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Abstract

This *Note* assesses entry rates of mortgages into arrears since 2012 using loan-level data for Irish domestic banks, with a focus on the monetary tightening period from June 2022 to June 2023. Entry into mortgage arrears reached very low levels by mid-2022 and has remained low, though increasing slightly in 2023. Mortgages with a history of performance problems are more likely to enter arrears, as are mortgages that originated before 2009 and older borrowers. Since 2022, tracker-rate mortgages have been more likely to miss payments than other mortgages. Although most flows into arrears are among mortgages with historical repayment challenges and tracker mortgages, 16 per cent of borrowers entering arrears were on fixed or standard variable rates with no history of mortgage non-performance.

1 Introduction

Recent euro area monetary tightening has increased debt service burdens on some mortgages, particularly those whose interest rates are closely tied to European Central Bank (ECB) policy rates. Higher debt service burdens could increase the risk that monthly payments become unaffordable for some borrowers.

This *Financial Stability Note* examines mortgage loans that enter early arrears by missing mortgages payments, using loan-level data about private dwelling house (PDH) mortgages at Irish domestic banks. The *Note* highlights changes in mortgage arrears between June 2022 and June 2023, a period when households experienced higher inflation, and when many borrowers faced rising interest rates after the ECB began the current monetary tightening cycle in July 2022.[2]

Overall, early arrears rates remain close to the 2019-22 average, and many borrowers in early arrears quickly return to on-time payments. Market-wide statistics for Ireland show that the share of PDH mortgage accounts in arrears up to 180 days fell from 8-9 per cent in 2012 to 2-4 per cent from 2016 onwards.[3] Having reached a low of 2.3 per cent in 2021, arrears up to 180 days increased

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[2] Over half of the Irish mortgage market is on a fixed interest rate, while less than half of the market is on a tracker or standard variable rate mortgage (Central Bank of Ireland *Financial Stability Review* 2023:II).

[3] Central Bank of Ireland Residential Mortgage Arrears and Repossession Statistics, June 2023. While other research often defines early arrears as 1-90 days past due, e.g. Kelly and McCann (2016), this *Note* focuses on arrears up to 180 days past due, as a result of the six-monthly reporting frequency of our data.

to 3.0 per cent of accounts by June 2023. However, interest rates remain high into late 2023, and there may be further a lag between higher payment burdens and arrears, in which case further effects of monetary tightening may be expected in future data.

Based on the loan-level data that we investigate in this *Note*, two main factors explain recent developments in loan-level flows into arrears. First, mortgages with a history of non-performance have a significantly higher rate of entry into early arrears than mortgages that had always been performing, reaffirming previous research and demonstrating that prior mortgage distress continues to be relevant during the recent period of monetary tightening. Second, tracker mortgages, whose interest rates are tied to ECB policy rates, have been more likely to enter arrears than mortgages on other interest rate types since June 2022.

The rising trend among tracker borrowers is of interest as it potentially signals a cohort of borrowers most at risk of deeper repayment challenges, as well as indicating potential impacts arising from monetary tightening that may eventually affect other borrowers. However, tracker mortgages differ from the average mortgage in important ways when assessing potential future credit risk. Almost all tracker mortgages were issued during the mid-2000s, when debt service and loan-to-income ratios were high, while most other mortgages were issued more recently under more sustainable credit standards. For these reasons, further monitoring will be required for the majority of mortgages which were originated in more recent years.

The *Note* is structured as follows. Section 2 outlines some research into mortgage repayment capacity in Ireland and other countries. Section 3 describes data. Section 4 discusses recent transition rates of mortgages with zero arrears into early arrears. Section 5 highlights key characteristics of these mortgages. Section 6 concludes.

2 Research on flows into mortgage arrears

The impact of recent monetary tightening on flows into mortgage arrears will depend upon the pass-through of policy rates to mortgage accounts, which is mostly based on contractual interest rate type and the decisions of lenders (Byrne, et al., 2017). By late 2022, fixed interest rates insulated 60 per cent of Irish mortgage borrowers from rising ECB policy rates, typically for a period of 1-5 years (Byrne, et al., 2023). Pass-through to non-tracker variable rate mortgages has been low as of late 2023. By contrast, ECB policy rate changes pass through completely to tracker mortgages.

An increase in repayment amounts may be expected to lead to repayment challenges for some borrowers. Campbell & Cocco (2015) find that overall default rates for adjustable and fixed rate mortgages in the United States are similar, and that default risk is higher for adjustable mortgages when interest rates and inflation increase. However, in general, the choice of interest rate type may depend on the borrower's characteristics and thus may be correlated with underlying risk of default (Byrne, et al., 2017). The information available to both the borrower and lender may be challenged by the issues of adverse selection (Bester, 1985) and moral hazard.

In Ireland, interest rates, housing equity, unemployment, income and non-mortgage default were explanatory factors of mortgage default during the 2008-13 crisis (Kelly & McCann, 2016). At that time, affordability issues and economic developments had important effects on overall arrears rates (Lydon & McCarthy, 2013). A deterioration in the debt service ratio through a loss of income or increased repayments has also been shown to drive mortgage delinquency in Ireland (O'Toole & Slaymaker, 2021).

3 Data

We assess outstanding PDH mortgages using Loan Level Data (LLD) for Irish domestic banks.[4] This is a panel dataset containing loan, borrower and collateral characteristics of mortgages, submitted by lenders to the Central Bank of Ireland every six months since December 2011. This long time horizon enables us to compare the flow rate in the recent period to longer-term developments. Over this period, banks sold a large share of their mortgage book to non-banks. In general, these purchased portfolios had a higher-risk profile than the loans remaining on the books of the banks.

Our approach is to consider loans that begin a half-year period with no arrears, and to calculate the share that flows into arrears by the end of the half-year period. We exclude loans that are in arrears at the beginning of each half-year period, to focus on developments among mortgages that had previously been making payments on time. Lenders use a range of conventions when reporting arrears on LLD: some report months of missed payments, while others report an exact number of days past due (dpd). We harmonise all lenders' conventions to a months-past-due basis.

A very small number of loans appear to miss seven or more months of payments over a half-year. We omit these from the analysis below due to interpretation challenges (e.g. their payment obligation may have reduced). A larger share of loans miss one monthly payment. However, upon investigation, this status is highly volatile; for some lenders, it may simply reflect calendar-month type timing effects. To better illustrate the underlying dynamics, we exclude borrowers who miss just one monthly payment from the flow analysis.

This leaves two categories of entry into arrears among loans beginning a six-month period with no arrears. First, loans moving to arrears between two and six months past due, which we label as "over 30 dpd". Second, loans moving to arrears between four and six months past due, which we label as "over 90 dpd". This corresponds to the importance of 90 dpd arrears in triggering non-performing loan classifications, as well as thresholds of early arrears used in other work.

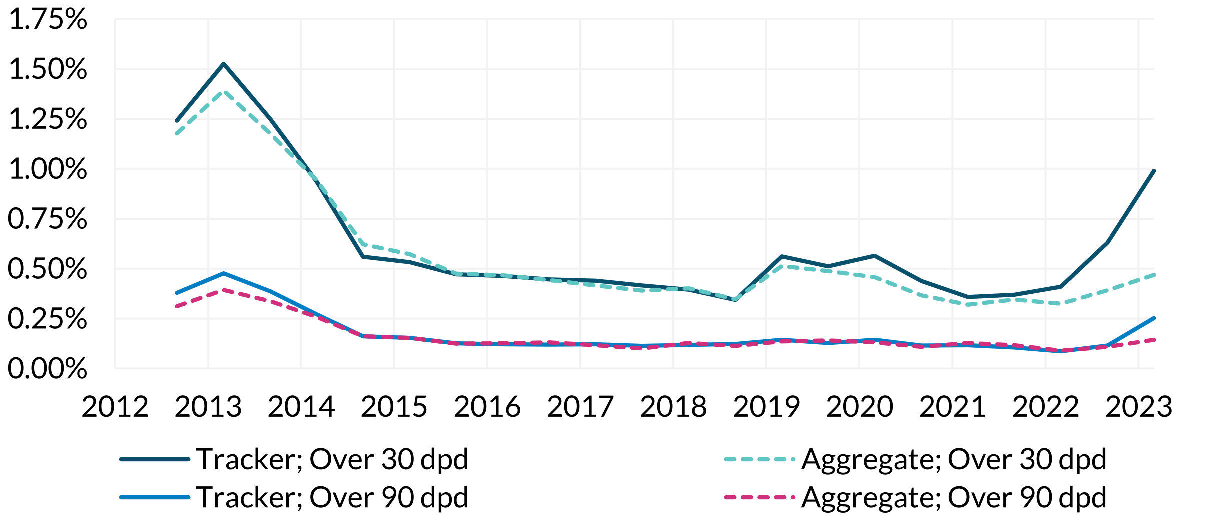
4 Flows into arrears

In this section, we show the shares of PDH mortgages with no arrears that transitioned to over 30 dpd and over 90 dpd during half-year periods since 2012 H2. The rate of the flow into arrears is of course conditional on slow-moving structural and cohort-level factors, such as selection into different product types, credit conditions at origination, and the propensities of some loans to exit more quickly than others, such as when well-performing borrowers refinance, or when banks sell non-performing loans (NPLs).

In Figure 1, we examine flows into early arrears across all PDH mortgages, and across PDH tracker mortgages, between 2012 H2 and 2023 H1. During the early part of this period, household incomes were challenged and financial distress was widespread among mortgage holders in Ireland, while the later period is marked by a stronger economy and banking system.

[4] Central Credit Register data, as used in previous work such as Byrne, McCann and Gaffney (2023), cover a wider range of lenders but a shorter time span; for example, interest rate types are not available prior to 2019.

Figure 1: Flows into arrears by interest rate type and depth of arrears, 2012 H2 to 2023 H1

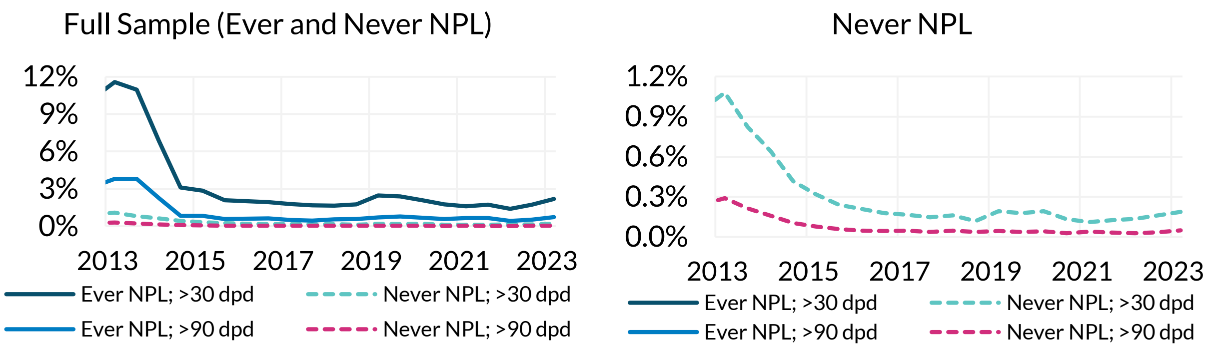


Source: Central Bank of Ireland loan-level data for PDH mortgages at domestic banks.
Notes: Mortgage accounts moving to arrears 2-6 months past due ("over 30 dpd") and 4-6 months past due ("over 90 dpd") at the end of a half-year observation period, as a share of all accounts not in arrears at the beginning of the period. "Aggregate" includes tracker and non-tracker mortgages.

The rate of entry into arrears increased during 2022-23, particularly into the "over 30 dpd" category. However, aggregate flows remain close to the 2019-22 average. The increase in aggregate flows has recently been driven by tracker mortgages, with the flow rate into early arrears of over 30 dpd increasing from 0.4 per cent in 2022 H1 to 1.0 per cent in 2023 H1. Flows into arrears among other loans have been much lower. Flows into arrears over 90 dpd, which is a more robust indicator of persistent repayment problems, has also increased, which suggests that the higher rate of entry into arrears is not due to solely transitory reasons.

Figure 2 shows the flow into early arrears by NPL status, split between ever NPL (loans with current or previous NPL status) and never NPL (those with no history of NPL). Loans with an NPL history have both a higher flow rate into early arrears and a higher increase in the rate of flow into early arears for both over 30 dpd and over 90 dpd. During 2023 H1, 2.20 per cent of mortgages with no arrears but with a NPL history entered arrears over 30 days, compared to just 0.19 per cent of mortgages with no NPL history. Again, flows remain within the 2019-22 range even after recent upward trends.

Figure 2: Flows into arrears by NPL status

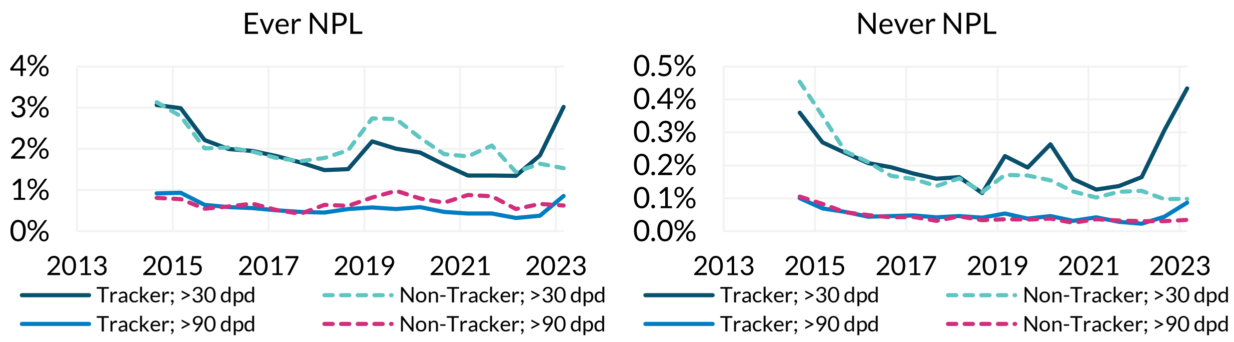


Flows into arrears among loans that were never NPL are much lower, including large cohorts that have experienced no increases in arrears flows at all. These mortgages tend to fall into one of two categories. First, loans originated relatively recently under more prudent lending standards, including the Central Bank of Ireland's mortgage measures. Second, loans originated during the 2000s that remained performing even during the financial crisis and recession of the late 2000s.

Figure 3 shows that tracker rates and NPL history each have a separate effect on the propensity of mortgages to enter arrears. The figure shows rates of flow into arrears across four groups with a focus on the period since 2014 H2. We construct the groups based on whether a loan is a tracker or non-tracker and whether it has a history of non-performance.

Overall, loans with an NPL history have much higher flows into arrears, regardless of interest rate type. This pattern holds true across the entire period since 2014 H2. However, in recent months, there has been no significant change in flows into arrears among loans with an NPL history that are on fixed or standard variable rates. The increase in arrears flows is due to the historically NPL loans on tracker rates: during 2023 H1, 3.02 per cent of tracker mortgages with an NPL history flowed into arrears, double the rate among non-tracker mortgages with an NPL history.

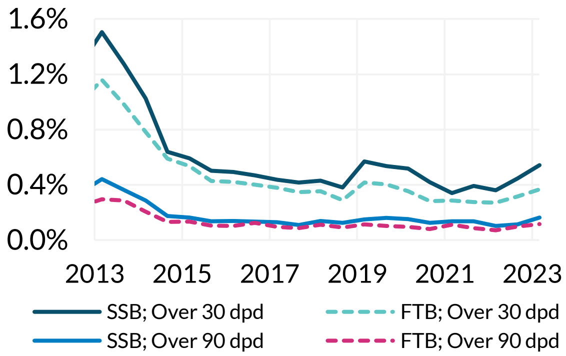
Figure 3: Flows into arrears by NPL status and Tracker vs Non-Tracker, 2014 H2 – 2023 H1



The same divergence between tracker and non-tracker mortgages occurred among never-NPL mortgages, beginning from a much lower base. During 2023 H1, the flow rate into arrears was 0.43 per cent among never-NPL tracker mortgages, but only 0.10 per cent among never-NPL, non-tracker mortgages.

Figure 4 shows that second and subsequent buyers have a somewhat higher rate of flow into arrears compared to first-time buyers. This is in line with previous findings about differences in credit risk across these two groups in Ireland.

Figure 4: Flows into early arrears by first-time buyer (FTB) or second and subsequent buyer (SSB) status



In Figure 5, we examine flows into early arrears by age cohort of the oldest borrower on the mortgage. Older borrowers have a higher propensity to enter arrears through time – in part, because more financially resilient borrowers are more likely to pay off mortgages more quickly. Borrowers aged between 40 and 59 have experienced the largest recent increases in the flow rate into arrears. The youngest age cohort is not experiencing a higher recent flow into arrears: over 95 per cent of borrowers aged 20-39 are on non-tracker mortgages with no NPL history.

Figure 5: Flows into early arrears by age cohort

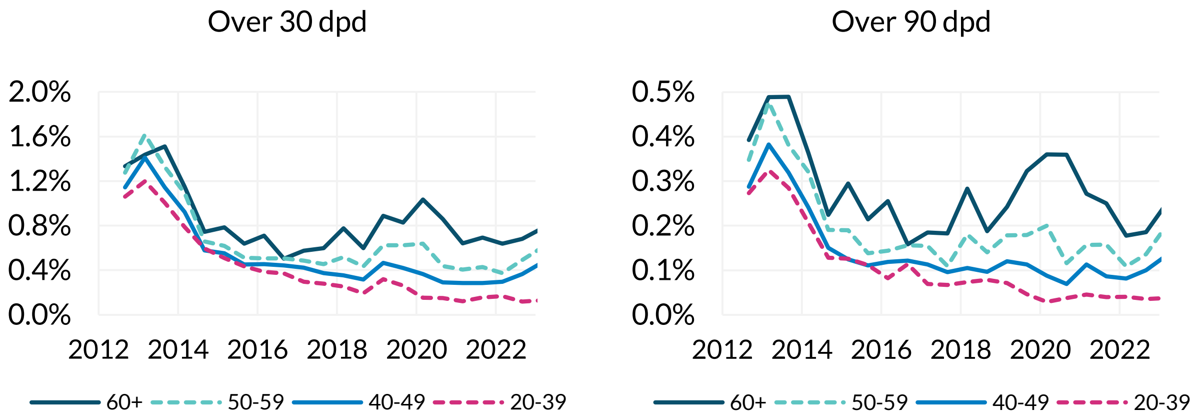
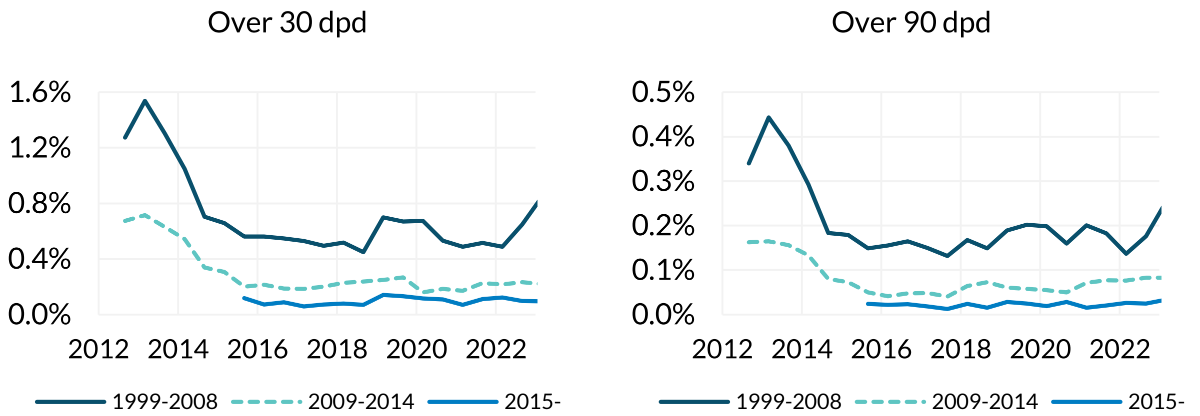


Figure 6 shows the flow into early arrears by year of mortgage origination. In the case of loans that originated in the period 1999-2008, this group has both the highest rate of early arrears and the highest increase in the rate of flow into early arrears. Mortgages originated up to 2008 are more likely to be tracker mortgages and to have encountered repayment problems than more recently mortgages, whose entry rate into arrears remains stable, at a low rate and with no upward trend.

Figure 6: Flow into early arrears by year of mortgage origination



5 Characteristics of loans flowing into early arrears

In Table 1, we describe the characteristics of accounts flowing into arrears over 30 dpd at any time between December 2021 and June 2023. The largest share of overall flows are tracker loans (53 per cent) and loans with current or previous NPL status (65 per cent). Nonetheless, categories like fixed interest rate mortgages and loans with no history of payment problems also represent large shares of the total flow.

Table 1: Flows into early arrears (31-180 dpd) by interest rate type since 2022 H1: number and share of the total

Interest Rate Type	Current NPL	Previous NPL	Never NPL	Total
Fixed	226	371	514	1,111
Standard variable	588	937	608	2,133
Tracker	681	1,660	1,264	3,605
Total	1,495	2,968	2,386	6,849

Interest Rate Type	Current NPL	Previous NPL	Never NPL	Total
Fixed	3%	5%	8%	16%
Standard variable	9%	14%	9%	31%
Tracker	10%	24%	18%	53%
Total	22%	43%	35%	100%
Note: Row and column totals may not sum to 100 per cent due to rounding.				

In Table 2, we show the aggregate number of loans flowing into early arrears by year in which the loan originated. 83 per cent of the flows into arrears are loans that originated during the period 1999-2008. 10 per cent of flows into early arrears originated during 2015-2022.

Table 2: Flows into early arrears since 2022 H1, by year of mortgage origination

Year	Flows into arrears	Share
1999-2008	5,689	83%
2009-2014	479	7%
2015-2022	681	10%
Total	6,849	100%

6 Conclusion

Beginning in June 2022, there has been an increase in the aggregate flow rate of PDH mortgages from zero arrears into early arrears. The flow rate remains within the range of recent values during 2019-22, and the deeper distress indicator of arrears over 90 dpd remains stable. However, the data cover the period at the beginning of 2022-23 monetary tightening. The full effect of changing interest rates may occur over a longer timeframe, and further impacts may be expected due to continuing monetary tightening after June 2023, the lag between higher payment burdens and arrears, and the gradual movement of fixed rate customers to higher variable rates.

The most powerful predictor of flows into arrears remains a history of NPL status. Additionally, tracker mortgages have recently been more likely to enter arrears than other mortgages; among non-tracker mortgages, the flow into arrears remains stable, regardless of NPL history. Older borrowers have experienced a higher risk of early arrears recently, while borrowers aged 20-39 have not been more likely to enter arrears. Finally, the rate of flow into early arrears for loans originated in 2009-2023 is below 0.25 per cent, compared to 0.9 per cent for pre-2009 loans. These risk characteristics are consistent with those identified in previous research, with the addition of the tracker mortgage cohort which has been most affected by recent monetary tightening. Further monitoring will be required to ascertain if tracker mortgages are otherwise representative of the mortgages unaffected by monetary tightening so far.

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