



Banc Ceannais na hÉireann
Central Bank of Ireland

Eurosystem



Macro-Financial Review

2017: II



Notes

1. Unless otherwise stated, this document refers to data available on 1 December 2017.
2. Unless otherwise stated, the aggregate banking data refer to all credit institutions operating in the Republic of Ireland.
 - *Irish retail banks* refer to the five banks offering retail-banking services within the Irish State: Allied Irish Banks plc, The Governor and Company of the Bank of Ireland, Permanent TSB, KBC Bank Ireland plc and Ulster Bank Ireland Designated Activity Company.
 - *Foreign-owned resident banks* are foreign banking groups that have a subsidiary in the Republic of Ireland and are internationally focused.
3. The following symbols are used:

e	estimate	H	half-year
f	forecast	rhs	right-hand scale
Q	quarter	lhs	left-hand scale

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Preface

The Macro-Financial Review offers an overview of the current state of the macro-financial environment in Ireland. Its aims are twofold: (i) to help the public, financial-market participants and international and national authorities better evaluate financial risks; and (ii) to promote informed dialogue on the financial system's strengths and weaknesses and efforts to strengthen its resilience.

The Review assembles some of the material kept under surveillance by the Financial Stability Committee of the Central Bank of Ireland. The Review focuses on downside risks but better-than-expected outcomes are also possible. It evaluates developments since the previous Review, published in June 2017.

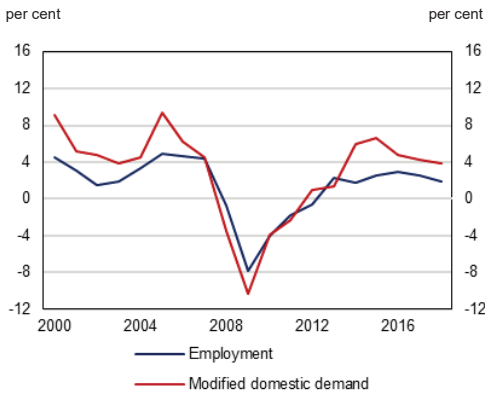
Réamhrá

Tugann an tAthbhreithniú Macra-Airgeadais forbheathnú ar staid reatha na timpeallachta macra-airgeadais in Éirinn. Tá dhá aidhm aige: (i) cuidiú leis an bpobal, le rannpháirtithe margaidh airgeadais agus le húdaráis idirnáisiúnta agus náisiúnta chun measúnú a dhéanamh ar rioscaí airgeadais; agus (ii) díospóireacht fheasach a chur chun cinn maidir le láidreachtaí agus laigí an chórais airgeadais mar aon le hiarrachtaí chun a stóinseacht a neartú.

San Athbhreithniú, bailítear cuid den ábhar a bhíonn faoi fhaireachas an Choiste um Chobhsaíocht Airgeadais de chuid Bhanc Ceannais na hÉireann. Díríonn an tAthbhreithniú ar rioscaí ar an taobh thíos ach féadfaidh na torthaí a bheith níos fearr ná mar a bhíodas ag súil leis. Déanann an tAthbhreithniú measúnú ar fhorbairtí ón Athbhreithniú deireanach a foilsíodh i mí na Meitheamh 2017.

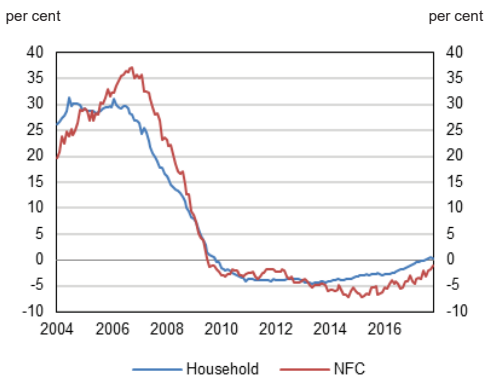
1. Overview

Chart A1: Domestic demand and employment growth



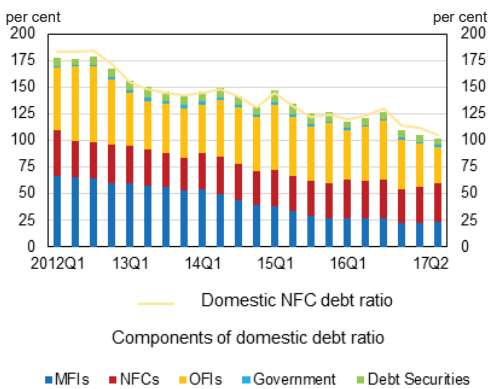
Source: CSO and Central Bank of Ireland.
Notes: Modified domestic demand includes consumption, government spending and investment (minus transport and intangibles-related investment expenditures). Forecasts for 2017 and 2018 are from the Central Bank of Ireland Quarterly Bulletin No. 4 2017.

Chart A2: Credit growth to household and NFC sectors



Source: Central Bank of Ireland.
Notes: Year-on-year growth in nominal credit. Last observation: October 2017.

Chart A3: NFC indebtedness



Source: Central Bank of Ireland and CSO.
Notes: Debt is equal to securities other than shares and loans. Domestic NFC debt is debt issued by an Irish counterparty. GNI* is used as the denominator. Last observation: 2017Q2.

Overview

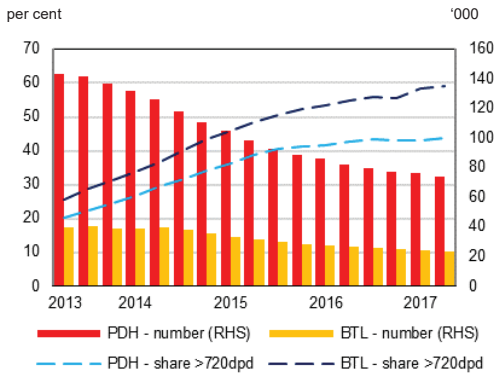
The global economic recovery continues to strengthen, with the IMF projecting global output growth of 3.6 per cent in 2017 and 3.7 per cent in 2018. Medium-term risks to growth are to the downside, reflecting, among other factors, EME vulnerabilities, the possibility of trade disruptions (including from Brexit), and any adverse effects of monetary policy normalisation. With elevated leverage in the global financial system and many asset prices at high levels, a re-pricing of risk premia in financial markets could have an unfavourable effect on the international financial system. EU banks face structural and cyclical challenges, while households and firms in some euro area Member States remain highly indebted. A deterioration in sentiment in the non-bank financial sector could have adverse effects on financial markets.

The Irish economy is projected to grow, in GDP terms, by 4.9 per cent in 2017 and by 3.9 per cent in 2018. Modified domestic demand, which is not affected by distortions arising from the activities of multinational corporations, is forecast to increase by 4.2 per cent in 2017 and by 3.9 per cent in 2018, while employment growth is expected to remain strong (Chart A1). High job vacancy rates arising in certain sectors and a declining unemployment rate may point to upward wage pressures emerging in the years ahead. There seems to have been little appreciable impact so far on consumer sentiment from Brexit. Investment is expected to continue to grow strongly in 2018. Export growth projections, of 4.9 per cent in 2017 and 4.1 per cent in 2018, reflect the expectation that weaker goods exports will be offset by an increase in services exports. Any further euro appreciation against sterling and the US dollar could have a negative effect on export growth. Headline General Government deficits of 0.3 per cent of GDP and 0.2 per cent are projected for 2017 and 2018, respectively.

The UK's decision to leave the EU poses significant risks to the Irish economy. Changes to trading agreements between the EU and the UK could have a negative impact on export demand and cause disruption to supply chains. To date, the main effect of Brexit has been through exchange-rate movements and, in particular, a weaker sterling. This has put downward pressure on goods price inflation. Infrastructural deficits, particularly in the housing sector, could hinder medium-to-long term growth prospects.

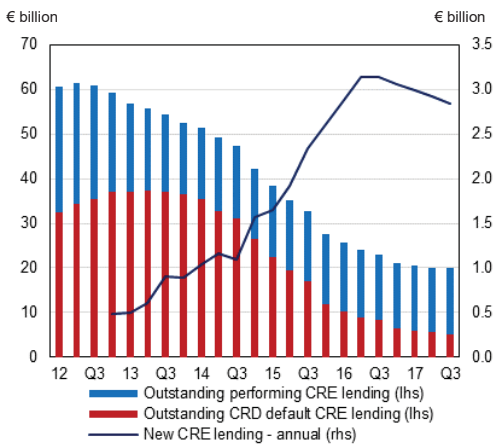
The CCyB rate on banks' Irish exposures, set by the Central Bank, remains at 0 per cent. This rate reflects the prevailing subdued, if strengthening, credit environment and indicators of cyclical systemic risk. The credit environment for both the NFC and household sectors remains subdued (Chart A2). In the NFC

Chart A4: Mortgage arrears



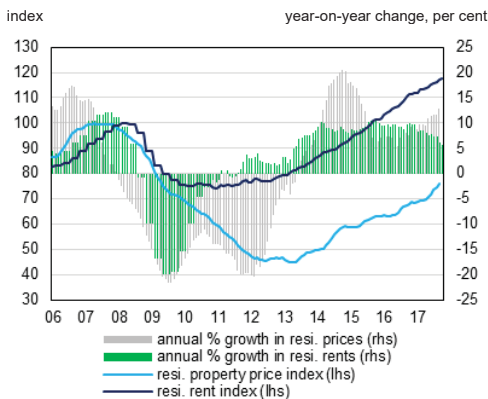
Source: Central Bank of Ireland
Note: Last observation: 2017Q2

Chart A5: Irish retail banks' CRE lending



Source: Central Bank of Ireland.
Notes: Data are consolidated and are collected in accordance with the Central Bank of Ireland's QSFR reporting requirements. CRD default loans refer to exposures that are impaired and/or classified as >90 days in arrears. Last observation: 2017Q3.

Chart A6: Residential property prices and rents



Source: CSO.
Notes: Residential property price index = 100 in April 2007. Residential rent index = 100 in February 2008. Last observations: Residential property prices (September 2017), residential rents (October 2017).

sector, credit to large enterprises has been increasing since 2015. Although total outstanding credit to SMEs is still falling, gross new lending to such firms is strengthening. In the household sector, fixed rate mortgage lending has been growing strongly since early 2015, albeit from a low initial level, while the rate of growth of lending for house purchase at floating rates remains negative. Household borrowing for purposes other than house purchase has been increasing since 2016Q2.

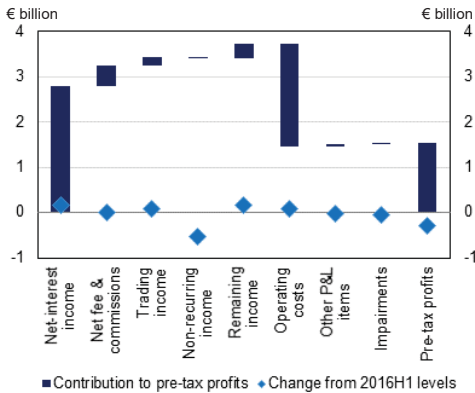
In the NFC sector, the ratio of debt held by domestic sources to GNI* stood at in excess of 100 per cent in 2017Q2 (Chart A3). High levels of indebtedness at the firm level may deter investment and leave firms vulnerable to the effects of increases in interest rates or a downturn in economic activity. The overall rate of NFC NPLs declined to 18.5 per cent in 2017Q3, although the rate of NPLs for SMEs is somewhat higher at 24 per cent. Uncertainty surrounding the future international trading environment, and arising from Brexit in particular, poses risks to the NFC sector.

While delevering has been occurring since the late 2000s, the household sector remains highly indebted with debt standing at 142 per cent of disposable income in 2017Q2. A large share of that debt, including mortgage debt, is susceptible to increases in interest rates, including ECB policy rates. The number of mortgage arrears cases continues to decline but remains large, at just under 100,000 in June 2017 (Chart A4). A combination of an improving economy and ongoing efforts to deal with mortgage arrears cases in a sustainable way is contributing to this decline, although a high share of cases in long-term arrears (more than 720 days past due) remains.

Irish commercial property returns have eased in recent quarters, bringing them more in line with other international markets. The take-up of Dublin office space was brisk in the first nine months of 2017, reflecting the growth of existing businesses. Any Brexit-related firm relocations could add to demand in this market. A large supply of new office space in Dublin is due to be in place by 2020. Outside the Dublin office sector, recovery in the commercial property market varies, particularly on a geographical basis. Commercial property transactions in 2017 have been much lower than in 2016, reflecting fewer large value purchases. Domestic buyers have accounted for most expenditure in 2017, in contrast to recent years when foreign investors were more prominent. The value of commercial property loans held by Irish retail banks has been decreasing steadily (Chart A5), but remains substantial, leaving those banks vulnerable to adverse market developments.

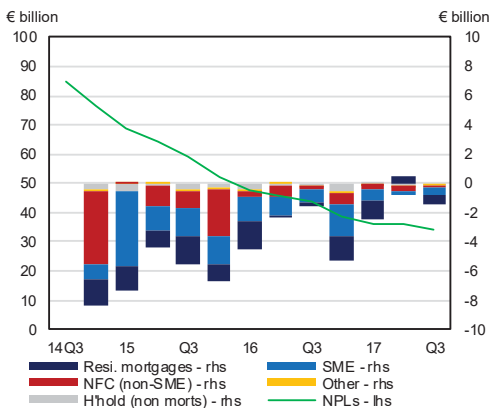
Year-on-year house price growth reached 12.8 per cent in September 2017, up from 8 per cent twelve months previously (Chart A6). Expectations of house price growth over the medium-term have also increased. Notwithstanding some recent moderation in rental inflation, residential rents in October 2017 were 18 per cent higher than their previous peak of early 2008. A lack of new and second-hand units for sale and a low turnover rate are features of the market. A shortage of residential

Chart A7: Breakdown of Irish retail banks' pre-tax profits



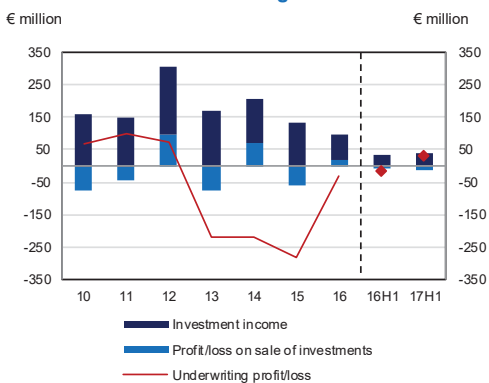
Source: Central Bank of Ireland calculations.
Notes: For the six-month period to end 2017H1. Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements.

Chart A8: Irish retail banks' stock and flow of NPLs



Source: Central Bank of Ireland.
Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements.

Chart A9: Non-life insurers' underwriting profits and investment income and gains



Source: Central Bank of Ireland.
Notes: Data are an aggregation of domestically focused high-impact firms who collectively write approximately 80 per cent of Irish risk-business. Profit/loss on sale of investments includes realised and unrealised gains and losses.

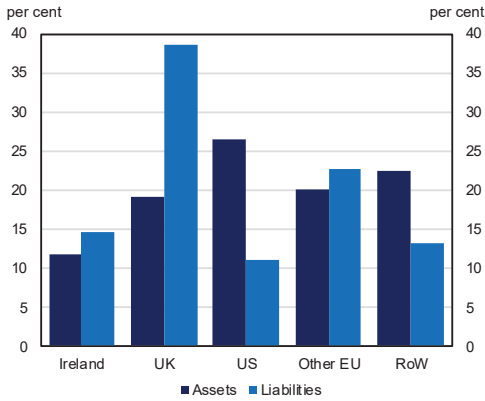
properties exerts upward pressure on house prices and rents. While leading indicators of residential construction point to a steady increase in housing output over the medium term, supply is likely to remain below demand. At end-November, the Central Bank published its annual review of the mortgage market measures. The review concluded that the core elements of the measures (the LTV and LTI limits) remain appropriate given recent developments in credit and housing markets. A refinement of the LTI allowances is being introduced which will allow more effective mitigation of risk in new mortgage lending for FTBs and SSBs.

Improved fiscal performance, a search for yield in international financial markets, and the ECB's monetary policy stance are contributing to low yields and stress levels in euro area sovereign bond markets. On 26 October, the ECB announced that purchases under its Asset Purchase Programme (APP) will continue at the current monthly pace of €60 billion until end-December 2017. From January, net asset purchases are intended to continue at a monthly rate of €30 billion until end-September 2018, or beyond, if necessary. A fall in global central bank demand for government bonds could influence their price and market conditions. A reversal of the search for yield or a failure to exercise prudent fiscal policy could raise fiscal sustainability concerns for Member States with high debt ratios. Ireland holds an 'A' grade long-term credit rating from all major credit rating agencies and carries a substantial cash balance.

A sharp decline in non-recurring income contributed to a fall in Irish retail banks' profitability in 2017H1 (Chart A7). Underlying profits increased by 18 per cent. Net-interest income, which accounted for almost three-quarters of operating income, rose marginally compared to the first half of 2016. Over 80 per cent of Irish retail banks' income came from the domestic market in 2017H1. A slowdown in the UK economy or Brexit could negatively affect Irish retail banks' profitability in the long term. New loans are rising, with the largest shares going to the SME/corporate sector and residential mortgages.

The Irish retail banks continue to delever as debt securities mature and loan redemptions exceed new lending. The value of aggregate total assets was down 4 per cent year-on-year in 2017Q3. Loan books remain concentrated in property-related lending, leaving banks vulnerable to adverse developments in residential and commercial real estate markets. Balance sheet asset quality continues to improve. NPLs fell in the twelve months to 2017Q3 and are over €50 billion below 2013 levels (Chart A8). Delevering, restructuring programmes, and the economic recovery have contributed to the decline in NPLs. The NPL rate, at 15.4 per cent of total loans, however, remains high, including by international comparison. High NPL rates weigh on bank profitability and hinder banks' capacity to provide new loans. While the Irish retail banks' aggregate solvency position has improved slightly since the last Review, the large amount of NPLs

Chart A10: Balance sheet of the funds and vehicles sector by location



Source: Central Bank of Ireland.
 Notes: Data as of 2017Q2. Figures are based on aggregate total assets and liabilities for IFs, MMFs, FVCs, and other SPEs.

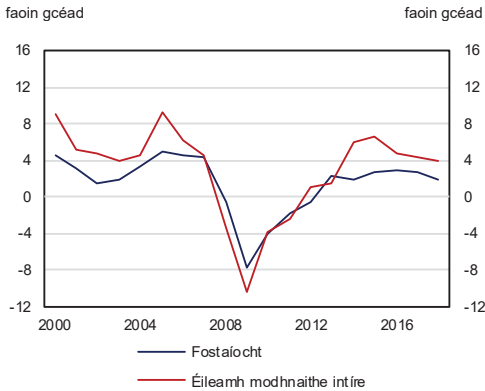
and low levels of profitability leave their capital base susceptible to a deterioration in the economic environment.

The domestic life insurance sector is well-capitalised on a Solvency II basis and saw strong growth in new business in 2017H1. Ireland’s demographic structure and the attendant scope for greater pension provision provide long-term growth opportunities for life insurers. The dominance of larger firms in the sector may make smaller firms less competitive and potentially unviable, while the impact that Brexit will have on the sector’s structure and demand for its products is uncertain. Domestically-focused, high-impact non-life insurance firms made an aggregate underwriting profit in 2017H1 due to increases in policy premiums (Chart A9). Their investment income remains suppressed in the low interest rate environment, although higher interest rates could have an adverse effect on their capital base.

While Ireland is an important domicile for the funds and vehicles sector, the majority of assets and liabilities are non-domestic and thus the Irish economy has limited direct exposure to the sector (Chart A10). Certain asset valuations are at or above pre-2007 levels and the possibility of revaluations arises. Maturity transformation in investment funds remains at an elevated level.

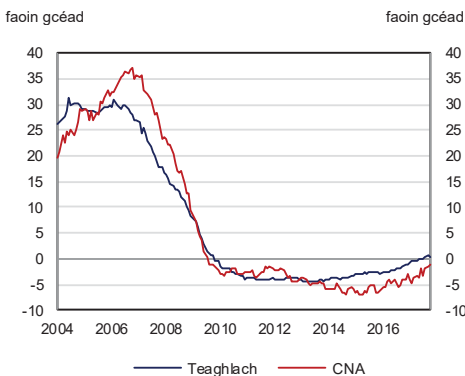
1. Forbhreathnú

Cairt A1: Éileamh intíre agus méadú ar fhostaíocht



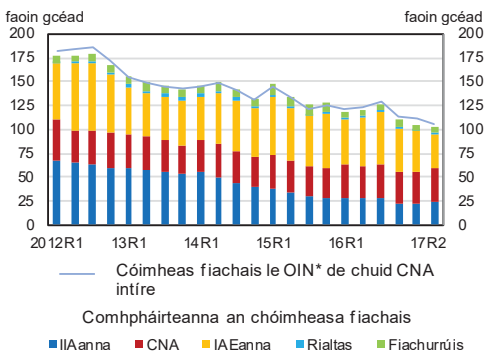
Foinse: CSO agus Banc Ceannais na hÉireann.
 Nótaí: Foláinonn éileamh modhnaithe intíre tomhaltas, caiteachas rialtais agus infheistíocht (lúide iompar agus sócmhainní doláimhsithe a bhaineann le caiteachais infheistíochta). Tógtar na réamhaisnéisí do 2017 agus 2018 ó Fhaisnéis Ráithiúl Uimh.4 2017 de chuid Bhanc Ceannais na hÉireann.

Cairt A2: Fás ar chreidmheas chuig earnáil na dteaghlach agus earnáil CNA



Foinse: Banc Ceannais na hÉireann.
 Nótaí: Fás bliain ar bhliain ar chreidmheas ainmniúil. Grinníú deireanach: Deireadh Fómhair 2017

Cairt A3: Féichiúnas CAN



Foinse: Banc Ceannais na hÉireann agus CSO.
 Nótaí: Is ionann fiachas agus úrrúis seachas scaireanna agus iasachtaí. Is ionann fiachas intíre CNA agus fiachas ama eisiúint ag contrapháirtí Éireannach. Úsáidtear OIN* mar an ainmniocht. Grinníú deireanach: 2017R2.

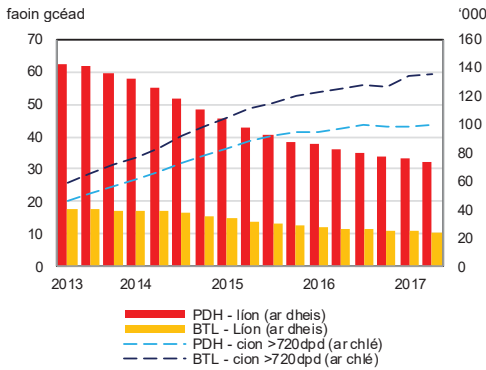
Forbhreathnú

Tá an téarnamh ar an eacnamaíocht dhomanda ag dul i neart agus tá an CAI ag tuar go dtiocfaidh fás 3.6 faoin gcéad agus fás 3.7 faoin gcéad ar an aschur domhanda in 2017 agus 2018 faoi seach. Is rioscaí ar an taobh thíos iad na rioscaí meántéarmacha don fhás, rud a léiríonn, i measc tosca eile, leochaileachtaí GME, an fhéidearthacht go mbeidh cur isteach ar thrádáil (lena n-áirítear de thoradh Brexit), agus aon éifeachtaí díobhálacha a bheidh ag normalú beartais airgeadaíochta. I bhfianaise go bhfuil gearráil sa chóras airgeadais domhanda ardaite agus go bhfuil praghsanna go leor sócmhainní ag leibhéil arda, d'fhéadfadh go mbeadh éifeacht neamhfhobhrach ag athphraghsáil préimheanna riosca sna margáí airgeadais ar an gcóras airgeadais idirnáisiúnta. Ní mór do bhainc AE aghaidh a thabhairt ar dhúshláin struchtúracha agus thimthriallacha, fad atá fiachas ard i gcónaí ag teaghlach agus gnóilachtaí i mBallstáit áirithe sa limistéar euro. D'fhéadfadh go mbeadh éifeachtaí díobhálacha ag aon mheathlú ar sheintimint san earnáil airgeadais neamhbhainc ar na margáí airgeadais.

Meastar go dtiocfaidh fás 4.9 faoin gcéad agus 3.9 faoin gcéad ar an OTI in 2017 agus in 2018 faoi seach. Maidir leis an éileamh modhnaithe intíre nach ndéanann saobhadh ó ghníomhaíochtaí corparáidí ilnáisiúnta difear dó, meastar go dtiocfaidh méadú 4.2 faoin gcéad agus 3.9 faoin gcéad air in 2017 agus 2018 faoi seach fad atáthar ag súil go leanfaidh an fás láidir ar fhostaíocht (Chart A1). Tugann rátaí arda folúntas le fios go dtiocfaidh brúnna aníos chun cinn ar thuarastal sna blianta atá romhainn. Is cosúil gur beag tionchar suntasach a bhí ag Brexit go dtí seo ar sheintimint chustaiméirí. Táthar ag súil go leanfaidh an fás láidir ar infheistíocht in 2018. Leis na réamh-mheastacháin don fhás ar onnmhairí arb ionann iad agus 4.9 faoin gcéad in 2017 agus 4.1 faoin gcéad in 2018, léirítear an t-ionchas go mbeidh onnmhairiú níos laige earraí á fhritháireamh le méadú ar onnmhairiú seirbhísí. D'fhéadfadh go mbeadh éifeacht dhiúltach ag aon luachmhéadú breise ar an euro in aghaidh an phuint steirling agus dhollar SA ar fhás onnmhairí. Táthar ag tuar go mbeidh easnaimh phríomha Rialtais Ghinearálta comhionann le 0.3 faoin gcéad den OTI in 2017 agus le 0.2 faoin gcéad den OTI in 2018.

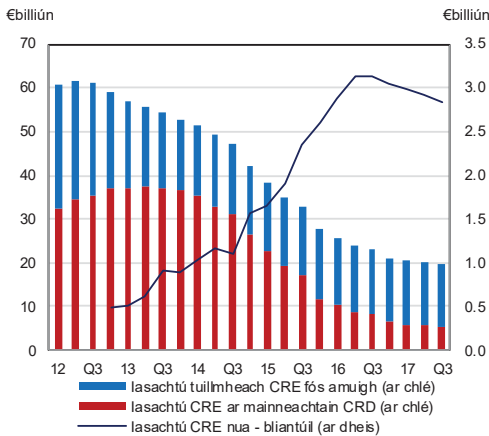
Tá rioscaí suntasacha do gheilleagar na hÉireann ann de thoradh chinneadh na Ríochta Aontaithe AE a fhágáil. D'fhéadfadh go mbeadh tionchar diúltach ag athruithe ar chomhaontuithe trádála idir AE agus RA ar éileamh onnmhairí agus go gcuirfidís isteach go mór ar shlabhraí soláthair. Go dtí seo, tá príomhéifeacht Brexit le brath sna gluaiseachtaí i rátaí malairte agus, go háirithe, i steirling níos laige. Cuireann sé seo brú anuas ar bhoilsciú i bpraghsanna earraí. D'fhéadfadh go gcuirfeadh easnaimh

Cairt A4: Riaráistí Morgáiste



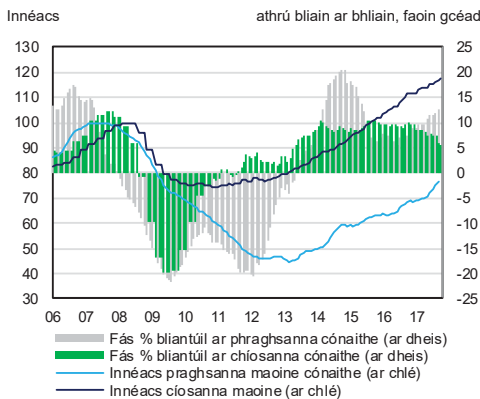
Foinse: Banc Ceannais na hÉireann
Nóta eolais: Grinníú deireanach: 2017R2.

Cairt A5: Iasachtú CRE ag na bainc mhiondiola Éireannacha



Foinse: Banc Ceannais na hÉireann.
Nótaí: Déantar na sonraí a chomhdhlúthú agus a bhailiú i gcomhréir le ceanglais tuairiscithe QFSR Bhanc Ceannais na hÉireann. Tagraíonn iasachtaí mainneachtana CRD do neamhchosaintí atá lagaithe agus/nó aicmithe mar chinn atá >90 lá i riaráiste. Grinníú deireanach: 2017R3

Cairt A6: Praghsanna agus cíosanna maoiné cónaithe



Foinse: CSO
Nótaí: Innéacs praghsanna maoiné cónaithe = 100 in Aibreán 2007. Innéacs cíosanna cónaithe = 100 i mí Feabhra 2008. Grinníú deireanach: Praghsanna maoiné cónaithe (Meán Fómhair 2017), cíosanna cónaithe (Deireadh Fómhair 2017).

bhonneagair, go háirithe san earnáil tithíochta, bac le hionchais mheántéarmacha agus fhadtéarmacha fáis.

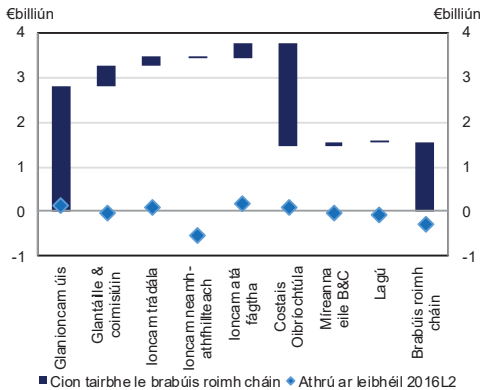
Is ionann agus 0 faoin gcéad ráta an chúlchiste fhrithimthriallaigh (CCyB), arna shocrú ag an mBanc Ceannais, ar neamhchosaintí Éireannacha na mbanc. Freagraíonn an ráta seo don timpeallacht chreidmheasa reatha atá maolaithe ach ag dul i neart agus do tháscairí maidir le riosca timthriallach sistéamach. Tá an timpeallacht chreidmheasa d'earnáil na dteaghlach agus d'earnáil na gCorparáidí Neamhairgeadais (CNA) ar aon maolaithe i gcónaí (Chart A2). In earnáil CNA, tá creidmheas chuig fiontair mhóra ag dul i méid ó 2015 i leith. Cé go bhfuil laghdú ag teacht i gcónaí ar an gcreidmheas iomlán gan íoc chuig FBManna, tá an t-olliasachtú nua chuig na gnóglachtaí sin ag dul i neart. In earnáil na dteaghlach, tá fás láidir tagtha ar iasachtú morgáiste ráta sheasta ó thús 2015 i leith, cé go raibh leibhéal tosaigh an iasachtaí sin íseal, fad atá an ráta fáis ar iasachtú do cheannach tí ar rátaí comhlúthacha diúltach i gcónaí. Ó R2 2016 i leith, tá méadú tagtha ar iasachtaíocht teaghlach chun críocho eile seachas chun teach a cheannach.

In earnáil CNA, bhí an cóimheas idir an fiachas arna shealbhú ag foinsí intíre agus OIN* os cionn 100 faoin gcéad i R1 2017 (Chart A3). Le hardleibhéal fiachais ar leibhéal gnóglachta, féadfar go ndéanfar infheistíocht a dhíspreagadh agus go bhfágfar gnóglachtaí leochaileach d'éifeachtaí a bheadh ag méaduithe ar rátaí úis nó do mheathlú ar ghníomhaíocht eacnamaíoch. Tháinig laghdú ar ráta foriomlán iasachtaí Neamhthuillemeacha CNA go dtí 18.5 faoin gcéad i R3 2017, ach tá ráta iasachtaí Neamhthuillemeacha FBManna níos airde. Eascaíonn rioscaí d'earnáil CNA as an éiginnteacht a bhaineann leis an timpeallacht trádála idirnáisiúnta amach anseo agus go háirithe as Brexit.

Cé go bhfuil díghiaráil ar siúl ó dheireadh na 2000idí, tá fiachas ard i gcónaí in earnáil na dteaghlach. B'ionann an fiachas sin agus 142 faoin gcéad d'ioncam indiúscartha i R2 2017. Tá cion ard den fhiachas sin, lena n-áirítear fiachas morgáiste, soghonta i leith méaduithe ar rátaí úis, lena n-áirítear rátaí beartais BCE. Tá líon na gcásanna de riaráistí morgáiste ag laghdú i gcónaí ach tá sé ard go fóill, díreach faoi bhun 100,000 i mí an Mheithimh 2017 (Chart A4). Ag cur leis an laghdú seo, tá geilleagar feabhsaithe agus na hiarrachtaí leanúnacha chun dul i ngleic leis na cásanna de riaráistí morgáiste ar bhealach inmharthana, ach tá cion mór i gcónaí de chásanna atá i riaráiste fadtéarmach (tréimhse is faide ná 720 lá thar téarma).

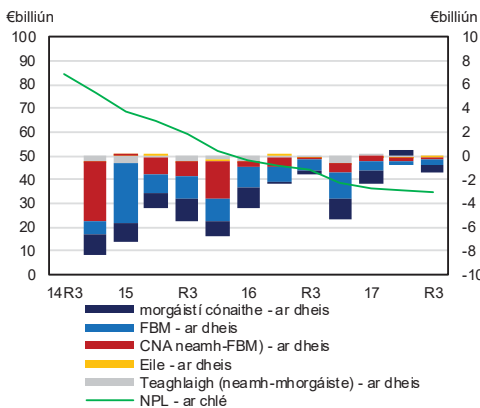
Tá maolú tagtha ar thorthaí ar mhaoín tráchtála in Éirinn le ráithí beaga anuas, sa chaoi go bhfuil siad ag teacht níos mó le margadí idirnáisiúnta eile. Bhí ráta glactha spáis oifige i mBaile Átha Cliath bríomhar sna chéad naoi mí den bhliain 2017, rud a léiríonn fás ar ghnóthaí reatha. D'fhéadfadh go gcuirfeadh athlonnú gnóglachtaí de bhun Brexit leis an éileamh sa mhargadh seo. Táthar ag súil go mbeidh soláthar mór de spás oifige nua ar fáil i mBaile Átha Cliath faoi 2020. Taobh amuigh d'earnáil oifige Bhaile Átha Cliath, tá eagsúlacht i gceist leis an téarnamh ar an margadh

Cairt A7: Miondealú ar bhrabúis roimh cháin na mbanc miondíola Éireannach



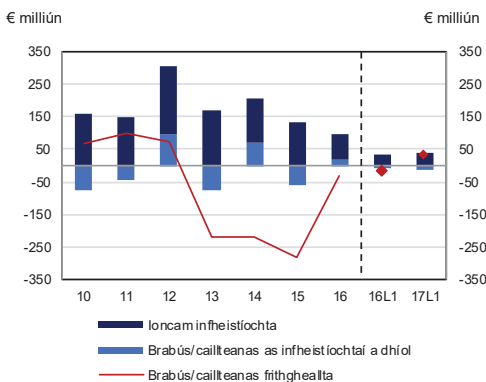
Foinse: Ríomhanna Bhanc Ceannais na hÉireann.
 Nótaí: Don tréimhse sé mhí go dtí deireadh L1 2017. Déantar sonraí a chomhdhlúthú agus a bhailiú i gcomhréir le ceanglais tuairiscithe FINREP ÚBE.

Cairt A8: Stoc agus sreabhadh NPL na mbanc miondíola Éireannach



Foinse: Banc Ceannais na hÉireann.
 Nótaí: Déantar sonraí a chomhdhlúthú agus a bhailiú i gcomhréir le ceanglais tuairiscithe FINREP ÚBE.

Cairt A9: Brabúis frithghéalta árachóirí neamhshaoil agus ioncam agus gnóthachain ó infheistíocht



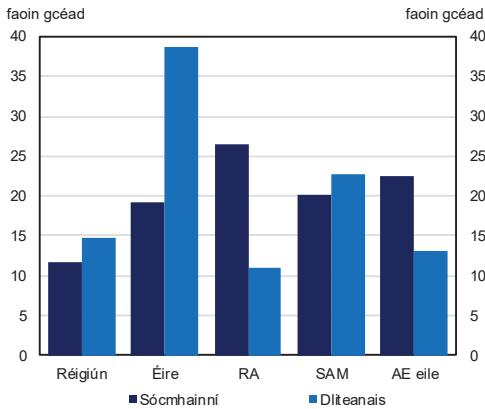
Foinse: Banc Ceannais na hÉireann.
 Nótaí: Is ionann na sonraí agus comhiomlánú ar shonraí na ngnóthachtaí ardtionchair intíre a scríobhann tuairim is 80 faoin gcéad de ghnó riosca na hÉireann. Folaíonn brabús/caillteanas ar dhíol infheistíochtaí gnóthachain agus caillteanas réadaithe agus neamhréadaithe.

maoine tráchtála, go háirithe ar bhonn tíreolaíochta. Bhí idirbhearta i maoin tráchtála i bhfad ní b'isle in 2017 i gcomparáid le 2016, rud a léiríonn go raibh níos lú ceannachán ardluacha ann. Bhí an chuid ba mhó den chaiteachas in 2017 inchurtha do cheannaitheoirí intíre, i gcodarsnacht le blianta beaga anuas nuair a chonacthas níos mó infheisteoirí eachtracha. Tá luach na n-iasachtaí maoin tráchtála arna sealbhú ag na bainc mhiondíola Éireannacha ag laghdú go seasta (Chart A5), ach tá sé suntasach i gcónaí, rud a fhágann go bhfuil na bainc sin leochaileach d'fhorbairtí díobhálacha margaidh.

B'ionann an fás ar phraghsanna tithe bliain ar bhliain agus 12.8 faoin gcéad i mí Mheán Fómhair 2017, aníos ó 8 faoin gcéad dhá mhí dhéag roimhe sin (Chart A6). Tá ardú tagtha ar na hionchais maidir le fás ar phraghsanna tithe thar an meántearma freisin. D'ainneoin maolú áirithe le déanaí ar bhoilsciú cíosanna, bhí cíosanna cónaithe 18 faoin gcéad ní b'airde i mí Dheireadh Fómhair 2017 ná a mbuaicphointe roimhe seo ag tús 2008. Is gnéithe den mhargadh iad an easpa aonad nua agus athlámhe le díol agus ráta iomlaoide íseal. Cuireann ganntanas maoin cónaithe brú aníos ar phraghsanna tithe agus ar chíosanna. Cé go dtugann na príomhtháscairí maidir le foirgníocht chónaithe le fios go bhfuil méadú seasta ar aschur tithíochta thar an meántearma, is dócha go mbeidh an soláthar fós faoi bhun an éilimh. Ag deireadh mhí na Samhna, d'fhoilsigh an Banc Ceannais a athbhreithniú bliantúil ar na bearta don mhargadh morgáiste. Ba é tátal an athbhreithnithe sin go raibh gnéithe lárnacha na mbeart (teorainneacha CIL agus CII) iomchuí i gcónaí i bhfianaise na bhforbairtí le déanaí sna margaí creidmheasa agus tithíochta. Déanfar mionchoigeartú ar lamhátais CII chun go bhféadfar riosca a bhaineann le hiasachtaí nua morgáiste do CCUanna agus CDUanna a mhaolú ar bhealach níos éifeachtaí.

Tá feidhmíocht fhioscach fheabhsaithe, cuardach toraidh sna margaí airgeadais idirnáisiúnta, agus seasamh BCE maidir le beartas airgeadaíochta, ag cur le torthaí ísle agus leibhéal struis ísle i margaí bannaí ceannasacha sa limistéar euro. An 26 Deireadh Fómhair, d'fhógair BCE go leanfaí leis na ceannacháin mhíosúla reatha de €60 billiún faoina Chlár Ceannaigh do Shócmhainní (APP) go dtí deireadh mhí na Nollag 2017. Ó mhí Eanáir ar aghaidh, tá sé i gceist go leanfar de ghlancheannacháin sócmhainní de réir ráta 30 billiún in aghaidh na míosa go dtí deireadh mhí Mheán Fómhair 2018 nó níos faide, más gá. Dá mbeadh titim ar an éileamh ar bhannaí rialtais ó bhainc cheannais dhomhanda, d'fhéadfadh go mbeadh tionchar aige sin ar a bpraghsanna agus ar dhálaí margaidh. Aon aisiompú ar chuardach toraidh nó aon mhainneachtain beartas fioscach stuamachta a fheidhmiú, d'fhéadfadh go mbeadh sé ina údar imní maidir le hinbhuanaitheacht fhioscach i mBallstáit a bhfuil cóimheasa arda fiachais acu. Tá rátáil chreidmheasa fhadtéarmach 'A' ag Éirinn ó na mórghnóthachtaí rátála creidmheasa go léir agus tá iarmhéid substaintiúil airgid aici.

Cairt A10: Clár comhardaithe earnáil na gcistí agus na n-aonán de réir suímh



Foinse: Banc Ceannais na hÉireann.
 Nótaí: Sonraí amháil R2 2017. Tá figiúirí bunaithe ar shócmhainní comhiomlána agus ar dhílteanais chomhiomlána do IFanna, MMFanna, CMAanna, agus SPEanna eile.

Chuir laghdú géar ar ioncam neamh-athfhillteach le titim ar bhrabúsacht na mbanc miondíola Éireannach sa chéad leath de 2017 (Chart A7). Tháinig méadú 18 faoin gcéad ar bhunbhrabúis. Tháinig méadú beag ar ghlanioncam úis, arbh ionann é agus beagnach trí cheathrú den ioncam oibriúcháin, i gcomparáid leis an gcéad leath de 2016. Is ón margadh intíre a tháinig os cionn 80 faoin gcéad d'ioncam na mbanc miondíola Éireannach sa chéad leath de 2017. D'fhéadfadh go mbeadh tionchar diúltach ag lag trá ar gheilleagar RA nó ag Brexit ar bhrabúsacht na mbanc miondíola Éireannach san fhadtéarma. Tá iasachtaí nua ag dul i méid, agus tá an cion is mó díobh ag dul chuig an earnáil corparáideach/FBM agus chuig morgaistí cónaithe.

Leanann na bainc mhiondíola Éireannacha den díghiaráil fad atá fiachurrúis ag teacht in aibíocht agus iasachtú nua á shárú ag fuascailtí iasachtaí. Bhí luach comhiomlán na sócmhainní iomlána 4 faoin gcéad ní b'ísle bliain ar bhliain i R3 2017. Tá na leabhair iasachta comhchruinnithe go fóill in iasachtú a bhaineann le maoin, rud a fhágann go bhfuil na bainc leochaileach d'fhorbairtí díobhálacha i margaí réadmhaoine cónaithe agus tráchtála. Tá cáilíocht sócmhainní na gclár comhardaithe ag feabhsú i gcónaí. Tháinig laghdú ar iasachtaí neamhthuillmheacha (NPL) sa dá mhí dhéag anuas go dtí R3 2017 agus tá siad €50 billiún níos ísle ná leibhéil 2013 (Chart A8). Tá an díghiaráil, na cláir um athstruchtúrú, agus an téarnamh eacnamaíoch ag cur leis an laghdú ar NPL. Ar a shon sin, tá ráta NPL, arb ionann é agus 15.4 faoin gcéad d'iasachtaí iomlána, ard i gcónaí ann féin agus agus ar bhonn comparáide idirnáisiúnta. Cuireann rátaí arda NPL isteach ar bhrabúsacht na mbanc agus cuireann siad bac ar chumas na mbanc iasachtaí nua a sholáthar. Cé go bhfuil feabhas beag tagtha ar staid chomhiomlán sócmhainneachta na mbanc miondíola Éireannach ón Athbhreithniú deireanach, fágann líon ard NPL mar aon le leibhéil ísle brabúsachta go bhfuil bonn caipitil na mbanc sin soghonta i leith meathlú ar an timpeallacht eacnamaíoch.

Tá an earnáil intíre árachais saoil dea-chaipitlithe ar bhonn Shócmhainneacht II agus chonacthas fás láidir ar ghnó nua sa chéad leath de 2017. I bhfianaise struchtúr déimeagrafach na hÉireann agus na scóipe gaolmhaire maidir le soláthar pinsean níos fearr, cuirtear deiseanna fadtéarmacha fáis ar fáil d'árachóirí saoil. I bhfianaise cheannasacht na ngnólachtaí móra san earnáil, féadfaidh nach mbeidh gnólachtaí beaga chomh hiomaíoch céanna nó nach mbeidh siad inmharthana, fad atá éiginnteacht ag baint le hiarmhairt Brexit ar struchtúr na hearnála agus ar an éileamh ar a cuid táirgí. Gnólachtaí ardtionchair árachais neamhshaoil a bhíonn dírithe ar an margadh intíre, d'éirigh leo brabús comhiomlán a dhéanamh sa chéad leath de 2017 de thoradh méaduithe ar phrímheanna polasaithe (Chart A9). Tá a n-ioncam ó infheistíocht maolaithe i gcónaí sa timpeallacht rátaí ísle úis, ach d'fhéadfadh go mbeadh éifeacht dhíobhálach ag rátaí níos airde úis ar a mbonn caipitil.

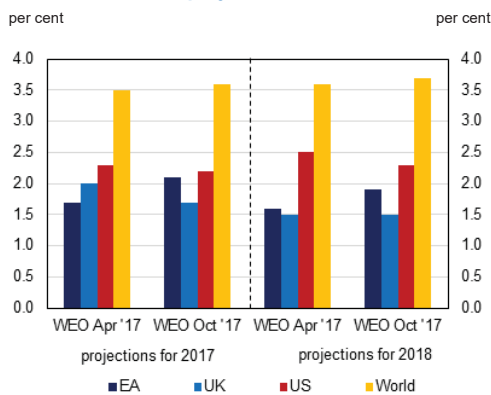
Cé go bhfuil tábhacht ag baint le hÉirinn mar shainchónaí d'earnáil na gcistí agus na n-aonán, is ionann formhór na

sócmhainní agus na ndlíteanas agus cinn neamhintíre, dá bhrí sin, tá neamhchosaint dhíreach teoranta ag Éirinn ar an earnáil (Cairt A10). Tá luachálacha sócmhainní áirithe ag leibhéil réamh-2007 nó níos airde agus tá an fhéidearthacht ann go mbeidh athluachálacha de dhíth. Tá claochlú aibíochta i gcistí infheistíochta ag leibhéal ard i gcónaí.

2. International economic and financial system developments

At present, external macroeconomic developments are relatively benign with a strengthening of the global economic recovery and accommodative monetary policy in many advanced economies. Medium-term risks to growth are to the downside, reflecting, among other factors, EME vulnerabilities, the possibility of trade disruptions (including from Brexit), and any adverse effects of monetary policy normalisation. Valuations in particular asset classes remain stretched relative to historical norms, while EU banks face ongoing cyclical and structural challenges. Highly indebted households, firms and sovereigns in certain euro area Member States remain vulnerable to any sudden shift in market sentiment and risk premia.

Chart 1: Real GDP projections

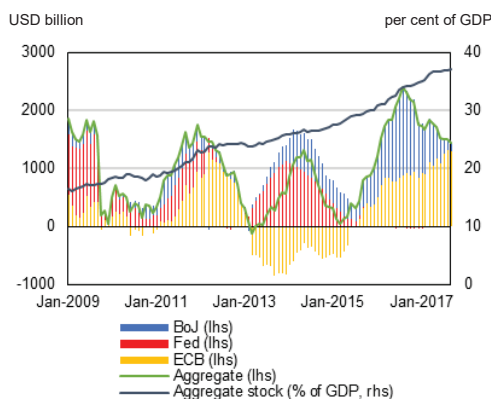


Source: IMF WEO.

In its latest World Economic Outlook (WEO), the IMF revised its projections for global economic growth upwards by 0.1 percentage points, to 3.6 per cent in 2017 and 3.7 per cent in 2018 (Chart 1).¹ This improvement in prospects includes important regional differences, however, as the increase in economic growth forecasts for the euro area, Japan and emerging Europe and Asia, have been partially offset by downward revisions to forecasts for the US and the UK.

Medium-term risks to global growth remain tilted to the downside, partially stemming from any adverse consequences of monetary policy normalisation, EME (including China) vulnerabilities, changes to existing trade arrangements (including Brexit), and currency and regulatory policies. Consumer price pressures in advanced economies remain subdued and market indicators suggest that it may be a number of years before inflation rates reach central bank targets.

Chart 2: Central bank balance sheet assets



Source: Bloomberg and Central Bank calculations.

Notes: The bars refer to the twelve-month rolling sum of the change in central bank assets. Aggregate refers to the sum of BoJ, US Federal Reserve and ECB balance sheets. Last observation: September 2017.

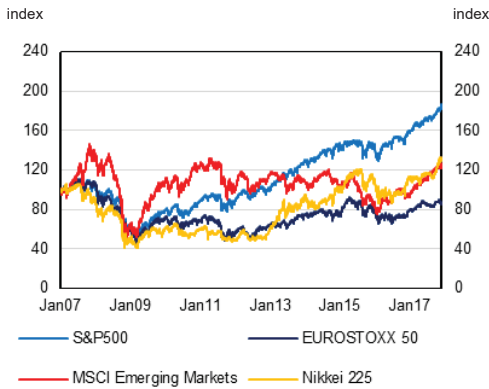
Monetary policy remains accommodative in major advanced economies, although some central banks are gradually starting to recalibrate their policies. Central bank balance sheets in advanced economies have continued to expand in 2017 as a number of non-standard monetary policies remain in place, including asset purchase programmes (Chart 2).² These policies may be contributing to a greater risk appetite in financial markets. Faster-than-expected monetary policy normalisation could have adverse and unintended consequences for the global economic outlook.

Leverage in the global financial system remains elevated relative to historical norms. For instance, IMF analysis suggests that the median net debt of large US corporates is close to its historical high of more than 1½ times earnings. Many asset price valuations are high by historical comparison (Chart 3). US and Japanese

¹ See IMF [World Economic Outlook October 2017](#).

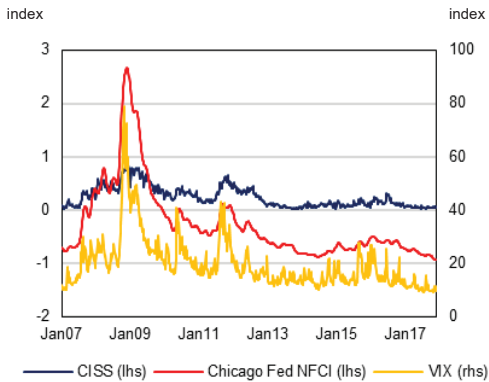
² As expected, the FOMC announced after its October meeting that its balance sheet wind-down would begin in October 2017. The Bank of England raised rates in 2017Q4.

Chart 3: Equity indices



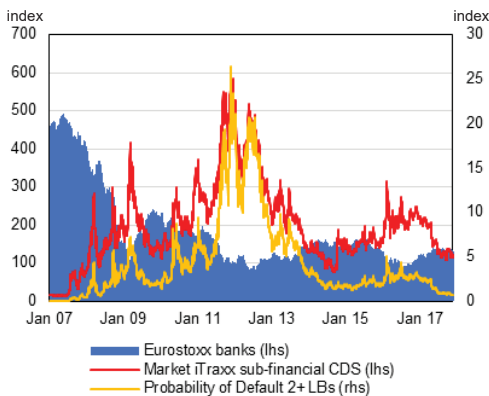
Source: Bloomberg and CBI calculations.
Notes: Indices rebased to January 2007 = 100. Last observation: 1 December 2017.

Chart 4: Composite indicators of financial conditions and volatility



Source: Bloomberg, ECB SDW and Chicago Fed.
Notes: The CISS is a composite indicator of stress across multiple asset classes in the EA, which is constrained to lie within the interval (0,1). The National Financial Conditions Index (NFCI) provides a weekly update on financial conditions in US financial markets and intermediation systems. Negative values of the NFCI have historically been associated with looser-than-average financial conditions. The VIX is the Chicago Board Options Exchange SPX Volatility Index. Last observation: 1 December 2017.⁵

Chart 5: Eurostoxx Banks Index, iTraxx Europe 5yr financial CDS index and probability of simultaneous default of two or more large banks



Source: Bloomberg, Markit iTraxx and ECB Risk Dashboard.
Notes: Markit iTraxx is a generic 5-year European sub-ordinated financial credit default swap index. Last Observation: 21 November 2017.

equities continue to trade near multi-year highs, while corporate bond yields are close to early-2007 values.

Both investors and firms could be vulnerable to an abrupt repricing of international risk premia. Notwithstanding the policy, political and geopolitical risks facing the global economy, volatility levels in financial markets remain low and financial conditions loose relative to historical averages (Chart 4).³ Excessive risk-taking by investors could increase their susceptibility to any market reassessment of global economic, fiscal, geopolitical or monetary policy expectations. The materialisation of vulnerabilities in particular EMEs could also lead to an international re-pricing of risk.

Signs of a cyclical economic recovery are providing some support to European financials (Chart 5), as are market expectations of higher global interest rates. EU banks, nevertheless, face cyclical and structural challenges such as generating sustainable profits in the current low interest rate environment, limited diversification opportunities, cost inefficiencies, and competition from the non-banking sector. The resolution (in Spain) and liquidation (in Italy) of a number of European banks earlier this year have had limited knock-on effects on aggregate European bank stocks and market-based indicators of default (Chart 5). These developments, however, could potentially affect the cost of and ability to raise debt (especially bail-in-able debt) for vulnerable banks in the future, in particular for banks where investors deem progress in reducing large legacy NPL stocks is too slow. In the non-bank financial sector, continued inflows into investment funds amid increased risk taking, along with the potential for sudden large redemptions among certain fund types, could amplify stress in financial markets if sentiment were to deteriorate.

Sovereign yields in the euro area continue to trade at relatively low levels (see section 3.4). There has been limited financial market reaction to recent geopolitical developments. Real estate asset prices have increased in a number of European countries, including residential property prices. Household debt to GDP ratios have risen in many advanced and emerging market economies over the past decade, and governments, households and firms in some euro area economies remain highly indebted.⁴ A rise in yields or change in risk appetite could weigh on debt servicing costs and debt sustainability.

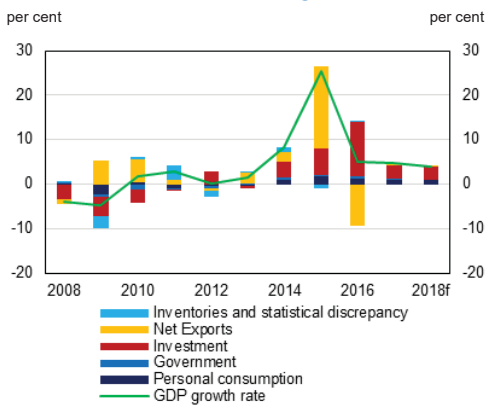
³ For further discussion of this issue, see Box C, "Trends in Market Volatility", *Central Bank of Ireland Quarterly Bulletin* 2017:Q4.
⁴ As discussed in chapter 2 of the recent IMF *Global Financial Stability Report, October 2017*, the median household debt-to-GDP ratio in advanced economies rose to 63 percent in 2016 from 52 percent in 2008. Among emerging economies, it increased to 21 percent from 15 percent over the same period. The chapter finds a trade-off between a short-term boost to growth from higher household debt and a medium-term risk to macroeconomic and financial stability that may result in lower growth, consumption, and employment and a greater risk of banking crises occurring. This trade-off is stronger when household debt is higher, but can be significantly attenuated by a combination of good policies, institutions, and regulations. These include appropriate macroprudential and financial sector policies, better financial supervision, less dependence on external financing, flexible exchange rates and lower income inequality.
⁵ For more information on the CISS, see *Box 5 MFR 2016:H1* and on the NFCI see Brave, S.A. and Kelley, D. (2017), "Introducing the Chicago Fed's New Adjusted National Financial Conditions Index", *Chicago Fed Letter, No. 386, 2017*.

3. Macroeconomic environment

3.1 Macroeconomic overview

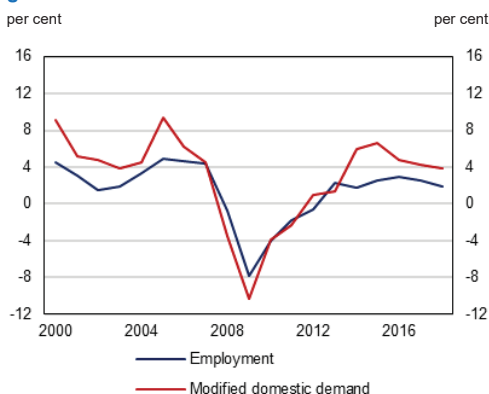
Although distortions arising from national accounting issues mean headline measures may not reflect the true extent of output growth, it is evident that the domestic economy continues to grow at a healthy pace, driven by domestic demand and strong growth in employment. The decision of the UK to leave the EU is likely to generate uncertainty in firms' investment decisions over the medium term. Infrastructural deficits may impede medium-to-long-term growth prospects, although increasing spending to ameliorate these deficits could generate overheating pressures in the short term.

Chart 6: Contributions to GDP growth



Source: CSO and Central Bank calculations.

Chart 7: Domestic demand and employment growth



Source: CSO and Central Bank of Ireland.

Notes: Modified domestic demand includes consumption, government spending and investment (minus transport and intangibles-related investment expenditures). Forecasts for 2017 and 2018 are from the Central Bank of Ireland Quarterly Bulletin No. 4 2017.

Domestic economy

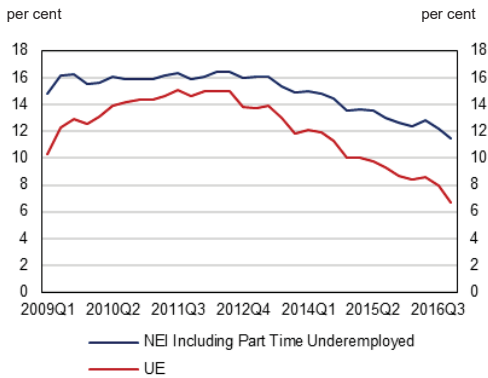
The economy is projected to grow, in GDP terms, by 4.9 per cent in 2017 and by 3.9 per cent in 2018 (Chart 6). An issue with the interpretation of standard aggregate measures of growth exists for Ireland, with distortions arising from the activities of MNCs.⁶ Modified domestic demand, which is not affected by these distortions, is projected to grow by 4.2 per cent in 2017 and by 3.9 per cent in 2018 (Chart 7). While these values point to strong growth, they constitute downward revisions to projections at the time of the last MFR. These lower forecasts follow from weaker growth in consumer spending and in investment (excluding the impact of aeroplanes and intellectual property) in the second quarter of this year. Export growth is lower this year than in 2016, mainly due to a decline in contract manufacturing. The latest projections, however, reflect the view that weaker goods exports will be mostly offset by an increase in services exports.

An important risk facing the domestic economy arises from the UK's decision to leave the EU. There seems to have been a negligible impact on consumer sentiment to date from Brexit and a weaker sterling is supporting real incomes in Ireland through its downward impact on consumer prices. The main Brexit-related effect on the Irish economy has been via exchange rate movements and their pass-through to Irish prices.⁷ As the transition agreement between the UK and the EU is negotiated, it is expected that the ultimate effects of Brexit will be negative and significant. Sectors with a high dependency on the UK for trade, such as manufactured goods and the agri-food sector, will be vulnerable to any unfavourable change in trading agreements between the EU and the UK.

⁶ See Lane, P.R. *The Treatment of Global Firms in National Accounts*, Central Bank of Ireland Economic Letter Series Vol 2017, No. 1 and Box B: GNI* = A Better Measure of Domestic Economic Activity, Central Bank of Ireland Quarterly Bulletin No.2, 2017.

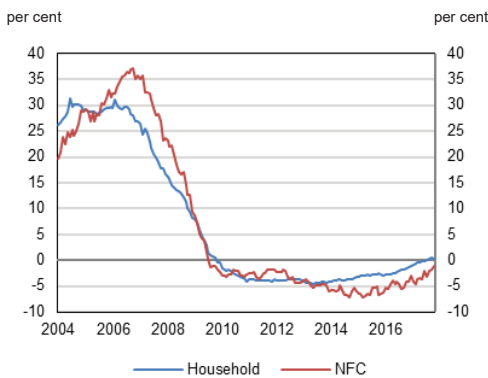
⁷ See Reddan, P and Rice, J. (2017) *Exchange Rate Pass Through to Domestic Prices*, Economic Letter 2017.8.

Chart 8: Non-employment and unemployment rates



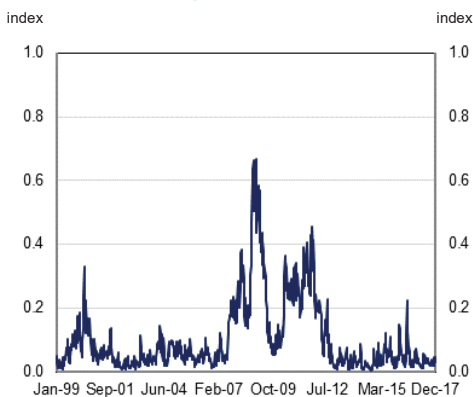
Source: CSO and Central Bank calculations.
Notes: The unemployment (UE) rate is calculated as a percentage of the labour force, while the non-employment (NEI) rate is calculated as a percentage of the working age population.

Chart 9: Credit growth to household and NFC sectors



Source: Central Bank of Ireland.
Notes: Year-on-year growth in nominal credit. Last observation: October 2017.

Chart 10: Irish Composite Stress Index



Source: Datastream and Central Bank calculations.
Notes: Series is presented as weekly average. Last observation: 1 December 2017.

A further risk to Irish firms from Brexit is the possible disruption to supply chains. It is likely that there will be an increase in the cost of importing goods and services into Ireland, as firms are forced to change existing logistic arrangements that use the UK as a land bridge for transporting goods to Ireland. Increased border waiting times, documentary compliance, and other regulatory developments, particularly for time-sensitive goods such as food, would also increase costs for firms. It remains to be seen whether such developments would affect the supply of goods or exert inflationary pressures as firms pass cost increases onto consumers.

As the economy continues to grow, the labour market is improving, although the pace of expansion has moderated in the second half of the year. Employment growth has been strong throughout the last 12 months (Chart 7). As of yet, there does not appear to be any significant evidence of tightness in the labour market, outside of certain sector-specific shortages (for instance, in information technology).⁸ Recent Central Bank research has calculated a “non-employment index” for Ireland, which takes into account those who are not working, but who fall outside the definition of unemployed.⁹ This measure shows that there has been additional slack in the labour market over recent years (Chart 8). Both the index and the unemployment rate are falling towards pre-crisis levels, suggesting that, all other factors being equal, upward wage pressures may begin to emerge in the coming years.

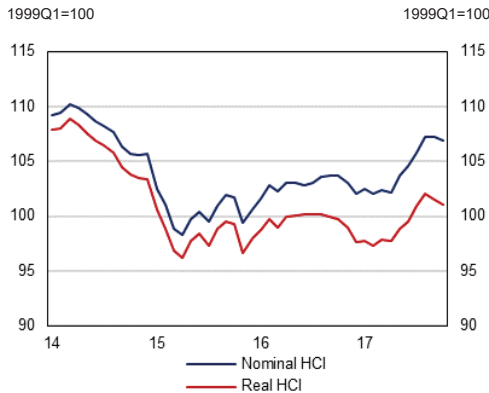
Infrastructural deficits in transport, communications, and residential property pose a risk to growth by, on one hand, the constraint they impose on growth and, on the other, as the additional expenditure required to address them may add to any overheating pressures that might emerge in the economy. Data on residential housing supply, including commencements and completions, have been subject to measurement error and, as such, it is difficult to assess the extent to which supply is falling short of demand. It is evident, however, that housing capacity is inadequate at present, particularly in urban centres, and this may inform firms’ investment decisions, particularly for those firms that are internationally mobile.

Credit developments

Despite a relative strengthening over recent months, the credit environment remains subdued. (See Sections 3.2 and 3.3 for detailed discussion of credit developments in the NFC and household sectors, respectively.) Year-on-year growth rates in lending to the household sector turned positive in July for the first time since mid-2009 (Chart 9). As of October, the growth rate was 0.3 per cent with the corresponding figure for NFCs being -1 per cent. The CCyB rate on Irish exposures, set by the Central Bank,

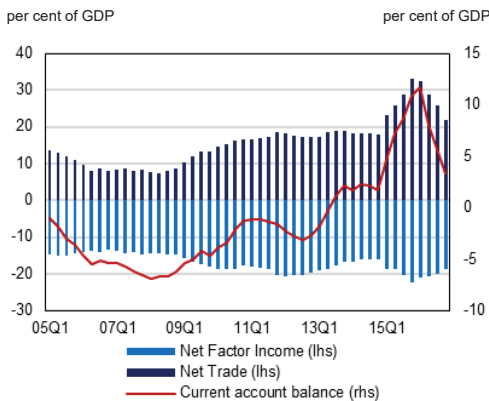
⁸ Recent wage and employment developments in the Irish economy are discussed in [Linehan et al. "The Labour Market and Wage Growth After a Crisis." Central Bank of Ireland Quarterly Bulletin, 04/2017, pp. 66-79.](#)
⁹ [Byrne, S. and Conefrey, T., "A Non-Employment Index for Ireland" Economic Letter, 2017 No. 9, Central Bank of Ireland.](#)

Chart 11: Harmonised competitiveness indicators



Source: CSO.
Notes: A decrease in the HCI implies an increase in competitiveness, and vice versa. The real HCI is deflated with the consumer price index. Last observation: 2017M10.

Chart 12: Balance of payments - current account



Source: Central Bank of Ireland.
Notes: Last observation: 2016Q4.

remains at 0 per cent. This policy stance reflects the prevailing credit environment as well as taking account of other indicators of cyclical systemic risk.¹⁰ The benchmark buffer rate implied by credit gap indicators for Ireland, which is a mandatory reference point for authorities in the CCyB rate setting process, is 0 per cent.¹¹ The Central Bank reviews the CCyB rate on banks' Irish exposures on a quarterly basis.

The Irish Composite Stress Index (ICSI) provides a coincident measure of systemic risk conditions in financial markets for Ireland. The index points to relatively low risk conditions prevailing in recent months (Chart 10). [See Box 1 for a discussion of the Central Bank's Systemic Risk Pack]

External environment

The global economy continues to grow modestly. In the euro area, GDP grew by 2.3 per cent year-on-year in the second quarter of 2017. The ECB has increased its projection for euro-area growth since the last MFR, with growth rates of 2.2 per cent and 1.8 per cent forecast for 2017 and 2018, respectively. Risks to the external environment are tilted to the downside. Geopolitical risk remains elevated, while the risk of further euro appreciation against sterling and the US dollar also arises.¹²

The divergence between goods and services performance was the most prominent feature of Irish export growth during the second quarter. Services export growth has been strong of late, driven largely by exports of computer services. The weakness of contract manufacturing continued to constrain goods exports during the second quarter. The appreciation of the euro poses a risk to export growth over the near term. The latest Harmonised Competitiveness Indicators suggest a decrease in competitiveness has occurred since the beginning of 2016 (Chart 11). Reflecting these developments, risks to the outlook for export growth remain tilted to the downside. The latest projection is for growth in export volumes of 4.9 per cent in 2017 and 4.1 per cent in 2018.

Balance of payments data contain the same distortions arising from globalisation activities as the National Accounts.¹³ Current account dynamics in recent quarters have been mainly driven by the import of intellectual property assets. This resulted in a small deficit on the current account in the second quarter (Chart 12). These imports are also reflected in the stock position, as reflected in the large negative (non-IFSC) Net International Investment Position of €387bn. This is driven largely by the -€438bn net position of the NFC sector relating to the financing by multinational firms of intellectual property imports that increase that sector's liabilities.

¹⁰ <https://www.centralbank.ie/financial-system/financial-stability/macro-prudential-policy/countercyclical-capital-buffer>

¹¹ The credit gap is measured as the difference between the current level of the credit-to-GDP ratio and the estimated long-run trend level of the ratio. At present in Ireland, the current credit-to-GDP ratio is below trend, resulting in a negative credit gap.

¹² The effects of large global economic shocks on the Irish economy are considered in O'Grady et al., "Global and Domestic Modelling of Macroeconomic Shocks: A GVAR Analysis of Ireland" Central Bank of Ireland Research Technical Paper 09/RT17.

¹³ See Box C: A Modified Measure of Ireland's Current Account in Central Bank of Ireland Quarterly Bulletin, 3, 2017.

Box 1: The Central Bank of Ireland Systemic Risk Pack

By Ellen Ryan (Financial Stability Division)

Both recent domestic and international experiences have demonstrated the damaging effects brought about by a build-up of systemic risks in financial systems. As Ireland's macroprudential authority, the Central Bank of Ireland (the Bank) is responsible for the monitoring of risks to financial stability and the implementation of policies to mitigate the impact of those risks on both the financial system and the real economy. To this end, the Bank has developed a Systemic Risk Pack (SRP), which presents indicators and visualisation methods for monitoring systemic risk in the Irish financial system.¹

Systemic risk is defined as the risk of a disruption to the provision of financial services, caused by an impairment of all or parts of the financial system, with serious, negative consequences for the real economy. Due to the dynamic and multi-faceted nature of systemic risk, a wide range of indicators is required to provide a comprehensive overview of systemic risk in a modern financial system. To provide structure and to allow for the mapping of indicators onto various sources of risk, the SRP is organised in line with the Central Bank's intermediate objectives of macroprudential policy.² It complements existing financial stability analysis by providing a comprehensive systemic perspective alongside the detailed sectoral approach of the Macro-Financial Review. The approach that has been taken in developing the risk pack allows it to evolve over time, as new data sources become available, other relevant indicators are identified, and approaches to data visualisation evolve.

In the SRP, heatmaps are used to distil the information provided by the indicators and to highlight areas of elevated risk. This is done by colour-coding indicators in line with their deviation from levels associated with financial system stability. At one end of the spectrum, red and orange colours highlight indicators moving in a direction associated with a build-up of systemic instability, whereas at the other end, darker green colours are generally associated with subdued financial system activity or the materialisation of systemic risk.³

Chart A provides an extract from the heatmap focussing on indicators related to the first intermediate objective of macroprudential policy (to mitigate and prevent excessive credit growth and leverage). In its first subsection, dark green shades reflect subdued aggregate credit dynamics and post-crisis delevering in the Irish banking sector. In the second subsection, a number of orange and red colours highlight the increased price pressures which are visible in both commercial and residential real estate markets. These price dynamics should be considered in the context of broader market and economic conditions. A range of indicators reflecting residential supply conditions show that Ireland is currently below the European average in terms of market activity, stock and property completions. The residential real estate misalignment measure takes into account economic variables, such as housing stock, interest rates and employment. The indicator does not provide evidence of excessively high house price levels up to 2017Q1.⁴ The third subsection provides sector-level detail on credit aggregates, with both household and domestic NFC sectors showing similar subdued dynamics to the aggregate indicators. The degree of concentration in banks' loan books is shown in the relatively high domestic credit Herfindahl index indicator. Its value reflects the large share of property-related lending (which is also above the historical average) and presents a less benign perspective on the vulnerability of the system to shocks in the real estate market.

While the heatmaps provide a useful overview of the systemic risk landscape, they are also a simple risk assessment tool. As such, a number of indicators highlighted by the heatmaps are presented in chart form for further consideration in the subsequent sections of the SRP.⁵ It is important to note that the SRP should not be seen as an automatic warning system or as a policy-setting tool in and of itself; rather the pack can inform the need for more in-depth analysis of a particular issue in order to inform policy maker judgement.

Chart A: An excerpt from the SRP heatmap focussing on the first intermediate objective

		>1.5 SDs below	>1.0 SDs below	>0.5 SDs below	Threshold	>0.5 SDs above	>1.0 SDs above	>1.5 SDs above			
					Indicator	Threshold	Risk level	Latest observation	Date	6 month change	Annual change
Objective 1: Mitigate & prevent excessive credit growth and leverage	Aggregate credit and leverage				Standardised credit gap	Lower threshold for CCyB setting (BCBS 2010)		-63.9pps	Mar-17	-1.2 pps	-26.1 pps
					Private-sector credit growth	Historical average		-1.8%	Aug-17	1.1 pps	1.9 pps
					National credit-to-GNI* BK	Lower threshold for CCyB setting (BCBS 2010)		-83.8pps	Aug-17	-10.4 pps	-1.5 pps
					Leverage ratio - Irish hist comparison	Historical average		5.9%	Aug-17	0.0 pps	-0.2 pps
	Asset prices				Leverage ratio - Euro comparison	European average		9.2%	Dec-16	-0.9 pps	-1.3 pps
					Residential property price growth	IMP threshold		11.4%	Jun-17	2.4 pps	5.9 pps
					Res. property price-to-rent ratio	Historical average		17.31	Jun-17	1.7%	3.3%
					Res. property price-to-income ratio	Historical average		3.99	Jun-17	1.4%	3.9%
					Res. price misalignment	Zero		-17.5%	Mar-17	-2.1 pps	-1.2 pps
					Residential property turnover	European average		2.3%	Dec-16		0.1 pps
					Res. property stock / 1,000 adults	European average		428.2	Dec-16		-2.0%
					Res. completions/ stock	European average		0.7%	Dec-16		0.1 pps
					Commercial real estate price growth	Historical average		5.1%	Jun-17	-2.3 pps	-8.9 pps
				CRE price-to-rent index	Historical average		96.0	Jun-17	-0.4%	-0.6%	
Sectoral credit and leverage				CRE price misalignment measure	Zero		1.2%	Jun-17	6.3 pps	4.9 pps	
				ISEQ 3 month MA QoQ growth	Historical average		-2.7%	Sep-17	-9.2 pps	0.5 pps	
				Total domestic credit - herfindahl	Historical average		0.5	Jun-17	1.5 pps	2.7 pps	
				Household debt gap	Lower threshold for CCyB setting (BCBS 2010)		-48.2pps	Mar-17	-9.9 pps	-4.7 pps	
				Household credit growth	Historical average		-1.7%	Aug-17	0.5 pps	1.3 pps	
				Domestic NFC debt gap	Lower threshold for CCyB setting (BCBS 2010)		-35.7pps	Mar-17	-0.5 pps	3.1 pps	
			Domestic NFC credit growth	Historical average		-2.0%	Aug-17	2.7 pps	3.5 pps		
			Property-related lending (%of total)	Historical average		68.3%	Jun-17	0.6 pps	0.3 pps		
			CRE related credit growth	Historical average		-9.0%	Jun-17	3.4 pps	1.5 pps		
			Res. fixed cap. formation/GNI*	European average		3.6%	Jun-17	0.6 pps	0.0 pps		

Source: Central Bank of Ireland Systemic Risk Pack, October 2017.

¹ The SRP is produced on a bi-annual basis and is available at www.centralbank.ie/publication/systemic-risk-pack.

² For more on the Central Bank's approach to macroprudential policy, see [A Macro-Prudential Policy Framework for Ireland](#)

³ For a discussion on the use of indicators in the macroprudential policy cycle, and further detail on the construction of the heatmaps see Ryan, E. (2017) 'The Role of Macroprudential Indicators in Monitoring Systemic Risk and Setting Policy'. *Central Bank of Ireland Quarterly Bulletin Special Article*, No.2 April.

⁴ This indicator is the average of the output of three models that are discussed in [Kennedy, O'Brien and Woods \(2016\) 'Assessing the sustainability of Irish residential property prices: 1980q1-2016q2' Central Bank of Ireland Economic Letter, Vol.2016 No.11](#).

⁵ These sections are also used to examine indicators that are not compatible with the heatmap structure.

3.2 Non-financial corporate sector

Developments in the operating environment faced by firms since the last Review have, in general, been favourable. Investment is expected to continue to see strong growth, while improving external demand should prove beneficial to exports. Uncertainty surrounding the future international trading environment, and arising from Brexit in particular, however, pose risks to the sector. Pockets of vulnerability remain within the sector, with high levels of indebtedness and arrears in certain sub-sectors. Irish commercial property returns have eased in recent quarters, but remain relatively high by international comparison. Recovery in the commercial property market varies, particularly on a geographical basis. The value of commercial property loans held by Irish retail banks remains substantial, leaving banks vulnerable to adverse market developments.

Chart 13: Business sentiment index



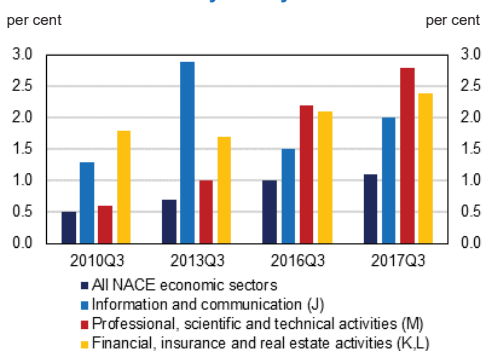
Source: KBC Bank Ireland/Chartered Accountants.
Notes: Index base 2006Q4=100. Last observation: 2017Q3.

Operating environment

Developments in firms' operating environment have been broadly positive since the last Review. Business sentiment, while showing a marginal decline in 2017Q3, has recovered substantially following a sharp fall in the wake of the Brexit referendum in 2016 (Chart 13). Investment is growing strongly and is expected to continue to do so in 2018. Export growth of 4.1 per cent in 2018 is forecast, with services exports expected to grow more strongly than goods exports. A further euro appreciation vis-à-vis sterling or the dollar, however, would likely have a damping influence on export growth. More generally, uncertainty regarding the external trading environment and, in particular, Brexit pose a significant source of downside risk to the outlook for the sector.

The labour market has seen rising employment and a reduction in the unemployment rate of late. The job vacancy rate has also picked up somewhat. Comparatively high job vacancy rates are evident in sectors such as professional and scientific services, and financial and real estate activities (Chart 14), which may point to difficulties in recruiting appropriate staff from a firm perspective and potential skills mismatches arising in those segments of the labour market.

Chart 14: Job vacancy rate by sector

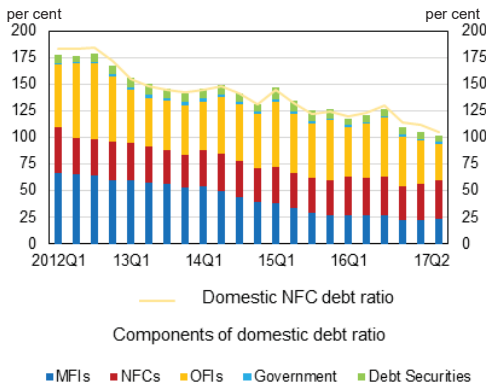


Source: CSO.
Notes: The job vacancy rate is defined as the ratio of job vacancies to vacancies and occupied positions. Last observation: 2017Q3.

Financial position

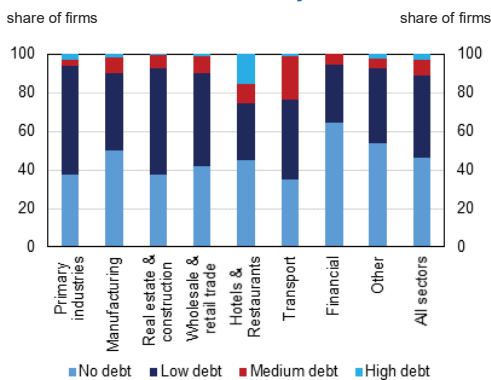
MNC activity has a sizeable influence on both the numerator and denominator of the NFC debt-to-GDP ratio in Ireland. According to this standard measure, the Irish NFC sector is highly indebted. However, from both an activity point of view and a funding perspective, MNCs tend to be less connected to domestic Irish developments than indigenous firms. Therefore, an alternative ratio is used to provide a better representation of Irish NFC indebtedness. This is calculated using debt held by domestic sources as the numerator and GNI* as the appropriate measure of Irish economic activity. Using this measure, the NFC sector is less indebted, although the ratio is still in excess of 100 per cent (Chart 15).

Chart 15: NFC Indebtedness



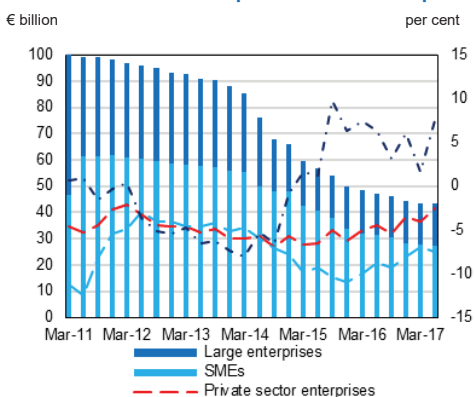
Source: Central Bank of Ireland and CSO.
Notes: Debt is equal to securities other than shares and loans. Domestic NFC debt is debt issued by an Irish counterparty. GNI* is used as the denominator. Last observation: 2017Q2.

Chart 16: SME indebtedness by sector



Source: SME Credit Demand Survey and Central Bank of Ireland calculation.
Notes: Firm indebtedness is based on debt-to-turnover ratio. Low debt <0.33, medium debt 0.33-1, high debt >1. Sample excludes outliers with a debt-to-turnover ratio >10. Small samples in some cases. Data relate to period October 2016-March 2017.

Chart 17: Credit to Irish private sector enterprises



Source: Central Bank of Ireland.
Notes: Bars represent outstanding amounts (lhs). Dash lines represent rate of growth (rhs). Data exclude the financial intermediation sector. Last observation: 2017Q2.

The proportion of credit to Irish private sector enterprises held by resident MFIs has been declining over time. Just under two-thirds of that credit is owed by SMEs with the remainder owed by large enterprises. In relation to overall lending to Irish private sector enterprises and the SME sub-component of lending, the real estate sector makes up the largest share (35-40 per cent) of the outstanding stock. The next largest share belongs to the wholesale and retail trade sector (circa 15 per cent), while in relation to lending to SMEs, primary industries accounts for over 10 per cent of lending also.

High levels of indebtedness at the firm level raise the vulnerability of firms to increases in interest rates or a decline in the turnover or profitability needed to service that debt. High indebtedness may also hinder investment by reducing access to finance or otherwise limiting firms' ability to undertake investments. Survey data indicate that 2.9 per cent of all SMEs in the October 2016-March 2017 period had debt holdings in excess of annual turnover.¹⁴ This share has declined over time, although there is variation in debt burdens across sectors. The hotels & restaurants sector has the largest share of highly indebted firms (Chart 16).

The downward trend in NFC NPLs has continued in recent quarters, falling to 18.5 per cent as of 2017Q3.¹⁵ There is a noticeable difference in the level of NPLs among SME loans (24 per cent) compared to lending to large enterprises (12 per cent). Loan-level data collected by the Central Bank indicates a similar picture, with the SME default rate being in the region of 19 per cent in 2016Q4. Amongst SMEs, the construction sector and the hotels and restaurants sector had the highest default rates, at over 24 per cent in December 2016.¹⁶

Financing conditions

Credit to Irish private sector enterprises continues to decline. The year-on-year rate of credit growth to Irish private sector enterprises was -2.5 per cent in June 2017. This, however, hides diverging trends between large enterprises and SMEs (Chart 17). Credit growth to large enterprises has been strong since 2015. In contrast, SMEs continue to delever with negative rates of credit growth persisting.

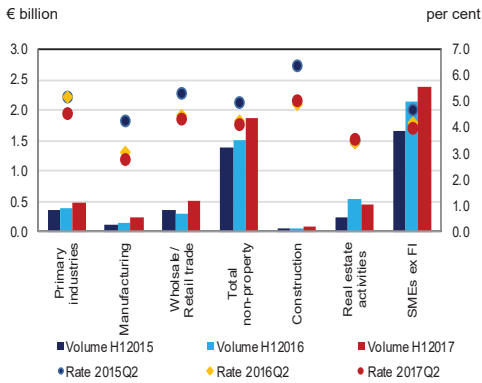
The decline in overall credit to SMEs is occurring despite a strengthening in gross new lending to SMEs. New lending to SMEs in the first six months of 2017 amounted to €2.4 billion, in comparison to €2.1 billion in the same period of 2016 (Chart 18). Looking at the distribution of lending in the first half of 2017, approximately 20 per cent went to each of the property, primary industries and wholesale and retail trade sectors. This is a more even distribution than in 2016 when almost 30 per cent of new lending was property-related. While interest rates vary across sector and over time, the average rate of approximately 4.1 per

¹⁴ McQuinn, J. and McCann, F. (2017), *The financial vulnerability of Irish Small and Medium enterprises, 2013-2017*, Central Bank of Ireland, *Economic Letter 2017 No.14*, provides a more comprehensive discussion of the evolution of financial vulnerability of Irish SMEs.

¹⁵ In this case, NPLs are assessed using supervisory data collected by the Central Bank of Ireland. Therefore, in addition to an improving economy and efforts at an institutional level to resolve the NPL issue, the sale or disposal of assets by banks may impact on the level of NPLs.

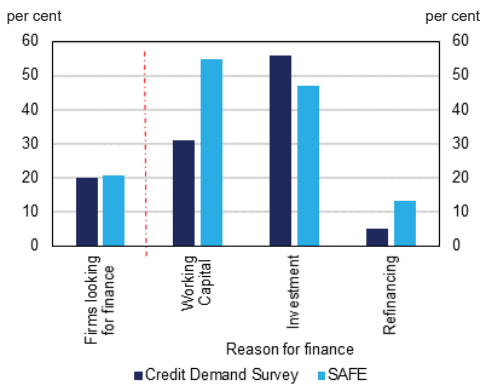
¹⁶ See [Central Bank of Ireland, SME Market Report 2017H1](#)

Chart 18: Gross new lending to SMEs



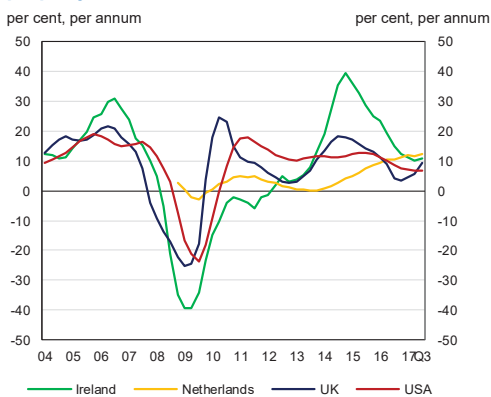
Source: Central Bank of Ireland.
Notes: Bars represent lending volumes (lhs), dots represented the corresponding interest rate (rhs). Last observation: 2017Q2.

Chart 19: SME financing needs - rationale



Source: SME Credit Demand Survey, SAFE & Central Bank of Ireland calculations.
Notes: Data relate to the period October 2016-March 2017. Percentage of firms requiring finance by purpose. Firms can use more than one kind of finance and therefore shares do not add to 100. Reasons for finance presented are not exhaustive.

Chart 20: Total returns across international property markets



Source: MSCI/IPD.
Notes: Data are annual total returns in local currency. Total return is an indicator of investment performance. It takes account of both capital and rental elements of a property's value, and is calculated by MSCI/IPD as the percentage change in capital values plus net income accrual, relative to capital employed. Last observation: 2017Q3.

cent in 2017Q2 is similar to that in the same period of 2016 (Chart 18).

While comparatively small relative to SME lending provided by the banking system, lending supported by the SBCI continues to grow. The first half of 2017 saw €311 million of SBCI-supported loans being issued, the largest half-year total to date. This brought total drawdowns since the SBCI started operating in early-2015 to €855 million.¹⁷ The SBCI has used a number of niche products targeted at meeting specific SME needs. The Agriculture Cashflow Support Scheme is one such example. It accounted for €118 million of loans in the first half of 2017.¹⁸ The SBCI is also looking to introduce a Brexit Loan Scheme. In terms of the use of funds, 84 per cent of SBCI-supported loans at end-2016 were used for investment in business expansion, with just 11 per cent used for working capital.

Survey evidence provides an insight into the reasons for firms applying for credit or their intended use of finance. The SME Credit Demand Survey points to only one in five SMEs requesting finance in the period October 2016-March 2017, with almost 90 per cent of those who did not apply for finance referring to the fact that it was not needed.¹⁹ Of those SMEs requesting finance, 31 per cent of SMEs requested bank finance for working capital purposes (Chart 19). A further 56 per cent of SMEs requested finance for some form of investment (23 per cent for the purposes of expansion, 21 per cent for the purchase of new equipment and 12 per cent relating to a new business venture).²⁰ The SAFE survey, overall, shows a similar picture, although in this case working capital is seen to be the primary reason for finance being required.

Commercial property market values

Notwithstanding a slight increase in the third quarter of 2017, Irish commercial property returns have eased in recent quarters, bringing them more in line with other international markets (Chart 20). Commercial property returns for the year ending 2017Q3 were 10.7 per cent, approximately four percentage points lower than the equivalent level recorded a year earlier. Annual commercial property capital values rose 5.6 per cent over the past year, bringing the cumulative increase since 2013 to 79 per cent. Capital values, however, remain below peak values with the CRE capital value index 42 per cent lower than its 2007 level.²¹ Annual commercial rental values were 4.7 per cent higher in 2017Q3, contributing to a 56 per cent cumulative increase in rents since their 2013 trough, leaving the index approximately 20 per cent off its previous peak. In terms of sectoral performance, industrial properties have been recording the strongest capital and rental value growth in recent quarters, replacing the office sector, which

¹⁷ On average, the cost of SBCI-supported loans to SMEs has been 1.15 per cent lower than the market cost of loans of <€250,000. [SBCI press release 3/08/2017](#).

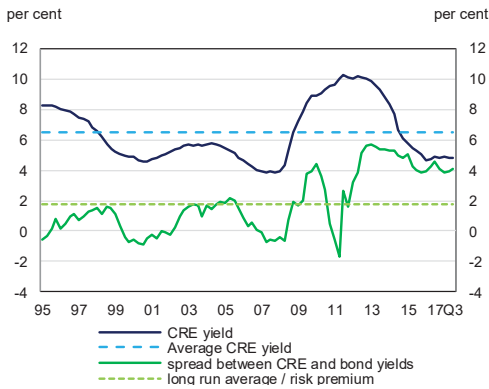
¹⁸ While SBCI supported lending has been utilised by SMEs across a range of sectors, the agriculture sector has accounted for almost one-quarter of lending as of June 2017.

¹⁹ [SME Credit Demand Survey, June 2017](#).

²⁰ For a broader discussion of Irish SME investment, see [Irish SME investment in Economic Recovery, Central Bank of Ireland, Quarterly Bulletin Article, April 2016](#).

²¹ Budgetary changes to the rate of stamp duty payable on commercial property purchases announced in October may have a negative impact on year-end valuations for 2017 and could reduce market liquidity.

Chart 21: CRE yield and risk premia



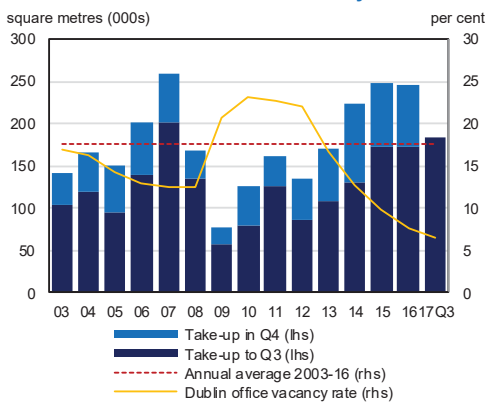
Source: MSCI/IPD and Datastream.
Notes: Risk premium / spread is the difference between gross rent passing yield on Irish CRE and the yield on an Irish 10 year government bond. Last observation: 2017Q3.

had driven much of the initial recovery in commercial property values. Yields on Irish commercial property, at just under 5 per cent in 2017Q3, have fallen below their historical average, although spreads between CRE yields and domestic sovereign bond yields are above their long-run average (Chart 21).

Commercial property market activity

Notwithstanding a rather subdued third quarter, take-up of Dublin office space was brisk in the first nine months of 2017, surpassing the 2003-2016 annual average (Chart 22).²² While any Brexit-related firm relocations have the potential to add to letting demand, the current demand for Dublin office space reflects the growth of existing businesses. The volume of leasing in recent years has seen the Dublin office vacancy rate fall to 6.6 per cent (Chart 22), lower than the average of 8 percent seen across a selection of major European cities (Chart 23).

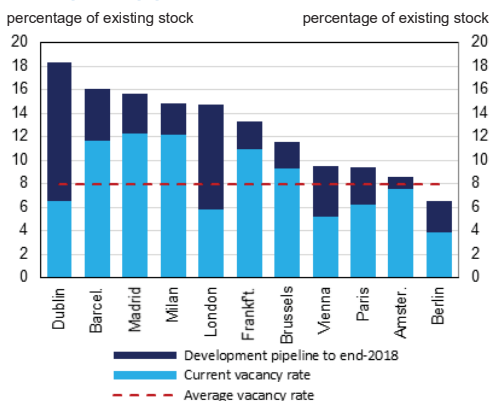
Chart 22: Dublin office market activity



Source: CBRE Research and Central Bank of Ireland calculations.
Notes: Dublin office vacancy rate refers to the average of the available end-quarter data from the year to which they relate. Last observation: 2017Q3.

Supply pressures have seen Dublin office rental costs rise steadily over time, with prime rents projected to reach €700 per square metre by end 2017, according to CBRE, up from €681 per square metre at the end-2017Q3.²³ The resumption of commercial property development in 2015 has resulted in the delivery of new office space to the city in 2016 and 2017, for the first time since 2010.²⁴ The equivalent of a further five years of average Dublin office take-up is due to be completed by 2020. The addition of this new stock should reduce upward pressure on rents and capital values and will allow Dublin to compare favourably with other European cities in terms of the supply of modern, well-situated, office accommodation (Chart 23). The scale of new development planned or already underway, and the possible inflow of firms choosing Ireland as a post-Brexit relocation destination, requires prudent management of the commercial construction cycle.

Chart 23: Dublin office vacancy rate and 2 year development pipeline



Source: CBRE Research.
Notes: Data refers to 2017/2018 development pipeline. Average vacancy rate calculated on a sample of 23 large European cities, a selection of which are included in the chart.

While data quality remains an issue, information for regional CRE markets outside of Dublin is gradually improving and points to a commercial property market recovery that has been less than broadly based across the country. According to GeoView, 13.5 per cent of the country's total stock of 213,000 commercial properties were vacant in 2017Q2. The corresponding 2016Q2 figure was 13.1 per cent. On a county level, the highest proportion of vacant commercial units are located in the north west, such as is in Sligo (18 per cent) and Leitrim (16.2 per cent), while Kerry (10.6 per cent) and Wexford (10.8 per cent) had the lowest commercial property vacancy rates. Regional office take-up has been sluggish of late. Cushman and Wakefield data, for example, show cumulative take-up of office space in the Cork, Limerick and Galway markets in the first nine months of 2017 was approximately 60 per cent of the 2016 total (Chart 24).²⁵

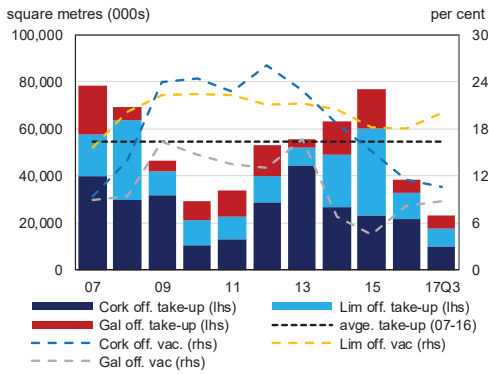
²² Analysis of the CRE sector in the Macro-Financial Review focuses mainly on the Dublin market, as data coverage of regional CRE markets tends to be poor. There is a need for detailed, independent information on both a national and regional basis. The Central Bank of Ireland, in conjunction with NAMA, has been supporting and co-funding a project with the CSO to ascertain whether it is possible to develop a Commercial Property Statistical System (CPSS) for Ireland and statistics covering the overall stock, the stock under construction and commercial property transactions.

²³ See [Dublin Office Market View, Q3 2017](#), CBRE Research.

²⁴ According to Duffy and Dwyer (2015), no new office space was delivered to the Dublin market for the five years up to 2015, with no new office construction occurring between 2011 and 2013, see "[FDI and the Availability of Dublin Office Space](#)", ESRI Research Note.

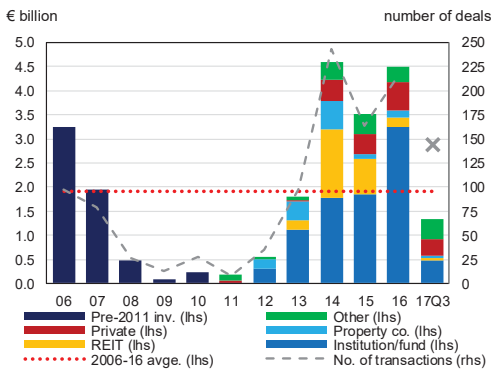
²⁵ At 9.5 per cent, Galway has the lowest, albeit rising, office vacancy rate. Next comes Cork at 10.5 per cent, having declined from a peak of 26 per cent in 2012. At present, the city with the highest vacancy rate is Limerick, where approximately 20 per cent of the available office space has been available over the past few years.

Chart 24: Regional office market activity



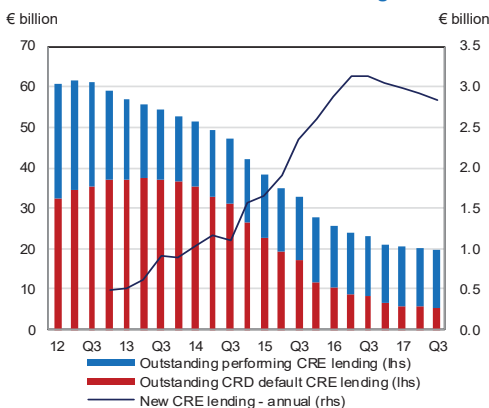
Source: Cushman and Wakefield Research.
Notes: Vacancy rates reflect the proportion of available stock to total market stock. The addition of total H2 take-up (grey bars) for years 2007 to 2016 provides a sense of annual take-up during those years. Last observation: 2017Q3.

Chart 25: Sources of Irish commercial property expenditure



Source: CBRE Research.
Notes: Spending relates to individual transactions worth at least €1 million. Breakdown by the original source of funding is only available from 2011. Last observation: 2017Q3.

Chart 26: Irish retail banks' CRE lending



Source: Central Bank of Ireland.
Notes: Data are consolidated and are collected in accordance with the Central Bank of Ireland's QSF reporting requirements. CRD default loans refer to exposures that are impaired and/or classified as >90 days in arrears. Last observation: 2017Q3

Commercial property market financing and transactions

The value of Irish commercial property market transactions was down markedly in the opening three quarters of 2017 (Chart 25). Just over €1.3 billion worth of transactions occurred up to end-2017Q3, which equates to approximately 30 per cent of the 2016 total, as fewer “big ticket” items were available for sale. With a number of large assets due to come on the market in the final quarter of 2017, the end-year transactions figure could well reach circa €2 billion, which would be in line with annual averages since 2006 (Chart 25).

Data on where purchasers are based are available for approximately €1.1 billion of the €1.3 billion of CRE traded up to 2017Q3. Domestically-located buyers accounted for just under three-quarters of that amount. While transaction volumes are much lower in 2017 than recent years, it is also the case that there has been a change in the source of investment as the majority of commercial property market activity following the property crash originated from abroad.

Having acquired a sizeable portfolio of assets in the years after their initial introduction in 2013, REITs have been less involved in market activity in the past 18 months. Instead, large private investors and institutional investors, such as insurers, property companies and income and pension funds, have accounted for the majority of recent transactions by value (Chart 25). The addition of REITs and other forms of international capital serves to broaden the Irish commercial property investor base and increase market liquidity. A greater degree of non-domestic involvement is not without risks, as it leaves the sector more exposed to changes in investor perceptions of the Irish market and/or to a change in external financing conditions. Under these circumstances, it is important that domestic funders, particularly banks, are resilient to any drops in collateral values that could arise if there was to be a significant reversal in foreign investment flows.

The value of commercial property loans held by Irish retail banks has been decreasing steadily, but remains substantial (Chart 26). The stock of outstanding CRE loans fell 13.4 per cent year-on-year in 2017Q3 to just under €20 billion. The share of non-performing commercial property loans has also been falling, down to 25.8 per cent of total CRE loans in 2017Q3, from a peak of 69.5 per cent at the end of 2013. New lending for CRE purposes is still quite muted, with the €670 million advanced in 2017Q3, bringing the cumulative rolling four-quarter total to €2.8 billion, from €3.1 billion a year before (Chart 26). In overall terms, new commercial property lending over the 12 months to September 2017 amounted to 10.7 per cent of all new bank lending. Central Bank of Ireland regulatory data show that this new commercial property lending tends to be for non-speculative purposes, i.e. for existing or pre-let buildings. Of the 23 per cent or so of lending that is classified as “speculative”, the vast majority relates to residential

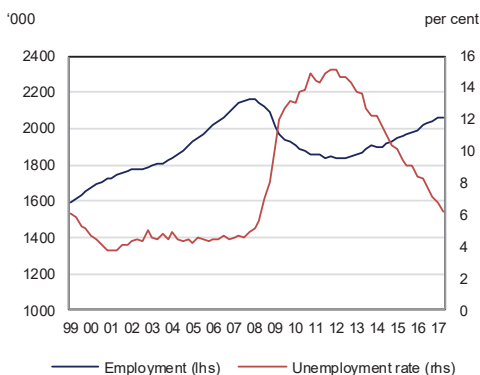
and, to a lesser extent, mixed commercial property development schemes.

Despite the relatively muted nature of new lending to the sector at present, existing property exposures ensure that Irish retail banks remain vulnerable to a decline in prices and the potential increase in provisions that could follow. Similarly, while not evident to date, any change in banks' business models and risk appetite owing to a recovering commercial property market needs to be monitored closely.

3.3 Household sector

Against a background of generally favourable labour market developments, the household credit environment is showing signs of strengthening. While the sector has delevered substantially in recent years, it is still highly indebted and remains vulnerable to adverse economic developments. The large stock of household debt on variable (including tracker) interest rates also leaves households susceptible to the effects of potential future interest rate increases. Strong price and rental growth are occurring in the residential property market. A shortage of new and second-hand units for sale and a low turnover of houses arise. While a steady increase in housing output is expected over the medium term, supply is likely to remain below demand.

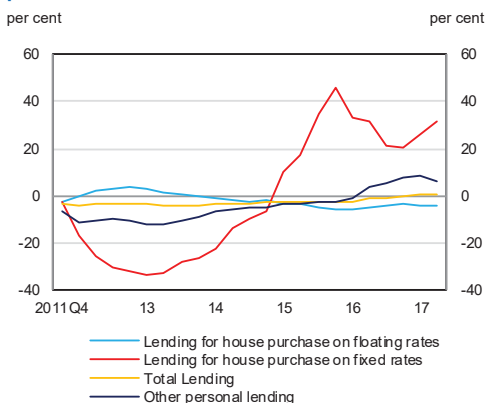
Chart 27: Labour market indicators



Source: CSO, QNHS.

Notes: Employment refers to persons aged over 15 and in employment. The unemployment rate relates to the number of people unemployed as a percentage of the labour force. Data are seasonally adjusted. Last observation: 2017Q2.

Chart 28: Year-on-year growth rates in credit to private Irish households



Source: Central Bank of Ireland.

Notes: Lending for house purchase at variable rates includes fixed rate lending where the period of fixation is up to 1-year. Growth rates are based on credit held on-balance sheet by credit institutions. Last observation: 2017Q2.

Economic and credit developments

Labour market conditions have remained favourable since the last Review. The number of people in employment continues to rise and the unemployment rate is still on a downward trajectory (Chart 27), with the monthly rate of unemployment standing at 6 per cent in October. Central Bank forecasts are for such trends to persist in 2018 with employment growth of almost 2 per cent expected and the unemployment rate predicted to be, on average, 5.6 per cent in the year. Linehan et al. (2017) notes that despite the improvement in labour market conditions since 2013, wage growth has, until recently, been subdued relative to pre-recession levels.²⁶ Overall, compensation per employee is forecast to increase by approximately 3 per cent in 2017 and 2018. Notwithstanding some month-to-month volatility, consumer sentiment has generally been improving during the year.

Credit growth to households turned positive in 2017 for the first time since late 2009, although growth rates remain modest, at 0.4 per cent year-on-year as of 2017Q2 (Chart 28).^{27,28} The growth rate is the aggregate effect of differing trends in its underlying components. Fixed rate mortgage lending has been growing strongly for some time now, albeit off a relatively small stock of outstanding loans, while lending for house purchase at floating rates continues to decline.

The upward trajectory in gross new lending for house purchase continues. In the first nine months of 2017, €4.6 billion in mortgage lending was drawn down, of which €4.5 billion related to PDH mortgages.²⁹ This was an increase of approximately 30 per cent on the same period in 2016. Focussing on the PDH element, 51 per cent of new lending in 2017 was at interest rates fixed for a period of greater than one year. Fixed rate products provide repayment certainty to borrowers for the period of fixation but such loans are vulnerable to potential rate increases at the end of the fixation period. While there has been a movement towards longer

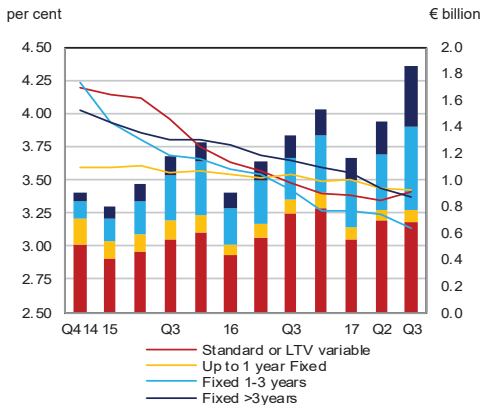
²⁶ The main drivers of increases in household incomes during this time have been growth in employment and an increase in average hours worked. See [Linehan et al. "The Labour Market and Wage Growth after a Crisis." Central Bank of Ireland Quarterly Bulletin, 04 2017, pp. 66-79.](#)

²⁷ Credit growth refers to the percentage change in outstanding credit arising from transaction activity (i.e. new lending and repayments).

²⁸ Growth rates are based on quarterly data relating to credit held on-balance sheet by credit institutions. This differs slightly from monthly data referred to in section 3.1. The quarterly data is utilised here as it allows for a more disaggregated breakdown.

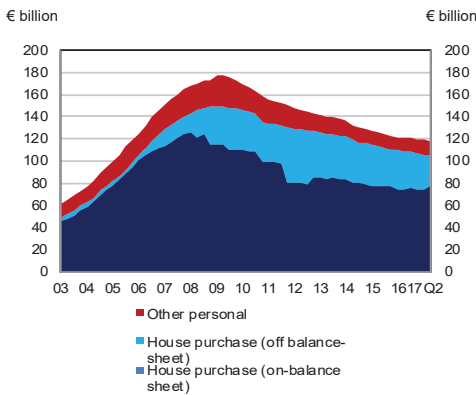
²⁹ Source: [Central Bank of Ireland Retail Interest Rate Statistics](#)

Chart 29: New PDH lending: volumes and interest rates



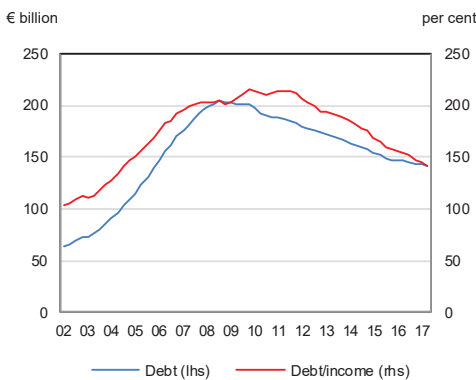
Source: Central Bank of Ireland.
Notes: Lines represent interest rates (lhs) while bars represent volumes (rhs). Last observation: 2017Q3.

Chart 30: Credit to Irish private households



Source: Central Bank of Ireland.
Notes: Last observation: 2017Q2.

Chart 31: Household sector debt



Source: Central Bank of Ireland, CSO.
Notes: Household debt is defined as total loans. Debt data are compiled on an ESA2010 standard, however prior to 2007 data are on an ESA1995 basis. Disposable income is total disposable income of households including NPISH. Last observation: 2017Q2.

periods of fixation, the majority of fixed rate lending in recent years has been for periods of fixation of less than three years (Chart 29). Across all interest rate types, interest rates on new lending have generally been declining of late (Chart 29).

Household borrowing for purposes other than house purchase, referred to as other personal lending, or consumer credit, accounts for a relatively small share of credit outstanding to Irish households at approximately 10 per cent (Chart 30). Consumer credit has been growing since 2016Q2. (Chart 28). This increase in lending has tended to mirror a rise in spending on consumer durables and, in particular, on motor vehicles.³⁰ It is important that households remain conscious of the risks associated with taking on new debt.

Financial position

As of 2017Q2, household sector debt amounted to €142 billion, equivalent to 142 per cent of disposable income (Chart 31). The indebtedness position of the sector has improved substantially as the sector has consistently delevered since debt levels reached a peak in the late 2000s. On the other side of the balance sheet, household assets have been increasing. Both these developments have contributed to an improvement in household net worth. The household debt-to-total assets ratio has fallen below 17 per cent, its lowest level since 2004Q3.

The sector, however, remains relatively highly indebted. The Irish household debt to disposable income ratio remains the fourth highest in the European Union and well above the euro area ratio (93 per cent).³¹ With tentative signs that household credit is once again moving towards expansion, the household sector is more vulnerable to adverse income and interest rate adjustments than was the case in the first half of the 2000s when debt values were lower (Chart 31). Debt is not distributed evenly across households. Previous Reviews have noted that those in the 30-44 age category, in particular, are relatively highly indebted.

Households held €105 billion of mortgage debt in June 2017 (Chart 32).³² Almost half of this debt is on tracker interest rates. Mortgages on standard variable interest rates account for a further 40 per cent of outstanding mortgage debt. The cost of both tracker and SVR mortgages are susceptible to any increases in ECB policy rates. The latter can also be affected by interest rate changes initiated by credit institutions. Most mortgage credit is, therefore, vulnerable to interest rate increases that could have a significant impact on households' mortgage repayments. McIndoe-Calder (2017) notes that the financial benefit to mortgage holders on tracker rates from reductions in official interest rates since 2008 has been substantial.³³ It also highlights, however, the risk faced by these borrowers from potential future

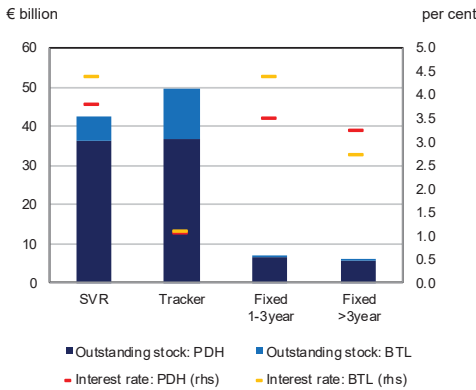
³⁰ See [Central Bank of Ireland, Quarterly Bulletin, October 2016, Box B: Developments in Consumer Credit – Evidence from Money and Banking Statistics](#).

³¹ [Central Bank of Ireland, Quarterly Financial Accounts, November 2017](#).

³² Relates to debt serviced by Irish resident banks.

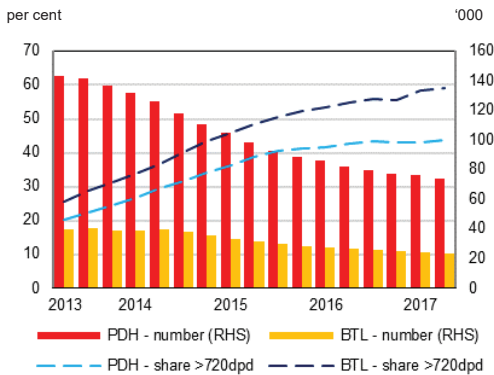
³³ [Debt giveth and debt taketh away: mortgage debt burdens in Ireland, Central Bank of Ireland, Economic Letter Vol. 2017, No.11](#).

Chart 32: Outstanding stock of lending for house purchase



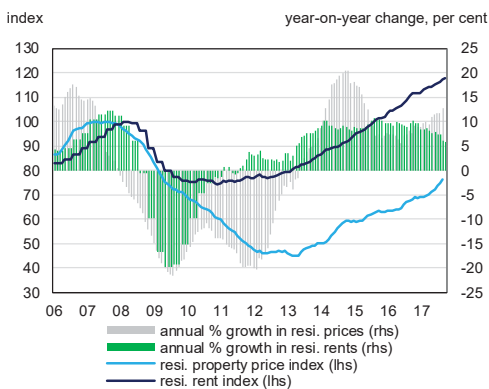
Source: Central Bank of Ireland.
Notes: Lending volumes incorporate loans held on balance sheet by Irish resident credit institutions and securitised loans serviced by these institutions. Interest rate data relate only to on-balance sheet loans. SVR stands for standard variable rate and includes fixed loans with a maturity of less than 1 year. Data relate to 2017Q2.

Chart 33: Mortgage arrears



Source: Central Bank of Ireland.
Note: Last observation: 2017Q2.

Chart 34: Residential property prices and rents



Source: CSO.
Notes: Residential property price index = 100 in April 2007. Residential rent index = 100 in February 2008. Last observations: Residential property prices (September 2017), residential rents (October 2017).

interest rate increases owing to their relatively high outstanding debt levels.

Mortgage arrears and debt resolution

Following from the rising house prices of recent months, the scale of negative equity in the housing market has declined further. [See Box 2 for an overview of negative equity developments in Ireland.] Overall, 9.6 per cent of mortgages were in negative equity in 2017Q3, down from 13.4 per cent in 2017Q1. Notwithstanding these developments, almost 6 per cent of mortgages still have a mortgage outstanding that is greater than 110 per cent of estimated value of the property.

At an aggregate level, the number of mortgage arrears cases continues to decline but remains large. In June 2017, the total number of mortgage arrears cases fell below 100,000. Of these, 73,000 are PDH mortgages. This equates to approximately 10 per cent of all PDH mortgages being in arrears. The respective figure for BTL mortgages is almost 20 per cent. McCann (2017) analyses the flow of mortgages into arrears and notes that the share of loans with no arrears balance entering arrears was at its lowest level in late 2016, since the data were first collected in 2010.³⁴

While the number of arrears cases is declining, the share in long-term arrears (more than 720 days past due) is large and has increased over time (Chart 33). As of June 2017, 45 per cent of PDH arrears cases are >720 DPD while the corresponding figure for BTL arrears cases is almost 60 per cent.

With regard to arrears resolution, 144,000 of the approximately 750,000 mortgages outstanding in June 2017 are classified as restructured. Almost 80 per cent of those restructured accounts are not currently in arrears. Looking specifically at those accounts still in arrears, 35 per cent of current PDH arrears cases are classified as restructured, while 20 per cent of BTL arrears cases are restructured. The flow of new restructure arrangements agreed in 2017Q2 was the lowest since 2012.³⁵

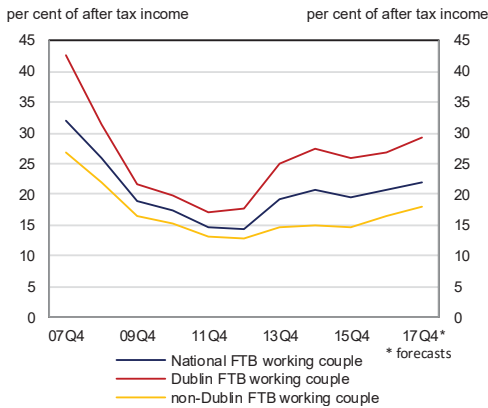
There continue to be cases where a restructuring arrangement is either not an appropriate or a sufficient resolution strategy. In the first half of 2017, there were just over 1,100 repossessions, over 2,200 applications for a personal insolvency arrangement, and 243 bankruptcy adjudications.

Overall, these developments suggest that a combination of an improving economy and the ongoing efforts to deal in a sustainable way with mortgage arrears cases is contributing to an improvement in mortgage arrears. However, challenges still remain, with a high level of long-term arrears cases highlighting how the situation will likely take some time to resolve.

³⁴ See McCann, F. (2017) "Resolving a non-performing loans crisis: the ongoing case of the Irish mortgage market", Central Bank of Ireland, 10/RT/17.

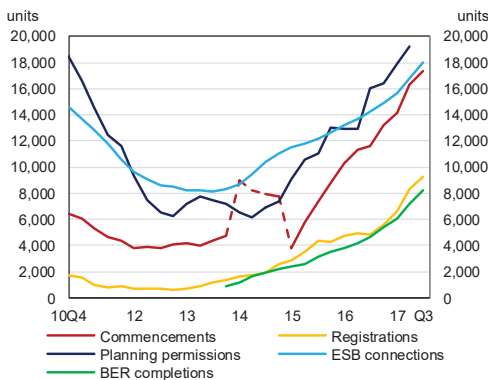
³⁵ Central Bank of Ireland, Mortgage Arrears Release June 2017.

Chart 35: EBS/DKM affordability index



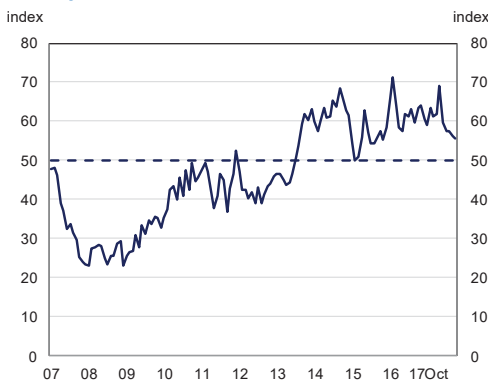
Source: EBS and DKM Economic Consultants.
Notes: The EBS/DKM Affordability Index is a measure of the proportion of after-tax income required to meet the first year's mortgage repayments for an 'average' FTB working couple, each on average earnings.

Chart 36: Residential construction activity: (rolling annual total)



Source: Department of Housing, Planning and Local Government, CSO and Goodbody Stockbrokers.
Notes: The adoption of new building codes from March 2014 resulted in a significant front-loading of commencements in the first quarter of 2014, the impact of which remained in the statistics until 2015Q1. This period is represented by the jagged red line. Latest observations: Planning permissions 2017Q2, all other indicators 2017Q3.

Chart 37: Ulster Bank Construction PMI: Housing Activity



Source: Ulster Bank.
Notes: Values of 50 signify no change in construction activity on the previous month. Values above 50 signify an expansion of activity, while those below 50 signify a contraction.

Residential property prices and rents

Recent months have seen a rise in the rate of residential property price appreciation. Year-on-year house price growth reached 12.8 per cent in September 2017, up from 8 per cent a year earlier (Chart 34). According to the CBI/SCSI survey of property market experts, expectations of house price growth over the short- and medium-term have also been increasing (see Box 3), with those expectations being driven mainly by supply constraints, rising disposable incomes and a buoyant labour market. While indicators of house price valuations, such as house price-to-rent and house price-to-income ratios are currently above historical averages, econometric assessments of market conditions do not indicate emerging bubble-like, unsustainable or unexplainable price behaviour up to 2017Q2. Ongoing vigilance and careful monitoring of house price developments in the period ahead will remain essential.³⁶

All else being equal, a pick-up in house price inflation reduces first-time buyer (FTB) affordability disproportionately relative to other buyer classes and can have a negative impact on economic competitiveness if it leads to higher wage demands. The EBS/DKM affordability index forecasts that nationally a first-time buyer couple will be paying, on average, 22.1 per cent of their net income on mortgage repayments by the end of the year, up from 20.7 per cent at end-2016 (Chart 35).³⁷ The affordability index for Dublin buyers is expected to rise to 29.2 per cent of the average FTB couple's net income by end-2017, up from 26.9 per cent at the end of last year.

Notwithstanding some recent moderation in the rate of rental inflation, residential rents are now well above pre-crisis levels with October 2017 rental values almost 18 per cent higher than those recorded in the early months of 2008 (Chart 34). Nationally, annual private rental inflation, as measured by the CSO, declined from 10.1 per cent in October 2016 to 5.7 per cent in October of this year. Regionally, annual rental increases are highest in Louth (16.7 per cent) and Galway county (14.1 per cent), while Dublin rents have been rising faster than in the other major cities, according to 2017Q3 Daft.ie data on asking rents.

Residential housing supply

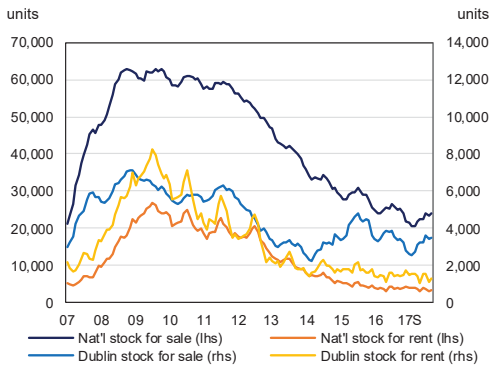
Housing availability is an important determinant of residential property prices and rents. A shortage of new and second-hand units for sale or rent has been a feature of the market for some time now. Uncertainty surrounds the exact level of new housing completions, as conflicting data from the ESB, BER and BCMS need to be considered.³⁸ Despite differences in the estimated number of new-builds, all sources point to brisk growth, albeit from

³⁶ See Box A1, "Review of residential mortgage lending requirements", Central Bank of Ireland, 2017.

³⁷ Calculations are based on forecasts of a 4.2 per cent increase in disposable incomes, an 11.9 per cent increase in average house prices and a decline of 5 bps in average mortgage interest rates from 4.15 per cent to 4.10 per cent. For more see [EBS/DKM Irish housing affordability index](#), July 2017.

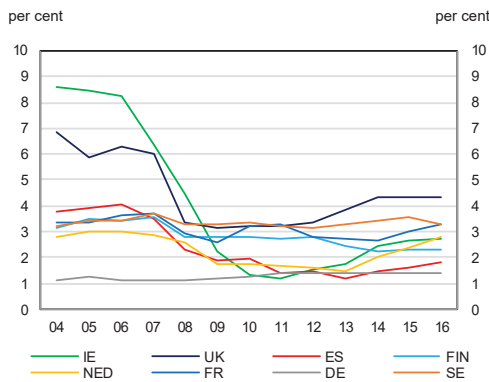
³⁸ Until recently, estimates of residential property completions were solely based on the number of connections to the electricity grid carried out by the ESB. While concerns about the reliability of these figures have existed for some time, doubts have increased since the property crash, due to issues such as the inclusion of ghost estate units where the majority of construction activity may have occurred earlier, the reconnection of existing homes to the grid after two years, or the addition of non-residential units such as outhouses and sheds to the total. The matter is currently under review by the Department of the Housing, Planning and Local Government, the ESRI and ESB. In the meantime, Building Energy Ratings, which are compulsory for properties being sold or rented, have been put forward as an alternative measure of residential completions.

Chart 38: Stock listed for sale or rent on Daft.ie



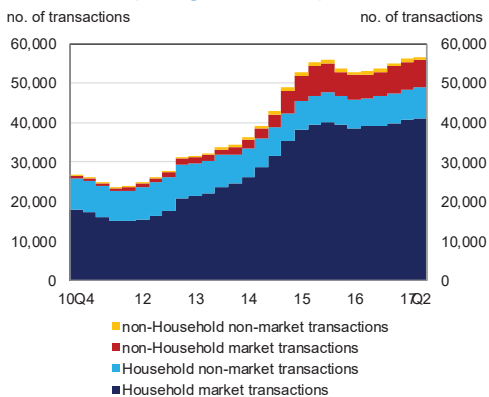
Source: Daft.ie.
Notes: Last observation: Sales stock September 2017, Rental stock November 2017.

Chart 39: Cross-country residential property turnover: transactions as a percentage of housing stock



Source: CSO, Hyostat and Central Bank of Ireland calculations
Notes: UK 2015 and 2016 housing stock figures are estimates based on long-run average annual increase in housing stock (1991-2014).

Chart 40: Breakdown of CSO residential property transactions (rolling annual total)



Source: CSO
Notes: Data refer to all residential property transactions. 2017Q3 data not included as data lags mean latest data tends to be revised later.

a low base. In the twelve months to end-2017Q3, ESB connections and the BER measure of completions were up 26 per cent and 78 per cent, respectively, on the equivalent period ending 2016Q3 (Chart 36).

Leading indicators of residential construction activity, commencements and planning permissions continue to signal a steady rise in housing output over the medium term (Chart 36), but not to the extent needed to meet the current level of housing demand.³⁹ Annual housing starts reached over 17,300 in 2017Q3, a year-on-year rise of 49 per cent. Homebond registrations were up 90 per cent to approximately 9,300 units over the same period, while grants of planning permission across the 12 months to June 2017 (19,200) rose almost 50 per cent. Another means of gauging recovery in construction is the residential element of Ulster Bank’s purchasing manager’s index (PMI). It recorded a value of 55.5 for October 2017, well in excess of the “no-change” index value of 50 (Chart 37).

The low number of second-hand dwellings listed for sale or rent at present is adding to the housing supply shortage. According to data from Daft.ie, there has been a 62 per cent fall in the number of existing units for sale nationally since 2008 (Chart 38). The decrease in the availability of properties to rent has been even sharper. Nationally, the number of rental units listed in November 2017 is around 90 per cent lower than at its peak in 2009. The situation in Dublin is particularly acute, with just under 1,300 properties advertised for rent in November 2017, compared to almost 8,300 in July 2009. As well as exerting upward pressure on house prices and rents, a shortage of residential properties can hamper foreign direct investment. A number of initiatives aimed at tackling the housing shortage and delivering an average of 25,000 homes per annum in the period to 2021 have been announced under the Government’s “Rebuilding Ireland” plan. These include the investment of €200 million in supporting infrastructure which would open up additional sites, a speeding-up of the planning process for applications of over 100 housing units, the development of a 20 year National Planning Framework, and a land management strategy.⁴⁰

Residential property transactions and mortgage market activity

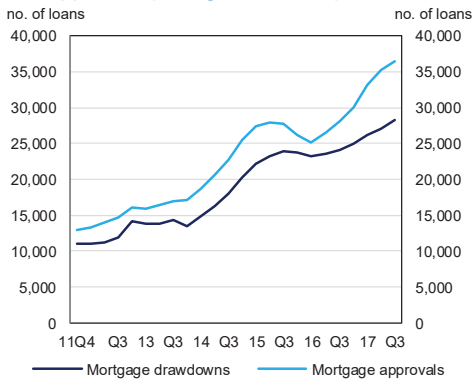
A relatively low number of housing transactions is another feature of the current residential property market. The housing turnover rate, at 2.7 per cent in 2016, is well below the 4 per cent rate that is typical of a well-functioning market.⁴¹ Notwithstanding structural differences between national markets, the current turnover rate in Ireland is higher than that in Spain and Germany but below that in the UK and Sweden (Chart 39).

³⁹ Based on a study of trends in household formation, ESRI research finds that there is likely to be an increase in demand for housing from the current level of 23,000 units per annum to just over 30,000 per annum in the mid-2020s. See Duffy, D., D. Foley, N. McNerney and K. McQuinn, “Demographic Change, Long-Run Housing Demand and the Related Challenges for the Irish Banking Sector”, ESRI (2016). According to Lyons (2017), once obsolescence, smaller household sizes, a natural increase in the population and a return of net migration are considered the annual housing requirement is closer to 40,000 units per year. See Lyons, R., “How to build enough homes” (February 2017).

⁴⁰ For more detail, see “Action Plan: For Housing and Homelessness”.

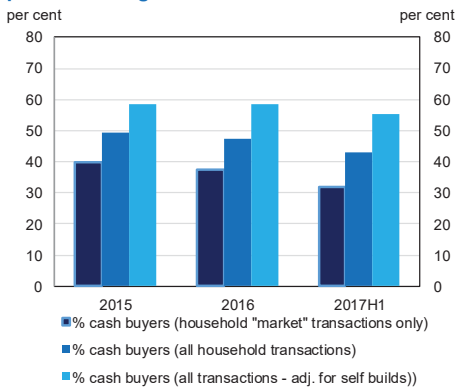
⁴¹ TEGoVA (2012) suggests that in a normally functioning property market, the rate of stock turnover should be 3 to 4 per cent per annum.

Chart 41: Residential mortgage credit: drawdowns and approvals (rolling annual total)



Source: BPF1.
Notes: Data refer to household transactions only, i.e. transactions completed by and mortgages to FTBs, mover purchasers and BTLs. Data are rolling annual totals.

Chart 42: Share of non-mortgage financed buyers per market segment



Source: CSO, BPF1 and Central Bank of Ireland calculations.

The total number of residential property transactions has been rising gradually since mid-2016 (Chart 40). CSO data show a year-on-year increase of 6.7 per cent in the number of housing units sold in the 12 months to June 2017 (approximately 56,600). Non-household buyers, which are most active in urban areas, have increased their share of property purchases, from approximately 4 per cent in early 2011 to just under 15 per cent more recently. As well as private sector institutional investors such as REITs and property funds, state/semi-state actors such as local authorities and voluntary housing associations are also included within the non-household category. Household buyers, i.e. first-time buyer owner-occupiers (FTBs), former owner-occupiers (FOOs) and non-occupiers (NOs), account for the remaining 85 per cent of transactions. Of these, FOOs are the largest category of buyers, accounting for more than half of property sales to households. The number of FTB transactions (excluding one-off/self builds) has been relatively stable in recent years accounting for a little more than 25 per cent of household transactions, with about a fifth going to NOs.

There has been a further expansion in mortgage credit approvals and drawdowns since the last Review (Chart 41). Annual mortgage drawdowns reached almost 28,300 in 2017Q3, up from 27,100 in 2017Q2 and from 24,100 in 2016Q3. The ratio of mortgage drawdowns to housing stock is currently about half that of the equivalent UK figure, suggesting the domestic mortgage market has the scope to expand from its current level. To this end, the 30 per cent year-on-year increase in mortgage approvals in 2017Q3 to 36,500 indicates that mortgage credit is set to expand further in the quarters ahead.

Although there is no single official dataset detailing the number of non-mortgage financed transactions, it is possible to establish a number of different estimates of cash buyer activity across market segments. Looking at the narrowest category, household buyers for arms-length market transactions, the proportion of cash buyers is estimated at just over 30 per cent in 2017H1, down from 40 per cent in 2015 (Chart 42). When non-market transactions are included, the proportion rises to 43 per cent in 2017H1. Considering the broadest possible category of both household and non-household transactions, which is pertinent for market-wide developments, the proportion of cash buyers rises to 55 per cent in the most recent half-year period, having been close to 60 per cent in both 2015 and 2016.⁴²

The Central Bank introduced macroprudential mortgage-lending requirements in February 2015, which are subject to annual review. The outcome of the second annual review of these requirements was announced in November 2017. [See Box 4 for details of the review.]

⁴² By way of international comparison, according to data from [HM Land Registry](#), cash purchases accounted for 31 per cent of all British residential property transactions in 2016.

Box 2: Negative equity in the Irish housing market: recent developments

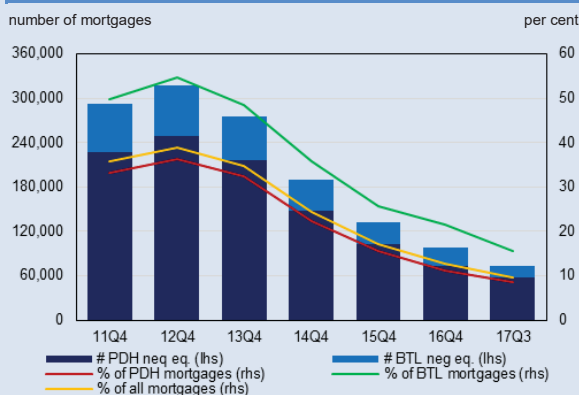
By Gerard Kennedy and Paul Lyons (Financial Stability Division)

The upturn in the economic environment in Ireland and the related rise in house prices has contributed to an improvement in the asset quality of bank loan books and has reduced the number of borrowers in negative equity. Negative equity occurs when the mortgage amount outstanding is greater than the current value of the house, i.e. the loan-to-value (LTV) ratio is greater than 100 per cent. Duffy and O'Hanlon (ESRI, 2013) have highlighted how the incidence of negative equity in Ireland was much worse than experienced in other economies.¹ With Irish house prices still some 23.7 per cent below their 2007 peak, negative equity remains a prominent, if diminishing, feature of the Irish housing market. Negative equity has adverse consequences for the economy. These include preventing or delaying households from selling their properties, and adverse 'wealth effects' whereby households in negative equity tend to consume less. Furthermore, negative equity matters for mortgage default, with loans in negative equity having a greater probability of default compared to positive equity loans.² This Box considers the evolution of negative equity in the Irish mortgage market over time and up to 2017Q3.

Chart A plots the evolution of negative equity between 2011 and 2017, using regulatory data submitted by the five main lending institutions in Ireland. For all property types, negative equity loans' share of total loans has fallen from a peak of 39.1 per cent in 2012Q4 to 9.6 per cent in 2017Q3. Approximately 75,000 mortgages are now in negative equity, down from a peak of 320,000 in 2012Q4. For PDHs, 8.7 per cent of loans remain in negative equity (down from 36.2 per cent in 2012Q4). BTL properties had a higher share of negative equity throughout the period with 15.5 per cent of BTLs currently in negative equity, down from 54.6 per cent in 2012Q4.

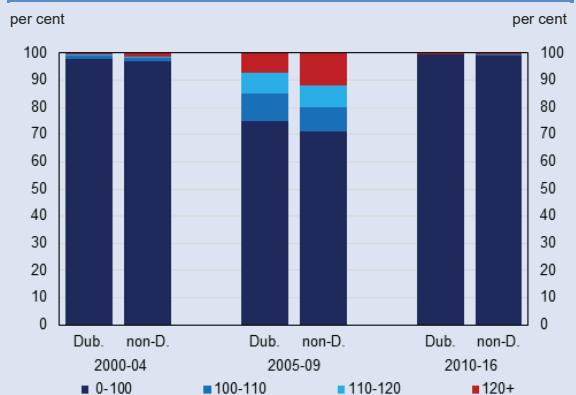
Using loan-by-loan level data from three domestic lenders in the Irish mortgage market, Chart B captures some features of PDH negative equity as at December 2016 by providing a profile of PDH negative equity by year of loan origination, by degree of negative equity, and by geographic region. It shows that the largest concentration of negative equity (i.e. loans in the above 100 per cent LTV categories in the chart) is among those borrowers who purchased their homes between 2005 and 2009. The share of negative equity among borrowers who took out their loans prior to 2005 or after 2010 is small. For non-Dublin borrowers, approximately 30 per cent of loans originated during 2005-2009 remain in negative equity, while the share for Dublin is slightly lower. Of those loans in negative equity, the majority have LTVs between 100 per cent and 120 per cent. Furthermore, there is a greater share of 'deep negative equity loans' (120+ per cent LTV) outside Dublin than in Dublin.

Chart A: Negative equity at Irish retail banks



Source: Central Bank of Ireland calculations.
Notes: Data for five banks (AIB, BOI, PTSB, UBIL and KBC).

Chart B: PDH negative equity by loan origination year and Dublin/non-Dublin region



Source: Central Bank of Ireland calculations.
Notes: Loan-by-loan data from three banks (AIB (including EBS), BOI and PTSB). Primary loans only and PDH. "Dub" refers to Dublin borrowers and "non-D" to borrowers outside of Dublin.

Negative equity in the Irish mortgage market has been in decline in recent years. As well as being of benefit to individual borrowers, this can be beneficial to overall financial stability, including through positive effects on consumption and consumer confidence and by aiding housing mobility. With one estimate pointing to house price growth of 8 per cent over the next 12 months and cumulative house price inflation of about 15 per cent anticipated over a three year horizon³, a further substantial reduction in negative equity is likely to occur, all else being equal, by 2020.

¹ Duffy, D. and O'Hanlon, N. (2013). "Negative Equity in the Irish Housing Market: Estimates using Loan-Level Data." *Journal of European Real Estate Research*, 7, 327-344.

² Kelly, R. and O'Malley, T. (2016). "The Good, the Bad and the Impaired: A Credit Risk Model of the Irish Mortgage Market." *Journal of Financial Stability*, 22, 1-9.

³ See Box 3 in this Review.

Box 3: Residential property price expectations survey

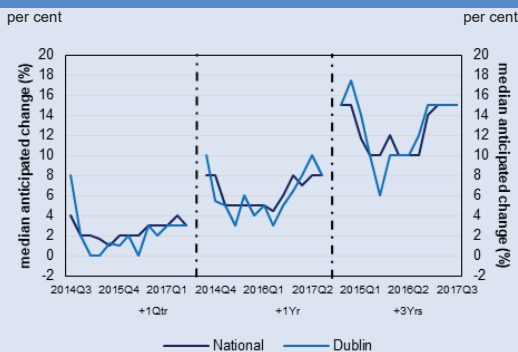
By Enda Keenan and Gerard Kennedy (Financial Stability Division)

The Central Bank of Ireland and Society of Chartered Surveyors of Ireland have carried out a residential property survey in each quarter since 2012Q3.¹ This box presents findings from the most recent Survey, conducted in October 2017, and earlier surveys. Respondents' house price expectations and the main factors put forward as influencing them are outlined. Median expectations of house price appreciation, across a number of horizons, have remained relatively stable at the national level over recent surveys. In Dublin, however, the anticipated increase in house prices a year from now is a little lower than it was in the 2017Q2 Survey.

Chart A summarises the median price expectations for both the national and Dublin markets at quarterly intervals since 2014Q3. In general, while a substantial majority of survey participants (approximately 85 per cent) continue to expect house prices to rise over the next three years, the expected degree of residential property price inflation has remained relatively stable across recent surveys. In 2017Q3, the national and Dublin median expectations for one year and three years ahead were both 8 and 15 per cent, respectively. The median expected house price increase for Dublin for one year ahead has decreased from 10 to 8 per cent. The results of the CBI/SCSI survey compare to the 2017Q3 Daft.ie Irish House Price Report, where in excess of 1,000 property market participants expect house prices to be 6.6 and 8.3 per cent higher nationally and in Dublin, respectively, in one year's time.² The median expectation here is that the cumulative price increase between 2017Q3 and 2020Q3 (i.e., the three-year horizon) will be in the region of 15 per cent at both national and Dublin levels, unchanged from recent surveys.

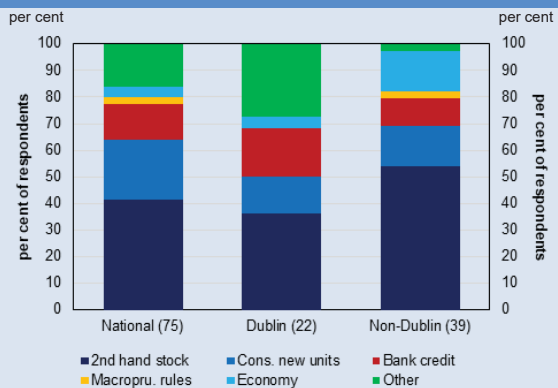
Another question in the survey asks respondents to rank which three factors they consider to have the most influence on future house price developments from a list of twelve pre-selected factors, with a further option for other issues not on that list. Chart B shows the first-ranked factors in the 2017Q3 survey for the national, Dublin, and Non-Dublin markets. The most important factor at the national level was the availability of second-hand stock, constituting 41 per cent of respondents' first-ranked factor, while the construction of new residential units was selected by 23 per cent of respondents as the most important factor. The availability of second-hand stock was also the most-cited primary factor for both Dublin and Non-Dublin markets (36 and 54 per cent, respectively). In Dublin, 'Other' issues (27 per cent) was the second most-cited primary factor, with interest rates and the perception of value being the most important determinants within that option.³ Economic conditions were cited by a substantial share of non-Dublin respondents as the most important factor in influencing their expectations.

Chart A: Q-on-Q median anticipated change in National and Dublin residential property prices over +1Qtr, +1Yr, and +3Yrs time horizons



Source: Central Bank of Ireland & SCSi Survey of Property Professionals.
Notes: Chart provides details of the results from the past 13 surveys (2014Q3 to 2017Q3). Number of observations varies from survey to survey.

Chart B: Number one ranked factor influencing expectations



Source: Central Bank of Ireland & SCSi Survey of Property Professionals.
Notes: Number of observations for each region included in parenthesis.

¹ Its respondents include estate agents, auctioneers and surveyors, as well as economists, market analysts and academics. While the focus of the survey is on participants' price expectations, questions are also included on activity levels and other market issues. The survey is a snapshot of respondents' expectations at a particular point in time and so can provide only limited information about possible future property price developments. It also provides a measure of uncertainty regarding those expectations, which is a useful complement to the available information on the domestic property market.

² [Daft.ie Irish House Price Report Q3 2017](#)

³ 'Other' represents responses under all other categories including rental market developments, perception of value, changes in demographics/population, and the level of interest rates.

Box 4: 2017 Review of mortgage market measures

By Financial Stability Division

The Central Bank of Ireland introduced macroprudential mortgage market measures in 2015 with the aim of increasing both bank and borrower resilience and mitigating the risks of credit-house price spirals emerging. These aims are achieved by limiting the volumes of high loan-to-value (LTV) and high loan-to-income (LTI) mortgage lending. The Central Bank is committed to an annual review of the mortgage market measures to ensure they continue to meet their objectives. This box summarises the main findings of the 2017 Review.¹ It considered the appropriate calibration of the measures given current conditions in, and the outlook for, the housing and credit markets. The Review also took regard of any practical implementation issues indicated by the Central Bank's ongoing monitoring and supervision of regulated mortgage providers.

On balance, the evidence in the Review does not point toward unsustainable developments in the joint dynamics of credit and house prices at this time. The growth in new mortgage lending witnessed in recent quarters has been from a very low base, and is still reflective of a post-crisis adjustment phase. This increase in new lending is being accompanied by a continuing tendency of households to pay down debt, such that the growth in outstanding mortgage credit remains muted. Both actual and expected house price growth are heavily influenced by the low levels of supply for newly-built and second-hand homes (see Box 3). These supply shortages arise at a time when the broader economic environment is favourable, with rising employment, incomes and population trends reinforcing the demand for housing. Using a range of statistical and econometric techniques, the analysis underpinning the Review found that the level of house prices prevailing in the market is consistent with broader economic developments.

Looking at the distribution of new mortgage lending, slight increases in average LTV and LTI ratios for first-time buyers (FTBs) and second/subsequent buyers (SSBs) are observed, in addition to a slight increase in the average LTV for buy-to-let (BTL) borrowers.² This increase in average leverage can be partly explained by house price and income developments over the period. Importantly, in the context of limiting high leverage lending, the compression of the upper ends of both LTV and LTI distributions observed over most recent years remains in the 2017H1 data.

As a result of the evidence in the Review, the core parameters of the measures – the LTV and LTI limits – will remain unchanged for 2018. A decision was made to enhance the framework with separate LTI allowances for FTB and SSB borrowers, as of 1 January 2018.³ This complements the existing separate LTV allowances for these borrower groups and eliminates the possibility of excessive lending above the LTI limit for either category of borrower. The separate allowances, which will permit 20 per cent of FTB lending and 10 per cent of SSB lending in a given year to be above the 3.5 LTI limit, closely reflect the current market trends for the relative use of allowances for each borrower group (Chart A and Chart B). Consequently, this refinement is not expected to have a significant market impact, but rather it contributes to a more effective framework to promote sustainable mortgage lending, and mitigates the impact of systemic risk related to mortgage lending into the future.

Chart A: Distribution of FTB LTI ratio 2006-H12017

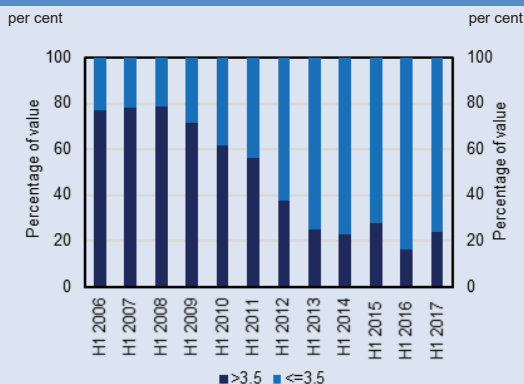
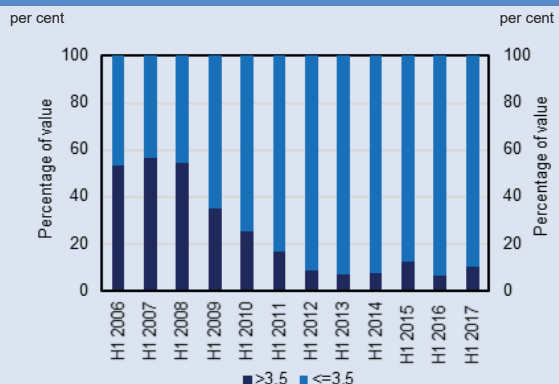


Chart B: Distribution of SSB LTI ratio 2006-H12017



Source: Central Bank of Ireland Loan Level Data (2006-2014) and Monitoring Templates Data (2015–2017H1).
Note: Percentages are based on the value of lending in each group. LTI distributions are based on a four-bank view from 2006 to 2014.

¹ Further details of the Review can be found at <https://www.centralbank.ie/financial-system/financial-stability/macro-prudential-policy/mortgage-measures>.

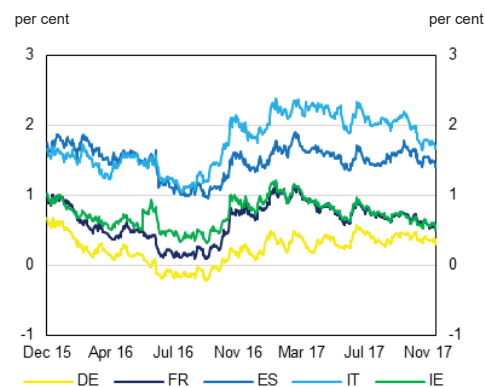
² Kinghan, C., Lyons, P. and McCarthy Y., "Macroprudential measures and Irish mortgage lending: Insights from H1 2017." Economic Letter 2017 - 13.

³ A technical amendment to the regulations is also being made, clarifying the appropriate valuation of collateral in mortgages issued for construction purposes, such as renovations. For further discussion of the technical amendment, see the [2017 Review](#).

3.4 Sovereign

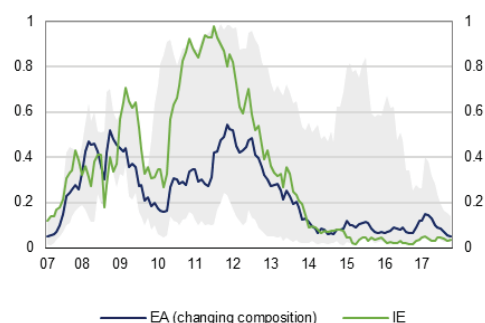
Bond yields in the euro area remain low by historical comparison. Future yield values and market conditions could be affected by inflation and output developments, changes to monetary policy, and investor preferences. If large, an increase in government bond yields (unless accompanied by higher output growth) could raise concerns about fiscal sustainability for high debt Member States. Ireland has an 'A' grade credit rating from all major credit rating agencies, while the maturity profile of Ireland's long-term marketable and official debt has been extended in recent years. The medium-term budgetary objective of the Stability and Growth Pact is forecast to be met in 2018.

Chart 43: Sovereign bond yields for selected EA Member States



Source: Thomson Reuters Datastream.
Notes: Chart shows yields on sovereign bonds, 10-year maturity. Last observation: 1 December 2017.

Chart 44: Composite Indicator of Sovereign Stress



Source: ECB Statistical Data Warehouse.
Notes: The Composite Indicator of Sovereign Stress aims to measure the level of stress in EA sovereign bond markets. Last observation: October 2017. The shaded area reflects the range of indicator values in each month among the following Member States: AT, BE, DE, EL, ES, FI, FR, IE, IT, NE, PT. Further information on the Indicator can be found in: [Hollo, D., Kremer, M., Lo Duca, M. "Ciss - a composite indicator of systemic stress in the financial system." ECB Working Paper 1426.](#)

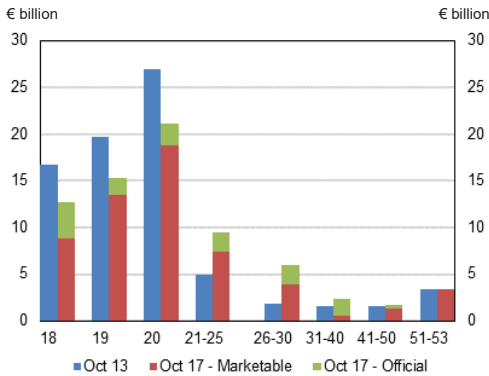
External developments

Long-term bond yields for euro area sovereigns, including Ireland, remain at broadly unchanged values since the publication of the last Review (Chart 43). Those values are low by comparison to yield values in the earlier years of this decade. Low levels of stress also arise in euro area sovereign bond markets, with the range of stress levels across Member States now more compressed than in recent years (Chart 44). Improved fiscal performance (and governments' lower gross financing needs), a search for yield in international financial markets, and the ECB's monetary policy stance are contributing to euro area sovereign bond market conditions.

Looking ahead, any of a number of factors could put upward pressure on yield values, and affect market conditions more generally. A rise in inflation expectations and/or output growth in the euro area or elsewhere could cause yield values to increase, including through their influence on monetary policy. A reversal of the search for yield could also affect market developments. An exit from accommodative monetary policy, including an ending of central bank asset purchases, would have an effect on sovereign bond markets. Outside the euro area, the US Federal Reserve has raised official interest rates on two occasions in 2017. The Bank of Japan continues to operate a programme of quantitative easing. Central banks reinvesting maturing funds in bond markets can act to offset any upward pressure on yield values. In September, the Federal Reserve announced that it would gradually reduce over time its reinvestment of principal payments that it receives on its portfolio of government bonds and mortgage-backed securities.

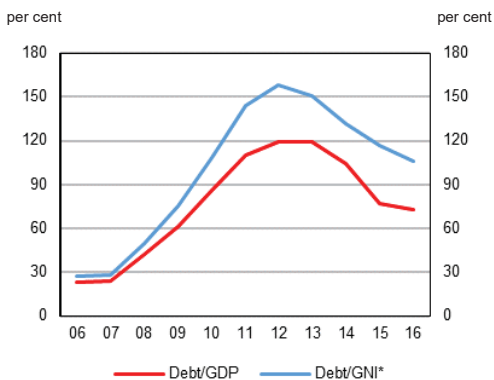
An Asset Purchase Programme (APP) of public sector and private sector securities has been in operation in the euro area since March 2015. A reduction in monthly asset purchases under the Programme, from €80 billion to €60 billion, occurred in April 2017. Under the Public Sector Purchase Programme (PSPP) component of the APP, 90 per cent of purchases are allocated to government bonds. On 26 October, the ECB announced that from January 2018, net asset purchases are intended to continue at a

Chart 45: Maturity profile of Ireland's long-term marketable and official debt



Source: NTMA.
Notes: Entries for 2021-25, 2026-30, 2031-2040, 2041-50 and 2051-53 are yearly averages. EFSM loans are subject to a seven year extension. It is not expected that Ireland will have to refinance any of its EFSM loans before 2027. The revised maturity dates of individual EFSM loans will only be determined as they approach their original maturity dates.

Chart 46: General Government debt



Source: CSO.

monthly rate of €30 billion until the end of September 2018, or beyond, if necessary. The principal payments for maturing securities purchased under the APP will be reinvested for an extended period after the end of net asset purchases.

A falling global central bank demand for government bonds could influence their price and market conditions, including the volatility of yields. There have been a number of studies of the influence of recent asset purchase programmes on bond markets. One recent commentary indicates that the Federal Reserve asset purchases and maturity extension programme put downward pressure on longer-term interest rates and reduced the US 10-year bond term premium by about 100 basis points.⁴³ A study of ECB APP policy found it reduced the GDP-weighted 10-year euro area sovereign bond yields up to October 2015 by 63 basis points.⁴⁴ The announcement of a curtailment in asset purchases can also have short-term effects on market conditions. This is exemplified in the 2013 “taper tantrum” following the Federal Reserve Chairman’s statement that the central bank would start reducing its government bond purchases towards the end of that year with long-term bond yields rising in response and market disruption occurring.⁴⁵

If large, an increase in government bond yields (unless accompanied by higher domestic output growth) could raise fiscal sustainability concerns, particularly for Member States that remain highly indebted. In general, fiscal deficit and debt ratios continue to improve in the euro area and the stock of explicit contingent liabilities to the financial sector has been declining.

Domestic developments

Ireland holds an ‘A’ grade long-term credit rating from all major credit rating agencies. Following an auction on 9 November, the NTMA had issued €15.75 billion of benchmark bonds in 2017. The maturity profile of Ireland’s long-term marketable and official debt has been extended through various operations in recent years (Chart 45). The state has substantial cash and liquid balances. On 4 October, the NTMA raised €4 billion through the syndicated sale of a new 5-year benchmark Treasury bond at a negative yield (-0.008 per cent). This sale was linked to the early repayment of loans from the IMF, Sweden and Denmark of circa €5.5 billion.⁴⁶

The headline General Government deficit for the year is projected at 0.3 per cent of GDP and is forecast to be 0.2 per cent in 2018. While adherence to the EU fiscal rules is adjudged ex-post, a structural budget deficit of 0.5 per cent of GDP is forecast for 2018, consistent with Ireland meeting its medium-term budgetary objective. Both the government deficit and debt ratios are affected by the issues surrounding national output measurement. The General Government debt ratio is substantially higher when

⁴³ Bonis B., Ihrig J., and Wei M., “The Effect of the Federal Reserve’s Security Holdings on Longer-term Interest Rates,” FED Notes, 20 April 2017. An earlier study estimated that the entire Federal Reserve quantitative easing programme had reduced the 10-year US Treasury term premium by 120 basis points in 2013 (Engen E., Laubach T., and Reifschneider D. “The Macroeconomic Effects of the Federal Reserve’s Unconventional Monetary Policies,” Federal Reserve Finance and Economics Discussion Series 2015-005, January 2015.)

⁴⁴ De Santis, R., “Impact of the Asset Purchase Programme on Euro Area Government Bond Yields Using Market News,” ECB Working Paper 1939, July 2016.

⁴⁵ See Neely C.J., “Lessons from the Taper Tantrum,” Federal Reserve Bank of St. Louis Economic Synopses 2014, No. 2, January 2014.

⁴⁶ See <http://www.finance.gov.ie/updates/early-loan-repayment-puts-ireland-in-stronger-financial-position-for-the-future-donohoe/>.

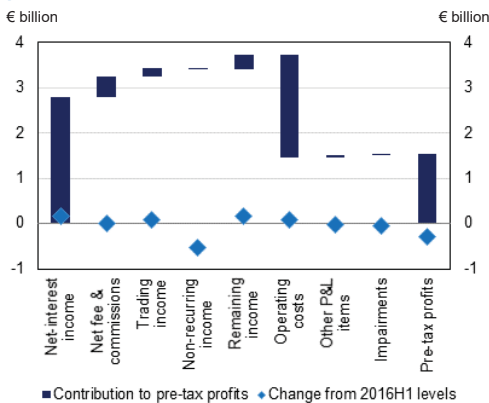
expressed as a proportion of GNI* than of GDP but has been declining since 2012 under both output metrics (Chart 46). Fiscal performance remains susceptible to external factors that can affect output growth (see section 3.1) and sovereign bond financing conditions. Among domestic factors affecting the deficit outturn, corporation tax revenue has increased substantially in recent years but is heavily dependent on a small number of taxpayers.

4. Financial system

4.1 Banking sector

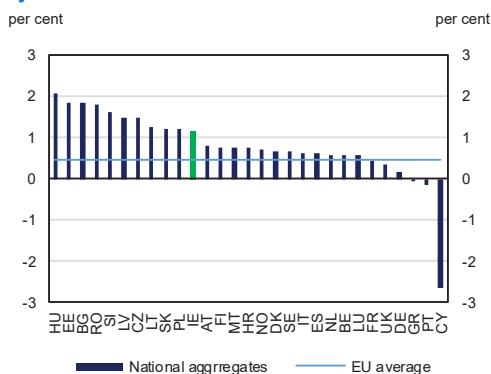
Operating income and profits of Irish retail banks declined in the first half of the year, although underlying profits increased. Banks' non-performing loans, while remaining at elevated levels, fell in the first half of 2017. The reduction, however, has not been uniform across lending categories. Irish retail banks continue to delever as debt securities mature and loan redemptions exceed new lending. Funding costs continue to fall and the share of funding accounted for by customer deposits has increased. Capital ratios are benefitting from retained earnings and reductions in risk-weighted assets. The medium-term challenge for the Irish banking sector remains the work out of troubled assets.

Chart 47: Breakdown of Irish retail banks' pre-tax profits



Source: Central Bank of Ireland calculations.
Notes: For the six-month period to end 2017H1. Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements.

Chart 48: International comparison of EU banking systems' return on assets



Source: EBA and Central Bank of Ireland.
Notes: Irish data are consolidated data for the five retail banks and collected in accordance with the EBA's FINREP reporting requirements. Data relate to 2017H1. Data are annualised.

Income and profitability

Irish retail banks' underlying profits increased by 18 per cent in the first half of 2017 when compared with the same period in 2016. However, when the declines in the write-back of provisions and reductions in non-recurring income are factored in, pre-tax profits declined by 15 per cent over the same period (Chart 47). Irish retail banks' return on assets remains above the EU average (Chart 48).

Although the main categories of income increased, total operating income declined in 2017H1 when compared to the first half of last year. This was primarily due to reductions in one-off income, which provided a substantial boost to profitability in 2016H1.⁴⁷

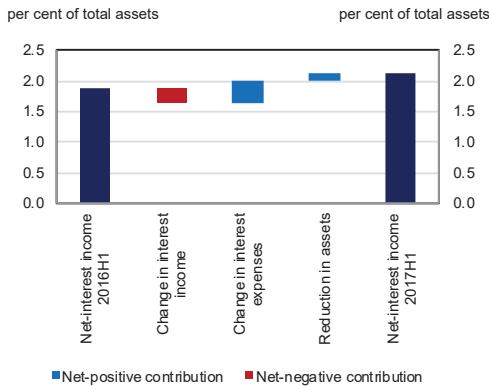
Net-interest income, which accounted for almost 75 per cent of operating income, increased marginally in the first half of 2017 compared with the same period in 2016 (Chart 47). As noted in previous Reviews, reductions in interest expenses have been offsetting declines in interest income in recent years. A change in funding composition has helped Irish retail banks reduce their funding costs as customer deposits have replaced maturing debt. In the low interest-rate environment, deposit rates have fallen and in some cases banks are charging negative rates on certain corporate deposit categories.

Lower funding costs in addition to reductions in assets have led to an increase in net interest margins (Chart 49). A normalisation of interest rates to above current levels would help banks to increase income. The overall impact on profitability of increases in interest rates, however, would depend on the resilience of borrowers to rate rises.

Fee and commission income represents the second largest source of income for Irish retail banks (Chart 47). Income from fees and commissions was broadly unchanged in the first half of

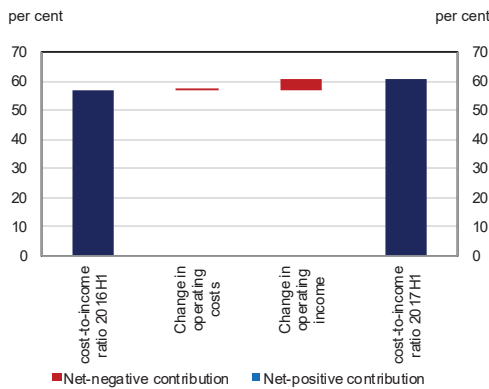
⁴⁷ A number of Irish retail banks along with banks across Europe reported gains from the disposal of their holdings in Visa Europe in the first half of 2016.

Chart 49: Breakdown of Irish retail banks' net-interest margins



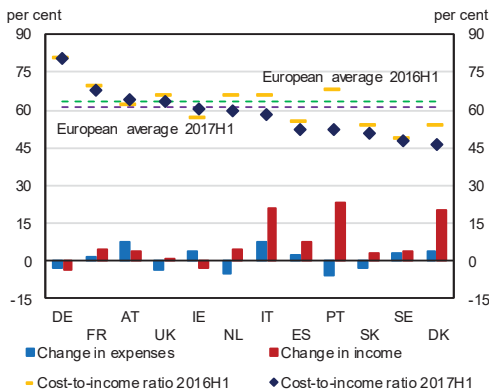
Source: Central Bank of Ireland.
Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements. Data are annualised.

Chart 50: Change in Irish retail banks' cost-to-income ratio



Source: Central Bank of Ireland.
Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements.

Chart 51: International comparison of cost-to-income ratios



Source: SNL Financial and Central Bank of Ireland calculations.
Notes: Data are consolidated. Country values are based on a minimum sample of three banks per country. The sample of banks is drawn from the list of banks that participated in the 2014 EBA stress-testing exercise and those banks that have been identified as systemically important by the respective national authorities. The 'IE' values are for the five Irish retail banks and are collected in accordance with the EBA's FINREP reporting requirements.

the year when compared to the same period twelve months earlier with declines in income offset by corresponding reductions in expenses (Chart 50). The strong growth recorded in trading income in 2017H1 was not uniformly spread across all Irish retail banks. This source of income, however, accounted for less than 5 per cent of total income. Increases in dividend income and other operating income contributed to the large increase in remaining income (Chart 47).

Operating costs increased by 3.9 per cent in the first six months of 2017 compared to 2016H1. Factors contributing to the increase included rises in staff expenses, regulatory charges, and investment in infrastructure. There are also expenses associated with the monitoring of NPLs and the implementation of resolution strategies. The combination of rising operating expenses and declines in operating income has seen the cost-to-income ratio increase by almost 4 percentage points (Chart 50). Nevertheless, Irish retail banks' cost-to-income ratios remain broadly in line with international peers (Chart 51).

The domestic market accounted for over 80 per cent of Irish retail banks' income in the first half of 2017. Domestically generated income declined by 4 per cent due to the reduction in one-off factors. Income from non-domestic activities increased by 4 per cent. A large share of non-domestic activities relate to UK operations. A slowdown in the UK economy or restrictions on capital flows stemming from Brexit could negatively affect Irish retail banks' profitability in the long term.

The introduction of IFRS 9 from early 2018 and the move to a forward-looking provisioning system could lead to higher impairment charges which could put further pressure on Irish retail banks' profits.

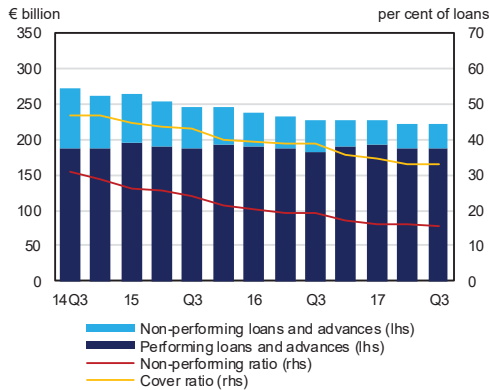
The outlook for the domestic economy remains broadly favourable. However, any slowdown in economic activity could hamper banks' ability to maintain profitability. The development of a business model which provides acceptable levels of risk taking while providing sustainable profitability remains a medium-term challenge for Irish retail banks.

Asset and credit quality

The value of aggregate total assets held by Irish retail banks amounted to €263.7 billion in 2017Q3, down 4 per cent year-on-year. Loans and advances are the largest asset category. Delevering and the maturing of NAMA bonds over the past twelve months have seen debt securities' share of assets decline from 14.7 per cent to 14.3 per cent. Other assets, including items such as tax assets and derivatives, account for the remainder of assets.

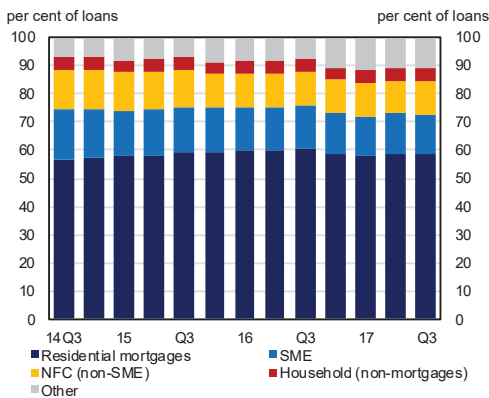
At €222.7 billion in September 2017, the value of Irish retail banks' outstanding loans was down 1.9 per cent on September 2016 (Chart 52). This decline reflects new lending volumes not compensating for the amount of loan redemptions and amortisations, as well as currency movements. Loan books are

Chart 52: Irish retail banks' asset quality: loans and advances



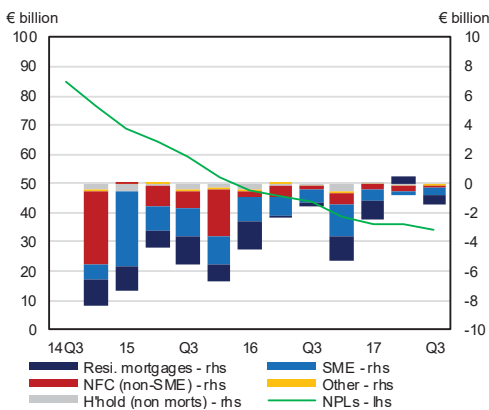
Source: Central Bank of Ireland.
Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements. Last observation: 2017Q3.

Chart 53: Sectoral breakdown of outstanding Irish retail banks' loans and advances



Source: Central Bank of Ireland.
Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements. Last observation: 2017Q3.

Chart 54: Irish retail banks' stock and flow of NPLs



Source: Central Bank of Ireland.
Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements. Last observation: 2017Q3.

concentrated in property-related lending (Chart 53), leaving banks vulnerable to adverse developments in residential and commercial real estate markets. Residential mortgages account for almost 60 per cent of outstanding loans. SMEs and larger non-financial corporates account for the bulk of the remainder with both including a significant proportion of CRE lending.⁴⁸

Balance sheet asset quality continues to improve. The value of outstanding non-performing loans (NPLs) has declined by over €50 billion since its peak in 2013, and by almost €10 billion over the past year to €34.4 billion in 2017Q3 (Chart 54). Substantial delevering and restructuring programmes incorporating active resolution and forbearance strategies have contributed to the fall in NPLs. The economic recovery may also have helped slow the formation of new arrears. [See Box 5 on inflows into mortgage arrears.] SME lending was the category which saw the largest reduction in the stock of NPLs over the past 12 months (Chart 54).

Despite the improvement in asset quality, the rate of NPLs remains elevated. At 15.4 per cent of total loans, Irish retail banks' NPL rate is above the European average of 3.9 per cent and is amongst the highest in the EU (Chart 55). High NPL rates are undesirable as they weigh on bank profitability, tie up capital, and can hinder banks' capacity to provide new lending to the economy. The resolution of NPLs is then critical to the future health and resilience of the banking sector. Notwithstanding progress in this area in recent years, it is important to maintain efforts to reduce the number and value of NPLs.

The majority of NPLs in 2017Q3 were residential mortgages. Almost two thirds of NPLs, by value, were for house purchases, over one fifth were to SMEs, larger corporates accounted for 10 per cent, while non-mortgage lending to households made up 3.5 per cent. In contrast, the largest category of NPLs for the euro area as a whole related to NFCs (approximately 60 per cent), while loans to households accounted for about one-third of the total.⁴⁹

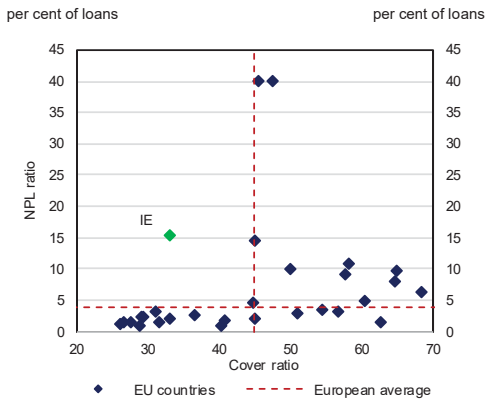
Despite a notable reduction in the value of NPLs during the past few years, SME lending remains the most distressed asset class on bank balance sheets (Chart 56). At end-2017Q3, 24 per cent of SME loans, with an outstanding balance of €5.1 billion, were non-performing, down from 32.5 per cent a year earlier. The resolution of distressed mortgages has proved to be a slow process. Non-performing mortgages at the Irish retail banks represented 17.1 per cent of the mortgage book in 2017Q3, compared with 18.4 per cent in 2016Q3 (Chart 56). The non-mortgage household NPL rate is the lowest amongst the main loan categories at 11.7 per cent (Chart 56).

The stock of provisions for NPLs has fallen, reflecting the drop in the value of distressed loans. Outstanding loan-loss provisions

⁴⁸ Additional QFSR data, based on the primary economic activity of counterparties, suggest CRE lending accounts for approximately 10 per cent of total outstanding loans.

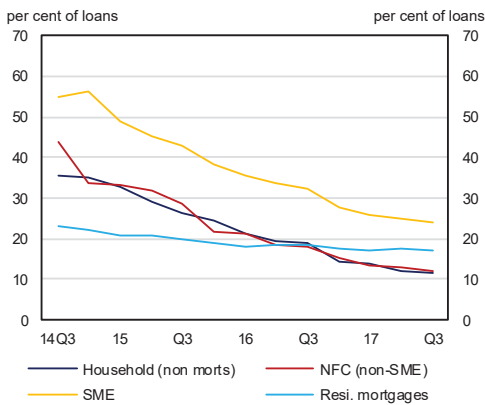
⁴⁹ Euro area data taken from "Supervisory Banking Statistics 2016Q4", ECB (April 2017). Data relate to significant institutions at the highest level of consolidation for which common reporting on capital adequacy (COREP) and financial reporting (FINREP) are available. NFC data include loans to SMEs and loans collateralised by commercial immovable property, while household lending data include loans for house purchases and credit for consumption.

Chart 55: Cross-country comparison of NPL and cover ratios



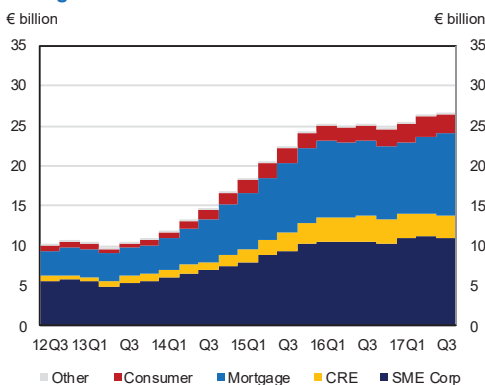
Source: European Banking Authority and Central Bank of Ireland.
Notes: Data relate to 2017Q2 for all countries except Ireland which are 2017Q3 data. The 'IE' values are for the five Irish retail banks.

Chart 56: Irish retail banks' sectoral NPL rate



Source: Central Bank of Ireland.
Notes: Data consolidated and are collected in accordance with the EBA's FINREP reporting requirements. Last observation: 2017Q3.

Chart 57: Sectoral breakdown of new lending: rolling 4Q total



Source: Central Bank of Ireland.
Notes: Data are consolidated and are collected in accordance with the Central Bank of Ireland's QSFRR reporting requirements. Last observation: 2017Q3.

were down one third year-on-year to €11.3 billion in 2017Q3. Consequently, the cover ratio (32.9 per cent) has fallen below the European average of about 45 per cent (Chart 55), reflecting a number of factors including, provision utilisation as part of NPL resolution activities, a change in the composition of NPL portfolios and improving economic conditions. It is important to ensure that the loan-loss models on which the calculation of impairment provisions are based are calibrated satisfactorily and based on realistic assumptions. The impending introduction of a forward-looking approach to loan impairment provisioning under IFRS 9 in 2018 could materially affect Irish retail banks' level of provisions given the relatively high share of non-performing exposures on their books.⁵⁰ The introduction of the Central Credit Register (CCR), through the collection of detailed loan-by-loan information on borrowers, will contribute to a greater understanding of the interconnected credit risk exposures faced by borrowers. The highly granular data provided by the CCR will aid risk monitoring and risk mitigation (Box 6 provides details of the CCR).

The gradual increase in the value of new lending has continued in recent quarters. Cumulatively, €26.5 billion of new loans were written in the twelve months to September 2017, a 5.3 per cent increase on the September 2016 figure (Chart 57). The largest portion (€11 billion) went to the SME/corporate sector, predominantly to borrowers involved in the manufacturing, primary industries and business and administration sectors. Residential mortgage lending accounted for €10.1 billion of new lending and €2.8 billion was extended to the commercial property sector.

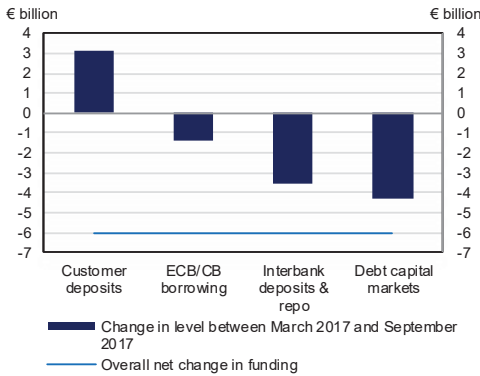
The provision of credit to UK borrowers had been a driver of new lending growth prior to the Brexit referendum, increasing from about one-fifth of annual new lending in 2012, to more than one-third in early 2016. Since 2016Q3, however, annual new UK lending is down 9.5 per cent to €7.6 billion. When adjusted for foreign exchange rate movements, the drop is lower, at 1.4 per cent. Despite this recent decline, lending to the UK remains substantial, accounting for approximately 30 per cent of new loans, by value, written by Irish retail banks over the past year. Meanwhile, the value of annual new Irish lending increased by 13.3 per cent, to €16.1 billion in 2017Q3, equivalent to approximately 60.9 per cent of total new lending.

Funding

The outstanding level of funding held by Irish retail banks declined by 2.7 per cent between March and September 2017. The lower levels of funding are a direct result of a continuing reduction in assets. A change in the composition of funding, coupled with the low interest-rate environment, has helped reduce funding costs for Irish retail banks. Nevertheless, funding costs remain susceptible to increases in interest rates and/or any negative changes in investor sentiment.

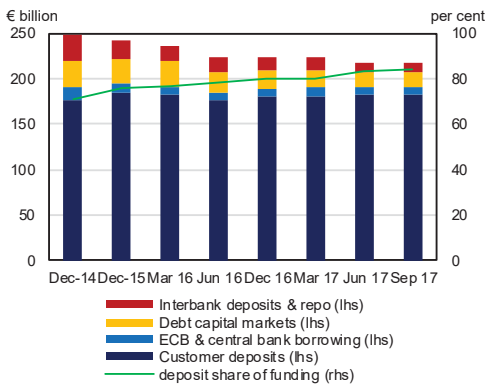
⁵⁰ For more on IFRS 9, see [Box 4 of the Macro-Financial Review 2017:1](#).

Chart 58: Change in Irish retail banks' funding composition



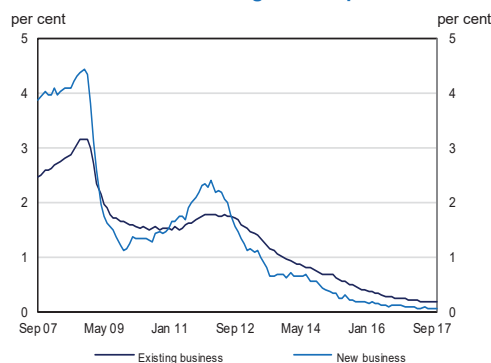
Source: Central Bank of Ireland
Notes: Change in funding components between March 2017 and September 2017.

Chart 59: Funding profile of Irish retail banks



Source: Central Bank of Ireland.
Notes: Data are consolidated. Last observation: September 2017.

Chart 60: New and existing retail deposit rates



Source: Central Bank of Ireland.
Notes: Data relate to new and existing business rates offered to households and NFCs conducted through resident offices of banks operating within the State. Last observation: September 2017.

Loan redemptions and asset disposals have resulted in a lower level of funding. The aggregate funding level of Irish retail banks was €218 billion at end-2017Q3, representing a decline of approximately €6 billion since the last Review (Chart 58). The maturing of outstanding debt, where a €4.2 billion diminution occurred, made the largest contribution to this overall reduction. Interbank and repo funding fell by €3.5 billion and ECB/central bank borrowings declined by just under €1 billion.

In contrast to other types of funding, there was an increase in customer deposits of €3.2 billion between March and September 2017, the majority of which came from an increase in retail deposits. There was a small reduction in corporate deposits, which was offset by an increase in NBF1 deposits. The reduction in corporate deposits may reflect some Irish retail banks charging negative rates on certain deposit categories. Overall, the share of funding accounted for by customer deposits continues to increase, standing at 84 per cent in September 2017 (Chart 59).

The compositional change in funding and the low interest-rate environment helps reduce funding costs. Irish retail banks have been able to substitute lower cost deposits for other sources of funding. At the same time, both new and existing deposit rates remain broadly unchanged since December 2016 (Chart 60).

With the high share of total funding accounted for by customer deposits and the bulk of deposits being either on demand or having contractual maturities of less than one month, some 68 per cent of total funding has a maturity of one month or less. As has been noted before, however, although such deposits are short-term in nature, they tend to exhibit a longer behavioural maturity.

The BRRD, introduced in January 2016, established a framework for the recovery and resolution of banks and investment firms across Europe. As part of this framework, institutions are required to build adequate loss absorbency buffers that can be bailed in, referred to as the minimum requirement of own funds and eligible liabilities (MREL). European institutions may need to issue new debt to reach their MREL targets which could have an effect on markets for bank debt and lead to higher funding costs for banks. Funding costs are also determined in part by risk-ratings assigned to institutions by credit rating agencies. Recently, AIB's and Bank of Ireland's individual credit ratings were upgraded by Fitch Ratings, on foot of improving asset quality, a longer record of stable profitability and strengthened capitalisation.⁵¹ In contrast, ratings agency Moody's revised its outlook on Ireland's banking system from "positive" to "stable", citing the banks' continuing high levels of NPLs.⁵²

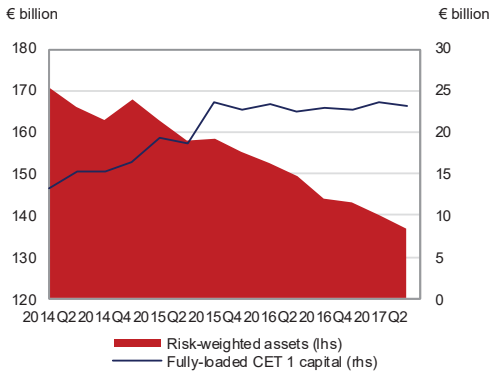
Solvency

The Irish retail banks' aggregate solvency position has improved slightly since the last Review, with increases in aggregate capital levels occurring alongside reductions in RWA. While increased

⁵¹ See [Fitch Ratings](#) for more details.

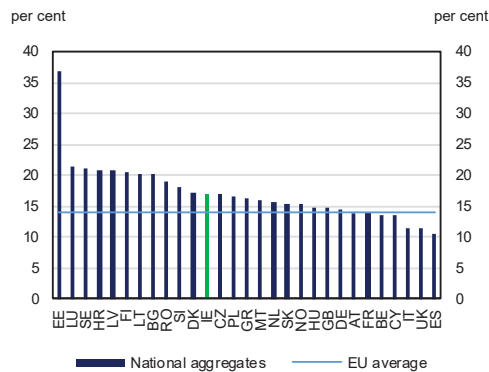
⁵² See [Moody's](#) for more details.

Chart 61: Irish retail banks' fully-loaded Tier 1 capital and risk-weighted assets



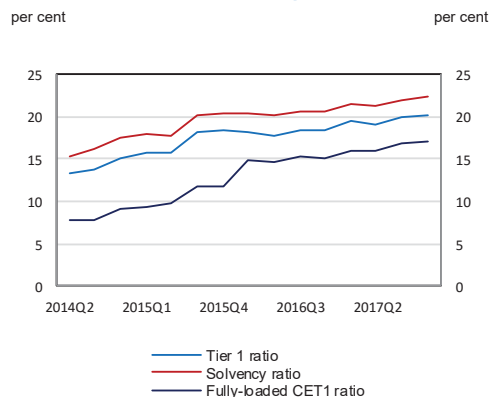
Source: Central Bank of Ireland.
Notes: Data are collected in accordance with the EBA's COREP reporting requirements. Last observation: 2017Q3.

Chart 62: International comparison of fully-loaded CET1 capital ratios



Source: EBA and Central Bank of Ireland.
Notes: Data are collected in accordance with the EBA's COREP reporting requirements. Data relate to 2017Q2 for all countries except Ireland which are 2017Q3 data. The 'IE' values are for the five Irish retail banks.

Chart 63: Irish retail banks' capital ratios



Source: Central Bank of Ireland.
Notes: Data are collected in accordance with the EBA's COREP reporting requirements. Last observation: 2017Q3.

capital adequacy ratios and the implementation of macroprudential measures enhance financial system resilience, risks to solvency remain. Although Irish retail banks are profitable, measures such as RORWA remain low, thus limiting banks' ability to generate capital internally. With a large amount of NPLs remaining on the banks' books and the introduction of IFRS 9 due at the beginning of 2018, the capital base remains susceptible to a deterioration in economic conditions. The capital base of Irish retail banks also remains vulnerable to any deterioration in the banks' defined benefit pension schemes, although concerns around such schemes have eased somewhat following favourable bond yield movements.

The Irish retail banks' capital ratios remain in excess of the CET1 targets under CRDIV. The banks reported aggregate fully-loaded CET1 capital of €23.3 billion in 2017Q3, a moderate increase from the €22.7 billion reported in 2017Q1. This increase was driven by several factors, the most important of which was an increase in retained earnings. Although the rate of reduction has decreased, RWA continue to decline as the size of banks' balance sheets shrink. Aggregate RWA stood at €136.9 billion at end September 2017, down €6.16 billion since March 2017, representing a 4.3 per cent reduction overall (Chart 61).

The combined effect of these changes in capital and RWA has been to increase Irish retail banks' aggregate fully-loaded CET1. The CET1 ratio in 2017Q3 is 17 per cent, an increase of 1.1 percentage points from that reported in March. This compares with an EU average for 2017Q2 of 14 per cent (Chart 62).

The broader measure of capital – Tier 1 capital – has also increased.⁵³ The aggregate Tier 1 capital ratio of Irish retail banks stood at 20.1 per cent in 2017Q3, up from 19.1 per cent in 2017Q1. The overall solvency ratio stands at 22.4 per cent, an increase of 0.8 percentage points since the last Review (Chart 63).⁵⁴

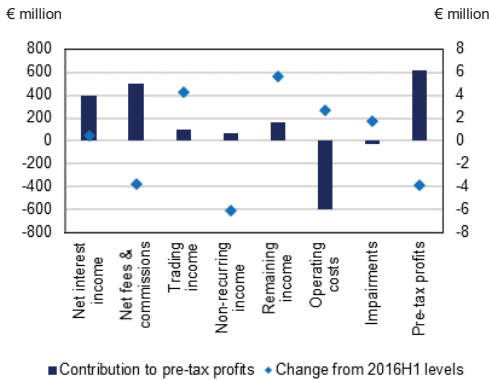
The Central Bank of Ireland has introduced a counter-cyclical capital buffer (CCyB) to bolster the resilience of the Irish retail-banking sector and to render it less pro-cyclical. Given the current modest rate of credit growth, the Central Bank maintains the current CCyB rate at 0 per cent. Furthermore, an O-SII capital buffer has been introduced, to take effect in 2019. The O-SII buffer applies to banks designated as systemically important to the Irish retail-banking sector, with buffer rates being institution-specific.⁵⁵ As currently designated, the O-SII buffer will range from 0 to 0.5 per cent upon its introduction, rising to 1.5 per cent by 2021 for certain banks.

⁵³Tier 1 capital includes additional Tier 1 capital which comprises such securities that may be converted into equity upon certain triggering conditions being met. (hybrid and/or contingent convertible securities).

⁵⁴The overall solvency ratio is defined as total own funds divided by risk weighted assets

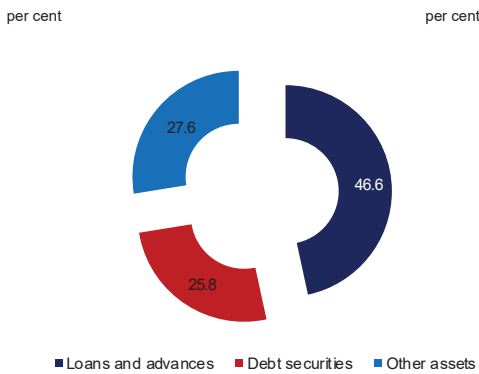
⁵⁵The O-SII buffer is a capital charge ranging from 0- 2 per cent of total risk exposures. For more on the O-SII buffer see www.centralbank.ie

Chart 64: Change in foreign-owned banks' profitability



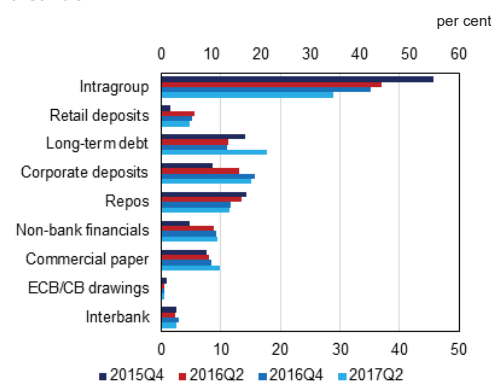
Source: Central Bank of Ireland.
Notes: For the six-month period to end 2017H1. Data are collected in accordance with the EBA's FINREP reporting requirements.

Chart 65: Foreign-owned banks' assets



Source: Central Bank of Ireland.
Notes: Data are consolidated. Data relate to 2017Q2.

Chart 66: Foreign-owned banks' funding breakdown



Source: Central Bank of Ireland.
Notes: Data are consolidated.

Foreign-owned resident banks⁵⁶

The first half of 2017 proved challenging for foreign-owned resident banks. Overall, total operating income increased by 0.4 per cent to €1.2 billion in the year to July 2017. A decrease of €38 million in net fees and commission income was offset by increases of €56 and €42 million in remaining income and trading income, respectively (Chart 64).⁵⁷ Over the same period, operating costs increased by 4.7 per cent and outpaced operating income such that the aggregate cost-to-income ratio for foreign-owned banks rose marginally from 46.5 per cent in 2016H1 to 48.5 per cent in 2017H1. In addition to the rise in operating expenses, provisions also increased albeit from a low base (Chart 64). Overall, the operations of foreign-owned resident banks in the first half of the year saw a 5.8 per cent decrease in pre-tax profits to €620 million. Reflecting a decrease in the aggregate balance sheet, return on assets remained unchanged from 2016H1, at 1.1 per cent.

Foreign-owned banks' total assets decreased by 3.3 per cent in the year to 2017Q2. This was primarily due to reductions in debt securities held, which fell from 28.6 per cent to 25.8 per cent of total assets (Chart 65). There has been a decline in all asset categories, aside from cash, cash balances at central banks and other demand deposits. Since 2016Q2, non-performing exposures for foreign-owned banks has fallen by 1.4 percentage points to 6.1 per cent of total exposures, while the coverage ratio declined by 2.4 percentage points to 51.1 per cent. The geographical breakdown of assets leaves foreign-owned banks susceptible to developments in foreign markets and exchange-rate fluctuations.

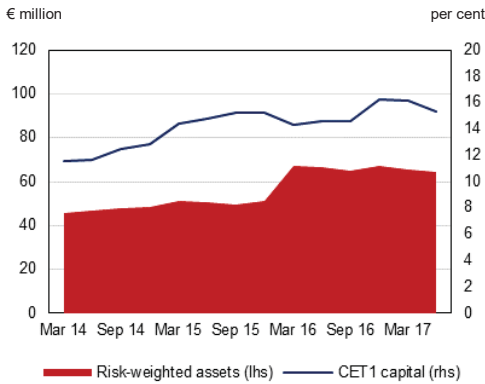
Reflecting the reduction in the aggregate balance sheet, total funding decreased by 3.4 per cent in the six months since December 2016 (Chart 66). While declining in recent quarters, intragroup support remains the largest funding source for foreign-owned banks, accounting for 29 per cent of total funding in 2017Q2. The decline in intragroup support was offset by an increase in long-term debt issuance, which accounted for 18 per cent of total funding. At end-June 2017, over 49 per cent of total funding had a maturity of one month or less, a decrease of 5.1 percentage points since the last Review.

In aggregate, foreign-owned banks' fully-loaded common equity Tier 1 capital declined by 5.4 per cent between 2016Q4 and 2017Q2 (Chart 67). RWAs decreased by 4.2 per cent during this period. As a result, the aggregate fully-loaded common equity Tier 1 capital ratio declined marginally by 0.3 percentage points to 23.9 per cent in the six months to 2017Q2. The solvency ratio fell marginally by 0.4 percentage points to 24.4 per cent over the same period.

As a result of Brexit, a number of financial institutions, which are currently based in the UK, are exploring the possibility of moving

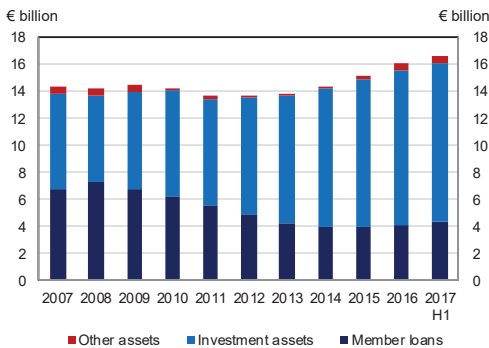
⁵⁶ Foreign-owned banks resident in Ireland form an important component of the overall banking system in terms of offering additional sources of credit and employment to the economy. Although these entities operate within the Irish economy, their business models largely differ from the retail banks in that they are not as active in extending credit to the domestic economy.
⁵⁷ Remaining income is composed of other operating income less other operating expenses, and dividend income.

Chart 67: Foreign-owned banks' fully-loaded CET 1 capital and RWA



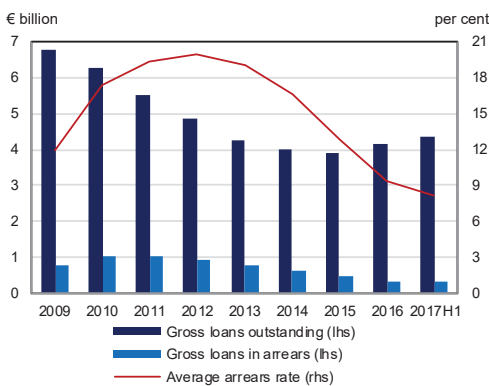
Source: Central Bank of Ireland.
Notes: Last observation: June 2017. Data are collected in accordance with the EBA's COREP reporting requirements. Data are consolidated.

Chart 68: Breakdown of credit unions' total assets



Source: Central Bank of Ireland.
Note: Member loans are net of impairment provisions. Last observation: 2017H1.

Chart 69: Credit unions' members' loans and arrears



Source: Central Bank of Ireland.
Notes: Arrears refer to members' loans that are more than nine weeks in arrears. Last observation: 2017H1.

operations to Ireland to ensure a continued presence in the EU. Firms seeking to relocate activities to Ireland post-Brexit, however, may face logistical challenges as they seek to expand current activities and alter existing business models.

Credit unions

The operating environment for credit unions remains challenging with the number of active credit unions continuing to decline. In the twelve months to end-June 2017, the number of credit unions operating in the State fell from 309 to 275. The work-out of members' loans that are in arrears and the development of business models remain the main challenges facing the sector. While progress has been made in these areas, there remain weaknesses within some institutions that will need to be addressed either through remediation from within the sector or, as has been the case with Charleville Credit Union, through the actions of the Central Bank.⁵⁸

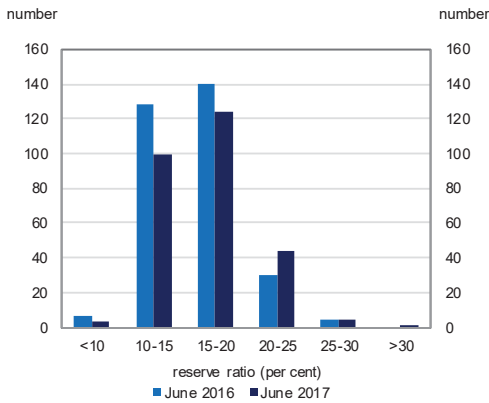
Notwithstanding the consolidation that has occurred within the sector in recent years, total assets increased by close to 3 per cent in the first six months of 2017 (Chart 68). Investment assets increased by 2.3 per cent and remain the largest asset category, accounting for 70 per cent of credit unions' aggregate balance sheet.⁵⁹ Investment assets primarily comprise deposits held with Irish resident banks. With interest earned on bank deposits an important source of income for credit unions, the extent of the interlinkages between banks and credit unions means shocks could be transmitted between them. The Central Bank conducted a review of investment regulations in 2017 and is proposing to introduce three additional permitted investment classes for credit unions with a view to encouraging diversification of credit union investment portfolios.

From 2008 to 2015, members' loans declined by almost a half (Chart 68). In 2016, gross loans advanced to members increased by 5.5 per cent, with a similar rate of growth occurring in the first six months of 2017. Loans in arrears continue to fall, down from a peak of over €1 billion in 2011 to €0.3 billion in 2017H1. The arrears rate has also declined sharply in the last 18 months and currently stands at 8.2 per cent (Chart 69). Notwithstanding the improvement at an aggregate level, improvements in asset quality remain unevenly spread across credit unions. While there have been improvements in lending practices and risk management systems, some credit unions remain subject to lending restrictions.

The increase in credit unions' aggregate balance sheet has been funded by increases in members' savings. Total savings increased by 2.9 per cent in the six months to June 2017. Despite low dividend rates across the sector, decreasing retail deposit interest rates may have increased demand for credit union

⁵⁸ As a result of breaches of a number of regulatory directions, and its distressed financial position, joint liquidators were appointed by the High Court to oversee Charleville Credit Union's winding up.
⁵⁹ The term investment assets includes bank deposits, bank bonds, government securities and collective investment schemes.

Chart 70: Distribution of credit unions' reserve ratios



Source: Central Bank of Ireland.

membership. As a result, measures such as the liquidity ratio and loan-to-savings ratio remain broadly unchanged from those reported in the last Review (36 per cent and 31.5 per cent in 2017Q2, respectively)

Credit unions are required to hold reserves in order to absorb losses and reduce the impact of financial shocks. The minimum regulatory reserve ratio is set by the Central Bank at 10 per cent of total assets. Total realised reserves held across the sector increased by 3.2 per cent in the six months to June, at just over €2.7 billion. The average reserve ratio has remained unchanged since December, at 16.4 per cent. There is a wide dispersion of reserve ratios across credit unions. In the twelve months to June 2017, the number of credit unions reporting reserve ratios below 10 per cent declined from seven to three (Chart 70).⁶⁰

To date, the consolidation within the sector and the work-out of troubled loans have been necessary steps in partly addressing the longer-term viability of the sector. In addition to ongoing efforts in these areas, the sector also needs to ensure that the resilience and operational efficiency of the sector are further enhanced in order for credit unions to be in a position to compete effectively with other parts of the financial sector.

⁶⁰ These numbers include Charleville Credit Union.

Box 5: Flows into mortgage arrears, 2008 to 2016

By Fergal McCann (Financial Stability Division)

A sharp rise in mortgage arrears was a feature of the Irish economy after 2009. The share of PDH mortgages in arrears of greater than 90 days past due (90 DPD) increased from 3.3 per cent in September 2009 to 12.9 per cent (or 17.3 per cent in value terms) in 2013Q3. Since the latter date, in parallel with the economic recovery, the 90 DPD rate has declined steadily to 7.1 per cent (or 10.6 per cent when weighted by balance) in 2017Q2.

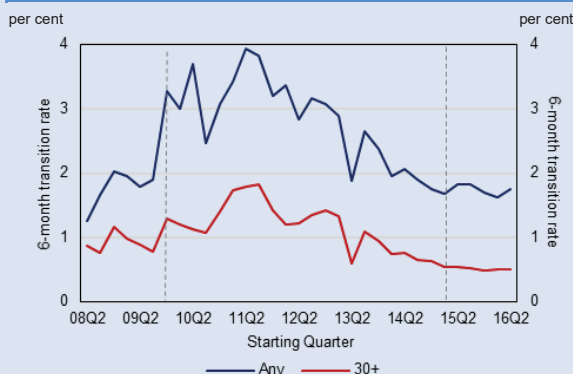
Underlying these recent improvements in the headline mortgage arrears rate is a shift in the flows of loans between different DPD categories. A decline in the aggregate 90 DPD arrears rate can be achieved in three ways: either (a) through a fall in the entry rate to arrears; (b) an increase in the “cure rate” (i.e., loans in arrears returning to an arrears balance of zero, either through improved borrower circumstances or through mortgage modification); or (c) the exit of in-arrears loans from the mortgage portfolio entirely, whether through loan sales, foreclosure or voluntary property sales. New research provides a detailed description of the evolution of flows between states of mortgage arrears, as well as analysis of the characteristics of loan cures, the engagement of financially distressed borrowers, and the performance of mortgage modifications.¹ The focus of this box is on *entry* to mortgage arrears (i.e. (a) above). In Chart A, each quarter-year entry shows the share of zero-arrears loans that entered arrears over the subsequent six months (the six-monthly transition rate). The entry into any arrears greater than zero is considered initially, followed by an analysis of those loans having missed more than one monthly payment (i.e. those entering arrears of greater than thirty days past due).

Chart A shows that, at its peak rate in early 2011, 3.9 per cent of zero-DPD PDH mortgages entered arrears over the following six months, while about half of those had entered 30+ DPD (i.e. had missed more than one payment). The chart shows that the transition rate into arrears has declined steadily since then, consistent with improving economic conditions. This most recent transition rate to 30+ DPD represents the lowest rate seen since the Central Bank began collecting loan-level data from the Irish retail banks in December 2010.

Previous Central Bank research has investigated the factors associated with mortgage default during the 2010 to 2013 period, showing that both housing equity and mortgage affordability had important roles in explaining the increase in mortgage arrears experienced in Ireland.² The new research assesses whether such factors continue to explain the entry into arrears but it also considers two additional features: the previous experience of loan default of the affected borrowers and the role of mortgage modification.³ Chart B disentangles the group of new inflows from June to December 2016 to 30+ DPD arrears along these two lines. The chart shows that just 16 per cent of the 2016H2 inflows are of mortgages that had never experienced either default or a modification previously. Some 36 per cent of the inflows were loans that had previously been in default and had been “permanently” modified. Another 25 per cent were loans that had previously received a temporary modification (such as an interest-only arrangement) which has since elapsed. The remaining loans relate to loans currently on temporary modifications and those with experience of permanent modification without having experienced default previously.

The composition of the inflows into arrears in 2016H2 shows that “truly new cases” of mortgage distress now comprise a small share of such inflows. The analysis highlights the need for regulators and lenders to remain vigilant in monitoring the performance of modified loans that have cleared their arrears balances, as their contribution to the aggregate reduction in arrears seen in official statistics is masking an underlying financial vulnerability in some cases. Regression analysis shows that, as well as the aforementioned crisis legacy effects, other factors that have been previously shown to affect entry to mortgage arrears, such as the loan to value ratio, interest rate, interest rate types, loan vintage and regional factors, all continued to play an explanatory role in the inflows to mortgage arrears in 2016.

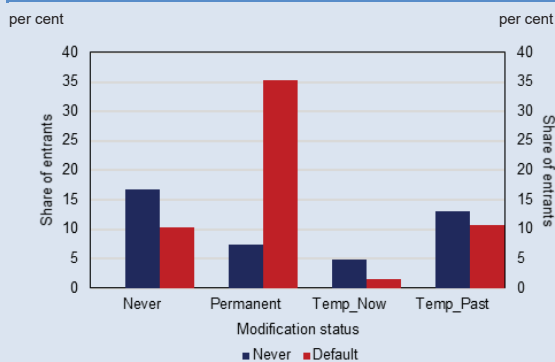
Chart A: 6-month transition rate from zero DPD to arrears, 2008 to 2016



Source: Central Bank of Ireland loan-level data.

Notes: To the left of first dashed line, sample comprises one bank. Between the two dashed lines, sample comprises three banks. To the right of second dashed line, sample comprises five banks.

Chart B: Composition of those entering arrears in 2016 H2 by previous default and previous modification status



Source: Central Bank of Ireland loan-level data; author's calculations.

Notes: June 2016 Zero DPD with 30+ by December Modification and previous default status. “Default” refers to a mortgage loan that has been in default at any time from 2009 to 2016, while “Never” indicates the mortgage has never been in default. The horizontal axis shows modification status.

¹ Fergal McCann (2017), “Resolving a Non-Performing Loan Crisis: The Ongoing Case of the Irish Mortgage Market”, 10/RT/17, Central Bank of Ireland.

² Kelly, R., and McCann, F. (2016). “Some Defaults are Deeper than Others: Understanding Long-term Mortgage Arrears.” *Journal of Banking and Finance*, 72, 15-27. McCarthy, Y. (2014). “Dis-entangling the Mortgage Arrears Crisis: The Role of the Labour Market, Income Volatility and Housing Equity.” *Journal of the Statistical and Social Inquiry Society of Ireland*, 43.

³ McCann, op. cit

Box 6: What is the Central Credit Register?

By John Connolly (Central Credit Register) and Paul Lyons (Financial Stability Division)

The Central Credit Register (CCR) is a secure database established and controlled by the Central Bank of Ireland, under the Credit Reporting Act 2013, enacted as a condition of the ECB-EU-IMF programme of financial assistance. The Credit Reporting Act 2013 was framed from the Report of the Inter-Agency Working Group on Credit Histories, which recommended the establishment of the CCR to resolve weaknesses identified in various reports published subsequent to the banking crisis. Lenders will provide personal and credit information on loans of €500 or more, in line with the recommendation of the Report. Lenders include regulated financial service providers (such as banks, credit unions, retail credit firms and licenced moneylenders), NAMA, local authorities and other providers of loans. The information collected will help the Central Bank in its role of safeguarding stability and protecting consumers and will support functions such as financial stability, prudential supervision and statistical analysis. Lenders will be able to use the information to get a detailed picture of a borrower's credit history in the form of a credit report, which will help them to make informed decisions about loan applications. Borrowers will have the opportunity to access their own credit report, which may support responsible borrowing.

The CCR will be implemented on a phased basis with phase 1 focusing on the submission of information on consumer loans such as mortgages, credit cards, overdrafts and personal loans. Hire Purchase loans including Personal Contract Plans (PCPs) are not included at this time, but it is intended that these will be included in the future subject to a legislative amendment. Lenders must report credit agreements in force on or after 30 June 2017 and update relevant information on a monthly basis thereafter. Lenders have a six-month window within which to report and so they must have completed their submission in respect of phase 1 by 31 December 2017. A summary of selected information to be collected in phase 1 is set out below in Table A.

Phase 2 focuses on the submission of information in respect of business loans such as commercial mortgages, revolving facilities, term loans, business overdrafts and business credit cards. Information on consumer lending from licensed moneylenders and local authorities will also be collected at this time. Lenders must report credit agreements in force on or after 31 March 2018 and update information every month thereafter. Lenders have a six-month window to report and so by 30 September 2018, lenders must have completed their submission in respect of phase 2. Information stored in the CCR will be held for five years. Anonymised information (i.e. information from which borrowers cannot be identified) may be held by the Central Bank indefinitely.

Table A: Summary of selected information to be collected in Phase 1

Personal information

- Name (first name and surname)
- Current and previous addresses
- Date of birth
- Personal public service number (PPSN)
- Gender
- Eircode
- Telephone number

Source: The full list of personal information is set out in S.I. No. 486/2016 - Credit Reporting Act 2013 (Section 11) (Provision of Information for Central Credit Register) Regulations 2016.

Notes: Alternative personal fields will apply for non-consumers covered in phase 2.

Credit information

- Product Type
- Finance Amount/Credit Limit
- Outstanding Balance
- Arrears information: Days Past Due, Amount Past Due
- Restructure Event
- Credit Status

Source: The full list of credit information is set out in S.I. No. 486/2016 - Credit Reporting Act 2013 (Section 11) (Provision of Information for Central Credit Register) Regulations 2016.

It is expected that credit reports will be available to borrowers and lenders in early 2018, subject to data submission and quality assurance. Access to information on the CCR will be strictly controlled and monitored. The Central Bank owns the information held on the Register and is a data controller under the Data Protection Acts. The CCR will operate in accordance with relevant data protection legislation including the General Data Protection Regulation, which comes into force on 25 May 2018. Lenders will be able to access a credit report when considering a new loan application, an application to have an existing loan restructured, or when an existing loan is in arrears. Individual borrowers will have the right to request their credit report at any time, for free, subject to such requests not being excessive. Each request will be recorded as a "footprint" so that borrowers will know who has looked at their credit report. The Central Bank may use information held on the CCR in the performance of its functions.

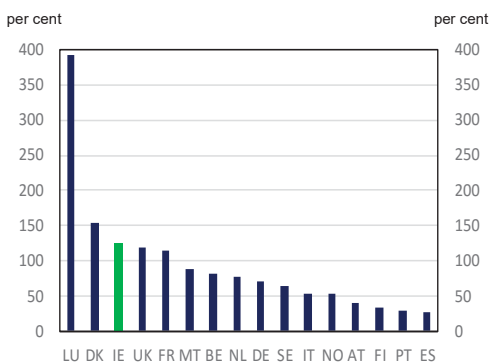
The introduction of the CCR will bring a number of benefits. For lenders, a mechanism for reviewing the full debt profile of individual borrowers will assist in risk management and loan origination decisions. For borrowers, the CCR will foster greater transparency and potentially increased competition among lenders on lending terms. For the Central Bank, the CCR will support many of its functions, including consumer protection, the supervision of credit institutions, assessing financial stability risks, and the calibration and evaluation of instruments used as part of its macroprudential policy framework.¹ In particular, by providing a comprehensive view of debt through the collection of detailed loan-by-loan information on borrowers, the CCR will contribute to a greater understanding of the interconnected credit risk exposures faced by borrowers and lenders. In this manner, the highly granular data provided by the CCR will aid risk monitoring and risk mitigation.

¹ Recommendation 9 of the IMF Financial Stability Assessment Programme (FSAP) for Ireland conducted in 2016 relating to Macroprudential policy was to "Operationalize the Central Credit Register as soon as possible, and, once operational, transform the LTI limit into a more comprehensive DTI limit".

4.2 Insurance sector

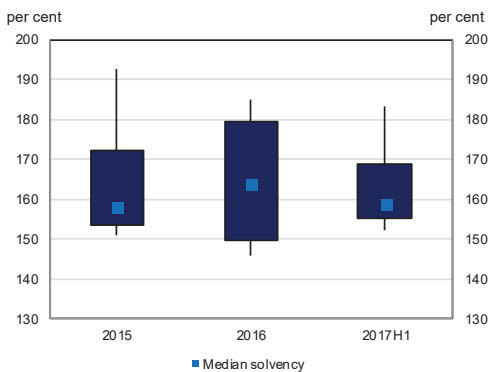
The domestic life insurance sector performed strongly in the first half of 2017 as economic conditions supported growth in the sector. Concentration risk and competitive pressures are features of the sector. Domestically-focused, high-impact non-life insurance firms made an aggregate underwriting profit in the first half of 2017 due to increases in policy premiums. Non-life insurance firms' investment income remains suppressed in the low interest rate environment, although higher interest rates would adversely affect firms' capital base. The recent natural catastrophic events in North America and the Caribbean are unlikely to have a significant direct impact on reinsurance firms domiciled in Ireland.

Chart 71: EU insurance firms' assets in relation to GDP



Source: EIOPA and Eurostat.
Note: Data are for 2016.

Chart 72: Solvency position of domestic life insurers



Source: Central Bank of Ireland.

Notes: The solvency position is measured as eligible own funds as a percentage of solvency capital requirements (SCR). Firms must maintain a SCR ratio of 100 per cent or higher to comply with regulatory requirements. The box at each point shows the interquartile range of solvency positions and the vertical lines show the 10th and 90th percentiles. Last observation: 2017H1.

The insurance sector in Ireland comprises life, non-life and reinsurance firms operating across a range of geographical markets. Insurance firms based in Ireland generated €76 billion of premium income in 2015, of which €61.9 billion related to foreign-risk business. This large foreign-risk element is reflected in the size of the Irish insurance sector vis-à-vis the sector in other EU countries (Chart 71). The types of insurance business varies across countries, with a large presence of European captive insurers being a feature of the Irish and Luxembourg insurance sectors.^{61,62} The relocation of some global insurance firms' EU headquarters from the UK to Ireland as a result of Brexit is likely to increase the size of the sector here further still.

Insurance firms operating in Ireland are likely to be affected by market volatility and any adverse effects on economic conditions arising from Brexit. It is probable that the business model of a number of firms will also be affected. The extent of Brexit's impact on firms will vary depending on the proportion of their sales to the UK. There are also some UK domiciled firms who write Irish-risk business on a branch basis that may need to seek establishment in Ireland.

Life insurance

The strong growth in new business in the domestic life insurance sector in the first half of 2017 is underpinned by favourable economic conditions.⁶³ Ireland's demographic structure and the attendant scope for greater private pension provision provide long-term growth opportunities for the sector. The sector is strongly capitalised on a Solvency II basis with all domestically-focused firms' solvency positions exceeding regulatory requirements (Chart 72).⁶⁴ Concentration risk and competitive pressures are features of the sector. The dominance of larger firms in the sector could result in smaller players becoming less competitive and potentially unviable. The impact that Brexit may have on the structure of the sector is uncertain, with any adverse

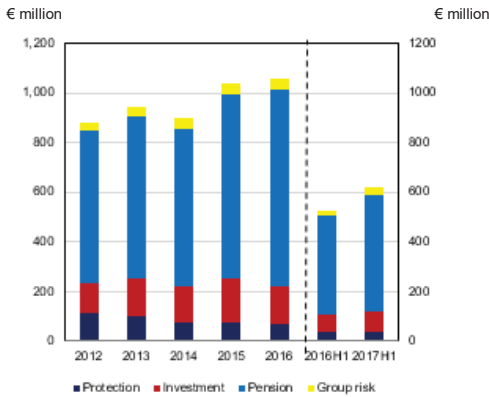
⁶¹ See [ECB \(2017\) Report on Financial Structures](#).

⁶² A captive insurer is a (re)insurance company owned by a non-(re)insurance company and which insures or reinsures the risks of its parent or affiliated companies.

⁶³ Analysis of the domestic life insurance market is based on the four largest domestically-focused firms which comprise approximately 70 per cent of the market. However, the data are only indicative of the markets these firms operate in given that other non-insurance firms offer similar products, particularly in the non-protection business.

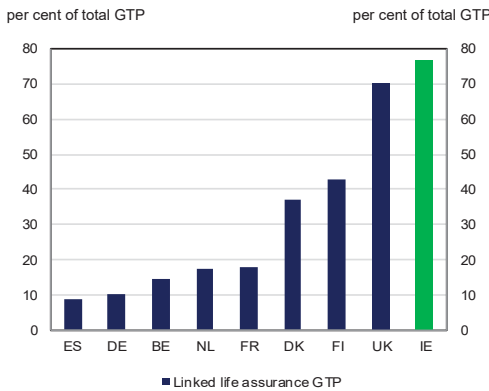
⁶⁴ The solvency position is measured as eligible own funds as a percentage of solvency capital requirements (SCR). Firms must maintain a SCR ratio of 100 per cent or higher to comply with regulatory requirements.

Chart 73: Premium income of domestic life insurers



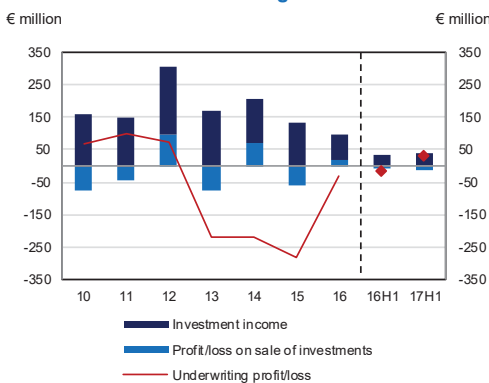
Source: Central Bank of Ireland.
Notes: Premium income is measured by new business APE. Data are for the four largest domestically-focused life insurers. Last observation: 2017H1.

Chart 74: Life insurers' linked assets (proxied by GTP) – EU comparison



Source: EIOPA.
Notes: Data are for 2015. Linked life assurance gross technical provisions (GTP) as a percentage of total gross technical provisions are used as a proxy measure of the proportion of linked business.

Chart 75: Non-life insurers' underwriting profits and investment income and gains



Source: Central Bank of Ireland.
Notes: Data are an aggregation of domestically focused high-impact firms who collectively write approximately 80 per cent of Irish risk-business. Profit/loss on sale of investments includes realised and unrealised gains and losses. Last observation: 2017H1.

effects on the Irish economy arising from Brexit presenting a risk to the sector.

The premium income of the domestic life insurance sector increased by 18 per cent in the first half of 2017 compared to the same period in 2016, with all business segments experiencing growth (Chart 73). Pension and group risk business grew strongly as employment conditions continued to improve. The decline in firms' retail business segments in 2016, highlighted in the last Review, were reversed in the first half of 2017. In the retail protection segment, premium income increased by 1.9 per cent in a competitive market, following five consecutive years of negative growth.⁶⁵

The retail investment segment of the sector performed strongly, increasing by 21.1 per cent in 2017H1 compared to the same period in 2016. Unit-linked products are the main product offering by Irish insurance firms, comprising almost 80 per cent of firms' technical provisions, compared with less than 20 per cent for some EU Member States (Chart 74). While the prevailing low interest rate environment does not pose a direct risk to life insurers offering such products, financial market volatility could affect demand negatively. A sustained fall in asset prices could reduce fee income, an important component of profitability, and could prompt an increase in lapses by policyholders.

Foreign-risk business greatly outweighs Irish-risk business in the life insurance sector in Ireland. Cross-border life insurance firms typically do not operate in the Irish market but focus on specific European markets with Italy and the UK accounting for 85 per cent of the business. As with the domestic market, unit-linked investment products are the dominant product offering in this sector. The sustainability of firms' business models is dependent on Italian banks distributing their product offering and the potential effect Brexit may have on firms' ability to operate on a FOS or FOE basis in the UK market.

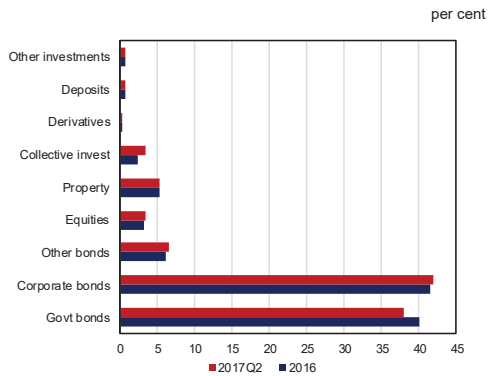
Non-life insurance

The outlook for the non-life insurance sector is improving. In aggregate, the domestically-focused, high-impact non-life insurance firms made an aggregate underwriting profit in the first half of 2017 on their domestic and foreign business following four years of underwriting losses (Chart 75). The return to profitability is largely due to increases in policy premiums in recent years, particularly in the motor book of business, and some stabilisation in the development of claims.

Against this improving operating environment, challenges arise in the non-life sector. While increases in premium rates from 2014 onwards initially resulted in a loss of business for some non-life firms, the rate rises are now translating into increases in premium income. Premium income for the Irish-risk business of the high-impact domestic non-life firms rose by 15 per cent in 2016 with the motor book of business growing particularly strongly, by 22

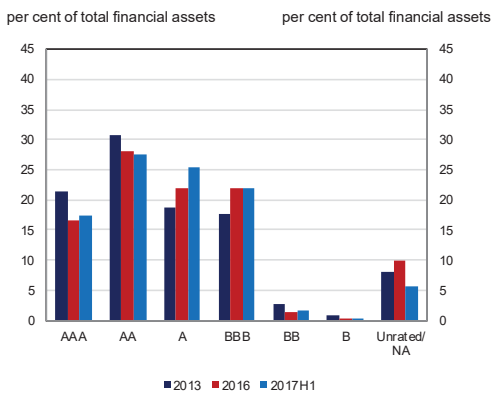
⁶⁵ Protection insurance to the retail market includes income, mortgage and payment protection insurance.

Chart 76: Non-life insurers' investment asset allocation



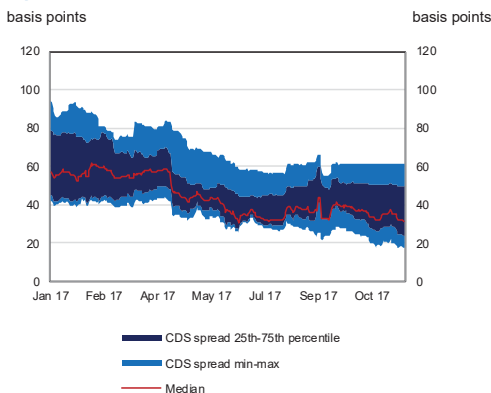
Source: Central Bank of Ireland.

Chart 77: Non-life insurers' financial asset quality



Source: Annual reports and Central Bank of Ireland.
Notes: The sample comprises high-impact firms. Under Solvency II the data for 2016 and 2017 the credit ratings are provided as credit quality steps with a scale of 0-6. These steps have been mapped to the credit rating equivalent in accordance with regulations. NA refers to no rating being available.

Chart 78: CDS spreads of reinsurance groups with a presence in Ireland



Source: Bloomberg.
Note: Last observation: 28 November 2017.

per cent. Firms operating on a branch (FOE) basis remain a competitive force in the Irish market and saw increases in premium income of 37 per cent in 2016.⁶⁶ The presence of managed general agents (MGAs) is also a source of competition in the market.⁶⁷ Should competitive pressures prompt firms to re-engage in aggressive price competition, it could erode the gains made in returning the sector to profitability.

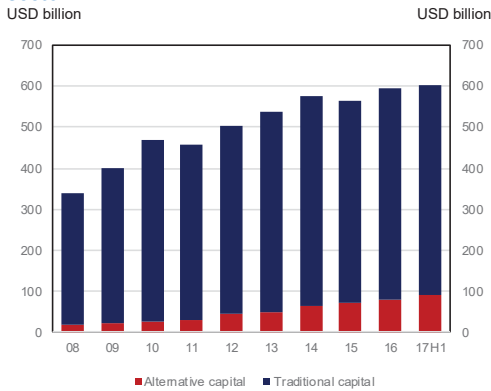
The performance of the motor and property books of business is improving as an increasing number of domestically-focused high-impact non-life firms' combined ratios were below 100 per cent in the first half of 2017.⁶⁸ In the case of the property business, this was mainly due to the absence of major weather events. The costs of Storm Ophelia will, in the main, be covered by firms' reinsurance programmes and are unlikely to have a substantial impact of firms' profitability. In response to uncertainty in the claims environment, where the frequency and cost of claims were increasing, firms have instigated increases in technical provisions in recent years.⁶⁹ While some stabilisation in the claims environment is now evident, uncertainty remains for firms due to the delay in the introduction of legislation for periodic payment orders and the extent to which changes in the Ogden rate in the UK might influence claims awards in Ireland.⁷⁰

Firms' investment income remains suppressed in the current low interest rate environment and does not bolster firms' profitability, as was previously the case (Chart 75). Investment income increased by 7.7 per cent in the first half of 2017 compared to the same period in 2016, although it was offset partially by the realised and unrealised losses on investments. A low interest environment may lead firms to raise their holdings of risky assets in the expectation of increasing investment income. While there has been some shift in asset allocation between sovereign and corporate bonds in recent years there is little evidence of a marked shift by non-life firms into other investment asset classes (Chart 76). The decline in the credit quality of firms' financial assets in the period 2013 to 2017 is largely explained by firms holding onto assets that have been downgraded, rather than those firms actively chasing yield (Chart 77). There is evidence in other euro area countries of insurers investing in riskier assets as well as considering increased exposure to alternative investments, such as loans for infrastructure and property.⁷¹

Although a rise in interest rates would benefit the sector by increasing investment income, an abrupt rise in interest rates due to a shift in risk premia could pose challenges for firms if widespread rating downgrades were to follow. Corporate credit rating downgrades would increase firms' required capital under

⁶⁶ This figure does not include FOS providers and FOE branches which are not required to submit National Specific Template data.
⁶⁷ A managed general agent (MGA), is a wholesale insurance intermediary with the authority to accept placements from retail agents on behalf of an insurer. MGAs receive commission on the insurance sold and are not liable in the event of the insurer being unable to pay out on claims.
⁶⁸ Combined ratios are calculated as the cost of incurred claims and expenses as a percentage of earned premium income. A combined ratio below 100 per cent indicates that a company is making an underwriting profit, while a ratio above 100 per cent means that the cost of claims is greater than the premium earned, resulting in an underwriting loss.
⁶⁹ Technical provisions are the amount an insurer needs to fulfil its obligations and settle all expected commitments to policyholders arising over the lifetime of the insurer's portfolio of insurance contracts.
⁷⁰ The Ogden discount rate is applied by courts in the UK when assessing lump sum awards for personal injury claimants. It is the net rate of return (discount) that the claimant might expect to receive from a reasonably prudent investment of lump sum compensation. A cut in the Ogden rate from 2.5 per cent to -0.75 per cent took effect in March 2017 although the rate is likely to increase to between 0 per cent and 1 per cent following a review of the rate setting process.
⁷¹ See [ECB Financial Stability Report May 2017](#).

Chart 79: Capital levels of global reinsurance sector



Source: AON Benfield.
 Notes: Traditional capital is the capital of traditional reinsurance firms. Alternative capital is a measure of the reinsurance supply capacity facilitated by capital markets. Last observation: 2017H1.

Solvency II. Higher interest rates would also add to volatility in firms' capital base as unrealised gains would be eroded by falling bond prices. Nevertheless, domestic non-life insurers are currently maintaining strong solvency positions in line with Solvency II capital requirements.

Reinsurance

The reinsurance sector in Ireland is internationally focused. The sector, accordingly, contends with the same operating challenges as the sector globally. Reinsurance firms domiciled in Ireland are subsidiaries of global reinsurance groups. While this can potentially benefit the firm through intra-group financing and the pooling and diversification of risk, it also creates exposures to other group entities as well as a reliance on the financial strength of the parent company.

The outlook for the global sector continues to be rated as negative by a number of rating agencies as operating conditions are expected to remain competitive and challenging.⁷² Over recent years, firms have contended with falling premium prices, low investment returns, and excess supply.

A benign loss environment has served to support profitability and capital levels in the reinsurance sector in recent years. Natural catastrophic events in North America and the Caribbean in the second half of 2017, however, are likely to have an impact on the sector, with estimates of insured losses as high as \$119 billion.⁷³ While reinsurance firms' CDS spreads spiked at the time these events occurred, they quickly reverted to previous levels (Chart 78) as the global sector is thought to be sufficiently well capitalised to withstand their financial impact. Irish reinsurers carry little catastrophe risk on their books and so should not be affected directly by these events, although other group entities may have significant exposures.

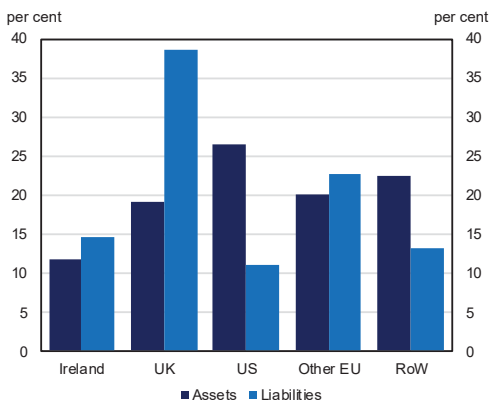
In the first half of 2017, global reinsurers' aggregate capital levels reached a high of US\$605 billion (Chart 79).⁷⁴ Low levels of catastrophe losses in recent years has contributed to firms building up traditional reinsurance capital. High levels of alternative capital continue to flow into the sector as financial market investors undertake a search for yield in the low interest rate environment.⁷⁵ Securitisation vehicles domiciled in Ireland have issued 7.5 per cent (\$2.2 billion) of the outstanding volume of insurance-linked securities (ILS) in the global market, third highest behind Bermuda and the Cayman Islands.⁷⁶ It is likely that some tranches of catastrophe bonds will have exposures to recent weather events in the US with investors suffering losses.⁷⁷ This may affect investors' risk appetite for such products in the future.

⁷² See [AM Best's Special Report: Down but not out: Reinsurers look to reposition amid market disruption](#) and [Fitch Ratings Global Reinsurance Guide 2018](#).
⁷³ See estimates by [Validus](#): the industry losses, excluding losses to the National Flood Insurance Program, are estimated as follows: Hurricane Harvey \$20 - \$30 billion, Hurricane Irma \$25 - \$40 billion, Hurricane Maria \$25 - \$45 billion and Mexico City Earthquake \$2 - \$4 billion.
⁷⁴ See [AON's Reinsurance Market Outlook, September 2017](#).
⁷⁵ Insurance-linked securities (alternative capital) are a means of transferring insurance risk to investors. Instruments include catastrophe (cat) bonds, sidecars, industry-loss warrants and collateralised reinsurance. Damage from US hurricanes is the predominant risk covered in the global ILS market (see [Standard and Poor's Global Reinsurance Highlights 2017](#)).
⁷⁶ See [Bermuda Monetary Authority, Bermuda Insurance-Linked Securities \(ILS\) Market Report September 2017](#).
⁷⁷ See [AM Best's Briefing: Hurricane Irma to test catastrophe bond market](#) and [FT article: Investors in catastrophe bonds flee Irma fury](#).

4.3 Funds and vehicles sector

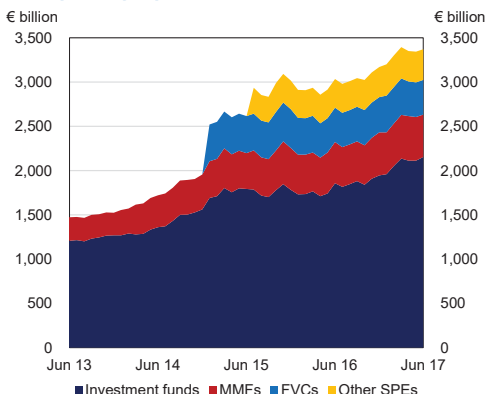
Certain asset valuations are at or above pre-2007 levels and the possibility of revaluations is a downside risk. A stronger euro has already caused asset valuations to fall in the vehicles sub-sectors and in money market funds (MMFs) in 2017Q2. Market risks have prompted asset managers to diversify, reducing, for example, holdings in US dollar-denominated assets and negative-yielding euro bonds. Some small changes in risk metrics have occurred in the first six months of 2017. Liquidity transformation for MMFs has risen slightly and is above the two-year average. At an EU level, weekly and daily liquidity in MMFs has been falling since 2012. Maturity transformation in investment funds (IFs) remains at an elevated level, above its two-year average. These increased risks and historically high asset valuations all represent downside risks to the sector.

Chart 80: Balance sheet of the funds and vehicles sector by location



Source: Central Bank of Ireland.
Notes: Data as of 2017Q2. Figures are based on aggregate total assets and liabilities for IFs, MMFs, FVCs, and other SPEs.

Chart 81: Total assets in the Irish authorised funds and special purpose vehicles sector



Source: Central Bank of Ireland.
Notes: Monthly data between 2013Q2 and 2017Q2. Other SPE reporting started in 2015Q3.

Overview

Ireland is an important domicile for the global funds and vehicles sector, with 41 per cent of euro area MMFs' assets, 17 per cent of euro area IFs' assets and 22 per cent of euro area FVCs' assets. The majority of assets and liabilities are non-domestic and thus the Irish economy has limited direct exposure to the sector (Chart 80). Developments and trends in the sector in Ireland, nevertheless, can be relevant in a wider global financial stability context. The funds and vehicles sector channels finance on behalf of investors to many other sectors of the economy.⁷⁸ Since the financial crisis, this sector has become an increasingly important source of finance.⁷⁹ It has been argued that market-based finance, particularly that which is equity-based, is more stable than bank-based debt-finance.⁸⁰ However, risks can emanate from the sector. For example, unexpected large margin calls or redemption requests can cause fire sales of assets and runs. These can amplify risk premia and make markets dysfunctional, which can reduce the availability of credit to the real economy.

Recent developments

Sector valuations grew in 2017Q1 but declined in 2017Q2 (except for IFs) mainly due to euro appreciation (Chart 81). Funds' assets (IFs and MMFs) grew by €202 billion in the first half of 2017 to €2.6 trillion at 2017Q2. Year on year funds' growth was 13.4 per cent. In 2017Q2, the vehicle sector's total assets fell by 4 per cent from the previous quarter to €736.6 billion and rose 3 per cent year-on-year. Assets denominated in US dollar and sterling fell in euro terms due to the changes in exchange rates.

In the six months to end-June 2017, the sum of net flows for IFs and MMFs were €153.6 billion and €17.5 billion, respectively (Chart 82).⁸¹ MMFs' valuations in particular were affected by the US dollar weakening relative to the euro. As Irish-domiciled MMFs

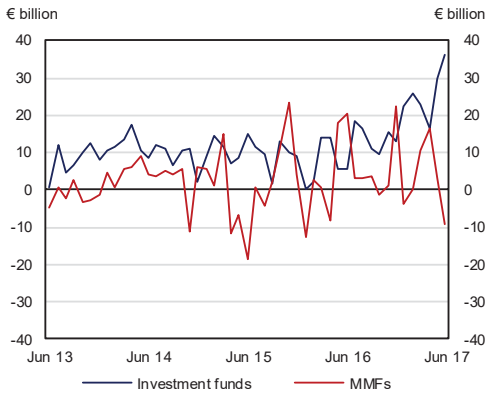
⁷⁸ Financial institutions including banks, governments and non-financial corporations (NFCs) for example.

⁷⁹ Baranova, Y. et al. (2017). "Simulating Stress Across the Financial System: The Resilience of Corporate Bond Markets and the Role of Investment Funds." Bank of England Financial Stability Paper 42. In this paper, it is noted that nearly all net credit raised by NFCs has been through the issuance of tradeable securities. In the euro zone, corporate bonds as a percentage of total bond and loan finance has increased since the financial crisis from 7 per cent to 12 per cent.

⁸⁰ Buch, C. (2015). "Finance and Growth - Guidelines for Financial Sector Reform."

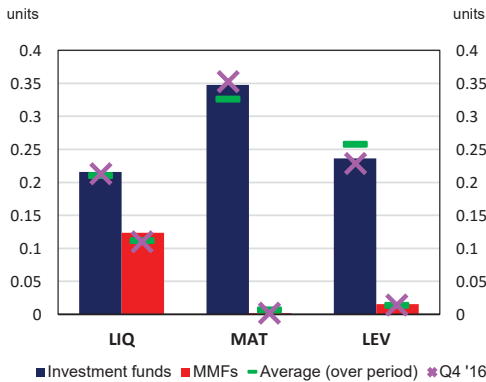
⁸¹ The limitation with this metric is that as it sums the redemptions over the month, it does not indicate the size of the within month changes or the timing within the month of the redemptions.

Chart 82: Monthly net flows into funds



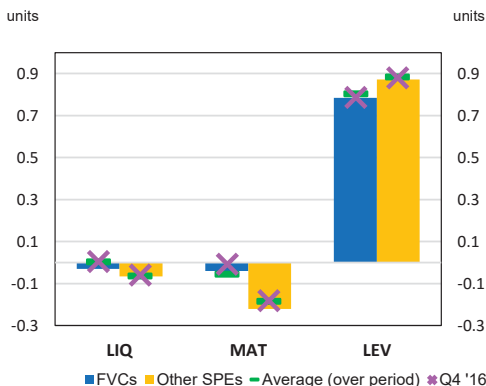
Source: Central Bank of Ireland.
Notes: Data between 2013Q2 and 2017Q2. Net flows are subscriptions minus redemptions calculated at the fund level and aggregated up to the fund type. Net subscriptions are above the x-axis whereas net redemptions are below the x-axis.

Chart 83: IF and MMF Risk Metrics



Source: Central Bank of Ireland.
Notes: Liquidity Transformation (LIQ) is defined as (Short Term Liabilities + Redeemable Equity - Liquid Assets)/Total Assets. Maturity transformation (MAT) is defined as (Long Term Assets - Long Term Liabilities - Non-Redeemable Equity)/Total Assets. Financial Leverage (LEV) is defined as (Total Assets Under Management/Total Net Asset Value)-1. Period for calculation of average is 2015Q1 to 2017Q1. Purple cross represents figure at Q42016.

Chart 84: FVC and other SPEs Risk Metrics



Source: Central Bank of Ireland.
Notes: Liquidity Transformation (LIQ) is defined as (Short term Liabilities - Liquid Assets)/Total Assets. Maturity transformation (MAT) is defined as (Long Term Assets - Long Term Liabilities - Non-Redeemable Equity)/Total Assets. Financial Leverage (LEV) is defined as (Loan Liabilities + Debt Securities Issued)/Assets Under Management. Period for calculation of average is 2015Q1 to 2017Q1 for FVCs and 2015Q3 to 2017Q1 for other SPEs.

are mostly prime (i.e., include corporate securities rather than sovereign bonds), large redemption requests can have amplification effects.⁸² Thus, as MMFs are systemically important in a global context, their redemptions should be closely monitored for excessive outflows.

Over the past few years, MMFs have exhibited negative flows whereas IFs have maintained positive net flows. The largest negative flow was €9.3 billion in June 2017. Statistical analysis suggests that current negative flows in MMFs are not unusual.^{83,84}

Liquidity transformation

Liquidity transformation risk occurs if the fund or vehicle has more liquid liabilities than liquid assets (i.e., a value greater than zero in Chart 83 and Chart 84). If a fund or vehicle is not able to meet requests for outflows, this can cause runs as investors fear they will make losses on their investments. These runs can amplify financial sector stress causing risk premia to rise and making finance harder to obtain. Following the Brexit vote in June 2016, a number of UK property funds suspended outflows to avoid fire sales of property assets or a run.

Liquidity transformation levels were generally stable at end-June 2017, although there was a slight rise in liquidity transformation amongst MMFs, when compared to the previous six months and to the two-year average (Chart 83). At an EU level, weekly and daily liquidity in MMFs has been falling since 2012.⁸⁵ In the case of FVCs (securitisation vehicles) and other non-securitisation special purpose entities (other SPEs), liquidity transformation is not a key risk as liabilities are generally longer-term debt obligations (Chart 84).

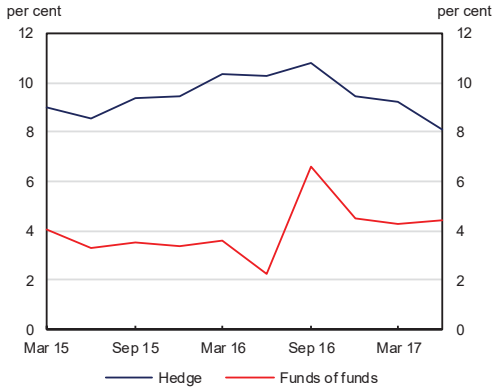
Maturity transformation

Maturity transformation can pose risks to financial stability as a maturity mismatch between assets and liabilities can result in funds or vehicles being unable to meet liability claims. This is a particular concern if paired with heightened liquidity transformation. Maturity transformation of greater than zero indicates that long-term assets are being financed by short-term liabilities. The heightened weighted average life of the debt portfolios of bond, mixed and other categories of IFs was maintained in the 6 months to end-June 2017, continuing the higher level of maturity transformation relative to the two-year average (Chart 83). The MMF sector is by design and by regulation focused on shorter-dated assets and as such, maturity transformation is not a feature of the MMF sector.⁸⁶

As a result of the business model used by FVCs and other SPEs, liabilities are generally longer dated than assets, leading to negative levels of maturity transformation (Chart 84).⁸⁷ There was

⁸² Large redemptions can amplify financial instability through interconnectedness with other parts of the financial system.
⁸³ MMF redemptions follow a Gaussian distribution, as confirmed by the Jacque-Bera test. The mean flow is a positive €2.4 billion, with a standard deviation of €8.4 billion. This suggests that a negative flow of greater than €14.37 billion should occur less than 2.5 per cent of the time. A negative flow of €22.8 billion should occur less than 0.5 per cent of the time.
⁸⁴ The flow of investment funds was found not follow a Gaussian distribution (Probability = 0.00).
⁸⁵ See Chart 27 in *ESRB Shadow Banking Monitor May 2017*. Also, Chart 14 indicates there was no notable evidence of liquidity transformation rising in the sample period for MMFs.
⁸⁶ UCITS regulation currently restricts the maturity of MMFs' assets. A new regulation will come into force in 2018, which will further restrict MMF investment activity.
⁸⁷ These vehicles are often wound up prior to the maturity date of the liabilities.

Chart 85: Value at risk (1-month) of Irish domiciled alternative investment funds



Source: Central Bank of Ireland.
 Note: Quarterly data between 2015Q1 and 2017Q2. Value at risk is calculated at the 99% confidence level for a holding period of 1 month and as a weighted average percentage of net asset value. The lookback periods vary, but are one year at a minimum. The average number of hedge funds in the sample is 46 while the average number of fund of funds is 26 which represents just over 1 per cent of the Irish domiciled fund population.

a slight decrease in negative maturity transformation in other SPEs, which may indicate that the vehicles are issuing longer-dated debt.

Financial leverage

Leverage in funds and vehicles can act to amplify risks by increasing the call on the entities' assets when under stress. Leverage levels are generally lower than the two-year average, except for MMFs where leverage is not a significant feature ((Chart 83) and (Chart 84)). FVCs and other SPEs are highly leveraged by design (i.e., their business model is such that they are thinly capitalised vehicles funded largely through debt). Given their structure, FVCs and other SPEs are open to step-in risk, whereby the sponsoring/consolidating body (e.g. a bank) may step in to meet the vehicles' liabilities.^{88,89} During the financial crisis, some SPEs struggled with meeting payments to investors and were bailed out by their sponsoring institution. This support was provided to protect the sponsor's brand, which is either explicitly or implicitly attached to the SPE at origination. Thus, the risk here is for investors in the SPE as well as for the investors in their sponsors. Step-in risk may not be explicit in the reported data and is thus difficult to measure. The BIS and the EBA are currently working to improve transparency of step-in risk and similar exposures.⁹⁰

Alternative investment funds

Alternative investment funds are funds subject to AIFMD.⁹¹ Chart 85 shows the value at risk (VaR) estimates of two categories of funds reporting under AIFMD to the Central Bank. VaR measures the potential maximum loss in value of a fund's portfolio over a defined period at a given probability. A sharp rise in VaR would indicate that funds are investing in riskier assets, which in turn raises their potential loss. The risk levels for hedge funds appear relatively stable over the period since early 2015 whereas there was some volatility in VaR for funds of funds (Chart 85).⁹² The VaR for hedge funds, however, is greater than that of funds of funds. This is due to the fact that hedge funds generally take more focused market positions whereas funds of funds are more diversified by design.

⁸⁸ See Barrett, D., Golden, B. and Godfrey, B. "New Data Collection on Special Purpose Vehicles in Ireland: Initial Findings and Measuring Shadow Banking." Central Bank of Ireland Quarterly Bulletin, 4 2016, 71-94 for definitions of sponsors and consolidators.

⁸⁹ For a discussion of step-in risk, see Identification and Management of Step-In Risk -Second Consultative Document, BIS, March 2017.

⁹⁰ See EBA/GL/2015/20.

⁹¹ AIFMD is the Alternative Investment Fund Managers Directive and Regulation (see Introduction to Alternative Investment Funds and <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:174:0001:0073:EN:PDF>).

⁹² Hedge funds are funds which receive some performance related fees whereas fund of funds are funds which hold shares in other funds.

Abbreviations

Country abbreviations follow the [European Union standards](#).

AIB	Allied Irish Bank	IFSC	International Financial Services Centre
AIFMD	Alternative Investment Fund Managers Directive	IFRS	International financial reporting standards
APE	Annual premium equivalent	IMF	International Monetary Fund
APP	Asset purchase programme	IPD	Investment Property Databank
BCMS	Building control management system	KBC	Kredietbank ABB Insurance CERA Bank
BER	Building energy rating	LTI	Loan to income ratio
BIS	Bank of International Settlements	LTV	Loan to value ratio
BOI	Bank of Ireland	MFR	Macro-Financial Review
BPFI	Banking and Payments Federation Ireland	MFI	Monetary financial institution
BRRD	Banking Recovery and Resolution Directive	MMF	Money market fund
BTL	But-to-let	MNC	Multinational corporation
CBRE	Coldwell Banker Richard Ellis Group	MSCI	Morgan Stanley Capital International
CCyB	Countercyclical capital buffer	NAMA	National Asset Management Agency
CDS	Credit default swaps	NFC	Non-financial corporation
CET1	Common equity tier 1	NPL	Non-performing loan
COREP	Common Reporting Framework	NTMA	National Treasury Management Agency
CRD	Capital Requirements Directive	O-SII	Other Systemically Important Institutions
CRE	Commercial real estate	PDH	Primary dwelling house
CSO	Central Statistics Office	PMI	Purchasing managers' index
DPD	Days-past-due	PTSB	Permanent PTSB
EA	Euro Area	QSFR	Quarterly summary financial return
EAPP	Expanded Asset Purchase Programme	ReBo	The Credit Union Restructuring Board
EBA	European Banking Authority	REIT	Real Estate Investment Fund
EBS	Educational Building Society	RORWA	Return on risk-weighted assets
EC	European Commission	RWA	Risk-weighted asset
ECB	European Central Bank	SBCI	Strategic Banking Corporation of Ireland
EEA	European Economic Area	SCSI	Society of chartered surveyors of Ireland
EFSM	European Financial Stabilisation Mechanism	SME	Small and Medium Enterprise
EIOPA	European Insurance and Occupational Pensions Authority	SNL	Savings and Loan Financial
EME	Emerging market economies	SPV	Special Purpose Vehicle
ESRB	European Systemic Risk Board	SRP	Systemic risk pack
ESRI	Economic and Social Research Institute	SSB	Second and Subsequent Buyer
EU	European Union	SVR	Standard variable rate
FDI	Foreign Direct Investment	USD	United States Dollar
FINREP	Financial reporting	VAT	Value added tax
FOE	Freedom of establishment	VIX	Chicago Board Options Exchange Volatility Index
FOMC	Federal Open Market Committee	WEO	World Economic Outlook
FOS	Freedom of service		
FTB	First-Time Buyer		
FVC	Financial vehicle corporations		
GDP	Gross domestic product		
GNI	Gross national income		
IF	Investment fund		

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