
Italy	Belgium	1996	1999	-10.81	-3.29	3.58	6.13	0.12	0.17		no	0.01	0.13
Italy	Belgium	1997	2000	10.94	4.02	-0.59	-1.24	0.02	-2.47	-2.03	no	-0.06	-2.73
Italy	Belgium	1998	2001	6.55	5.25	0.01	0.05	0.06	-3.73	-2.36	yes	-0.12	-2.56
Italy	Belgium	1999	2002	2.96	5.85	0.52	6.22	0.30	-2.18	-2.28	no	-0.16	-1.77
Italy	Finland	1995	1998	1.38	1.10	1.51	7.94	0.05	-0.38	-0.22	no	0.02	0.68
Italy	Finland	1996	1999	-10.93	-8.92	3.63	16.62	0.14	-1.22	-1.65	no	-0.06	-1.10
Italy	Finland	1997	2000	-2.68	-1.07	1.90	4.14	0.03	-1.07	-1.10	no	-0.06	-2.13
Italy	Finland	1998	2001	1.79	1.67	0.90	4.52	0.07	-3.68		yes	-0.33	-4.70
Italy	Finland	1999	2002	3.09	10.26	0.59	10.09	0.39	-2.28	-1.76	yes	-0.20	-2.21
Italy	France	1995	1998	-6.81	-9.45	2.21	25.18	0.46	-3.06	-2.09	yes	-0.26	-2.07
Italy	France	1996	1999	-10.12	-23.48	2.66	45.44	1.13	-4.32	-3.80	yes	-0.60	-4.00
Italy	France	1997	2000	-11.37	-9.88	2.78	16.57	0.31	-1.46	-1.29	no	-0.12	-1.37
Italy	France	1998	2001	-4.87	-3.46	1.75	8.17	0.24	-2.73	-2.25	no	-0.47	-4.55
Italy	France	1999	2002	-0.32	-0.57	1.01	11.58	0.63	-2.89	-2.42	yes	-0.41	-3.04
Italy	Germany	1995	1998	-2.06	-1.29	2.10	8.37	0.08	-2.39	-1.54	no	-0.01	-0.15
Italy	Germany	1996	1999	-12.47	-5.52	3.80	9.67	0.13	-0.15	-1.31	no	-0.02	-0.17
Italy	Germany	1997	2000	3.53	1.22	0.71	1.42	0.01	-2.31	-1.89	no	-0.05	-3.03
Italy	Germany	1998	2001	5.49	3.90	0.20	0.80	0.06	-3.74	-2.37	yes	-0.13	-2.53
Italy	Germany	1999	2002	4.12	6.34	0.35	3.07	0.17	-1.39	-1.72	no	-0.07	-1.00
Italy	Ireland	1995	1998	3.64	0.70	1.05	1.45	0.02	0.64	-0.41	no	0.02	1.07
Italy	Ireland	1996	1999	-2.17	-1.02	1.76	5.41	0.04	-1.57	-1.61	no	-0.08	-2.20
Italy	Ireland	1997	2000	-0.85	-0.88	1.38	8.93	0.10	-2.24	-2.20	no	-0.11	-1.73
Italy	Ireland	1998	2001	1.87	4.35	0.83	11.21	0.29	-3.41	-3.42	yes	-0.24	-2.38
Italy	Ireland	1999	2002	2.95	7.88	0.62	8.47	0.40	-2.34		yes	-0.29	-2.98
Italy	Netherlands	1995	1998	-2.97	-1.53	2.20	7.35	0.08	-1.48	-0.55	no	0.00	0.00
Italy	Netherlands	1996	1999	-16.87	-6.28	4.44	9.76	0.19	-0.55	-1.61	no	-0.10	-0.96
Italy	Netherlands	1997	2000	0.84	0.26	1.15	2.10	0.02	-2.13		no	-0.05	-2.42
Italy	Netherlands	1998	2001	4.63	2.85	0.34	1.22	0.06	-3.70	-2.47	yes	-0.14	-2.64
Italy	Netherlands	1999	2002	3.40	4.74	0.46	3.77	0.18	-1.38	-1.72	no	-0.07	-1.10
Italy	Portugal	1995	1998	1.49	4.32	0.96	28.79	0.32	-4.00		yes	-0.18	-1.75
Italy	Portugal	1996	1999	0.30	1.63	1.10	50.33	0.41	-2.26		yes	-0.27	-2.84
Italy	Portugal	1997	2000	0.19	0.72	1.09	29.05	0.21	-0.65		no	-0.23	-2.48
Italy	Portugal	1998	2001	0.04	0.08	1.11	13.22	0.25	-2.26		no	-0.31	-2.85
Italy	Portugal	1999	2002	2.45	9.67	0.66	14.49	0.67	-2.99	-2.58	yes	-0.34	-3.06
Italy	Spain	1995	1998	2.98	6.47	0.97	18.43	0.11	-0.61		no	0.01	0.14
Italy	Spain	1996	1999	-0.47	-1.08	1.43	23.19	0.09	-1.46		no	-0.03	-0.56
Italy	Spain	1997	2000	-4.38	-5.24	2.05	14.49	0.07	0.81	0.22	no	0.05	1.40
Italy	Spain	1998	2001	-0.07	-0.06	1.20	6.46	0.06	-3.48		yes	-0.36	-6.04
Italy	Spain	1999	2002	2.13	8.76	0.75	16.44	0.63	-3.05	-2.38	yes	-0.52	-4.16
Italy	Australia	1995	1998	0.64	0.85	1.24	14.23	0.11	-0.38	-0.34	no	0.09	1.64
Italy	Australia	1996	1999	-3.94	-3.09	1.75	10.52	0.06	-0.15	-0.74	no	-0.07	-1.66
Italy	Australia	1997	2000	3.53	0.93	0.58	1.08	0.01	-1.56	-1.74	no	-0.05	-2.73
Italy	Australia	1998	2001	6.36	3.56	0.03	0.13	0.06	-3.79	-2.38	yes	-0.14	-2.95
Italy	Australia	1999	2002	3.39	4.99	0.39	4.01	0.16	-1.06		no	-0.06	-1.06
Italy	Canada	1995	1998	6.67	3.70	0.68	2.55	0.04	1.01	0.32	no	0.04	1.72
Italy	Canada	1996	1999	22.96	6.20	-2.19	-3.72	0.07	-2.22	-2.39	no	-0.12	-2.71
Italy	Canada	1997	2000	19.55	13.55	-1.79	-8.35	0.14	-1.41	-1.70	no	-0.07	-1.26
Italy	Canada	1998	2001	7.89	6.68	-0.19	-1.10	0.07	-3.19	-2.04	no	-0.11	-2.04
Italy	Canada	1999	2002	5.47	13.36	0.10	1.57	0.14	-1.01	-1.46	no	-0.05	-0.91
Italy	Japan	1995	1998	5.15	2.40	2.16	2.84	0.05	0.46	-1.07	no	0.04	1.47
Italy	Japan	1996	1999	-48.78	-7.30	22.65	8.70	0.11	-1.79		no	-0.11	-1.89
Italy	Japan	1997	2000	-30.77	-8.67	15.30	10.83	0.20	-2.10		no	-0.17	-1.83
Italy	Japan	1998	2001	-12.84	-5.73	7.93	8.69	0.29	-2.93		no	-0.20	-2.16
Italy	Japan	1999	2002	-4.05	-1.27	4.23	3.18	0.21	-1.40		no	-0.09	-1.21
Italy	Switzerland	1995	1998	-8.60	-8.20	4.09	18.98	0.21	-1.77	-1.27	no	-0.07	-0.74
Italy	Switzerland	1996	1999	-17.06	-17.71	5.94	27.47	0.31	-2.16		no	-0.30	-3.10
Italy	Switzerland	1997	2000	-17.84	-8.15	6.03	11.64	0.10	0.09		no	-0.06	-0.95
Italy	Switzerland	1998	2001	-3.53	-1.40	2.44	4.01	0.07	-3.44		yes	-0.13	-2.16
Italy	Switzerland	1999	2002	-2.51	-4.60	2.09	15.79	0.92	-3.80	-4.05	yes	-0.48	-3.71
Italy	United Kingdom	1995	1998	4.26	0.96	0.95	1.56	0.03	0.82		no	0.02	0.84
Italy	United Kingdom	1996	1999	-9.37	-1.73	2.70	3.45	0.05	-1.36		no	-0.05	-1.36
Italy	United Kingdom	1997	2000	-12.50	-4.29	2.95	6.91	0.13	-1.76	-2.36	no	-0.11	-1.82
Italy	United Kingdom	1998	2001	1.46	1.10	0.80	3.91	0.08	-2.79	-2.24	no	-0.07	-1.42
Italy	United Kingdom	1999	2002	5.87	8.35	0.04	0.34	0.14	-0.89	-1.42	no	-0.06	-1.02
Italy	USA	1995	1998	-20.45	-3.99	4.26	6.18	0.10	-0.86		no	-0.03	-0.69

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Italy	USA	1996	1999	-33.53	-6.38	5.90	8.16	0.15	-2.29		no	-0.11	-1.43
Italy	USA	1997	2000	-18.72	-3.37	3.65	4.74	0.06	-1.22		no	-0.05	-0.77
Italy	USA	1998	2001	7.10	1.77	-0.07	-0.12	0.06	-3.73	-2.34	yes	-0.10	-1.83
Italy	USA	1999	2002	3.57	3.23	0.37	2.29	0.16	-1.26		no	-0.08	-1.36
Netherlands	Austria	1995	1998	-0.20	-0.47	0.98	15.84	0.31	-2.27	-3.10	no	-0.14	-1.77
Netherlands	Austria	1996	1999	2.02	3.82	0.64	7.39	0.21	-1.22	-2.27	no	-0.18	-2.65
Netherlands	Austria	1997	2000	2.16	2.75	0.64	4.78	0.10	-1.10	-1.72	no	-0.11	-2.48
Netherlands	Austria	1998	2001	2.10	2.65	0.64	4.72	0.09	-0.93	-1.46	no	-0.15	-2.02
Netherlands	Austria	1999	2002	1.64	2.26	0.74	5.84	0.13	-1.70	-2.63	no	-0.26	-4.86
Netherlands	Belgium	1995	1998	1.87	10.17	0.73	25.12	0.44	-2.23		yes	-0.19	-2.00
Netherlands	Belgium	1996	1999	1.06	2.64	0.86	12.07	0.30	-1.92		no	-0.11	-1.45
Netherlands	Belgium	1997	2000	1.74	4.83	0.73	11.65	0.15	-1.36		no	-0.11	-1.94
Netherlands	Belgium	1998	2001	1.96	6.36	0.65	12.63	0.17	-1.31	-1.90	no	-0.17	-2.61
Netherlands	Belgium	1999	2002	1.40	4.67	0.74	14.95	0.24	-1.73		no	-0.23	-2.88
Netherlands	Finland	1995	1998	2.43	10.14	0.62	16.94	0.20	-2.09	-2.17	no	-0.11	-1.49
Netherlands	Finland	1996	1999	2.56	7.56	0.60	9.93	0.21	-1.38	-2.49	no	-0.05	-0.78
Netherlands	Finland	1997	2000	1.99	4.11	0.72	8.11	0.13	-1.27	-1.82	no	-0.09	-1.36
Netherlands	Finland	1998	2001	2.43	5.44	0.64	7.66	0.12	-1.17	-2.35	no	0.00	0.04
Netherlands	Finland	1999	2002	2.94	7.97	0.57	7.95	0.14	-1.91	-3.37	yes	-0.25	-4.36
Netherlands	France	1995	1998	1.27	2.46	0.63	10.07	0.18	-2.79		no	-0.20	-2.44
Netherlands	France	1996	1999	2.96	9.30	0.40	9.29	0.29	-1.48	-3.10	no	-0.23	-2.89
Netherlands	France	1997	2000	3.08	4.64	0.41	4.26	0.11	-1.01	-1.60	no	-0.10	-2.46
Netherlands	France	1998	2001	1.03	1.14	0.73	5.29	0.16	-1.43	-2.05	no	-0.21	-3.85
Netherlands	France	1999	2002	0.47	0.55	0.85	6.41	0.23	-1.99	-3.61	yes	-0.36	-5.76
Netherlands	Germany	1995	1998	0.83	5.61	0.89	38.27	0.53	-2.53		yes	-0.27	-2.34
Netherlands	Germany	1996	1999	1.15	5.99	0.83	24.77	0.58	-2.81	-3.01	yes	-0.19	-1.78
Netherlands	Germany	1997	2000	0.92	4.98	0.87	27.26	0.64	-2.86	-2.95	yes	-0.23	-1.63
Netherlands	Germany	1998	2001	0.93	6.30	0.87	33.48	0.88	-3.50	-3.48	yes	-0.44	-3.20
Netherlands	Germany	1999	2002	0.90	5.67	0.87	31.45	0.80	-3.85	-3.94	yes	-0.39	-3.06
Netherlands	Ireland	1995	1998	0.74	0.47	0.79	3.64	0.10	-3.34	-3.58	yes	-0.09	-1.66
Netherlands	Ireland	1996	1999	4.40	9.68	0.23	3.30	0.12	-0.93	-1.72	no	-0.12	-2.54
Netherlands	Ireland	1997	2000	5.77	14.04	0.02	0.32	0.07	-0.52	-1.28	no	-0.07	-2.24
Netherlands	Ireland	1998	2001	6.07	14.06	-0.04	-0.57	0.08	-0.89	-2.11	no	-0.05	-1.39
Netherlands	Ireland	1999	2002	5.31	8.48	0.11	0.87	0.08	-1.37	-2.84	no	-0.15	-4.29
Netherlands	Italy	1995	1998	3.69	9.67	0.25	7.35	0.10	-3.76	-2.22	yes	-0.18	-2.63
Netherlands	Italy	1996	1999	4.48	29.72	0.15	9.76	0.27	-1.06	-2.92	no	-0.19	-2.42
Netherlands	Italy	1997	2000	5.32	18.59	0.08	2.10	0.07	-0.41	-1.24	no	-0.08	-2.35
Netherlands	Italy	1998	2001	5.22	10.30	0.09	1.22	0.07	-0.80	-1.98	no	-0.06	-1.84
Netherlands	Italy	1999	2002	2.73	3.28	0.51	3.77	0.12	-1.76	-3.30	yes	-0.22	-4.17
Netherlands	Portugal	1995	1998	3.74	12.66	0.27	9.36	0.11	-2.48	-2.95	no	-0.14	-2.49
Netherlands	Portugal	1996	1999	4.56	29.00	0.16	8.84	0.23	-1.05	-2.31	no	-0.15	-2.26
Netherlands	Portugal	1997	2000	5.16	18.57	0.11	2.75	0.07	-0.64	-1.50	no	-0.09	-2.42
Netherlands	Portugal	1998	2001	4.17	8.05	0.28	3.24	0.07	-0.97	-1.72	no	-0.09	-2.36
Netherlands	Portugal	1999	2002	3.30	6.55	0.46	5.09	0.11	-1.86	-2.98	no	-0.24	-5.33
Netherlands	Spain	1995	1998	4.03	15.92	0.28	9.81	0.13	-2.96	-3.09	no	-0.13	-1.93
Netherlands	Spain	1996	1999	4.46	24.01	0.21	8.01	0.21	-1.39	-2.55	no	-0.13	-2.09
Netherlands	Spain	1997	2000	4.15	9.48	0.30	4.05	0.08	-1.11	-1.88	no	-0.06	-1.01
Netherlands	Spain	1998	2001	2.68	4.57	0.57	5.39	0.10	-1.11	-1.90	no	-0.14	-2.66
Netherlands	Spain	1999	2002	2.85	5.67	0.57	6.02	0.13	-1.77	-3.60	yes	-0.28	-4.98
Netherlands	Australia	1995	1998	3.40	9.23	0.36	8.40	0.12	-2.31		no	-0.17	-2.69
Netherlands	Australia	1996	1999	3.94	12.19	0.26	6.11	0.17	-1.39	-2.09	no	-0.11	-1.98
Netherlands	Australia	1997	2000	1.20	1.70	0.67	6.70	0.18	-2.09	-2.01	no	-0.11	-2.12
Netherlands	Australia	1998	2001	0.80	1.41	0.72	8.88	0.24	-1.98		no	-0.14	-1.70
Netherlands	Australia	1999	2002	1.89	3.21	0.58	6.76	0.18	-1.63	-2.71	no	-0.26	-3.69
Netherlands	Canada	1995	1998	3.00	7.78	0.52	9.05	0.13	-0.49	-0.95	no	-0.03	-0.49
Netherlands	Canada	1996	1999	6.89	8.99	-0.16	-1.32	0.12	-1.40	-1.62	no	-0.11	-2.28
Netherlands	Canada	1997	2000	4.69	8.32	0.18	2.18	0.07	-0.87	-1.35	no	-0.05	-1.82
Netherlands	Canada	1998	2001	3.12	6.52	0.40	5.69	0.11	-1.14	-1.41	no	-0.02	-0.43
Netherlands	Canada	1999	2002	4.20	11.44	0.25	4.57	0.09	-1.68	-2.45	no	-0.15	-3.91
Netherlands	Japan	1995	1998	1.89	4.94	1.63	12.02	0.29	-1.49	-0.44	no	-0.02	-0.22
Netherlands	Japan	1996	1999	-2.62	-1.67	3.32	5.42	0.16	-0.84	-2.48	no	-0.15	-2.53
Netherlands	Japan	1997	2000	5.23	3.04	0.27	0.39	0.07	-0.51	-1.25	no	-0.05	-1.48
Netherlands	Japan	1998	2001	7.20	3.80	-0.56	-0.72	0.08	-0.93	-1.67	no	-0.05	-1.42
Netherlands	Japan	1999	2002	4.68	1.26	0.49	0.32	0.08	-1.28	-2.52	no	-0.11	-2.85
Netherlands	Switzerland	1995	1998	0.55	0.97	1.22	10.44	0.15	-2.59	-3.17	yes	-0.14	-1.95
Netherlands	Switzerland	1996	1999	2.33	4.44	0.80	6.83	0.21	-1.16	-2.57	no	-0.19	-3.01
Netherlands	Switzerland	1997	2000	2.79	2.72	0.74	3.03	0.09	-0.95	-1.89	no	-0.09	-2.25
Netherlands	Switzerland	1998	2001	1.74	1.23	0.98	2.90	0.10	-0.89	-1.92	no	-0.15	-3.01
Netherlands	Switzerland	1999	2002	2.02	1.51	0.93	2.85	0.12	-1.55	-2.91	no	-0.31	-5.85
Netherlands	United Kingdom	1995	1998	-0.31	-0.27	0.92	5.87	0.35	-2.52		no	-0.22	-2.33
Netherlands	United Kingdom	1996	1999	1.52	1.66	0.63	4.76	0.15	-1.72	-1.83	no	-0.17	-3.03
Netherlands	United Kingdom	1997	2000	3.14	3.16	0.41	2.78	0.07	-0.02	-0.85	no	-0.04	-1.18
Netherlands	United Kingdom	1998	2001	4.65	5.97	0.18	1.52	0.06	-0.84	-1.45	no	-0.05	-1.44
Netherlands	United Kingdom	1999	2002	3.33	5.20	0.42	3.97	0.08	-1.68	-2.17	no	-0.15	-3.61
Netherlands	USA	1995	1998	-4.31	-2.56	1.45	6.38	0.07	-1.95		no	-0.07	-1.64
Netherlands	USA	1996	1999	-1.88	-1.89	1.07	7.80	0.21	-2.07	-2.54	no	-0.15	-2.18
Netherlands	USA	1997	2000	-3.18	-2.81	1.26	8.04	0.19	-1.36	-2.00	no	-0.12	-1.80
Netherlands	USA	1998	2001	-5.80	-4.83	1.65	9.69	0.29	-1.89		no	-0.10	-1.23
Netherlands	USA	1999	2002	0.99	0.99	0.70	4.87	0.11	-1.70	-2.52	no	-0.12	-2.38
Portugal	Austria	1995	1998	-8.48	-4.96	2.75	10.92	0.05	-0.25	-0.77	no	-0.02	-0.55
Portugal	Austria	1996	1999	-15.33	-10.00	3.87	15.40	0.12	-1.16	-1.73	no	-0.07	-1.44
Portugal	Austria	1997	2000	-10.23	-4.71	2.90	7.87	0.05	-1.21	-2.65	no	-0.16	-4.15
Portugal	Austria	1998	2001	-2.95	-4.27	1.52	12.90	0.17	-3.55	-2.03	yes	-0.10	-1.01
Portugal	Austria	1999	2002	-2.40	-5.76	1.39	19.12	0.28	-1.83		no	-0.18	-2.22
Portugal	Belgium	1995	1998	-0.86	-0.63	1.75	8.04	0.06	-0.57	-0.88	no	-0.05	-1.35
Portugal	Belgium	1996	1999	-8.79	-2.82	3.02	5.46	0.10	0.09	-0.59	no	0.03	0.55
Portugal	Belgium	1997	2000	8.20	3.32	-0.24	-0.56	0.01	-3.61	-3.50	yes	-0.07	-3.90

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Portugal	Belgium	1998	2001	3.96	4.14	0.33	2.06	0.05	-2.46	-1.74	no	-0.05	-1.21
Portugal	Belgium	1999	2002	1.09	1.61	0.73	6.59	0.12	-1.77	-2.91	no	-0.08	-1.34
Portugal	Finland	1995	1998	-0.49	-0.43	1.62	9.36	0.04	0.15	-0.76	no	-0.02	-0.79
Portugal	Finland	1996	1999	-9.27	-6.80	3.13	12.89	0.09	-0.96	-1.63	no	-0.04	-0.89
Portugal	Finland	1997	2000	-3.53	-1.66	1.92	4.90	0.03	-2.44	-2.70	no	-0.14	-5.04
Portugal	Finland	1998	2001	0.10	0.17	1.09	10.33	0.14	-3.29		no	-0.23	-1.96
Portugal	Finland	1999	2002	0.79	3.47	0.93	20.92	0.39	-2.40		yes	-0.20	-1.43
Portugal	France	1995	1998	-8.40	-15.27	2.27	33.84	0.46	-2.37	-2.56	yes	-0.21	-2.24
Portugal	France	1996	1999	-9.25	-19.73	2.39	37.52	0.66	-3.09	-2.94	yes	-0.36	-2.91
Portugal	France	1997	2000	-10.74	-13.48	2.58	22.14	0.50	-2.69	-3.08	yes	-0.34	-2.96
Portugal	France	1998	2001	-5.00	-6.87	1.67	15.05	0.64	-3.18		yes	-0.35	-2.76
Portugal	France	1999	2002	-3.95	-7.07	1.49	17.00	0.72	-3.31	-3.23	yes	-0.34	-2.79
Portugal	Germany	1995	1998	-4.46	-3.23	2.30	10.64	0.08	-1.59	-2.25	no	-0.10	-2.42
Portugal	Germany	1996	1999	-10.78	-4.95	3.31	8.74	0.12	-0.37	-1.41	no	-0.08	-1.06
Portugal	Germany	1997	2000	1.81	0.71	0.88	1.99	0.02	-3.09	-2.38	no	-0.05	-2.04
Portugal	Germany	1998	2001	3.29	3.07	0.47	2.48	0.06	-2.30	-1.59	no	0.00	-0.05
Portugal	Germany	1999	2002	2.05	2.47	0.61	4.20	0.10	-1.31	-2.52	no	-0.03	-0.59
Portugal	Ireland	1995	1998	2.27	0.43	1.09	1.49	0.02	-0.51	-0.70	no	-0.01	-0.82
Portugal	Ireland	1996	1999	-1.59	-0.80	1.50	4.95	0.04	-1.54	-1.39	no	-0.09	-3.07
Portugal	Ireland	1997	2000	-0.09	-0.09	1.13	7.18	0.06	-2.78	-2.46	no	-0.14	-3.09
Portugal	Ireland	1998	2001	2.40	5.92	0.62	8.83	0.15	-1.92		no	-0.08	-1.45
Portugal	Ireland	1999	2002	0.93	2.03	0.91	10.09	0.25	-1.93		no	-0.21	-2.59
Portugal	Italy	1995	1998	-0.94	-2.41	0.98	28.79	0.31	-4.47		yes	-0.28	-2.52
Portugal	Italy	1996	1999	-0.13	-0.74	0.90	50.33	0.41	-2.26		yes	-0.33	-3.24
Portugal	Italy	1997	2000	0.19	0.79	0.87	29.05	0.21	-0.88	-1.00	no	-0.25	-2.49
Portugal	Italy	1998	2001	1.21	3.34	0.71	13.22	0.24	-1.64	-2.01	no	-0.19	-2.13
Portugal	Italy	1999	2002	-2.05	-3.92	1.24	14.49	0.59	-2.81		yes	-0.28	-2.58
Portugal	Netherlands	1995	1998	-5.70	-3.36	2.45	9.36	0.08	-0.99	-1.55	no	-0.06	-1.57
Portugal	Netherlands	1996	1999	-14.65	-5.66	3.87	8.84	0.15	-0.52	-1.73	no	-0.03	-0.39
Portugal	Netherlands	1997	2000	-0.87	-0.31	1.30	2.75	0.02	-3.27	-2.53	no	-0.05	-1.88
Portugal	Netherlands	1998	2001	2.07	1.73	0.66	3.24	0.06	-2.39	-2.15	no	0.01	0.18
Portugal	Netherlands	1999	2002	0.95	1.06	0.78	5.09	0.08	-1.16	-1.73	no	-0.01	-0.16
Portugal	Spain	1995	1998	1.67	3.97	1.00	20.68	0.06	-0.42	-2.12	no	0.00	0.10
Portugal	Spain	1996	1999	-0.57	-1.33	1.28	21.34	0.05	-1.39	-1.80	no	-0.01	-0.39
Portugal	Spain	1997	2000	-4.60	-9.62	1.95	24.16	0.12	-0.55		no	-0.03	-0.56
Portugal	Spain	1998	2001	-1.15	-2.43	1.28	15.00	0.13	-2.94		no	-0.18	-2.59
Portugal	Spain	1999	2002	-0.24	-1.37	1.09	32.60	0.64	-3.34		yes	-0.34	-2.80
Portugal	Australia	1995	1998	-0.65	-0.88	1.26	14.72	0.09	-0.27	-1.05	no	-0.01	-0.22
Portugal	Australia	1996	1999	-3.62	-3.06	1.56	10.13	0.06	-0.32	-1.07	no	-0.01	-0.21
Portugal	Australia	1997	2000	-0.88	-0.27	1.09	2.39	0.02	-1.56	-2.36	no	-0.01	-0.23
Portugal	Australia	1998	2001	2.05	1.55	0.56	2.95	0.05	-3.44		yes	-0.03	-0.80
Portugal	Australia	1999	2002	-0.05	-0.07	0.81	8.01	0.12	-0.92		no	-0.01	-0.25
Portugal	Canada	1995	1998	4.40	2.51	0.85	3.29	0.03	1.11	-0.11	no	0.01	0.33
Portugal	Canada	1996	1999	22.17	6.93	-2.24	-4.40	0.09	-2.43	-2.28	no	-0.14	-2.78
Portugal	Canada	1997	2000	16.64	11.57	-1.47	-6.89	0.09	-1.15	-1.30	no	-0.08	-1.70
Portugal	Canada	1998	2001	5.25	5.50	0.10	0.71	0.05	-2.55	-1.87	no	-0.04	-1.11
Portugal	Canada	1999	2002	3.61	7.23	0.29	3.88	0.08	-0.83	-1.69	no	0.03	0.59
Portugal	Japan	1995	1998	1.78	0.89	2.97	4.18	0.04	0.32	-0.90	no	0.00	0.00
Portugal	Japan	1996	1999	-42.44	-6.67	19.75	7.96	0.10	-1.68		no	-0.14	-2.50
Portugal	Japan	1997	2000	-24.46	-6.42	12.47	8.22	0.13	-2.26		no	-0.20	-2.90
Portugal	Japan	1998	2001	-7.43	-3.44	5.45	6.19	0.17	-1.80		no	-0.14	-2.12
Portugal	Japan	1999	2002	-11.82	-2.88	7.23	4.23	0.19	-1.55		no	-0.09	-1.34
Portugal	Switzerland	1995	1998	-10.69	-15.97	4.29	31.20	0.18	-0.76	-1.19	no	-0.04	-0.61
Portugal	Switzerland	1996	1999	-15.88	-22.85	5.42	34.78	0.27	-2.21	-2.90	no	-0.25	-2.63
Portugal	Switzerland	1997	2000	-17.93	-13.32	5.87	18.42	0.23	-1.25	-1.90	no	-0.19	-2.11
Portugal	Switzerland	1998	2001	-5.65	-3.47	2.79	7.11	0.13	-1.88	-1.79	no	-0.05	-0.79
Portugal	Switzerland	1999	2002	-5.65	-6.02	2.71	11.92	0.32	-2.07		no	-0.24	-2.83
Portugal	United Kingdom	1995	1998	0.05	0.01	1.37	2.30	0.06	-0.44		no	-0.08	-1.84
Portugal	United Kingdom	1996	1999	-7.91	-1.60	2.33	3.26	0.04	-1.39	-1.34	no	-0.05	-1.54
Portugal	United Kingdom	1997	2000	-8.99	-3.09	2.32	5.46	0.09	-1.72	-2.34	no	-0.08	-1.75
Portugal	United Kingdom	1998	2001	2.88	2.52	0.47	2.69	0.07	-1.97	-2.11	no	-0.03	-0.86
Portugal	United Kingdom	1999	2002	3.83	4.11	0.29	1.83	0.06	-0.62	-2.55	no	-0.03	-0.78
Portugal	USA	1995	1998	-25.11	-5.34	4.73	7.49	0.11	-1.00	-1.47	no	-0.06	-1.20
Portugal	USA	1996	1999	-32.13	-7.24	5.55	9.09	0.15	-2.55		no	-0.11	-1.21
Portugal	USA	1997	2000	-20.93	-4.66	3.84	6.19	0.07	-1.75	-1.89	no	-0.10	-1.67
Portugal	USA	1998	2001	1.51	0.48	0.63	1.41	0.06	-2.39	-1.97	no	-0.01	-0.30
Portugal	USA	1999	2002	-0.05	-0.04	0.81	4.06	0.08	-0.94	-1.62	no	-0.06	-1.87
Spain	Austria	1995	1998	-10.71	-8.80	2.84	15.81	0.08	-1.94	-1.80	no	0.00	-0.03
Spain	Austria	1996	1999	-10.46	-8.70	2.85	14.43	0.09	-1.42		no	-0.10	-2.15
Spain	Austria	1997	2000	-3.83	-4.76	1.65	12.06	0.10	-2.39		no	-0.15	-2.46
Spain	Austria	1998	2001	-1.41	-5.63	1.19	27.89	0.53	-2.79		yes	-0.28	-2.43
Spain	Austria	1999	2002	-1.98	-6.52	1.28	24.06	0.34	-1.30		no	-0.17	-1.62
Spain	Belgium	1995	1998	-3.02	-2.73	1.84	10.48	0.11	-2.04		no	-0.05	-0.91
Spain	Belgium	1996	1999	-7.69	-3.73	2.58	7.07	0.15	-0.76		no	-0.06	-0.65
Spain	Belgium	1997	2000	4.91	4.05	0.16	0.77	0.02	-4.08	-1.97	yes	-0.04	-2.01
Spain	Belgium	1998	2001	2.66	4.66	0.48	5.06	0.08	-1.40	-1.85	no	0.04	1.16
Spain	Belgium	1999	2002	0.87	1.61	0.74	8.31	0.14	-1.52	-2.68	no	-0.07	-1.14
Spain	Finland	1995	1998	-2.85	-3.62	1.74	14.58	0.06	-1.35	-1.53	no	-0.02	-0.58
Spain	Finland	1996	1999	-6.69	-7.93	2.43	16.15	0.11	-1.20	-1.63	no	-0.10	-1.92
Spain	Finland	1997	2000	-0.60	-0.69	1.19	7.46	0.05	-4.01	-2.25	yes	-0.20	-4.34
Spain	Finland	1998	2001	0.86	3.45	0.88	18.97	0.35	-2.32		no	-0.19	-1.99
Spain	Finland	1999	2002	1.02	5.26	0.84	22.36	0.41	-2.28	-3.04	yes	-0.13	-1.30
Spain	France	1995	1998	-9.20	-17.86	2.17	34.50	0.46	-2.40	-2.62	yes	-0.27	-2.61
Spain	France	1996	1999	-5.95	-12.52	1.75	27.12	0.35	-2.56	-2.95	yes	-0.24	-2.50
Spain	France	1997	2000	-2.97	-9.63	1.29	28.74	0.89	-4.29	-3.80	yes	-0.51	-3.54
Spain	France	1998	2001	-2.38	-5.05	1.21	16.81	0.79	-3.36	-3.61	yes	-0.43	-3.27
Spain	France	1999	2002	-3.44	-8.17	1.38	20.85	0.95	-3.54	-3.65	yes	-0.44	-3.13

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Spain	Germany	1995	1998	-5.70	-4.57	2.24	11.43	0.11	-2.45	-2.42	no	-0.04	-0.86
Spain	Germany	1996	1999	-7.34	-4.57	2.47	8.86	0.12	-1.61	-2.30	no	-0.04	-0.63
Spain	Germany	1997	2000	2.06	1.75	0.66	3.24	0.03	-3.41	-2.31	yes	0.03	0.73
Spain	Germany	1998	2001	2.62	3.82	0.52	4.26	0.08	-1.26	-1.97	no	0.05	1.39
Spain	Germany	1999	2002	1.78	2.51	0.62	5.00	0.09	-1.03	-2.06	no	0.01	0.09
Spain	Ireland	1995	1998	-1.00	-0.20	1.31	1.91	0.02	-0.87	-1.34	no	-0.02	-0.73
Spain	Ireland	1996	1999	0.97	0.60	0.90	3.65	0.03	-2.85	-2.19	no	-0.05	-1.68
Spain	Ireland	1997	2000	2.69	5.17	0.52	6.17	0.07	-3.00	-2.19	no	-0.13	-2.89
Spain	Ireland	1998	2001	3.74	9.57	0.31	4.66	0.07	-0.92	-1.42	no	-0.09	-2.92
Spain	Ireland	1999	2002	1.51	3.15	0.75	7.97	0.19	-1.84	-2.33	no	-0.30	-4.07
Spain	Italy	1995	1998	-1.69	-3.02	0.91	18.43	0.10	-1.31	-1.12	no	-0.15	-2.08
Spain	Italy	1996	1999	0.84	3.12	0.64	23.19	0.09	-2.25	-1.80	no	-0.07	-1.43
Spain	Italy	1997	2000	2.80	12.91	0.40	14.49	0.07	-0.02	-0.51	no	-0.04	-0.95
Spain	Italy	1998	2001	2.93	7.18	0.39	6.46	0.06	-0.99	-1.30	no	-0.08	-2.97
Spain	Italy	1999	2002	-1.66	-3.91	1.14	16.44	0.54	-2.80	-2.04	yes	-0.45	-3.70
Spain	Netherlands	1995	1998	-6.85	-4.37	2.37	9.81	0.10	-1.76	-1.96	no	-0.05	-1.11
Spain	Netherlands	1996	1999	-9.50	-4.65	2.77	8.01	0.13	-1.59	-2.63	no	0.02	0.23
Spain	Netherlands	1997	2000	0.67	0.52	0.88	4.05	0.04	-3.89	-2.65	yes	-0.08	-2.33
Spain	Netherlands	1998	2001	1.57	2.12	0.68	5.39	0.08	-1.29	-2.05	no	0.06	1.73
Spain	Netherlands	1999	2002	0.75	0.99	0.78	6.02	0.09	-0.90	-1.84	no	0.00	0.09
Spain	Portugal	1995	1998	-0.69	-1.53	0.91	20.68	0.06	-0.64	-2.51	no	-0.06	-1.99
Spain	Portugal	1996	1999	1.03	3.61	0.71	21.34	0.05	-2.40	-2.18	no	-0.09	-2.53
Spain	Portugal	1997	2000	2.61	18.82	0.47	24.16	0.13	-0.84	-1.20	no	-0.13	-2.31
Spain	Portugal	1998	2001	1.69	6.52	0.65	15.00	0.13	-2.10		no	-0.13	-2.47
Spain	Portugal	1999	2002	0.44	2.89	0.88	32.60	0.63	-3.27		yes	-0.34	-2.49
Spain	Australia	1995	1998	-2.62	-8.15	1.30	35.00	0.33	-1.85	-2.21	no	-0.11	-1.17
Spain	Australia	1996	1999	-3.22	-6.60	1.33	20.91	0.17	-1.09	-0.44	no	-0.12	-1.88
Spain	Australia	1997	2000	-0.29	-0.20	0.87	4.30	0.03	-1.49	-1.59	no	-0.03	-0.83
Spain	Australia	1998	2001	1.39	1.69	0.60	5.07	0.06	-2.08	-2.02	no	0.01	0.16
Spain	Australia	1999	2002	0.38	0.59	0.72	7.66	0.10	-0.35		no	0.03	0.57
Spain	Canada	1995	1998	1.00	0.67	1.12	5.09	0.05	-0.24		no	0.02	0.69
Spain	Canada	1996	1999	12.80	4.76	-0.96	-2.24	0.03	-3.50	-2.71	yes	-0.11	-2.99
Spain	Canada	1997	2000	9.50	11.16	-0.55	-4.34	0.06	-1.28		no	-0.05	-1.29
Spain	Canada	1998	2001	4.64	6.91	0.13	1.34	0.05	-1.40	-2.01	no	-0.02	-0.82
Spain	Canada	1999	2002	3.63	7.99	0.26	3.77	0.06	-0.55	-1.30	no	0.03	0.85
Spain	Japan	1995	1998	0.06	0.03	3.00	4.53	0.05	-0.42	-1.67	no	-0.03	-1.24
Spain	Japan	1996	1999	-25.75	-4.69	12.71	5.94	0.06	-2.51		no	-0.06	-1.30
Spain	Japan	1997	2000	-8.22	-3.92	5.61	6.71	0.10	-2.40		no	-0.17	-3.00
Spain	Japan	1998	2001	-0.17	-0.09	2.33	3.00	0.07	-0.91	-1.33	no	-0.06	-1.68
Spain	Japan	1999	2002	-8.14	-2.10	5.61	3.47	0.14	-1.29		no	-0.08	-1.31
Spain	Switzerland	1995	1998	-11.45	-19.67	4.11	34.37	0.23	-1.90	-2.83	no	-0.15	-2.16
Spain	Switzerland	1996	1999	-10.86	-16.64	3.98	27.22	0.20	-1.53	-3.57	yes	-0.23	-3.19
Spain	Switzerland	1997	2000	-6.63	-12.29	2.96	23.18	0.40	-2.54	-3.37	yes	-0.21	-2.19
Spain	Switzerland	1998	2001	-4.34	-5.15	2.38	11.74	0.24	-0.89	-1.98	no	-0.16	-1.77
Spain	Switzerland	1999	2002	-4.87	-5.94	2.47	12.44	0.26	-1.77	-2.81	no	-0.42	-4.54
Spain	United Kingdom	1995	1998	-1.89	-0.46	1.41	2.51	0.07	-0.72		no	-0.03	-0.61
Spain	United Kingdom	1996	1999	-1.06	-0.27	1.14	2.02	0.02	-3.10	-2.33	no	-0.06	-2.03
Spain	United Kingdom	1997	2000	-1.70	-1.16	1.11	5.18	0.08	-1.68	-1.91	no	-0.02	-0.41
Spain	United Kingdom	1998	2001	4.76	5.49	0.12	0.90	0.05	-1.03	-1.96	no	-0.03	-1.41
Spain	United Kingdom	1999	2002	3.60	4.32	0.29	2.07	0.05	-0.42	-1.56	no	0.00	-0.02
Spain	USA	1995	1998	-16.71	-3.01	3.38	4.53	0.05	-0.68	-0.94	no	-0.04	-1.49
Spain	USA	1996	1999	-17.67	-4.24	3.38	5.88	0.08	-3.45	-4.50	yes	-0.09	-1.31
Spain	USA	1997	2000	-8.78	-4.22	2.03	7.04	0.12	-2.17	-2.23	no	0.03	0.38
Spain	USA	1998	2001	0.77	0.36	0.68	2.18	0.07	-1.29	-1.81	no	0.01	0.20
Spain	USA	1999	2002	0.09	0.07	0.76	4.28	0.08	-0.93	-1.86	no	-0.01	-0.47
Australia	Austria	1995	1998	-5.44	-5.03	2.07	12.98	0.11	-1.46	-2.29	no	-0.07	-1.44
Australia	Austria	1996	1999	-2.98	-2.32	1.73	8.22	0.08	-1.29	-2.47	no	-0.11	-2.51
Australia	Austria	1997	2000	3.07	3.73	0.68	4.85	0.13	-1.35	-1.04	no	-0.07	-1.75
Australia	Austria	1998	2001	3.24	3.57	0.64	4.11	0.09	-0.67		no	-0.09	-1.34
Australia	Austria	1999	2002	1.57	1.81	0.93	6.13	0.10	-1.12		no	-0.10	-1.63
Australia	Belgium	1995	1998	0.05	0.05	1.36	9.75	0.11	-1.73		no	-0.06	-1.18
Australia	Belgium	1996	1999	-3.22	-2.28	1.92	7.66	0.20	-1.39		no	-0.16	-2.07
Australia	Belgium	1997	2000	3.55	6.51	0.61	6.43	0.17	-3.40	-3.12	yes	-0.15	-2.15
Australia	Belgium	1998	2001	3.64	6.99	0.56	6.39	0.16	-0.58		no	-0.03	-0.41
Australia	Belgium	1999	2002	3.26	4.61	0.60	5.13	0.11	-1.24	-2.41	no	-0.07	-1.31
Australia	Finland	1995	1998	0.33	0.47	1.26	11.98	0.09	-1.20	-1.76	no	-0.15	-2.98
Australia	Finland	1996	1999	-1.08	-1.22	1.55	9.83	0.10	-1.21	-2.00	no	-0.08	-1.45
Australia	Finland	1997	2000	3.47	5.86	0.66	6.04	0.18	-2.42	-1.66	no	-0.14	-2.48
Australia	Finland	1998	2001	3.16	6.57	0.71	7.95	0.18	-1.89	-2.02	no	-0.22	-2.59
Australia	Finland	1999	2002	2.96	7.75	0.77	10.36	0.23	-1.40	-1.82	no	-0.14	-1.75
Australia	France	1995	1998	-4.33	-6.58	1.58	19.68	0.32	-1.83	-2.46	no	-0.19	-2.36
Australia	France	1996	1999	-0.55	-0.77	1.11	11.43	0.17	-1.62	-2.61	no	-0.14	-2.12
Australia	France	1997	2000	4.53	6.15	0.37	3.42	0.13	-1.00	-1.06	no	-0.08	-1.86
Australia	France	1998	2001	2.68	2.44	0.65	3.90	0.15	-1.41		no	-0.27	-3.53
Australia	France	1999	2002	-0.41	-0.45	1.15	7.91	0.30	-1.93		no	-0.20	-2.51
Australia	Germany	1995	1998	-1.80	-1.74	1.63	10.08	0.11	-1.74	-1.87	no	-0.06	-1.25
Australia	Germany	1996	1999	-1.90	-1.50	1.65	7.48	0.12	-2.01	-2.26	no	-0.14	-2.24
Australia	Germany	1997	2000	3.19	5.68	0.67	6.87	0.23	-2.42	-2.05	no	-0.11	-1.59
Australia	Germany	1998	2001	2.81	5.25	0.73	7.78	0.25	-1.41		no	-0.10	-1.22
Australia	Germany	1999	2002	2.80	4.04	0.72	5.89	0.17	-1.54	-2.04	no	-0.11	-1.61
Australia	Ireland	1995	1998	4.26	1.11	0.59	1.12	0.02	-0.99	-1.13	no	-0.02	-0.75
Australia	Ireland	1996	1999	5.40	4.24	0.33	1.70	0.03	-2.55	-3.04	no	-0.14	-4.91
Australia	Ireland	1997	2000	7.23	16.77	-0.03	-0.47	0.10	-1.54	-1.16	no	-0.06	-1.48
Australia	Ireland	1998	2001	7.05	14.81	-0.02	-0.21	0.09	-0.40	-1.19	no	-0.02	-0.34
Australia	Ireland	1999	2002	4.35	6.44	0.50	3.75	0.11	-1.45		no	-0.10	-1.36
Australia	Italy	1995	1998	1.15	2.18	0.66	14.23	0.11	-1.35	-1.06	no	-0.08	-1.40
Australia	Italy	1996	1999	3.80	10.23	0.40	10.52	0.07	-1.36	-1.93	no	-0.08	-1.72

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Australia	Italy	1997	2000	6.71	21.58	0.04	1.08	0.10	-1.09	-0.99	no	-0.08	-1.99
Australia	Italy	1998	2001	6.88	12.16	0.01	0.13	0.08	-0.44	-1.19	no	-0.05	-1.13
Australia	Italy	1999	2002	2.87	2.86	0.66	4.01	0.10	-1.19	-1.51	no	-0.05	-0.96
Australia	Netherlands	1995	1998	-2.42	-1.84	1.70	8.40	0.10	-1.37		no	-0.05	-1.09
Australia	Netherlands	1996	1999	-2.69	-1.60	1.74	6.11	0.11	-1.89		no	-0.13	-2.23
Australia	Netherlands	1997	2000	2.67	4.10	0.74	6.70	0.21	-2.76	-2.16	no	-0.12	-1.82
Australia	Netherlands	1998	2001	1.86	3.23	0.87	8.88	0.25	-1.73		no	-0.08	-0.91
Australia	Netherlands	1999	2002	1.81	2.42	0.86	6.76	0.17	-1.45		no	-0.10	-1.52
Australia	Portugal	1995	1998	1.92	4.17	0.66	14.72	0.10	-0.78	-1.57	no	-0.09	-1.75
Australia	Portugal	1996	1999	3.93	10.54	0.44	10.13	0.08	-1.46	-2.29	no	-0.10	-2.06
Australia	Portugal	1997	2000	6.35	21.34	0.10	2.39	0.10	-0.84	-1.01	no	-0.19	-3.31
Australia	Portugal	1998	2001	5.26	9.10	0.29	2.95	0.08	-1.20		no	-0.18	-2.84
Australia	Portugal	1999	2002	2.91	5.83	0.72	8.01	0.14	-1.38		no	-0.13	-1.50
Australia	Spain	1995	1998	2.26	12.19	0.74	35.00	0.34	-2.02	-2.28	no	-0.15	-1.88
Australia	Spain	1996	1999	2.91	12.64	0.68	20.91	0.19	-1.29	-1.24	no	-0.12	-2.12
Australia	Spain	1997	2000	5.11	11.29	0.33	4.30	0.11	-0.68	-0.96	no	-0.18	-3.58
Australia	Spain	1998	2001	3.62	5.49	0.60	5.07	0.10	-1.28		no	-0.05	-0.86
Australia	Spain	1999	2002	2.72	5.00	0.78	7.66	0.13	-1.09		no	-0.06	-0.83
Australia	Canada	1995	1998	2.82	2.53	0.86	5.20	0.06	-0.52	-0.81	no	-0.01	-0.29
Australia	Canada	1996	1999	8.77	4.35	-0.20	-0.62	0.03	-2.84	-3.37	yes	-0.16	-5.78
Australia	Canada	1997	2000	5.70	9.68	0.20	2.28	0.11	-2.64	-1.21	no	-0.02	-0.32
Australia	Canada	1998	2001	3.29	7.83	0.54	8.79	0.24	-1.62	-2.04	no	-0.13	-1.54
Australia	Canada	1999	2002	3.93	12.45	0.45	9.47	0.23	-1.63	-2.01	no	-0.06	-0.74
Australia	Japan	1995	1998	2.55	1.76	2.14	4.17	0.05	-0.56	-1.58	no	-0.01	-0.45
Australia	Japan	1996	1999	-8.09	-1.73	6.10	3.35	0.05	-2.27	-2.61	no	-0.14	-3.40
Australia	Japan	1997	2000	8.35	4.63	-0.53	-0.73	0.10	-1.62	-1.09	no	-0.06	-1.43
Australia	Japan	1998	2001	7.97	3.82	-0.41	-0.49	0.09	-0.40	-1.24	no	-0.02	-0.34
Australia	Japan	1999	2002	-5.47	-1.31	5.15	2.96	0.12	-1.71	-1.46	no	-0.06	-1.14
Australia	Switzerland	1995	1998	-5.94	-7.85	2.99	19.24	0.22	-1.60	-2.24	no	-0.17	-2.41
Australia	Switzerland	1996	1999	-3.91	-4.27	2.58	12.56	0.15	-1.23	-2.28	no	-0.14	-2.15
Australia	Switzerland	1997	2000	2.73	2.74	1.02	4.33	0.12	-0.93	-1.02	no	-0.08	-1.94
Australia	Switzerland	1998	2001	2.04	1.34	1.18	3.22	0.09	-0.28		no	0.00	-0.07
Australia	Switzerland	1999	2002	1.36	0.86	1.33	3.47	0.09	-1.06	-1.46	no	-0.08	-1.46
Australia	United Kingdom	1995	1998	2.28	0.71	0.85	1.96	0.06	-0.81		no	-0.03	-0.68
Australia	United Kingdom	1996	1999	5.84	2.01	0.25	0.59	0.03	-2.75	-3.16	no	-0.16	-6.04
Australia	United Kingdom	1997	2000	6.77	5.99	0.04	0.24	0.10	-1.39	-1.07	no	-0.04	-1.03
Australia	United Kingdom	1998	2001	6.34	7.27	0.09	0.70	0.08	-0.60	-1.79	no	-0.03	-0.55
Australia	United Kingdom	1999	2002	3.46	4.59	0.57	4.54	0.12	-1.24	-2.84	no	-0.07	-1.22
Australia	USA	1995	1998	-8.79	-2.02	2.33	3.97	0.05	-0.81	-1.30	no	-0.04	-1.14
Australia	USA	1996	1999	-6.88	-2.07	1.99	4.35	0.07	-3.22	-3.56	yes	-0.21	-4.07
Australia	USA	1997	2000	-1.57	-1.18	1.19	6.45	0.20	-1.22	-1.30	no	-0.08	-1.45
Australia	USA	1998	2001	-5.16	-3.56	1.72	8.37	0.32	-2.11		no	-0.17	-1.96
Australia	USA	1999	2002	-0.05	-0.04	1.00	6.25	0.15	-1.10		no	-0.04	-0.62
Canada	Austria	1995	1998	-2.36	-2.40	1.34	9.24	0.20	-2.10		no	-0.09	-1.25
Canada	Austria	1996	1999	8.89	10.60	-0.43	-3.16	0.25	-1.94	-1.96	no	-0.12	-1.53
Canada	Austria	1997	2000	9.35	5.98	-0.46	-1.72	0.09	-0.94		no	-0.20	-2.91
Canada	Austria	1998	2001	5.82	3.74	0.17	0.65	0.09	0.64		no	0.04	0.81
Canada	Austria	1999	2002	2.12	1.06	0.77	2.20	0.06	-0.43		no	-0.02	-0.42
Canada	Belgium	1995	1998	0.24	0.46	1.03	12.25	0.28	-1.82		no	-0.12	-1.50
Canada	Belgium	1996	1999	5.23	5.44	0.18	1.07	0.19	-1.14	-1.21	no	-0.08	-1.24
Canada	Belgium	1997	2000	0.97	1.15	1.00	6.74	0.17	-2.35		no	-0.12	-1.89
Canada	Belgium	1998	2001	3.81	3.98	0.51	3.17	0.09	1.09		no	0.07	0.99
Canada	Belgium	1999	2002	2.45	1.66	0.67	2.76	0.06	-0.56		no	-0.05	-1.26
Canada	Finland	1995	1998	0.99	1.86	0.87	10.85	0.19	-2.29		no	-0.10	-1.38
Canada	Finland	1996	1999	7.30	10.50	-0.19	-1.51	0.23	-1.56	-1.70	no	-0.11	-1.54
Canada	Finland	1997	2000	6.26	4.94	0.08	0.33	0.08	-1.43		no	-0.11	-2.02
Canada	Finland	1998	2001	3.34	3.48	0.65	3.64	0.09	0.01		no	0.02	0.35
Canada	Finland	1999	2002	0.94	1.01	1.09	5.98	0.08	-0.92		no	-0.07	-1.47
Canada	France	1995	1998	1.53	1.26	0.63	4.25	0.10	-2.69		no	-0.09	-1.49
Canada	France	1996	1999	8.16	14.21	-0.26	-3.36	0.26	-2.02	-2.09	no	-0.17	-2.06
Canada	France	1997	2000	11.53	10.47	-0.71	-4.43	0.13	-0.90		no	-0.05	-0.90
Canada	France	1998	2001	4.24	2.32	0.39	1.41	0.09	0.46	-0.38	no	0.04	0.79
Canada	France	1999	2002	-2.81	-1.32	1.46	4.36	0.09	-0.77		no	-0.04	-0.79
Canada	Germany	1995	1998	-0.28	-0.35	1.10	8.62	0.15	-1.16		no	-0.05	-0.82
Canada	Germany	1996	1999	7.02	8.19	-0.13	-0.90	0.22	-1.28	-1.51	no	-0.07	-0.96
Canada	Germany	1997	2000	3.28	2.79	0.59	2.90	0.08	-1.86		no	-0.12	-2.61
Canada	Germany	1998	2001	1.53	1.68	0.94	5.85	0.11	1.03	-0.33	no	0.12	1.90
Canada	Germany	1999	2002	0.22	0.16	1.10	4.63	0.05	-1.02	-1.27	no	-0.06	-1.81
Canada	Ireland	1995	1998	-1.80	-0.73	1.18	3.45	0.16	-3.62		yes	-0.23	-2.68
Canada	Ireland	1996	1999	8.26	15.86	-0.31	-3.90	0.30	-2.09	-2.19	no	-0.18	-2.22
Canada	Ireland	1997	2000	9.65	18.37	-0.49	-5.78	0.19	-1.64		no	-0.12	-1.56
Canada	Ireland	1998	2001	7.60	10.97	-0.14	-1.14	0.10	0.86	-0.25	no	0.05	0.98
Canada	Ireland	1999	2002	3.53	2.69	0.58	2.27	0.06	-0.62		no	0.01	0.13
Canada	Italy	1995	1998	4.61	5.66	0.18	2.55	0.09	-3.22		no	-0.11	-1.92
Canada	Italy	1996	1999	7.23	26.30	-0.11	-3.72	0.26	-2.05	-2.30	no	-0.16	-1.85
Canada	Italy	1997	2000	9.23	29.12	-0.34	-8.35	0.20	-1.36	-1.62	no	-0.08	-1.23
Canada	Italy	1998	2001	7.72	9.37	-0.14	-1.10	0.10	0.85	-0.09	no	0.05	0.93
Canada	Italy	1999	2002	3.31	1.63	0.52	1.57	0.06	-0.53		no	-0.02	-0.48
Canada	Netherlands	1995	1998	-1.33	-1.49	1.24	9.05	0.16	-1.46	-1.33	no	-0.06	-0.98
Canada	Netherlands	1996	1999	7.59	7.47	-0.23	-1.32	0.23	-1.35	-1.56	no	-0.08	-1.02
Canada	Netherlands	1997	2000	3.65	2.61	0.51	2.18	0.08	-1.68		no	-0.10	-2.04
Canada	Netherlands	1998	2001	0.75	0.70	1.04	5.69	0.13	0.13		no	0.03	0.40
Canada	Netherlands	1999	2002	-0.69	-0.44	1.23	4.57	0.07	-0.84		no	-0.05	-1.23
Canada	Portugal	1995	1998	4.40	6.27	0.22	3.29	0.09	-2.62		no	-0.09	-1.64
Canada	Portugal	1996	1999	7.34	28.51	-0.13	-4.40	0.28	-2.23	-2.35	no	-0.18	-2.04
Canada	Portugal	1997	2000	9.02	25.56	-0.34	-6.89	0.16	-0.84		no	-0.04	-0.73
Canada	Portugal	1998	2001	6.17	6.67	0.11	0.71	0.09	0.47		no	0.13	2.08

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\,r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Canada	Portugal	1999	2002	1.87	1.56	0.84	3.88	0.08	-0.79		no	-0.05	-0.94
Canada	Spain	1995	1998	3.94	7.13	0.32	5.09	0.11	-2.88		no	-0.13	-1.77
Canada	Spain	1996	1999	6.95	21.47	-0.10	-2.24	0.22	-1.70	-1.81	no	-0.10	-1.35
Canada	Spain	1997	2000	9.76	13.55	-0.53	-4.34	0.11	-0.54		no	-0.03	-0.56
Canada	Spain	1998	2001	5.23	4.39	0.29	1.34	0.09	0.42		no	0.03	0.68
Canada	Spain	1999	2002	1.67	1.29	0.91	3.77	0.07	-0.77		no	-0.03	-0.75
Canada	Australia	1995	1998	2.97	4.13	0.43	5.20	0.11	-2.75		no	-0.10	-1.69
Canada	Australia	1996	1999	6.57	12.76	-0.04	-0.62	0.20	-1.29	-1.45	no	-0.07	-0.96
Canada	Australia	1997	2000	3.10	1.97	0.51	2.28	0.09	-2.59		no	-0.25	-3.64
Canada	Australia	1998	2001	-1.29	-1.40	1.17	8.79	0.25	-1.00		no	-0.07	-0.89
Canada	Australia	1999	2002	-3.52	-3.32	1.46	9.47	0.21	-1.25		no	-0.09	-1.20
Canada	Japan	1995	1998	-0.11	-0.17	2.42	10.32	0.36	-2.17		no	-0.13	-1.45
Canada	Japan	1996	1999	15.00	7.48	-3.41	-4.36	0.34	-2.22	-2.32	no	-0.21	-2.43
Canada	Japan	1997	2000	20.95	10.54	-5.69	-7.19	0.29	-1.81		no	-0.20	-2.05
Canada	Japan	1998	2001	9.31	3.04	-1.01	-0.81	0.09	0.81	-0.21	no	0.05	0.93
Canada	Japan	1999	2002	-8.34	-1.06	6.18	1.89	0.09	-0.74		no	-0.02	-0.51
Canada	Switzerland	1995	1998	0.56	0.42	1.26	4.58	0.10	-2.62		no	-0.06	-1.11
Canada	Switzerland	1996	1999	9.19	11.97	-0.66	-3.85	0.27	-2.22	-2.20	no	-0.14	-1.77
Canada	Switzerland	1997	2000	13.78	8.80	-1.69	-4.55	0.12	-0.56	-0.92	no	-0.11	-1.59
Canada	Switzerland	1998	2001	8.09	3.26	-0.31	-0.51	0.09	0.64	-0.28	no	0.01	0.17
Canada	Switzerland	1999	2002	3.75	1.18	0.66	0.86	0.06	-0.42		no	-0.04	-0.85
Canada	United Kingdom	1995	1998	-3.67	-2.03	1.41	5.74	0.45	-3.12	-2.23	yes	-0.29	-2.69
Canada	United Kingdom	1996	1999	9.46	7.58	-0.46	-2.57	0.28	-1.50	-1.72	no	-0.14	-1.69
Canada	United Kingdom	1997	2000	11.70	7.12	-0.74	-3.07	0.14	-1.58		no	-0.10	-1.56
Canada	United Kingdom	1998	2001	3.57	2.97	0.50	2.72	0.09	-0.36		no	-0.01	-0.18
Canada	United Kingdom	1999	2002	-3.01	-3.69	1.60	11.70	0.33	-2.04		no	-0.17	-1.70
Canada	USA	1995	1998	1.71	0.49	0.66	1.41	0.07	-2.87	-1.68	no	-0.11	-2.42
Canada	USA	1996	1999	13.53	9.33	-1.00	-5.02	0.39	-1.88		yes	-0.24	-2.38
Canada	USA	1997	2000	9.27	3.18	-0.36	-0.89	0.09	-1.23		no	-0.08	-1.62
Canada	USA	1998	2001	-13.13	-7.79	2.83	11.85	0.35	-1.48		no	-0.12	-1.07
Canada	USA	1999	2002	-9.29	-6.81	2.29	11.59	0.22	-1.48	-2.13	no	-0.10	-1.34
Japan	Austria	1995	1998	-0.30	-0.89	0.46	9.11	0.23	-2.49	-3.43	yes	-0.13	-1.90
Japan	Austria	1996	1999	1.69	24.26	0.14	12.54	0.30	-2.10		no	-0.16	-1.61
Japan	Austria	1997	2000	1.55	10.36	0.16	6.38	0.15	-1.10		no	-0.07	-1.13
Japan	Austria	1998	2001	1.90	11.56	0.09	3.35	0.15	-1.75		no	-0.13	-2.04
Japan	Austria	1999	2002	2.16	25.78	0.04	2.92	0.46	-3.20		yes	-0.27	-2.56
Japan	Belgium	1995	1998	0.62	3.21	0.35	11.51	0.38	-2.42	-3.57	yes	-0.15	-1.86
Japan	Belgium	1996	1999	2.17	15.18	0.07	2.75	0.08	0.48		no	0.03	0.56
Japan	Belgium	1997	2000	2.85	19.64	-0.06	-2.34	0.11	-1.32		no	-0.07	-1.29
Japan	Belgium	1998	2001	2.74	23.49	-0.05	-2.46	0.18	-1.97		no	-0.16	-2.17
Japan	Belgium	1999	2002	2.39	34.56	0.00	0.18	0.41	-2.88		yes	-0.20	-2.11
Japan	Finland	1995	1998	1.02	4.62	0.27	8.18	0.21	-2.57	-4.62	yes	-0.09	-1.30
Japan	Finland	1996	1999	1.95	28.92	0.11	9.08	0.17	-1.38		no	-0.07	-0.94
Japan	Finland	1997	2000	2.00	13.95	0.10	3.60	0.09	-1.03		no	-0.06	-1.14
Japan	Finland	1998	2001	2.17	17.92	0.05	2.35	0.14	-1.77		no	-0.14	-2.25
Japan	Finland	1999	2002	2.24	45.89	0.03	3.27	0.48	-3.31		yes	-0.27	-2.36
Japan	France	1995	1998	0.95	2.31	0.23	4.49	0.13	-2.94	-4.42	yes	-0.12	-2.18
Japan	France	1996	1999	2.04	31.35	0.07	8.15	0.16	-1.16		no	-0.05	-0.81
Japan	France	1997	2000	1.68	14.61	0.12	7.26	0.18	-1.51		no	-0.06	-0.85
Japan	France	1998	2001	1.76	9.08	0.11	3.61	0.18	-1.63		no	-0.11	-1.52
Japan	France	1999	2002	2.10	20.77	0.05	2.99	0.47	-3.27		yes	-0.29	-2.62
Japan	Germany	1995	1998	0.23	0.94	0.41	10.57	0.29	-1.95	-3.36	yes	-0.10	-1.34
Japan	Germany	1996	1999	2.05	17.98	0.09	4.53	0.11	0.21		no	0.02	0.30
Japan	Germany	1997	2000	2.56	15.72	-0.01	-0.34	0.08	-1.26		no	-0.06	-1.27
Japan	Germany	1998	2001	2.62	18.90	-0.03	-1.23	0.15	-1.87		no	-0.15	-2.31
Japan	Germany	1999	2002	2.42	33.93	0.00	-0.37	0.41	-2.80		yes	-0.19	-2.07
Japan	Ireland	1995	1998	-0.24	-0.28	0.42	3.62	0.16	-4.04	-4.28	yes	-0.32	-3.21
Japan	Ireland	1996	1999	1.97	55.72	0.09	16.96	0.53	-2.66		yes	-0.29	-2.74
Japan	Ireland	1997	2000	1.95	66.07	0.09	19.06	0.69	-3.26	-4.09	yes	-0.39	-3.17
Japan	Ireland	1998	2001	1.97	49.87	0.08	12.43	0.60	-2.90	-3.05	yes	-0.32	-2.82
Japan	Ireland	1999	2002	2.16	44.69	0.05	5.05	0.63	-3.37	-3.71	yes	-0.32	-2.79
Japan	Italy	1995	1998	2.02	7.28	0.07	2.84	0.11	-3.41	-5.00	yes	-0.16	-2.95
Japan	Italy	1996	1999	2.31	75.47	0.03	8.70	0.17	-1.26		no	-0.12	-1.76
Japan	Italy	1997	2000	2.15	63.08	0.05	10.83	0.26	-1.92		no	-0.15	-1.81
Japan	Italy	1998	2001	1.94	32.12	0.08	8.69	0.37	-2.27		no	-0.31	-3.35
Japan	Italy	1999	2002	2.14	26.07	0.04	3.18	0.48	-3.17		yes	-0.27	-2.55
Japan	Netherlands	1995	1998	-0.20	-0.82	0.47	12.02	0.33	-2.26	-3.33	yes	-0.13	-1.71
Japan	Netherlands	1996	1999	1.87	14.60	0.12	5.42	0.14	0.14		no	0.02	0.27
Japan	Netherlands	1997	2000	2.44	13.03	0.01	0.39	0.08	-1.22		no	-0.06	-1.27
Japan	Netherlands	1998	2001	2.57	15.75	-0.02	-0.72	0.14	-1.84		no	-0.15	-2.25
Japan	Netherlands	1999	2002	2.37	28.78	0.00	0.32	0.41	-2.90		yes	-0.20	-2.12
Japan	Portugal	1995	1998	1.86	8.11	0.09	4.18	0.12	-2.81	-4.58	yes	-0.15	-2.89
Japan	Portugal	1996	1999	2.32	73.65	0.03	7.96	0.16	-1.12		no	-0.14	-1.97
Japan	Portugal	1997	2000	2.18	53.31	0.05	8.22	0.19	-1.69		no	-0.11	-1.54
Japan	Portugal	1998	2001	1.96	24.29	0.08	6.19	0.25	-1.76		no	-0.16	-2.10
Japan	Portugal	1999	2002	2.18	42.86	0.04	4.23	0.55	-3.44		yes	-0.34	-2.88
Japan	Spain	1995	1998	1.93	9.71	0.10	4.53	0.13	-3.08	-4.69	yes	-0.12	-1.86
Japan	Spain	1996	1999	2.33	57.28	0.03	5.94	0.12	-0.84		no	-0.04	-0.61
Japan	Spain	1997	2000	1.99	25.63	0.09	6.71	0.15	-1.47		no	-0.07	-1.19
Japan	Spain	1998	2001	2.06	15.83	0.07	3.00	0.16	-1.68		no	-0.14	-2.19
Japan	Spain	1999	2002	2.20	38.64	0.04	3.47	0.51	-3.40		yes	-0.31	-2.72
Japan	Australia	1995	1998	1.70	6.36	0.13	4.17	0.12	-2.89	-4.63	yes	-0.13	-2.50
Japan	Australia	1996	1999	2.32	31.59	0.03	3.35	0.09	-0.24		no	-0.01	-0.18
Japan	Australia	1997	2000	2.66	12.62	-0.02	-0.73	0.08	-1.40		no	-0.06	-1.34
Japan	Australia	1998	2001	2.54	14.30	-0.01	-0.49	0.14	-1.75		no	-0.13	-2.11
Japan	Australia	1999	2002	2.18	30.10	0.03	2.96	0.46	-3.30		yes	-0.18	-1.67
Japan	Canada	1995	1998	0.87	4.63	0.29	10.32	0.37	-2.27	-3.34	yes	-0.18	-2.11

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Japan	Canada	1996	1999	3.10	25.07	-0.09	-4.36	0.20	-1.64		no	-0.11	-1.59
Japan	Canada	1997	2000	3.13	35.95	-0.09	-7.19	0.29	-1.73		no	-0.13	-1.61
Japan	Canada	1998	2001	2.55	21.57	-0.01	-0.81	0.14	-1.66		no	-0.14	-2.09
Japan	Canada	1999	2002	2.32	57.17	0.01	1.89	0.45	-3.03		yes	-0.22	-2.28
Japan	Switzerland	1995	1998	0.57	1.27	0.46	4.98	0.13	-2.87	-4.48	yes	-0.13	-2.28
Japan	Switzerland	1996	1999	1.90	18.98	0.15	6.60	0.14	-1.16		no	-0.06	-0.93
Japan	Switzerland	1997	2000	1.46	7.91	0.25	5.68	0.16	-1.33		no	-0.08	-1.22
Japan	Switzerland	1998	2001	2.11	7.34	0.08	1.18	0.14	-1.71		no	-0.14	-2.18
Japan	Switzerland	1999	2002	2.03	15.88	0.09	2.92	0.50	-3.31		yes	-0.28	-2.56
Japan	United Kingdom	1995	1998	-1.29	-2.35	0.56	7.46	0.74	-4.08		yes	-0.58	-3.69
Japan	United Kingdom	1996	1999	1.52	10.50	0.15	7.23	0.20	-0.78		no	-0.04	-0.54
Japan	United Kingdom	1997	2000	1.39	8.64	0.16	6.96	0.22	-1.48		no	-0.10	-1.43
Japan	United Kingdom	1998	2001	1.83	15.17	0.10	5.18	0.23	-1.83		no	-0.15	-1.87
Japan	United Kingdom	1999	2002	2.36	33.52	0.01	0.54	0.41	-2.88		yes	-0.20	-2.13
Japan	USA	1995	1998	-1.74	-1.67	0.61	4.35	0.12	-2.67	-3.51	yes	-0.13	-2.21
Japan	USA	1996	1999	1.50	6.27	0.15	4.44	0.12	-0.43		no	-0.01	-0.14
Japan	USA	1997	2000	2.04	5.52	0.07	1.27	0.08	-1.13		no	-0.07	-1.55
Japan	USA	1998	2001	2.88	7.32	-0.06	-1.08	0.15	-1.80		no	-0.15	-2.25
Japan	USA	1999	2002	2.26	19.58	0.02	1.16	0.42	-2.95		yes	-0.21	-2.19
Switzerland	Austria	1995	1998	0.26	0.90	0.68	16.06	0.10	-1.46		no	-0.07	-1.24
Switzerland	Austria	1996	1999	0.26	0.86	0.69	13.86	0.14	-1.25	-1.61	no	-0.07	-1.24
Switzerland	Austria	1997	2000	1.33	4.18	0.49	9.10	0.14	-1.78	-2.22	no	-0.18	-2.59
Switzerland	Austria	1998	2001	1.96	9.47	0.38	10.66	0.25	-1.38	-2.35	no	-0.11	-1.57
Switzerland	Austria	1999	2002	1.71	9.60	0.42	13.56	0.40	-1.93	-2.63	yes	-0.20	-2.09
Switzerland	Belgium	1995	1998	2.15	7.81	0.43	9.88	0.14	-1.62		no	-0.08	-1.12
Switzerland	Belgium	1996	1999	1.55	2.65	0.51	4.94	0.12	-0.36		no	-0.04	-0.61
Switzerland	Belgium	1997	2000	4.17	10.52	0.01	0.12	0.04	-2.23	-2.11	no	-0.10	-2.43
Switzerland	Belgium	1998	2001	3.20	14.68	0.16	4.43	0.12	-1.29	-2.32	no	-0.15	-2.59
Switzerland	Belgium	1999	2002	2.87	12.02	0.21	5.29	0.15	-1.21	-2.11	no	-0.08	-1.29
Switzerland	Finland	1995	1998	2.20	10.73	0.41	13.05	0.08	-0.94	-1.59	no	-0.05	-1.00
Switzerland	Finland	1996	1999	1.35	5.07	0.55	11.69	0.12	-0.93	-1.88	no	-0.13	-2.53
Switzerland	Finland	1997	2000	2.35	7.48	0.35	5.99	0.09	-2.44	-2.64	no	-0.23	-3.91
Switzerland	Finland	1998	2001	2.80	15.68	0.25	7.62	0.18	-0.58	-1.49	no	-0.02	-0.32
Switzerland	Finland	1999	2002	2.89	19.17	0.24	8.25	0.20	-1.51	-2.06	no	-0.09	-1.29
Switzerland	France	1995	1998	0.60	6.17	0.52	44.06	0.68	-3.04	-3.02	yes	-0.35	-2.85
Switzerland	France	1996	1999	1.31	12.46	0.43	30.07	0.45	-2.28	-2.45	yes	-0.21	-2.06
Switzerland	France	1997	2000	1.49	9.20	0.40	16.87	0.46	-2.39	-3.15	yes	-0.25	-2.51
Switzerland	France	1998	2001	1.78	5.99	0.36	8.05	0.26	-1.66	-1.77	no	-0.08	-1.05
Switzerland	France	1999	2002	1.48	5.20	0.42	9.36	0.31	-1.72	-2.18	no	-0.09	-1.13
Switzerland	Germany	1995	1998	1.43	4.94	0.54	11.87	0.14	-2.09	-2.75	no	-0.10	-1.64
Switzerland	Germany	1996	1999	1.28	2.89	0.55	7.18	0.13	-0.81	-2.13	no	-0.01	-0.12
Switzerland	Germany	1997	2000	3.31	8.27	0.16	2.27	0.06	-2.14	-2.40	no	-0.08	-1.81
Switzerland	Germany	1998	2001	3.51	12.54	0.11	2.31	0.09	-1.02	-1.82	no	-0.07	-1.40
Switzerland	Germany	1999	2002	3.41	11.55	0.13	2.44	0.10	-0.78	-1.62	no	-0.04	-0.72
Switzerland	Ireland	1995	1998	2.56	2.17	0.32	1.94	0.03	-1.19	-1.28	no	-0.02	-0.82
Switzerland	Ireland	1996	1999	2.86	7.51	0.24	4.18	0.04	-2.00	-1.76	no	-0.06	-1.77
Switzerland	Ireland	1997	2000	3.26	18.41	0.16	5.51	0.10	-2.04	-2.21	no	-0.17	-2.84
Switzerland	Ireland	1998	2001	3.69	23.31	0.08	2.98	0.08	-0.75	-1.30	no	-0.06	-1.52
Switzerland	Ireland	1999	2002	2.73	16.80	0.28	8.69	0.34	-2.39		no	-0.26	-2.48
Switzerland	Italy	1995	1998	2.41	18.49	0.22	18.98	0.20	-2.42	-1.90	no	-0.17	-1.99
Switzerland	Italy	1996	1999	2.96	52.93	0.16	27.47	0.31	-2.33		no	-0.19	-2.29
Switzerland	Italy	1997	2000	3.28	39.19	0.12	11.64	0.13	-0.34	-1.05	no	-0.10	-1.49
Switzerland	Italy	1998	2001	3.46	19.54	0.11	4.01	0.08	-0.91	-1.23	no	-0.07	-1.78
Switzerland	Italy	1999	2002	1.66	10.58	0.40	15.79	0.86	-3.64		yes	-0.45	-3.67
Switzerland	Netherlands	1995	1998	1.12	3.12	0.58	10.44	0.13	-1.61	-2.20	no	-0.05	-0.94
Switzerland	Netherlands	1996	1999	0.74	1.36	0.63	6.83	0.14	-0.90	-2.31	no	0.00	-0.04
Switzerland	Netherlands	1997	2000	2.88	6.52	0.23	3.03	0.07	-2.35	-2.63	no	-0.12	-2.42
Switzerland	Netherlands	1998	2001	3.24	10.24	0.16	2.90	0.10	-0.97	-1.86	no	-0.06	-1.02
Switzerland	Netherlands	1999	2002	3.18	9.53	0.16	2.85	0.11	-0.81	-1.75	no	-0.07	-1.19
Switzerland	Portugal	1995	1998	2.60	35.22	0.22	31.20	0.18	-1.01	-1.44	no	-0.08	-1.15
Switzerland	Portugal	1996	1999	2.98	68.24	0.18	34.78	0.28	-2.38	-3.11	no	-0.15	-1.76
Switzerland	Portugal	1997	2000	3.19	55.59	0.15	18.42	0.26	-1.29	-2.11	no	-0.23	-2.80
Switzerland	Portugal	1998	2001	3.04	19.25	0.19	7.11	0.14	-1.02	-1.33	no	-0.07	-1.13
Switzerland	Portugal	1999	2002	2.59	19.85	0.28	11.92	0.34	-2.06		no	-0.12	-1.09
Switzerland	Spain	1995	1998	2.86	48.15	0.23	34.37	0.23	-2.01	-2.95	no	-0.13	-1.71
Switzerland	Spain	1996	1999	2.83	46.01	0.24	27.22	0.21	-1.23	-3.04	no	-0.11	-1.43
Switzerland	Spain	1997	2000	2.40	30.20	0.31	23.18	0.42	-2.38	-3.43	yes	-0.23	-2.56
Switzerland	Spain	1998	2001	2.41	16.09	0.32	11.74	0.25	-0.88	-1.93	no	-0.04	-0.49
Switzerland	Spain	1999	2002	2.47	18.36	0.31	12.44	0.29	-1.87	-2.84	no	-0.12	-1.43
Switzerland	Australia	1995	1998	2.30	17.13	0.30	19.24	0.22	-1.50	-2.25	no	-0.20	-2.61
Switzerland	Australia	1996	1999	2.17	11.89	0.30	12.56	0.14	-0.64	-1.27	no	-0.15	-2.30
Switzerland	Australia	1997	2000	2.22	4.80	0.28	4.33	0.07	-1.23	-2.19	no	-0.08	-1.99
Switzerland	Australia	1998	2001	3.07	9.11	0.16	3.22	0.08	-0.76	-1.47	no	0.05	1.15
Switzerland	Australia	1999	2002	3.06	9.89	0.16	3.47	0.09	-0.46	-1.29	no	-0.02	-0.39
Switzerland	Canada	1995	1998	3.18	8.66	0.25	4.58	0.05	0.01		no	0.00	0.08
Switzerland	Canada	1996	1999	6.73	11.21	-0.37	-3.85	0.08	-2.79	-1.83	no	-0.14	-2.69
Switzerland	Canada	1997	2000	5.44	20.00	-0.18	-4.55	0.09	-0.89	-2.08	no	-0.07	-1.52
Switzerland	Canada	1998	2001	4.28	17.20	-0.02	-0.51	0.07	-0.99	-1.61	no	-0.04	-0.83
Switzerland	Canada	1999	2002	3.97	21.64	0.02	0.86	0.08	-0.45	-1.22	no	0.02	0.51
Switzerland	Japan	1995	1998	2.71	6.26	0.76	4.98	0.06	-0.46	-1.07	no	0.00	-0.03
Switzerland	Japan	1996	1999	-3.96	-3.11	3.28	6.60	0.09	-2.06		no	-0.08	-1.62
Switzerland	Japan	1997	2000	0.05	0.07	1.66	5.68	0.12	-1.81		no	-0.16	-2.58
Switzerland	Japan	1998	2001	3.28	4.38	0.36	1.18	0.07	-0.85	-1.43	no	-0.05	-1.59
Switzerland	Japan	1999	2002	-0.04	-0.02	1.74	2.92	0.16	-1.28		no	-0.08	-1.26
Switzerland	United Kingdom	1995	1998	2.05	2.13	0.38	2.89	0.11	-1.02		no	-0.05	-0.98
Switzerland	United Kingdom	1996	1999	2.39	2.53	0.30	2.16	0.03	-1.66	-1.58	no	-0.03	-0.96
Switzerland	United Kingdom	1997	2000	2.46	4.58	0.26	3.29	0.08	-1.40	-2.71	no	-0.07	-1.48

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Switzerland	United Kingdom	1998	2001	4.81	15.87	-0.10	-2.18	0.08	-1.33	-1.99	no	-0.07	-1.68
Switzerland	United Kingdom	1999	2002	4.23	13.66	-0.02	-0.33	0.07	-0.20	-1.03	no	-0.02	-0.43
Switzerland	USA	1995	1998	-2.21	-1.83	0.95	5.84	0.09	-1.01	-1.45	no	-0.06	-1.44
Switzerland	USA	1996	1999	-2.22	-2.43	0.92	7.28	0.14	-2.72	-3.99	yes	-0.08	-1.04
Switzerland	USA	1997	2000	-0.44	-0.64	0.64	6.78	0.13	-1.71	-2.12	no	-0.13	-1.93
Switzerland	USA	1998	2001	3.76	4.51	0.06	0.48	0.07	-0.92	-1.56	no	-0.06	-1.55
Switzerland	USA	1999	2002	3.12	6.34	0.15	2.04	0.08	-0.75	-1.41	no	-0.05	-1.03
United Kingdom	Austria	1995	1998	4.26	6.99	0.46	5.08	0.75	-3.23		yes	-0.40	-3.24
United Kingdom	Austria	1996	1999	4.13	7.17	0.46	4.82	0.18	-1.98	-2.63	no	-0.15	-2.14
United Kingdom	Austria	1997	2000	2.96	4.26	0.66	5.55	0.17	-0.37	-1.81	no	-0.06	-0.89
United Kingdom	Austria	1998	2001	5.29	4.64	0.20	1.01	0.08	-0.47	-1.70	no	-0.06	-1.31
United Kingdom	Austria	1999	2002	5.16	4.57	0.14	0.70	0.08	-0.25	-0.99	no	-0.01	-0.20
United Kingdom	Belgium	1995	1998	5.19	13.41	0.34	5.61	0.78	-3.30		yes	-0.40	-3.21
United Kingdom	Belgium	1996	1999	5.16	7.39	0.31	2.50	0.15	-1.49		no	-0.08	-1.36
United Kingdom	Belgium	1997	2000	6.60	9.86	0.04	0.33	0.11	-1.05	-1.63	no	-0.05	-0.91
United Kingdom	Belgium	1998	2001	7.39	9.64	-0.16	-1.24	0.11	-0.66	-2.18	no	-0.14	-2.77
United Kingdom	Belgium	1999	2002	4.18	5.09	0.29	2.17	0.07	-0.38	-0.85	no	-0.09	-2.06
United Kingdom	Finland	1995	1998	5.48	14.97	0.28	5.14	0.71	-3.13		yes	-0.55	-4.38
United Kingdom	Finland	1996	1999	5.11	10.76	0.32	3.78	0.16	-1.90	-2.44	no	-0.10	-1.53
United Kingdom	Finland	1997	2000	4.52	7.28	0.43	3.73	0.14	-0.47	-1.25	no	-0.06	-0.99
United Kingdom	Finland	1998	2001	5.19	6.62	0.23	1.61	0.08	-0.64	-1.70	no	-0.09	-1.85
United Kingdom	Finland	1999	2002	3.82	6.40	0.42	3.58	0.09	-0.75	-1.19	no	0.01	0.24
United Kingdom	France	1995	1998	5.82	9.42	0.19	2.46	0.54	-2.79		yes	-0.37	-3.22
United Kingdom	France	1996	1999	5.48	12.39	0.19	3.25	0.16	-1.70	-2.34	no	-0.11	-1.86
United Kingdom	France	1997	2000	3.50	6.40	0.49	6.08	0.22	-1.13	-1.66	no	-0.15	-1.86
United Kingdom	France	1998	2001	3.86	2.92	0.39	1.95	0.10	-0.49	-1.05	no	-0.07	-1.33
United Kingdom	France	1999	2002	2.78	2.15	0.50	2.45	0.11	-0.63	-1.06	no	-0.08	-1.43
United Kingdom	Germany	1995	1998	4.83	10.19	0.40	5.33	0.74	-3.21		yes	-0.36	-3.09
United Kingdom	Germany	1996	1999	4.57	8.11	0.41	4.14	0.17	-1.61	-2.10	no	-0.09	-1.39
United Kingdom	Germany	1997	2000	5.14	7.69	0.29	2.52	0.11	-0.79	-1.31	no	0.01	0.28
United Kingdom	Germany	1998	2001	5.13	5.93	0.23	1.53	0.08	-0.46	-0.94	no	-0.04	-0.99
United Kingdom	Germany	1999	2002	2.65	3.55	0.58	4.42	0.08	-0.97		no	-0.09	-1.67
United Kingdom	Ireland	1995	1998	1.86	1.91	0.76	5.63	0.81	-4.03		yes	-0.58	-4.41
United Kingdom	Ireland	1996	1999	4.74	14.49	0.33	6.69	0.28	-1.52	-2.41	no	-0.09	-1.15
United Kingdom	Ireland	1997	2000	5.09	17.82	0.28	6.14	0.22	-1.38	-2.90	no	-0.15	-2.10
United Kingdom	Ireland	1998	2001	4.77	10.52	0.29	3.76	0.11	-0.64	-2.10	no	-0.07	-1.30
United Kingdom	Ireland	1999	2002	5.63	7.52	0.06	0.42	0.08	-0.26	-1.09	no	0.02	0.45
United Kingdom	Italy	1995	1998	6.73	17.27	0.05	1.56	0.49	-2.71		yes	-0.37	-3.30
United Kingdom	Italy	1996	1999	6.19	28.97	0.08	3.45	0.17	-1.67	-2.27	no	-0.12	-1.86
United Kingdom	Italy	1997	2000	5.50	27.99	0.17	6.91	0.23	-1.48	-2.82	no	-0.20	-2.74
United Kingdom	Italy	1998	2001	4.38	8.22	0.31	3.91	0.12	-0.38	-1.83	no	-0.08	-1.45
United Kingdom	Italy	1999	2002	5.56	4.93	0.06	0.34	0.08	-0.25	-1.00	no	-0.01	-0.19
United Kingdom	Netherlands	1995	1998	4.33	8.44	0.47	5.87	0.78	-3.31		yes	-0.40	-3.25
United Kingdom	Netherlands	1996	1999	3.83	5.91	0.52	4.76	0.19	-1.74	-2.13	no	-0.10	-1.61
United Kingdom	Netherlands	1997	2000	4.72	6.23	0.36	2.78	0.11	-0.72	-1.37	no	-0.05	-0.87
United Kingdom	Netherlands	1998	2001	4.92	4.89	0.26	1.52	0.08	-0.51	-1.05	no	-0.06	-1.37
United Kingdom	Netherlands	1999	2002	2.43	2.74	0.60	3.97	0.08	-0.63		no	-0.06	-1.10
United Kingdom	Portugal	1995	1998	6.57	19.37	0.08	2.30	0.53	-2.75		yes	-0.37	-3.24
United Kingdom	Portugal	1996	1999	6.24	29.52	0.08	3.26	0.17	-1.64	-2.24	no	-0.11	-1.84
United Kingdom	Portugal	1997	2000	5.66	25.85	0.17	5.46	0.19	-1.13	-2.61	no	-0.22	-3.48
United Kingdom	Portugal	1998	2001	4.74	7.44	0.29	2.69	0.10	-0.49	-2.03	no	-0.08	-1.75
United Kingdom	Portugal	1999	2002	4.63	6.40	0.24	1.83	0.09	-0.47	-1.15	no	-0.02	-0.42
United Kingdom	Spain	1995	1998	6.61	22.24	0.09	2.51	0.54	-2.78		yes	-0.36	-3.19
United Kingdom	Spain	1996	1999	6.41	25.66	0.07	2.02	0.15	-1.55	-2.16	no	-0.10	-1.75
United Kingdom	Spain	1997	2000	4.87	12.83	0.33	5.18	0.17	-0.83	-2.39	no	-0.12	-1.78
United Kingdom	Spain	1998	2001	5.65	6.36	0.14	0.90	0.09	-0.52	-1.82	no	-0.04	-0.79
United Kingdom	Spain	1999	2002	4.38	5.73	0.30	2.07	0.09	-0.55	-1.18	no	-0.02	-0.51
United Kingdom	Australia	1995	1998	6.56	16.38	0.09	1.96	0.52	-2.68		yes	-0.36	-3.18
United Kingdom	Australia	1996	1999	6.67	16.95	0.03	0.59	0.14	-1.34	-1.94	no	-0.08	-1.65
United Kingdom	Australia	1997	2000	6.60	7.12	0.03	0.24	0.11	-1.04	-1.63	no	-0.08	-1.52
United Kingdom	Australia	1998	2001	5.67	5.09	0.11	0.70	0.09	-0.73	-1.92	no	-0.11	-2.14
United Kingdom	Australia	1999	2002	2.23	2.72	0.54	4.54	0.13	-0.62	-1.07	no	-0.03	-0.57
United Kingdom	Canada	1995	1998	5.36	15.35	0.30	5.74	0.85	-3.40		yes	-0.43	-3.50
United Kingdom	Canada	1996	1999	8.59	12.97	-0.27	-2.57	0.22	-1.58	-2.11	no	-0.14	-2.06
United Kingdom	Canada	1997	2000	8.35	16.54	-0.23	-3.07	0.18	-1.39	-2.76	no	-0.09	-1.39
United Kingdom	Canada	1998	2001	4.57	6.58	0.27	2.72	0.09	-1.53		no	-0.16	-3.15
United Kingdom	Canada	1999	2002	2.90	11.01	0.47	11.70	0.35	-1.98		no	-0.24	-2.39
United Kingdom	Japan	1995	1998	4.58	12.31	0.98	7.46	1.13	-4.28		yes	-0.43	-3.08
United Kingdom	Japan	1996	1999	-2.11	-1.69	3.52	7.23	0.27	-1.62	-2.71	no	-0.22	-2.78
United Kingdom	Japan	1997	2000	-1.03	-0.92	3.13	6.96	0.26	-1.45	-2.34	no	-0.18	-2.35
United Kingdom	Japan	1998	2001	-2.92	-1.61	3.82	5.18	0.19	-0.91	-1.61	no	-0.17	-2.10
United Kingdom	Japan	1999	2002	3.58	0.81	0.99	0.54	0.08	-0.25	-1.06	no	-0.04	-0.85
United Kingdom	Switzerland	1995	1998	5.37	7.89	0.40	2.89	0.57	-2.83		yes	-0.37	-3.20
United Kingdom	Switzerland	1996	1999	5.51	8.58	0.31	2.16	0.15	-1.55	-2.22	no	-0.10	-1.79
United Kingdom	Switzerland	1997	2000	3.70	3.91	0.74	3.29	0.15	-0.84	-2.61	no	-0.09	-1.36
United Kingdom	Switzerland	1998	2001	10.25	5.86	-0.92	-2.18	0.10	-0.91	-1.45	no	-0.11	-2.14
United Kingdom	Switzerland	1999	2002	6.51	3.76	-0.14	-0.33	0.08	-0.08	-0.88	no	0.03	0.56
United Kingdom	USA	1995	1998	2.78	1.85	0.61	3.03	0.56	-2.81		yes	-0.36	-3.21
United Kingdom	USA	1996	1999	2.37	1.97	0.62	3.75	0.18	-1.50	-2.08	no	-0.09	-1.56
United Kingdom	USA	1997	2000	2.67	1.75	0.57	2.72	0.13	-0.96	-1.70	no	-0.04	-0.73
United Kingdom	USA	1998	2001	0.27	0.11	0.88	2.65	0.09	-0.94	-1.36	no	-0.08	-1.64
United Kingdom	USA	1999	2002	-3.01	-4.82	1.30	14.36	0.41	-2.30	-2.78	yes	-0.21	-2.20
USA	Austria	1995	1998	5.60	13.09	0.27	4.32	0.14	-1.06	-1.93	no	-0.09	-1.64
USA	Austria	1996	1999	5.04	11.45	0.36	5.04	0.17	-1.90	-2.89	no	-0.06	-1.13
USA	Austria	1997	2000	5.13	10.36	0.36	4.24	0.12	-1.27	-1.69	no	-0.10	-2.05
USA	Austria	1998	2001	6.31	13.51	0.13	1.59	0.14	-0.91	-1.68	no	-0.14	-1.66
USA	Austria	1999	2002	4.89	6.68	0.35	2.74	0.06	0.34	-0.45	no	0.02	0.41

Table A6: Rolling cointegration of mortgage rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\,r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
USA	Belgium	1995	1998	6.19	22.23	0.20	4.52	0.11	-0.81	-1.48	no	-0.07	-1.31
USA	Belgium	1996	1999	5.16	10.58	0.37	4.33	0.12	-1.46	-1.83	no	-0.06	-1.14
USA	Belgium	1997	2000	5.81	15.26	0.25	3.73	0.09	-1.58		no	-0.19	-3.82
USA	Belgium	1998	2001	5.74	22.18	0.22	5.11	0.19	-1.00		no	-0.07	-0.97
USA	Belgium	1999	2002	4.98	9.43	0.32	3.66	0.06	0.16		no	0.00	0.08
USA	Finland	1995	1998	6.49	23.92	0.15	3.54	0.12	-0.93	-1.87	no	-0.04	-0.77
USA	Finland	1996	1999	5.69	16.12	0.28	4.46	0.14	-1.88		no	-0.05	-1.04
USA	Finland	1997	2000	5.51	14.39	0.32	4.50	0.12	-1.41	-1.83	no	-0.13	-2.42
USA	Finland	1998	2001	5.85	20.65	0.23	4.27	0.15	-1.24		no	-0.16	-1.87
USA	Finland	1999	2002	4.73	13.79	0.42	6.36	0.09	-0.42		no	-0.02	-0.46
USA	France	1995	1998	5.53	16.50	0.23	5.71	0.19	-1.53	-2.45	no	-0.13	-2.17
USA	France	1996	1999	5.39	20.73	0.26	7.25	0.23	-2.48		no	-0.16	-2.18
USA	France	1997	2000	4.90	14.82	0.34	7.05	0.20	-1.55		no	-0.11	-1.62
USA	France	1998	2001	5.65	10.58	0.21	2.63	0.16	-1.08	-1.71	no	-0.20	-2.46
USA	France	1999	2002	3.13	4.01	0.59	4.84	0.11	-0.28		no	-0.01	-0.22
USA	Germany	1995	1998	5.57	19.18	0.30	6.48	0.14	-1.23	-1.62	no	-0.09	-1.67
USA	Germany	1996	1999	4.67	13.67	0.45	7.59	0.20	-1.87		no	-0.13	-1.89
USA	Germany	1997	2000	4.93	15.64	0.40	7.27	0.18	-1.83		no	-0.26	-3.70
USA	Germany	1998	2001	4.96	24.78	0.37	10.46	0.37	-1.71		no	-0.17	-1.66
USA	Germany	1999	2002	4.27	8.82	0.46	5.47	0.08	-0.46		no	-0.02	-0.43
USA	Ireland	1995	1998	6.73	8.05	0.10	0.84	0.10	-1.15	-2.12	no	-0.08	-1.67
USA	Ireland	1996	1999	6.39	19.22	0.13	2.63	0.11	-1.09		no	-0.05	-1.08
USA	Ireland	1997	2000	6.99	28.23	0.04	0.93	0.08	-1.37	-1.59	no	-0.10	-2.20
USA	Ireland	1998	2001	7.31	34.49	-0.05	-1.24	0.15	-0.89	-1.85	no	-0.09	-1.58
USA	Ireland	1999	2002	5.80	11.69	0.22	2.23	0.07	0.06	-0.65	no	0.01	0.19
USA	Italy	1995	1998	6.24	31.66	0.11	6.18	0.18	-1.91	-2.62	no	-0.13	-2.03
USA	Italy	1996	1999	6.33	53.15	0.10	8.16	0.23	-2.32		no	-0.15	-1.91
USA	Italy	1997	2000	6.53	43.78	0.09	4.74	0.12	-1.12		no	-0.23	-4.10
USA	Italy	1998	2001	7.08	27.69	0.00	-0.12	0.13	-0.88	-1.72	no	-0.09	-1.53
USA	Italy	1999	2002	5.20	6.97	0.28	2.29	0.08	-0.09		no	0.00	0.01
USA	Netherlands	1995	1998	5.34	16.19	0.32	6.38	0.12	-1.01	-1.42	no	-0.05	-0.91
USA	Netherlands	1996	1999	4.12	10.23	0.53	7.80	0.20	-1.91		no	-0.10	-1.38
USA	Netherlands	1997	2000	4.48	13.08	0.46	8.04	0.19	-1.94	-2.38	no	-0.29	-3.59
USA	Netherlands	1998	2001	4.68	19.03	0.41	9.69	0.35	-1.90		no	-0.16	-1.77
USA	Netherlands	1999	2002	4.08	7.00	0.48	4.87	0.08	-0.13		no	-0.02	-0.44
USA	Portugal	1995	1998	6.26	39.10	0.12	7.49	0.20	-1.60	-2.66	no	-0.14	-2.18
USA	Portugal	1996	1999	6.31	57.95	0.12	9.09	0.23	-2.52	-3.90	yes	-0.18	-2.16
USA	Portugal	1997	2000	6.41	47.61	0.12	6.19	0.14	-1.27	-1.74	no	-0.07	-1.36
USA	Portugal	1998	2001	6.66	23.86	0.07	1.41	0.13	-0.98	-1.74	no	-0.03	-0.54
USA	Portugal	1999	2002	5.09	11.38	0.33	4.06	0.07	-0.08	-0.96	no	0.00	0.02
USA	Spain	1995	1998	6.66	37.95	0.09	4.53	0.14	-1.27	-2.41	no	-0.16	-2.49
USA	Spain	1996	1999	6.39	41.77	0.13	5.88	0.16	-2.33	-3.48	yes	-0.08	-1.30
USA	Spain	1997	2000	5.72	26.62	0.26	7.04	0.17	-1.50	-2.06	no	-0.09	-1.59
USA	Spain	1998	2001	6.28	17.71	0.14	2.18	0.15	-1.08	-1.81	no	-0.06	-1.00
USA	Spain	1999	2002	4.90	10.42	0.38	4.28	0.09	-0.37	-1.09	no	-0.01	-0.32
USA	Australia	1995	1998	6.50	27.10	0.11	3.97	0.13	-1.09	-2.20	no	-0.17	-2.94
USA	Australia	1996	1999	6.15	23.82	0.15	4.35	0.13	-1.87		no	-0.11	-2.12
USA	Australia	1997	2000	4.41	10.13	0.40	6.45	0.18	-1.13		no	-0.13	-2.13
USA	Australia	1998	2001	4.61	15.74	0.35	8.37	0.37	-2.30		no	-0.20	-2.13
USA	Australia	1999	2002	3.75	7.42	0.46	6.25	0.13	0.02		no	0.01	0.09
USA	Canada	1995	1998	7.02	23.52	0.06	1.41	0.09	-0.56	-1.64	no	-0.07	-1.52
USA	Canada	1996	1999	9.47	21.41	-0.35	-5.02	0.28	-1.73		no	-0.13	-1.81
USA	Canada	1997	2000	7.53	21.14	-0.05	-0.89	0.08	-1.29	-1.54	no	-0.09	-2.02
USA	Canada	1998	2001	5.23	33.91	0.27	11.85	0.39	-2.22		yes	-0.20	-1.93
USA	Canada	1999	2002	4.79	25.87	0.33	11.59	0.21	-1.00	-1.81	no	-0.08	-1.04
USA	Japan	1995	1998	6.10	19.64	0.48	4.35	0.13	-0.73	0.09	no	-0.08	-1.59
USA	Japan	1996	1999	2.00	1.69	2.05	4.44	0.14	-1.20		no	-0.03	-0.65
USA	Japan	1997	2000	5.91	5.73	0.52	1.27	0.08	-1.31	-1.56	no	-0.10	-2.33
USA	Japan	1998	2001	8.05	8.63	-0.41	-1.08	0.14	-0.92	-1.75	no	-0.05	-0.81
USA	Japan	1999	2002	3.38	1.12	1.47	1.16	0.07	0.38	-0.48	no	0.03	0.73
USA	Switzerland	1995	1998	5.26	14.07	0.45	5.84	0.17	-1.37	-2.46	no	-0.13	-2.47
USA	Switzerland	1996	1999	4.67	13.07	0.58	7.28	0.21	-2.43	-3.82	yes	-0.15	-2.18
USA	Switzerland	1997	2000	3.95	8.18	0.78	6.78	0.16	-1.38	-1.87	no	-0.08	-1.43
USA	Switzerland	1998	2001	6.69	8.78	0.09	0.48	0.13	-0.85	-1.70	no	-0.08	-1.28
USA	Switzerland	1999	2002	4.54	3.93	0.57	2.04	0.06	0.17	-0.61	no	0.01	0.23
USA	United Kingdom	1995	1998	5.44	8.25	0.27	3.03	0.18	-1.35		no	-0.10	-1.50
USA	United Kingdom	1996	1999	4.66	6.73	0.38	3.75	0.13	-1.25	-1.68	no	-0.06	-1.24
USA	United Kingdom	1997	2000	5.57	9.19	0.24	2.72	0.10	-1.20	-1.63	no	-0.09	-1.94
USA	United Kingdom	1998	2001	6.07	16.44	0.15	2.65	0.14	-1.19	-1.79	no	-0.11	-1.89
USA	United Kingdom	1999	2002	3.16	12.04	0.63	14.36	0.38	-2.02		no	-0.19	-1.95
Panel B: Cointegration relative to rest of eurozone													
Austria	eurozone average excluding Austria	1995	1998	2.23	5.46	0.67	11.13	0.07	-2.26	-1.96	no	-0.13	-2.76
Austria	eurozone average excluding Austria	1996	1999	2.81	14.93	0.55	17.53	0.18	-1.61	-2.13	no	-0.04	-0.65
Austria	eurozone average excluding Austria	1997	2000	2.82	8.50	0.56	9.27	0.11	-0.29	-2.07	no	-0.03	-0.75
Austria	eurozone average excluding Austria	1998	2001	0.46	0.92	1.05	10.67	0.15	-2.18		no	-0.07	-1.15
Austria	eurozone average excluding Austria	1999	2002	-1.18	-2.57	1.39	15.01	0.28	-1.80		no	-0.12	-1.45
Belgium	eurozone average excluding Belgium	1995	1998	0.86	1.75	0.66	11.03	0.13	-3.00		no	-0.13	-1.96
Belgium	eurozone average excluding Belgium	1996	1999	3.52	12.26	0.30	7.44	0.28	-1.15	-1.55	no	-0.07	-0.88
Belgium	eurozone average excluding Belgium	1997	2000	4.84	6.88	0.13	1.21	0.08	-0.24		no	-0.16	-2.86
Belgium	eurozone average excluding Belgium	1998	2001	1.05	1.04	0.81	4.86	0.07	-1.53		no	-0.18	-3.71
Belgium	eurozone average excluding Belgium	1999	2002	-1.50	-3.13	1.29	15.75	0.34	-2.63	-3.47	yes	-0.36	-3.03
Finland	eurozone average excluding Finland	1995	1998	0.01	0.02	0.81	13.74	0.05	-1.12	-1.75	no	-0.04	-1.28
Finland	eurozone average excluding Finland	1996	1999	1.88	9.31	0.53	18.53	0.13	-1.85	-2.12	no	-0.07	-1.29
Finland	eurozone average excluding Finland	1997	2000	2.08	4.79	0.52	7.69	0.09	-0.25	-2.69	no	-0.02	-0.34
Finland	eurozone average excluding Finland	1998	2001	-1.27	-2.65	1.09	13.78	0.23	-2.09	-2.17	no	-0.17	-2.06
Finland	eurozone average excluding Finland	1999	2002	-3.29	-7.78	1.43	19.90	0.33	-2.53		no	-0.29	-2.85
France	eurozone average excluding France	1995	1998	2.33	15.46	0.73	39.06	0.88	-3.59	-4.38	yes	-0.43	-3.47

Table A6: Rolling cointegration of mortgage rates

national interest rate r			sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2		start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
France	eurozone average excluding	France	1996	1999	1.98	13.56	0.77	37.21	0.77	-3.38	-4.70	yes	-0.32	-2.84
France	eurozone average excluding	France	1997	2000	1.92	9.88	0.78	25.39	0.80	-3.39	-4.21	yes	-0.57	-4.47
France	eurozone average excluding	France	1998	2001	2.06	7.26	0.76	15.91	0.80	-3.37	-3.57	yes	-0.32	-2.75
France	eurozone average excluding	France	1999	2002	1.88	5.72	0.78	13.64	0.52	-2.75	-3.17	yes	-0.30	-2.89
Germany	eurozone average excluding	Germany	1995	1998	2.05	5.53	0.49	11.69	0.13	-4.24	-3.46	yes	-0.16	-2.45
Germany	eurozone average excluding	Germany	1996	1999	3.36	14.02	0.31	10.07	0.19	-0.85	-3.01	no	-0.14	-2.28
Germany	eurozone average excluding	Germany	1997	2000	4.31	8.23	0.21	2.68	0.08	-0.77	-1.65	no	-0.07	-1.88
Germany	eurozone average excluding	Germany	1998	2001	2.82	3.33	0.45	3.35	0.08	-1.14	-1.74	no	-0.10	-2.28
Germany	eurozone average excluding	Germany	1999	2002	0.97	1.17	0.79	5.70	0.13	-2.15	-2.78	no	-0.25	-4.01
Ireland	eurozone average excluding	Ireland	1995	1998	6.31	15.65	0.11	2.18	0.28	-1.30	-2.28	no	-0.14	-2.20
Ireland	eurozone average excluding	Ireland	1996	1999	3.42	5.07	0.44	4.68	0.08	-0.04	-0.86	no	0.00	-0.09
Ireland	eurozone average excluding	Ireland	1997	2000	-0.03	-0.03	0.96	5.90	0.09	-1.16	-1.50	no	-0.20	-2.72
Ireland	eurozone average excluding	Ireland	1998	2001	-0.50	-0.32	1.03	3.96	0.09	-1.02	-1.51	no	-0.05	-1.18
Ireland	eurozone average excluding	Ireland	1999	2002	1.04	1.05	0.69	4.07	0.18	-1.85	-2.34	no	-0.14	-1.91
Italy	eurozone average excluding	Italy	1995	1998	-2.98	-3.04	1.96	14.61	0.10	-2.71	-1.11	no	-0.03	-0.47
Italy	eurozone average excluding	Italy	1996	1999	-10.46	-16.01	3.09	30.48	0.25	-0.48	-1.61	no	-0.07	-0.58
Italy	eurozone average excluding	Italy	1997	2000	-8.25	-3.68	2.61	7.11	0.03	-0.10	-0.80	no	-0.02	-0.48
Italy	eurozone average excluding	Italy	1998	2001	0.61	0.37	1.02	3.71	0.06	-3.37	-2.54	yes	-0.23	-3.63
Italy	eurozone average excluding	Italy	1999	2002	1.75	2.94	0.75	7.30	0.27	-2.07	-2.17	no	-0.14	-1.74
Netherlands	eurozone average excluding	Netherlands	1995	1998	2.32	6.72	0.51	12.07	0.13	-2.85	-2.05	no	-0.13	-1.88
Netherlands	eurozone average excluding	Netherlands	1996	1999	3.51	16.43	0.34	11.35	0.27	-1.28	-2.41	no	-0.20	-2.64
Netherlands	eurozone average excluding	Netherlands	1997	2000	3.44	7.14	0.38	5.15	0.08	-0.82	-1.40	no	-0.16	-3.16
Netherlands	eurozone average excluding	Netherlands	1998	2001	1.32	2.11	0.74	7.26	0.09	-1.47	-1.93	no	-0.26	-3.62
Netherlands	eurozone average excluding	Netherlands	1999	2002	0.20	0.40	0.96	11.44	0.17	-1.65	-3.14	no	-0.23	-3.46
Portugal	eurozone average excluding	Portugal	1995	1998	-4.26	-8.66	1.80	29.50	0.13	-1.26		no	-0.11	-2.15
Portugal	eurozone average excluding	Portugal	1996	1999	-5.75	-13.13	2.01	32.29	0.17	-1.08	-2.16	no	-0.19	-3.05
Portugal	eurozone average excluding	Portugal	1997	2000	-7.21	-9.41	2.20	18.44	0.13	-1.54	-2.17	no	-0.09	-1.37
Portugal	eurozone average excluding	Portugal	1998	2001	-2.61	-3.85	1.41	12.63	0.19	-1.72		no	-0.11	-1.14
Portugal	eurozone average excluding	Portugal	1999	2002	-2.04	-3.31	1.29	12.30	0.20	-2.34	-2.59	no	-0.16	-1.90
Spain	eurozone average excluding	Spain	1995	1998	-6.09	-11.33	1.82	27.32	0.13	-0.86	-1.71	no	-0.07	-1.34
Spain	eurozone average excluding	Spain	1996	1999	-3.68	-7.83	1.50	22.67	0.10	-2.50	-2.10	no	-0.07	-1.30
Spain	eurozone average excluding	Spain	1997	2000	-1.12	-3.39	1.08	21.23	0.18	-2.19	-2.12	no	-0.06	-0.77
Spain	eurozone average excluding	Spain	1998	2001	-0.63	-1.36	1.01	13.33	0.18	-1.61	-2.70	no	-0.01	-0.13
Spain	eurozone average excluding	Spain	1999	2002	-1.92	-3.80	1.22	14.35	0.21	-1.94	-2.55	no	-0.08	-0.81
Australia	eurozone average		1995	1998	-1.40	-2.76	1.24	19.87	0.15	-0.72	-1.55	no	-0.10	-1.73
Australia	eurozone average		1996	1999	1.10	2.00	0.93	11.94	0.09	-1.52	-2.11	no	-0.10	-1.89
Australia	eurozone average		1997	2000	4.98	8.59	0.32	3.56	0.11	-0.81	-0.96	no	-0.06	-1.53
Australia	eurozone average		1998	2001	3.06	3.66	0.64	4.66	0.11	-1.57		no	-0.07	-1.11
Australia	eurozone average		1999	2002	0.74	0.96	1.04	7.96	0.17	-1.28		no	-0.11	-1.66
Canada	eurozone average		1995	1998	2.32	2.57	0.54	4.87	0.10	-2.47		no	-0.07	-1.24
Canada	eurozone average		1996	1999	7.61	16.34	-0.19	-2.96	0.25	-1.84	-2.06	no	-0.20	-2.37
Canada	eurozone average		1997	2000	10.14	11.13	-0.54	-3.83	0.12	-0.91	-1.26	no	-0.21	-3.19
Canada	eurozone average		1998	2001	3.76	2.64	0.51	2.15	0.08	0.34	-0.35	no	0.04	0.81
Canada	eurozone average		1999	2002	-1.29	-0.72	1.32	4.34	0.06	-0.74		no	-0.03	-0.93
Japan	eurozone average		1995	1998	1.24	4.05	0.19	5.18	0.14	-2.79	-4.32	yes	-0.10	-1.98
Japan	eurozone average		1996	1999	2.16	40.82	0.06	7.81	0.14	-0.87		no	-0.05	-0.76
Japan	eurozone average		1997	2000	1.87	19.74	0.10	6.73	0.14	-1.32		no	-0.07	-1.21
Japan	eurozone average		1998	2001	1.95	12.25	0.08	3.17	0.15	-1.51		no	-0.12	-1.90
Japan	eurozone average		1999	2002	2.23	24.96	0.03	1.86	0.43	-3.15		yes	-0.25	-2.41
Switzerland	eurozone average		1995	1998	1.59	16.92	0.40	34.96	0.34	-1.60	-2.65	no	-0.18	-1.96
Switzerland	eurozone average		1996	1999	2.01	18.78	0.35	22.96	0.22	-1.49	-2.32	no	-0.09	-1.24
Switzerland	eurozone average		1997	2000	2.14	13.72	0.33	13.41	0.21	-1.52	-2.46	no	-0.13	-1.87
Switzerland	eurozone average		1998	2001	2.44	9.12	0.28	6.42	0.13	-1.03	-1.66	no	-0.04	-0.74
Switzerland	eurozone average		1999	2002	2.07	7.67	0.35	7.65	0.19	-1.50	-2.28	no	-0.19	-2.35
United Kingdom	eurozone average		1995	1998	5.96	12.77	0.17	2.98	0.55	-2.81		yes	-0.36	-3.16
United Kingdom	eurozone average		1996	1999	5.71	16.53	0.17	3.49	0.16	-1.70	-2.28	no	-0.11	-1.82
United Kingdom	eurozone average		1997	2000	4.01	9.79	0.44	6.89	0.20	-1.00	-1.50	no	-0.11	-1.58
United Kingdom	eurozone average		1998	2001	3.61	3.53	0.47	2.79	0.09	-0.28	-0.81	no	-0.06	-1.33
United Kingdom	eurozone average		1999	2002	2.82	2.66	0.53	2.95	0.08	-0.65		no	-0.11	-1.88
USA	eurozone average		1995	1998	5.89	23.60	0.19	6.26	0.16	-1.43	-2.24	no	-0.14	-2.59
USA	eurozone average		1996	1999	5.72	29.33	0.22	8.00	0.21	-2.48		no	-0.15	-2.01
USA	eurozone average		1997	2000	5.26	21.69	0.31	8.15	0.18	-1.49		no	-0.20	-2.58
USA	eurozone average		1998	2001	5.51	13.82	0.25	3.87	0.16	-1.24		no	-0.07	-1.11
USA	eurozone average		1999	2002	3.59	5.61	0.56	5.19	0.08	-0.30		no	-0.02	-0.46

Notes: Cointegration is based on the Durbin-Watson (DW), Dickey-Fuller (DF) and Augmented Dickey-Fuller (ADF) tests. The critical values for 100 observations at the 5% and 10% significance levels are as follows: 0.386 and 0.322 for DW, -3.37 and -3.03 DF and -2.84 and -3.17 for ADF. Cointegration is considered to exist if at least two test statistics are significant at the 10% level or if at least one test-statistic is significant at the 5% level. For the error correction model (ECM) the speed of adjustment coefficient and its t-test statistic are reported. All t-tests statistics (t-stat) report tests of the estimated coefficients against zero.

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Panel A: Bilateral cointegration													
Austria	Belgium	1995	1998	-0.61	-0.84	1.03	10.80	0.30	-1.44	0.42	no	0.01	0.15
Austria	Belgium	1996	1999	-5.13	-3.04	1.64	6.88	0.16	-1.27		no	-0.09	-1.50
Austria	Belgium	1997	2000	2.56	3.99	0.52	5.86	0.09	-2.23		no	-0.09	-2.24
Austria	Belgium	1998	2001	2.68	7.25	0.47	9.69	0.15	-1.21		no	-0.08	-1.36
Austria	Belgium	1999	2002	1.97	5.43	0.53	11.41	0.20	-1.45		no	-0.15	-2.16
Austria	Finland	1995	1998	2.73	16.97	0.72	27.86	0.22	-1.03		no	-0.09	-1.12
Austria	Finland	1996	1999	1.28	4.03	0.97	16.40	0.19	-1.77		no	-0.10	-1.50
Austria	Finland	1997	2000	1.56	3.76	0.90	11.46	0.18	-2.14		no	-0.16	-2.13
Austria	Finland	1998	2001	2.06	8.87	0.78	18.12	0.33	-2.32		no	-0.36	-3.27
Austria	Finland	1999	2002	2.04	13.83	0.77	27.53	0.55	-2.71		yes	-0.30	-3.15
Austria	France	1995	1998	4.16	15.77	0.45	11.57	0.16	-3.08		no	-0.13	-1.93
Austria	France	1996	1999	4.20	26.54	0.41	14.83	0.20	-1.58		no	-0.09	-1.28
Austria	France	1997	2000	3.58	14.42	0.53	11.02	0.27	-1.82	-1.97	no	-0.13	-1.65
Austria	France	1998	2001	3.21	11.54	0.60	10.99	0.30	-1.82		no	-0.16	-1.85
Austria	France	1999	2002	2.62	14.73	0.69	19.61	0.89	-4.04		yes	-0.51	-3.71
Austria	Germany	1995	1998	-1.81	-6.17	0.92	30.62	0.47	-2.32		yes	-0.23	-2.28
Austria	Germany	1996	1999	-3.18	-3.80	1.05	11.54	0.19	-1.25		no	-0.08	-1.19
Austria	Germany	1997	2000	-1.17	-1.01	0.82	6.45	0.08	-1.50		no	-0.06	-1.27
Austria	Germany	1998	2001	0.60	0.77	0.60	7.31	0.10	-0.79	-1.25	no	-0.05	-0.81
Austria	Germany	1999	2002	-0.46	-0.53	0.69	7.67	0.10	-0.64		no	0.00	0.02
Austria	Ireland	1995	1998	1.09	0.51	0.60	2.82	0.04	-1.99		no	-0.05	-1.76
Austria	Ireland	1996	1999	1.86	2.32	0.49	5.77	0.06	-2.17		no	-0.11	-2.51
Austria	Ireland	1997	2000	2.02	4.94	0.45	10.50	0.20	-1.69		no	-0.06	-0.88
Austria	Ireland	1998	2001	1.65	4.02	0.49	11.25	0.22	-1.62	-2.04	no	-0.21	-3.01
Austria	Ireland	1999	2002	-0.48	-1.16	0.73	15.87	0.25	-2.12		no	-0.24	-2.72
Austria	Italy	1995	1998	3.75	10.87	0.32	10.03	0.05	-3.66	-2.58	yes	-0.12	-2.44
Austria	Italy	1996	1999	4.37	59.07	0.24	29.58	0.36	-2.39	-2.81	no	-0.20	-2.63
Austria	Italy	1997	2000	4.83	23.86	0.20	7.44	0.09	0.51	-0.41	no	-0.15	-3.33
Austria	Italy	1998	2001	4.18	12.30	0.31	6.12	0.08	-1.23	-1.28	no	-0.22	-4.03
Austria	Italy	1999	2002	0.74	2.60	0.89	18.77	0.27	-2.22		no	-0.13	-1.74
Austria	Netherlands	1995	1998	4.14	7.27	0.82	5.34	0.03	0.60		no	0.01	0.45
Austria	Netherlands	1996	1999	8.75	9.41	-0.66	-2.45	0.07	-2.00		no	-0.05	-1.05
Austria	Netherlands	1997	2000	5.26	14.58	0.27	2.92	0.05	-2.12	-1.52	no	-0.06	-1.80
Austria	Netherlands	1998	2001	4.33	19.90	0.45	8.92	0.12	-1.72	-2.05	no	-0.13	-2.02
Austria	Netherlands	1999	2002	3.54	34.75	0.59	25.36	0.71	-3.71		yes	-0.49	-4.04
Austria	Portugal	1995	1998	4.25	28.62	0.28	20.09	0.34	-2.07	-1.58	no	-0.24	-2.70
Austria	Portugal	1996	1999	4.56	58.31	0.23	25.63	0.61	-2.96	-2.77	yes	-0.26	-2.49
Austria	Portugal	1997	2000	4.87	25.25	0.21	7.57	0.14	-0.09	-0.47	no	-0.01	-0.15
Austria	Portugal	1998	2001	4.16	12.74	0.34	6.44	0.13	-1.62	-1.39	no	-0.15	-2.55
Austria	Portugal	1999	2002	1.84	6.74	0.77	15.61	0.91	-4.13	-3.80	yes	-0.73	-5.38
Austria	Spain	1995	1998	4.54	28.40	0.35	16.90	0.16	-2.38	-2.80	no	-0.24	-3.40
Austria	Spain	1996	1999	4.59	43.88	0.32	18.93	0.30	-1.83		no	-0.16	-1.81
Austria	Spain	1997	2000	3.83	22.85	0.48	14.92	0.57	-2.72		yes	-0.41	-3.11
Austria	Spain	1998	2001	3.20	19.89	0.62	19.07	1.34	-4.77	-4.70	yes	-0.76	-4.93
Austria	Spain	1999	2002	3.04	17.67	0.64	17.87	1.20	-4.76		yes	-0.54	-3.76
Austria	Australia	1995	1998	1.17	2.12	0.60	10.87	0.08	-1.80	-2.00	no	-0.12	-2.47
Austria	Australia	1996	1999	1.72	3.99	0.51	11.13	0.12	-1.02		no	-0.05	-0.89
Austria	Australia	1997	2000	1.08	1.42	0.57	6.84	0.11	-1.28	-1.50	no	-0.06	-1.08
Austria	Australia	1998	2001	1.22	1.59	0.56	6.58	0.12	-1.54	-2.02	no	-0.09	-1.53
Austria	Australia	1999	2002	0.05	0.08	0.67	9.86	0.19	-1.30		no	-0.09	-1.41
Austria	Canada	1995	1998	4.65	13.66	0.38	7.50	0.06	0.40		no	0.01	0.16
Austria	Canada	1996	1999	7.39	11.80	-0.15	-1.46	0.04	-2.26		no	-0.05	-1.50
Austria	Canada	1997	2000	6.77	14.81	-0.08	-1.06	0.06	-0.41	-1.31	no	-0.04	-1.01
Austria	Canada	1998	2001	4.78	9.89	0.22	3.04	0.07	-1.16	-1.89	no	-0.07	-1.86
Austria	Canada	1999	2002	4.90	17.98	0.20	4.44	0.07	-0.92	-2.26	no	-0.07	-1.95
Austria	Japan	1995	1998	4.52	13.64	1.48	8.13	0.07	-0.70	-1.37	no	-0.01	-0.29
Austria	Japan	1996	1999	-1.63	-2.33	5.20	11.64	0.12	-2.73		no	-0.13	-1.83
Austria	Japan	1997	2000	2.00	2.99	2.85	6.44	0.08	-0.14		no	-0.10	-1.93
Austria	Japan	1998	2001	3.07	3.44	2.18	3.57	0.08	-0.83	-1.57	no	-0.08	-1.96
Austria	Japan	1999	2002	-1.80	-1.12	5.63	4.90	0.15	-1.76	-2.16	no	-0.13	-1.97
Austria	Switzerland	1995	1998	0.87	2.97	1.32	21.43	0.24	-2.15		no	-0.17	-2.13
Austria	Switzerland	1996	1999	0.94	2.58	1.27	15.24	0.23	-1.58		no	-0.10	-1.29
Austria	Switzerland	1997	2000	-0.10	-0.18	1.53	11.04	0.30	-2.07		no	-0.17	-1.99
Austria	Switzerland	1998	2001	-1.56	-2.35	1.88	11.82	0.38	-2.06		no	-0.24	-2.65
Austria	Switzerland	1999	2002	-1.49	-3.22	1.85	16.37	0.51	-1.84		yes	-0.17	-1.50
Austria	United Kingdom	1995	1998	9.65	6.41	-0.33	-1.67	0.02	-0.84	-1.13	no	-0.05	-2.35
Austria	United Kingdom	1996	1999	4.71	6.00	0.24	2.26	0.02	-2.13		no	-0.05	-1.91
Austria	United Kingdom	1997	2000	3.81	7.43	0.34	4.86	0.07	-0.88		no	-0.04	-0.81
Austria	United Kingdom	1998	2001	4.77	10.63	0.21	3.32	0.06	-0.84		no	-0.03	-0.79
Austria	United Kingdom	1999	2002	4.05	9.29	0.33	4.71	0.07	-1.13		no	-0.07	-2.01
Austria	USA	1995	1998	-8.72	-3.35	1.87	6.10	0.14	-2.45	-1.20	no	-0.05	-1.07
Austria	USA	1996	1999	-2.05	-0.82	1.03	3.40	0.05	-0.69		no	-0.03	-0.70
Austria	USA	1997	2000	1.95	2.22	0.51	4.97	0.07	-2.09		no	-0.06	-1.31
Austria	USA	1998	2001	5.05	10.94	0.15	2.60	0.06	-0.92	-1.73	no	-0.03	-1.01
Austria	USA	1999	2002	5.18	21.12	0.13	3.80	0.07	-0.89	-2.55	no	-0.06	-1.89
Belgium	Austria	1995	1998	2.54	5.51	0.69	10.80	0.40	-2.16	-0.36	yes	-0.03	-0.40
Belgium	Austria	1996	1999	5.06	17.34	0.31	6.88	0.33	-2.04		no	-0.20	-2.29
Belgium	Austria	1997	2000	2.04	2.28	0.83	5.86	0.11	-0.80		no	-0.09	-1.49
Belgium	Austria	1998	2001	-1.34	-1.45	1.43	9.69	0.13	-1.27	-1.08	no	-0.09	-1.30
Belgium	Austria	1999	2002	-0.71	-0.96	1.39	11.41	0.19	-1.73	-1.28	no	-0.10	-1.17
Belgium	Finland	1995	1998	4.26	15.52	0.53	11.98	0.46	-2.59	-5.66	yes	-0.19	-1.67
Belgium	Finland	1996	1999	5.26	21.64	0.34	7.46	0.36	-2.13		no	-0.39	-3.62
Belgium	Finland	1997	2000	0.93	2.14	1.21	14.58	0.36	-2.36	-1.29	no	-0.24	-2.38
Belgium	Finland	1998	2001	0.29	0.72	1.36	18.14	0.34	-1.71	-1.26	no	-0.15	-1.50
Belgium	Finland	1999	2002	1.82	3.84	1.13	12.49	0.17	-1.61	-1.07	no	-0.13	-1.86

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Belgium	France	1995	1998	6.06	16.45	0.22	4.00	0.22	-2.39	-5.64	yes	-0.11	-2.20
Belgium	France	1996	1999	6.60	44.28	0.08	3.20	0.25	-1.97	-2.14	no	-0.14	-2.05
Belgium	France	1997	2000	5.21	10.05	0.40	4.01	0.13	-0.79	-1.21	no	-0.09	-1.38
Belgium	France	1998	2001	1.91	5.09	1.13	15.34	0.79	-3.43		yes	-0.46	-3.40
Belgium	France	1999	2002	2.57	5.99	1.03	12.14	0.55	-2.66	-1.99	yes	-0.29	-2.68
Belgium	Germany	1995	1998	1.35	2.11	0.63	9.66	0.34	-2.11	-1.45	no	-0.07	-1.05
Belgium	Germany	1996	1999	4.64	7.46	0.26	3.91	0.26	-1.88		no	-0.17	-2.15
Belgium	Germany	1997	2000	-5.65	-8.08	1.41	18.49	0.70	-3.60	-3.34	yes	-0.46	-3.60
Belgium	Germany	1998	2001	-5.44	-10.91	1.39	26.22	0.85	-3.48	-3.49	yes	-0.43	-3.28
Belgium	Germany	1999	2002	-5.74	-9.43	1.41	22.14	0.67	-2.91	-2.39	yes	-0.30	-2.54
Belgium	Ireland	1995	1998	1.41	0.83	0.61	3.62	0.17	-2.12		no	-0.23	-3.61
Belgium	Ireland	1996	1999	5.00	14.70	0.22	6.07	0.36	-2.63	-2.68	no	-0.36	-3.59
Belgium	Ireland	1997	2000	4.84	5.46	0.26	2.74	0.09	0.50	-0.50	no	-0.04	-0.85
Belgium	Ireland	1998	2001	2.11	1.88	0.59	4.90	0.08	-1.48	-1.70	no	-0.10	-2.20
Belgium	Ireland	1999	2002	-3.47	-8.51	1.24	27.56	0.94	-3.70	-1.31	yes	-0.56	-4.06
Belgium	Italy	1995	1998	5.99	13.30	0.14	3.40	0.15	-2.21	-5.82	yes	-0.12	-2.34
Belgium	Italy	1996	1999	6.52	55.97	0.06	4.89	0.29	-2.00	-2.21	no	-0.10	-1.35
Belgium	Italy	1997	2000	7.24	19.00	0.00	0.06	0.08	0.82	-0.71	no	-0.09	-1.89
Belgium	Italy	1998	2001	6.29	8.09	0.20	1.72	0.05	-1.08	-1.43	no	-0.13	-3.49
Belgium	Italy	1999	2002	-0.49	-0.80	1.36	13.67	0.28	-3.30		no	-0.26	-2.80
Belgium	Netherlands	1995	1998	4.01	14.03	0.95	12.34	0.62	-2.82		yes	-0.16	-2.51
Belgium	Netherlands	1996	1999	6.06	15.09	0.29	2.50	0.14	-1.81	-1.95	no	-0.13	-2.30
Belgium	Netherlands	1997	2000	4.15	23.48	0.81	17.88	0.43	-2.93	-2.57	yes	-0.25	-2.51
Belgium	Netherlands	1998	2001	3.54	23.27	0.96	27.27	0.64	-2.62	-0.52	yes	-0.38	-2.29
Belgium	Netherlands	1999	2002	3.75	16.77	0.93	18.08	0.37	-1.75	-0.27	no	-0.17	-1.76
Belgium	Portugal	1995	1998	5.82	20.60	0.16	6.10	0.27	-1.92	-4.47	yes	-0.08	-1.40
Belgium	Portugal	1996	1999	6.59	59.53	0.06	4.46	0.29	-2.03	-2.16	no	-0.18	-2.29
Belgium	Portugal	1997	2000	7.20	19.63	0.01	0.16	0.08	0.83	-0.68	no	-0.04	-0.92
Belgium	Portugal	1998	2001	6.33	8.27	0.21	1.70	0.05	-1.07	-1.21	no	-0.07	-2.19
Belgium	Portugal	1999	2002	2.29	3.02	0.98	7.21	0.21	-2.18		no	-0.18	-2.25
Belgium	Spain	1995	1998	6.02	22.34	0.20	5.67	0.19	-2.01	-5.17	yes	-0.04	-0.61
Belgium	Spain	1996	1999	6.59	58.26	0.08	4.32	0.28	-1.90	-2.18	no	-0.18	-2.27
Belgium	Spain	1997	2000	5.84	12.48	0.28	3.09	0.09	0.02	-0.22	no	-0.04	-0.77
Belgium	Spain	1998	2001	3.00	6.18	0.94	9.58	0.32	-2.23	-1.63	no	-0.19	-2.03
Belgium	Spain	1999	2002	3.00	8.79	1.00	14.01	0.69	-3.05	-1.29	yes	-0.40	-3.67
Belgium	Australia	1995	1998	4.56	6.20	0.29	4.02	0.17	-1.98	-5.42	yes	-0.11	-2.51
Belgium	Australia	1996	1999	6.16	18.53	0.10	2.74	0.22	-1.86	-2.23	no	-0.16	-2.21
Belgium	Australia	1997	2000	0.49	0.52	0.75	7.20	0.15	-1.44	-2.12	no	-0.18	-2.52
Belgium	Australia	1998	2001	-0.85	-0.61	0.94	6.13	0.09	-0.72		no	-0.03	-0.68
Belgium	Australia	1999	2002	0.73	0.52	0.78	4.98	0.07	-0.99		no	-0.09	-2.11
Belgium	Canada	1995	1998	5.02	27.51	0.37	13.88	0.60	-2.90		yes	-0.14	-1.55
Belgium	Canada	1996	1999	6.65	24.58	0.07	1.53	0.19	-1.85	-1.98	no	-0.10	-1.54
Belgium	Canada	1997	2000	5.11	10.38	0.34	4.43	0.10	0.07	-0.60	no	-0.05	-1.06
Belgium	Canada	1998	2001	6.83	7.42	0.12	0.86	0.05	-0.65	-1.34	no	-0.04	-1.22
Belgium	Canada	1999	2002	7.41	14.15	0.05	0.62	0.05	-1.08	-2.32	no	-0.06	-1.83
Belgium	Japan	1995	1998	4.98	26.68	1.41	13.80	0.58	-3.08	-2.13	yes	-0.19	-2.37
Belgium	Japan	1996	1999	4.00	10.12	1.97	7.78	0.41	-2.55		yes	-0.20	-1.99
Belgium	Japan	1997	2000	7.00	5.98	0.18	0.23	0.08	0.83	-0.68	no	-0.03	-0.57
Belgium	Japan	1998	2001	8.03	4.56	-0.29	-0.24	0.05	-0.82	-1.64	no	-0.05	-1.58
Belgium	Japan	1999	2002	-0.02	-0.01	5.53	2.59	0.08	-1.82		no	-0.10	-2.13
Belgium	Switzerland	1995	1998	3.72	6.52	0.80	6.68	0.24	-1.99	-4.40	yes	-0.07	-1.28
Belgium	Switzerland	1996	1999	5.88	16.92	0.27	3.42	0.24	-1.93	-2.14	no	-0.16	-2.15
Belgium	Switzerland	1997	2000	2.74	2.21	1.08	3.66	0.10	-0.56	-0.74	no	-0.08	-1.41
Belgium	Switzerland	1998	2001	-6.99	-8.08	3.53	16.90	0.68	-4.08		yes	-0.31	-2.37
Belgium	Switzerland	1999	2002	-2.92	-2.52	2.60	9.19	0.22	-0.73		no	-0.10	-1.16
Belgium	United Kingdom	1995	1998	6.31	5.03	0.16	0.94	0.12	-2.25	-6.24	yes	-0.21	-6.35
Belgium	United Kingdom	1996	1999	5.34	21.13	0.24	6.84	0.37	-3.06		yes	-0.27	-2.78
Belgium	United Kingdom	1997	2000	6.19	7.88	0.15	1.37	0.08	1.04	-0.25	no	-0.01	-0.17
Belgium	United Kingdom	1998	2001	8.28	9.54	-0.10	-0.78	0.06	-0.84	-1.77	no	-0.06	-1.67
Belgium	United Kingdom	1999	2002	7.09	8.32	0.11	0.76	0.05	-1.14	-2.24	no	-0.06	-1.84
Belgium	USA	1995	1998	-6.71	-3.44	1.68	7.28	0.44	-2.99	-1.07	yes	-0.07	-0.70
Belgium	USA	1996	1999	3.28	3.04	0.46	3.50	0.25	-2.00	-2.55	no	-0.25	-2.31
Belgium	USA	1997	2000	-0.71	-1.00	0.94	11.17	0.30	-1.49	-2.08	no	-0.13	-1.46
Belgium	USA	1998	2001	7.52	8.69	0.01	0.10	0.05	-0.81	-1.59	no	-0.05	-1.55
Belgium	USA	1999	2002	7.65	16.87	0.01	0.17	0.05	-1.06	-2.31	no	-0.08	-2.41
Finland	Austria	1995	1998	-3.23	-9.56	1.31	27.86	0.22	-1.08		no	-0.09	-1.30
Finland	Austria	1996	1999	-0.35	-0.99	0.88	16.40	0.19	-2.43		no	-0.12	-1.61
Finland	Austria	1997	2000	0.08	0.18	0.82	11.46	0.18	-1.28		no	-0.13	-1.72
Finland	Austria	1998	2001	-1.66	-4.26	1.12	18.12	0.32	-2.27		no	-0.24	-2.07
Finland	Austria	1999	2002	-2.19	-8.11	1.22	27.53	0.53	-2.64		yes	-0.32	-2.73
Finland	Belgium	1995	1998	-4.62	-5.13	1.43	11.98	0.35	-1.98	-3.02	yes	0.02	0.30
Finland	Belgium	1996	1999	-6.16	-3.98	1.63	7.46	0.19	-2.05		no	-0.15	-1.58
Finland	Belgium	1997	2000	0.30	0.88	0.68	14.58	0.33	-2.47	-2.28	no	-0.05	-0.48
Finland	Belgium	1998	2001	0.47	1.74	0.64	18.14	0.34	-1.63	-1.37	no	-0.09	-1.02
Finland	Belgium	1999	2002	-0.06	-0.13	0.68	12.49	0.16	-1.17	-1.27	no	-0.11	-2.25
Finland	France	1995	1998	2.36	5.70	0.57	9.33	0.10	-2.20		no	-0.08	-1.82
Finland	France	1996	1999	3.34	17.31	0.36	10.82	0.14	-2.43	-2.32	no	-0.12	-2.06
Finland	France	1997	2000	3.23	9.55	0.39	5.99	0.14	-0.93	-2.08	no	-0.14	-2.15
Finland	France	1998	2001	1.55	5.37	0.76	13.30	0.50	-2.45	-2.54	yes	-0.25	-2.30
Finland	France	1999	2002	0.98	3.73	0.85	16.36	0.70	-3.40		yes	-0.42	-3.23
Finland	Germany	1995	1998	-5.89	-13.53	1.23	27.72	0.37	-2.11		no	-0.23	-2.44
Finland	Germany	1996	1999	-4.56	-7.68	1.07	16.76	0.33	-2.05		no	-0.18	-1.96
Finland	Germany	1997	2000	-3.88	-5.44	1.00	12.80	0.13	-1.17		no	-0.06	-1.03
Finland	Germany	1998	2001	-2.77	-4.27	0.87	12.54	0.12	-0.41	-0.91	no	-0.06	-1.07
Finland	Germany	1999	2002	-3.19	-3.07	0.88	8.11	0.05	-0.04		no	-0.01	-0.32
Finland	Ireland	1995	1998	-1.30	-0.44	0.74	2.52	0.04	-1.68	-1.68	no	-0.02	-0.45

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Finland	Ireland	1996	1999	2.32	2.57	0.32	3.41	0.05	-3.30	-2.68	no	-0.10	-2.32
Finland	Ireland	1997	2000	2.17	3.91	0.33	5.53	0.11	0.17	-0.90	no	-0.12	-2.05
Finland	Ireland	1998	2001	0.64	0.99	0.51	7.32	0.13	-1.56	-1.96	no	-0.16	-2.86
Finland	Ireland	1999	2002	-3.21	-7.12	0.94	18.77	0.19	-2.08	-1.53	no	-0.14	-1.64
Finland	Italy	1995	1998	1.85	3.52	0.41	8.28	0.03	-2.27	-1.84	no	-0.05	-1.81
Finland	Italy	1996	1999	3.53	24.82	0.21	13.50	0.09	-2.77	-2.18	no	-0.05	-1.23
Finland	Italy	1997	2000	4.55	17.09	0.09	2.66	0.05	1.32	-2.57	no	-0.08	-2.25
Finland	Italy	1998	2001	3.59	7.44	0.27	3.72	0.04	-1.17	-2.39	no	-0.11	-4.45
Finland	Italy	1999	2002	-1.73	-7.42	1.15	29.94	0.27	-2.72		no	-0.06	-0.63
Finland	Netherlands	1995	1998	1.64	2.30	1.22	6.41	0.03	0.00	-0.54	no	0.01	0.33
Finland	Netherlands	1996	1999	6.94	7.57	-0.46	-1.71	0.05	-3.28	-2.45	no	-0.07	-2.17
Finland	Netherlands	1997	2000	3.37	13.57	0.49	7.62	0.08	-1.90		no	-0.07	-1.58
Finland	Netherlands	1998	2001	2.72	15.75	0.62	15.53	0.23	-2.02	-2.14	no	-0.15	-1.87
Finland	Netherlands	1999	2002	2.02	16.48	0.75	26.51	0.71	-3.80		yes	-0.53	-4.23
Finland	Portugal	1995	1998	2.47	8.61	0.35	13.18	0.16	-1.01	-1.43	no	-0.12	-1.92
Finland	Portugal	1996	1999	3.69	27.50	0.20	13.13	0.18	-2.44	-1.77	no	-0.12	-2.04
Finland	Portugal	1997	2000	4.56	17.84	0.10	2.72	0.06	1.06	-1.77	no	-0.09	-2.19
Finland	Portugal	1998	2001	3.61	7.62	0.29	3.75	0.06	-1.32	-1.68	no	-0.07	-2.15
Finland	Portugal	1999	2002	-0.16	-0.48	0.97	16.67	0.95	-4.30		yes	-0.67	-4.47
Finland	Spain	1995	1998	2.69	11.19	0.46	14.90	0.10	-1.45		no	-0.21	-4.33
Finland	Spain	1996	1999	3.59	32.76	0.30	17.04	0.23	-1.89		no	-0.15	-2.23
Finland	Spain	1997	2000	3.51	12.27	0.34	6.14	0.12	-0.46	-0.80	no	-0.14	-2.23
Finland	Spain	1998	2001	1.82	7.81	0.72	15.38	0.74	-3.46		yes	-0.43	-3.34
Finland	Spain	1999	2002	1.41	6.49	0.81	17.84	0.98	-4.14	-2.45	yes	-0.50	-3.76
Finland	Australia	1995	1998	-1.48	-1.75	0.76	9.08	0.06	-1.26	-1.52	no	-0.12	-3.38
Finland	Australia	1996	1999	0.84	2.02	0.48	11.00	0.12	-1.99	-1.91	no	-0.09	-1.92
Finland	Australia	1997	2000	0.24	0.33	0.55	6.96	0.13	-0.99	-2.58	no	-0.08	-1.34
Finland	Australia	1998	2001	-0.69	-0.75	0.67	6.62	0.10	-1.14	-1.77	no	-0.05	-0.96
Finland	Australia	1999	2002	-1.50	-1.61	0.75	7.26	0.10	-0.76	-1.43	no	-0.03	-0.45
Finland	Canada	1995	1998	2.36	6.22	0.57	10.22	0.09	-0.36	-0.72	no	-0.01	-0.18
Finland	Canada	1996	1999	4.92	8.09	0.08	0.76	0.03	-3.02	-1.68	no	-0.03	-1.52
Finland	Canada	1997	2000	4.39	10.40	0.13	2.02	0.06	0.14	-2.18	no	-0.08	-2.59
Finland	Canada	1998	2001	4.03	6.66	0.20	2.23	0.05	-0.73	-2.01	no	-0.01	-0.35
Finland	Canada	1999	2002	3.88	10.93	0.23	3.88	0.03	-0.57	-2.72	no	-0.02	-0.92
Finland	Japan	1995	1998	2.83	5.81	1.86	6.96	0.07	-1.01		no	0.04	1.35
Finland	Japan	1996	1999	-0.94	-1.00	4.05	6.72	0.08	-3.70	-2.94	yes	-0.11	-2.18
Finland	Japan	1997	2000	2.95	3.64	1.52	2.84	0.06	1.08	-0.85	no	-0.11	-2.57
Finland	Japan	1998	2001	3.38	2.88	1.36	1.69	0.05	-0.72	-2.39	no	-0.06	-2.49
Finland	Japan	1999	2002	-4.48	-2.19	6.94	4.75	0.13	-1.58	-2.30	no	-0.05	-0.94
Finland	Switzerland	1995	1998	-1.89	-3.37	1.69	14.39	0.09	-1.05	-1.91	no	-0.06	-1.26
Finland	Switzerland	1996	1999	0.45	1.00	1.13	10.92	0.12	-2.35	-2.32	no	-0.15	-2.36
Finland	Switzerland	1997	2000	0.47	0.59	1.14	6.08	0.09	-0.78	-1.30	no	-0.11	-2.20
Finland	Switzerland	1998	2001	-4.76	-8.56	2.45	18.24	0.58	-3.20		yes	-0.19	-1.52
Finland	Switzerland	1999	2002	-4.50	-8.94	2.37	19.36	0.54	-1.79	-2.10	yes	-0.21	-1.55
Finland	United Kingdom	1995	1998	8.00	3.86	-0.25	-0.90	0.01	-1.43	-1.58	no	-0.03	-2.01
Finland	United Kingdom	1996	1999	4.12	5.35	0.17	1.64	0.03	-3.98	-2.12	yes	-0.07	-3.01
Finland	United Kingdom	1997	2000	3.47	6.41	0.24	3.28	0.06	1.24	-2.03	no	0.01	0.14
Finland	United Kingdom	1998	2001	4.65	7.88	0.10	1.22	0.04	-0.69	-2.92	no	-0.05	-2.19
Finland	United Kingdom	1999	2002	2.89	5.08	0.38	4.14	0.04	-0.85	-2.18	no	-0.04	-1.63
Finland	USA	1995	1998	-14.69	-4.10	2.46	5.81	0.14	-1.96	-1.01	no	-0.02	-0.39
Finland	USA	1996	1999	0.72	0.28	0.56	1.80	0.04	-2.44	-2.25	no	-0.03	-0.88
Finland	USA	1997	2000	0.20	0.28	0.59	7.03	0.13	-1.10	-1.89	no	-0.04	-0.77
Finland	USA	1998	2001	4.57	7.85	0.10	1.37	0.04	-0.71	-2.67	no	-0.04	-1.76
Finland	USA	1999	2002	4.21	13.27	0.14	3.33	0.04	-0.61	-2.80	no	-0.03	-1.34
France	Austria	1995	1998	-5.17	-5.05	1.65	11.57	0.20	-2.40		no	-0.07	-1.11
France	Austria	1996	1999	-7.58	-8.48	2.04	14.83	0.21	-1.53	-1.81	no	-0.10	-1.57
France	Austria	1997	2000	-3.48	-4.47	1.36	11.02	0.32	-2.38	-2.50	no	-0.19	-1.83
France	Austria	1998	2001	-2.47	-3.61	1.20	10.99	0.36	-2.08		no	-0.22	-2.31
France	Austria	1999	2002	-2.84	-7.09	1.29	19.61	0.96	-4.33		yes	-0.58	-4.09
France	Belgium	1995	1998	-2.27	-1.02	1.19	4.00	0.15	-1.04		no	-0.02	-0.69
France	Belgium	1996	1999	-9.97	-2.05	2.21	3.20	0.08	-1.08	-1.51	no	-0.06	-1.35
France	Belgium	1997	2000	0.43	0.37	0.64	4.01	0.15	-2.76	-2.40	no	-0.24	-3.27
France	Belgium	1998	2001	-0.58	-1.59	0.74	15.34	0.86	-3.60		yes	-0.55	-3.83
France	Belgium	1999	2002	-0.70	-1.49	0.74	12.14	0.62	-2.82		yes	-0.41	-3.36
France	Finland	1995	1998	-0.42	-0.55	1.15	9.33	0.14	-1.45		no	-0.02	-0.39
France	Finland	1996	1999	-5.05	-5.09	1.98	10.82	0.14	-1.59	-1.98	no	-0.04	-0.81
France	Finland	1997	2000	-0.73	-0.75	1.11	5.99	0.18	-2.55	-2.46	no	-0.24	-2.98
France	Finland	1998	2001	-0.59	-1.38	1.05	13.30	0.58	-2.70		yes	-0.31	-2.65
France	Finland	1999	2002	-0.25	-0.77	1.00	16.36	0.79	-3.77		yes	-0.57	-4.20
France	Germany	1995	1998	-8.59	-6.65	1.55	11.81	0.27	-2.53		no	-0.13	-1.63
France	Germany	1996	1999	-17.28	-11.38	2.48	15.10	0.39	-2.43		yes	-0.29	-2.77
France	Germany	1997	2000	-6.28	-3.25	1.24	5.89	0.16	-2.42	-2.25	no	-0.24	-3.02
France	Germany	1998	2001	-4.62	-6.26	1.03	13.10	0.54	-2.67	-2.86	yes	-0.29	-2.64
France	Germany	1999	2002	-4.28	-3.88	0.97	8.42	0.29	-1.61		no	-0.12	-1.49
France	Ireland	1995	1998	2.68	0.61	0.39	0.89	0.05	-0.47		no	-0.03	-1.17
France	Ireland	1996	1999	-0.31	-0.14	0.62	2.71	0.04	-1.48	-2.01	no	-0.08	-2.33
France	Ireland	1997	2000	0.44	0.45	0.49	4.72	0.16	-2.10	-2.04	no	-0.15	-2.22
France	Ireland	1998	2001	0.45	0.50	0.49	5.16	0.20	-1.72		no	-0.12	-1.78
France	Ireland	1999	2002	-3.87	-6.51	0.98	14.94	0.74	-3.20		yes	-0.42	-3.33
France	Italy	1995	1998	-0.99	-3.40	0.72	26.53	0.66	-2.77		yes	-0.30	-2.76
France	Italy	1996	1999	1.01	4.41	0.52	20.86	0.31	-1.65	-1.87	no	-0.14	-1.57
France	Italy	1997	2000	3.05	8.29	0.28	5.70	0.15	-0.95	-1.19	no	-0.09	-1.66
France	Italy	1998	2001	3.77	6.10	0.19	2.05	0.13	-1.34	-1.55	no	-0.07	-1.26
France	Italy	1999	2002	-1.83	-3.38	1.13	12.64	0.55	-3.66		yes	-0.39	-3.19
France	Netherlands	1995	1998	4.93	3.62	0.46	1.24	0.05	-0.08		no	-0.01	-0.30
France	Netherlands	1996	1999	15.18	8.93	-2.80	-5.65	0.18	-2.44		no	-0.13	-1.83

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
France	Netherlands	1997	2000	3.91	6.48	0.31	2.00	0.11	-2.57	-1.97	no	-0.17	-2.86
France	Netherlands	1998	2001	1.91	9.60	0.73	15.87	1.04	-4.24		yes	-0.68	-4.68
France	Netherlands	1999	2002	1.63	8.69	0.78	18.22	1.47	-5.19		yes	-0.75	-4.92
France	Portugal	1995	1998	1.14	3.66	0.52	18.08	0.57	-4.10		yes	-0.43	-3.46
France	Portugal	1996	1999	1.35	6.99	0.51	22.97	0.59	-2.63	-2.55	yes	-0.25	-2.34
France	Portugal	1997	2000	2.98	8.92	0.31	6.49	0.20	-0.99	-1.03	no	-0.13	-1.89
France	Portugal	1998	2001	3.66	6.08	0.22	2.29	0.13	-1.39	-1.53	no	-0.10	-1.78
France	Portugal	1999	2002	-0.31	-0.62	0.96	10.56	0.73	-4.05		yes	-0.69	-4.80
France	Spain	1995	1998	1.50	5.95	0.68	21.01	0.64	-3.36		yes	-0.30	-3.41
France	Spain	1996	1999	1.28	6.73	0.73	23.74	0.55	-3.34	-3.34	yes	-0.30	-2.86
France	Spain	1997	2000	1.33	4.14	0.74	11.94	0.51	-2.43	-2.79	yes	-0.31	-3.17
France	Spain	1998	2001	1.27	3.32	0.77	9.92	0.54	-2.78		yes	-0.28	-2.55
France	Spain	1999	2002	0.87	3.56	0.87	17.14	1.44	-5.09		yes	-0.69	-5.00
France	Australia	1995	1998	-6.27	-10.90	1.28	22.52	0.67	-3.50		yes	-0.33	-3.10
France	Australia	1996	1999	-6.50	-14.43	1.29	27.06	0.68	-3.09		yes	-0.38	-3.12
France	Australia	1997	2000	-4.97	-5.57	1.11	11.30	0.49	-2.96		yes	-0.26	-2.23
France	Australia	1998	2001	-2.49	-2.45	0.84	7.43	0.35	-2.03		no	-0.17	-1.89
France	Australia	1999	2002	-2.39	-2.41	0.82	7.46	0.35	-2.04		no	-0.18	-2.03
France	Canada	1995	1998	3.90	4.43	0.41	3.15	0.06	-0.13		no	0.01	0.18
France	Canada	1996	1999	8.47	6.18	-0.47	-2.10	0.04	-2.17	-2.06	no	-0.09	-2.50
France	Canada	1997	2000	6.68	9.51	-0.25	-2.28	0.11	-1.09	-1.41	no	-0.05	-1.09
France	Canada	1998	2001	3.88	5.33	0.18	1.59	0.12	-1.13	-1.42	no	-0.07	-1.37
France	Canada	1999	2002	3.76	9.33	0.21	3.13	0.14	-1.60		no	-0.09	-1.46
France	Japan	1995	1998	3.81	4.27	1.57	3.21	0.08	-0.81		no	-0.03	-1.16
France	Japan	1996	1999	-8.18	-3.49	8.85	5.90	0.07	-1.47		no	-0.08	-1.74
France	Japan	1997	2000	0.76	0.57	2.88	3.27	0.13	-1.49	-1.36	no	-0.15	-2.42
France	Japan	1998	2001	4.98	3.51	0.03	0.03	0.12	-1.20	-1.60	no	-0.11	-2.09
France	Japan	1999	2002	-1.99	-0.79	4.98	2.79	0.20	-2.07		no	-0.16	-2.17
France	Switzerland	1995	1998	-5.29	-8.76	2.51	19.84	0.52	-3.54		yes	-0.29	-2.60
France	Switzerland	1996	1999	-7.71	-20.33	3.06	35.31	1.37	-4.86		yes	-0.68	-4.66
France	Switzerland	1997	2000	-6.23	-10.54	2.71	19.19	1.19	-4.48		yes	-0.57	-4.30
France	Switzerland	1998	2001	-6.61	-8.91	2.81	15.70	1.26	-4.97		yes	-0.64	-4.37
France	Switzerland	1999	2002	-4.97	-6.64	2.43	13.34	0.93	-3.37		yes	-0.51	-3.27
France	United Kingdom	1995	1998	18.13	7.49	-1.51	-4.77	0.12	-0.18		no	-0.04	-0.83
France	United Kingdom	1996	1999	6.43	3.47	-0.11	-0.44	0.03	-1.35	-1.69	no	-0.05	-1.79
France	United Kingdom	1997	2000	3.85	3.88	0.17	1.26	0.10	-1.81	-1.64	no	-0.09	-1.77
France	United Kingdom	1998	2001	4.95	7.03	0.01	0.11	0.12	-1.20	-1.60	no	-0.06	-1.13
France	United Kingdom	1999	2002	2.75	4.28	0.37	3.53	0.16	-1.85		no	-0.13	-1.97
France	USA	1995	1998	-11.53	-1.88	2.14	2.96	0.09	-1.02	-1.27	no	-0.04	-1.26
France	USA	1996	1999	-4.90	-0.81	1.27	1.73	0.05	-1.06	-1.71	no	-0.06	-1.75
France	USA	1997	2000	-1.58	-1.10	0.78	4.67	0.18	-3.01	-2.57	no	-0.23	-2.84
France	USA	1998	2001	4.10	6.00	0.11	1.37	0.12	-1.16	-1.50	no	-0.07	-1.41
France	USA	1999	2002	4.05	11.40	0.13	2.75	0.14	-1.53		no	-0.11	-1.81
Germany	Austria	1995	1998	2.34	9.59	1.04	30.62	0.48	-2.41		yes	-0.24	-2.37
Germany	Austria	1996	1999	4.64	11.56	0.71	11.54	0.21	-1.81		no	-0.14	-1.93
Germany	Austria	1997	2000	5.49	9.64	0.58	6.45	0.07	0.90		no	-0.03	-0.59
Germany	Austria	1998	2001	3.80	4.98	0.89	7.31	0.06	-0.64	-0.66	no	-0.02	-0.55
Germany	Austria	1999	2002	4.56	7.00	0.82	7.67	0.07	-1.12		no	0.03	0.62
Germany	Belgium	1995	1998	1.79	2.16	1.07	9.66	0.24	-1.47	-0.01	no	-0.05	-0.88
Germany	Belgium	1996	1999	2.53	1.47	0.95	3.91	0.11	-1.74		no	-0.12	-2.03
Germany	Belgium	1997	2000	4.61	18.75	0.62	18.49	0.67	-3.35	-2.93	yes	-0.42	-3.14
Germany	Belgium	1998	2001	4.24	21.62	0.67	26.22	0.83	-3.41	-3.40	yes	-0.37	-2.71
Germany	Belgium	1999	2002	4.54	19.98	0.65	22.14	0.64	-2.94	-2.51	yes	-0.23	-1.73
Germany	Finland	1995	1998	5.07	29.45	0.77	27.72	0.38	-2.18		no	-0.18	-1.96
Germany	Finland	1996	1999	4.94	19.17	0.80	16.76	0.34	-1.99		no	-0.17	-1.92
Germany	Finland	1997	2000	5.04	15.68	0.78	12.80	0.12	-0.39		no	-0.01	-0.21
Germany	Finland	1998	2001	4.59	11.99	0.89	12.54	0.10	-0.33		no	-0.03	-0.56
Germany	Finland	1999	2002	6.05	13.98	0.67	8.11	0.04	-0.90		no	0.01	0.13
Germany	France	1995	1998	6.58	23.75	0.48	11.81	0.24	-3.18		no	-0.15	-1.83
Germany	France	1996	1999	7.36	57.24	0.34	15.10	0.41	-2.91		yes	-0.29	-2.77
Germany	France	1997	2000	7.38	24.44	0.35	5.89	0.11	0.23	-0.15	no	-0.07	-1.09
Germany	France	1998	2001	5.52	18.64	0.77	13.10	0.44	-2.40	-2.55	yes	-0.25	-2.37
Germany	France	1999	2002	6.42	17.21	0.62	8.42	0.19	-1.41		no	-0.09	-1.34
Germany	Ireland	1995	1998	5.17	2.17	0.46	1.93	0.03	-1.94		no	-0.05	-1.49
Germany	Ireland	1996	1999	7.61	9.11	0.17	1.96	0.05	-2.51		no	-0.13	-2.99
Germany	Ireland	1997	2000	7.51	12.77	0.17	2.79	0.04	2.70	-0.31	no	0.01	0.38
Germany	Ireland	1998	2001	6.06	7.28	0.36	3.99	0.03	-1.16	-1.48	no	-0.06	-2.02
Germany	Ireland	1999	2002	2.35	5.25	0.80	16.11	0.15	-0.75	-0.01	no	-0.02	-0.32
Germany	Italy	1995	1998	6.09	17.28	0.35	10.65	0.08	-3.10		no	-0.09	-1.54
Germany	Italy	1996	1999	7.66	61.09	0.18	13.12	0.18	-1.87		no	-0.11	-1.47
Germany	Italy	1997	2000	8.99	35.63	0.02	0.65	0.04	2.92	-1.31	no	-0.03	-1.10
Germany	Italy	1998	2001	8.84	16.03	0.08	0.97	0.02	-0.76	-1.55	no	-0.06	-2.69
Germany	Italy	1999	2002	4.49	8.40	0.84	9.47	0.06	-2.85		no	-0.03	-0.59
Germany	Netherlands	1995	1998	6.83	10.76	0.80	4.69	0.05	-0.20		no	-0.01	-0.17
Germany	Netherlands	1996	1999	11.91	16.70	-0.78	-3.75	0.13	-3.02		no	-0.15	-2.21
Germany	Netherlands	1997	2000	7.22	44.08	0.50	11.92	0.17	-2.60	-1.63	no	-0.14	-1.80
Germany	Netherlands	1998	2001	6.60	47.92	0.65	20.46	0.46	-1.80		yes	-0.18	-1.65
Germany	Netherlands	1999	2002	7.12	30.55	0.56	10.55	0.16	-0.83		no	0.07	0.89
Germany	Portugal	1995	1998	6.72	39.54	0.29	18.55	0.38	-2.01	-2.19	no	-0.17	-1.83
Germany	Portugal	1996	1999	7.79	67.22	0.17	13.11	0.29	-2.13	-2.07	no	-0.18	-2.15
Germany	Portugal	1997	2000	8.95	36.94	0.03	0.82	0.04	2.88	-1.20	no	0.00	0.13
Germany	Portugal	1998	2001	8.88	16.36	0.08	0.90	0.03	-0.74	-1.52	no	-0.03	-1.53
Germany	Portugal	1999	2002	6.58	10.83	0.54	4.90	0.11	-1.74	-1.23	no	-0.05	-0.94
Germany	Spain	1995	1998	6.95	45.72	0.38	19.23	0.32	-2.84	-2.96	no	-0.36	-3.34
Germany	Spain	1996	1999	7.66	97.27	0.26	20.92	0.71	-3.15		yes	-0.38	-3.20
Germany	Spain	1997	2000	7.97	27.21	0.23	4.08	0.06	1.74	1.24	no	0.00	-0.04

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\,r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Germany	Spain	1998	2001	6.48	16.39	0.59	7.39	0.17	-1.56	-1.09	no	-0.10	-1.43
Germany	Spain	1999	2002	6.63	21.76	0.62	9.66	0.32	-1.85	-1.03	no	-0.15	-1.98
Germany	Australia	1995	1998	3.15	6.04	0.66	12.78	0.17	-2.09		no	-0.17	-2.34
Germany	Australia	1996	1999	4.90	21.75	0.46	19.38	0.61	-3.32		yes	-0.35	-3.12
Germany	Australia	1997	2000	3.90	8.04	0.58	10.86	0.25	-1.10	-1.98	no	-0.22	-2.47
Germany	Australia	1998	2001	3.62	3.70	0.64	5.88	0.06	-0.26	-0.85	no	-0.01	-0.23
Germany	Australia	1999	2002	5.43	5.35	0.46	4.05	0.04	-1.00	-1.27	no	-0.04	-1.24
Germany	Canada	1995	1998	7.06	20.04	0.41	7.92	0.09	-0.35		no	0.04	0.61
Germany	Canada	1996	1999	9.14	17.32	0.02	0.19	0.05	-2.47		no	-0.07	-1.90
Germany	Canada	1997	2000	8.19	22.52	0.15	2.66	0.05	1.18	-0.18	no	-0.03	-0.78
Germany	Canada	1998	2001	9.32	14.46	0.01	0.08	0.03	-0.58	-1.82	no	-0.02	-1.04
Germany	Canada	1999	2002	9.77	27.59	-0.04	-0.67	0.03	-1.24	-1.45	no	-0.02	-0.56
Germany	Japan	1995	1998	7.13	18.78	1.49	7.12	0.07	-0.80	-1.23	no	-0.02	-0.60
Germany	Japan	1996	1999	4.93	5.19	2.77	4.55	0.08	-2.44		no	-0.12	-2.29
Germany	Japan	1997	2000	8.93	11.49	0.14	0.27	0.04	2.70	-1.29	no	0.00	0.11
Germany	Japan	1998	2001	10.50	8.66	-0.78	-0.94	0.03	-0.58	-2.22	no	-0.05	-2.27
Germany	Japan	1999	2002	5.41	2.60	2.95	1.98	0.05	-2.00		no	-0.07	-1.86
Germany	Switzerland	1995	1998	3.13	9.49	1.40	20.32	0.24	-2.08		no	-0.13	-1.67
Germany	Switzerland	1996	1999	4.71	15.13	1.04	14.65	0.23	-2.44		no	-0.17	-2.09
Germany	Switzerland	1997	2000	5.23	7.11	0.94	5.32	0.07	0.68	0.74	no	-0.07	-1.48
Germany	Switzerland	1998	2001	-0.49	-0.70	2.38	14.10	0.38	-2.92		no	-0.08	-0.98
Germany	Switzerland	1999	2002	3.45	3.55	1.48	6.27	0.08	0.11	-0.10	no	0.02	0.46
Germany	United Kingdom	1995	1998	12.97	8.20	-0.42	-2.03	0.03	-1.13		no	-0.06	-1.81
Germany	United Kingdom	1996	1999	9.45	13.84	-0.03	-0.30	0.05	-2.52		no	-0.10	-2.61
Germany	United Kingdom	1997	2000	8.94	16.80	0.03	0.39	0.04	2.73	-1.36	no	0.00	0.12
Germany	United Kingdom	1998	2001	10.43	17.80	-0.15	-1.84	0.04	-0.68	-2.14	no	-0.06	-2.23
Germany	United Kingdom	1999	2002	9.90	17.14	-0.06	-0.63	0.03	-1.20	-2.17	no	-0.05	-1.67
Germany	USA	1995	1998	-4.98	-1.65	1.74	4.88	0.12	-2.22	-1.17	no	-0.04	-0.95
Germany	USA	1996	1999	6.24	2.75	0.36	1.32	0.05	-2.20		no	-0.11	-2.65
Germany	USA	1997	2000	3.73	8.34	0.64	12.12	0.19	-0.77	-2.48	no	-0.09	-1.06
Germany	USA	1998	2001	9.61	16.01	-0.03	-0.41	0.03	-0.68	-1.90	no	-0.02	-0.68
Germany	USA	1999	2002	9.86	32.54	-0.05	-1.11	0.04	-1.28	-2.14	no	0.03	1.20
Ireland	Austria	1995	1998	8.31	13.34	0.24	2.82	0.24	-0.80	-1.85	no	-0.15	-1.79
Ireland	Austria	1996	1999	3.91	4.01	0.86	5.77	0.10	-1.24	-1.88	no	-0.09	-2.00
Ireland	Austria	1997	2000	-0.37	-0.39	1.55	10.50	0.21	-1.70		no	-0.09	-1.33
Ireland	Austria	1998	2001	0.03	0.04	1.48	11.25	0.24	-1.98		no	-0.18	-2.29
Ireland	Austria	1999	2002	1.95	4.38	1.16	15.87	0.24	-2.36		no	-0.12	-1.58
Ireland	Belgium	1995	1998	7.30	9.61	0.37	3.62	0.27	-0.62	-2.09	no	-0.17	-1.78
Ireland	Belgium	1996	1999	-5.00	-2.09	2.05	6.07	0.23	-1.57	-1.97	no	-0.21	-2.73
Ireland	Belgium	1997	2000	5.46	3.76	0.55	2.74	0.08	-1.02	-1.54	no	-0.06	-1.61
Ireland	Belgium	1998	2001	4.88	5.39	0.58	4.90	0.11	-1.89	-2.60	no	-0.15	-2.80
Ireland	Belgium	1999	2002	3.15	14.71	0.76	27.56	0.94	-3.68	-1.33	yes	-0.37	-2.68
Ireland	Finland	1995	1998	9.04	22.30	0.16	2.52	0.24	-0.66	-1.80	no	-0.25	-2.53
Ireland	Finland	1996	1999	6.14	6.17	0.63	3.41	0.09	-0.99	-1.60	no	-0.10	-1.95
Ireland	Finland	1997	2000	2.98	2.56	1.23	5.53	0.12	-0.97	-1.42	no	-0.07	-1.43
Ireland	Finland	1998	2001	3.62	4.65	1.06	7.32	0.16	-2.04	-2.42	no	-0.20	-2.95
Ireland	Finland	1999	2002	4.07	15.38	0.94	18.77	0.20	-2.44		no	-0.18	-2.03
Ireland	France	1995	1998	9.76	29.64	0.04	0.89	0.22	-0.54	-1.59	no	-0.14	-1.74
Ireland	France	1996	1999	8.26	17.54	0.22	2.71	0.08	-0.69	-1.35	no	-0.05	-1.22
Ireland	France	1997	2000	6.06	8.41	0.66	4.72	0.12	-1.36		no	-0.05	-1.02
Ireland	France	1998	2001	5.55	7.61	0.74	5.16	0.15	-1.85		no	-0.14	-2.11
Ireland	France	1999	2002	4.80	16.91	0.84	14.94	0.66	-3.03		yes	-0.37	-2.95
Ireland	Germany	1995	1998	8.45	10.17	0.16	1.93	0.23	-0.62	-1.75	no	-0.14	-1.73
Ireland	Germany	1996	1999	5.35	2.52	0.45	1.96	0.07	-0.59	-1.16	no	-0.04	-1.15
Ireland	Germany	1997	2000	1.80	0.66	0.83	2.79	0.06	-0.81	-1.17	no	-0.04	-1.27
Ireland	Germany	1998	2001	2.53	1.49	0.72	3.99	0.08	-1.71	-2.05	no	-0.12	-2.54
Ireland	Germany	1999	2002	-1.14	-1.81	1.06	16.11	0.16	-0.70	0.07	no	-0.04	-0.57
Ireland	Italy	1995	1998	9.70	24.99	0.03	0.92	0.22	-0.59	-1.66	no	-0.10	-1.28
Ireland	Italy	1996	1999	7.81	21.84	0.19	4.91	0.09	-1.07	-1.72	no	-0.08	-1.82
Ireland	Italy	1997	2000	6.42	20.02	0.41	9.59	0.16	-1.76	-2.17	no	-0.16	-2.29
Ireland	Italy	1998	2001	4.67	11.86	0.70	11.87	0.23	-2.06	-2.43	no	-0.28	-2.92
Ireland	Italy	1999	2002	2.29	6.23	1.11	18.40	0.25	-5.30		yes	-0.45	-4.03
Ireland	Netherlands	1995	1998	8.26	21.96	0.49	4.81	0.33	-0.65	-1.97	no	-0.26	-1.89
Ireland	Netherlands	1996	1999	8.39	6.41	0.33	0.86	0.06	-0.37	-0.91	no	-0.04	-1.01
Ireland	Netherlands	1997	2000	8.80	12.21	0.16	0.87	0.06	-0.93	-1.34	no	-0.05	-1.70
Ireland	Netherlands	1998	2001	7.19	13.38	0.49	3.97	0.08	-1.90	-2.17	no	-0.12	-2.61
Ireland	Netherlands	1999	2002	5.77	54.51	0.75	31.18	0.62	-2.65	-0.45	yes	-0.26	-2.17
Ireland	Portugal	1995	1998	9.58	33.41	0.04	1.67	0.23	-0.71	-1.73	no	-0.14	-1.83
Ireland	Portugal	1996	1999	8.08	23.53	0.17	4.35	0.10	-1.07	-1.49	no	-0.07	-1.61
Ireland	Portugal	1997	2000	6.69	19.67	0.40	8.24	0.21	-1.98		no	-0.15	-2.01
Ireland	Portugal	1998	2001	4.88	11.60	0.72	10.57	0.38	-2.44	-2.36	no	-0.23	-2.35
Ireland	Portugal	1999	2002	4.39	8.30	0.84	8.79	0.38	-3.02	-2.43	no	-0.34	-3.12
Ireland	Spain	1995	1998	9.71	36.22	0.05	1.32	0.21	-0.56	-1.68	no	-0.05	-0.71
Ireland	Spain	1996	1999	8.35	22.39	0.19	3.24	0.07	-0.77	-1.32	no	-0.05	-1.35
Ireland	Spain	1997	2000	5.36	12.20	0.79	9.38	0.26	-2.67		no	-0.16	-1.88
Ireland	Spain	1998	2001	4.43	10.79	0.99	11.93	0.48	-2.78		yes	-0.42	-3.95
Ireland	Spain	1999	2002	5.15	24.70	0.82	18.73	1.15	-4.34	-2.72	yes	-0.51	-4.42
Ireland	Australia	1995	1998	10.01	15.07	0.00	0.06	0.21	-0.39	-1.56	no	-0.14	-1.75
Ireland	Australia	1996	1999	7.71	7.20	0.19	1.69	0.07	-0.58	-1.17	no	-0.04	-1.10
Ireland	Australia	1997	2000	4.70	2.50	0.52	2.51	0.08	-0.96	-1.59	no	-0.04	-1.05
Ireland	Australia	1998	2001	4.65	2.71	0.52	2.71	0.09	-1.67	-2.30	no	-0.09	-1.88
Ireland	Australia	1999	2002	2.85	2.80	0.69	6.06	0.11	-1.15	-1.81	no	-0.12	-2.08
Ireland	Canada	1995	1998	9.33	30.64	0.11	2.42	0.23	-0.27	-1.48	no	0.03	0.42
Ireland	Canada	1996	1999	11.39	14.11	-0.31	-2.35	0.10	-1.04	-1.45	no	-0.02	-0.43
Ireland	Canada	1997	2000	11.00	13.35	-0.25	-1.94	0.09	-0.77	-1.50	no	-0.06	-1.57
Ireland	Canada	1998	2001	7.96	8.89	0.20	1.49	0.07	-1.53	-2.24	no	-0.08	-2.57

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Ireland	Canada	1999	2002	8.34	20.94	0.11	1.73	0.04	-1.18	-2.51	no	-0.03	-1.13
Ireland	Japan	1995	1998	9.08	30.80	0.54	3.35	0.27	-0.92	-2.24	no	-0.14	-1.60
Ireland	Japan	1996	1999	-1.72	-2.10	7.20	13.75	0.32	-1.91	-2.50	no	-0.15	-1.78
Ireland	Japan	1997	2000	-0.57	-0.67	6.62	11.74	0.28	-1.76		no	-0.25	-3.42
Ireland	Japan	1998	2001	1.28	1.00	5.51	6.27	0.17	-1.44		no	-0.11	-1.97
Ireland	Japan	1999	2002	1.70	0.75	5.22	3.23	0.11	-2.13		no	-0.09	-1.70
Ireland	Switzerland	1995	1998	9.06	15.00	0.21	1.65	0.22	-0.62	-1.70	no	-0.13	-1.71
Ireland	Switzerland	1996	1999	6.33	5.75	0.73	2.89	0.08	-0.65	-1.25	no	-0.05	-1.29
Ireland	Switzerland	1997	2000	1.10	0.67	1.99	5.08	0.12	-1.51	-1.84	no	-0.05	-1.05
Ireland	Switzerland	1998	2001	-0.24	-0.13	2.30	5.25	0.12	-1.44	-2.66	no	-0.14	-2.59
Ireland	Switzerland	1999	2002	0.03	0.04	2.19	11.84	0.20	-0.47		no	-0.07	-0.78
Ireland	United Kingdom	1995	1998	6.36	7.75	0.48	4.50	0.25	-0.56		no	-0.06	-0.68
Ireland	United Kingdom	1996	1999	3.38	5.37	0.84	9.79	0.17	-1.46		no	0.05	0.62
Ireland	United Kingdom	1997	2000	2.86	4.41	0.90	10.18	0.18	-1.36		no	-0.17	-1.92
Ireland	United Kingdom	1998	2001	5.83	8.39	0.50	5.02	0.09	-0.89		no	-0.05	-1.05
Ireland	United Kingdom	1999	2002	7.84	12.12	0.19	1.83	0.05	-1.33	-2.40	no	-0.06	-1.67
Ireland	USA	1995	1998	-3.13	-2.89	1.56	12.17	0.78	-3.30		yes	-0.35	-3.10
Ireland	USA	1996	1999	-10.90	-4.90	2.47	9.17	0.16	0.61		no	0.10	1.26
Ireland	USA	1997	2000	4.07	2.20	0.63	2.90	0.05	-0.94	-1.25	no	0.01	0.23
Ireland	USA	1998	2001	8.09	9.66	0.15	1.44	0.07	-1.36	-1.73	no	-0.09	-2.01
Ireland	USA	1999	2002	8.58	24.61	0.06	1.29	0.05	-1.10	-2.49	no	-0.03	-0.96
Italy	Austria	1995	1998	-4.66	-3.06	2.13	10.03	0.04	-1.50	-1.02	no	0.01	0.29
Italy	Austria	1996	1999	-16.92	-19.36	3.97	29.58	0.34	-2.15	-2.57	no	-0.16	-1.78
Italy	Austria	1997	2000	-9.89	-4.25	2.74	7.44	0.04	0.03		no	-0.04	-0.91
Italy	Austria	1998	2001	-2.37	-1.62	1.43	6.12	0.04	-3.49		yes	-0.11	-2.36
Italy	Austria	1999	2002	-0.04	-0.13	1.00	18.77	0.26	-2.29		no	-0.04	-0.43
Italy	Belgium	1995	1998	0.00	0.00	1.41	3.40	0.05	0.52	-0.41	no	0.04	2.79
Italy	Belgium	1996	1999	-30.00	-3.77	5.49	4.89	0.09	-0.78		no	-0.06	-1.22
Italy	Belgium	1997	2000	7.18	2.29	0.03	0.06	0.01	-3.16	-1.41	no	-0.02	-1.95
Italy	Belgium	1998	2001	4.28	3.21	0.30	1.72	0.03	-3.56	-2.23	yes	-0.07	-2.77
Italy	Belgium	1999	2002	1.48	4.41	0.59	13.67	0.28	-3.11		no	-0.19	-2.19
Italy	Finland	1995	1998	1.51	1.36	1.47	8.28	0.03	0.34	-0.51	no	0.05	2.44
Italy	Finland	1996	1999	-11.65	-7.64	3.81	13.50	0.07	-1.37	-1.44	no	-0.01	-0.32
Italy	Finland	1997	2000	-0.09	-0.03	1.42	2.66	0.01	-2.24	-1.04	no	-0.04	-2.75
Italy	Finland	1998	2001	1.98	1.60	0.85	3.72	0.02	-4.74	-2.65	yes	-0.09	-4.04
Italy	Finland	1999	2002	1.72	11.89	0.82	29.94	0.28	-2.88		no	-0.12	-1.49
Italy	France	1995	1998	1.93	5.83	1.30	26.53	0.62	-2.50		yes	-0.26	-2.56
Italy	France	1996	1999	-0.91	-1.89	1.73	20.86	0.29	-1.42	-1.61	no	-0.11	-1.39
Italy	France	1997	2000	-0.23	-0.17	1.49	5.70	0.07	-0.54	-0.86	no	-0.02	-0.40
Italy	France	1998	2001	4.36	4.03	0.44	2.05	0.03	-3.18		no	-0.04	-1.42
Italy	France	1999	2002	2.61	9.53	0.69	12.64	0.47	-3.40		yes	-0.28	-2.35
Italy	Germany	1995	1998	-9.33	-4.98	2.03	10.65	0.07	-1.29		no	0.03	0.79
Italy	Germany	1996	1999	-31.75	-10.26	4.39	13.12	0.14	-0.91		no	-0.04	-0.60
Italy	Germany	1997	2000	3.53	0.60	0.42	0.65	0.01	-3.11	-1.70	no	-0.02	-1.83
Italy	Germany	1998	2001	4.24	1.76	0.25	0.97	0.03	-3.36	-2.09	no	-0.05	-2.53
Italy	Germany	1999	2002	-1.51	-1.89	0.79	9.47	0.09	-2.14		no	-0.02	-0.50
Italy	Ireland	1995	1998	5.08	0.86	0.54	0.92	0.01	1.25	-1.57	no	0.02	1.10
Italy	Ireland	1996	1999	-8.21	-2.36	1.79	4.91	0.04	-1.54	-1.90	no	-0.07	-2.34
Italy	Ireland	1997	2000	-8.06	-4.99	1.64	9.59	0.11	-2.51	-2.42	no	-0.18	-2.43
Italy	Ireland	1998	2001	-3.38	-4.02	1.07	11.87	0.18	-2.65	-2.72	no	-0.20	-1.72
Italy	Ireland	1999	2002	-1.08	-2.79	0.79	18.40	0.25	-5.02	-2.68	yes	-0.30	-2.81
Italy	Netherlands	1995	1998	9.14	4.94	0.38	0.76	0.01	2.28	0.16	no	0.02	1.86
Italy	Netherlands	1996	1999	22.34	6.40	-3.95	-3.89	0.07	-1.86		no	-0.02	-0.57
Italy	Netherlands	1997	2000	10.23	7.35	-0.75	-2.09	0.02	-1.75	-2.03	no	-0.02	-0.96
Italy	Netherlands	1998	2001	5.86	7.70	0.17	0.94	0.03	-3.43	-2.16	yes	-0.05	-2.28
Italy	Netherlands	1999	2002	3.40	24.32	0.61	19.17	0.49	-4.28		yes	-0.39	-3.18
Italy	Portugal	1995	1998	3.21	7.53	0.70	17.74	0.28	-3.76	-2.36	yes	-0.19	-1.86
Italy	Portugal	1996	1999	0.82	4.40	0.96	45.03	1.14	-4.33	-4.37	yes	-0.52	-3.82
Italy	Portugal	1997	2000	0.41	2.02	1.01	35.23	1.19	-4.58		yes	-0.70	-4.77
Italy	Portugal	1998	2001	0.29	1.29	1.03	28.19	1.18	-4.34	-2.75	yes	-0.63	-4.32
Italy	Portugal	1999	2002	1.59	5.11	0.80	14.36	0.75	-3.13	-2.51	yes	-0.42	-3.26
Italy	Spain	1995	1998	3.67	10.91	0.92	21.17	0.17	-1.73		no	-0.01	-0.17
Italy	Spain	1996	1999	0.92	2.69	1.32	24.09	0.36	-2.26	-0.34	no	-0.17	-1.70
Italy	Spain	1997	2000	-1.22	-1.56	1.68	11.13	0.24	-1.37	-0.46	no	-0.19	-2.03
Italy	Spain	1998	2001	2.15	2.73	0.90	5.65	0.12	-2.65	-3.06	no	-0.27	-3.39
Italy	Spain	1999	2002	2.93	12.85	0.66	13.71	0.74	-4.13	-3.06	yes	-0.48	-4.15
Italy	Australia	1995	1998	-6.75	-8.63	1.72	22.23	0.24	-2.13		no	-0.06	-0.70
Italy	Australia	1996	1999	-11.78	-8.27	2.19	14.54	0.10	-0.35		no	-0.02	-0.45
Italy	Australia	1997	2000	-0.21	-0.06	0.84	1.97	0.01	-1.81	-1.07	no	0.01	0.45
Italy	Australia	1998	2001	5.18	2.29	0.15	0.61	0.03	-3.25	-2.20	no	-0.04	-1.91
Italy	Australia	1999	2002	0.96	1.10	0.57	5.83	0.10	-1.35	-1.53	no	0.00	0.07
Italy	Canada	1995	1998	7.54	6.16	0.46	2.51	0.02	2.10	0.59	no	0.05	2.98
Italy	Canada	1996	1999	14.32	5.78	-0.91	-2.24	0.02	-2.31	-1.60	no	-0.04	-2.04
Italy	Canada	1997	2000	15.51	12.76	-1.28	-6.77	0.09	-1.11	-1.47	no	-0.05	-0.97
Italy	Canada	1998	2001	5.39	4.82	0.18	1.06	0.03	-3.61	-2.09	yes	-0.04	-1.94
Italy	Canada	1999	2002	5.16	16.13	0.15	2.78	0.05	-0.74	-1.53	no	-0.03	-1.18
Italy	Japan	1995	1998	7.38	5.96	1.78	2.62	0.02	0.76	-0.84	no	0.00	0.43
Italy	Japan	1996	1999	-22.58	-7.00	20.12	9.76	0.07	-1.95	-1.94	no	-0.10	-2.16
Italy	Japan	1997	2000	-13.76	-9.84	14.00	15.15	0.23	-2.60	-2.09	no	-0.32	-4.04
Italy	Japan	1998	2001	-6.15	-5.91	8.75	12.23	0.32	-2.41	-3.19	yes	-0.22	-2.60
Italy	Japan	1999	2002	-2.68	-1.60	6.23	5.21	0.16	-1.51	-2.06	no	-0.08	-1.51
Italy	Switzerland	1995	1998	-5.01	-5.11	3.28	15.96	0.12	-1.75	-1.30	no	-0.04	-0.55
Italy	Switzerland	1996	1999	-14.86	-14.31	5.44	22.91	0.26	-0.92	-1.11	no	-0.07	-0.80
Italy	Switzerland	1997	2000	-12.52	-4.34	4.76	6.91	0.07	-0.25		no	-0.03	-0.66
Italy	Switzerland	1998	2001	0.52	0.19	1.46	2.25	0.03	-2.83	-3.37	yes	-0.07	-2.58
Italy	Switzerland	1999	2002	-1.75	-3.04	1.90	13.51	0.27	-1.25	-1.08	no	-0.18	-1.24

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Italy	United Kingdom	1995	1998	25.97	7.97	-2.03	-4.75	0.08	1.26	0.35	no	0.04	1.07
Italy	United Kingdom	1996	1999	4.55	1.37	0.59	1.29	0.01	-1.61	-1.68	no	-0.03	-3.43
Italy	United Kingdom	1997	2000	-2.35	-1.27	1.34	5.28	0.04	-4.01	-3.16	yes	-0.13	-3.51
Italy	United Kingdom	1998	2001	1.03	1.52	0.80	8.25	0.07	-1.43	-1.41	no	0.01	0.19
Italy	United Kingdom	1999	2002	4.51	8.73	0.25	2.99	0.05	-0.75	-1.44	no	-0.02	-0.98
Italy	USA	1995	1998	-13.21	-1.60	2.80	2.87	0.04	-0.33	-1.41	no	0.00	-0.14
Italy	USA	1996	1999	-22.76	-2.18	3.82	3.03	0.03	0.06	-0.98	no	-0.03	-1.09
Italy	USA	1997	2000	6.82	1.69	0.07	0.14	0.01	-3.19	-1.40	no	-0.03	-2.04
Italy	USA	1998	2001	5.33	5.13	0.15	1.19	0.03	-3.26	-2.28	no	-0.03	-1.33
Italy	USA	1999	2002	5.45	19.12	0.08	2.14	0.05	-0.80	-1.75	no	-0.03	-1.26
Netherlands	Austria	1995	1998	0.33	0.52	0.47	5.34	0.06	-1.08		no	-0.07	-1.80
Netherlands	Austria	1996	1999	4.55	9.83	-0.17	-2.45	0.23	-1.74		no	-0.16	-2.40
Netherlands	Austria	1997	2000	0.19	0.15	0.58	2.92	0.06	-0.69	-0.14	no	-0.09	-1.97
Netherlands	Austria	1998	2001	-4.55	-4.60	1.41	8.92	0.12	-1.90	-2.04	no	-0.14	-2.65
Netherlands	Austria	1999	2002	-5.30	-13.96	1.58	25.36	0.73	-3.82		yes	-0.45	-3.44
Netherlands	Belgium	1995	1998	-2.40	-4.85	0.81	12.34	0.54	-2.74		yes	-0.08	-1.23
Netherlands	Belgium	1996	1999	0.53	0.46	0.41	2.50	0.12	-0.90		no	-0.08	-1.68
Netherlands	Belgium	1997	2000	-3.99	-9.09	1.08	17.88	0.41	-3.15	-2.93	yes	-0.32	-2.75
Netherlands	Belgium	1998	2001	-3.23	-11.71	0.98	27.27	0.65	-2.69	-0.68	yes	-0.26	-1.33
Netherlands	Belgium	1999	2002	-3.02	-7.43	0.95	18.08	0.40	-1.68	-0.14	yes	-0.11	-1.13
Netherlands	Finland	1995	1998	1.31	3.51	0.39	6.41	0.07	-1.36	-1.23	no	-0.23	-3.19
Netherlands	Finland	1996	1999	4.13	9.95	-0.13	-1.71	0.21	-1.62		no	-0.47	-5.37
Netherlands	Finland	1997	2000	-2.18	-2.75	1.15	7.62	0.09	-2.05		no	-0.08	-1.40
Netherlands	Finland	1998	2001	-3.00	-6.39	1.35	15.53	0.25	-2.19	-1.86	no	-0.13	-1.55
Netherlands	Finland	1999	2002	-2.28	-9.14	1.26	26.51	0.75	-3.98		yes	-0.64	-4.88
Netherlands	France	1995	1998	3.20	8.24	0.07	1.24	0.05	-2.52	-1.99	no	-0.08	-2.16
Netherlands	France	1996	1999	4.25	28.33	-0.15	-5.65	0.33	-2.35		no	-0.16	-2.03
Netherlands	France	1997	2000	2.52	3.79	0.26	2.00	0.07	-0.59	-0.95	no	-0.03	-0.63
Netherlands	France	1998	2001	-1.55	-4.22	1.15	15.87	0.98	-4.13		yes	-0.66	-4.58
Netherlands	France	1999	2002	-1.31	-4.21	1.12	18.22	1.43	-5.01		yes	-0.72	-4.72
Netherlands	Germany	1995	1998	-0.27	-0.32	0.40	4.69	0.07	-1.33		no	-0.05	-1.10
Netherlands	Germany	1996	1999	6.20	8.35	-0.30	-3.75	0.26	-2.07		no	-0.12	-1.56
Netherlands	Germany	1997	2000	-9.96	-8.59	1.51	11.92	0.19	-3.39		yes	-0.29	-3.25
Netherlands	Germany	1998	2001	-8.70	-13.72	1.38	20.46	0.50	-1.97		yes	-0.26	-2.28
Netherlands	Germany	1999	2002	-7.69	-6.76	1.26	10.55	0.21	-0.74		no	-0.03	-0.45
Netherlands	Ireland	1995	1998	-3.24	-2.25	0.69	4.81	0.16	-1.85		no	-0.19	-1.95
Netherlands	Ireland	1996	1999	2.96	5.52	0.05	0.86	0.18	-1.22		no	-0.09	-1.41
Netherlands	Ireland	1997	2000	2.89	2.64	0.10	0.87	0.06	0.46	-0.67	no	0.01	0.25
Netherlands	Ireland	1998	2001	-0.55	-0.45	0.52	3.97	0.07	-1.54		no	-0.11	-2.55
Netherlands	Ireland	1999	2002	-7.10	-19.37	1.26	31.18	0.65	-2.63	-0.40	yes	-0.26	-2.12
Netherlands	Italy	1995	1998	3.33	7.19	0.03	0.76	0.05	-2.58	-2.12	no	-0.05	-0.99
Netherlands	Italy	1996	1999	3.97	26.98	-0.06	-3.89	0.24	-1.94		no	-0.14	-2.13
Netherlands	Italy	1997	2000	4.70	11.18	-0.12	-2.09	0.07	0.71	-1.46	no	-0.10	-2.48
Netherlands	Italy	1998	2001	3.50	4.36	0.11	0.94	0.06	-1.12	-2.19	no	-0.17	-3.91
Netherlands	Italy	1999	2002	-4.45	-9.71	1.45	19.17	0.52	-4.32		yes	-0.52	-3.33
Netherlands	Portugal	1995	1998	2.81	8.63	0.08	2.73	0.05	-1.62	-1.69	no	-0.06	-1.53
Netherlands	Portugal	1996	1999	3.95	29.52	-0.06	-4.13	0.26	-2.06		no	-0.12	-1.67
Netherlands	Portugal	1997	2000	4.63	11.40	-0.11	-2.00	0.07	0.69	-1.37	no	-0.04	-0.82
Netherlands	Portugal	1998	2001	3.44	4.37	0.13	1.03	0.07	-1.17	-1.81	no	-0.08	-2.20
Netherlands	Portugal	1999	2002	-2.15	-3.69	1.17	11.13	0.65	-3.84		yes	-0.60	-4.56
Netherlands	Spain	1995	1998	2.94	9.65	0.10	2.50	0.05	-2.04	-1.90	no	-0.07	-1.79
Netherlands	Spain	1996	1999	3.96	29.10	-0.09	-4.10	0.27	-2.20		no	-0.17	-2.26
Netherlands	Spain	1997	2000	3.35	5.69	0.10	0.85	0.06	0.22	-0.52	no	-0.04	-0.91
Netherlands	Spain	1998	2001	-0.22	-0.42	0.91	8.53	0.27	-2.38	-1.98	no	-0.22	-2.44
Netherlands	Spain	1999	2002	-0.79	-3.45	1.08	22.47	1.76	-5.99		yes	-0.86	-6.55
Netherlands	Australia	1995	1998	2.88	3.68	0.08	1.03	0.05	-2.38	-2.23	no	-0.08	-2.21
Netherlands	Australia	1996	1999	5.32	16.80	-0.20	-6.03	0.36	-2.59		no	-0.19	-1.97
Netherlands	Australia	1997	2000	-2.49	-1.94	0.70	4.95	0.09	-1.85	-1.74	no	-0.17	-3.14
Netherlands	Australia	1998	2001	-5.50	-4.51	1.08	8.01	0.17	-1.40		no	-0.09	-1.35
Netherlands	Australia	1999	2002	-4.54	-3.82	0.99	7.44	0.18	-1.18		no	-0.08	-1.26
Netherlands	Canada	1995	1998	1.50	7.51	0.33	11.12	0.19	-1.90		no	-0.09	-1.43
Netherlands	Canada	1996	1999	2.35	8.19	0.18	3.78	0.22	-1.54		no	-0.15	-2.13
Netherlands	Canada	1997	2000	0.57	1.21	0.52	7.03	0.13	-0.20		no	-0.08	-1.21
Netherlands	Canada	1998	2001	2.61	2.88	0.25	1.82	0.06	-0.81	-1.70	no	-0.06	-1.65
Netherlands	Canada	1999	2002	2.90	5.94	0.24	2.94	0.08	-1.14	-2.26	no	-0.05	-1.26
Netherlands	Japan	1995	1998	1.65	6.76	1.14	8.48	0.17	-1.25	-1.50	no	-0.06	-1.16
Netherlands	Japan	1996	1999	3.91	5.53	-0.31	-0.69	0.19	-1.39		no	-0.07	-1.23
Netherlands	Japan	1997	2000	6.05	4.62	-1.47	-1.69	0.07	0.53	-1.14	no	-0.02	-0.40
Netherlands	Japan	1998	2001	5.52	3.11	-0.88	-0.72	0.07	-0.92	-2.40	no	-0.10	-2.67
Netherlands	Japan	1999	2002	-6.25	-2.19	7.54	3.71	0.14	-1.93		no	-0.13	-1.92
Netherlands	Switzerland	1995	1998	1.69	2.50	0.42	2.95	0.05	-1.80	-1.61	no	-0.06	-1.43
Netherlands	Switzerland	1996	1999	5.35	14.79	-0.44	-5.35	0.32	-2.26		no	-0.15	-1.77
Netherlands	Switzerland	1997	2000	1.37	0.86	0.59	1.57	0.06	-0.33	-0.65	no	-0.05	-1.26
Netherlands	Switzerland	1998	2001	-10.72	-13.40	3.62	18.73	0.77	-5.54		yes	-0.43	-3.32
Netherlands	Switzerland	1999	2002	-8.00	-10.19	3.00	15.69	0.46	-1.89		yes	-0.30	-2.21
Netherlands	United Kingdom	1995	1998	-0.23	-0.23	0.51	3.84	0.07	-3.76		yes	-0.16	-3.18
Netherlands	United Kingdom	1996	1999	1.76	5.09	0.23	4.82	0.24	-1.17		no	-0.05	-0.65
Netherlands	United Kingdom	1997	2000	3.71	4.02	0.02	0.14	0.06	0.59	-0.78	no	0.04	0.89
Netherlands	United Kingdom	1998	2001	5.00	5.70	-0.11	-0.86	0.07	-0.90	-2.60	no	-0.08	-2.01
Netherlands	United Kingdom	1999	2002	1.84	2.34	0.40	3.16	0.08	-1.35	-2.04	no	-0.07	-1.71
Netherlands	USA	1995	1998	-9.40	-5.18	1.54	7.21	0.26	-2.29		no	0.03	0.29
Netherlands	USA	1996	1999	2.16	1.52	0.15	0.88	0.18	-1.33		no	-0.07	-1.28
Netherlands	USA	1997	2000	-5.09	-5.74	1.05	10.09	0.18	-1.47	-1.91	no	-0.04	-0.60
Netherlands	USA	1998	2001	3.30	3.81	0.12	1.11	0.06	-0.98	-2.28	no	-0.02	-0.48
Netherlands	USA	1999	2002	3.27	7.58	0.14	2.47	0.08	-1.10	-2.47	no	-0.10	-2.00
Portugal	Austria	1995	1998	-12.74	-10.96	3.25	20.09	0.37	-1.96	-1.30	no	-0.14	-1.67

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Portugal	Austria	1996	1999	-17.95	-17.43	4.05	25.63	0.62	-2.90		yes	-0.21	-1.99
Portugal	Austria	1997	2000	-10.02	-4.48	2.68	7.57	0.14	-1.09		no	-0.14	-2.00
Portugal	Austria	1998	2001	-2.56	-1.90	1.38	6.44	0.15	-2.97	-3.41	yes	-0.28	-4.25
Portugal	Austria	1999	2002	-1.14	-2.66	1.10	15.61	1.03	-4.44		yes	-0.79	-5.04
Portugal	Belgium	1995	1998	-10.51	-3.04	2.80	6.10	0.19	-0.91		no	0.02	0.44
Portugal	Belgium	1996	1999	-29.24	-3.47	5.32	4.46	0.13	-1.12		no	-0.07	-1.24
Portugal	Belgium	1997	2000	6.39	2.09	0.07	0.16	0.05	-2.42	-1.93	no	-0.11	-3.11
Portugal	Belgium	1998	2001	3.95	3.14	0.28	1.70	0.08	-2.68	-1.54	no	-0.15	-2.97
Portugal	Belgium	1999	2002	1.36	2.34	0.54	7.21	0.34	-2.22		no	-0.24	-2.53
Portugal	Finland	1995	1998	-3.38	-3.17	2.26	13.18	0.19	-0.82	-0.94	no	-0.02	-0.33
Portugal	Finland	1996	1999	-12.63	-7.87	3.90	13.13	0.18	-1.64	-1.47	no	-0.12	-1.95
Portugal	Finland	1997	2000	-0.49	-0.18	1.41	2.72	0.06	-1.94		no	-0.14	-3.45
Portugal	Finland	1998	2001	1.74	1.49	0.81	3.75	0.10	-2.96	-2.11	no	-0.23	-4.18
Portugal	Finland	1999	2002	0.92	3.32	0.88	16.67	1.09	-4.69		yes	-0.78	-4.99
Portugal	France	1995	1998	-0.62	-0.99	1.68	18.08	0.56	-4.41		yes	-0.58	-4.04
Portugal	France	1996	1999	-1.77	-3.91	1.80	22.97	0.59	-2.62		yes	-0.29	-2.52
Portugal	France	1997	2000	-1.05	-0.85	1.56	6.49	0.15	-1.11		no	-0.06	-1.11
Portugal	France	1998	2001	3.78	3.75	0.46	2.29	0.09	-2.62	-1.49	no	-0.14	-2.28
Portugal	France	1999	2002	1.85	5.25	0.74	10.56	0.78	-4.03		yes	-0.63	-4.19
Portugal	Germany	1995	1998	-19.07	-11.93	3.02	18.55	0.39	-1.81	-1.90	yes	-0.12	-1.28
Portugal	Germany	1996	1999	-33.43	-10.48	4.52	13.11	0.27	-1.57		no	-0.08	-1.01
Portugal	Germany	1997	2000	2.18	0.38	0.51	0.82	0.05	-2.25	-1.77	no	-0.08	-2.06
Portugal	Germany	1998	2001	4.04	1.78	0.22	0.90	0.09	-2.53	-1.52	no	-0.11	-2.17
Portugal	Germany	1999	2002	-0.58	-0.46	0.64	4.90	0.26	-1.71		no	-0.10	-1.16
Portugal	Ireland	1995	1998	-2.43	-0.31	1.29	1.67	0.05	-1.31	-1.00	no	-0.02	-0.57
Portugal	Ireland	1996	1999	-7.82	-2.10	1.70	4.35	0.07	-1.70	-2.59	no	-0.09	-2.30
Portugal	Ireland	1997	2000	-7.29	-4.22	1.50	8.24	0.20	-2.90		no	-0.31	-3.25
Portugal	Ireland	1998	2001	-3.00	-3.48	0.98	10.57	0.39	-3.03	-2.15	yes	-0.28	-2.20
Portugal	Ireland	1999	2002	-1.23	-1.59	0.75	8.79	0.51	-3.10		yes	-0.36	-2.96
Portugal	Italy	1995	1998	-2.66	-3.54	1.25	17.74	0.31	-4.49	-3.17	yes	-0.45	-3.60
Portugal	Italy	1996	1999	-0.65	-3.13	1.02	45.03	1.16	-4.46	-4.63	yes	-0.59	-4.34
Portugal	Italy	1997	2000	-0.15	-0.71	0.95	35.23	1.23	-4.82	-4.91	yes	-0.91	-5.05
Portugal	Italy	1998	2001	0.07	0.31	0.92	28.19	1.24	-4.52	-4.43	yes	-0.65	-4.28
Portugal	Italy	1999	2002	-0.61	-1.42	1.02	14.36	0.88	-3.41	-2.55	yes	-0.39	-2.54
Portugal	Netherlands	1995	1998	4.26	1.85	1.69	2.73	0.05	0.21	-0.01	no	0.03	0.86
Portugal	Netherlands	1996	1999	22.90	6.47	-4.26	-4.13	0.11	-2.16		no	-0.10	-1.82
Portugal	Netherlands	1997	2000	9.56	7.04	-0.70	-2.00	0.06	-1.94	-1.88	no	-0.12	-2.95
Portugal	Netherlands	1998	2001	5.35	7.48	0.17	1.03	0.09	-2.63	-1.61	no	-0.14	-2.81
Portugal	Netherlands	1999	2002	2.84	11.59	0.62	11.13	0.75	-4.00		yes	-0.63	-4.57
Portugal	Spain	1995	1998	1.23	2.99	1.23	23.21	0.73	-3.74		yes	-0.33	-2.49
Portugal	Spain	1996	1999	0.19	0.55	1.36	24.29	0.74	-3.30		yes	-0.30	-2.49
Portugal	Spain	1997	2000	-1.55	-2.12	1.65	11.64	0.37	-1.88		no	-0.21	-2.20
Portugal	Spain	1998	2001	1.89	2.56	0.85	5.74	0.18	-2.76	-2.64	no	-0.30	-3.47
Portugal	Spain	1999	2002	2.31	7.10	0.68	10.01	0.65	-3.57		yes	-0.42	-3.07
Portugal	Australia	1995	1998	-12.24	-10.10	2.26	18.87	0.34	-2.58		no	-0.12	-1.25
Portugal	Australia	1996	1999	-13.16	-9.59	2.29	15.74	0.21	-1.17	-2.10	no	-0.10	-1.44
Portugal	Australia	1997	2000	-2.22	-0.60	1.00	2.48	0.04	-1.67		no	-0.09	-2.74
Portugal	Australia	1998	2001	3.72	1.76	0.26	1.12	0.08	-2.67	-1.63	no	-0.08	-1.58
Portugal	Australia	1999	2002	-0.65	-0.71	0.69	6.75	0.32	-2.06	-1.86	no	-0.23	-2.27
Portugal	Canada	1995	1998	4.20	2.87	0.95	4.41	0.07	0.08	-0.08	no	0.03	0.74
Portugal	Canada	1996	1999	13.85	5.41	-0.91	-2.18	0.04	-2.22		no	-0.07	-1.98
Portugal	Canada	1997	2000	14.61	12.09	-1.22	-6.46	0.18	-1.73		no	-0.10	-1.50
Portugal	Canada	1998	2001	4.32	4.18	0.27	1.71	0.09	-3.06	-1.80	no	-0.10	-1.96
Portugal	Canada	1999	2002	3.98	12.78	0.26	5.07	0.27	-1.67		no	-0.12	-1.61
Portugal	Japan	1995	1998	3.14	2.27	4.13	5.44	0.09	-0.40	-0.86	no	0.01	0.24
Portugal	Japan	1996	1999	-22.63	-6.30	19.85	8.63	0.12	-2.11		no	-0.11	-1.80
Portugal	Japan	1997	2000	-12.83	-8.02	13.06	12.36	0.30	-3.01		no	-0.35	-3.53
Portugal	Japan	1998	2001	-5.79	-5.73	8.17	11.77	0.53	-3.06		yes	-0.34	-3.25
Portugal	Japan	1999	2002	-4.98	-2.77	7.51	5.85	0.47	-2.28		yes	-0.21	-2.05
Portugal	Switzerland	1995	1998	-11.56	-16.15	4.64	30.99	0.97	-3.86	-3.53	yes	-0.48	-3.58
Portugal	Switzerland	1996	1999	-16.24	-16.67	5.65	25.35	0.58	-2.36	-1.65	yes	-0.11	-0.94
Portugal	Switzerland	1997	2000	-13.64	-5.24	4.91	7.89	0.13	-0.72	-0.21	no	0.02	0.25
Portugal	Switzerland	1998	2001	0.10	0.04	1.44	2.37	0.10	-2.29	-2.04	no	-0.12	-2.30
Portugal	Switzerland	1999	2002	-3.16	-4.73	2.12	13.01	0.94	-4.36		yes	-0.63	-4.34
Portugal	United Kingdom	1995	1998	27.22	5.79	-2.20	-3.57	0.09	-0.38	-0.45	no	0.01	0.30
Portugal	United Kingdom	1996	1999	5.21	1.51	0.43	0.91	0.03	-1.42	-1.66	no	-0.04	-1.52
Portugal	United Kingdom	1997	2000	-1.54	-0.81	1.16	4.45	0.08	-3.36		no	-0.28	-5.10
Portugal	United Kingdom	1998	2001	0.71	1.16	0.78	8.90	0.24	-2.32	-1.89	no	-0.08	-0.95
Portugal	United Kingdom	1999	2002	2.82	5.76	0.44	5.57	0.31	-1.85	-1.97	no	-0.06	-0.68
Portugal	USA	1995	1998	-31.46	-3.06	4.95	4.08	0.12	-1.98	-1.33	no	-0.04	-0.79
Portugal	USA	1996	1999	-20.97	-1.91	3.54	2.68	0.05	-0.61	-1.49	no	-0.03	-0.77
Portugal	USA	1997	2000	5.97	1.53	0.11	0.23	0.05	-2.43	-1.91	no	-0.11	-2.89
Portugal	USA	1998	2001	4.30	4.48	0.22	1.87	0.09	-2.66	-1.77	no	-0.09	-1.67
Portugal	USA	1999	2002	4.33	15.34	0.17	4.37	0.25	-1.73	-2.00	no	-0.13	-1.86
Spain	Austria	1995	1998	-10.19	-9.69	2.47	16.90	0.17	-1.91	-2.34	no	-0.21	-3.28
Spain	Austria	1996	1999	-12.12	-12.63	2.79	18.93	0.31	-2.18		no	-0.19	-2.14
Spain	Austria	1997	2000	-5.71	-7.85	1.72	14.92	0.62	-3.41		yes	-0.48	-3.72
Spain	Austria	1998	2001	-4.04	-8.58	1.43	19.07	1.44	-5.08	-5.14	yes	-0.76	-4.93
Spain	Austria	1999	2002	-3.53	-7.62	1.36	17.87	1.31	-5.15		yes	-0.74	-5.52
Spain	Belgium	1995	1998	-8.17	-2.95	2.09	5.67	0.10	-0.52	-0.14	no	0.00	0.05
Spain	Belgium	1996	1999	-20.01	-3.33	3.68	4.32	0.11	-1.61		no	-0.12	-2.21
Spain	Belgium	1997	2000	0.64	0.44	0.62	3.09	0.12	-2.80		no	-0.16	-2.53
Spain	Belgium	1998	2001	-0.49	-0.87	0.71	9.58	0.43	-2.59		yes	-0.31	-2.67
Spain	Belgium	1999	2002	-1.53	-3.41	0.81	14.01	0.81	-3.30	-2.06	yes	-0.46	-3.98
Spain	Finland	1995	1998	-3.54	-4.72	1.80	14.90	0.11	-0.86		no	-0.05	-0.88
Spain	Finland	1996	1999	-9.52	-10.41	2.88	17.04	0.23	-1.69		no	-0.12	-1.91

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\,r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Spain	Finland	1997	2000	-1.86	-1.63	1.33	6.14	0.17	-2.65	-2.13	no	-0.18	-2.48
Spain	Finland	1998	2001	-1.31	-3.22	1.16	15.38	0.86	-3.82		yes	-0.55	-3.89
Spain	Finland	1999	2002	-0.92	-2.89	1.08	17.84	1.11	-4.60	-2.89	yes	-0.47	-2.87
Spain	France	1995	1998	-1.28	-3.00	1.33	21.01	0.61	-3.42		yes	-0.23	-2.39
Spain	France	1996	1999	-1.18	-3.82	1.27	23.74	0.55	-3.71	-3.58	yes	-0.28	-2.22
Spain	France	1997	2000	-0.11	-0.25	1.03	11.94	0.52	-2.67		yes	-0.21	-2.01
Spain	France	1998	2001	0.43	0.95	0.89	9.92	0.59	-2.93		yes	-0.31	-2.69
Spain	France	1999	2002	-0.22	-0.75	0.99	17.14	1.48	-5.19		yes	-0.70	-4.95
Spain	Germany	1995	1998	-15.57	-12.94	2.36	19.23	0.32	-2.39	-2.35	no	-0.25	-2.28
Spain	Germany	1996	1999	-25.64	-16.94	3.42	20.92	0.69	-3.07		yes	-0.33	-2.89
Spain	Germany	1997	2000	-5.44	-2.10	1.15	4.08	0.12	-2.35	-1.44	no	-0.09	-1.60
Spain	Germany	1998	2001	-3.72	-3.18	0.92	7.39	0.32	-2.10	-2.19	no	-0.18	-1.91
Spain	Germany	1999	2002	-5.65	-5.25	1.09	9.66	0.45	-2.14	-1.12	yes	-0.17	-1.84
Spain	Ireland	1995	1998	-0.58	-0.09	0.80	1.32	0.02	-0.64	-1.38	no	-0.01	-0.62
Spain	Ireland	1996	1999	-3.13	-1.11	0.96	3.24	0.04	-2.67	-1.93	no	-0.12	-3.41
Spain	Ireland	1997	2000	-2.68	-3.21	0.83	9.38	0.30	-3.62	-3.68	yes	-0.21	-1.81
Spain	Ireland	1998	2001	-2.19	-3.66	0.76	11.93	0.58	-2.86	-1.92	yes	-0.29	-2.44
Spain	Ireland	1999	2002	-5.02	-9.62	1.08	18.73	1.27	-4.61	-2.91	yes	-0.70	-5.42
Spain	Italy	1995	1998	-2.93	-5.85	0.99	21.17	0.18	-2.29		no	-0.05	-0.62
Spain	Italy	1996	1999	-0.21	-0.77	0.70	24.09	0.38	-2.85	-0.87	no	-0.11	-1.04
Spain	Italy	1997	2000	1.91	6.49	0.43	11.13	0.34	-1.90	-1.06	no	-0.31	-3.03
Spain	Italy	1998	2001	1.91	3.58	0.46	5.65	0.26	-1.95	-1.43	no	-0.29	-3.36
Spain	Italy	1999	2002	-2.67	-4.93	1.23	13.71	0.86	-4.48	-3.36	yes	-0.75	-6.11
Spain	Netherlands	1995	1998	3.02	1.66	1.22	2.50	0.03	0.36	-0.57	no	0.01	0.56
Spain	Netherlands	1996	1999	16.20	6.47	-2.99	-4.10	0.13	-3.04		no	-0.11	-1.82
Spain	Netherlands	1997	2000	4.50	6.12	0.16	0.85	0.10	-2.54	-1.86	no	-0.10	-1.77
Spain	Netherlands	1998	2001	2.05	6.02	0.67	8.53	0.37	-2.64		no	-0.26	-2.54
Spain	Netherlands	1999	2002	1.07	6.45	0.85	22.47	1.85	-6.29		yes	-0.94	-7.13
Spain	Portugal	1995	1998	-0.33	-0.95	0.75	23.21	0.72	-3.55	-3.31	yes	-0.38	-2.81
Spain	Portugal	1996	1999	0.30	1.23	0.68	24.29	0.75	-3.62		yes	-0.33	-2.69
Spain	Portugal	1997	2000	2.00	7.27	0.45	11.64	0.42	-2.06		yes	-0.24	-2.37
Spain	Portugal	1998	2001	1.94	3.71	0.49	5.74	0.26	-2.02		no	-0.24	-2.90
Spain	Portugal	1999	2002	-0.83	-1.49	1.01	10.01	0.64	-3.70		yes	-0.49	-3.63
Spain	Australia	1995	1998	-10.39	-12.30	1.78	21.29	0.40	-2.27		yes	-0.24	-2.46
Spain	Australia	1996	1999	-9.83	-13.56	1.68	21.92	0.58	-3.21	-2.38	yes	-0.23	-1.87
Spain	Australia	1997	2000	-4.06	-2.65	1.01	6.00	0.21	-2.17	-0.81	no	-0.14	-1.93
Spain	Australia	1998	2001	-2.29	-1.87	0.80	5.89	0.32	-2.23		no	-0.18	-2.02
Spain	Australia	1999	2002	-3.49	-3.49	0.92	8.24	0.45	-2.34		yes	-0.28	-2.75
Spain	Canada	1995	1998	2.25	2.05	0.79	4.89	0.05	0.41	-0.13	no	0.02	0.65
Spain	Canada	1996	1999	7.87	4.19	-0.31	-1.02	0.04	-3.04	-1.33	no	-0.10	-3.06
Spain	Canada	1997	2000	7.55	9.48	-0.38	-3.08	0.15	-1.60	-1.62	no	-0.08	-1.31
Spain	Canada	1998	2001	2.91	3.88	0.30	2.69	0.18	-1.63		no	-0.09	-1.35
Spain	Canada	1999	2002	3.44	7.97	0.22	3.07	0.19	-1.75	-2.03	no	-0.03	-0.44
Spain	Japan	1995	1998	2.81	2.37	2.63	4.06	0.04	-0.30	-1.59	no	-0.04	-1.62
Spain	Japan	1996	1999	-13.16	-4.41	12.26	6.42	0.08	-2.67	-1.87	no	-0.10	-2.07
Spain	Japan	1997	2000	-3.32	-2.73	5.60	6.96	0.23	-2.30	-1.53	no	-0.08	-0.87
Spain	Japan	1998	2001	0.74	0.53	2.87	2.98	0.21	-1.56	-1.82	no	-0.13	-1.90
Spain	Japan	1999	2002	-3.89	-1.50	6.16	3.33	0.26	-2.31		no	-0.17	-2.09
Spain	Switzerland	1995	1998	-9.31	-12.49	3.54	22.69	0.38	-2.28		no	-0.21	-2.34
Spain	Switzerland	1996	1999	-11.25	-14.82	3.96	22.79	0.63	-3.79		yes	-0.36	-2.61
Spain	Switzerland	1997	2000	-7.72	-8.67	3.07	14.44	0.71	-3.09		yes	-0.34	-2.78
Spain	Switzerland	1998	2001	-6.59	-6.04	2.78	10.54	0.68	-3.05		yes	-0.38	-3.14
Spain	Switzerland	1999	2002	-5.82	-7.12	2.57	12.93	0.83	-3.13	-1.90	yes	-0.33	-2.53
Spain	United Kingdom	1995	1998	19.58	5.26	-1.59	-3.26	0.05	0.09	-0.83	no	0.01	0.21
Spain	United Kingdom	1996	1999	5.03	2.05	0.13	0.38	0.03	-2.63	-1.05	no	-0.09	-3.55
Spain	United Kingdom	1997	2000	1.06	1.03	0.56	3.96	0.14	-2.86	-1.68	no	-0.15	-2.04
Spain	United Kingdom	1998	2001	2.82	4.07	0.30	3.03	0.18	-1.48		no	-0.05	-0.85
Spain	United Kingdom	1999	2002	2.56	3.65	0.36	3.13	0.20	-1.89	-1.45	no	0.00	0.06
Spain	USA	1995	1998	-22.70	-2.77	3.56	3.69	0.09	-1.36		no	-0.02	-0.65
Spain	USA	1996	1999	-10.89	-1.37	2.04	2.12	0.05	-1.85		no	-0.08	-2.17
Spain	USA	1997	2000	-0.82	-0.44	0.70	3.21	0.12	-2.92	-3.07	no	-0.14	-2.40
Spain	USA	1998	2001	3.36	4.69	0.19	2.18	0.18	-1.51	-1.64	no	-0.09	-1.35
Spain	USA	1999	2002	3.78	9.90	0.13	2.56	0.19	-1.66	-2.25	no	-0.08	-1.31
Australia	Austria	1995	1998	1.39	1.74	1.21	10.87	0.09	-1.12	-1.43	no	-0.06	-1.20
Australia	Austria	1996	1999	0.07	0.09	1.44	11.13	0.13	-1.14		no	-0.09	-1.59
Australia	Austria	1997	2000	3.54	4.38	0.88	6.84	0.13	-1.00	-1.74	no	-0.15	-2.67
Australia	Austria	1998	2001	3.57	4.33	0.87	6.58	0.13	-1.53	-2.01	no	-0.15	-2.07
Australia	Austria	1999	2002	2.83	4.54	1.01	9.86	0.20	-1.63	-1.68	no	-0.18	-2.57
Australia	Belgium	1995	1998	3.38	2.04	0.89	4.02	0.07	-0.29	-0.21	no	0.01	0.28
Australia	Belgium	1996	1999	-0.87	-0.23	1.45	2.74	0.05	-1.17	-1.88	no	-0.07	-1.94
Australia	Belgium	1997	2000	3.92	5.46	0.71	7.20	0.14	-2.32	-3.12	no	-0.28	-4.09
Australia	Belgium	1998	2001	5.36	8.99	0.48	6.13	0.12	-0.70	-1.35	no	-0.05	-0.82
Australia	Belgium	1999	2002	5.50	7.86	0.45	4.98	0.09	-1.05	-1.55	no	-0.07	-1.44
Australia	Finland	1995	1998	4.84	8.35	0.85	9.08	0.07	-0.43	-0.81	no	-0.15	-2.32
Australia	Finland	1996	1999	1.33	1.81	1.50	11.00	0.12	-1.31		no	-0.18	-2.41
Australia	Finland	1997	2000	4.20	5.98	0.93	6.96	0.14	-1.67	-2.47	no	-0.20	-3.29
Australia	Finland	1998	2001	5.10	8.65	0.72	6.62	0.12	-1.21		no	-0.06	-0.79
Australia	Finland	1999	2002	5.25	10.16	0.71	7.26	0.13	-1.35	-1.81	no	-0.07	-0.74
Australia	France	1995	1998	5.32	24.77	0.71	22.52	0.64	-3.54		yes	-0.32	-2.80
Australia	France	1996	1999	5.29	34.00	0.73	27.06	0.68	-3.17		yes	-0.42	-3.46
Australia	France	1997	2000	5.70	18.88	0.66	11.30	0.46	-2.33		yes	-0.35	-3.43
Australia	France	1998	2001	5.71	12.83	0.65	7.43	0.30	-1.77	-2.20	no	-0.14	-1.71
Australia	France	1999	2002	5.65	12.60	0.66	7.46	0.29	-1.89		no	-0.24	-2.63
Australia	Germany	1995	1998	-1.52	-1.67	1.18	12.78	0.17	-1.48		no	-0.09	-1.33
Australia	Germany	1996	1999	-8.42	-9.15	1.93	19.38	0.59	-3.00		yes	-0.30	-2.70
Australia	Germany	1997	2000	-2.29	-2.19	1.24	10.86	0.28	-2.15	-3.28	yes	-0.38	-4.26

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Australia	Germany	1998	2001	2.70	2.52	0.67	5.88	0.11	-0.52	-1.33	no	-0.16	-1.78
Australia	Germany	1999	2002	3.49	2.57	0.58	4.05	0.08	-0.95	-1.90	no	-0.23	-3.92
Australia	Ireland	1995	1998	9.84	2.96	0.02	0.06	0.02	-0.01		no	-0.01	-0.58
Australia	Ireland	1996	1999	6.49	3.77	0.30	1.69	0.03	-1.79		no	-0.09	-3.03
Australia	Ireland	1997	2000	6.88	7.88	0.23	2.51	0.08	-0.57	-1.55	no	-0.09	-1.95
Australia	Ireland	1998	2001	6.51	7.08	0.27	2.71	0.09	-1.11	-1.75	no	-0.05	-1.11
Australia	Ireland	1999	2002	3.14	3.26	0.65	6.06	0.13	-1.25	-2.20	no	-0.14	-2.21
Australia	Italy	1995	1998	4.44	17.35	0.53	22.23	0.25	-2.57		no	-0.11	-1.25
Australia	Italy	1996	1999	6.09	25.84	0.37	14.54	0.12	-0.93		no	-0.06	-1.09
Australia	Italy	1997	2000	8.39	23.53	0.09	1.97	0.07	0.07	-1.76	no	-0.15	-2.77
Australia	Italy	1998	2001	8.64	15.21	0.05	0.61	0.07	-0.83	-1.88	no	-0.16	-2.83
Australia	Italy	1999	2002	4.44	5.68	0.75	5.83	0.11	-1.65	-1.78	no	-0.11	-1.57
Australia	Netherlands	1995	1998	9.00	8.81	0.28	1.03	0.02	0.33	-0.01	no	-0.04	-1.50
Australia	Netherlands	1996	1999	16.86	13.57	-2.18	-6.03	0.21	-2.84		no	-0.21	-2.44
Australia	Netherlands	1997	2000	7.16	18.26	0.50	4.95	0.10	-2.51	-3.03	no	-0.29	-5.92
Australia	Netherlands	1998	2001	6.71	23.16	0.54	8.01	0.18	-1.27		no	-0.13	-1.85
Australia	Netherlands	1999	2002	6.59	20.26	0.55	7.44	0.17	-1.35		no	-0.16	-2.20
Australia	Portugal	1995	1998	5.94	26.51	0.39	18.87	0.33	-2.36		no	-0.19	-2.14
Australia	Portugal	1996	1999	6.32	31.03	0.37	15.74	0.21	-1.34	-2.77	no	-0.11	-1.65
Australia	Portugal	1997	2000	8.26	24.59	0.12	2.48	0.06	0.41	-1.54	no	-0.11	-2.66
Australia	Portugal	1998	2001	8.38	15.13	0.10	1.12	0.07	-0.92	-1.36	no	-0.12	-2.74
Australia	Portugal	1999	2002	4.98	8.36	0.72	6.75	0.21	-2.02	-1.92	no	-0.16	-2.24
Australia	Spain	1995	1998	6.22	33.50	0.51	21.29	0.40	-2.24		yes	-0.24	-2.56
Australia	Spain	1996	1999	6.15	39.91	0.54	21.92	0.57	-2.97	-2.44	yes	-0.30	-2.77
Australia	Spain	1997	2000	6.85	18.27	0.43	6.00	0.18	-0.89		no	-0.15	-1.98
Australia	Spain	1998	2001	6.35	14.06	0.54	5.89	0.22	-1.80		no	-0.13	-1.63
Australia	Spain	1999	2002	5.89	15.61	0.65	8.24	0.35	-2.08		no	-0.24	-2.57
Australia	Canada	1995	1998	7.89	12.19	0.33	3.40	0.04	0.48	0.06	no	0.02	0.56
Australia	Canada	1996	1999	10.57	9.94	-0.19	-1.12	0.03	-2.26		no	-0.10	-3.28
Australia	Canada	1997	2000	8.89	15.54	0.03	0.33	0.07	-0.48	-2.18	no	-0.06	-1.50
Australia	Canada	1998	2001	6.22	12.04	0.42	5.40	0.12	-0.88		no	-0.06	-1.10
Australia	Canada	1999	2002	7.19	24.44	0.30	6.22	0.09	-1.65		no	-0.10	-1.93
Australia	Japan	1995	1998	7.84	11.91	1.24	3.42	0.04	-0.10		no	0.00	0.11
Australia	Japan	1996	1999	0.87	0.44	5.46	4.34	0.05	-1.67	-1.82	no	-0.09	-2.18
Australia	Japan	1997	2000	8.48	7.46	0.39	0.52	0.07	-0.31	-2.03	no	-0.07	-1.62
Australia	Japan	1998	2001	8.82	7.04	0.11	0.13	0.08	-0.76	-1.93	no	-0.07	-1.68
Australia	Japan	1999	2002	-0.08	-0.04	6.47	4.45	0.15	-2.47	-1.75	no	-0.16	-2.60
Australia	Switzerland	1995	1998	1.31	2.57	1.84	17.31	0.27	-1.80	-2.31	no	-0.16	-1.94
Australia	Switzerland	1996	1999	-0.35	-0.78	2.24	21.75	0.48	-2.61	-2.90	yes	-0.29	-2.86
Australia	Switzerland	1997	2000	1.60	1.97	1.79	9.19	0.24	-1.62		no	-0.24	-3.25
Australia	Switzerland	1998	2001	0.31	0.29	2.10	8.32	0.25	-2.08	-1.76	no	-0.10	-1.40
Australia	Switzerland	1999	2002	1.85	1.77	1.74	6.82	0.18	-0.92	-2.19	no	-0.12	-1.29
Australia	United Kingdom	1995	1998	19.36	11.22	-1.22	-5.42	0.10	0.07	-0.66	no	0.03	0.40
Australia	United Kingdom	1996	1999	10.94	7.95	-0.21	-1.13	0.03	-1.72		no	-0.07	-2.57
Australia	United Kingdom	1997	2000	9.35	11.99	-0.04	-0.36	0.07	-0.39	-2.15	no	-0.07	-1.59
Australia	United Kingdom	1998	2001	8.41	13.65	0.08	0.95	0.07	-0.90	-1.94	no	-0.04	-0.86
Australia	United Kingdom	1999	2002	6.13	12.42	0.47	5.83	0.10	-1.95	-2.08	no	-0.09	-1.89
Australia	USA	1995	1998	-0.56	-0.12	1.25	2.24	0.04	-0.96	-0.71	no	-0.02	-0.53
Australia	USA	1996	1999	3.86	0.83	0.67	1.19	0.03	-1.49		no	-0.08	-2.79
Australia	USA	1997	2000	1.89	2.30	0.84	8.74	0.17	-2.71	-3.28	yes	-0.30	-3.81
Australia	USA	1998	2001	6.31	13.42	0.33	5.75	0.09	-0.80	-1.05	no	-0.01	-0.19
Australia	USA	1999	2002	7.52	28.51	0.20	5.69	0.09	-1.21	-2.13	no	-0.07	-1.54
Canada	Austria	1995	1998	-3.80	-2.73	1.45	7.50	0.09	-0.43		no	-0.01	-0.30
Canada	Austria	1996	1999	7.95	6.04	-0.30	-1.46	0.11	-1.94	-1.93	no	-0.07	-1.35
Canada	Austria	1997	2000	8.32	4.43	-0.31	-1.06	0.07	-0.97	-1.28	no	-0.06	-1.39
Canada	Austria	1998	2001	1.86	1.20	0.75	3.04	0.12	0.49		no	0.01	0.16
Canada	Austria	1999	2002	-3.22	-1.56	1.50	4.44	0.04	-0.77		no	-0.08	-2.62
Canada	Belgium	1995	1998	-9.54	-8.18	2.15	13.88	0.52	-2.55		yes	-0.10	-1.41
Canada	Belgium	1996	1999	1.00	0.30	0.71	1.53	0.09	-1.23		no	-0.04	-0.93
Canada	Belgium	1997	2000	-0.05	-0.03	0.88	4.43	0.08	-1.81		no	-0.11	-2.25
Canada	Belgium	1998	2001	5.56	4.73	0.13	0.86	0.11	1.07	-0.02	no	0.00	0.02
Canada	Belgium	1999	2002	4.73	2.44	0.16	0.62	0.03	-0.28	-1.29	no	-0.04	-1.63
Canada	Finland	1995	1998	-0.84	-1.14	1.21	10.22	0.12	-0.86	-1.39	no	-0.04	-0.73
Canada	Finland	1996	1999	5.16	4.43	0.16	0.76	0.10	-1.29		no	-0.05	-0.95
Canada	Finland	1997	2000	3.14	1.97	0.61	2.02	0.07	-1.83		no	-0.11	-2.36
Canada	Finland	1998	2001	4.00	3.46	0.48	2.23	0.12	0.81		no	0.07	1.21
Canada	Finland	1999	2002	0.26	0.17	1.08	3.88	0.03	-0.64	-1.15	no	-0.02	-0.71
Canada	France	1995	1998	3.74	4.02	0.43	3.15	0.06	-1.59	-2.00	no	-0.05	-1.27
Canada	France	1996	1999	7.08	13.88	-0.19	-2.10	0.11	-2.05		no	-0.09	-1.52
Canada	France	1997	2000	8.41	9.17	-0.41	-2.28	0.08	-0.56		no	-0.04	-0.85
Canada	France	1998	2001	5.06	5.34	0.30	1.59	0.12	0.96	0.05	no	0.08	1.35
Canada	France	1999	2002	1.72	1.26	0.84	3.13	0.04	-0.86		no	-0.05	-1.55
Canada	Germany	1995	1998	-7.08	-4.09	1.40	7.92	0.11	-0.74		no	-0.04	-0.78
Canada	Germany	1996	1999	5.60	2.41	0.05	0.19	0.10	-1.46		no	-0.05	-1.03
Canada	Germany	1997	2000	-1.74	-0.57	0.88	2.66	0.08	-2.00		no	-0.12	-2.45
Canada	Germany	1998	2001	6.40	3.06	0.02	0.08	0.12	0.89	-0.26	no	0.07	1.24
Canada	Germany	1999	2002	8.29	2.35	-0.25	-0.67	0.03	-0.27	-1.51	no	0.00	-0.15
Canada	Ireland	1995	1998	-3.81	-0.88	1.03	2.42	0.06	-1.41	-1.90	no	-0.10	-2.02
Canada	Ireland	1996	1999	9.32	6.66	-0.35	-2.35	0.14	-1.86	-1.92	no	-0.08	-1.32
Canada	Ireland	1997	2000	9.20	6.22	-0.30	-1.94	0.09	-1.19	-1.54	no	-0.07	-1.40
Canada	Ireland	1998	2001	4.44	3.12	0.23	1.49	0.11	0.85	0.17	no	0.07	1.37
Canada	Ireland	1999	2002	1.07	0.38	0.54	1.73	0.03	-0.46	-1.09	no	-0.05	-1.55
Canada	Italy	1995	1998	3.79	3.35	0.27	2.51	0.05	-1.58	-1.94	no	-0.07	-1.65
Canada	Italy	1996	1999	7.00	15.84	-0.11	-2.24	0.12	-2.13		no	-0.09	-1.58
Canada	Italy	1997	2000	9.21	21.22	-0.39	-6.77	0.14	-0.95	-1.49	no	-0.06	-1.05
Canada	Italy	1998	2001	5.69	6.83	0.13	1.06	0.12	0.62	-0.23	no	-0.01	-0.20

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Canada	Italy	1999	2002	0.01	0.00	0.98	2.78	0.03	-0.32		no	-0.01	-0.47
Canada	Netherlands	1995	1998	-1.54	-2.08	2.21	11.12	0.18	-1.51		no	-0.07	-1.13
Canada	Netherlands	1996	1999	1.48	1.22	1.33	3.78	0.14	-1.74		no	-0.11	-1.81
Canada	Netherlands	1997	2000	2.49	4.47	1.00	7.03	0.14	-1.43		no	-0.11	-1.77
Canada	Netherlands	1998	2001	5.41	8.48	0.27	1.82	0.11	1.09	0.25	no	0.00	-0.07
Canada	Netherlands	1999	2002	3.05	3.07	0.67	2.94	0.03	-0.76	-1.35	no	-0.04	-1.33
Canada	Portugal	1995	1998	3.32	4.36	0.31	4.41	0.08	-0.82		no	-0.05	-1.03
Canada	Portugal	1996	1999	6.89	16.86	-0.10	-2.18	0.12	-2.15		no	-0.09	-1.55
Canada	Portugal	1997	2000	9.03	21.12	-0.39	-6.46	0.19	-1.21		no	-0.10	-1.41
Canada	Portugal	1998	2001	5.20	6.47	0.22	1.71	0.12	0.33	-0.30	no	-0.01	-0.11
Canada	Portugal	1999	2002	-1.68	-1.11	1.38	5.07	0.12	-1.17		no	-0.06	-1.23
Canada	Spain	1995	1998	3.37	4.94	0.43	4.89	0.07	-1.08		no	-0.05	-1.13
Canada	Spain	1996	1999	6.46	15.02	-0.07	-1.02	0.11	-1.84		no	-0.08	-1.57
Canada	Spain	1997	2000	8.63	11.47	-0.45	-3.08	0.11	-0.70		no	-0.06	-1.05
Canada	Spain	1998	2001	4.37	5.33	0.45	2.69	0.13	0.51		no	0.04	0.61
Canada	Spain	1999	2002	2.25	1.85	0.78	3.07	0.05	-0.92	-1.15	no	-0.05	-1.78
Canada	Australia	1995	1998	0.41	0.22	0.62	3.40	0.05	-1.24	-1.70	no	-0.07	-1.70
Canada	Australia	1996	1999	7.32	6.38	-0.14	-1.12	0.11	-1.79		no	-0.07	-1.30
Canada	Australia	1997	2000	5.62	2.54	0.08	0.33	0.06	-1.42		no	-0.09	-1.97
Canada	Australia	1998	2001	-1.70	-1.11	0.92	5.40	0.16	0.49		no	0.05	0.76
Canada	Australia	1999	2002	-7.67	-3.50	1.52	6.22	0.05	-1.09		no	-0.03	-0.83
Canada	Japan	1995	1998	1.65	2.41	2.78	7.36	0.10	-1.05		no	-0.05	-1.00
Canada	Japan	1996	1999	10.48	5.71	-2.84	-2.42	0.13	-1.89		no	-0.04	-0.67
Canada	Japan	1997	2000	13.10	8.21	-4.48	-4.25	0.12	-1.20	-1.55	no	-0.09	-1.70
Canada	Japan	1998	2001	3.00	1.69	2.45	2.01	0.12	0.40	-0.33	no	-0.04	-0.54
Canada	Japan	1999	2002	-12.98	-2.77	13.51	4.04	0.11	-0.99		no	-0.05	-1.07
Canada	Switzerland	1995	1998	-0.73	-0.46	1.54	4.68	0.07	-1.00		no	-0.04	-0.98
Canada	Switzerland	1996	1999	8.78	7.35	-0.63	-2.30	0.12	-2.10	-2.06	no	-0.09	-1.56
Canada	Switzerland	1997	2000	12.18	5.82	-1.40	-2.79	0.09	-0.42	-0.96	no	-0.03	-0.72
Canada	Switzerland	1998	2001	1.96	0.84	1.11	1.96	0.13	0.60	0.20	no	0.07	1.25
Canada	Switzerland	1999	2002	-5.14	-1.77	2.70	3.83	0.05	-1.04		no	-0.06	-1.81
Canada	United Kingdom	1995	1998	1.50	0.51	0.67	1.73	0.04	-2.15		no	-0.09	-2.44
Canada	United Kingdom	1996	1999	5.60	4.82	0.06	0.38	0.10	-1.50		no	-0.05	-1.05
Canada	United Kingdom	1997	2000	7.07	5.50	-0.10	-0.57	0.07	-1.37		no	-0.08	-1.84
Canada	United Kingdom	1998	2001	3.01	4.01	0.51	4.76	0.14	-0.95		no	-0.02	-0.33
Canada	United Kingdom	1999	2002	-3.62	-10.99	1.57	29.25	0.64	-3.40	-3.83	yes	-0.27	-2.45
Canada	USA	1995	1998	-21.56	-3.95	3.32	5.16	0.11	-1.22		no	0.01	0.27
Canada	USA	1996	1999	13.21	3.48	-0.87	-1.89	0.14	-1.78	-1.78	no	-0.07	-1.16
Canada	USA	1997	2000	0.46	0.22	0.69	2.89	0.07	-1.60		no	-0.10	-2.35
Canada	USA	1998	2001	0.98	2.63	0.69	15.18	0.44	-3.11		yes	-0.25	-2.44
Canada	USA	1999	2002	1.00	5.49	0.69	28.08	0.30	-1.77	-2.31	no	-0.12	-1.29
Japan	Austria	1995	1998	-1.07	-3.04	0.40	8.13	0.11	-2.75	-3.26	yes	-0.16	-3.23
Japan	Austria	1996	1999	0.63	7.84	0.14	11.64	0.13	-1.53	-1.82	no	-0.03	-0.45
Japan	Austria	1997	2000	0.46	2.82	0.17	6.44	0.08	-0.38		no	-0.04	-0.81
Japan	Austria	1998	2001	0.83	4.78	0.10	3.57	0.10	-1.73	-1.91	no	-0.12	-2.22
Japan	Austria	1999	2002	1.03	13.58	0.06	4.90	0.36	-3.15	-4.16	yes	-0.30	-2.95
Japan	Belgium	1995	1998	-2.49	-8.02	0.57	13.80	0.51	-3.58	-2.29	yes	-0.25	-3.65
Japan	Belgium	1996	1999	-0.48	-1.84	0.29	7.78	0.24	-1.12		no	-0.01	-0.12
Japan	Belgium	1997	2000	1.46	7.15	0.01	0.23	0.04	-1.11	-1.36	no	-0.01	-0.41
Japan	Belgium	1998	2001	1.49	10.81	0.00	-0.24	0.09	-1.68	-1.99	no	-0.12	-2.40
Japan	Belgium	1999	2002	1.22	17.74	0.02	2.59	0.29	-2.90	-3.67	yes	-0.22	-2.61
Japan	Finland	1995	1998	0.09	0.35	0.28	6.96	0.11	-2.99	-4.57	yes	-0.18	-3.13
Japan	Finland	1996	1999	0.90	9.16	0.12	6.72	0.09	-1.12	-0.97	no	0.06	1.12
Japan	Finland	1997	2000	0.99	5.48	0.10	2.84	0.05	-0.74	-0.77	no	-0.02	-0.76
Japan	Finland	1998	2001	1.22	8.92	0.04	1.69	0.09	-1.77	-2.03	no	-0.12	-2.41
Japan	Finland	1999	2002	1.15	21.90	0.05	4.75	0.35	-3.10	-4.27	yes	-0.28	-2.88
Japan	France	1995	1998	1.01	4.12	0.12	3.21	0.08	-4.17	-3.99	yes	-0.15	-3.06
Japan	France	1996	1999	1.29	26.97	0.05	5.90	0.07	-0.16	-0.82	no	0.00	0.03
Japan	France	1997	2000	1.17	11.37	0.07	3.27	0.07	-0.81	-1.03	no	-0.03	-0.67
Japan	France	1998	2001	1.45	12.84	0.00	0.03	0.09	-1.69	-1.99	no	-0.12	-2.41
Japan	France	1999	2002	1.26	23.98	0.03	2.79	0.34	-3.04	-3.88	yes	-0.26	-2.71
Japan	Germany	1995	1998	-1.67	-3.44	0.35	7.12	0.10	-2.74	-3.62	yes	-0.13	-2.38
Japan	Germany	1996	1999	0.52	2.28	0.11	4.55	0.07	-0.12	-0.68	no	0.00	0.12
Japan	Germany	1997	2000	1.40	3.63	0.01	0.27	0.04	-1.08	-1.35	no	-0.04	-1.21
Japan	Germany	1998	2001	1.68	6.98	-0.02	-0.94	0.09	-1.66	-2.04	no	-0.10	-2.15
Japan	Germany	1999	2002	1.15	8.91	0.03	1.98	0.28	-2.84	-3.59	yes	-0.21	-2.85
Japan	Ireland	1995	1998	-1.85	-1.71	0.36	3.35	0.10	-3.94		yes	-0.19	-2.36
Japan	Ireland	1996	1999	0.50	6.42	0.11	13.75	0.29	-1.58	-2.00	no	-0.05	-0.53
Japan	Ireland	1997	2000	0.44	4.85	0.11	11.74	0.26	-1.88	-1.43	no	-0.15	-1.81
Japan	Ireland	1998	2001	0.68	5.44	0.08	6.27	0.18	-1.69		no	-0.12	-1.76
Japan	Ireland	1999	2002	1.08	10.91	0.04	3.23	0.32	-3.16	-3.99	yes	-0.20	-2.13
Japan	Italy	1995	1998	1.01	3.39	0.07	2.62	0.06	-4.53	-2.86	yes	-0.15	-4.36
Japan	Italy	1996	1999	1.26	40.26	0.03	9.76	0.10	-1.05	-1.07	no	-0.01	-0.30
Japan	Italy	1997	2000	1.07	36.07	0.06	15.15	0.26	-2.25	-2.10	no	-0.33	-3.85
Japan	Italy	1998	2001	0.88	18.56	0.09	12.23	0.38	-2.22	-3.14	yes	-0.25	-2.76
Japan	Italy	1999	2002	1.04	15.01	0.06	5.21	0.37	-2.87	-3.89	yes	-0.27	-2.93
Japan	Netherlands	1995	1998	-0.19	-0.81	0.54	8.48	0.18	-2.00	-3.04	no	-0.07	-1.05
Japan	Netherlands	1996	1999	1.67	10.24	-0.03	-0.69	0.04	0.26	0.02	no	0.01	0.38
Japan	Netherlands	1997	2000	1.66	18.04	-0.04	-1.69	0.06	-0.93	-1.37	no	-0.05	-1.67
Japan	Netherlands	1998	2001	1.51	19.75	-0.01	-0.72	0.09	-1.63	-1.99	no	-0.12	-2.36
Japan	Netherlands	1999	2002	1.27	35.27	0.03	3.71	0.33	-3.17	-4.01	yes	-0.28	-2.91
Japan	Portugal	1995	1998	0.79	4.17	0.09	5.44	0.10	-2.77	-3.93	yes	-0.14	-2.62
Japan	Portugal	1996	1999	1.30	41.42	0.03	8.63	0.12	-1.11	-1.00	no	-0.03	-0.66
Japan	Portugal	1997	2000	1.10	32.78	0.06	12.36	0.29	-2.39		no	-0.19	-2.29
Japan	Portugal	1998	2001	0.89	18.65	0.09	11.77	0.53	-2.72		yes	-0.26	-2.36
Japan	Portugal	1999	2002	1.09	20.12	0.06	5.85	0.55	-3.19		yes	-0.31	-2.85

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\,r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Japan	Spain	1995	1998	1.03	5.38	0.10	4.06	0.07	-3.69	-4.41	yes	-0.12	-2.48
Japan	Spain	1996	1999	1.33	35.57	0.04	6.42	0.08	-0.56	-0.98	no	0.00	-0.10
Japan	Spain	1997	2000	1.04	15.21	0.09	6.96	0.17	-1.44		no	-0.06	-0.98
Japan	Spain	1998	2001	1.18	12.54	0.06	2.98	0.12	-1.74		no	-0.14	-2.50
Japan	Spain	1999	2002	1.25	27.64	0.03	3.33	0.35	-3.18		yes	-0.29	-2.94
Japan	Australia	1995	1998	0.13	0.27	0.16	3.42	0.07	-3.69	-2.68	yes	-0.14	-3.60
Japan	Australia	1996	1999	1.06	9.15	0.05	4.34	0.06	0.10	-0.31	no	0.01	0.17
Japan	Australia	1997	2000	1.37	5.25	0.01	0.52	0.04	-1.03	-1.31	no	-0.04	-1.23
Japan	Australia	1998	2001	1.42	6.26	0.00	0.13	0.09	-1.70	-1.99	no	-0.12	-2.25
Japan	Australia	1999	2002	0.98	10.44	0.05	4.45	0.34	-3.43		yes	-0.22	-2.25
Japan	Canada	1995	1998	0.49	2.76	0.19	7.36	0.11	-2.52		no	-0.05	-0.92
Japan	Canada	1996	1999	1.80	17.97	-0.04	-2.42	0.06	-0.34	-0.89	no	-0.01	-0.19
Japan	Canada	1997	2000	1.91	20.10	-0.06	-4.25	0.10	-1.00	-1.48	no	-0.09	-2.09
Japan	Canada	1998	2001	1.24	11.41	0.03	2.01	0.09	-2.15	-2.12	no	-0.14	-2.69
Japan	Canada	1999	2002	1.29	44.16	0.02	4.04	0.34	-2.67	-3.48	yes	-0.22	-2.61
Japan	Switzerland	1995	1998	-0.42	-1.09	0.46	5.72	0.09	-3.30	-2.61	no	-0.13	-2.79
Japan	Switzerland	1996	1999	0.88	7.99	0.16	6.21	0.08	-0.08	-0.63	no	0.00	0.09
Japan	Switzerland	1997	2000	0.59	2.56	0.22	3.96	0.08	-0.84	-1.13	no	-0.02	-0.61
Japan	Switzerland	1998	2001	1.31	4.66	0.03	0.49	0.09	-1.65	-2.02	no	-0.12	-2.44
Japan	Switzerland	1999	2002	0.96	8.90	0.11	4.08	0.35	-3.05	-3.88	yes	-0.26	-2.59
Japan	United Kingdom	1995	1998	1.62	2.02	0.02	0.20	0.05	-4.52	-4.66	yes	-0.21	-5.89
Japan	United Kingdom	1996	1999	0.97	9.12	0.08	5.62	0.08	-0.50	-0.25	no	0.06	1.48
Japan	United Kingdom	1997	2000	0.71	7.34	0.11	8.24	0.16	-2.24	-2.70	no	-0.18	-2.48
Japan	United Kingdom	1998	2001	0.85	14.76	0.09	10.54	0.33	-1.85	-2.66	no	-0.19	-2.02
Japan	United Kingdom	1999	2002	1.21	25.49	0.03	4.00	0.34	-2.48	-3.49	yes	-0.19	-2.31
Japan	USA	1995	1998	-6.38	-4.69	0.96	5.99	0.19	-4.77	-2.30	yes	-0.07	-0.78
Japan	USA	1996	1999	-0.39	-1.07	0.24	5.32	0.10	1.16	0.30	no	0.08	1.66
Japan	USA	1997	2000	1.60	6.08	-0.01	-0.33	0.05	-1.10	-1.39	no	-0.02	-0.56
Japan	USA	1998	2001	1.23	12.28	0.03	2.24	0.09	-1.84	-2.06	no	-0.14	-2.75
Japan	USA	1999	2002	1.31	50.43	0.01	3.46	0.32	-2.69	-3.56	yes	-0.23	-2.54
Switzerland	Austria	1995	1998	-0.17	-0.73	0.69	21.43	0.25	-1.95		no	-0.14	-1.81
Switzerland	Austria	1996	1999	0.10	0.36	0.66	15.24	0.23	-1.55		no	-0.10	-1.38
Switzerland	Austria	1997	2000	1.19	4.40	0.47	11.04	0.32	-2.85		no	-0.26	-2.71
Switzerland	Austria	1998	2001	1.65	7.79	0.40	11.82	0.41	-2.28		yes	-0.23	-2.44
Switzerland	Austria	1999	2002	1.29	7.50	0.46	16.37	0.53	-1.55		yes	-0.14	-1.10
Switzerland	Belgium	1995	1998	0.11	0.16	0.62	6.68	0.14	-0.87	-1.25	no	-0.01	-0.13
Switzerland	Belgium	1996	1999	-0.91	-0.59	0.75	3.42	0.07	-1.05	-1.51	no	-0.05	-1.17
Switzerland	Belgium	1997	2000	2.67	6.43	0.21	3.66	0.10	-3.43		yes	-0.20	-3.67
Switzerland	Belgium	1998	2001	2.28	20.64	0.24	16.90	0.73	-4.26		yes	-0.53	-4.07
Switzerland	Belgium	1999	2002	2.18	10.33	0.25	9.19	0.25	-0.02	0.60	no	0.05	0.49
Switzerland	Finland	1995	1998	1.78	8.51	0.48	14.39	0.09	-0.67	-1.48	no	-0.03	-0.55
Switzerland	Finland	1996	1999	0.92	2.92	0.64	10.92	0.12	-1.48	-2.05	no	-0.05	-1.05
Switzerland	Finland	1997	2000	2.13	6.33	0.39	6.08	0.12	-3.20	-2.38	no	-0.21	-3.33
Switzerland	Finland	1998	2001	2.21	20.83	0.36	18.24	0.63	-3.43		yes	-0.27	-2.49
Switzerland	Finland	1999	2002	2.14	20.94	0.38	19.36	0.59	-1.63	-1.94	yes	-0.40	-2.74
Switzerland	France	1995	1998	2.38	19.58	0.36	19.84	0.49	-3.77		yes	-0.40	-3.20
Switzerland	France	1996	1999	2.58	50.14	0.31	35.31	1.36	-4.86		yes	-0.71	-4.58
Switzerland	France	1997	2000	2.51	28.52	0.33	19.19	1.17	-4.63		yes	-0.60	-4.15
Switzerland	France	1998	2001	2.63	27.23	0.30	15.70	1.23	-4.98		yes	-0.67	-4.66
Switzerland	France	1999	2002	2.47	20.01	0.33	13.34	0.89	-2.87		yes	-0.39	-2.35
Switzerland	Germany	1995	1998	-1.53	-4.94	0.64	20.32	0.24	-1.76		no	-0.11	-1.47
Switzerland	Germany	1996	1999	-2.95	-5.91	0.79	14.65	0.21	-1.87		no	-0.11	-1.56
Switzerland	Germany	1997	2000	0.45	0.65	0.41	5.32	0.11	-2.95		no	-0.18	-2.89
Switzerland	Germany	1998	2001	0.94	4.16	0.34	14.10	0.46	-3.18	-1.55	yes	-0.34	-3.31
Switzerland	Germany	1999	2002	1.14	2.41	0.31	6.27	0.14	0.98		no	0.10	1.29
Switzerland	Ireland	1995	1998	2.05	1.25	0.27	1.65	0.03	-1.20		no	-0.04	-1.44
Switzerland	Ireland	1996	1999	2.34	3.37	0.21	2.89	0.04	-1.52		no	-0.07	-2.22
Switzerland	Ireland	1997	2000	2.48	7.39	0.18	5.08	0.13	-2.68		no	-0.10	-1.46
Switzerland	Ireland	1998	2001	2.63	9.09	0.16	5.25	0.15	-1.31	-2.20	no	-0.12	-2.56
Switzerland	Ireland	1999	2002	1.00	3.82	0.34	11.84	0.24	0.22		no	0.08	0.75
Switzerland	Italy	1995	1998	2.02	11.64	0.26	15.96	0.13	-2.67	-2.25	no	-0.17	-1.98
Switzerland	Italy	1996	1999	2.86	42.42	0.17	22.91	0.28	-1.19	-1.40	no	-0.10	-1.10
Switzerland	Italy	1997	2000	3.39	28.96	0.11	6.91	0.13	-1.02		no	-0.14	-1.99
Switzerland	Italy	1998	2001	3.69	18.45	0.07	2.25	0.10	-1.05	-1.68	no	-0.19	-4.11
Switzerland	Italy	1999	2002	1.56	8.29	0.42	13.51	0.31	-0.78		no	-0.03	-0.24
Switzerland	Netherlands	1995	1998	3.35	6.99	0.38	2.95	0.03	0.22	-0.54	no	-0.02	-0.86
Switzerland	Netherlands	1996	1999	7.32	13.15	-0.87	-5.35	0.17	-2.36		no	-0.13	-1.86
Switzerland	Netherlands	1997	2000	3.85	18.08	0.09	1.57	0.08	-3.11	-2.04	no	-0.21	-5.05
Switzerland	Netherlands	1998	2001	3.10	54.99	0.24	18.73	0.80	-5.65		yes	-0.46	-3.78
Switzerland	Netherlands	1999	2002	2.89	36.98	0.28	15.69	0.47	-1.45		yes	-0.05	-0.37
Switzerland	Portugal	1995	1998	2.59	36.20	0.21	30.99	0.95	-3.78	-3.61	yes	-0.45	-2.81
Switzerland	Portugal	1996	1999	2.97	52.42	0.17	25.35	0.58	-2.38	-1.69	yes	-0.22	-2.00
Switzerland	Portugal	1997	2000	3.37	32.13	0.12	7.89	0.16	-0.86		no	-0.03	-0.44
Switzerland	Portugal	1998	2001	3.68	18.80	0.08	2.37	0.12	-1.17	-1.74	no	-0.15	-3.85
Switzerland	Portugal	1999	2002	2.05	12.93	0.37	13.01	0.85	-3.88		yes	-0.69	-4.13
Switzerland	Spain	1995	1998	2.80	31.63	0.26	22.69	0.38	-2.41		no	-0.25	-2.63
Switzerland	Spain	1996	1999	2.97	46.76	0.23	22.79	0.62	-3.44		yes	-0.34	-2.82
Switzerland	Spain	1997	2000	2.81	29.37	0.27	14.44	0.68	-3.04		yes	-0.35	-2.91
Switzerland	Spain	1998	2001	2.89	24.16	0.25	10.54	0.61	-2.89		yes	-0.34	-2.99
Switzerland	Spain	1999	2002	2.66	23.61	0.30	12.93	0.75	-2.48	-1.29	yes	0.01	0.04
Switzerland	Australia	1995	1998	0.02	0.06	0.47	17.31	0.26	-1.99	-2.78	no	-0.20	-2.43
Switzerland	Australia	1996	1999	0.53	2.99	0.41	21.75	0.48	-2.52	-2.65	yes	-0.49	-3.52
Switzerland	Australia	1997	2000	0.89	2.49	0.36	9.19	0.25	-2.69		no	-0.39	-3.65
Switzerland	Australia	1998	2001	1.57	5.05	0.29	8.32	0.27	-2.32	-1.87	no	-0.07	-1.08
Switzerland	Australia	1999	2002	1.51	3.94	0.29	6.82	0.20	-0.04	-0.90	no	-0.01	-0.07
Switzerland	Canada	1995	1998	3.37	11.17	0.21	4.68	0.05	0.14		no	-0.03	-0.73

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Switzerland	Canada	1996	1999	5.34	12.28	-0.16	-2.30	0.04	-2.34	-2.17	no	-0.09	-2.56
Switzerland	Canada	1997	2000	4.84	20.30	-0.10	-2.79	0.10	-1.29	-1.71	no	-0.03	-0.64
Switzerland	Canada	1998	2001	3.68	15.72	0.07	1.96	0.11	-1.35	-1.21	no	0.01	0.31
Switzerland	Canada	1999	2002	3.57	25.17	0.09	3.83	0.11	-0.38	-1.17	no	-0.01	-0.10
Switzerland	Japan	1995	1998	3.15	11.06	0.90	5.72	0.06	-0.62	-1.40	no	-0.03	-0.72
Switzerland	Japan	1996	1999	-0.20	-0.27	2.92	6.21	0.07	-1.39		no	-0.08	-1.73
Switzerland	Japan	1997	2000	2.43	5.48	1.16	3.96	0.11	-1.87	-1.38	no	-0.06	-0.97
Switzerland	Japan	1998	2001	3.91	8.47	0.16	0.49	0.10	-1.14	-1.40	no	-0.05	-1.48
Switzerland	Japan	1999	2002	0.63	0.74	2.48	4.08	0.18	-1.03		no	-0.09	-1.12
Switzerland	United Kingdom	1995	1998	8.28	8.38	-0.46	-3.59	0.05	-0.25		no	-0.05	-1.32
Switzerland	United Kingdom	1996	1999	4.52	7.61	-0.02	-0.29	0.03	-1.47	-1.76	no	-0.05	-1.87
Switzerland	United Kingdom	1997	2000	3.68	10.70	0.07	1.48	0.08	-2.39	-1.65	no	-0.12	-2.28
Switzerland	United Kingdom	1998	2001	4.07	17.74	0.01	0.29	0.10	-1.16	-1.40	no	-0.06	-1.78
Switzerland	United Kingdom	1999	2002	3.12	14.08	0.16	4.46	0.11	-0.75	-0.72	no	-0.05	-0.90
Switzerland	USA	1995	1998	-4.17	-1.94	1.05	4.14	0.09	-1.67	-1.07	no	-0.04	-0.96
Switzerland	USA	1996	1999	0.92	0.47	0.42	1.76	0.04	-1.10	-1.93	no	-0.06	-2.02
Switzerland	USA	1997	2000	2.19	4.14	0.23	3.78	0.10	-3.54		yes	-0.17	-2.84
Switzerland	USA	1998	2001	3.79	17.10	0.04	1.57	0.10	-1.19	-1.34	no	-0.04	-0.90
Switzerland	USA	1999	2002	3.65	29.74	0.06	3.78	0.10	-0.53	-1.42	no	0.04	0.72
United Kingdom	Austria	1995	1998	8.85	11.84	-0.17	-1.67	0.12	-0.97	-2.28	no	-0.09	-2.30
United Kingdom	Austria	1996	1999	4.60	3.89	0.41	2.26	0.06	-0.83	-2.06	no	-0.07	-2.10
United Kingdom	Austria	1997	2000	1.02	0.79	0.99	4.86	0.08	-0.94	-1.96	no	-0.03	-0.71
United Kingdom	Austria	1998	2001	1.26	0.74	0.90	3.32	0.04	-0.17	-0.59	no	-0.03	-0.98
United Kingdom	Austria	1999	2002	0.17	0.13	0.97	4.71	0.05	-1.17		no	-0.05	-1.36
United Kingdom	Belgium	1995	1998	6.69	6.87	0.12	0.94	0.11	-1.25	-1.42	no	-0.05	-1.29
United Kingdom	Belgium	1996	1999	-7.79	-3.53	2.13	6.84	0.23	-2.09		no	-0.14	-1.51
United Kingdom	Belgium	1997	2000	5.34	3.77	0.27	1.37	0.06	-0.60	-1.84	no	-0.05	-1.64
United Kingdom	Belgium	1998	2001	7.92	6.02	-0.13	-0.78	0.05	-0.11	-1.94	no	-0.06	-1.90
United Kingdom	Belgium	1999	2002	5.19	4.31	0.12	0.76	0.04	-0.57		no	-0.03	-1.30
United Kingdom	Finland	1995	1998	8.05	16.44	-0.07	-0.90	0.11	-1.04	-2.27	no	-0.06	-1.61
United Kingdom	Finland	1996	1999	5.55	5.26	0.32	1.64	0.06	-0.78	-2.21	no	-0.08	-2.43
United Kingdom	Finland	1997	2000	3.18	2.54	0.78	3.28	0.06	-0.34	-1.81	no	-0.04	-1.01
United Kingdom	Finland	1998	2001	5.28	3.94	0.30	1.22	0.04	-0.10	-1.14	no	-0.05	-1.44
United Kingdom	Finland	1999	2002	2.39	2.66	0.71	4.14	0.04	-1.08		no	-0.03	-0.78
United Kingdom	France	1995	1998	9.05	29.20	-0.22	-4.77	0.18	-0.94	-1.49	no	-0.07	-1.28
United Kingdom	France	1996	1999	7.48	15.15	-0.04	-0.44	0.06	-0.51	-2.25	no	-0.07	-2.23
United Kingdom	France	1997	2000	6.29	7.90	0.19	1.26	0.06	-0.90	-2.46	no	-0.05	-1.80
United Kingdom	France	1998	2001	6.78	6.23	0.02	0.11	0.05	-0.06	-1.63	no	-0.05	-1.65
United Kingdom	France	1999	2002	3.21	3.89	0.58	3.53	0.07	-1.37		no	-0.05	-1.20
United Kingdom	Germany	1995	1998	9.52	10.08	-0.20	-2.03	0.12	-0.97	-2.20	no	-0.09	-2.09
United Kingdom	Germany	1996	1999	7.92	3.68	-0.07	-0.30	0.06	-0.53	-2.31	no	-0.07	-2.11
United Kingdom	Germany	1997	2000	6.23	2.28	0.11	0.39	0.06	-0.77	-2.30	no	-0.06	-2.13
United Kingdom	Germany	1998	2001	11.04	4.89	-0.44	-1.84	0.06	-0.19	-2.12	no	-0.06	-1.68
United Kingdom	Germany	1999	2002	7.48	3.41	-0.14	-0.63	0.04	-0.44	-1.18	no	0.00	0.09
United Kingdom	Ireland	1995	1998	1.27	0.90	0.63	4.50	0.13	-1.24		no	0.03	0.55
United Kingdom	Ireland	1996	1999	-0.35	-0.45	0.80	9.79	0.16	-1.49		no	0.00	0.06
United Kingdom	Ireland	1997	2000	0.04	0.06	0.77	10.18	0.17	-1.35	-2.09	no	-0.07	-0.82
United Kingdom	Ireland	1998	2001	0.34	0.26	0.71	5.02	0.06	0.43		no	0.00	0.04
United Kingdom	Ireland	1999	2002	2.91	1.67	0.35	1.83	0.04	-0.83		no	0.00	-0.07
United Kingdom	Italy	1995	1998	9.32	25.45	-0.16	-4.75	0.17	-0.68	-2.01	no	-0.06	-1.16
United Kingdom	Italy	1996	1999	6.74	15.94	0.06	1.29	0.06	-0.69	-2.36	no	-0.07	-2.16
United Kingdom	Italy	1997	2000	5.19	12.84	0.28	5.28	0.08	-2.00	-3.14	no	-0.11	-2.64
United Kingdom	Italy	1998	2001	2.02	3.38	0.74	8.25	0.08	0.42	-0.56	no	0.00	0.06
United Kingdom	Italy	1999	2002	2.19	1.66	0.65	2.99	0.04	-0.55		no	-0.01	-0.27
United Kingdom	Netherlands	1995	1998	5.87	12.82	0.47	3.84	0.13	-2.02	-1.53	no	-0.09	-1.80
United Kingdom	Netherlands	1996	1999	2.24	2.14	1.47	4.82	0.12	-0.42	-1.09	no	-0.05	-0.75
United Kingdom	Netherlands	1997	2000	7.18	10.72	0.02	0.14	0.06	-0.79	-2.34	no	-0.06	-2.24
United Kingdom	Netherlands	1998	2001	7.52	10.26	-0.15	-0.86	0.06	-0.03	-1.55	no	-0.06	-1.81
United Kingdom	Netherlands	1999	2002	4.20	6.88	0.44	3.16	0.04	-1.22	-0.75	no	-0.04	-1.66
United Kingdom	Portugal	1995	1998	8.64	28.97	-0.10	-3.57	0.15	-0.88	-2.24	no	-0.07	-1.45
United Kingdom	Portugal	1996	1999	6.93	17.56	0.04	0.91	0.06	-0.64	-2.42	no	-0.07	-2.24
United Kingdom	Portugal	1997	2000	5.49	13.28	0.26	4.45	0.09	-1.91	-2.88	no	-0.11	-2.69
United Kingdom	Portugal	1998	2001	1.96	3.49	0.81	8.90	0.20	-0.97	-1.36	no	-0.09	-1.27
United Kingdom	Portugal	1999	2002	1.08	1.20	0.91	5.57	0.17	-1.50		no	-0.09	-1.53
United Kingdom	Spain	1995	1998	8.49	30.23	-0.12	-3.26	0.13	-0.89	-2.31	no	-0.06	-1.42
United Kingdom	Spain	1996	1999	7.12	17.70	0.02	0.38	0.06	-0.56	-2.29	no	-0.07	-2.12
United Kingdom	Spain	1997	2000	4.95	8.28	0.46	3.96	0.09	-1.63	-2.42	no	-0.06	-1.35
United Kingdom	Spain	1998	2001	4.19	4.65	0.55	3.03	0.06	-0.23	-0.91	no	-0.05	-1.08
United Kingdom	Spain	1999	2002	3.77	5.01	0.49	3.13	0.07	-1.28		no	-0.02	-0.57
United Kingdom	Australia	1995	1998	10.80	18.23	-0.32	-5.42	0.19	-0.82	-2.00	no	-0.09	-1.51
United Kingdom	Australia	1996	1999	8.47	7.98	-0.13	-1.13	0.06	-0.52	-2.16	no	-0.07	-2.22
United Kingdom	Australia	1997	2000	7.93	4.29	-0.07	-0.36	0.06	-0.83	-2.36	no	-0.07	-2.39
United Kingdom	Australia	1998	2001	4.85	2.23	0.23	0.95	0.04	-0.22	-1.54	no	-0.05	-1.71
United Kingdom	Australia	1999	2002	-2.06	-1.47	0.91	5.83	0.07	-1.58		no	-0.02	-0.47
United Kingdom	Canada	1995	1998	7.00	19.60	0.09	1.73	0.11	-1.31	-2.08	no	-0.17	-3.55
United Kingdom	Canada	1996	1999	6.96	8.36	0.05	0.38	0.06	-0.51	-2.18	no	-0.09	-2.82
United Kingdom	Canada	1997	2000	7.72	9.80	-0.07	-0.57	0.06	-0.89	-2.54	no	-0.08	-2.78
United Kingdom	Canada	1998	2001	2.69	3.02	0.64	4.76	0.07	-2.40		no	-0.13	-2.90
United Kingdom	Canada	1999	2002	2.50	19.92	0.61	29.25	0.65	-3.48	-3.81	yes	-0.30	-2.57
United Kingdom	Japan	1995	1998	7.54	20.09	0.04	0.20	0.10	-1.15	-2.21	no	-0.07	-1.79
United Kingdom	Japan	1996	1999	-0.52	-0.38	5.00	5.62	0.10	-1.16	-1.58	no	-0.05	-1.12
United Kingdom	Japan	1997	2000	-0.95	-0.95	5.45	8.24	0.17	-2.05	-2.68	no	-0.21	-3.13
United Kingdom	Japan	1998	2001	-4.87	-4.35	8.10	10.54	0.29	-1.07	-2.04	no	-0.17	-1.68
United Kingdom	Japan	1999	2002	-5.58	-1.91	8.34	4.00	0.11	-0.82		no	-0.05	-0.92
United Kingdom	Switzerland	1995	1998	9.84	15.70	-0.47	-3.59	0.14	-0.90	-1.81	no	-0.09	-1.88
United Kingdom	Switzerland	1996	1999	7.60	6.51	-0.08	-0.29	0.06	-0.52	-2.29	no	-0.07	-2.32

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r		sample period		cointegration regression: $r_1 = a + b\, r_2$							cointe-	ECM	
r_1	r_2	start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
United Kingdom	Switzerland	1997	2000	4.55	2.46	0.65	1.48	0.06	-0.99	-2.26	no	-0.08	-3.06
United Kingdom	Switzerland	1998	2001	6.12	2.25	0.19	0.29	0.05	-0.03	-1.67	no	-0.05	-1.48
United Kingdom	Switzerland	1999	2002	-1.61	-0.93	1.88	4.46	0.07	-1.61	-1.27	no	-0.04	-1.18
United Kingdom	USA	1995	1998	1.00	0.43	0.78	2.82	0.08	-1.07	-1.82	no	-0.02	-0.37
United Kingdom	USA	1996	1999	-8.32	-2.93	1.89	5.50	0.11	-0.42	-0.50	no	0.06	1.08
United Kingdom	USA	1997	2000	5.46	2.98	0.21	0.99	0.05	-0.69	-2.11	no	-0.05	-1.75
United Kingdom	USA	1998	2001	2.84	3.47	0.50	5.02	0.05	-1.56	-2.10	no	-0.07	-2.00
United Kingdom	USA	1999	2002	3.04	25.64	0.42	26.65	0.46	-4.05	-4.02	yes	-0.21	-2.08
USA	Austria	1995	1998	6.77	24.04	0.24	6.10	0.31	-1.61	-1.70	no	-0.14	-2.11
USA	Austria	1996	1999	7.00	18.79	0.19	3.40	0.16	-0.96	-1.86	no	-0.11	-1.99
USA	Austria	1997	2000	4.20	4.84	0.68	4.97	0.07	-1.16	-1.44	no	-0.15	-2.72
USA	Austria	1998	2001	2.67	1.27	0.87	2.60	0.04	2.60	-0.65	no	-0.02	-0.52
USA	Austria	1999	2002	-4.38	-1.43	1.90	3.80	0.02	0.24	-0.88	no	-0.02	-1.08
USA	Belgium	1995	1998	6.08	18.43	0.32	7.28	0.50	-1.91	-0.14	yes	-0.15	-1.43
USA	Belgium	1996	1999	5.02	5.40	0.46	3.50	0.19	-1.29	-1.86	no	-0.18	-2.85
USA	Belgium	1997	2000	2.85	5.60	0.78	11.17	0.27	-1.79	-2.18	no	-0.34	-3.94
USA	Belgium	1998	2001	7.96	5.06	0.02	0.10	0.05	2.59	-0.43	no	0.05	1.30
USA	Belgium	1999	2002	6.73	2.44	0.06	0.17	0.02	0.99	-0.44	no	-0.02	-1.10
USA	Finland	1995	1998	7.42	40.21	0.17	5.81	0.32	-1.26	-1.50	no	-0.16	-2.13
USA	Finland	1996	1999	7.64	21.82	0.12	1.80	0.15	-1.08	-1.84	no	-0.10	-1.96
USA	Finland	1997	2000	3.92	6.00	0.87	7.03	0.12	-1.39	-1.87	no	-0.06	-1.08
USA	Finland	1998	2001	5.96	3.76	0.40	1.37	0.04	2.69	-0.08	no	0.12	3.20
USA	Finland	1999	2002	0.07	0.03	1.36	3.33	0.01	0.47	-0.39	no	0.01	0.36
USA	France	1995	1998	7.98	46.67	0.07	2.96	0.22	-0.86	-2.04	no	-0.08	-1.38
USA	France	1996	1999	8.00	49.93	0.05	1.73	0.15	-1.19	-1.73	no	-0.09	-1.74
USA	France	1997	2000	6.42	14.20	0.41	4.67	0.13	-1.65		no	-0.12	-1.93
USA	France	1998	2001	6.41	5.05	0.34	1.37	0.05	2.65	0.39	no	-0.01	-0.32
USA	France	1999	2002	1.85	0.94	1.07	2.75	0.03	0.06		no	-0.04	-1.19
USA	Germany	1995	1998	6.56	16.66	0.20	4.88	0.28	-1.25	-1.54	no	-0.13	-2.02
USA	Germany	1996	1999	7.33	10.39	0.10	1.32	0.14	-1.14	-1.78	no	-0.09	-1.77
USA	Germany	1997	2000	-2.44	-2.70	1.20	12.12	0.19	-1.64	-2.78	no	-0.13	-1.57
USA	Germany	1998	2001	9.27	3.34	-0.12	-0.41	0.05	2.40	-0.59	no	-0.05	-1.40
USA	Germany	1999	2002	12.68	2.56	-0.57	-1.11	0.02	0.76	-0.72	no	-0.01	-0.27
USA	Ireland	1995	1998	3.54	8.74	0.49	12.17	0.75	-3.28		yes	-0.38	-3.36
USA	Ireland	1996	1999	5.78	21.21	0.26	9.17	0.24	-0.30	-1.70	no	0.01	0.18
USA	Ireland	1997	2000	6.19	7.72	0.25	2.90	0.04	0.40	-0.42	no	0.02	0.66
USA	Ireland	1998	2001	5.40	2.85	0.29	1.44	0.04	2.93	-1.02	no	0.00	0.00
USA	Ireland	1999	2002	1.99	0.49	0.58	1.29	0.01	0.94	-0.97	no	-0.01	-0.44
USA	Italy	1995	1998	7.90	39.02	0.05	2.87	0.21	-0.94	-2.18	no	-0.05	-0.80
USA	Italy	1996	1999	7.88	60.01	0.04	3.03	0.16	-0.97	-1.78	no	-0.12	-2.19
USA	Italy	1997	2000	8.46	24.36	0.01	0.14	0.05	0.41	-0.72	no	-0.03	-1.11
USA	Italy	1998	2001	6.82	6.19	0.20	1.19	0.05	2.54	-0.32	no	-0.01	-0.35
USA	Italy	1999	2002	0.55	0.18	1.10	2.14	0.02	0.82	-0.31	no	0.01	0.68
USA	Netherlands	1995	1998	7.21	40.62	0.34	7.21	0.40	-1.17		yes	0.14	1.35
USA	Netherlands	1996	1999	7.89	18.54	0.11	0.88	0.14	-1.33	-1.65	no	-0.17	-3.14
USA	Netherlands	1997	2000	5.99	23.62	0.66	10.09	0.17	-1.60		no	-0.19	-3.10
USA	Netherlands	1998	2001	7.18	8.27	0.22	1.11	0.04	2.76	0.05	no	-0.04	-1.02
USA	Netherlands	1999	2002	3.69	2.56	0.82	2.47	0.02	0.34	-0.65	no	-0.02	-1.18
USA	Portugal	1995	1998	7.91	55.65	0.05	4.08	0.26	-1.35	-1.91	no	-0.13	-2.10
USA	Portugal	1996	1999	7.95	64.32	0.04	2.68	0.16	-1.01	-1.76	no	-0.09	-1.71
USA	Portugal	1997	2000	8.43	25.20	0.01	0.23	0.05	0.40	-0.72	no	-0.02	-0.61
USA	Portugal	1998	2001	6.16	5.81	0.32	1.87	0.05	2.08	-1.07	no	-0.02	-0.58
USA	Portugal	1999	2002	-2.56	-1.14	1.77	4.37	0.08	-0.80	-1.11	no	-0.04	-0.97
USA	Spain	1995	1998	7.99	59.34	0.06	3.69	0.25	-1.06	-1.78	no	0.01	0.13
USA	Spain	1996	1999	8.00	62.32	0.04	2.12	0.15	-1.10	-1.78	no	-0.13	-2.33
USA	Spain	1997	2000	7.17	16.92	0.26	3.21	0.06	-0.71	-0.77	no	-0.04	-0.80
USA	Spain	1998	2001	5.71	5.11	0.49	2.18	0.05	2.17	0.03	no	-0.03	-0.52
USA	Spain	1999	2002	2.73	1.54	0.95	2.56	0.03	0.04	-0.39	no	-0.03	-1.15
USA	Australia	1995	1998	7.69	21.69	0.08	2.24	0.20	-0.75	-1.87	no	-0.11	-1.98
USA	Australia	1996	1999	7.85	22.17	0.04	1.19	0.14	-1.17	-1.73	no	-0.08	-1.70
USA	Australia	1997	2000	1.80	2.34	0.74	8.74	0.15	-2.37	-2.53	no	-0.25	-3.72
USA	Australia	1998	2001	-3.28	-1.65	1.27	5.75	0.06	2.14	1.60	no	0.09	2.26
USA	Australia	1999	2002	-11.15	-3.45	2.05	5.69	0.04	0.31	-0.01	no	0.01	0.16
USA	Canada	1995	1998	7.75	53.60	0.11	5.16	0.25	-0.30	-0.15	no	0.08	1.14
USA	Canada	1996	1999	8.77	32.71	-0.08	-1.89	0.18	-1.58	-1.89	no	-0.10	-1.54
USA	Canada	1997	2000	7.10	14.40	0.22	2.89	0.05	0.01	-1.50	no	-0.04	-1.65
USA	Canada	1998	2001	0.17	0.32	1.21	15.18	0.37	-2.95		no	-0.29	-2.76
USA	Canada	1999	2002	-0.98	-3.27	1.38	28.08	0.29	-1.48	-1.68	no	-0.09	-0.98
USA	Japan	1995	1998	7.66	55.36	0.46	5.99	0.33	-1.98	-1.13	no	-0.08	-1.08
USA	Japan	1996	1999	5.75	12.13	1.61	5.32	0.21	-0.59	-1.27	no	-0.17	-2.61
USA	Japan	1997	2000	8.86	8.31	-0.23	-0.33	0.05	0.40	-0.76	no	-0.08	-2.36
USA	Japan	1998	2001	2.91	1.24	3.59	2.24	0.05	2.14	-1.26	no	-0.01	-0.22
USA	Japan	1999	2002	-16.65	-2.41	17.04	3.46	0.07	-0.43	-0.92	no	-0.04	-0.97
USA	Switzerland	1995	1998	7.25	24.34	0.26	4.14	0.25	-1.10	-1.79	no	-0.11	-1.84
USA	Switzerland	1996	1999	7.60	20.13	0.15	1.76	0.15	-1.16	-1.82	no	-0.09	-1.77
USA	Switzerland	1997	2000	4.27	3.82	1.01	3.78	0.07	-1.28	-1.75	no	-0.08	-1.80
USA	Switzerland	1998	2001	3.17	1.00	1.20	1.57	0.04	2.73	0.05	no	0.00	-0.12
USA	Switzerland	1999	2002	-8.35	-2.02	3.79	3.78	0.03	-0.58	-1.36	no	-0.04	-1.47
USA	United Kingdom	1995	1998	7.04	13.77	0.19	2.82	0.16	-0.16	-1.22	no	-0.10	-1.59
USA	United Kingdom	1996	1999	6.74	24.09	0.21	5.50	0.19	-1.15	-1.20	no	-0.04	-0.63
USA	United Kingdom	1997	2000	7.79	10.78	0.10	0.99	0.04	0.62	-0.48	no	0.02	0.78
USA	United Kingdom	1998	2001	3.25	3.31	0.71	5.02	0.05	0.70	-0.41	no	-0.05	-1.29
USA	United Kingdom	1999	2002	-6.28	-12.30	2.21	26.65	0.43	-3.72	-3.51	yes	-0.21	-1.99
Panel B: Cointegration relative to rest of eurozone													
Austria	eurozone average excluding Austria	1995	1998	2.20	5.84	0.72	13.21	0.08	-2.74	-3.51	yes	-0.13	-2.60
Austria	eurozone average excluding Austria	1996	1999	2.78	16.50	0.61	22.29	0.23	-1.66		no	-0.11	-1.60

Table A7: Rolling cointegration of short-term corporate lending rates

national interest rate r			sample period		cointegration regression: $r_1 = a + b\ r_2$							cointe-	ECM	
r_1	r_2		start	end	a	t-stat(a)	b	t-stat(b)	DW	DF	ADF	gration?	speed	t-stat
Austria	eurozone average excluding	Austria	1997	2000	1.82	5.42	0.79	13.32	0.17	-0.93		no	-0.12	-1.58
Austria	eurozone average excluding	Austria	1998	2001	-0.66	-2.23	1.26	23.41	0.54	-2.73		yes	-0.30	-2.40
Austria	eurozone average excluding	Austria	1999	2002	-1.44	-4.15	1.40	21.69	0.44	-2.44	-1.86	yes	-0.25	-2.55
Belgium	eurozone average excluding	Belgium	1995	1998	4.89	10.23	0.31	5.52	0.21	-2.10	-5.20	yes	-0.08	-1.48
Belgium	eurozone average excluding	Belgium	1996	1999	6.18	31.06	0.12	4.53	0.27	-1.94	-2.15	no	-0.17	-2.22
Belgium	eurozone average excluding	Belgium	1997	2000	4.71	6.00	0.37	3.27	0.08	-0.01	-0.65	no	-0.09	-1.88
Belgium	eurozone average excluding	Belgium	1998	2001	-0.83	-1.19	1.24	12.15	0.19	-2.47	-2.64	no	-0.24	-2.76
Belgium	eurozone average excluding	Belgium	1999	2002	-1.34	-3.67	1.36	24.89	0.73	-3.25	-2.75	yes	-0.48	-3.52
Finland	eurozone average excluding	Finland	1995	1998	-0.13	-0.29	0.74	13.96	0.05	-1.19	-1.56	no	-0.09	-2.35
Finland	eurozone average excluding	Finland	1996	1999	2.04	9.48	0.44	15.64	0.11	-2.32	-2.01	no	-0.09	-1.98
Finland	eurozone average excluding	Finland	1997	2000	2.02	4.32	0.46	6.93	0.07	-0.13	-1.77	no	-0.07	-1.69
Finland	eurozone average excluding	Finland	1998	2001	-0.95	-3.23	0.92	21.57	0.26	-2.39		no	-0.25	-2.47
Finland	eurozone average excluding	Finland	1999	2002	-1.70	-5.03	1.03	20.58	0.17	-1.38		no	-0.08	-1.03
France	eurozone average excluding	France	1995	1998	-3.68	-7.60	1.15	21.42	0.53	-3.26		yes	-0.21	-2.30
France	eurozone average excluding	France	1996	1999	-3.37	-8.44	1.13	22.76	0.36	-2.19	-2.32	no	-0.16	-1.86
France	eurozone average excluding	France	1997	2000	-1.67	-2.58	0.91	10.49	0.29	-1.96	-2.11	no	-0.26	-3.05
France	eurozone average excluding	France	1998	2001	-1.77	-2.57	0.93	9.87	0.34	-2.38		no	-0.21	-2.26
France	eurozone average excluding	France	1999	2002	-2.87	-5.47	1.09	15.02	0.66	-3.02		yes	-0.44	-3.50
Germany	eurozone average excluding	Germany	1995	1998	5.76	22.34	0.51	15.86	0.17	-2.80		no	-0.17	-1.93
Germany	eurozone average excluding	Germany	1996	1999	7.20	53.91	0.30	15.63	0.28	-2.14		no	-0.21	-2.38
Germany	eurozone average excluding	Germany	1997	2000	8.03	22.66	0.19	3.19	0.04	2.96	0.80	no	-0.02	-0.51
Germany	eurozone average excluding	Germany	1998	2001	5.88	10.88	0.61	6.47	0.04	-1.63		no	-0.05	-1.61
Germany	eurozone average excluding	Germany	1999	2002	5.52	14.26	0.73	10.41	0.09	-0.96		no	0.00	-0.04
Ireland	eurozone average excluding	Ireland	1995	1998	9.37	19.81	0.08	1.45	0.22	-0.63	-1.69	no	-0.14	-1.79
Ireland	eurozone average excluding	Ireland	1996	1999	7.04	10.74	0.33	3.81	0.08	-0.87	-1.52	no	-0.06	-1.50
Ireland	eurozone average excluding	Ireland	1997	2000	2.17	2.97	1.05	9.97	0.17	-2.18	-2.45	no	-0.09	-1.36
Ireland	eurozone average excluding	Ireland	1998	2001	1.13	1.57	1.20	11.37	0.20	-1.80	-2.25	no	-0.18	-2.51
Ireland	eurozone average excluding	Ireland	1999	2002	1.84	10.58	1.07	41.46	0.97	-4.22		yes	-0.54	-3.72
Italy	eurozone average excluding	Italy	1995	1998	-2.66	-3.44	1.66	17.19	0.06	-1.43	-0.93	no	0.02	0.28
Italy	eurozone average excluding	Italy	1996	1999	-10.73	-14.69	2.74	26.96	0.17	-0.98		no	-0.01	-0.13
Italy	eurozone average excluding	Italy	1997	2000	-5.68	-2.08	1.91	4.78	0.02	0.14	-0.69	no	0.01	0.37
Italy	eurozone average excluding	Italy	1998	2001	2.46	1.55	0.60	2.59	0.02	-3.80	-1.90	yes	-0.06	-2.37
Italy	eurozone average excluding	Italy	1999	2002	0.40	1.18	0.82	16.79	0.25	-4.17		yes	-0.12	-1.18
Netherlands	eurozone average excluding	Netherlands	1995	1998	2.47	4.55	0.14	2.23	0.05	-2.14	-1.80	no	-0.06	-1.22
Netherlands	eurozone average excluding	Netherlands	1996	1999	4.43	18.52	-0.13	-4.26	0.26	-2.09		no	-0.14	-2.01
Netherlands	eurozone average excluding	Netherlands	1997	2000	3.03	3.03	0.11	0.81	0.06	0.24	-0.70	no	-0.09	-1.79
Netherlands	eurozone average excluding	Netherlands	1998	2001	-3.87	-4.41	1.16	9.27	0.15	-2.44	-2.50	no	-0.22	-3.12
Netherlands	eurozone average excluding	Netherlands	1999	2002	-5.29	-15.55	1.40	28.27	1.13	-3.95	-1.79	yes	-0.56	-3.68
Portugal	eurozone average excluding	Portugal	1995	1998	-7.12	-11.73	2.09	29.32	0.76	-4.58	-4.16	yes	-0.54	-3.97
Portugal	eurozone average excluding	Portugal	1996	1999	-7.83	-18.47	2.17	38.56	0.96	-3.72		yes	-0.40	-3.12
Portugal	eurozone average excluding	Portugal	1997	2000	-8.29	-6.22	2.19	11.43	0.19	-0.77		no	-0.06	-0.86
Portugal	eurozone average excluding	Portugal	1998	2001	-0.73	-0.56	1.00	5.28	0.11	-2.52	-2.04	no	-0.16	-2.97
Portugal	eurozone average excluding	Portugal	1999	2002	-0.17	-0.29	0.84	9.87	0.49	-2.90	-2.30	yes	-0.29	-2.11
Spain	eurozone average excluding	Spain	1995	1998	-7.31	-19.62	1.72	40.09	0.77	-3.30		yes	-0.33	-3.01
Spain	eurozone average excluding	Spain	1996	1999	-6.09	-17.51	1.58	35.04	0.76	-4.01	-2.73	yes	-0.33	-2.43
Spain	eurozone average excluding	Spain	1997	2000	-4.10	-11.25	1.29	25.38	1.23	-4.80	-5.77	yes	-0.76	-4.84
Spain	eurozone average excluding	Spain	1998	2001	-3.35	-7.46	1.17	18.44	1.10	-4.10		yes	-0.56	-3.93
Spain	eurozone average excluding	Spain	1999	2002	-3.65	-8.44	1.20	19.42	1.26	-4.59	-2.87	yes	-0.67	-5.80
Australia	eurozone average		1995	1998	2.97	9.74	0.84	23.48	0.29	-1.90		no	-0.15	-2.03
Australia	eurozone average		1996	1999	3.30	10.82	0.82	20.21	0.23	-1.51		no	-0.12	-1.64
Australia	eurozone average		1997	2000	5.04	7.95	0.58	6.40	0.11	-0.64	-1.26	no	-0.18	-2.68
Australia	eurozone average		1998	2001	4.69	5.95	0.63	5.46	0.11	-1.25	-1.68	no	-0.16	-2.44
Australia	eurozone average		1999	2002	4.01	5.37	0.74	6.67	0.13	-1.26	-1.62	no	-0.14	-2.39
Canada	eurozone average		1995	1998	0.95	0.76	0.67	4.55	0.06	-1.06	-1.59	no	-0.04	-0.88
Canada	eurozone average		1996	1999	7.30	9.38	-0.17	-1.63	0.11	-1.98		no	-0.08	-1.41
Canada	eurozone average		1997	2000	10.34	7.89	-0.58	-3.06	0.09	-0.49	-1.02	no	-0.04	-0.76
Canada	eurozone average		1998	2001	4.39	3.01	0.32	1.49	0.11	0.90	0.08	no	0.08	1.38
Canada	eurozone average		1999	2002	1.55	0.69	0.65	1.95	0.03	-0.43		no	-0.06	-2.04
Japan	eurozone average		1995	1998	0.32	0.95	0.17	4.40	0.07	-3.81	-2.87	yes	-0.13	-2.88
Japan	eurozone average		1996	1999	1.08	17.39	0.06	7.78	0.07	-0.62	-0.70	no	-0.02	-0.42
Japan	eurozone average		1997	2000	0.66	5.74	0.12	7.51	0.10	-0.82	-1.27	no	-0.03	-0.56
Japan	eurozone average		1998	2001	1.03	6.36	0.06	2.65	0.10	-1.58	-1.85	no	-0.11	-2.14
Japan	eurozone average		1999	2002	1.13	14.23	0.04	3.40	0.32	-3.07	-3.96	yes	-0.20	-2.12
Switzerland	eurozone average		1995	1998	1.11	9.33	0.43	31.00	0.36	-2.57		no	-0.23	-2.24
Switzerland	eurozone average		1996	1999	1.68	18.39	0.36	29.57	0.46	-2.34		yes	-0.23	-2.12
Switzerland	eurozone average		1997	2000	1.74	11.46	0.35	16.16	0.42	-2.68		yes	-0.30	-2.93
Switzerland	eurozone average		1998	2001	1.88	11.14	0.33	13.42	0.44	-2.36		yes	-0.44	-4.30
Switzerland	eurozone average		1999	2002	1.55	7.75	0.38	12.86	0.34	-0.20	1.26	no	0.18	1.45
United Kingdom	eurozone average		1995	1998	9.35	18.88	-0.21	-3.55	0.14	-0.84	-2.17	no	-0.05	-1.07
United Kingdom	eurozone average		1996	1999	6.77	9.18	0.07	0.69	0.06	-0.60	-2.31	no	-0.07	-2.13
United Kingdom	eurozone average		1997	2000	3.18	3.06	0.59	3.96	0.07	-1.29	-2.58	no	-0.05	-1.30
United Kingdom	eurozone average		1998	2001	3.71	2.31	0.47	2.00	0.04	0.21	-0.74	no	-0.03	-0.90
United Kingdom	eurozone average		1999	2002	3.15	2.26	0.44	2.12	0.04	-0.81		no	-0.04	-1.41
USA	eurozone average		1995	1998	7.55	31.75	0.11	3.94	0.24	-1.08	-1.93	no	-0.07	-1.02
USA	eurozone average		1996	1999	7.70	33.11	0.08	2.47	0.15	-1.06	-1.79	no	-0.10	-1.80
USA	eurozone average		1997	2000	5.99	8.26	0.36	3.49	0.05	-0.73	-1.04	no	-0.20	-3.46
USA	eurozone average		1998	2001	5.87	3.00	0.33	1.15	0.04	2.84	0.00	no	-0.01	-0.17
USA	eurozone average		1999	2002	2.42	0.74	0.71	1.48	0.01	0.92	-0.16	no	-0.01	-0.70

See notes to Table A6.