



Banc Ceannais na hÉireann
Central Bank of Ireland

Eurosystem



Financial Stability Review 2019: I

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Notes

1. Unless otherwise stated, this document refers to data available on 28 June 2019.
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.
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 Central Bank serves the public interest by safeguarding monetary and financial stability and by working to ensure that the financial system operates in the best interests of consumers and the wider economy.

Contributing to the safeguarding of financial stability, the Central Bank evaluates the main risks facing the financial system and assesses the resilience of the financial system to those risks. A resilient financial system is one that is able to provide services to Irish households and businesses, both in good times and in bad. The Central Bank's policy actions seek to ensure that the financial system is able to absorb, rather than amplify, adverse shocks.

Over the past decade, the tools available to the Central Bank to safeguard financial stability have expanded significantly, including through new macroprudential instruments. The Central Bank has actively deployed these tools to strengthen the resilience of the financial system.

This expanded responsibility underscores the continued need for transparency and accountability. In this context, the Central Bank is revamping the way it communicates its judgements around financial stability with the publication of the *Financial Stability Review*.

The structure of this publication mirrors the overall approach the Central Bank takes in reaching a judgement around its macroprudential policy stance.

- The first section outlines the Central Bank's assessment of the main risks facing the Irish financial system over the short to medium term.
- The second section outlines the Central Bank's assessment of the resilience of the domestic financial system to adverse shocks and its ability to absorb, rather than amplify, shocks of this nature.
- The third section explains the Central Bank's policy actions to safeguard financial stability and ensure that the resilience of the financial system is proportionate to the risks it faces.

Ireland is host to a large and diverse financial sector. A growing part of that financial sector serves international clients, with limited direct implications for the domestic economy. This publication focuses on the segments of the financial sector that provide services to Irish households and businesses.

The *Financial Stability Review* reflects, and is informed by, the deliberations of the Central Bank's Financial Stability Committee and Macroprudential Measures Committee. The aim of the *Review* is not to provide an economic forecast, but instead focuses on the potential for negative outcomes to materialise. The Central Bank is committed to transparency over its judgements around financial stability and plans to use this publication as a key vehicle to explain the policy actions taken, within its mandate, to safeguard financial stability.

Réamhrá

Freastalaíonn an Banc Ceannais ar leas an phobail trí chobhsaíocht airgeadaíochta agus airgeadais a choimirciú agus trína áirithiú go bhfuil an córas airgeadais ag feidhmiú ar mhaithe le leas na dtomhaltóirí agus leas an gheilleagair níos leithne.

Agus é ag cur le cosaint na cobhsaíochta airgeadais, déanann an Banc Ceannais measúnú ar na príomhrioscaí atá os comhair an chórais airgeadais agus ar athléimneacht an chórais airgeadais in aghaidh na rioscaí sin. Is córas airgeadais athléimneach é córas inar féidir seirbhísí a chur ar fáil do theaghlaigh agus do ghnólachtaí Éireannacha i dtréimhsí maithe agus i ndrochthréimhsí araon. Le gníomhaíochtaí beartais an Bhainc Ceannais, féachtar lena áirithiú go bhfuil an córas airgeadais in ann turraingí dochracha a iompar, agus nach ndéanfaidh sé iad a mhéadú.

Le deich mbliana anuas, tá leathnú suntasach déanta ar na huirlisí atá ar fáil don Bhanc Ceannais chun cobhsaíocht airgeadais a chosaint, lena n-áirítear uirlisí macrastuamachta nua. Tá úsáid ghníomhach bainte as na huirlisí sin chun athléimneacht an chórais airgeadais a neartú.

Leis an bhfreagracht bhreise seo, cuirtear béim ar an ngá leanúnach atá le trédhearcacht agus le cuntasacht. Sa chomhthéacs sin, tá an Banc Ceannais ag déanamh athnuachana ar an gcaoi a gcuireann sé a bhreithnithe faoi chobhsaíocht airgeadais in iúl le foilsiú an *Athbhreithnithe Cobhsaíochta Airgeadais*.

Is léiriú é an foilseachán seo ar an gcur chuige a ghlacann an Banc Ceannais chun breithniú a dhéanamh faoina staid maidir le beartas macrastuamachta.

Sa chéad mhír, déantar cur síos ar mheasúnú an Bhainc Ceannais ar na príomhrioscaí atá roimh an gcóras airgeadais Éireannach sa ghearrthéarma agus sa mheántéarma.

Sa dara mír, déantar cur síos ar mheasúnú an Bhainc Ceannais ar athléimneacht an chórais airgeadais intíre in aghaidh turraingí dochracha agus a inniúlacht chun rioscaí den sórt sin a iompar, seachas a mhéadú.

Sa tríú mír, déantar cur síos ar ghníomhaíochtaí beartais an Bhainc Ceannais chun an chobhsaíocht airgeadais a chosaint agus chun a chinntiú go bhfuil athléimneacht an chórais airgeadais comhréireach i dtaca leis na rioscaí atá roimhe.

Tá córas airgeadais mór agus ilchineálach in Éirinn. Tá fás ag teacht ar an gcuid sin de sheirbhísí eárnála airgeadais a fhreastalaíonn ar chliaint idirnáisiúnta, agus tá impleachtaí díreacha teoranta ann don gheilleagar intíre. Díritear san foilseachán seo ar na codanna den chóras airgeadais a chuireann seirbhísí ar fáil do theaghlaigh agus do ghnólachtaí Éireannach.

Léirítear breithnithe ó Choiste um Chobhsaíocht Airgeadais agus ó Choiste um Bearta Macrastuamachta an Bhainc Ceannais san *Athbhreithniú Cobhsaíochta Airgeadais* agus tá na breithnithe sin mar bhonn faisnéise leis an athbhreithniú. Ní hé is aidhm leis an Athbhreithniú réamhaisnéis eacnamaíoch a chur ar fáil. Ina ionad sin, díritear ar an bhféidearthacht go dtiocfadh torthaí diúltacha chun cinn. Tá an Banc Ceannais tiomnaithe do thrédhearcacht a chuid breithnithe maidir le cobhsaíocht airgeadais agus tá sé beartaithe aige an foilseachán seo a úsáid mar bhealach chun na gníomhaíochtaí beartais arna nglacadh laistigh dá shainordú, chun an chobhsaíocht airgeadais a chosaint, a mhíniú.

Overview

The main risks to domestic financial stability stem from external developments. As a small, highly-globalized economy, with a significant reliance on foreign-owned multinational enterprises, Ireland is always particularly exposed to risks stemming from abroad. External risks are particularly elevated at the moment, both due to cyclical developments – such as accommodative global financial conditions – and structural developments – such as the risk of a disorderly Brexit. Domestically, credit dynamics point to a continuing gradual build-up of cyclical systemic risk. However, even as the economy approaches full capacity, evidence of material imbalances across credit and asset prices remains limited.

The main sources of risk to domestic financial stability are:

A disorderly Brexit: The Central Bank – working with other authorities domestically and internationally – has taken action to mitigate the most material and immediate risks to the disruption of financial services between the EU and the UK in a disorderly Brexit. The main outstanding source of risk to financial stability and the wider economy is a larger-than-expected macroeconomic shock in a disorderly Brexit. This could arise if the expected negative impact of a disorderly Brexit through trade channels is compounded by a sharp increase in uncertainty and fall in confidence, with knock-on effects to Irish economic activity.

An abrupt tightening in global financial conditions: International investor appetite for risk remains elevated, despite lower global growth prospects and increased policy uncertainty. Corporate debt in many advanced economies has risen, facilitated by market-based, non-bank finance. Riskier segments of the corporate debt market have grown particularly quickly in recent years, as evidenced by developments in the leveraged loan market in the United States. An abrupt reversal in investor risk appetite could lead to sharp falls in asset prices and either cause or amplify adverse shocks to global economic activity. Ireland remains vulnerable given both direct and indirect effects.

A re-emergence of sovereign debt sustainability concerns in the euro area: Government debt-to-GDP ratios remain elevated across parts of the euro area and fiscal consolidation has stalled in some countries. Euro area banks still have significant exposures to their domestic sovereigns, and these exposures are increasing in some countries. Further downward revisions to euro area growth expectations, higher political uncertainty or a general reappraisal of risk could lead to a re-emergence of European sovereign debt sustainability concerns. Ireland remains vulnerable given the elevated debt position of the government.

An abrupt fall in Irish property prices: Despite recent moderation in price growth across both residential and commercial real estate markets, valuations have grown significantly in recent years and, in the CRE market, the supply pipeline is material. While valuations appear close to fundamentals, an external shock leading to a decline in domestic macroeconomic activity or a fall in investor sentiment towards property could interact with domestic vulnerabilities, causing prices to fall sharply.

Banking sector profitability and the possibility of elevated risk-taking behaviour: Irish retail banks continue to face challenges to the sustainability of their profitability through an

economic cycle, which may hamper their ability to compete with international peers for investment. These challenges include management of non-performing loans (NPLs), sustaining the profitability of corporate and household lending and investing to adapt to a changing operating environment, while containing costs. Over time, such challenges to profitability could incentivise banks to take on excessive risk to meet return expectations, leading to an unsustainable pro-cyclical expansion in credit and increasing the risk of additional NPLs in future.

Overall, risks to financial stability have increased slightly over the past six months and some of the possible triggers have become more imminent. The domestic credit environment has continued its cyclical upturn. Globally, risk appetite has remained elevated, extending the period of accommodative financial conditions. At the same time, some of the potential triggers for these risks have become more imminent. For example, global growth prospects have been downgraded and uncertainty around global trade arrangements has increased. In addition, a key lesson from the last crisis is that different risks can crystallise at the same time, challenging financial stability. It is therefore important to recognise that the risks identified above could interact. For example, a disorderly Brexit could act as a trigger for an abrupt tightening in global financial conditions and lead to a macroeconomic disruption in Ireland, both of which would have adverse implications for domestic property prices.

With reference to the above risks, the Central Bank assesses the resilience of the financial system and the economy –the ability of the system to absorb, rather, than amplify shocks.

The resilience of the domestic banking system has strengthened considerably in recent years, but vulnerabilities remain. The aggregate CET1 capital ratio of the domestic banking system stood at 17 percent at end-2018, double the level it was five years before that. Domestic lending is now funded primarily through retail deposits, rather than less stable sources of short-term, wholesale financing. NPLs on domestic banks' balance sheets have fallen by 79 per cent since 2014. Overall, the banking system is now better able to absorb shocks, rather than amplify them. Nonetheless, further progress is needed to strengthen resilience and maintain sustainable profitability in a changing operating environment. The level of NPLs is still above international standards and a sustainable reduction in NPLs remains a supervisory priority. Continued progress is also required to improve bank resolvability, including through issuance of additional loss-absorbing liabilities.

Domestic households and companies have also become more resilient, but a significant number of households with restructured mortgages could be particularly vulnerable to economic stress. The household sector has reduced its indebtedness substantially in recent years and the serviceability of that debt has improved, partly due to lower interest rates. The share of mortgagors in negative equity has fallen from 40 per cent in 2012 to 5 per cent in 2018. Still, the level of aggregate household debt to income, at 123 per cent, remains high relative to international standards. There is also a significant number of restructured mortgages, which could be particularly vulnerable to a future economic downturn. In the corporate sector, SMEs have continued to reduce their debts. The level of debt owed by SMEs to Irish banks has fallen by more than a third over the past five years. Rather than borrowing, SMEs are increasingly using retained earnings to fund spending and investment.

Non-bank finance has become increasingly important for the domestic property market, but its resilience remains untested. While most Irish-resident funds invest abroad, they are also

becoming an increasingly important source of financing for the domestic real estate market. Investment funds now account for around a third of the estimated stock of investable commercial real estate. These funds allow investors to redeem their funds relatively infrequently, suggesting that the risk of forced sales driven by widespread redemptions is mitigated to some extent. Their average leverage has been broadly stable in recent years, but there is a small portion of funds with high leverage that merits particular focus. Overall, the resilience of this form of finance in its current scale remains untested in a stress.

The Central Bank uses its macroprudential policies for the banking sector to promote financial stability in Ireland and to mitigate the impact of negative shocks on the real economy. There are two facets to the objectives of macroprudential policy: first, to make the domestic financial system more resilient so that it can better withstand adverse shocks and continue to provide financial services to the real economy; second, to reduce the emergence of imbalances or vulnerabilities in the domestic financial system. Policy decisions consider the balance between the risks facing the economy and financial system and their resilience.

The Central Bank has kept the Countercyclical Capital Buffer (CCyB) rate at 1 per cent. The CCyB aims to strengthen the resilience of the banking sector to a future downturn. Consistent with the Central Bank's framework for the CCyB, a positive rate has been maintained given the sustained upward trajectory in indicators related to emerging cyclical systemic risk. The decision to maintain the CCyB rate at 1 per cent was taken under the assumption of no disorderly Brexit over the relevant time horizon. The Central Bank stands ready to adjust the CCyB rate in either direction as the risk environment evolves in a manner consistent with the objective of mitigating pro-cyclicality and supporting a sustainable supply of credit to the economy.

In November 2018, the Central Bank concluded its most recent review of the mortgage measures, with no change to the LTV and LTI limits or exemptions. The measures were found to be meeting their objectives in guarding against an excessive loosening of underwriting standards, strengthening both borrower and lender resilience, and minimising the potential for a credit-house price spiral emerging. The 2019 review will conclude in the second half of this year. In June 2019, the Central Bank Commission, following consultation with the Minister for Finance, decided to exempt lifetime mortgages from the LTI limit. These products do not have a contractual regular repayment of capital and interest, so the affordability of regular repayments, which is a primary concern of the LTI limit, is not applicable in these cases.

The Central Bank is aiming to complete the macroprudential framework for bank capital. The Irish economy is small and highly globalised, with a particular reliance on activity from foreign multinational companies. These characteristics mean that the economy is both more sensitive to developments in the global cycle and more prone to structural macroeconomic shocks. A resilient banking system requires sufficient capital buffers to absorb these structural shocks. Following a request by the Governor of the Central Bank in April 2019, the Minister for Finance has confirmed that the power to set a Systemic Risk Buffer (SyRB) is to be granted to the Central Bank to complete the macroprudential framework for bank capital. To support the precise design and calibration of the SyRB, the Central Bank is considering the overall level of bank capital that is appropriate for a small, highly-globalised economy, such as Ireland. This level of capital will inform the calibration of both cyclical and structural buffers.

Forbhreathnú

Eascaíonn na príomhrioscaí don chobhsaíocht airgeadais intíre as forbairtí seachtracha. Is geilleagar beag rí-dhomhandaithe í Éire a bhraitheann go suntasach ar fhiontair ilnáisiúnta i seilbh eachtrannach, agus bíonn sí i gcónaí nochtaithe do rioscaí eachtrannacha. Tá ardú ar leith ar rioscaí seachtracha faoi láthair, de bharr forbairtí timthriallacha - amhail dálaí airgeadais domhanda in-chomhfhoirmeach - agus forbairtí struchtúrtha - amhail an riosca maidir le Brexit mí-ordúil. Sa chríoch baile, tarraingíonn dinimic chreidmheasa aird ar charnadh céimnitheach leanúnach riosca shistéamaigh thimthriallaigh. Dá ainneoin sin, fiú agus an geilleagar ag teacht i dtreo lánchumais, is teoranta an fhianaise d'éagothroime ábhartha i bpraghsanna creidmheasa agus sócmhainní.

Is iad na príomhfhoinsí riosca don chobhsaíocht airgeadais intíre:

Brexit mí-ordúil: Tá gníomh glactha ag an mBanc Ceannais, agus é ag obair le húdaráis eile intíre agus go hidirnáisiúnta, chun na rioscaí ábhartha agus láithreacha is mó a mhaolú do chur isteach ar sheirbhísí airgeadais idir AE agus an Ríocht Aontaithe i gcás Brexit mí-ordúil. Is í an phríomhfhoinsé riosca don chobhsaíocht airgeadais agus don gheilleagar níos leithne turraing eacnamaíoch, ní ba mhó ná mar a bheifí ag súil leis, i gcás Brexit mí-ordúil. D'fhéadfadh sé sin teacht chun cinn má ghéaraítear ar thionchar Brexit mí-ordúil trí chainéil trádála le méaduithe géara ar éiginnteacht agus laghdú ar mhúinín, agus bheadh impleachtaí iarmharta aige sin ar ghníomhaíochta eacnamaíoch na hÉireann.

Daingniú tobann ar dhálaí airgeadais domhanda: Tá fonn riosca infheisteoirí idirnáisiúnta fós ard, in ainneoin ionchais fáis dhomhanda níos ísle agus éiginnteacht mhéadaithe maidir le beartas. Tá ardú ar fhiachas corparáideach i mórán geilleagair fhorbartha, arna eascú le maoiniú margadhbhunaithe neamhbhainc. Tá codanna níos rioscúla den mhargadh fiachais chorparáidigh tár éis fás go tapa le blianta beaga anuas, mar is léir ó fhorbairtí sa mhargadh iasachtaí gearáilte sna Stáit Aontaithe. D'fhéadfadh titim ghéar ar phraghsanna sócmhainní a bheith ann de bharr aisiompú tobann ar fhonn riosca infheisteoirí, rud a d'fhéadfadh turraingí diúltacha do ghníomhaíocht eacnamaíoch dhomhanda a chruthú nó a mhéadú. Tá Éire fós leochailleach i bhfianaise éifeachtaí díreacha agus indíreacha.

Inní an athuir faoi inmharthanacht fiachais cheannasaigh sa limistéar euro: Tá cóimheasa fiachais rialtais go OTI fós ard i gcodanna den limistéar euro agus tá comhdhlúthú fíoscach stoptha i roinnt tíortha. Tá risíochtaí suntasacha fós ag baint sa limistéar euro dá gceannasaigh intíre, agus tá na risíochtaí sin ag ardú i roinnt tíortha. Má bhíonn tuilleadh athbhreithnithe anuas ar ionchas fáis an limistéir euro, éiginnteacht pholaitiúil níos mó nó athbhreithniú ginearálta riosca ann, d'fhéadfadh inní maidir le hinmharthanacht fiachais cheannasaigh Eorpaigh teacht chun cinn arís. Tá Éire fós leochaileach i bhfianaise staid fiachais ard an rialtais.

Titim thobann ar phraghsanna réadmhaoine Éireannaí: In ainneoin modhnú le déanaí ar fhás praghsanna sa mhargadh cónaithe agus sa mhargadh eastáit réadaigh trádála, tá ardú suntasach ar luachálacha le blianta beaga anuas, agus i margadh CRE, tá an phíblíne soláthair ábhartha. Cé go ndealraíonn sé go bhfuil luachálacha gearr do bhuntosca, má bhíonn turraing

sheachtrach ann, as a n-eascródh laghdú ar ghníomhaíocht mhaicreacnamaíoch nó titim ar sheintimint infheisteoirí i leith réadmhaoine, d'fhéadfadh praghsanna titim go géar dá bharr.

Brabúsacht na hearnála baincéireachta agus an fhéidearthacht go mbeadh ardú ar iompar rioscúil: Tá dúshlán fós roimh bhainc thráchtála Éireannacha d'inmharthanacht bhrabúsachta tríd an timthriall eacnamaíoch, rud a d'fhéadfadh cur isteach ar a gcumas dul san iomaíocht le piaraí idirnáisiúnta le haghaidh infheistíochta. I measc na ndúshlán sin, tá bainistíocht iasachtaí neamhthuillmheacha, brabúsacht iasachtaí corparáideacha agus iasachtaí teaghlaigh a choimeád, agus infheistiú chun oiriúnú do thimpeallacht oibríochtúil dúshlánach, fad is a choimeádtar srian ar chostais. I gcaitheamh ama, d'fhéadfadh dúshlán dá leithéid don bhrabúsacht bainc a spreagadh le breis riosca a ghlacadh chun ionchais fáltais a shásamh, agus d'fhéadfadh leathnú comhthimthriallach do-mharthana ar chreidmheas agus riosca ardaithe NPLanna sa todhchaí a bheith ann dá bharr.

Ar an iomlán, tá méadú beag tagtha ar rioscaí don chobhsaíocht airgeadais le 6 mhí anuas agus tá cuid de na spreagthaí éirithe níos gaire. Leanadh leis an gcor chun feabhais timthriallach sa timpeallacht chreidmheasa intíre. Ar an leibhéal domhanda, tá fonn riosca fós ardaithe, agus tá síneadh le tréimhse na ndálaí airgeadais comhfhoirmeacha dá réir. Ag an am céanna, tá roinnt de na spreagthaí féideartha do na rioscaí sin éirithe níos gaire. Mar shampla, laghdaíodh ionchais fáis dhomhanda agus tá méadú ar éiginnteacht i dtaca le socruithe trádála idirnáisiúnta. Sa bhreis air sin, is príomhcheacht ón ngéarchéim dheireanach é gur féidir rioscaí éagsúla teacht chun cinn ag an am céanna, rud a thugann dúshlán na cobhsaíochta airgeadais. Mar sin, tá sé tábhachtach a aithint go bhféadfadh na rioscaí thuasluaite tionchar a imirt ar a chéile. Mar shampla, d'fhéadfadh Brexit mí-ordúil a bheith ina spreagadh do dhaingniú tobann ar dhálaí airgeadais domhanda agus do shuaitheadh maicreacnamaíoch in Éirinn. D'fhéadfadh an dá ní sin impleachtaí diúltacha a bheith acu ar phraghsanna réadmhaoine intíre.

I ngeall ar na rioscaí sin, déanann an Banc Ceannais measúnú ar athléimneacht an chórais airgeadais agus an gheilleagair - is é sin, measúnú ar chumas an chórais turraingí a iompar seachas iad a mhéadú.

Tá athléimneacht na mbanc tar éis neartú go suntasach le blianta anuas, ach tá pointí leochaileacha fós ann. B'ionann cóimheas caipitil comhiomlán CET1 an chórais baincéireachta intíre agus 17 faoin gcéad faoi dheireadh 2018, leibhéal a bhí dhá ionann ní b'airde ná an leibhéal a bhí aige cúig bliana ó shin. Go príomha, maoinítear iasachtú intíre anois le tascí miondíola, agus ní le foinní gearrthéarmacha mórdhíola nach bhfuil chomh seasmhach céanna. Tá titim 79% ar iasachtaí neamhthuillmheacha (NPLanna) ar chláir chomhordaithe na mbanc miondíola ó bhí 2014 ann. Ar an iomlán, tá an córas baincéireachta ábalta turraingí a iompar ar bhonn níos fearr anois, seachas iad a mhéadú. Mar sin féin, tá dul chun cinn breise de dhíth chun athléimneacht a neartú agus chun brabúsacht inmharthanach a choimeád i dtimpeallacht oibríochtúla atá i mbun athraithe. Tá leibhéal na n-iasachtaí neamhthuillmheacha fós níos airde ná na caighdeáin idirnáisiúnta agus is tosaíocht mhaoirseachta fós é laghdú inmharthanach ar iasachtaí neamhthuillmheacha. Tá dul chun cinn leantach fós de dhíth chun réiteacht banc a fheabhsú, lena n-áirítear trí dhliteanais bhreise iompair caillteanas a eisiúint.

Tá teaghlaigh agus gnólachtaí intíre éirithe níos athléimní ach d'fhéadfadh líon suntasach teaghlach a bhfuil morgáiste athstruchtúrtha acu a bheith leochaileach, go háirithe i dtaca le strus eacnamaíoch. Tá féichiúnas earnáil na dteaghlach laghdaithe go suntasach le blianta beaga anuas

agus tá feabhas tagtha ar fhóinteacht an fhiachais sin, i bpáirt de bharr rátaí úis níos ísle. Tá titim ar sciar na sealbhóirí morgáiste a bhfuil cothromas diúltach acu ó 40 faoin gcéad in 2012 go 5 faoin gcéad in 2018. Fós féin, tá leibhéal an fhiachais teaghlaigh go hioncam comhiomlán, atá ag 123 faoin gcéad, fós ard i gcomparáid le caighdeáin idirnáisiúnta. Tá líon suntasach morgáistí athstruchtúrtha ann, agus d'fhéadfaidís a bheith leochaileach má bhíonn strus ann sa todhchaí. San earnáil chorparáideach, leanann FBManna dá gcuid fiachais a laghdú. Tá méid an fhiachais atá dlite ag FBManna do bhainc Éireannacha tite níos mó ná aon trian le cúig bliana anuas. Seachas iasacht a fháil, is mince atá FBManna ag úsáid tuilleamh coimeádta chun caiteachas agus infheistíocht a mhaoiniú.

Tá maoiniú neamhbhainc tar éis éirí níos tábhachtaí don mhargadh réadmhaoine intíre, ach tá a athléimneacht fós gan tástáil. Cé go ndéanann formhór na gcistí Éireannacha infheistíocht thar lear, is tábhachtaí anois iad mar fhoinsé mhaoinithe don mhargadh eastáit réadaigh intíre. Is ionann cistí infheistíochta anois agus thart ar thrían den stoc measartha eastáit réadaigh trádála so-infheistithe. Leis na cistí sin, is féidir le hinfheisteoirí a gcistí a fhuascailt sách annamh rud a thugann le tuiscint go maolaítear go pointe an riosca díolachán éigeantach arna spreagadh ag fuascailtí forleathana. Tá a ngiaráil mheánach sách seasmhach le blianta beaga anuas, ach tá sciar beag cistí ann a bhfuil giaráil ard acu ar gá aird ar leith a dhíriú orthu. Ar an iomlán, tá athléimneacht an mhaoinithe seo fós gan tástáil ar an scála atá ann faoi láthair.

Baineann an Banc Ceannais úsáid as a bheartais mhacrustuamachta don earnáil baincéireachta chun cobhsaíocht airgeadais a chur chun cinn in Éirinn agus chun an tionchar a bheadh ag turraingí diúltacha ar an ngeilleagar a mhaolú. Tá dhá ghné ag baint le cuspóirí an bheartais macrustuamachta: ar an gcéad dul síos, go mbeadh an córas airgeadais níos athléimní ionas gur féidir leis turraingí diúltach a iompar ar bhealach níos fearr agus leanúint de sheirbhísí airgeadais a chur ar fáil don fhíorgheilleagar; agus ar an dara dul síos, laghdú a dhéanamh ar theacht chun cinn éagothroime agus leochaileachtaí sa chóras airgeadais intíre. Le cinntí beartais, déantar measúnú ar an gcothromas idir na rioscaí atá roimh an ngeilleagar agus roimh an gcóras airgeadais, agus an athléimneacht atá acu.

Tá ráta an Chúlchiste Fhriththimriallaigh (CCyB) coimeádta ag 1 faoin gcéad ag an mBanc Ceannais. Is é is aidhm leis an gCúlchiste Fhriththimthriallach (CCyB) athléimneacht na hearnála baincéireachta a neartú i gcás cor chun donais amach anseo. I gcomhréir le creat an Bhaic Ceannais don CCyB, coimeádadh ráta dearfach i bhfianaise conair leanúnach aníos i dtáscairí a bhaineann le riosca sistéamach timthriallach atá ag teacht chun cinn. Glacadh an cinneadh chun ráta CCyB a choimeád ag 1 faoin gcéad ar an tuiscint nach mbeadh Brexit míordúil ann sa tréimhse lena mbaineann. Tá an Banc Ceannais ullamh chun ráta CCyB a choigeartú i dtreo ar bith fad is a thagann forbairt ar an timpeallacht riosca ar bhealach a dtagann leis an gcuspóir comhthimthriallacht a mhaolú agus tacaíocht a thabhairt do sholáthar inmharthana creidmheasa don gheilleagar.

I mí na Samhna, chuir an Banc Ceannais a athbhreithniú is déanaí ar na bearta morgáiste i gcrích, inar beartaíodh nach mbeadh athrú ar theorainneacha CIL ná ar eisceachtaí. Thángthas ar an gconclúid go sásaíonn na bearta a gcuspóirí cosaint a thabhairt ar scaoileadh iomarcach caighdeán frithgheallta, athléimneacht iasachtaithe agus iasachtóirí a neartú agus an fhéidearthacht a laghdú go dtiocfadh bíseanna creidmheasa - praghsanna tite chun cinn. Cuirfear athbhreithniú 2019 i gcrích sa dara leath den bhliain seo. I Meitheamh 2019, chinn an Banc Ceannais, tar éis comhairliúchán leis an Aire Airgeadais, go mbeadh morgáistí saoil díolmhaithe ó theorainn CIL. Níl

aisíocaíocht chonartha rialta caipitil agus úis ag na táirgí seo, mar sin níl iníocaíocht íocaíochtaí rialta, ar príomhábhar imní í do theorainn CIL, i gceist sna cásanna seo.

Tá an Banc Ceannais ag iarraidh an creat macrastuamachta do chaipiteal bainc a chur i gcrích. Tá geilleagar na hÉireann beag agus rí-dhomhandaithe agus braitheann sé go sonrach ar ghníomhaíocht ó chuideachtaí ilnáisiúnta eachtrannacha. Ciallaíonn na gnéithe sin go bhfuil an geilleagar níos leochailí d'fhorbairtí sa timthriall dhomhanda agus go bhfuil sé níos tugtha do thurraingí macrastuamachta struchtúrtha. Ionas go mbeadh córas baincéireachta athléimneach ann, tá cúlchistí caipitil leordhóthanacha de dhíth chun na turraingí struchtúrtha sin a iompar. I ndiaidh do Ghobharnóir an Bhainc Ceannais iarratas a dhéanamh i mí Aibreáin 2019, tá sé deimhnithe ag an Aire Airgeadais go dtabharfar an chumhacht don Bhanc Ceannais Cúlchiste Riosca Shistéamaigh (SyRB) a shocrú chun an creat macrastuamachta do chaipiteal bainc a chur i gcrích. Chun tacú le dearadh agus calabrú cruinn SyRB, tá an Banc Ceannais ag déanamh measúnú ar leibhéal an chaipitil bainc is cuí le haghaidh geilleagar beag fiordhomhandaithe amhail geilleagar na hÉireann. Tabharfar an leibhéal caipitil sin san áireamh i gcalabrú cúlchiste timthriallacha agus cúlchistí struchtúrtha araon.

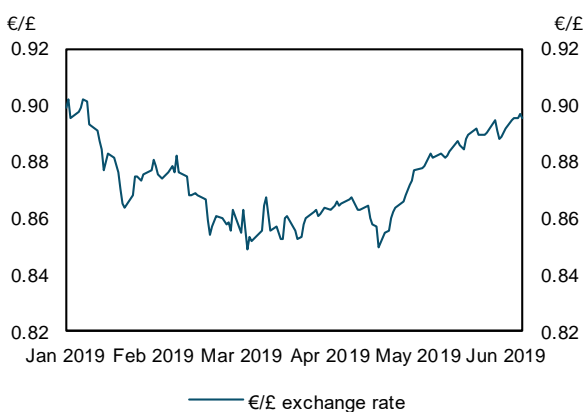
Risks

A disorderly Brexit

Since the Brexit referendum in 2016, the Central Bank and other authorities have identified, and prepared for, a number of potential ‘cliff-edge’ risks to the disruption of financial services between the EU and the UK in a no-deal, no-transition Brexit. The extension of the UK’s departure from the EU to 31 October has allowed further time for households and businesses – including in the financial sector – to continue contingency planning and enhance their preparedness. The main outstanding source of risk to financial stability in Ireland stems from a worse-than-expected macroeconomic shock. This could arise if the expected negative impact through trade channels is compounded by a sharp increase in uncertainty and a fall in confidence, with knock-on effects to Irish employment, incomes and investment. Ireland’s relatively acute exposure to Brexit may also negatively alter investor sentiment towards Irish assets, with adverse implications for financing conditions of an already relatively indebted private sector. Given the extent of direct and indirect exposures, this would result in unanticipated losses for the domestic financial system.

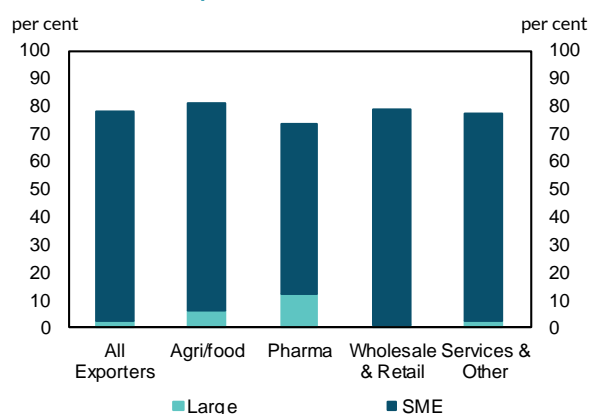
Uncertainty around the eventual outcome of Brexit remains elevated. This has been reflected in currency market developments and is negatively affecting business and consumer sentiment. While sterling appreciated in the opening months of 2019, the continued political uncertainty in the UK has contributed to a roll-back in some of those gains since May (Chart 1). Despite the continued improvement in the Irish labour market, consumer and business sentiment survey evidence suggests that Brexit uncertainty may already be weighing on the momentum of Irish economic activity in 2019.¹

Chart 1: Sterling early 2019 appreciation unwound



Euro/sterling exchange rate.
Source: Bloomberg.
Notes: Last observation 28 June 2019.

Chart 2: The UK remains an important market for Irish firms that export



The proportion of exporting Irish enterprises that export to the UK.
Source: CSO and Central Bank of Ireland calculations.
Note: Data refer to 2017.

A disorderly Brexit presents a number of immediate risks to the provision of cross-border financial services, which Irish authorities and firms have taken actions to mitigate. The Irish financial system

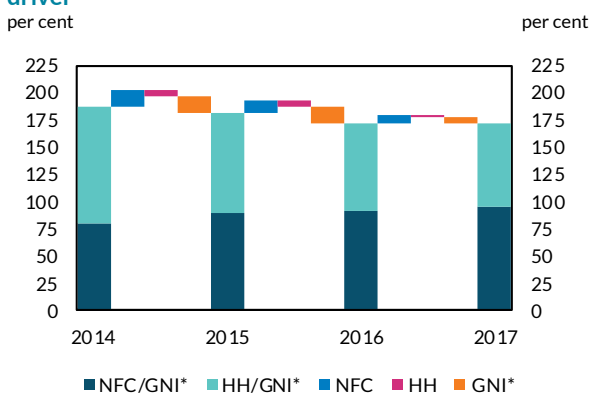
¹ Consumer sentiment has declined since early-2018 ([KBC/ESRI Consumer Sentiment Index](#)). Business sentiment is also lower, with recent suggestions that Brexit uncertainty is actively delaying investment by firms ([Bank of Ireland Business Pulse Survey](#)).

and economy have close links with the financial system of the UK. These links are underpinned by a common legislative and regulatory framework, as part of the EU’s Single Market. The Central Bank, working with other authorities domestically and internationally, has taken action to ensure that the most material and immediate risks to the provision of cross-border financial services from a disorderly Brexit have been mitigated (see Box 1). With the extension of the timeline within which the withdrawal agreement is to be ratified, there is scope for further preparation, not just by financial firms, but also by the non-financial sector.

There are a number of channels through which a disorderly Brexit would affect the Irish economy, with trade being a key transmission channel. While the UK share of Irish aggregate exports had declined to approximately 13 per cent by 2017, the UK remains an important export destination for exporting Irish firms (Chart 2). This is especially the case for SMEs, with 78 per cent of active exporters in 2017 exporting to the UK. Empirical analyses of the trade channel point to a material reduction in goods exports to the UK due to the imposition of tariff and non-tariff barriers.² A disorderly exit of the UK from the Single Market would also front-load a reduction in Irish services exports, with estimates of a 49 per cent fall in Irish-UK flows (10 per cent of total services exports).³

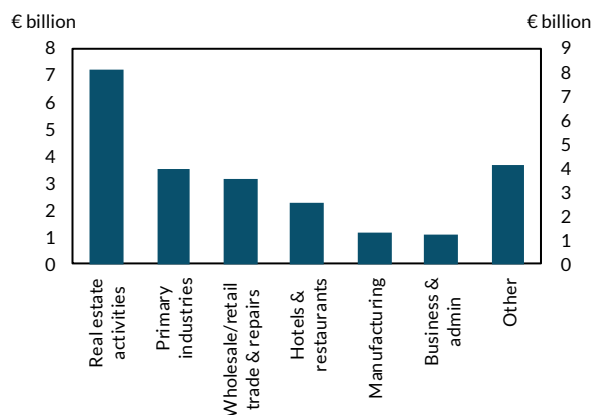
The trade challenges would be reflected to varying degrees across different sectors, products, regions and firms. The largest trade reductions due to WTO-implied tariffs in the absence of a trade deal would be incurred in food sectors such as meat, cereals, processed foods, sugars and flours, as well as clothing.⁴ Sterling devaluations also risk causing competitive harm in sectors with less direct export exposures to the UK. Given the sectors involved, it could be expected that Irish SMEs would be particularly affected.

Chart 3: Private-sector indebtedness is lower, but actual reductions in debt levels have been less of a driver



Level of NFC and HH Debt to GNI* and contributions to changes in overall domestically relevant non-financial private sector debt ratio. Source: Central Bank of Ireland and CSO. Notes: NFC refers to NFCs whose ultimate parent is Irish.

Chart 4: Irish banks have exposures to SMEs in sectors that would be impacted by a disorderly Brexit



Lending to Irish resident SMEs by resident banks. Source: Central Bank of Ireland, Table A.14.1. Notes: Data as at March 2019

² Lawless and Morgenroth (2019) “The product and sector level impact of a hard Brexit across the EU” *Contemporary Social Science*, 14:2, discuss the potential effect of imposing WTO-like tariffs on goods exports to the UK from other EU Member States, noting that the reduction in the share of total trade is more severe for Ireland than for the rest of the EU27. See Byrne and Rice (2018) “Non-tariff barriers and goods trade: a Brexit impact analysis” *Central bank of Ireland, Research Technical Paper, Vol. 2018, No. 7* for a discussion of non-tariff barriers.
³ Lawless (2018) “Irish-UK services trade and Brexit”, numbers quoted from “Key Finding 12”.
⁴ Estimates of trade reductions resulting from increases in tariffs are estimated in Lawless and Morgenroth (2019) “The product and sector level impact of a hard Brexit across the EU” *Contemporary Social Science*, 14:2.

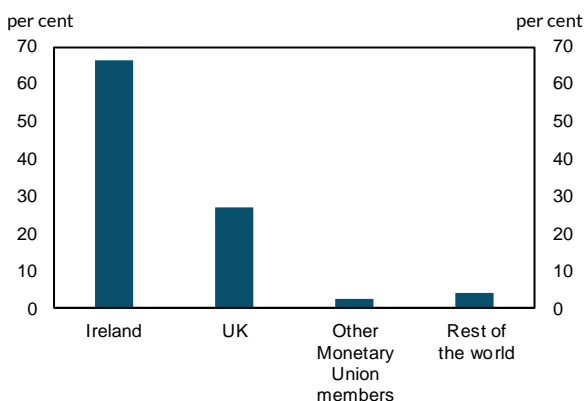
According to Central Bank analysis from early 2019, in a “no deal” scenario Irish economic output would be approximately 6 per cent lower after two years relative to what would otherwise be expected.⁵ This would represent a material disruption to domestic economic activity. However, it is less severe than the macroeconomic shock incorporated in the adverse scenario of the 2018 EBA stress test of the banking system, which assumed output being some 9 per cent below baseline after the first two years of the exercise. The two Irish-owned banks included in that exercise maintained capital levels above regulatory minima in such an adverse scenario.

The macroeconomic impact of a disorderly Brexit is very uncertain and could be greater than expected. Given the unprecedented nature of a disorderly Brexit, it is very difficult to assess with accuracy its macroeconomic implications. A sharp increase in uncertainty and a fall in confidence could result in a greater-than-anticipated macroeconomic shock, both in the UK and in Ireland. This may also overlap with more severe financial market dislocation and have potential knock-on effects for financial stability in Ireland.

Negative income shocks arising from a disorderly Brexit scenario would present challenges to the private sector in Ireland, and the domestic banking system from which they have borrowed.

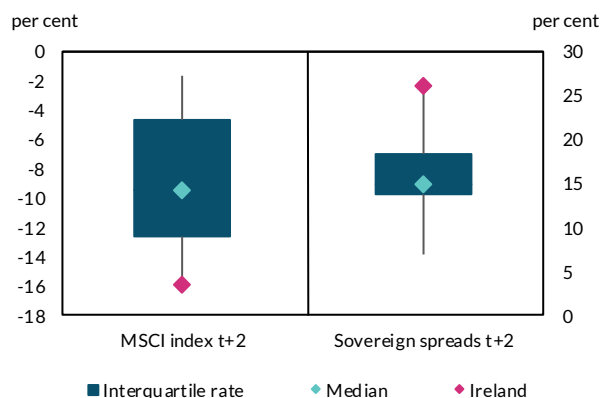
Despite recent delevering and balance sheet repair, the Irish non-financial sectors remain heavily indebted (Chart 3). Household debt as a percentage of disposable income ranks fifth highest within the EU and slightly above the OCED average, while a small pocket of SMEs still carry high debt levels (See *Resilience: Household and Corporate Sectors*). Irish retail banks remain the most important source of external financing for households and SMEs. The exposure of the Irish banking system to SMEs is significant vis-à-vis sectors that would be most affected by a disorderly Brexit, such as agriculture (Primary Industries), manufacturing, retail trade and tourism (Hotels & Restaurants) (Chart 4). In addition, one quarter of Irish banks’ credit exposures are directly to borrowers in the UK (Chart 5), predominantly to the household and corporate sectors, (62 and 31 per cent of UK exposures, respectively), creating a direct source of risk from a disorderly Brexit. Monitoring of these sectors is warranted given the uncertainty at present of a disorderly Brexit.

Chart 5: The UK is the second-most important market for Irish retail banks



A geographical breakdown of Irish retail banks’ lending and advances. Source: Central Bank of Ireland Consolidated Supervisory data. Notes: Data are for four banks which report international exposures. Data as at 2019Q1.

Chart 6: Irish asset prices fell by more than other euro area countries after the UK referendum



Irish and European equity prices and sovereign spreads. Source: Datastream and Bloomberg. Note: Percentage change in MSCI index and spreads on 10-year sovereign bonds over the two trading days after the Brexit referendum (i.e. 27/06/2016). MSCI (sovereign spreads) for 11 (12) EA countries.

⁵ Conefrey, O’Reilly, Walsh (2019) “Box B: The Macroeconomic Implications of a Disorderly Brexit” Central Bank of Ireland, Quarterly Bulletin No.1 2019.

Given the relatively strong linkages between Ireland and the UK, a disorderly Brexit could have a relatively large negative effect on investor sentiment towards Irish assets. Indeed, around the 2016 UK referendum, Irish asset prices were affected by more than the euro area average (Chart 6). Investor appetite for Irish assets has been strong, reflected in areas such as the growth in non-bank financing in the Irish commercial real estate market. Uncertainty around Brexit poses a risk for market perceptions of Irish assets. A fall in demand for Irish assets would affect prices, potentially reducing domestic investment and net worth amidst tighter financing conditions. A disorderly Brexit, therefore, could magnify the impact on Irish financial stability of a more general repricing of risk in financial markets.

An abrupt tightening of global financing conditions accompanied by a repricing of global and Irish risk premia

Global investor appetite for risk remains elevated, despite lower global growth prospects and increased policy uncertainty. Equity valuations have recovered since late-2018 and credit risk premia are compressed relative to many historical benchmarks. Corporate debt in several advanced economies has risen, much of which has been facilitated by market-based finance. Riskier segments of the sector have grown particularly fast, as evidenced by developments in the leveraged loan market. If there were a shock to investor confidence, a downturn in the global financial cycle could materialise quickly. A disorderly tightening in global financial conditions could affect global economic activity and lead to sharp price falls in certain already stretched asset classes, with both direct and indirect adverse effects on the Irish economy and financial system.

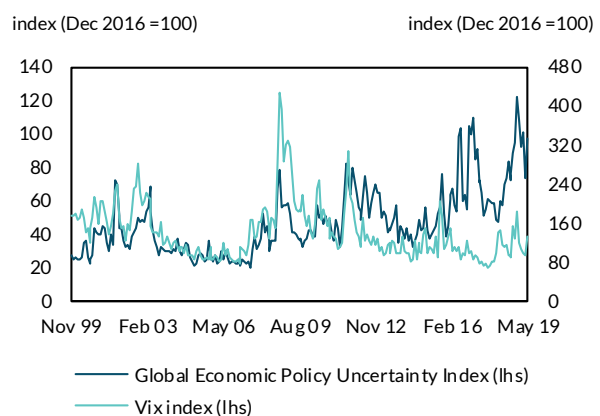
Despite lower growth prospects and increased policy uncertainty, global risk appetite – especially towards corporate sector assets – remains elevated. Since late-2018, global equity prices have recovered following declines, even though earnings expectations have remained constant (Chart 7). The recovery in equity prices was partly due to changing expectations around monetary policy. Equity market volatility remains at historically low levels, despite increased global policy uncertainty, pointing to a continued search for yield among investors (Chart 8). Trade tensions, in particular, remain to the fore and may be contributing to high levels of global economic policy uncertainty.

Chart 7: Global equity prices have recovered but economic uncertainty continues to weigh on earnings forecasts



Global equity prices and forward earnings per share.
 Source: Thomson Reuters I/B/E/S, Datastream, and Central Bank of Ireland calculations.
 Notes: Global MSCI index and 12 month forward year on year EPS growth forecast. Last observation 28 June 2019.

Chart 8: Equity market volatility remains at low levels, despite increased global policy uncertainty



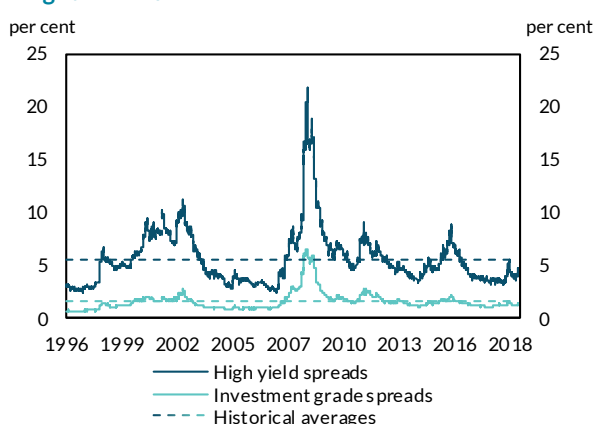
Global policy uncertainty and equity market implied volatility.
 Source: CBOE, Bloomberg and Davis (2016).
 Notes: Davis, (2016), "An Index of Global Economic Policy Uncertainty", Macroeconomic Review, October. Last observation May 2019. Uncertainty index is based upon frequency of newspaper articles mentioning economic policy uncertainty.

Elevated risk appetite is also apparent in corporate debt markets, where financing conditions remain accommodative relative to historical norms. Corporate bond spreads over government bond yields remain below historical averages in the US (Chart 9). Term premia – the compensation that investors require to hold longer-maturity assets – are also compressed by historical standards. The low compensation investors are requiring for holding risk contrasts with the

deterioration in credit quality of underlying instruments in certain market segments. For example, BBB-rated corporate bonds – the lowest investment grade rating – now account for 55 per cent of total investment-grade corporate bonds outstanding (\$3.4 trillion), compared to 40 per cent (of \$1.4 trillion) in 2010. Spreads between the yields on investment grade and sub-investment grade corporate debt remain compressed despite some recent increases.

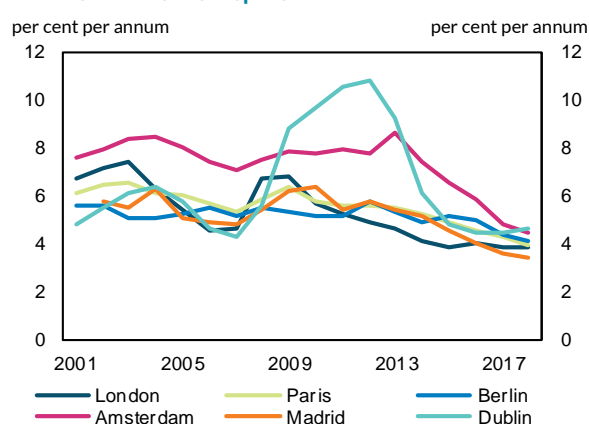
Irish commercial real estate (CRE) yields have also been declining as part of a wider cross-country convergence. Investor appetite for CRE continues such that there is now only a small dispersion in yields in the office segment of the CRE market across Europe, pointing to reduced differentiation of risk by investors (Chart 10). Elevated CRE valuations can ease financing constraints for companies that use CRE as collateral to borrow.

Chart 9: Spreads on US corporate bonds are below long run levels



US corporate bond spreads.
Source: Federal Reserve Economic Data.
Notes: Last observation 28 June 2019.

Chart 10: Strong demand drives CRE office yields lower and reduces dispersion



Yields on selected city office markets.
Source: MSCI.
Notes: Last observation 2018Q4.

Accommodative financing conditions have led to a pick-up in corporate leverage. In the United States the level of corporate debt to GDP has risen to its highest level in 20 years. Corporate indebtedness in Europe has been growing in some economies, particularly France, and remains high in others (Chart 11). Domestically relevant corporate debt in Ireland is lower than its pre-crisis peak, standing at just below 100 per cent of GNI* in 2017 (Chart 3). Considering more recent data, an increase in the Irish resident banking system's exposures to large Irish enterprises has been a key contributor to recent credit growth. (See *Policy: CCyB* for a further discussion of Irish NFCs.)

Riskier segments of the corporate debt market have seen particularly strong growth. The global leveraged loan market has grown particularly quickly in recent years. These loans are typically to corporates that are highly indebted or owned by private equity sponsors. Gross issuance of leveraged loans reached a historical high of almost \$600 billion in the United States in 2018⁶, though there has been some moderation recently. The growth in the market has also been accompanied by both a weakening in covenants and an increase in leverage of borrowers, suggesting that developments have been driven by a loosening of credit supply.

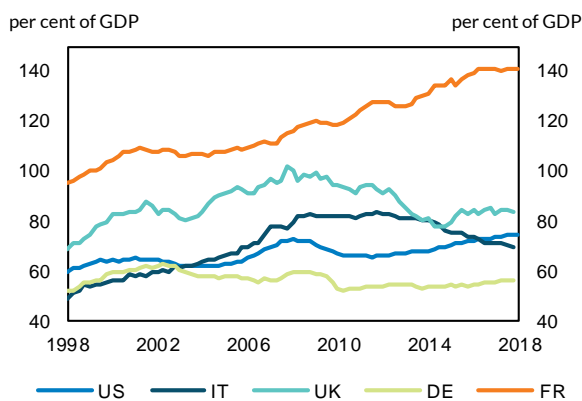
The growth in corporate leverage has been facilitated by market-based or non-bank finance. In the corporate bond market, a growing share of outstanding bonds are now held by investment funds. In the leveraged lending market, a growing share of loans are being securitised and sold in

⁶ See [IMF Global Financial Stability Report, April 2019](#).

secondary markets as CLOs (collateralised loan obligations). The outstanding stock of CLOs has reached record highs (Chart 12).⁷ Market-based finance has also played an increasing role in CRE markets. Recent data for the Irish CRE investment market show that resident investment funds and Irish-listed REITs hold around €22 billion of the market⁸ (See *Risks: An abrupt fall in property prices* for further discussion on Irish CRE developments and Box 3).

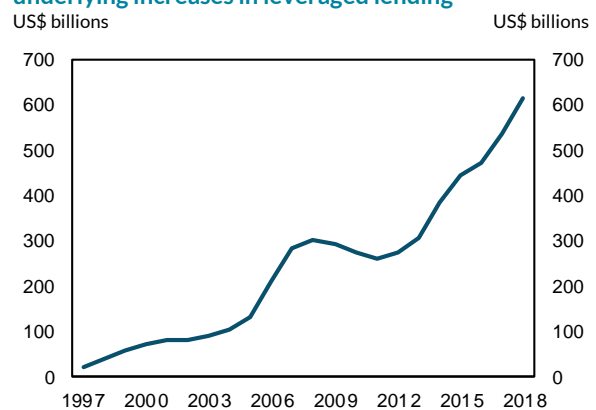
The bout of market volatility observed at end-2018 demonstrated the potential fragility of current financial market conditions. While this episode of market volatility proved temporary, partly due to changing expectations around monetary policy, further adverse shocks could trigger a broader and more persistent reappraisal of risk. Potential triggers for such an event include further downward revisions to global growth, an escalation of trade tensions internationally or further global geopolitical uncertainty.

Chart 11: Corporate indebtedness remains high in certain countries



Corporate debt to GDP ratio.
Source: BIS Total Credit Statistics Database.
Notes: Last observation 2018Q3.

Chart 12: The stock of US collateralised loan obligations has risen, much of which relates to underlying increases in leveraged lending



US \$ CLOs outstanding.
Source: SIFMA.
Notes: Last observation 2018.

The Irish retail banking system has direct exposures to the global leveraged lending market. Irish retail banks have become increasingly active in the leveraged loan market and they retain some of these exposures on their balance sheets. Using the ECB's definition of leveraged finance, as at December 2018 the direct exposure of Irish retail banks to this sector was more than €10 billion. A reversal in risk appetite or increase in loan defaults in these markets will have direct effects on the performance of these exposures.

An abrupt tightening of global financing conditions could affect global economic activity. Higher levels of corporate leverage can amplify adverse shocks to economic activity through spending and employment decisions of highly-indebted firms. As a small, highly globalised economy, Ireland would be particularly exposed to a global downturn through trade and investment channels. Ireland also hosts a number of US-incorporated multinational companies, which account for a significant share of domestic economic activity. The exports of these firms performed more strongly than other sectors of the economy during the Global Financial Crisis, suggesting that these firms have the potential to offer counter-cyclical support to the Irish economy. Nonetheless,

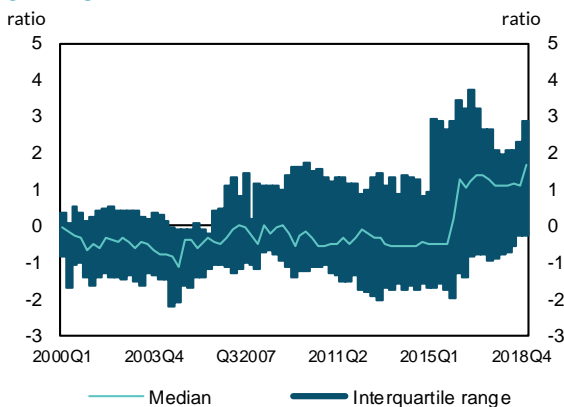
⁷ CLOs are conceptually similar to mortgage-backed securities or collateralised debt obligations, in that they are structured finance vehicles which re-package the credit risk of the underlying assets. Corporate loans are issued to (often) highly-leveraged firms, prior to being bundled together by the issuing lender(s) and divided into investment tranches which are rated and sold separately.

⁸ See Coates *et al.*, (2019), "Who invests in the Irish Commercial Real Estate Market? An overview of non-bank institutional ownership of Irish CRE" Central Bank of Ireland, *Financial Stability Notes, Vol. 2019, No. 6*.

their importance in overall economic activity can pose a vulnerability. Although there has been a small increase in the leverage position of these companies, their levels of indebtedness are generally low (Chart 13). Ireland's sensitivity to a global cyclical response to tighter financing conditions is in addition to the tail risk of structural shocks, which can be more acute for countries like Ireland (see Box 2).

A reversal in global risk premia could also have a knock-on effect on foreign investor appetite for Irish assets and affect domestic asset prices. Some domestic asset classes are particularly reliant on foreign investors. These include the domestic CRE market (see *Risks: An abrupt fall in property prices*), the Irish sovereign debt market (see *Risks: European sovereign debt sustainability*), and the market for non-performing loans (see *Resilience: Banks and credit unions*). These markets could be particularly vulnerable in the event of a tightening of global financial conditions. More broadly, a global repricing of risk could affect funding costs for banks, leading to an increase in the cost of borrowing from banks for domestic households and companies.

Chart 13: Irish resident US multinationals' leverage is growing but remains low



Net debt to EBITA (Earnings before interest, taxes and amortisation) ratio at a consolidated group level.

Source: Bloomberg and Central Bank of Ireland calculations.

Note: Covers the 15 largest US MNCs in Ireland.

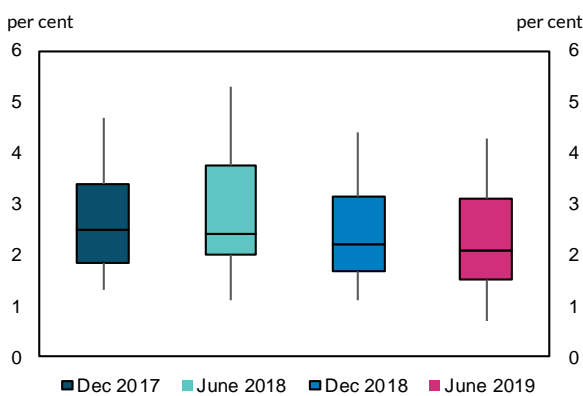
Re-emergence of European sovereign debt sustainability concerns with re-pricing of sovereign risk

Government debt-to-GDP ratios remain high and fiscal consolidation has stalled in some euro area countries. At the same time, downward revisions to euro area economic growth forecasts raise concerns about sovereign debt sustainability, particularly in some European economies. The domestic financial system in many euro area countries has significant holdings of their respective sovereign's debt, so the potential for an adverse feedback loop between bank and sovereign stress remains. So far, spill-overs to Ireland from the most affected sovereign debt markets seem contained. The direct exposures of the domestic financial system to the most affected markets is also relatively low. However a general reappraisal of risk towards European sovereigns could spillover to Ireland given its high level of indebtedness.

The outlook for economic growth in the euro area has become less optimistic, and more uncertain. Recent revisions to growth forecasts have been accompanied by a widening in growth expectations across countries (Chart 14). A further deterioration in the growth outlook would negatively affect the market's perception of the ability of certain sovereigns to stabilise or improve their debt levels.

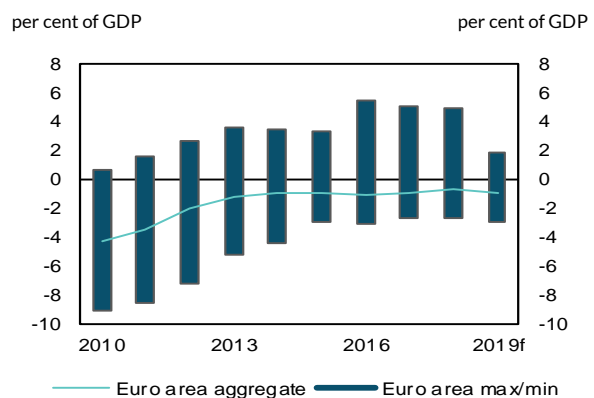
At the same time, fiscal consolidation in some euro area countries has stalled. Government debt-to-GDP ratios have fallen since the European sovereign debt crisis, due to net redemptions in debt and economic growth. However, they remain high in many Member States, and recent data suggest that the recent trend towards increased government surpluses in the euro area has slowed in 2019 (Chart 15).

Chart 14: Growth forecasts for euro area countries have declined



Distribution of euro area Growth Forecasts for 2019.
Source: AMECO and Central Bank of Ireland calculations.
Notes: Annual GDP forecasts for 19 euro area countries.

Chart 15: Fiscal consolidation efforts slow across the euro area with ongoing heterogeneity



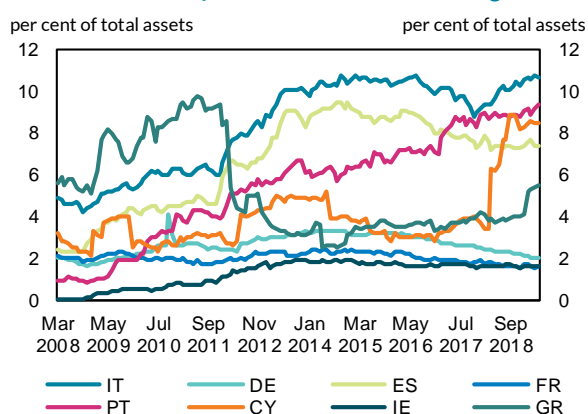
Structural General Government Balance.
Source: AMECO.

Exposures of some European banks to their sovereign is increasing and domestic sovereign bonds form part of the insurance sector's investment portfolio. The local financial systems in some Member States responded to the 2018 repricing in yields by increasing their exposure to their domestic sovereign debt (Chart 16). This can act to amplify spill-overs between sovereign bond markets and the banking sector, as seen in the 2009-2012 euro area sovereign bond crisis, with

implications for the funding capacity of exposed sovereign and banking sectors. European insurers are also exposed to their domestic sovereign. Almost two thirds of European insurers' investment portfolios comprise sovereign and corporate bonds. There is evidence of significant home bias in some countries and in aggregate 25 per cent of European insurers' investments are exposed to EU/EEA sovereigns.⁹

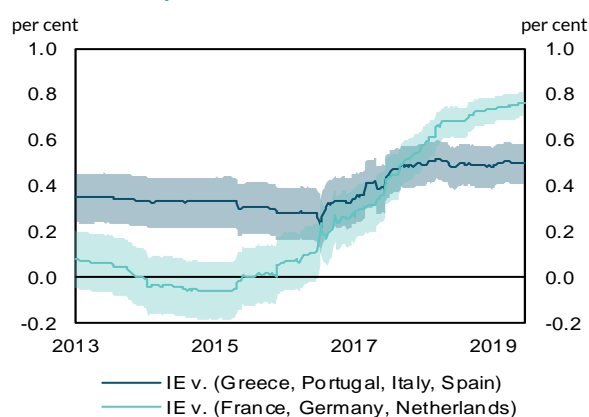
While domestic and euro area reforms (including the reduction of imbalances and the creation of the ESM) have mitigated some of these downside risks, the financial architecture remains incomplete. The development of the European Deposit Insurance Scheme and the implementation of the broader resolution framework remain outstanding. Further, legacy issues from the financial crisis create policy constraints. The refinancing of government debt in a context of diminished risk appetite could limit the scope for countercyclical policies by increasing the cost of servicing debt.

Chart 16: Some European banking sectors have increased their exposure to domestic sovereign



Domestic sovereign debt securities held by MFIs in selected countries.
Source: ECB and Central Bank of Ireland calculations.
Notes: ECB BSI data. Last observation May 2019.

Chart 17: Irish bond yields co-move more with northern European countries



Time-varying correlations across European sovereign bond yields.
Source: Datastream and Central Bank of Ireland calculations.
Notes: The chart shows the time-varying average pairwise cross-country correlations (solid lines) between changes in the Irish 10-year sovereign bonds yields and those of two groups of Euro area countries, observed at a weekly frequency, over January 2013-June 2019. The correlation is computed using a window size equal to 240 and the calculation starts in January 2002. The 95 percent confidence intervals are also reported (shaded areas).

There is no current evidence of negative spill-overs for Ireland in sovereign credit markets.

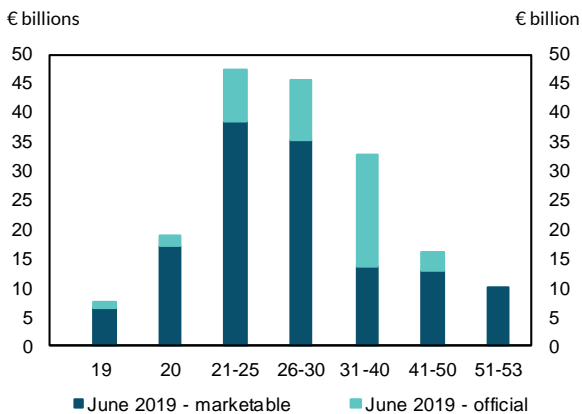
Possible spill-overs from repricing of euro area sovereigns would imply a higher cost for Ireland to refinance its government debt, resulting in a loss of fiscal capacity during a downturn. The extent of this repricing would depend on market perceptions of country-specific risk, which could for example be reassessed for Ireland after a disorderly Brexit (see *Risks: A disorderly Brexit*). In recent years, Irish sovereign bond yields have moved increasingly with those of other euro area countries less affected by the last crisis, reflective of the positive investor sentiment towards Ireland (Chart 17).

However, Ireland's high debt position makes it vulnerable to a broader re-emergence of sovereign sustainability concerns. The Irish sovereign's current level of indebtedness and the high levels of debt falling due within the next two years (approximately 20 per cent of total debt) increase its vulnerability to changes in risk sentiment (Chart 18). Also, the absolute level of Irish sovereign debt has remained relatively static in recent years at around €200 billion, with the decline in the debt to GNI* ratio driven by growth in GNI (Chart 19). Mitigating the extent to which any negative

⁹ Assets held for unit-linked purposes are excluded. See [EIOPA Financial Stability Report, December 2018](#).

changes in risk sentiment may affect the ability to roll-over Irish sovereign debt is the level of liquid assets available to pre-fund redemptions. Going into 2019, the National Treasury Management Agency had a cash balance of €15.3 billion and over the first four months of 2019 had issued approximately €6.5bn in long term debt.¹⁰

Chart 18: Irish Government debt remains vulnerable to refinancing risk and sovereign market sentiment

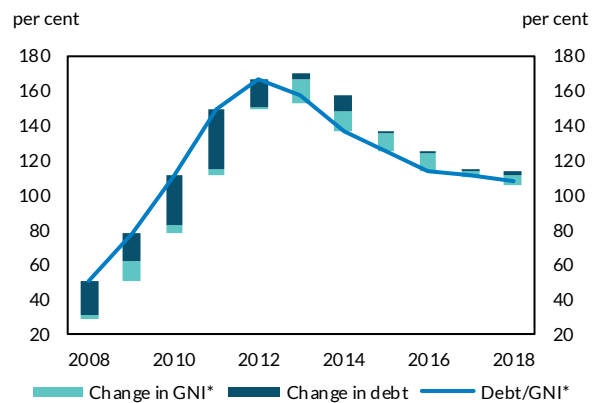


Maturity profile of Irish Government debt.

Source: NTMA and Central Bank of Ireland calculations.

Notes: Data are based on June 2019 release. Horizontal axis refers to the year(s) which the debt falls due.

Chart 19: Increases in GNI* have contributed to the decline in Irish Government debt



Contributions to ratio of Irish Government debt to GNI*.

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

Notes: All else equal, increases (decreases) in GNI* (debt) lead to decreases in the debt to GNI* ratio.

The domestic banking system has maintained a relatively low exposure to the Irish sovereign in recent years. In comparison to European peers the Irish resident banking system (including the IFSC banks) holds a relatively low share of Irish sovereign debt (Chart 16). Irish headquartered retail banks' holdings of Irish sovereign debt rose by 9.6 per cent in the year to April 2019, with their share in total assets increasing from 5.5 to 6 per cent.¹¹ Meanwhile, the share of sovereign debt in the total foreign claims of the Irish headquartered banks increased during 2018. Other euro area sovereigns accounted for 8 per cent of total foreign claims, having grown by 24 per cent over the year. The holdings of UK sovereign debt rose by 18 per cent, bringing UK sovereign exposure to 6 per cent of total foreign claims.¹²

Domestically-focused insurers, in both the life and non-life sectors, have some exposure to European sovereigns. French and German debt is the most significant at 3.9 and 3.4 per cent of total assets at end-2018, with exposures to the Irish sovereign accounting for 1.8 per cent. While diversification by country and by rating is useful, repricing of the full European sovereign credit market could occur if the shock was significant.

¹⁰ [NTMA Investor Presentation](#) (January 2019) and Central Bank of Ireland [Securities Issues Statistics](#) (April 2019).

¹¹ Central Bank of Ireland [Money and Banking Statistics: Table A.4.2](#). Data cover Irish-Headquartered Group credit institutions whose ultimate parent entity is resident in Ireland.

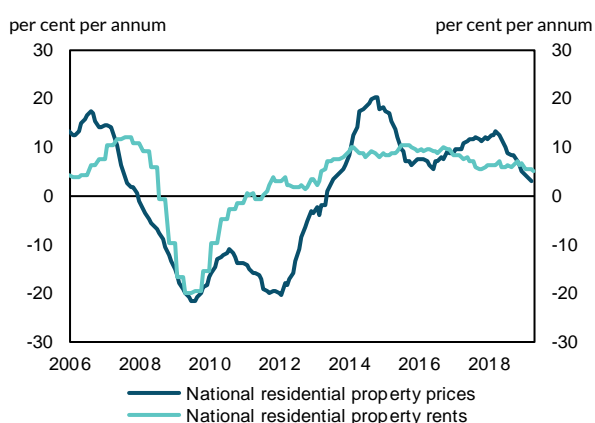
¹² Central Bank of Ireland [Consolidated Banking Statistics: Foreign Claims](#).

An abrupt fall in Irish property prices

Despite recent price growth moderation across both the residential and commercial real estate markets in Ireland, vulnerabilities remain. Market prices are around fundamentals while a risk of future oversupply could crystallize if demand suddenly declines. While property prices are not being driven by excess credit, the increased role of non-bank financing and institutional investor ownership of Irish property creates new risk transmission channels. An external shock leading to either a decline in domestic macroeconomic activity and/or a fall in investor sentiment towards property could interact with domestic vulnerabilities and cause prices to fall sharply. This would have significant implications for Irish banks' asset quality given their concentrated exposure to this market.

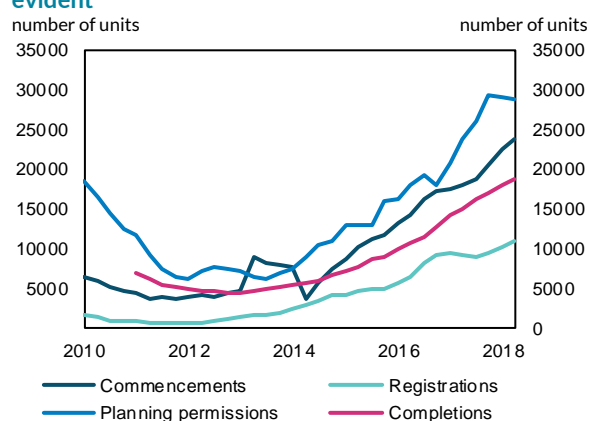
Irish house price growth has eased considerably in recent months despite favourable domestic economic developments and continued low supply levels in certain areas. The annual growth rate of 3.1 per cent in April 2019 was the lowest rate observed since August 2013 (Chart 20), with the slowdown in prices being particularly evident in Dublin. Expectations for future house price movements are for low single digit growth, as anticipated aggregate supply in the near-to-medium term continues to move closer to estimates of housing demand (Chart 21).^{13, 14}

Chart 20: Irish house price growth has eased



Annual growth rates of residential property prices and rents.
Source: CSO and Central Bank of Ireland calculations.
Notes: Latest observations April 2019 (property prices) and May 2019 (rents).

Chart 21: Housing supply levels low relative to estimates of medium term demand but some pick-up evident



Housing market construction activity.
Source: CSO.
Notes: Rolling 4 quarter total. Latest observations 2019Q1.

House prices are close to long-run fundamentals but remain high compared to income or rent on a historical basis. The suite of model-based approaches used by the Central Bank to assess misalignment in house prices point to current prices being on average around what would be expected given economic fundamentals (Chart 22).¹⁵ Ratio indicators of house price valuations, such as house price-to-rent and house price-to-income, however, exceed historical averages. Ireland is currently just above the euro area average for the extent to which price-to-rent and price-to-income ratios are above long-run trend (Chart 23). Higher positive deviations from long-

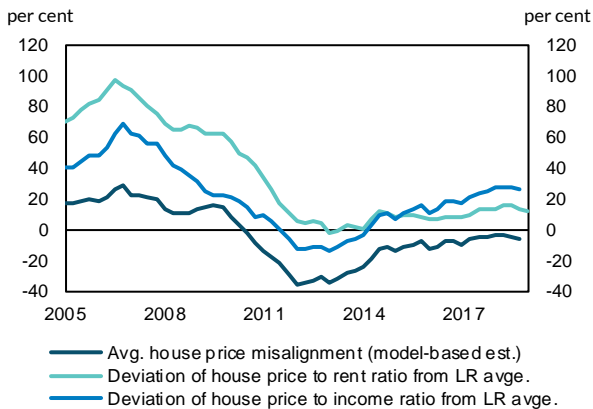
¹³ According to the results of the 2019Q1 CBI/SCSI Survey, the majority of participants expect national house prices to continue to increase over both the short (i.e. 1 year ahead – 63 per cent) and medium (i.e. 3 year ahead – 76 per cent) term horizons. Meanwhile, the median degree of expected national property price appreciation for the coming 12 months, and 3 years, is 4 and 6 per cent, respectively.

¹⁴ An annual average output of 30,000 to 35,000 new homes per annum is estimated to be required to meet increased population growth and household formation up to 2027. See [Project Ireland 2040: National Planning Framework](#)

¹⁵ Kennedy, O'Brien and Woods (2016), "Assessing the sustainability of Irish residential property prices: 1980Q1-2016Q2", Central Bank of Ireland, [Economic Letter Series, Vol. 2016, No. 11](#).

run averages of price-to-income are typically associated with higher probabilities of house price declines.¹⁶

Chart 22: Statistical indicators of house price valuations are above long-run averages

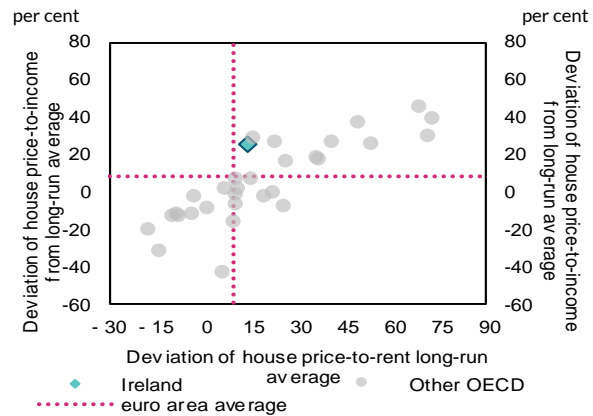


Statistical and model estimates of residential property price misalignment.

Source: Central Bank of Ireland.

Note: Latest observations for deviation of house price-to-rent ratio (2019Q1), deviation of house price-to-disposable income ratio (2018Q4) and average estimated house price misalignment (2018Q4).

Chart 23: Statistical indicators of misalignment above euro area average



Cross-country comparison of deviation of price-to-income and price-to-rent ratios from long-run averages as at 2018Q4.

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

Credit dynamics do not appear to be driving house price growth in an unsustainable manner. While PDH mortgage lending is a significant contributor to the recent credit growth, there is no indication that the volume of mortgage activity is excessively pro-cyclical. The ratio of new mortgage lending to household disposable income remains below its historical threshold (Chart 24). With the Central Bank mortgage measures in place, there is currently no evidence of a general deterioration in lending standards on new mortgage lending, with the measures becoming more binding (see *Policy* for an overview of the Central Bank's macroprudential mortgage measures).

The availability of relatively high yields, in comparison to alternative asset classes in the current low yield environment, continues to drive investor activity in the residential property sector.

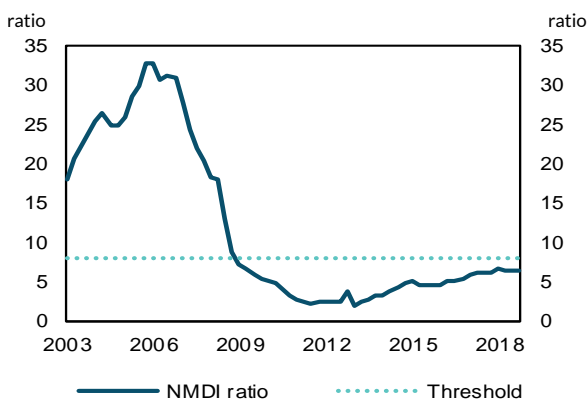
There has been a notable increase in the participation of non-household entities in the residential sector (Chart 25). Some of this consists of social and affordable housing provision by public bodies, but institutional investors are also playing a role. These investors have mostly focused on the acquisition of multi-unit apartment blocks, attracted by the availability of relatively attractive yields, as increases in rents have been keeping track with or exceeding purchase price increases.

Fundamental determinants of house prices, such as lending rates and disposable incomes, are themselves sensitive to macroeconomic developments, which in the Irish case remain highly sensitive to global factors. A negative shock due to a reappraisal of risk premia, the fall-out from a disorderly Brexit, or some other unforeseen geopolitical event has the potential to cause house prices to fall in the period ahead. Income falls due to such a shock would affect demand for housing. Further, a repricing of risk premia, reflecting changes in investor sentiment towards Ireland and Irish property in particular, could negatively affect demand by non-household investors and ultimately residential property prices.

¹⁶ See Box A1 in the Central Bank of Ireland's "Review of residential mortgage lending requirements. Mortgage Measures 2018". Instances where price-to-income ratios are 20 per cent above long-run averages are associated with a 20 per cent probability of house price declines of between 0-5 per cent over the following 12-month period.

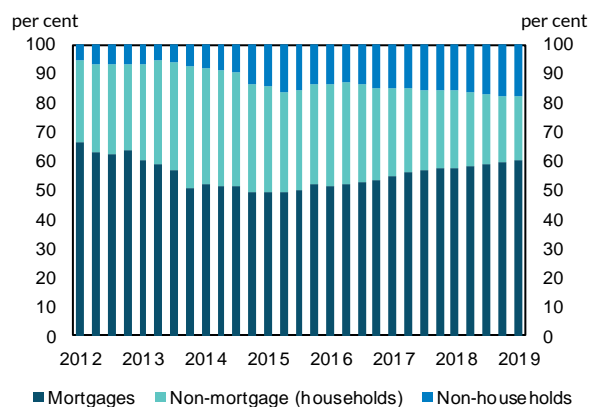
In the commercial real estate (CRE) market, growth in prices and rents have also moderated, and, while CRE yields are well above sovereign yields, they are low by historical comparison. At the end of March 2019, CRE prices were 2.8 per cent higher year-on-year, down from annual rates of growth of 30 per cent at the end of 2014. The equivalent figures for the growth of CRE rents were 1.4 per cent and 20 per cent, respectively (Chart 26). At 4.9 per cent, CRE yields remained steady throughout 2018 (Chart 27). Spreads between CRE yields and domestic sovereign bond yields are well above their long-run average, suggesting that CRE risk premia may not be excessively compressed in the prevailing low interest rate environment. In the office market, however, investor demand across major European cities, including Dublin, remains strong with yields below long-run averages (Chart 10).

Chart 24: New mortgage lending does not appear excessive relative to disposable income



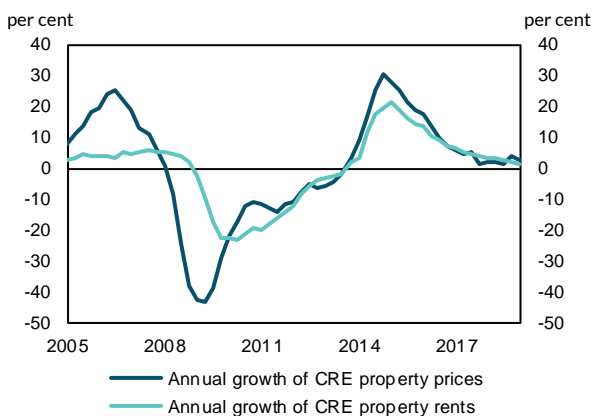
Ratio of new mortgage lending to disposable income (NMDI). Source: BPF, CSO and Central Bank of Ireland calculations. Note: The dotted line denotes a NMDI ratio threshold derived based on long-run structural determinants. Latest observations 2018Q4.

Chart 25: Non-household entities appear more active in residential market



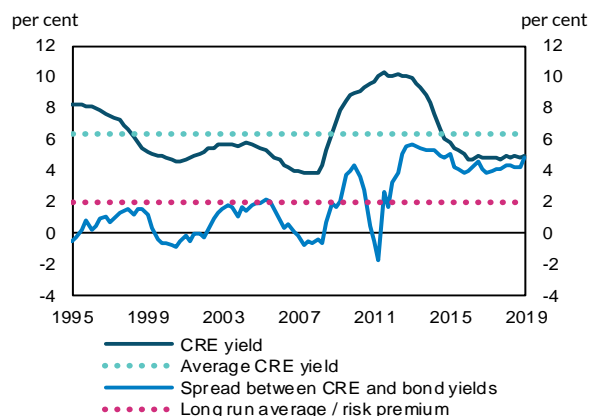
Breakdown of housing transactions by buyer type. Source: CSO, BPF and Central Bank of Ireland calculations. Note: Latest observations 2019Q1.

Chart 26: Moderation in price and rental growth in Irish CRE market



Annual growth of CRE property capital and rental values. Source: MSCI. Notes: Latest observation 2019Q1.

Chart 27: CRE yields above sovereign yields but low by historical comparison



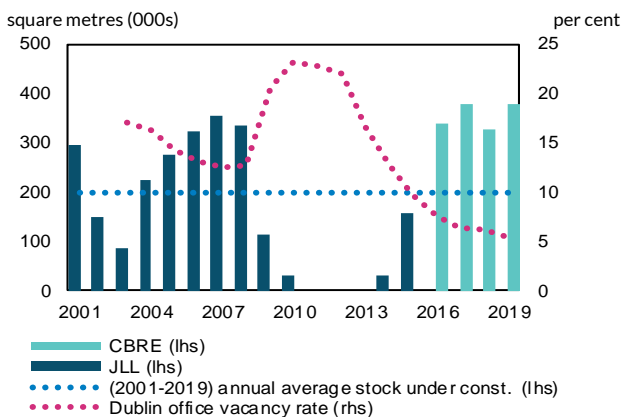
CRE yields and risk premia. Source: MSCI, Datastream and Central Bank of Ireland calculations. Notes: Risk premium / spread is the difference between the yield on Irish CRE (calculated as the rent passing on a property at the end of a period, divided by its net market capital value) and the yield on an Irish 10 year government bond. Latest observation 2019Q1.

The strong pipeline of future office space could reduce future price and rental values, especially if projected demand does not materialise. Current office vacancy rates in Dublin are low relative to history (Chart 28) and in comparison to other cities. In response, large volumes of office space are expected between now and end-2020. If demand for space does not match this new supply,

vacancy rates in Dublin could increase, which could put downward pressure on future rents and expected income returns for investors.

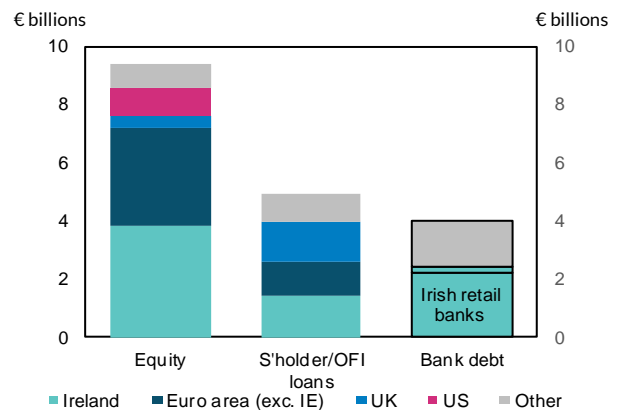
The value of Irish commercial property loans held by Irish retail banks has fallen substantially since the crisis, and most new CRE lending is for non-speculative purposes. Central Bank regulatory data show outstanding Irish CRE exposures of approximately €12 billion in the Irish retail banks at end-2018, with €2.4 billion of new lending to the sector having taken place during last year. Of the 30 per cent of new CRE lending that is classified as “speculative”¹⁷, the vast majority relates to residential and, to a lesser extent, mixed commercial property development schemes.

Chart 28: Large supply expected by 2020 in response to low vacancy rate in Dublin office market



Dublin office stock under construction and vacancy rate.
Source: JLL, CBRE and Central Bank of Ireland calculations.
Notes: Latest observation 2019Q1.

Chart 29: Irish retail banks provide some debt funding to REIFs



Funding profile of resident investment funds with holdings of Irish property.
Source: Central Bank of Ireland.
Notes: Latest observation 2018Q4.

The growing role of non-bank CRE investors broadens risk sharing but creates new channels for the transmission of external shocks. Investment funds in Ireland have amassed ownership of a substantial portion of the invested Irish property market (€18 billion - see *Resilience: Investment Funds*). Investor behaviour will always be sensitive to global financing conditions, such as a reversal in risk pricing and shifts in market demand to more favourable investment opportunities elsewhere. A sharp reduction in foreign buyer demand would likely have adverse consequences for the market. It may result in fire-sales, where CRE investors want to dispose of assets all at once, putting further downward pressure on prices. Any related decrease in the financial soundness of real estate investment funds would impact the Irish banks through their debt exposure (Chart 29). Such interconnections must be observed closely, as these relationships constitute an alternative channel through which potential vulnerabilities in the CRE market could spill over to the domestic financial system (see Box 3).

Even in the absence of significant new bank lending to the Irish CRE market, large and unexpected declines in CRE prices could adversely affect the real economy through a number of channels. Such declines could lead to a wealth effect, through reductions in the value of pension or investment funds, to a downturn in real estate construction activity with a drop in employment in the sector and/or to a tightening of credit conditions via a reduction in the ability of firms to use CRE as collateral.

¹⁷ Speculative commercial property lending refers to the buying and/or developing of land zoned for residential, office, retail, industrial or mixed-use property which is not pre-sold or pre-let. Lending related to brown field sites with no guaranteed rental income is included here.

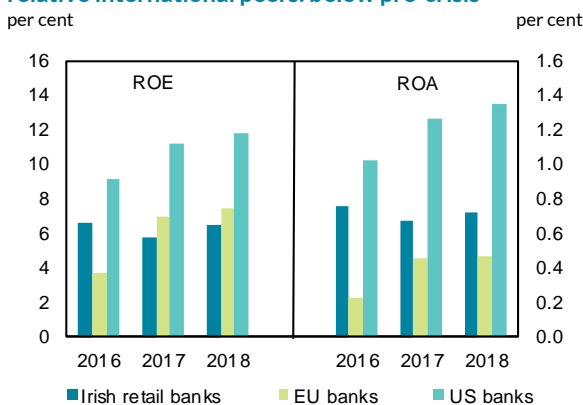
Banking sector profitability and possibility of elevated risk-taking behaviour

Irish retail banks face a challenge in seeking to balance sustainable levels of profitability over the economic cycle and meeting market expectations of returns. Challenges to profitability include the management of non-performing loans, reliance on net interest income from corporate and household lending and investing to adapt to a changing operating environment, while containing costs. In this environment, banks may face incentives to elevate risk taking to meet return expectations of market participants. This could lead to an unsustainable, pro-cyclical expansion in credit over time. While risk-taking is not excessive at present, there is some tentative evidence of increased risk taking in some areas, facilitated by the broader macroeconomic environment.

Irish retail bank profitability has recovered from its post-crisis low, but remains subdued relative to international benchmarks. Measures of profitability, such as return on equity and return on assets, are similar to those observed on average across the European banking system (Chart 30). However, the European banking sector has been slow to recover in comparison to international peers.

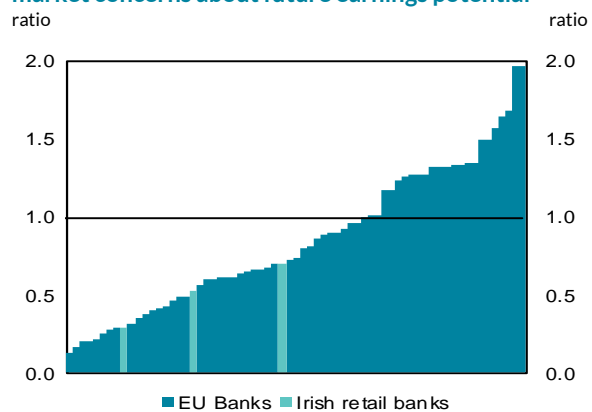
The challenges facing the EU and Irish retail banking sectors are reflected in forward-looking market based valuations. The price-to-book ratio provides a market-based assessment of future earnings potential. A significant proportion of EU banks, including the three Irish-headquartered banks, are still trading below book value, indicating that market participants are pessimistic about future profitability and asset quality (Chart 31).

Chart 30: Irish retail banks' profitability subdued relative international peers. below pre-crisis



International comparison of profitability.
 Source: S&P Global, Federal Reserve Economic Data and Central Bank of Ireland calculations.
 Note: EU data relate to a sample of 66 banks identified as O-SII.

Chart 31: EU banks' price-to-book ratios point to market concerns about future earnings potential

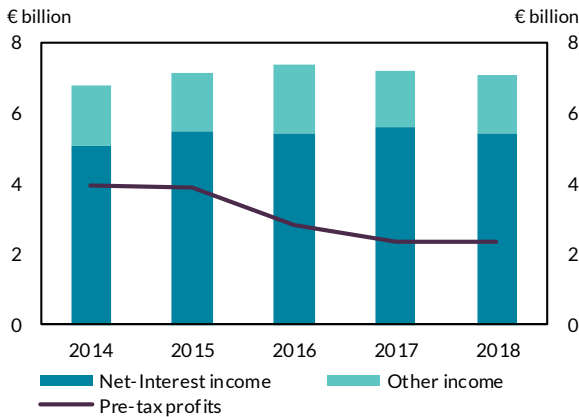


International comparison of price-to-book ratios.
 Source: Bloomberg.
 Notes: The price-to-book ratio is a ratio of market price of a bank relative to its accounting book value. A value above (below) 1 implies a positive (negative) market valuation relative to its current accounting valuation. Data are for a sample of 67 EU banks that have been identified as O-SII and Irish retail banks. Data as at 28 June 2019.

Irish retail bank profitability is heavily reliant on net interest income on household and firm lending, while costs are elevated relative to peers (Chart 32). In recent years, lower funding costs have contributed to relatively high net interest margins, with the composition of liabilities shifting to retail deposits. This is unlikely to continue given the limited scope for further reductions in deposit rates and the issuance of loss-absorbing liabilities required to meet MREL targets. In the lending

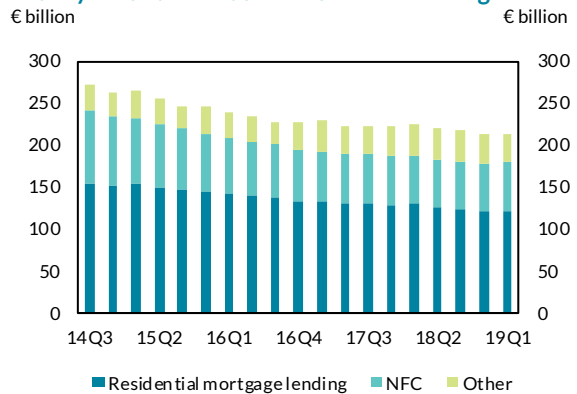
portfolio, the majority of interest income is earned from lending to household and corporates, with retail mortgages accounting for the single largest portion of outstanding lending. (Chart 33).¹⁸ This business model can provide long-run sustainable profitability, but the incentive to increase volume through looser credit standards in a low interest rate environment must be guarded against by ensuring prudent underwriting standards are maintained. Other factors such as operating efficiency are putting pressure on Irish retail banks' profitability. The cost-to-income ratio of most Irish retail banks remains above the EU median (Chart 34).

Chart 32: Irish retail banks' reliance on net-interest income



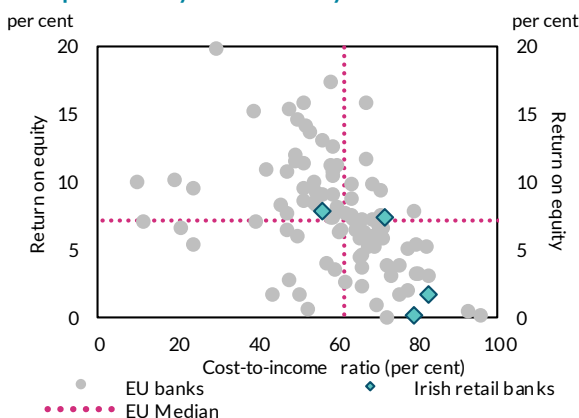
Breakdown of Irish retail banks' operating income and overall pre-tax profits.
 Source: Central Bank of Ireland.
 Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements. Data are as at 31 December 2018.

Chart 33: Irish retail banks' loan book remains heavily reliant on household and firm lending



Irish retail banks' gross loans outstanding by counterparty.
 Source: Central bank of Ireland.
 Notes: Data are consolidated and collected in accordance with the EBA's FINREP reporting requirements. Data refer to gross loans. Last observation 2019Q1.

Chart 34: Irish retail banks face challenges in terms of both profitability and efficiency



International comparison of return on equity and cost-to-income ratios.
 Source: S&P Global.
 Note: Cost-to-income data not available for KBC Ireland. EU data relate to 102 banks identified as O-SII.

Irish banks face headwinds to profitability, both from legacy and structural factors. A high stock of NPLs has been identified as a key driver of price-to-book ratios and expected future profitability.¹⁹ Substantial progress has been made by Irish banks in reducing existing NPLs, but the stock of NPLs

¹⁸ For more on Irish banks' balance sheet concentration in real estate see Lyons, Nevin and Shaw(2019) "[Real-estate concentration in the Irish banking system](#)". Vol. 2019, No. 4.
¹⁹ [Bogdanova et al \(2018\) BIS Quarterly Review, March.](#)

remains high relative to international standards (see *Resilience: Banks*). Banks also face structural headwinds to profitability, such as changes in how businesses finance themselves, and growing competition from non-bank finance and from other sources. For example, applications from SMEs for bank finance continues to decrease as firms use retained earnings to fund investments (see *Resilience: Real Economy*). Finally, banks also need to continue to invest, for example in their IT systems, to adapt to a changing operating environment, while containing costs overall.

Efforts to meet market expectations of profitability, irrespective of whether those expectations are appropriate, may incentivise Irish retail banks to take on excessive risks. The majority of EU banks appear to be targeting a long-term ROE of between 10-12 per cent.²⁰ Such target ROE levels are significantly above the current level recorded by many EU banks, including the Irish retail banking system overall. Such targets could lead to banks loosening credit standards in order to meet return targets. This could lead to inefficient allocation and mispricing of credit within the domestic economy, as well as increasing the risk of additional NPLs in future. Alternatively, new, more risky business lines may be taken on, with similar implications.

While risk-taking is not excessive at present, there is some tentative evidence of the emergence of looser credit standards. As noted in discussions on increased corporate indebtedness, some Irish banks have increased exposures to the global leveraged loan market, risks in which have been rising. The SSM and the Central Bank are closely monitoring the retail banks' exposures to leveraged debt transactions, with a particular focus on strategy, portfolio composition and financial resilience following stress testing. Changes to risk perception may not be limited to new business activities. The current benign macro-economic environment, for example, may also lead to a pro-cyclical fall in provisioning on currently non-performing assets and an overreliance on current and forecast market valuations of underlying collateral that may be subject to negative repricing in a downturn.²¹ Overall, while domestic credit developments have continued to strengthen, there is no evidence of risk taking leading to excess growth in the volume of bank credit. (See *Policy: CCyB*).

²⁰ This reflects an expected cost of capital in the range of 8-10 per cent. For more see [EBA Risk Assessment Questionnaire](#).

²¹ While recent accounting reforms under IFRS9 aim to reduce the possibility of sharp changes in bank provisions and profitability during downturns, recent research suggests the design of the new regime leaves many ambiguities. In particular, the reliance on forward-looking indicators means that in the current benign domestic macroeconomic environment, there is a risk that provisions against future loan losses may be optimistically low. See [Gaffney and McCann \(2018\), "The cyclicity in SICR: mortgage modelling under IFRS 9", Vol. 2018, No. 16](#) for a discussion of the potential for pro-cyclicality in provisioning under the new IFRS9 accounting regime.

Box 1: Brexit Contingency: Mitigation of 'Cliff Edge' Risks

By Gina Fitzgerald (Financial Risks and Governance Division)

The Irish financial system and economy have close links with the financial system of the UK. These links are underpinned by a common legislative and regulatory framework, as part of the EU's Single Market. Absent mitigating actions, a disorderly Brexit would have the potential to disrupt the provision of cross-border financial services to Irish households, businesses and financial institutions, with adverse implications for domestic financial stability. Over the past 18 months, the Central Bank – working with other authorities domestically and internationally – has taken action to mitigate those 'cliff-edge' risks that have the potential to cause the most significant immediate disruption to cross-border financial services in a disorderly Brexit. This Box outlines what these risks are and the actions that have been taken to mitigate them.

Loss of access to UK Central Counterparties (CCPs)

In a disorderly Brexit, absent mitigating actions, EU financial institutions (and, in turn, the clients that they serve) would not be permitted to clear certain derivative contracts through UK CCPs, specifically interest rate swaps and certain index credit default swaps. This is because EU legislation requires that such derivative contracts are centrally cleared and the vast majority of such contracts are currently cleared by LCH in London. Late last year, the European Commission provided temporary equivalence for UK CCPs offering clearing services into the EU in the event of a disorderly Brexit. That temporary equivalence, which lasts until 30 March 2020, enabled the recognition by ESMA of all three UK CCPs (ICE Clear Europe Ltd, LME Clear Ltd and LCH Ltd). The necessary Memorandum of Understanding (MoU) has also been agreed between ESMA and the Bank of England. The combination of these actions means that EU financial institutions (and, in turn, their clients) will be able to continue to access UK CCPs in a disorderly Brexit for a temporary period. Banks and other affected entities will need to take action to mitigate that risk over the medium term, ahead of the expiration of the temporary equivalence period.

Loss of access to the UK's Central Securities Depository (CSD)

In a disorderly Brexit, absent mitigating actions, it would no longer be possible to settle Irish securities (equities and some exchange traded funds) traded on Euronext Dublin (formerly the Irish Stock Exchange) and the London Stock Exchange. This is because the current settlement system for these Irish securities is CREST, a CSD operated by the UK-incorporated Euroclear UK & Ireland (EUI). Euronext Dublin identified an alternative EU-based CSD as their preferred long-term provider of settlement services (Euroclear Bank Belgium). But an interim solution was also needed to facilitate a smooth transition to this new provider in the event of a disorderly Brexit. On 19 December 2018, the European Commission granted temporary equivalence to the UK's legal and supervisory arrangements for CSDs for a period of two years, until 29 March 2021. On 1 March 2019, ESMA announced that, in the event of a no-deal Brexit, EUI will be recognised as a 'third country' CSD to provide services in the EU. Also in March the ECB granted EUI's continued access to euro settlement until 29 March 2021, aligned with the temporary equivalence decision granted by the EU Commission to the UK. The Central Bank has worked closely with the Department of Finance and the Department of Business Enterprise and Innovation to ensure the necessary amendments to national legislation (Irish Settlement Finality and Companies Act) are progressed and are ready to be enacted if required. The combination of these actions means that the

risk of a material disruption to the trading of Irish securities in a disorderly Brexit scenario has been mitigated.

Disruption of cross-border insurance services

In a disorderly Brexit, absent mitigating actions, UK insurers that are not authorised to operate within the EU would not be able to provide insurance services to Irish policyholders. This would disrupt the provision of cross-border insurance services, for example by precluding UK insurers from servicing claims to Irish policyholders. A number of UK insurers have been authorised to operate within the EU, for example by establishing subsidiaries in Ireland or other EU Member States. In addition, the Central Bank worked with the Department of Finance to develop a domestic temporary 'run-off' regime for insurers and brokers. This legislation enables UK insurers to service existing insurance contracts for a period of three years after the withdrawal date, mitigating the risk of a disruption to the continuity of insurance contracts. Under the temporary 'run-off' regime, UK insurers may not write new business without authorisation. The necessary legislation was published as part of the Government's Omnibus Brexit Bill on 22 February and has been signed by the President. It is ready to be enacted, should the need arise.

Disruption of cross-border fund management services

In a disorderly Brexit, absent mitigating actions, UK fund managers would lose their passporting rights to manage Irish authorised funds. This applies to both Undertakings for the Collectively Investment in Transferable Securities (UCITS) and Alternative Investment Funds (AIFs). A number of Irish Qualifying Investor AIFs (QIAIFs) can continue to be managed by UK fund management companies under certain non-EU Alternative Investment Fund Manager (AIFM) conditions, allowing the continued provision of services. The remaining Irish authorised funds have already moved their management to EU27 fund management companies or have measures in place to transfer their management in the event of a no deal Brexit. An additional issue relates to the ability of Irish-authorized investment funds to continue delegating portfolio management activities to UK entities. On 1 February 2019, ESMA confirmed that ESMA and EU securities regulators had agreed no-deal Brexit MoUs with the UK's Financial Conduct Authority (FCA). This included a multilateral MoU (MMoU) between EU/EEA securities regulators and the FCA covering supervisory cooperation, enforcement and information exchange between individual regulators and the FCA. The MMoU allows portfolio management outsourcing and delegation to continue to be carried out by UK-based entities on behalf of counterparties based in the EEA, mitigating this risk.

Overall, the Central Bank considers that – on account of the actions taken – the most material and immediate risks to the provision of cross-border financial services from a disorderly Brexit have been mitigated. However, some degree of disruption remains likely. For example, some UK-based providers of specialised financial services may no longer be able to serve Irish clients, who will need to find alternative providers of such services. The extension period should be used by firms, as well as their clients, to continue to prepare for a disorderly Brexit.

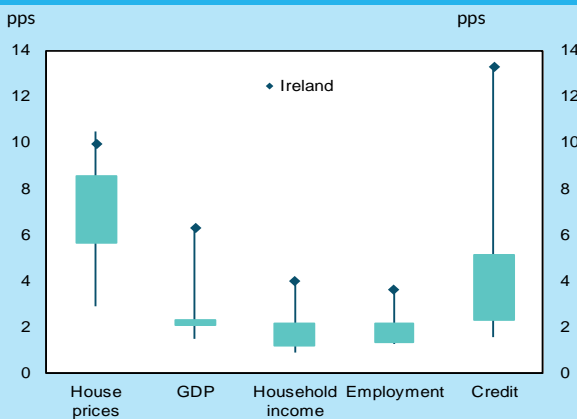
Box 2: Financial stability considerations of being a small, highly globalised economy

By Michael Wosser, Martin O'Brien (Macro-Financial Division) & Caroline Mehigan (International Relations Function)

The Irish economy is small, open, and highly-globalised. As a result, it is more sensitive to developments in the global financial cycle as well as being more prone to structural macroeconomic shocks. This Box outlines the implications of the small, highly-globalised nature of the Irish economy for financial stability and the setting of macroprudential policy.

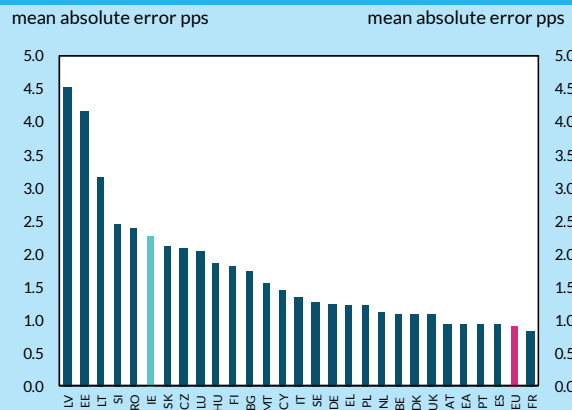
The historic volatility of the Irish macro-financial environment is perhaps the most visible representation of being small, open and highly globalised. Chart A shows the cross-country volatility of a range of macro-financial variables since 1980, illustrating the relatively large volatility of macroeconomic variables in Ireland relative to its European peers. Another metric of the volatility of the Irish macro-financial environment is the average deviation of actual economic performance relative to previous forecasts. These forecast errors for Ireland are at the higher end of the distribution when comparing across EU Member States, and indeed are the highest among pre-2004 Member States (Chart B). Given that these forecast errors are from a consistent forecasting framework, over multiple business cycles, they are more likely to reflect Ireland's higher propensity for structural shocks.

Chart A: The Irish economy has been considerably more volatile than its peers across a range of macro-financial variables



Source: Central Bank of Ireland calculations.
 Notes: Volatility is the standard deviation of annual growth rates in the series examined (1980Q2-2018Q2). For Household Income and Credit to NFC 1997Q2-2018Q2. GDP is replaced with modified GNI* for Ireland.

Chart B: Higher forecast errors for the Irish economy point to higher occurrence of structural shocks

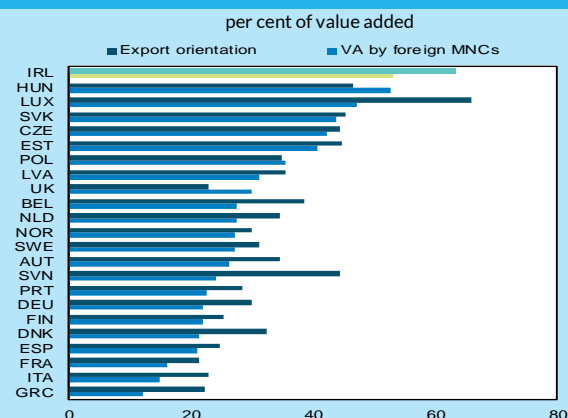


Source: Fioramanti et al. (2016).
 Notes: Chart displays cross country comparisons of year-ahead GDP forecast errors from the European Commission over the period 1969-2014, and so excludes the impact of the extremely large revisions of 2015 and subsequent years. The comparison has been made over a long period of time, to capture expansionary and contractionary phases of the business cycle. Forecast errors are the Mean Absolute Error (MAE), which is the average of the absolute value of forecast errors over the period.

Another manifestation of Ireland's highly globalised nature is its reliance on the activity of foreign-owned multinational corporates (MNCs). While MNCs generate many benefits, the extensive role played by foreign-owned firms is one channel that may increase the probability that the Irish economy would experience idiosyncratic structural shocks that would have significant macro-financial consequences.¹ These can arise from various sources, including from shifts in technological trends, changes to the international trade and tax regimes or even idiosyncratic shocks to some of the largest multinational enterprises that operate in Ireland or the sectors in which these enterprises operate.

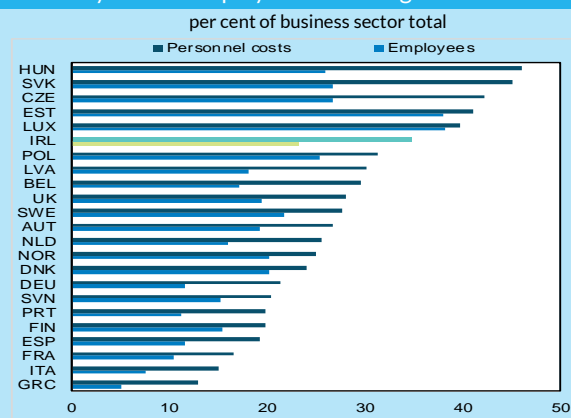
The significant contribution of foreign-owned MNCs to the Irish economy is presented in Charts C and D. MNCs contributed 53 per cent of Irish value-added in 2014 (Chart C), the highest of all EU countries.² Furthermore, the amount of domestic value-added that meets foreign final demand, an indicator of openness, is 63 per cent. This is one of the highest in the OECD, second only to Luxembourg.

Chart C: MNCs in Ireland contribute the highest share of value added relative to other countries



Source: Eurostat and OECD.
 Notes: Value-added by foreign MNCs- (2014 latest comparable year). OECD-WTO TiVA- export orientation - domestic value-added in foreign final demand share in VA (2016 latest comparable year). The group reported are EU members that are also OECD members for the data year 2014.

Chart D: MNCs in Ireland contribute significantly to the economy in both employment and wages



Source: AMNE data.
 Notes: Latest comparable year 2012. Data for Ireland in 2017 "Corporation Tax 2018 Payments and 2017 Returns" has 22 per cent of company employment in foreign MNCs. The business sector data excludes the agriculture, finance and public sectors.

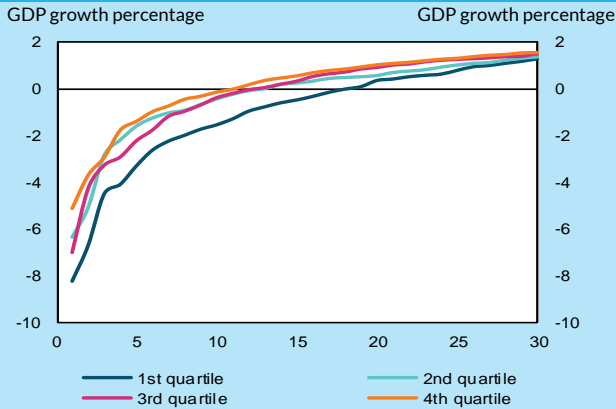
Beyond value-added and exports, foreign MNCs play a crucial role in the real economy in terms of employment and their income taxes. Chart D illustrates that 23 per cent of business sector jobs were in foreign-owned MNCs, which is at the upper end of advanced countries. Furthermore, as these firms are providing high quality jobs, the personnel costs of MNCs (a proxy for wages) accounts for 33 per cent of the business sector total, this being greater than the employee share. The presence of these firms also benefits the Irish exchequer, with employees in foreign MNCs contributing 41 per cent of income tax in 2017 and 40 per cent of the Universal Social Charge (USC), on top of significant contributions to other tax receipts such as corporation tax (80 per cent of the total in 2017).³

Taken together, the fundamental structural characteristics of the Irish economy point to the domestic banking system being – at all points in the cycle – exposed to greater macroeconomic risk than banking systems in larger, more diversified economies. Analysis ongoing in the Central Bank shows that small countries also tend to have higher ‘tail risk’ at all stages of the financial cycle. Using quarterly data from 1980 for a sample of 27 developed countries, the analysis shows that the tail risk to small economies’ growth prospects are considerably higher than for their larger counterparts (Chart E).

In addition to facing a higher degree of macroeconomic risk, the structural characteristics of the economy can also affect the structure of the domestic banking system. Related to being small, and having a high dependency on foreign investment, is the relatively lower diversification of domestic economic activity funded by the domestic banking system. This can result in a more concentrated set of sectors to which the banking system is exposed, given that a large share of economic activity is financed through other means. In Ireland, domestic banks have particularly large concentration of exposures to real estate and construction activities. Also there is some cross-country evidence to

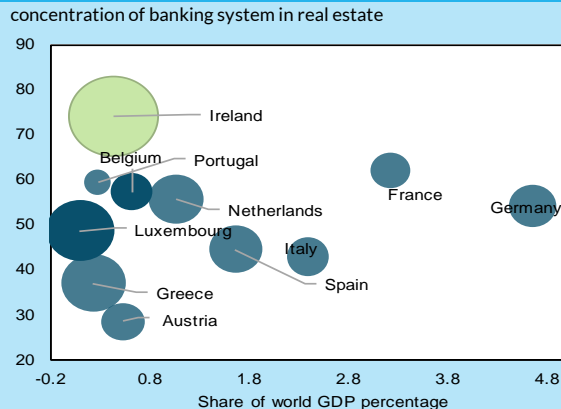
suggest that a higher degree of common exposures to real estate was associated with a higher cost, in terms of the output foregone, of the recent crisis (Chart F).

Chart E: Smaller countries typically have more adverse growth outcomes than larger countries



Source: IMF, CSO and Central Bank of Ireland calculations.
 Notes: The past distribution of GDP growth rates is used for the countries in the sample covering the timeframe 1980Q1 to 2019Q1. The graph shows the GDP growth experienced by large and small economies at each percentile of their respective densities up to the 30th percentile. Countries are divided into quartiles on the basis of their average quarterly output over the full sample timeframe. Thus the 1st quartile represents the smallest 25 per cent (on average) of countries in the sample. Growth rates are measured quarterly year-on-year.

Chart F: Smaller European countries typically had higher costs associated with the last financial crisis



Source: IMF, Bloomberg and Central Bank of Ireland calculations.
 Notes: Share of world GDP percentage is based upon IMF 2018 rankings. Concentration in real-estate lending is sourced from Bloomberg bank balance sheet data and represents the proportion of the loan-book of banks related to property. The data are aggregated at the country level by averaging across all banks headquartered in each sample country. Crisis cost, represented by bubble area, is based on 3 year aggregate output foregone (actual to forecast at time of the global financial crisis onset) as a proportion of the forecast.

These findings have important macroprudential policy-related implications. Systemic risk is multi-faceted and a broad toolkit is necessary to address the different sources of systemic risk. In the capital buffer framework, the CCyB addresses the risks to the banking system from cyclical systemic risk, including in the case of a highly globalised economy, the influences of the ebb and flow of the global cycle on the domestic cycle. However, slow-changing structural characteristics that increase systemic risk require a different capital buffer, such as a Systemic Risk Buffer. This would build resilience against the higher probability and larger impact of structural shocks of being a small and highly-globalised economy. Finally, the large concentration of the banking system to property underlines the importance of prudent underwriting by the banking system. The Central Bank’s mortgage market measures help in this regard, by protecting banks and borrowers against a marked loosening of such underwriting standards.

¹ Further details can be found in the speech given by Governor Lane at the UCD school of economics on 16th April 2019. The full speech is available [here](#).
² This increased to 59 per cent in 2015, still the highest in the EU although data is not yet available for all countries.
³ See Revenue Commission “Corporation Tax 2018 Payments and 2017 Returns”, published May 2019.

Box 3: Who invests in the Irish commercial real estate market?¹

By Gerard Kennedy (Macro Financial Division)

The size of national real estate markets and their level of interconnectedness with both the financial system and wider economy make them important from a financial stability perspective. The aim of this Box is to provide detail surrounding the nature of investors in the Irish commercial property market, at a time when it appears that non-bank investors are becoming more prominent not just in Ireland but also throughout Europe.²

It is useful to think of the commercial property markets as being comprised of two distinct parts: an “invested” or “professionally managed” component, containing CRE owned for the primary purpose of generating an income return, and owner-occupied commercial property held for non-investment purposes (Chart A). While no official figures specifying the size of the entire domestic CRE market exist, estimates of the scale of the professionally managed portion, from MSCI and Cushman & Wakefield, suggest it lies in the region of €26 to €48 billion.³

Central Bank of Ireland data show that **Irish-domiciled Real Estate Investment Funds (REIFs)** held €17.7 billion of property assets at the end of 2018 (Chart B).⁴ This has been one of the fastest growing sources of investment in recent years. Given the internationally-oriented nature of the funds sector in Ireland, these assets account for less than 1 per cent of the total assets of all Irish-domiciled investment funds. Traditional CRE sectors (office, retail and industrial/logistical units) account for the vast bulk of these holdings (83 per cent), with the remainder in income producing RRE (11 per cent), and land and property under (6 per cent).

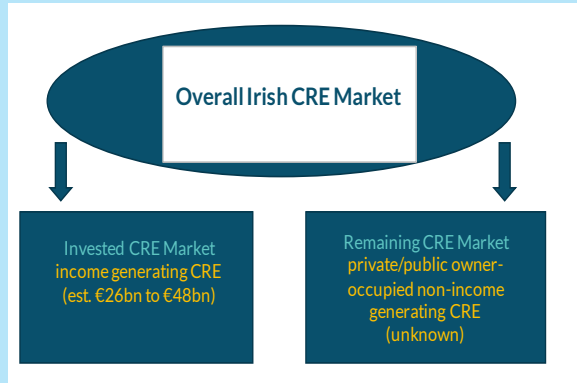
Data published in individual annual accounts show that the **Real Estate Investment Trust (REIT)** sector in Ireland held around €3.8 billion of property at the end of 2018 (Chart B). Green REIT is the largest of the Irish-listed REITs by value of property assets, ca. €1.5 billion in 2018, compared to Hibernia’s property assets of €1.3 billion. Green and Hibernia tend to focus on the acquisition of traditional CRE, primarily Dublin city offices. In contrast, IRES REIT purchases, manages and develops multi-unit residential rental real estate.⁵ By the end of 2018, IRES had obtained almost 2,700 residential units along with associated commercial space and development sites, located in Dublin city-centre and suburbs, valued at €920 million.

Solvency II data indicate that **Irish-based insurance corporations** hold around €5.4 billion of property assets (Chart B), mainly office, retail, industrial and hotel real estate assets (98 per cent) which tend to be held by life insurance firms (€4.2 billion). Finally, the Pension Authority’s Annual Report reveals the property holdings of Irish **pension funds** lies in the region of €3.1 billion, accounting for just 4.8 per cent of total assets (Chart B).

Between them, REIFs and REITs hold more than 70 per cent of the resident financial sector’s investment in Irish commercial property assets. Central Bank analysis estimates that overseas institutions provide approximately half of the identifiable funding associated with these investments directly. A greater level of foreign investor involvement in CRE markets comes with benefits from increased liquidity and risk diversification. However, the rise in cross-border flows can heighten risks to financial stability by

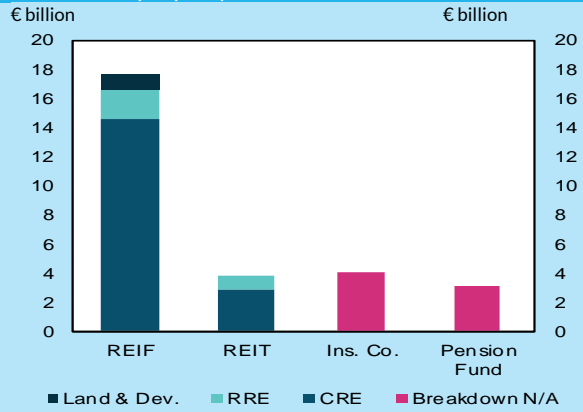
amplifying boom-bust cycles, synchronizing the local property market with overseas markets, and exposing the domestic market to international financing conditions.

Chart A: Representation of the Irish CRE market



Source: MSCI, C&W and Central Bank of Ireland.

Chart B: Resident financial sector's holdings of Irish commercial property assets



Source: Central Bank of Ireland.

¹ See Coates et al., (2019), "Who invests in the Irish Commercial Real Estate Market? An overview of non-bank institutional ownership of Irish CRE" Central Bank of Ireland, Financial Stability Notes, Vol. 2019, No. 6.

² See "Report on vulnerabilities in the EU commercial real estate sector", ESRB, November 2018

³ The MSCI estimate is from 2016, while the C&W estimate is from 2017. The difference in the estimates arise due to differences between the sources in terms of data collection and coverage.

⁴ Data collected by the Central Bank do not include property holdings of foreign-domiciled funds and so cannot provide figures related to the additional Irish property assets held by these entities.

⁵ Yew Grove REIT is the latest and smallest market entrant having floated on the Irish stock exchange in June 2018. According to its accounts, it had built up a portfolio valued at ca. €78 million in 2018.

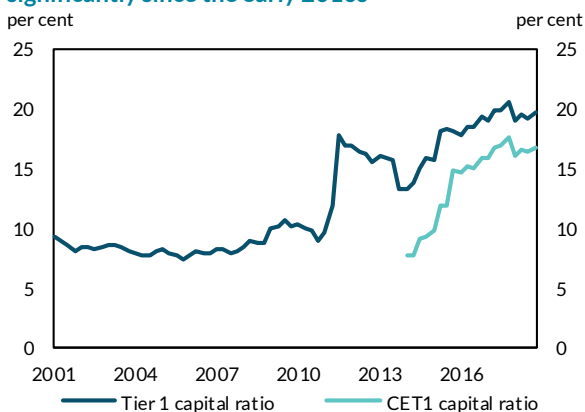
Resilience

Banks and credit unions

During the last decade, Irish banks and credit unions have become better able to absorb shocks, rather than amplify them. Banks now have higher capital ratios and more stable sources of funding, and the banking system is much smaller. Non-performing loans (NPLs) on banks' balance sheets have also fallen significantly since their peak. Still, vulnerabilities remain and further action is needed to strengthen resilience. NPLs on Irish banks' balance sheets remain elevated relative to international standards and a sustainable reduction in NPLs remains a supervisory priority. More progress is also needed to improve the resolvability of financial institutions and to strengthen operational resilience.

Banks serving the Irish economy have significantly increased their capital ratios over the last decade. Banks fund themselves with capital in proportion to the risks they take when investing in loans and other assets. In doing so, they build resilience against unexpected losses. The Irish retail banking sector now has twice as much Tier 1 capital relative to risk-weighted assets than in 2010 (Chart 35). Common Equity Tier 1 (CET1) capital ratios, which compare the best-quality capital to risk-weighted assets, are twice as high as in 2014.²² These solvency ratios have grown due to capital injections during the crisis, reductions in risk-weighted assets and retention of earnings. In recent years, a slight reduction in system-wide ratios is due to capital adjustments at banks that are above minimum solvency ratios.

Chart 35: Risk-based capital ratios have increased significantly since the early 2010s

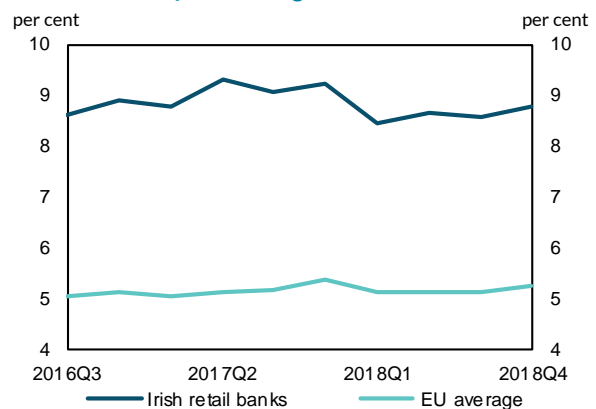


Tier 1 and CET1 capital ratios of Irish retail banks.

Source: Central Bank of Ireland.

Notes: Irish retail bank weighted average fully-loaded CET1 capital ratio, expressed as total capital divided by risk-weighted assets.

Chart 36: Leverage ratios in Irish retail banks are above the European average



Leverage ratios of Irish retail banks and other EU banks.

Source: EBA and Central Bank of Ireland.

Notes: Weighted average of Irish retail banks. Leverage ratios measure Tier 1 capital relative to total unweighted assets.

Irish retail banks are less levered than other European banks. Leverage ratios in Ireland have been stable since 2016, at almost twice the EU average (Chart 36). High leverage ratios mean that banks have high levels of capital relative to total assets. The leverage ratio is a simpler measure of solvency than the CET1 ratio. It does not rely on assessing the riskiness of banks' assets, and is robust to uncertainty about risk models. It complements other solvency ratios, such as Tier 1 capital and CET1 capital, that measure capital relative to risk-weighted assets.

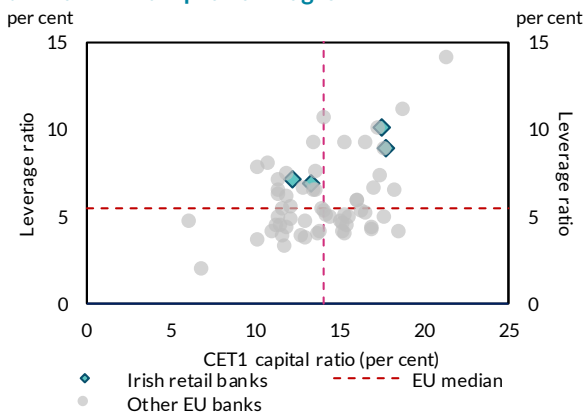
²² Common equity capital less intangibles and deferred tax assets are used as a proxy for CET1 capital in 2007.

According to the 2018 EU-wide stress test, Ireland’s largest retail banks could absorb losses in a European recession. The EBA and the European Systemic Risk Board tested whether the EU banking sector had enough capital to withstand a Europe-wide recession. The 2018 exercise tested the impact of important threats to the financial system that remain relevant to Irish retail banks today, including repricing of global risk premia, an EU-wide recession, structural banking sector challenges and debt sustainability concerns.

The two largest Irish domestic lenders remained significantly above minimum solvency ratios in the EU-wide stress-test scenarios. The banks tested by the EBA had enough capital to be able to remain solvent during a European recession, while maintaining lending to the rest of the economy in line with debt repayments from borrowers. As of June 2018, these lenders had maintained capital ratios close to or above the European average (data reported to June 2018 EBA transparency exercise, Chart 37).

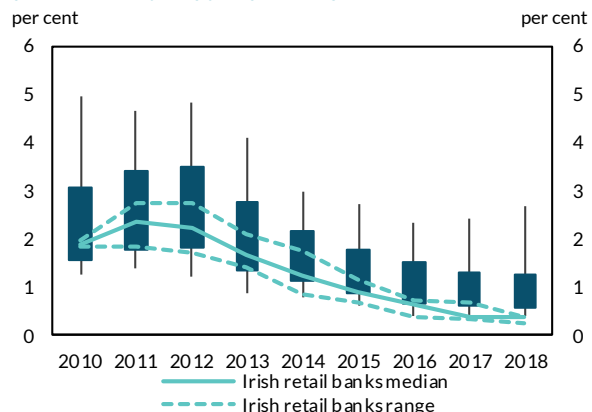
The Irish retail banks’ funding costs have continued to fall. Banks can fund themselves more cheaply than international peers (Chart 38), largely due to a strong supply of customer deposits. The cost of wholesale funding to Irish banks in debt markets has been more stable than equity prices over the past 18 months. Bank equity prices have fallen in Ireland, as in other EU countries. Global economic growth expectations have fallen, while Brexit remains a source of continuing uncertainty. Although investors may expect less future bank profitability (see *Risks: Banking sector profitability and possibility of elevated risk-taking behaviour*), this has not led to funding difficulties.

Chart 37: Irish retail banks regulatory ratios are close to or above European averages



Capital and leverage ratios of EU and Irish retail banks.
 Source: S&P Global.
 Notes: Chart shows regulatory ratios as at 2018 of four Irish retail banks and 67 other European banks identified as O-SII. Irish retail banks exclude Ulster Bank.

Chart 38: Irish retail banks funding costs are stable, and below international norms

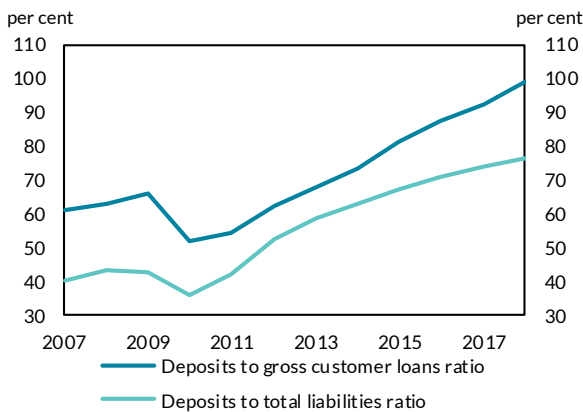


Distribution of funding costs of Irish retail banks.
 Source: S&P Global.
 Notes: Vertical lines and boxes show the 90th, 75th, 25th and 10th percentiles of the distribution of funding costs in a time-varying sample of 118 international banks identified as O-SII. Time-varying sample of Irish retail banks.

Domestic banks are now funded mainly with customer deposits, making them more resilient to capital market turbulence. Deposits are now almost equal to loans to customers (Chart 39). During the mid-2000s, lenders borrowed heavily from other banks and international capital markets. Significant reliance on short-term wholesale funding can be a source of bank funding vulnerability. Investors may withdraw funds more rapidly than retail depositors in search of higher yields or in response to global risks. Customer deposits are now the main source of bank funding; these are mostly provided by individual retail customers, so they tend to be more stable than short-term interbank deposits. By contrast, funding from wholesale lenders and central banks has fallen by half since 2014.

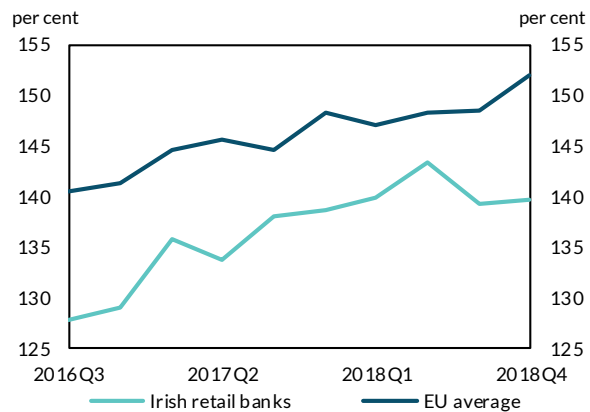
Banks are increasing their holdings of liquid assets relative to their potential outgoings, but they remain below or close to average European liquidity ratios. Irish retail banks can cover more than their expected liquidity needs during a stressed month (Chart 40), and their liquidity ratios have increased in the last three years. Banks with high Liquidity Coverage Ratios (LCRs) are better able to meet redemption requirements from creditors such as depositors. Nonetheless, Irish retail banks remain slightly below the average European LCR. Most are also at or above the average net stable funding ratio, which measures longer-term liquidity needs over a year (Chart 41).

Chart 39: Irish retail banks now rely more on customer deposits



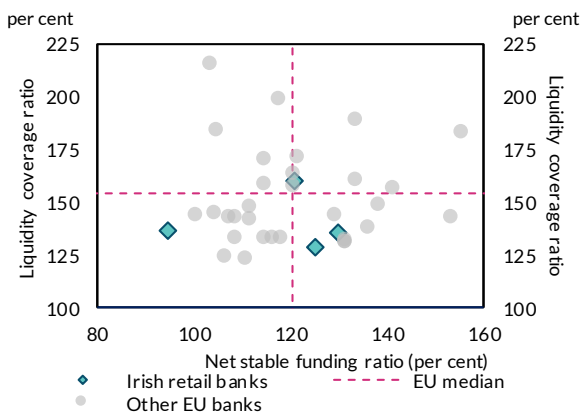
Deposits as shares of gross customer loans and total liabilities at Irish retail banks.
Source: Central Bank of Ireland; S&P Global.
Notes: Total across Irish retail banks to the end of 2018.

Chart 40: The Irish banking system covers its liquidity needs, but is below EU average coverage



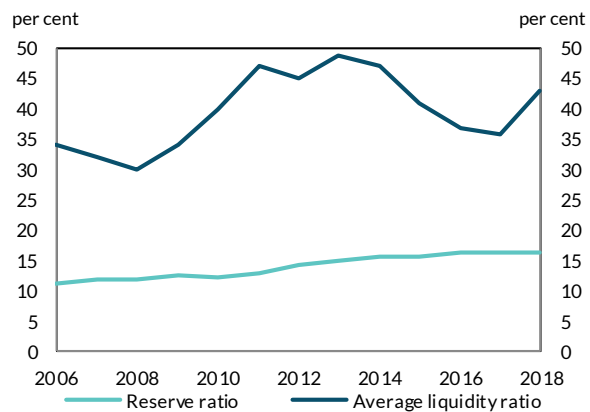
Liquidity coverage ratios of Irish retail banks and other EU banks.
Source: EBA and Central Bank of Ireland.
Notes: Weighted average of Irish retail banks.

Chart 41: Most Irish banks have short and medium-term liquidity coverage near or below the EU average



Liquidity ratios of Irish and other EU banks.
Source: S&P Global.
Notes: Chart shows liquidity ratios as at 2018 of four Irish retail banks and 44 other European banks identified as O-SII. Irish retail banks exclude Ulster Bank.

Chart 42: Credit unions have increased their solvency and liquidity ratios



Credit union sector regulatory ratios.
Source: Central Bank of Ireland.
Notes: Weighted averages across a time-varying sample of 428 credit unions.

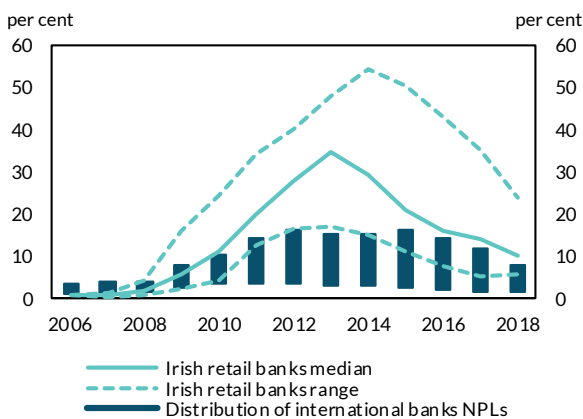
Credit unions have more reserves and liquidity than in the mid-2000s. Credit unions account for 5 per cent of total domestic market lender assets and provide approximately 30 per cent of unsecured consumer lending. Like banks, the credit union sector now has more reserves as a share of assets, and is more liquid (Chart 42). Although credit unions face significant challenges to their business models, these do not arise from excessive, high-risk lending.²³

²³ *Business Model Strategy: Guidance for Credit Unions*, Central Bank of Ireland, February 2019.

The banking system is smaller than before the crisis. Total assets of domestic Irish lenders are now €263 billion, which is less than half of the 2008 peak value of €536 billion. Banks sold loans and investment portfolios to foreign and non-bank investors, while borrowers paid back more debt than they took on. Lenders now focus on loans to households and firms rather than CRE, although most lending is still for residential or commercial property (see *Risks: An abrupt fall in property prices*).

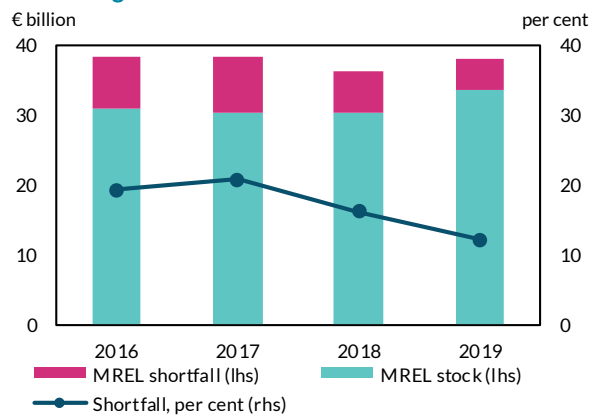
Despite significantly strengthening resilience since the financial crisis, banks remain vulnerable to problems arising from its aftermath, including NPLs. Irish banks have reduced their large NPL stock more quickly than banks elsewhere in Europe. Nevertheless, many loans in the Irish banking system remain non-performing. Retail banks still have NPL ratios above the international average (Chart 43), which reduces their ability to generate profits relative to other EU banks (see *Risks: Banking sector profitability and possibility of elevated risk-taking behaviour*). It also poses a threat to the resilience of the banking system during times of stress: for example, a fall in asset values would significantly impede recovery of value from NPLs.

Chart 43: Irish banks still have NPL ratios well above international banks



Irish retail banks' NPL ratios relative to other European banks. Source: S&P Global. Notes: Boxes show the 75th and 25th percentiles of the distribution of NPL ratios in a time-varying sample of 124 European banks. Time-varying sample of Irish retail banks.

Chart 44: Retail banks are making progress toward MREL targets



MREL stocks and shortfalls from MREL targets in the Irish retail banking sector. Source: Central Bank of Ireland. Notes: 2019 figures show progress during the year up to 1 July 2019.

Recently, banks have reduced their NPLs further through loan sales, among other strategies. In 2018, Irish retail banks sold €7.8 billion of mortgages and corporate loans, which contributed to NPL reductions. Central Bank research suggests that many NPLs still on bank balance sheets may be difficult to cure. This implies that loan sales are likely to remain part of the toolkit available to lenders to reduce NPLs, while purchasers must continue to apply statutory consumer protections to NPLs. Future demand for NPL portfolios would not be guaranteed if investors were to become more risk-averse (see *Risks: Global financing conditions*).

Banks need to continue to work toward resolvability. Some Irish retail banks are required to issue more “bail-inable” debt which will absorb losses during a crisis, to meet minimum requirements for MREL. These banks have made progress toward their MREL targets, and are reducing their MREL shortfalls relative to their targets (Chart 44). Other important structural changes have included the creation of holding companies from which they can issue MREL. Further progress is needed to close MREL shortfalls and remove other barriers to resolution, such as in portfolio valuation and legal restructuring (see Box 4).

Financial institutions need to focus on operational resilience as well as financial resilience. The financial services sector depends heavily on technology to conduct its operations and deliver its services. In addition, the connections between firms are becoming more numerous and increasingly complex, while competition from new financial technology firms is rising. Strategic decisions about investment in information technology should incorporate considerations of operational resilience. In addition to the capabilities to prevent and detect operational or technology-related incidents, it is critical that banks can withstand, absorb and recover from these types of disruptive events.

Banks have recently made some progress toward improved management of technology risks.

Across the sector as a whole, there remains a need for substantial investment in banks' data and technology capabilities. The financial sector will need to invest more to increase its resilience to service outages and cyber-attacks, as well as to keep pace with services offered by new financial technology firms. Supervisors across the EU are increasing the priority of these challenges, and requiring a focus by their regulated institutions on the importance of operational and cyber-resilience.

Household and corporate sectors

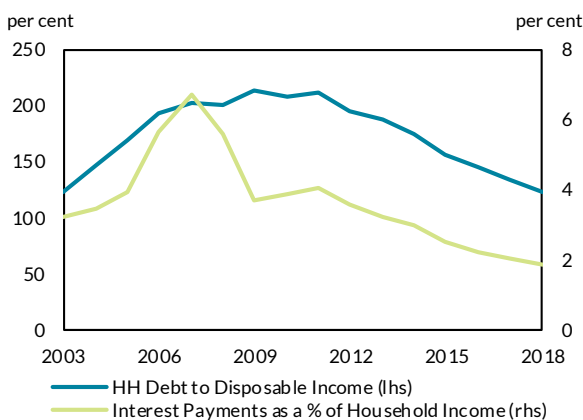
Ireland's household sector has become more resilient over the past 10 years. Households now have lower debt repayment burdens and are less sensitive to shocks to interest rates or incomes. However, some households remain in a vulnerable position, including those who have not fully recovered from the previous financial crisis.

Irish firms have reduced their debts relative to their assets, and debt repayment burdens have fallen. Debts owed by small and medium-sized enterprises (SMEs) to Irish banks have fallen by more than a third during the last five years. Instead of borrowing, many Irish SMEs use retained earnings to fund spending and investment.

Households

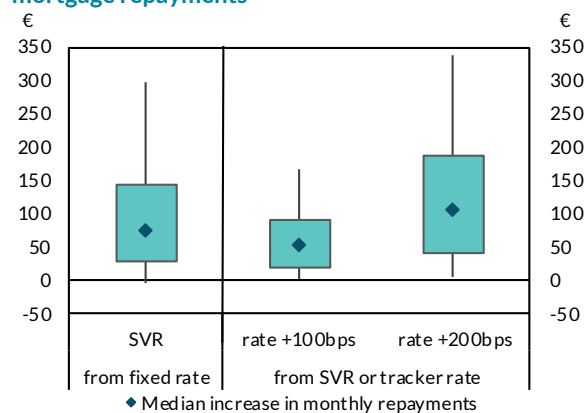
Most Irish households have reduced their debts over the past ten years and their debt repayment burdens have also fallen. Households now have less debt relative to their income (Chart 45). Their debt repayment burdens have fallen, due to a decline in the sums owed, higher incomes and lower interest rates. The Irish household sector is therefore less vulnerable to repayment problems from unsustainable borrowing than in the mid-2000s.

Chart 45: Irish households have reduced their debts and their debt repayment burdens have fallen



Aggregate debt servicing and debt-to-income ratios.
 Source: Central Bank of Ireland, CSO, ECB Statistical Data Warehouse.
 Notes: Household liabilities (household balance sheets, Central Bank of Ireland Quarterly Accounts), divided by gross disposable household income (CSO). The rate of interest on banks' outstanding lending to households for house purchases is used as a proxy for the average interest rate on all debt when calculating debt servicing cost. Last observation 2018Q3.

Chart 46: Even large shocks to interest rates would have a moderate impact on most households' monthly mortgage repayments



Mortgage repayment increases under interest rate change scenarios.
 Source: Central Bank of Ireland.
 Notes: Column 1 covers loans on a fixed rate on 30 June 2018 due to switch to a variable rate before 2022. Borrowers are assigned the highest current SVR at their bank. Columns 2 and 3 cover loans on a variable rate on 30 June 2018. Vertical lines and boxes show the 95th, 75th, 25th and 5th percentiles; dot is at median.

Even quite large shocks to interest rates would have a modest impact on most households' monthly mortgage repayments. If interest rates were to rise by 1 per cent, the average household on a variable-rate mortgage would pay €45 extra per month (Chart 46). Based on Central Bank calculations, this represents less than 2.5 per cent of the average estimated disposable monthly income after basic living expenses for mortgaged households.²⁴ Some households would be affected more, as they have larger mortgages. For example, if interest rates rise by 2 per cent, borrowers with larger mortgages will pay an extra €315 per month. According to Central Bank

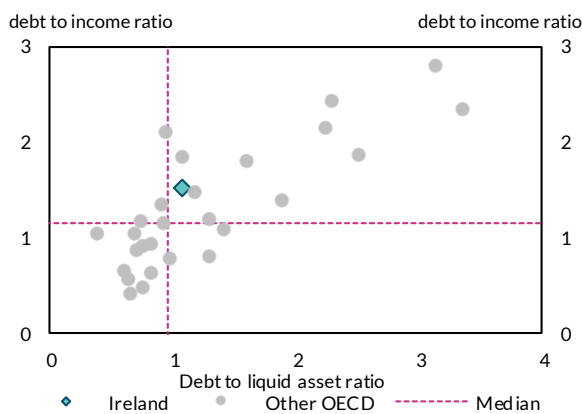
²⁴ Average monthly disposal income of €1,867. This figure is the amount after taxes, mortgage repayments and basic living expenses derived from an estimate of subsistence expenditure. See Kelly and Mazza, "Loan-to-Income restrictions, Mortgage-Service and the Interest Rate Cycle", forthcoming.

analysis, 95 per cent of mortgaged households would be able to afford this increase and still afford to pay basic living expenses.

Even without an interest rate rise, borrowers on fixed-rate mortgages could face increases in their repayments when their fixation periods end unless they refinance. Around two-thirds of borrowers with fixed-rate mortgages will roll off their current fixed rate between now and 2021. If they do not refinance, and roll onto their bank's highest standard variable rate, the average borrower would see an increase in repayments of €65 per month (Chart 46). These increases will be larger if standard variable rates rise.

Households built up financial assets, gaining resilience against future shocks. Aggregate household sector financial assets have grown almost as quickly as incomes, and are mostly in liquid, low-risk forms like bank deposits, which can be drawn down in times of stress. The Irish household sector has close to the median OECD level of debt to liquid assets (Chart 47), although debt to income is slightly higher than the OECD average. Cash and deposits are more evenly spread across the income distribution than other assets, providing a buffer for many households against shocks.²⁵

Chart 47: Irish households have average levels of financial assets, and slightly high levels of debt

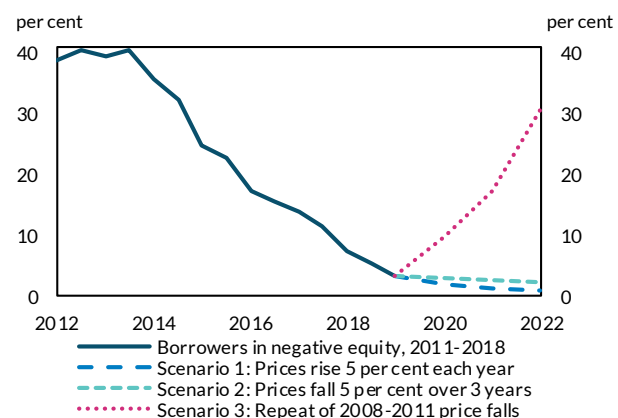


Household debt to income and debt to liquid assets in Ireland and OECD countries.

Source: OECD and Central Bank of Ireland calculations.

Notes: Liquid assets defined as cash and deposits. Calculated using OECD published household debt to disposable net income data (%), adjusted disposable net household income (US Dollars), household financial assets (US Dollars) and cash and deposits to net financial assets (%). Data are a range of years for different countries (2015 - 2018).

Chart 48: Households are now less likely to fall into negative equity



Mortgage borrowers at retail banks in negative equity.

Source: Central Bank of Ireland.

Notes: Scenario projections are as at 31 December each year. In each scenario, loans amortise on schedule, while new loans originate each year at 2018 LTVs and volumes.

Housing represents the majority of real, non-financial household assets in Ireland. Around 70 per cent of Irish households own their own homes, including over 60 per cent of the lowest-income households.²⁵ Around half of all homeowners have a mortgage and 84 per cent of all Irish household debt is mortgage lending. Since Irish households tend to rely on property as an asset, housing equity represents the difference between what most households owe and the value of their largest asset.

Housing equity of mortgaged households has grown substantially since the early 2010s, mostly due to rising house prices. Some households remain in negative equity, as they owe more to the bank than their house is worth. In the event of a shock, they would be unable to react by accessing

²⁵ Lawless, Lydon, and McIndoe-Calder, (2015) "The Financial Position of Irish Households" Central Bank of Ireland Quarterly Bulletin Q1 2015.

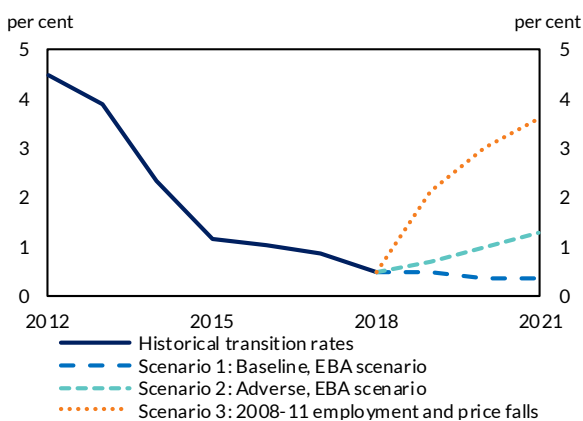
credit or selling their homes. The share of households in negative equity has fallen from 40 per cent in 2012 to 5 per cent in 2018, mainly due to rising property prices.

Households are also less likely to end up in negative equity, even if prices fall as far as in 2008-2011, due to stronger underlying resilience among mortgage holders (Chart 48). A Central Bank model estimates that the proportion of mortgage borrowers in negative equity will continue to decrease even if prices fall by 5 per cent as per the EBA adverse scenario, as loan repayments will offset the decline in prices. Further, if the price falls of 2008-2011 were to recur, negative equity would return to its 2014 level, 10 percentage points below its peak (Box 5). This suggests mortgage borrowers have become more resilient to house price shocks in the last decade.

Some households continue to face difficulties in paying their debts, although the number is declining. The average mortgage borrower in arrears owes more than two years of payments to the lender. Fewer households are now falling into mortgage arrears over 90 days past due (Chart 49). Central Bank models suggest that in the EBA adverse scenario, the share of performing mortgage loans that enter 90-day arrears could rise to 1.6 per cent per year after three years. This would be the highest level since 2014, but would remain well below 2012 levels.

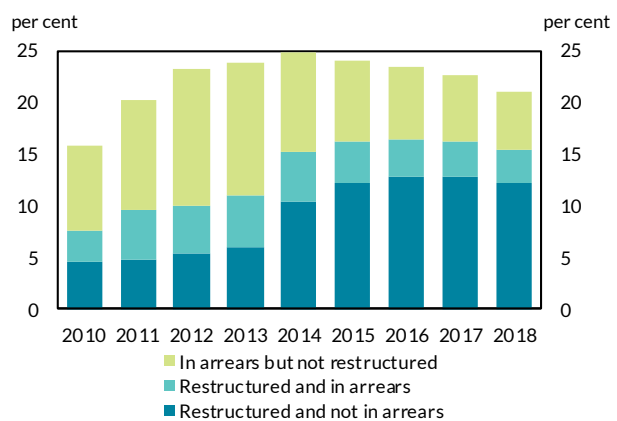
Households who have already experienced financial difficulties are likely to be less resilient to any future shock. 15 per cent of owner-occupier mortgages are restructured, and an additional 7 per cent are in arrears without a restructure (Chart 50). Restructuring is often successful, but 13 per cent of restructured accounts are currently missing payments. Central Bank credit risk models show that restructured borrowers are 5 times more likely to enter arrears than borrowers with performing, non-restructured loans.

Chart 49: Fewer households are falling into arrears



Mortgages at retail banks entering three months of arrears.
 Source: Central Bank of Ireland.
 Notes: Share of loans in arrears beginning each year 0-90 days past due that become 91+ days past due by the end of the year.

Chart 50: Many householders with mortgages are still in arrears or have been restructured



Shares of Irish PDH mortgages restructured and/or in arrears.
 Source: Central Bank of Ireland.
 Notes: Mortgages on primary dwelling houses that are restructured and/or in arrears. All figures are as at 31 December each year.

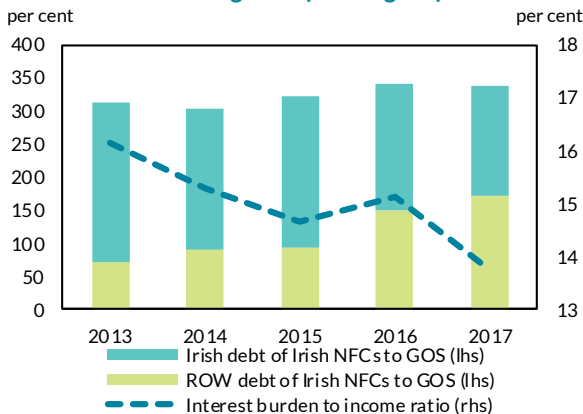
Non-financial corporations

Many of the largest firms registered in Ireland are foreign owned or have operations abroad, so are less likely to be affected by risks arising from the Irish economy than Irish firms. Large foreign multi-national corporations generated around 40 per cent of the €275 billion of GDP attributable to non-financial corporations (NFCs) in 2017.²⁶

Total debt balances of the Irish-owned NFC sector have risen relative to their gross operating surplus (Chart 51). Small and medium enterprises (SMEs) tend to borrow from local banks, while larger firms also have access to international banks and credit markets. The aggregate Irish-owned NFC sector has reduced its total debt to Irish creditors. However, debt funding from the rest of the world has more than replaced Irish debt to Irish-owned firms. Large Irish-owned firms may therefore be more exposed to funding conditions in foreign markets.

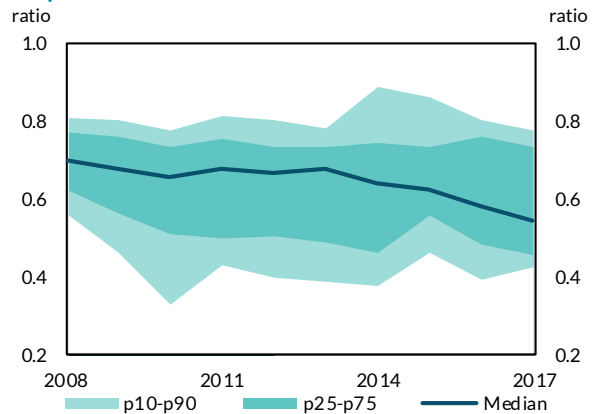
It appears to be mostly larger Irish firms that have taken out more debt, although this has been more than offset by asset growth. Debt securities issued by NFCs have increased in value by 200 per cent since 2009. However, despite increases in their debt, the leverage of the largest 25 Irish-owned corporates has declined slightly since 2013 (Chart 52), suggesting that the growth in their total assets has more than kept pace with the growth in their debt.

Chart 51: Irish NFC debt to foreign counterparties has increased relative to gross operating surplus



Irish NFC sector debt-to-GOS ratio and interest burden.
 Source: CSO and Central Bank of Ireland.
 Notes: NFC debt in the debt-to-GOS ratio refers to Irish (ultimate controlling parent) NFC debt (loans and debt securities) in the numerator and gross operating surplus (B.2g/ B.3g) in the denominator. The interest burden to income ratio uses national accounts data for NFCs in Ireland excluding large multi-national enterprises -- interest costs (D.41) is expressed as a share of gross operating surplus (B.2g/ B.3g).

Chart 52: The leverage of the largest 25 Irish corporates has decreased



Total liabilities to total assets of the top 25 Irish corporates by turnover.
 Source: Dun and Bradstreet.
 Notes: Foreign-owned and re-domiciled companies are excluded.

Interest payments have declined as a share of firm income, due to higher earnings and sustained low interest rates (Chart 51). For a given level of debt, firms are therefore more resilient to shocks. Additionally, over 90 per cent of outstanding corporate debt securities are long-term fixed-interest rate securities, limiting large NFCs' refinancing and interest rate risks.

SMEs are continuing to reduce their debts, despite the decline in their borrowing costs. SMEs, other than real estate and financial firms, owed €25 billion to Irish banks five years ago; now, they owe just €15 billion. Most Irish SMEs are decreasing their debt relative to their annual sales (Chart

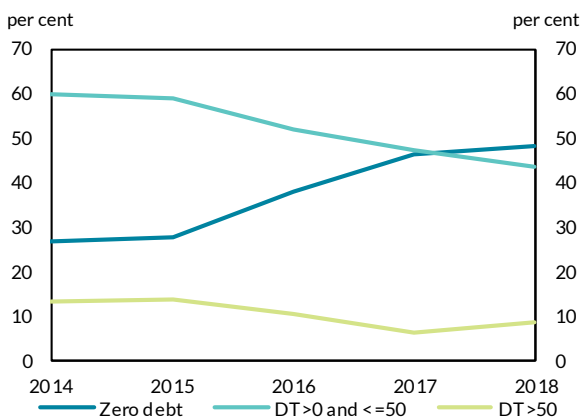
²⁶ Foreign-owned multinational corporations are identified by the CSO based on their industry codes, and operate mainly in the Manufacturing and Information and Communications sectors.

53). Low debt and the low interest rate environment have reduced the cost of servicing their debts, increasing their resilience to adverse shocks.

SMEs are using their retained earnings to fund running costs and investments, which is strengthening their resilience to changes in credit availability, demand, or market competition.

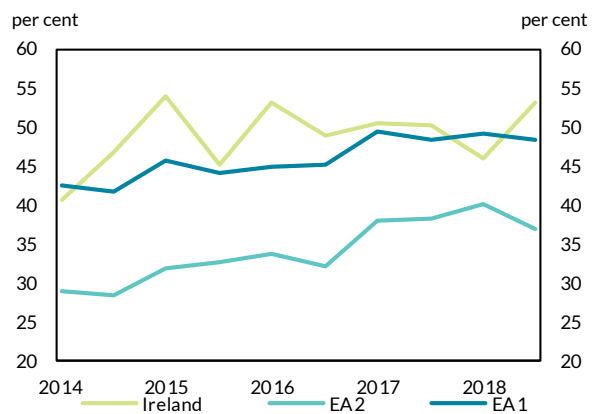
Nearly half of SMEs are funding their running costs and investments from their retained earnings (Chart 54). These businesses are better able to manage their cash flows through a downturn, and changes in interest rates have less effect on their costs. NFCs that use retained earnings to fund projects are also less likely to fail.

Chart 53: The share of SMEs with no debt has increased



Proportion of SMEs with various debt-to-turnover ratios. Source: Department of Finance Credit Demand Survey. Notes: Survey data are as of March in each year. Debt-to-turnover is defined outstanding debt divided by annual turnover.

Chart 54: Many SMEs do not apply for credit because they have enough internal funds

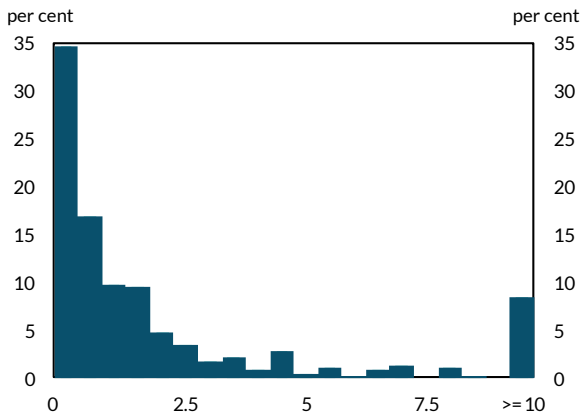


SMEs that did not apply for credit due to sufficient internal funds. Source: ECB/EC Survey on the access to finance of enterprises. Notes: EA1 countries are Austria, Belgium, Germany, Finland, the Netherlands and France. EA2 countries are Portugal, Italy, Spain and Greece. Survey observations are taken every six months from September 2014 to September 2018. "Internal funds" refers to retained earnings or funds from the sale of assets.

However, some indebted SMEs may be vulnerable to short-term shocks. SMEs without enough liquid assets may amplify short-term revenue shocks resulting from an event such as Brexit (see *Risks: A disorderly Brexit*). Excluding those without any debt, around half of SMEs have more debt than liquid assets, and may therefore be vulnerable to shocks to their revenues (Chart 55). Debt to liquid asset ratios are slightly larger for medium sized enterprises than micro enterprises, and are the largest for firms in the hotels and restaurants sector. Of firms with no debt, around 70 per cent hold more liquid assets than their turnover, suggesting they hold sufficient liquid assets to support operations, investment and employment in the face of shocks.

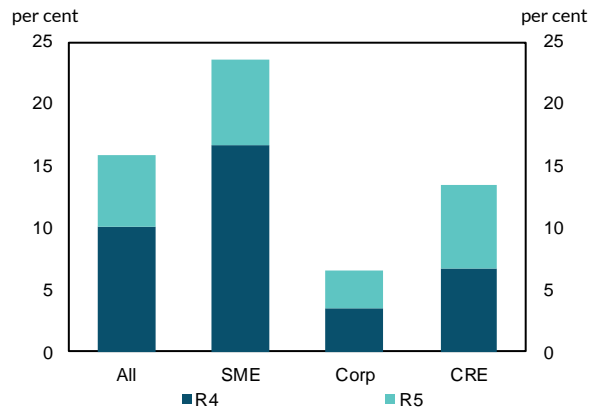
Lenders' own credit assessments suggest most firms are capable of servicing their debts. The majority of NFC bank loans have the highest quality ratings (Chart 56). However, around 16 per cent of loan balances have a rating classified by the Central Bank as R4 or R5, which have historically had high default rates. Large corporate loans have relatively good ratings. Weak ratings are most common among performing SME loans.

Chart 55: Around half of SMEs have more debt than liquid assets



SME debt to liquid asset ratios of firms with debt.
 Source: Department of Finance SME Credit Demand Survey.
 Notes: Data reported in April-September 2018 survey round. Data capped at 10. Excludes SMEs with zero debt.

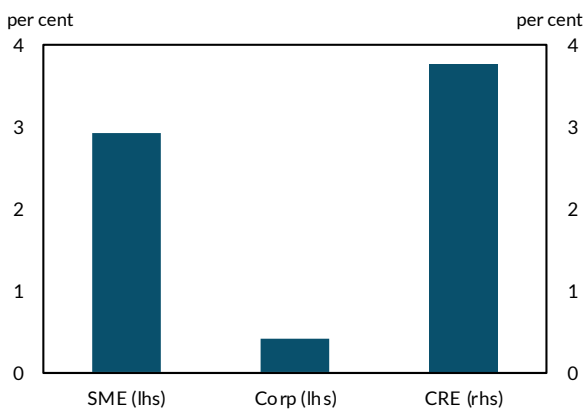
Chart 56: Banks' own assessments suggest that most firms are likely to repay their debts



Banks' ratings of Irish resident firms.
 Source: Central Bank of Ireland.
 Notes: Internal bank ratings of performing balances from a sample of three Irish retail banks harmonised to a five-point rating scale. R1 is the highest quality performing exposure and R5 is the weakest quality performing exposure.

SMEs and CRE firms are more likely to default on their bank loans than large corporates (Chart 57). CRE firms that owe money to Irish retail banks default the most frequently, with close to four per cent of performing loans entering default in the year to June 2018, reflecting the high risk and capital-intensive nature of real estate (see *Risks: An abrupt fall in property prices*). Over the same period, 3 per cent of performing SME loans transitioned to default, compared to less than half a per cent for large Irish corporate borrowers.

Chart 57: SMEs and CRE firms are more likely to default



Annual transition rates of NFC loans to non-performing status.
 Source: Central Bank of Ireland.
 Notes: Sample of three Irish retail banks Data as at June 2018.

Non-bank financial sector

Irish-resident investment funds provide alternative forms of financial intermediation services to the Irish economy, reducing reliance on the banking system. Investment by funds has become particularly important in the financing of Irish commercial real estate (CRE). Funds that invest in Irish CRE have increased their leverage very slightly, with a small number being highly leveraged. Irish-resident funds that invest in CRE have a redemption profile that reduces the risks of widespread redemptions.

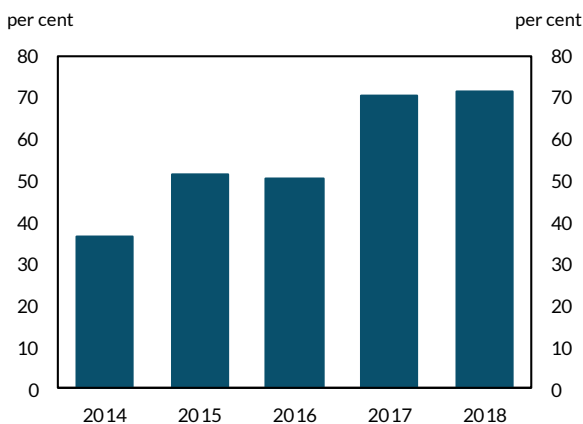
Ireland has the second-largest insurance sector in the EU, although most of these are cross-border firms that sell services to clients outside Ireland. Domestic insurers that provide services to the Irish market have capital buffers well above the regulatory minimum, but recently their asset quality has slightly decreased.

Investment funds

Most Irish-resident investment funds are internationally focused, although they are becoming more important investors in the Irish economy. Around 95 per cent of the sector’s assets are foreign securities and 91 per cent of the sector’s liabilities are held by foreign investors. Over the last 5 years, Irish investments by resident funds have almost doubled as a share of GNI* (Chart 58). However, many of these investments are in other Irish-resident financial institutions which may not be directly linked to the Irish economy.

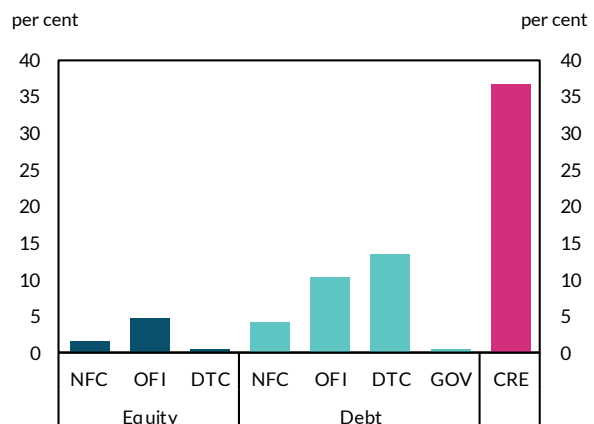
Investment by funds is particularly important in the financing of CRE. Irish investment funds now account for over 35 per cent of the CRE market (Chart 59). Irish funds have invested a total of €18 billion in Irish property and land. Highly levered funds may have to sell their assets if the cost of their debt rises; for example, if global risk is repriced (see *Risks: Global financing conditions*). Funds with large liquidity mismatches may also have to sell assets quickly to fulfil redemptions. Such asset sales could put downward pressure on asset prices and raise the cost of finance for borrowers, leading to fire sales (see *Risks: An abrupt fall in property prices*).

Chart 58: Irish resident investment funds have increased their investments in Ireland



Irish assets held by Irish investment funds as a share of GNI*. Source: Central Bank of Ireland. Notes: Assets exclude equities issued by Irish authorised investment funds.

Chart 59: Investment by funds is particularly important in the financing of CRE

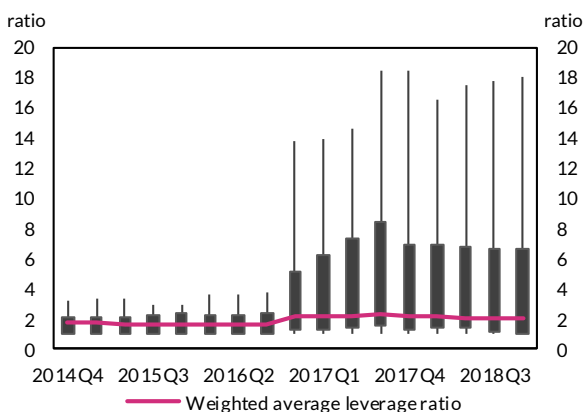


Irish assets held by Irish investment funds as a share of each market. Source: Central Bank of Ireland and Cushman & Wakefield. Notes: Data for 2018Q4. OFI refers to 'Other Financial Institutions', DTC refers to 'Deposit Taking Corporations' and GOV refers to Governments. Assets exclude equities issued by Irish-authorised investment funds. Counterparty basis may not reflect the ultimate beneficiary's domicile.

The average leverage of Irish resident funds that invest in the domestic CRE market has increased only slightly in recent years, but there are a few highly leveraged funds (Chart 60). On a weighted average basis, CRE funds are around two times levered. However, a group of highly-leveraged small funds has emerged, which has grown from 2016 onward. Since the announcement of the 2016 Finance Act, which introduced a 20 per cent tax rate for foreign investors holding shares of funds investing in Irish property, many investment funds have swapped a portion of their equity for shareholder loans.²⁷ Among the 25 firms with leverage ratios greater than 10 times net assets, 57 per cent of their liabilities are now loans from shareholders.

However, Irish resident funds that invest in the domestic CRE market have also increased their buffers of liquid assets in recent years (Chart 61). These funds now hold around 5 per cent of their assets in liquid holdings. These holdings, such as cash or deposits, allow funds fulfil typical redemption flows without the need to sell real estate assets. Liquidity is particularly important for funds holding CRE, as it is not possible to sell a large building in a short period of time without affecting market prices. Without liquidity buffers, even a small redemption request could lead to CRE funds having to sell their assets at a large discount.

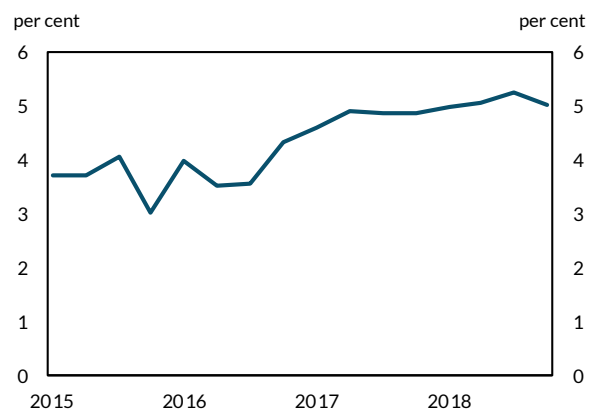
Chart 60: There is a tail of highly leveraged Irish-resident investment funds that invest in CRE



Leverage of Irish investment funds investing in Irish CRE.
Source: Central Bank of Ireland.

Notes: Data for 2017Q4-2018Q4. Financial leverage ratio is total assets under management divided by total net asset value. Box plots show the 90th, 75th, 25th and 10th percentiles of leverage in a time-varying sample of Irish real estate holdings.

Chart 61: Irish resident funds that invest in CRE have increased their liquidity buffers



Liquidity buffers of Irish-authorized investment funds with holdings of Irish CRE.
Source: Central Bank of Ireland.

Notes: Data for 2015Q1-2018Q4. Liquidity buffer is defined as (liquid assets/total assets). Liquid assets are defined as cash, deposits, advanced economies' government short-term debt, euro area bank short-term debt, and advanced economies' equities. The composition of funds with Irish CRE holdings changes over time.

The majority of Irish CRE funds give investors at most one opportunity per year to redeem their investments (Chart 62). Most Irish funds can also limit large redemption requests with “gates” (temporary periods when funds do not allow redemptions) and redemption fees. This reduces the risk that CRE funds may have to sell properties quickly at discounts to meet redemptions.

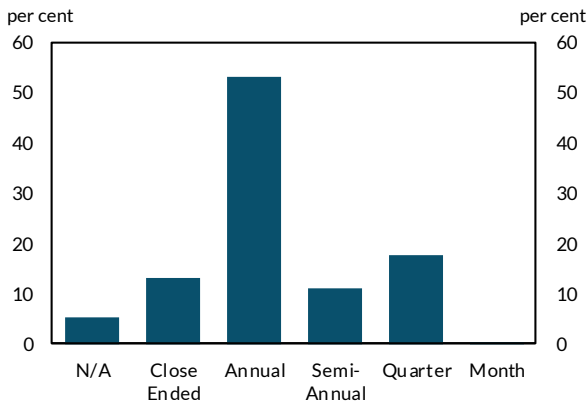
Insurance firms

Insurers based in and serving the Irish market have solvency ratios above the minimum regulatory requirements (Chart 63). Ireland has the second-largest insurance sector (relative to GDP) in the EU, mainly due to cross-border firms that sell services to clients in other countries (see Box 6). Among the domestic-market insurers serving Irish clients, over 90 per cent of firms have solvency ratios that are at least 1.5 times the regulatory minimum. A higher ratio implies a greater resilience

²⁷ McCarthy, B, “The Impact of the 2016 Finance Act on Investment into Irish Real Estate Funds”, forthcoming Central Bank of Ireland working papers

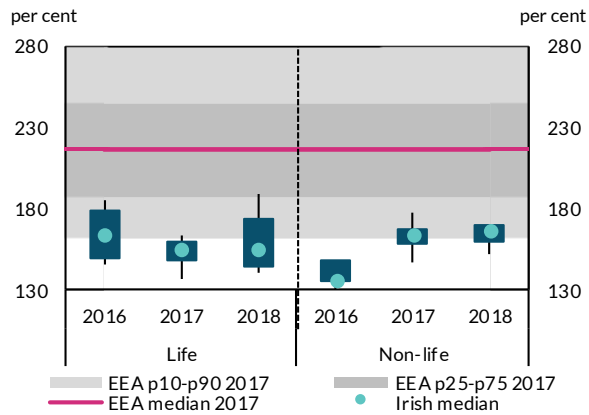
to adverse shocks affecting the value of their assets (see *Risks: European sovereign debt sustainability*).

Chart 62: Irish resident funds that invest in Irish CRE allow their investors to redeem funds infrequently



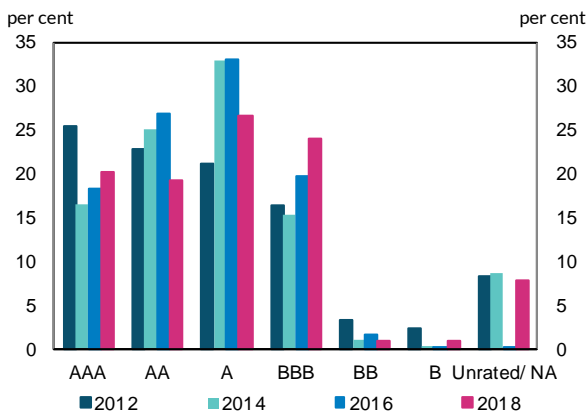
Redemption schedule profile of Irish- investment funds investing in Irish CRE.
 Source: Central Bank of Ireland.
 Notes: Data for 2018Q4. Close Ended means capital cannot be withdrawn from the fund by investors. In addition to the timeframe, for many funds the ability to redeem is conditional on one or more additional factors.

Chart 63: Irish domestic insurers' solvency ratios are above requirements, but below European averages



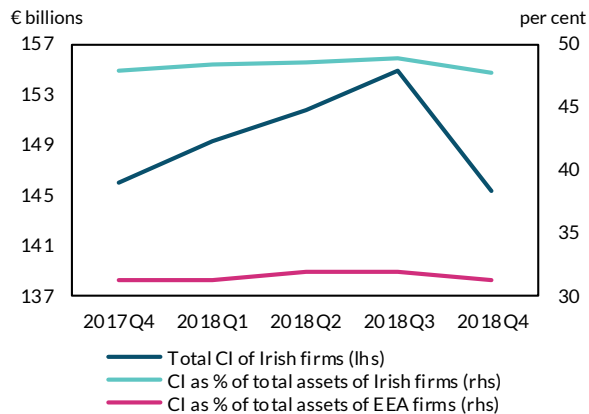
Solvency capital requirement (SCR) ratios of domestic insurers.
 Source: Central Bank of Ireland.
 Notes: The ratio is eligible own funds as a percentage of solvency capital requirements (SCR). Firms must maintain a SCR ratio of 100 per cent or higher to comply with regulatory requirements. Vertical lines and boxes show the 90th, 75th, 25th and 10th percentiles of SCR ratios. Shaded grey areas 90th, 75th, 25th and 10th percentiles of SCR ratios for EEA insurers as at end 2017.

Chart 64: Irish non-life insurers' financial asset quality has declined



Domestic non-life insurers' financial assets by asset rating.
 Source: Central Bank of Ireland.
 Notes: Categories are as per cent of total financial assets.

Chart 65: Irish insurance firms have increased their collective investments



Collective investments of Irish and EEA insurance firms.
 Source: EIOPA.

Irish non-life insurers' asset quality has decreased slightly since 2012, increasing their investment risk (Chart 64). In the early- to mid-2010s, the decline in asset quality was due to downgrades by credit rating agencies. More recently, firms have shifted some of their investments to higher-risk, higher-return assets to generate more investment income because government bond yields have fallen. However, high-risk assets increase the risk of losses being incurred during a downturn. In contrast, life insurance policies tend to be unit-linked, so policyholders bear any investment risk.

Insurers invest heavily in asset markets, so their behaviour can affect the overall quality of market functioning, especially in times of stress. Insurers tend to invest in assets like government bonds, which have a fixed return. However, insurers have recently increased their use of collective investments, for example through investment funds. Irish insurance firms (including cross-border

firms) tend to use collective investments more than the average European insurer (Chart 65). This may be due to the predominance of unit-linked assets on life insurers' balance sheets. In the event of a shock, these funds could sell their assets simultaneously, which could lead to large falls in prices.

Box 4: The Central Bank's approach to resolution & MREL

By John Biggins (Resolution and Crisis Management Division)

Approach to resolution

In its capacity as national resolution authority, the Central Bank is responsible for the orderly resolution of failing credit institutions, certain investment firms and credit unions. Recognising that regulated firms may fail, the objective of the Central Bank's approach to resolution is to ensure that this happens in an orderly way, minimising the need for taxpayer funded bailouts.

The Central Bank's resolution framework is based on the EU's resolution framework for banks and certain investment firms¹ and the national resolution framework for credit unions². In a Banking Union context, the Central Bank works in close cooperation with the Single Resolution Board in enhancing the resolvability of Irish significant institutions.

The Central Bank recently published its Approach to Resolution to enhance general awareness of the Central Bank's resolution framework, and to publicly confirm the Central Bank's key expectations of banks and BRRD in-scope investment firms in terms of ensuring resolvability if they failed.³ This document will be periodically updated to reflect changes in the resolution legal framework and evolution in the Central Bank's policies over time. For example, recently agreed changes to the current EU resolution framework, introduced through the 'Risk Reduction Measures' (RRM) Banking Reform Package, will have an impact on the Central Bank's existing resolution mandates and discretions.

When it comes to the failure of any financial institution, similar to market practice when non-financial firms fail, normal insolvency proceedings (i.e. liquidation) is the preferred strategy of the Central Bank. Notwithstanding this, some institutions are too systemically important or interconnected, either in Ireland or in another EU Member State, to be liquidated in the normal way. For these institutions, a resolution action may be appropriate in the public interest to ensure they, or their critical functions, continue to operate as normal. Such resolution action under the established framework aims to mitigate the negative effects of a failing institution on consumers and businesses. In the case of the failure of a bank, and certain investment firms, the framework allows public authorities to impose losses on ('bail-in') shareholders and some creditors – instead of the taxpayer or depositors.

Preparation is a key element of the Central Bank's approach to firm failure and ensuring resolution action can be successful:

- Regulated firms need to be prepared to take remedial action in the event of a stress event and have a recovery plan in place;
- Implementable resolution plans and resolvability assessments for relevant institutions need to be prepared by the resolution authority on an ex-ante basis; and
- Regulated firms are required to remove identified impediments to resolvability.

MREL

As part of the resolution framework, banks and certain investment firms are also required to maintain a buffer to facilitate resolution. This buffer is known as the minimum requirement for own funds and

eligible liabilities (MREL). MREL is a requirement aiming to ensure that firms have sufficient capital and liabilities to absorb losses and, where they are resolved, have sufficient resources to meet their capital requirements and maintain market confidence. As such, MREL aims to ensure that institutions have sufficient capital and liabilities that can be 'bailed in', i.e. written down or converted to equity, if necessary.

Under the resolution framework, the level of the institution-specific MREL requirement depends on the preferred resolution strategy for each institution and is calibrated with reference to applicable capital requirements under the prudential regulatory framework. These prudential capital requirements comprise: 1) a minimum statutory capital requirement (known as the 'Pillar 1' requirement); 2) an add-on set by the prudential supervisor to reflect additional risks (known as the 'Pillar 2' requirement); and 3) a supplementary 'combined buffer requirement', reflecting other types of capital buffers an institution may be subject to, such as macroprudential buffers. The MREL requirement will differ depending on whether the institution may be placed into liquidation or resolved if it failed.

Where an institution would be liquidated if it failed, the MREL requirement needs to be calibrated so that it at least ensures that losses could be absorbed at the point of failure. In these cases, the Central Bank's general MREL policy approach is to set a 'loss absorption amount' (LAA) MREL requirement at a level equivalent to the institution's 'total capital requirement' (i.e. Pillar 1 plus Pillar 2 requirement plus combined buffer requirement).

Where an institution would be subject to resolution tools (as opposed to liquidation) if it failed, the assumption is that the institution, or at least parts of it, would continue to exist after resolution and need to sustain a sufficient level of market confidence. In these cases, the Central Bank's general policy approach is to set, on top of a LAA requirement, a supplementary recapitalisation amount (RCA) and market confidence charge (MCC) requirement equal to the institution's Pillar 1 plus Pillar 2 requirement and combined buffer requirement respectively. These components would also be subject to certain scaling factors which would be calibrated on a case-by-case basis depending on the specific resolution strategy.

The aforementioned RRM package revisions to the EU resolution framework will have an impact on the Central Bank's approach to MREL. The new legislative changes implement the Financial Stability Board's standard on total loss absorbing capacity (TLAC) at an EU-level, introducing, *inter alia*, new Pillar 1 and subordination requirements for certain institutions. Revisions to the BRRD will be transposed into national legislation and are expected to be applicable from January 2021. The SRB and Central Bank are expected to revise their respective MREL policies accordingly in 2020.

¹ EU Directive 2014/59/EU - The Bank Recovery and Resolution Directive (BRRD)

² The Central Bank and Credit Institutions (Resolution) Act 2011

³ See [The Central Bank's Approach to Resolution for Banks and Investment Firms \(First Edition\)](#)

Box 5: A negative equity projection model for Irish retail banks

By Edward Gaffney (Macro-Financial Division)

Mortgages in negative equity pose challenges to households, lenders and society as a whole. Borrowers without housing equity find it harder to move to a new property, access credit or switch lender. Households in negative equity are more likely to cut their spending on goods and services, affecting other sectors of the economy, and to fall into arrears under financial stress.

Ireland endured one of the highest rates of negative equity in the world in the early 2010s. In assessing the resilience of borrowers and lenders, an important question is how the equity position of mortgages would evolve if house prices fall again. This Box provides more detail on the housing equity projections for mortgage holders under the hypothetical scenarios shown in Chart 48 in *Resilience: Households*.

The projections use Central Bank of Ireland loan-level data on mortgages for properties in Ireland that are outstanding at Irish retail banks at end-2018. To simulate repayments, each mortgage is paid down on its current schedule and interest rate. To project new lending, the volume and composition of 2018 mortgage originations is repeated each year. Finally, the following property price scenarios are applied to the collateral values of all mortgages, which are used to calculate current LTV ratios:

Scenario 1: prices grow by 5 per cent each year.

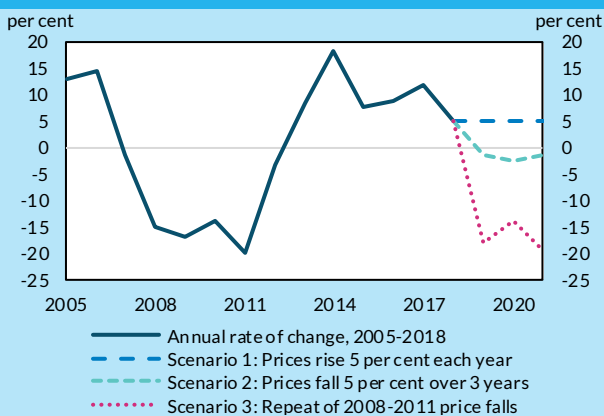
Scenario 2: prices fall by a cumulative 5 per cent over three years.

Scenario 3: prices fall by 18, 14 and 19 per cent over three years.

Chart A shows the three scenarios in comparison to historical growth rates for residential property prices in Ireland. Scenario 1 (5 per cent growth per annum) is a projection somewhat below the average rate of increase in prices since 2013. In Scenario 2, property prices decline slightly. Scenario 3 is a repeat of the sharpest three-year reduction of property prices in Irish history, between 2008 and 2011.

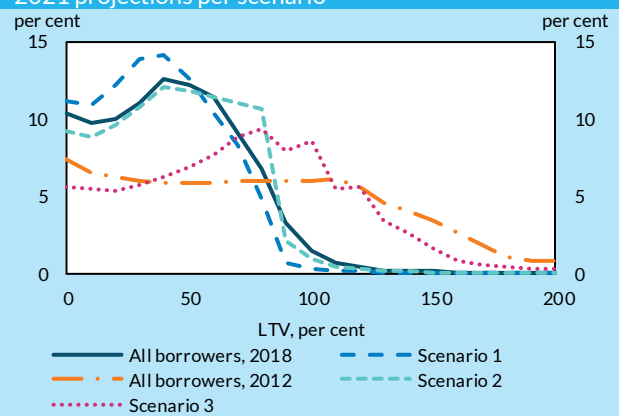
Chart B demonstrates that LTV ratios fall during Scenarios 1 and 2. Even if house prices were to fall by 5 per cent, negative equity would be lower after three years, as the impact of loan repayments would exceed declines in house prices. In Scenario 3, the share of high-LTV mortgages rises significantly due to severe reductions in property prices. Nevertheless, more mortgages would be in positive equity than in 2012. The distributions also illustrate that housing equity may vary widely across households after an adverse shock, as some borrowers' LTV ratios would rise to over 150 per cent.

Chart A: Scenarios for property price growth



Source: Central Statistics Office; Central Bank of Ireland calculations.

Chart B: LTV distributions; starting point and end-2021 projections per scenario



Source: Central Bank of Ireland calculations.
 Note: Chart shows shares of borrowers falling into LTV groups of width equal to 10 percentage points.

Box 6: Cross-border insurance business

By Andrew Candland (Insurance Directorate)

European legislation allows insurance firms across the EU to operate on a "freedom of establishment" (FoE) and "freedom to provide services" (FoS) basis. This means that, once approved in one EU Member State, an insurance firm may sell and service insurance contracts in any other Member State, either by setting up a physical branch (FoE) or by providing cross-border services (FoS). Such cross-border insurance activity is a key feature of the insurance sector in Ireland.

Overall, Irish insurers and reinsurers write considerably more premium in respect of non-Irish risks than of Irish risks (comparison of rows A and B). Much of this outward business is written into other EU countries under FoE or FoS. Indeed, FoE/FoS regimes are utilised far more by Irish firms writing outward business from Ireland than by other EU based firms writing business into Ireland (comparison of Row A with Rows C & D). This shows that Irish insurers have a heavy international orientation. Charts A and B below show the split of the outgoing life and non-life premium by country. The volume and geographic mix may change in 2019 as a result of Brexit and as a number of newly-authorized Irish undertakings will begin writing non-Irish risk business.

Table A: Gross written premium - 2017

A	Premium written overseas by Irish firms	Life €26.7bn	Non-life €12.3bn	Health ---	Reinsurance €15.2bn	Total €54.2bn	
B	Premium written in Ireland by Irish firms	Life €13.2bn	Non-life €3.1bn	Health €2.0bn	Reinsurance €1.1bn	Total €19.4bn	
C	FoE premium written in Ireland by other EU firms	FoE Life €1.90bn	FoE Non-life €1.37bn	FoE Health €0.00bn	FoE Reinsurance €0.18bn	FoE Total €3.45bn	
D	FoS premium written in Ireland by other EU firms	FoS Life €0.89bn	FoS Non-life €0.44bn	FoS Health €0.63bn	FoS Reinsurance €1.33bn	FoS Total €3.29bn	Total premium written in Ireland €26.1bn

Source: EIOPA and Central Bank of Ireland calculations.

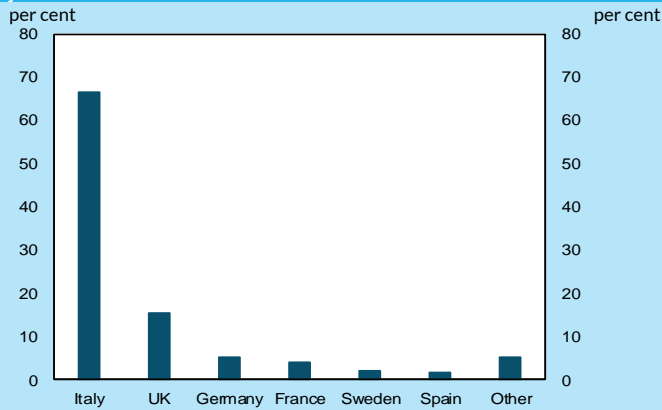
Note: Gross written premium is the total value of premiums received by the firm from policyholders. Rows A & B are reporting by CBI-regulated firms as at 31 December 2017. Rows C & D: are supplied by other EU supervisory authorities via EIOPA.

The majority of the services provided to Irish households and businesses is provided by domestic insurers. Still, about a quarter of the premium is written by non-Irish insurers under FoE/FoS, rising to 37 per cent for non-life insurance. This points to a material dependence on non-Irish firms for the provision of insurance services to Irish households and businesses.

The most significant aspect of the legislative framework is that the "home supervisory authority" – the authority that first authorised the insurance undertaking – is responsible for the prudential supervision of the undertaking in its home country and its activity under FoE or FoS in other so-called host countries. Host supervisory authorities are responsible for overseeing compliance with conduct requirements.

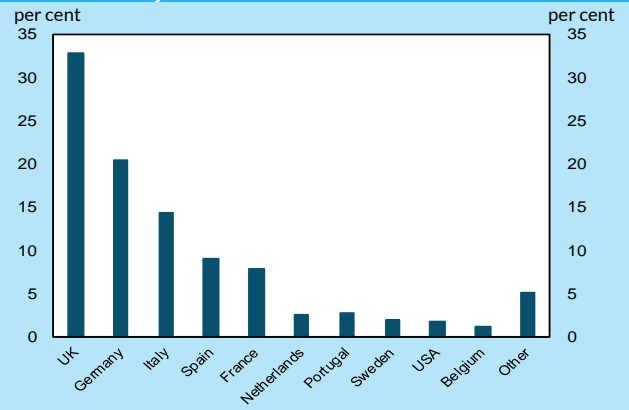
The Central Bank maintains regular dialogue and information exchange with the relevant regulators in order to monitor the resilience of the firms operating in Ireland and to fulfil the Central Bank's responsibility for conduct of business supervision of these firms.

Chart A: Cross-border life business of Irish firms – main life jurisdictions



Source: Central Bank of Ireland.
Note: Data as at 31/12/2017.

Chart B: Cross-border non-life premium of Irish firms – main non-life jurisdictions



Source: Central Bank of Ireland.
Note: Data as at 31/12/2017.

Macroprudential policy

The Central Bank uses macroprudential policies to promote financial stability in Ireland and to mitigate the impact of negative shocks on the real economy. There are two facets to the goal of macroprudential policy: first, to make the domestic banking system more resilient so that it can better withstand adverse shocks and continue to provide financial services to the real economy; and, secondly, to try to reduce the emergence of imbalances or vulnerabilities in the domestic financial system.²⁸

The Central Bank has a range of macroprudential policy tools at its disposal to help it address these objectives and has introduced a number of these over the last number of years (Table 1). These tools are focussed primarily at the banking sector. Expanding the macroprudential policy toolkit beyond banking is an ongoing area of development internationally. The Central Bank monitors on an ongoing basis the appropriateness of the calibration of existing policies. The prevailing risk environment, the Central Bank's assessment of the required resilience in the financial system, the effectiveness of activated policies and interactions between these policies inform whether changes need to be made to the policy mix. This section first outlines the policy measures currently active and then points to some future developments in macroprudential policy in Ireland.

Table 1| Summary of active macroprudential instruments in the banking sector

	Mortgage measures	O-SII	CCyB
Objective	(i) Increase resilience of banks and borrowers to negative economic and financial shocks (ii) Dampen pro-cyclicality of credit and house prices	Increase resilience of systemically important banks, defined as those institutions whose failure would have a large impact on the financial system.	Increase banking system resilience to cyclical risks
Rate	LTV: 70% - 90% depending on borrower type LTI: 3.5 times A proportion of new lending above the limits is allowed	0% - 1.5%	1%
Type of risk addressed	Cyclical and structural	Structural	Cyclical
Exposures in scope	Proportion of newly originated mortgage exposures	All exposures	Irish exposures
Effective from	Feb 2015	Jul 2019 on a phased basis	Jul 2019
Next review	Q4 2019	Q4 2019	Q3 2019

²⁸ See '[A macroprudential framework for Ireland](#)' and '[The instruments of macroprudential policy](#)' for details.

Active macroprudential policy measures

CCyB rate maintained at 1 per cent

The objective of the CCyB is to build resilience in the banking system to cyclical systemic risk. The Central Bank announced a 1 per cent CCyB rate in July 2018, which came into effect on 5 July this year. The CCyB rate is reviewed on a quarterly basis and in its latest quarterly review, the Central Bank has decided that a 1 per cent CCyB rate remains appropriate.

In the Central Bank's framework for the CCyB, it is expected that a positive CCyB rate would be maintained when there is a sustained trajectory in indicators consistent with emerging cyclical systemic risk in order to ensure sufficient resilience in the banking sector in a downturn. The framework emphasises the importance of activating the buffer early in the cycle to build resilience ahead of any materialisation of cyclical systemic risk. This approach should ensure that the buffer is available to release when necessary, thereby supporting the provision of credit to the economy in a downturn.

The decision to maintain the CCyB rate at 1 per cent is taken under the assumption of no disorderly Brexit scenario occurring over the relevant time horizon. Such a scenario, however, remains a possibility. At the same time, without a disorderly Brexit, the current trajectory in credit and broader economic conditions could persist. The Central Bank stands ready to adjust the CCyB rate in either direction as the risk environment evolves in a manner consistent with the objective of mitigating pro-cyclicality and supporting a sustainable supply of credit to the economy. In contrast to announced increases in the buffer rate, which by default have a 12-month implementation phase, any reduction in the CCyB would take effect immediately.

The latest quarterly review took account of the fact that, at the domestic level indicators point to, on balance, a continuing build-up of cyclical systemic risk. Table 2 outlines the CCyB dashboard for both the trajectory and the level of imbalances across a range of indicators covering credit, asset prices, the economy and risk pricing. When considered collectively, significant imbalances have not yet emerged across these indicators. However, there continues to be a gradual rise in the persistence of credit developments, alongside increasing evidence of the broader economy operating close to or above potential. Non-performing loans and high-levels of indebtedness in certain areas also continue to be features of the macro-financial environment in Ireland. As discussed earlier in this report, while both NPLs and indebtedness have declined over time, both still present sources of vulnerability.

The credit environment continues to strengthen, although at an aggregate level credit growth remains modest. Underlying the aggregate figure, divergent trends are evident across different segments (Chart 66). Mortgage lending for private dwelling homes (driven by lending at fixed interest rates) is seeing increasingly robust growth and is the main driver of growth in aggregate credit.²⁹ On the other hand, lending to SMEs continues to see negative rates of growth.

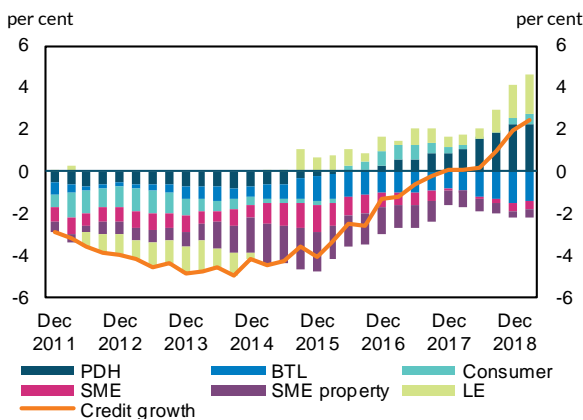
²⁹ Central Bank of Ireland, [Retail Interest Rate Statistics](#), show that since 2017Q3 the majority of new lending for house purchase has been at fixed rates of interest.

Table 2 | CCyB indicator dashboard related to the build-up of systemic risk

		Trajectory		Indicator		Latest obs date	Threshold	Qualitative assessment
		Persistence	12-month change in indicator	Latest observation	Risk level			
Credit growth	Household credit growth	●	1.1 pps	-0.4%	Green	Apr-19	Historical average	Aggregate credit environment while strengthening remains relatively contained. Large differences in the dynamics across categories are evident.
	Domestic NFC credit growth	●	4.1 pps	3.3%	Green	Apr-19	Historical average	
	Private Household: PDH Mortgage	●	2.3 pps	4.7%	Green	Mar-19	No threshold established	
	Private Household: BTL Mortgage	●	-6.4 pps	-15.7%	Green	Mar-19	No threshold established	
	Private Household: Non-mortgage	●	2.7 pps	4.6%	Green	Mar-19	No threshold established	
	Irish Private Sector Enterprises: Large Enterprises	●	10.1 pps	14.8%	Green	Mar-19	No threshold established	
Credit gaps	Standardised credit gap	●	-8.4 pps	-90.0pps	Green	Dec-18	Lower threshold for CCyB setting (BCBS 2010)	The most relevant measures have been on an upward trajectory. The alternative gap measure is now positive. Nonetheless, the gap measures do not currently point to unsustainable imbalances in credit.
	National credit-to-GNI* gap	●	10.2 pps	-66.7pps	Green	Dec-18	Lower threshold for CCyB setting (BCBS 2010)	
	Alternative National Specific gap	●	8.0 pps	0.5pps	Green	Dec-18	Lower threshold for CCyB setting (BCBS 2010)	
New lending	Mortgage Lending: 4-quarter volume	●	€1.2 bn	€8.4 bn	Green	Mar-19	No threshold established	Mortgage lending recovering strongly from subdued levels. Scope for some further sustainable increases in the near term.
	Mortgage Lending-to-Disposable Income ratio	●	0.2 pps	6.5%	Green	Dec-18	Model Benchmark (2003Q1-2018Q1)	
	Lending to SMEs: 4-quarter volume	●	-€0.1 bn	€5.1 bn	Green	Mar-19	No threshold established	
Real estate	Residential property price growth (m)	●	-10.3 pps	3.1%	Green	Apr-19	MIP threshold	Rate of house price growth has moderated substantially in recent months. House prices are close to fundamental levels, albeit high relative to incomes.
	Residential property price-to-income ratio	●	1.8%	4.1	Green	Dec-18	Historical average	
	Res. real estate misalignment measure	●	-1.1 pps	-5.5%	Green	Dec-18	Zero	
	Commercial real estate price growth	●	0.9 pps	2.8%	Green	Mar-19	Historical average	
Indebtedness	Total credit-to-GDP ratio	●	-19.6 pps	237.7%	Green	Dec-18	MIP threshold	Total credit in Ireland is substantially impacted by the presence of foreign-owned MNCs. More domestically relevant measures have been on a downward trajectory for some time, although still indicate high levels of indebtedness.
	National credit-to-GNI* ratio	●	-6.6 pps	93.7%	Green	Dec-18	Euro area aggregate (bank credit-to-GDP)	
	Household debt-to-income ratio	●	-8.7 pps	123.5%	Green	Dec-18	Euro area average	
Macro - economy	Employment rate	●	1.4 pps	69.3%	Green	Mar-19	Historical average	At or approaching full employment/capacity constraints.
	Unemployment rate	●	-0.9 pps	5.0%	Green	Mar-19	Historical average	
Bank balance sheets	CET1 Ratio - retail banks	●	0.6 pps	16.7%	Green	Mar-19	CRD IV minimum requirement	Well above minimum requirements/benchmarks.
	Leverage ratio - retail banks	●	0.3 pps	8.7%	Green	Mar-19	European average	
Market conditions	Commercial real estate spreads (bps)	●	38.4 bps	426 bps	Green	Mar-19	Historical average	Against a background of accommodative global financing conditions, Irish government bonds spreads are low by historical comparison.
	Irish gov bond spreads - monthly avg (bps)	●	1 bps	55 bps	Green	Jun-19	Historical average	

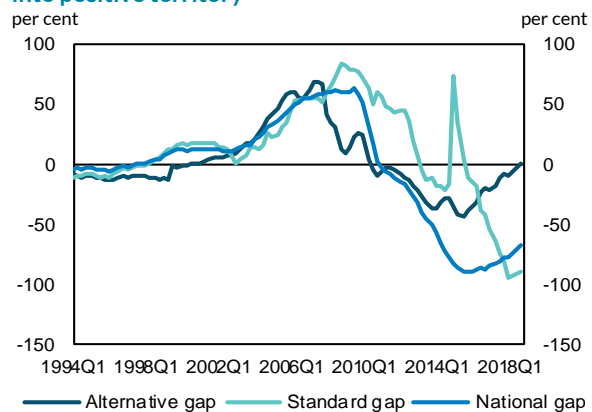
Notes: The table provides a visual representation of the Central Bank's high level approach that informs the setting of the CCyB rate during the build-up phase. As such indicators and shading are presented from the point of view of monitoring a build-up in cyclical systemic risk. Indicators can be interpreted differently from other perspectives. The indicator trajectory relates to the degree of persistence in each indicator and the change in the indicator over the previous 12 months. The coloring of the trajectory is based on the length of time an indicator has been trending in a direction that is indicative of a rise in cyclical systemic risk (Green: no sustained rise in systemic risk, Amber: sustained trajectory indicating build-up of systemic risk, Red: more persistent trend of increasing systemic risk). The shading of the latest indicator value represents the level of risk associated with the current level of each indicator relative to its threshold value (Green: low risk - red: high risk). Grey shading is used where no threshold value is available. For further details on the indicators and thresholds see the Central Bank of Ireland bi-annual Systemic Risk Pack. CCyB rate decisions are made on the basis of guided discretion.

Chart 66: While aggregate credit growth remains modest, trends are divergent across different sectors



Contribution to credit growth.
Source: Central Bank of Ireland calculations.
Notes: BTL includes holiday home. Consumer relates to non-mortgage household credit. LE stands for large enterprises and is a derived series. Latest observation: 2019Q1.

Chart 67: Standard credit gaps remain substantially below zero but the alternative credit gap has moved into positive territory



Credit gaps.
Source: CSO, ECB and Central Bank of Ireland calculations.
Notes: Latest observation 2018Q4.

Alternative measures of the so-called credit gap are moving into positive territory but do not yet suggest significant imbalances. The credit gap refers to the deviation in the credit-to-GDP ratio from its estimated trend level and is a required reference indicator for macroprudential authorities in Europe when setting the CCyB rate. Given the specificities of the Irish economy, the standard credit gap concept is of limited value in the Irish context, since measures of trend credit are severely distorted by the unsustainable credit boom in the mid-2000s. These shortcomings are in part addressed in the alternative (model-based) national approach as discussed in Box 7, as well as considering the pace of change in the credit gap and not just the level of the credit gap (Chart 67). The alternative gap has been on an upward trajectory for some time now and in recent quarters moved into positive territory.

The domestic economy continues to perform strongly. Labour market conditions tightened again in Q1. Data from the 2019Q1 labour force survey showed year-on-year employment growth of 3.7 per cent with the unemployment rate falling to 5 per cent. This suggests the economy is at, or close to, capacity constraints. While property price growth has moderated, as discussed in *Risks: An abrupt fall in property Prices*, the significant recovery since the crisis has resulted in valuations being at or slightly above those implied by broader economic developments and long-run averages.

As a small, globalised economy, the domestic financial cycle is susceptible to changes at a global level and thus it is important to also consider indicators of global financial conditions. As discussed in *Risks: Global financing conditions*, global investor appetite for risk remains elevated, with signs that the cycle is at an advanced stage. The global financial cycle could turn quickly were there to be a shock to investor confidence with both direct and indirect effects on the Irish economy and financial system.

The Central Bank carries out an annual review of third (i.e. non-EEA) countries and as a result has identified the USA as the only material third country for the Irish banking system, although this assessment would change if the UK were to become a third country. This assessment is mandated in ESRB Recommendation 2015/1 and is based on quantitative indicators of the geographic exposure of the Irish banking system. Following the 2019 review, the USA has been identified as the only material third country from an Irish point of view. The largest-cross border exposure of the Irish banking system, however, is to the UK. Therefore, if/when arising from Brexit the UK became a third country it would be expected to be identified as material in future reviews. Where third countries are identified as material, the Central Bank and/or the ESRB monitors developments in those countries and either takes or recommends any policy action that may be needed to effectively mitigate cyclical risk related to developments in those third countries.³⁰

Mortgage measures

The Central Bank's macroprudential mortgage measures consists of loan-to-value (LTV) and loan-to-income (LTI) limits (Table 3). These measures were first introduced in 2015 with the objectives of increasing the resilience of both banks and borrowers and dampening the pro-cyclicality of credit and house prices. The Central Bank is committed to annually reviewing the calibration of the mortgage measures so that they continue to meet their objectives and the results of the 2019 review will be announced in Q4 this year.

The 2018 Review of the measures resulted in no change to the LTV and LTI limits and the related lending allowances above those limits in 2019.³¹ The analysis undertaken during the 2018 Review re-affirmed that the objectives were being met and that the mortgage measures as calibrated continued to contribute to overall financial stability. The results of the 2019 review will be announced in Q4 of this year. The objectives of the mortgage measures include:

- increasing the resilience of banks and borrowers to negative economic and financial shocks, and;

³⁰ Where the third country is identified as material only in the Irish case, the Central Bank of Ireland is expected to monitor developments. If the third country is also material for the EU as a whole, the ESRB monitors developments. The United States has been identified as material at both the national and the EU level.

³¹ Central Bank of Ireland (2018) "[Review of residential mortgage lending requirements](#)".

- dampening the pro-cyclicality of credit and house prices so a damaging credit-house price spiral does not emerge.

Table 3 | Details of the LTV and LTI Regulations – 2019

LTV Limits	For primary dwelling homes (PDHs):	First-time buyers (FTBs): 90% Second and subsequent buyers (SSBs): 80%	5% of new lending to FTBs allowed above 90% 20% of SSB new lending allowed above 80%
	For buy-to-let borrowers (BTLs):	70% LTV limit	10% of new lending allowed above the BTL limit
LTI Limit	For PDHs:	3.5 times income	20% of new lending to FTBs allowed above 3.5 limit 10% of SSB new lending allowed above 3.5 limit
Exemptions	From LTV limit: Borrowers in negative equity	From LTI limit: BTL borrowers Lifetime mortgages*	From both limits: Switcher mortgages Restructuring of mortgages in arrears

*The exemption for lifetime mortgages from the LTI limit has been decided by the Central Bank Commission and will come into force in due course.

Table 4 | Overview of new mortgage lending – 1 January to 31 December 2018

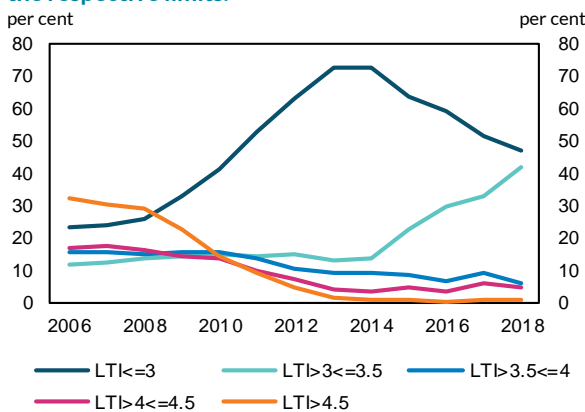
	Total Value (€ million)	No. of Loans	Value 2018 (%)	Value 2017 (%)
Total Lending	8,894	39,495	100	100
In-Scope of Regulations	8,078	35,995	91	93
of which:				
PDH Lending	7,802	34,151	97	97
FTB Lending	4,281	19,173	55	54
of which FTB over LTV Limit	5	21	0	0
of which FTB over LTI Limit	748	2,465	17	25
SSB Lending	3,521	14,978	45	46
of which SSB over the LTV Limit	558	1,654	16	17
of which SSB over the LTI Limit	249	747	7	10
BTL Lending	276	1,844	3	3
of which BTL over the LTV Limit	8	40	3	4
Exempt from Regulations	816	3,500	9	7
of which:				
Switcher	753	3,111	92	78
Negative Equity	35	134	4	17
Other Exemption	28	255	3	6

Notes: In-scope lending excludes negative equity loans which are in-scope for LTI purposes only. These loans are included in the calculation of SSB loans over the LTI limit. 2017 figures may differ from those previously published due to changes in the underlying sample.

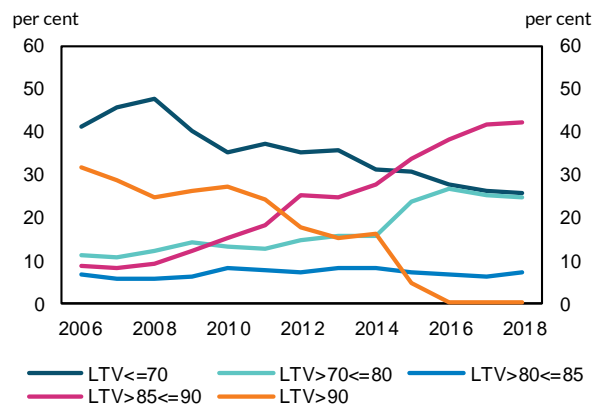
Since the conclusion of the 2018 review, loan level data on new mortgage lending for the full year of 2018 are available and these confirm the trends seen in the first half of that year. While broader developments in new mortgage lending are discussed in *Risks: Property prices*, this section considers the data collected for the purposes of monitoring the mortgage measures. These data show that €8.9 billion of new lending was originated by reporting institutions in 2018 (Table 4).³² This is an increase from €7.4 billion of new lending in 2017³³, pointing to a continued recovery in mortgage lending. The analysis of new lending for the full year confirms the trends identified in the first half of the year as discussed in the 2018 Review. There has been little change in average LTVs and LTIs and there was no sign of a generalised deterioration in lending standards. However, there have been shifts in the distribution of LTVs and LTIs in new lending, indicating the measures became more binding in 2018. Chart 68 and Chart 69 show new lending at different LTI and LTV bands, respectively, over the last number of years, illustrating the increase in the amount of new lending taking place just below the 3.5 times LTI limit and the 80 and 90 per cent LTV limits. These developments are in line with the objective of the measures to maintain prudent lending standards.

The 2018 new lending data show that allowances were allocated to borrowers in each quarter of the year. The Central Bank will continue to monitor the functioning of the allowances as part of its regular reviews of the measures. The limits to high LTV and high LTI lending are framed relative to the total value of new lending. For example, for every €800 of new lending to FTBs below the 3.5 times LTI limit, a bank can lend up to €200 at LTI levels above 3.5 times. Thus, the value of high LTV and high LTI lending can vary according to the amount of new lending taking place below the limits. Looking at how the regime functioned in 2018, allowances were allocated to borrowers in all quarters (Chart 70). For more on the allocation of allowances across borrower categories and characteristics see Box 8.

Chart 68 and Chart 69: While there is no sign of a generalised deterioration in lending standards, there have been shifts in the distribution of new lending for both LTI (LHS) and LTV (RHS), particularly for new lending just below the respective limits.



Developments in LTI.
 Source: Central Bank of Ireland.
 Notes: LTI breakdown for new lending (by number of loans) for new primary dwelling home purchase between 2006 and 2018 for a sample of banks active in the Irish market.

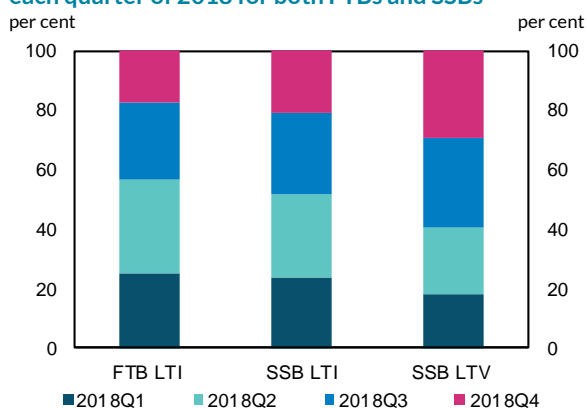


Developments in LTV.
 Source: Central Bank of Ireland.
 Notes: LTV breakdown for new lending (by number of loans) for new primary dwelling home purchase between 2006 and 2018 for a sample of banks active in the Irish market.

³² Reporting institutions for 2018 were AIB, BOI, PTSB, UBI, KBCI, Pepper Money Ireland and Dilosk DAC. See <https://centralbank.ie/financial-system/financial-stability/macro-prudential-policy/mortgage-measures/new-mortgage-lending-data-and-commentary> for further details.
³³ Kinghan, C., Lyons, P., and E. Mazza, “Macprudential measures and Irish mortgage lending: an overview of 2017”, Central Bank of Ireland Financial Stability Note No. 1, 2018

The mortgage measures are gradually promoting overall resilience in banks' mortgage books. As the mortgage measures operate through the flow of new lending, they have an incremental effect on the overall stock of outstanding mortgages. As of end-2018, just over 20 per cent of outstanding mortgage lending at Irish retail banks had been issued subject to the Central Bank's mortgage measures (Chart 71). Loans issued since the introduction of, but exempt from, the measures accounted for a further 2 per cent of the outstanding stock of mortgages.

Chart 70: Allowances were allocated to borrowers in each quarter of 2018 for both FTBs and SSBs

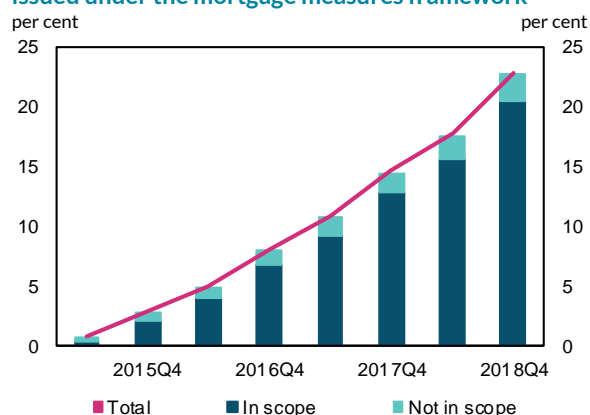


Share of allowances originated in each quarter of 2018 (by number).

Source: Central Bank of Ireland.

Notes: We do not provide information on the share of LTV allowances for FTBs and BTL. This is due to small numbers of observations in these groups.

Chart 71: Share of Irish retail bank mortgage lending issued under the mortgage measures framework



Share of outstanding mortgage lending issued under mortgage measures.

Source: Central Bank of Ireland.

Notes: Mortgage lending at Irish retail banks issued under the mortgage measures framework are those mortgage loans approved and drawn down since 9 February 2015.

In June 2019, the Central Bank Commission, following consultation with the Minister for Finance, decided to exempt lifetime mortgages from the LTI limit. These products do not have a contractual regular repayment of capital and interest and instead are fully repaid, inclusive of accumulated interest, at the end of their term when certain life events take place, such as when the property is no longer the primary residence of the borrower. The affordability of regular repayments, which is a primary concern of the LTI limit, is not applicable in these cases and is not considered in lenders' underwriting practices for these products. A more important consideration or risk related to this product is the potential for negative equity at the time of final settlement. As a result, LTV limits are still relevant in the case of lifetime mortgages. While issuance of lifetime mortgages is currently very limited, this will continue to be monitored by the Central Bank as part of the ongoing monitoring of mortgage markets. Annex A discusses the exemption for lifetime mortgages in further detail.

Buffers for systemically important institutions

The O-SII buffer framework looks to reduce the probability and impact of a failure of a systemically important institution. Currently, six institutions have been identified as systemically important by the Central Bank. The list of O-SIIs, and associated capital buffers, is reviewed on an annual basis. The outcome of the 2019 review is due to be announced in November.

Institutions that are systemically important, due to the scale or nature of their business, may be subject to additional capital buffers. The failure of one of these systemically important institutions would have a greater impact on the financial system and economy. Higher capital requirements for

these institutions look to reduce the probability, and impact, of their failure. Institutions that are systemically important to the domestic economy or to the economy of the European Union are referred to as O-SIIs.³⁴

Currently, arising from the 2018 review, six institutions are classified as O-SIIs by the Central Bank. Buffer rates have been applied to these institutions depending on the systemic importance of the individual bank and are being phased in from 2019-2021 (Table 5). The designation of O-SIIs and their related buffer rate are reviewed annually. The 2019 O-SII review, the results of which are due to be announced in November, will take account of changes to the financial system including those related to Brexit.

Table 5 | 2018 O-SII and associated phased-in buffer requirements

O-SII	Level of consolidation	O-SII Buffer Rate (%)		
		1 July 2019	1 July 2020	1 July 2021
AIB Group plc	Consolidated	0.5	1.0	1.5
Bank of Ireland Group plc	Consolidated	0.5	1.0	1.5
Citibank Holdings Ireland Limited	Consolidated	0.25	0.5	1.0
Ulster Bank Ireland DAC	Individual	0.25	0.5	0.5
UniCredit Bank Ireland plc	Individual	0.25	0.25	0.25
DePfa Bank plc	Consolidated	0.00	0.00	0.00

Recognition of macroprudential measures taken by other countries

Reciprocity aims to increase the effectiveness of macroprudential measures by reducing cross-border leakages and by minimising negative cross-border effects. To increase coordination, the European Systemic Risk Board (ESRB) has put in place a framework of voluntary reciprocity for macroprudential policy measures among EEA Member States. When a country introduces a national macroprudential policy measure that may have cross-border effects, reciprocity requires other countries to apply the same or an equivalent measure to domestically authorised institutions. In 2015, the ESRB put in place a framework of voluntary reciprocity for macroprudential policy measures, which lays the basis for a coordinated approach to the reciprocation of macroprudential measures for which EU legislation does not foresee compulsory reciprocation.³⁵ The Central Bank has laid out an Irish reciprocation framework in line with ESRB Recommendations, in particular Recommendation ESRB/2015/2.³⁶

The Central Bank considers all requests for reciprocity. So far, the ESRB has issued reciprocation recommendations for measures introduced in five Member States. These recommendations include a threshold level of exposures, above which other Member State banks would be considered to have a material exposure to those five countries.³⁷ In terms of recent activity in the

³⁴ This is to differentiate these institutions from institutions that are systemically important at a global level, referred to as G-SIIs.

³⁵ For more information on the ESRB reciprocity framework see: (i) [Recommendation ESRB/2015/2](#); (ii) Article 5 of [Decision ESRB/2015/4](#); and (iii) Chapter 11 ("Cross-border effects of macroprudential policy and reciprocity") of [the ESRB Handbook on operationalising macroprudential policy in the banking sector](#).

³⁶ Central Bank of Ireland (2016) [Macro Financial Review 2016:1](#), pg. 50.

³⁷ ESRB (2019) [Reciprocation of Measures: Belgium, Estonia, Finland, France, Sweden](#).

first half of 2019, the Central Bank decided not to reciprocate two macroprudential measures – an Estonian systemic risk buffer and a Swedish macroprudential measure under Article 458 of the Capital Requirements Regulation (CRR).³⁸ The Central Bank is currently assessing a recommendation to reciprocate a French macroprudential measure under Article 458 CRR.

Future macroprudential policy developments

Systemic risk buffer

A key policy lesson from the financial crisis is that systemic risk is multi-faceted and a broad range of macroprudential instruments may therefore be required to promote financial stability and mitigate systemic risk. One such instrument in the EU macroprudential framework established under CRD IV is the systemic risk buffer (SyRB). By the end of 2018, a SyRB was active or had been announced in sixteen countries. In Ireland, the decision was taken not to exercise the discretion to introduce a SyRB during the transposition of CRD IV in 2014.

In April 2019, the Governor of the Central Bank wrote to the Minister for Finance to request that the power to activate the SyRB be granted to the Central Bank. The discretion to introduce a SyRB would complete the macroprudential toolkit for bank capital and would enable the Central Bank to address the overall calibration of the macroprudential toolkit to the risk environment facing Ireland.

The Minister has subsequently agreed to grant the Central Bank with the power to introduce the SyRB and work is ongoing on preparing a Statutory Instrument to transpose Article 133 of CRD IV. This would grant the Central Bank the power to introduce the SyRB, but does not mean that the Central Bank would automatically set a non-zero buffer rate. In assessing whether to set a positive SyRB rate, how to calibrate its level and determine the appropriate phase-in period, the Central Bank would be informed by best international practice in relating bank capital requirements to the underlying structural characteristics of the economy. In addition, the inclusion of the SyRB in the toolkit would also inform, and be informed, by the calibration of other macroprudential instruments.

A key motivating factor for completing the macroprudential toolkit with an SyRB is the small and highly globalised nature of the Irish economy. As discussed in Box 2, the small size of the Irish economy as well as its high degree of openness mean that Ireland is more sensitive to developments in the global cycle as well as being more prone to structural macroeconomic shocks. These fundamental structural characteristics of the economy mean that the domestic banking system is – at all points in the cycle – exposed to greater macroeconomic risk than banking systems in larger, more diversified economies. This, in turn, calls for levels of capital through appropriate buffers in the Irish banking system, at all stages of the cycle, that reflect this relatively higher level of structural risk.³⁹

³⁸ In both cases, an assessment was conducted by the Central Bank and the relevant exposures were below the materiality thresholds set by the ESRB. No Irish authorised credit institutions had Estonian exposures close to or near the materiality threshold €250 million. No Irish authorised institution had exposures close to or near the materiality threshold of SEK 5 billion for the Swedish measure. The materiality of exposures will be reviewed on an annual basis and if the materiality thresholds are breached, the Central Bank will consider reciprocating these measures.

³⁹ Lane, P., (2019), "[Tail Risks and the Irish Economy](#)," Lecture, UCD School of Economics (16th April).

Macroprudential policy in market based finance

Macroprudential policy in the market based finance sector is at an early stage of development, both at an international level and within the Central Bank. Given the growth in market-based finance in recent years, there is growing focus on understanding the financial stability risks posed by these developments.⁴⁰ Beyond this, there is also consideration of macroprudential policies to mitigate any risks if that were judged appropriate. Most of the focus to date has been on investment funds. International regulators are working together to consider policies that would make investment fund structures more resilient. The European Systemic Risk Board has published a recommendation to address systemic risks arising from investment funds' use of leverage and liquidity mismatches.⁴¹ It called for more liquidity management tools and supervisory requirements, tighter liquidity stress testing, a harmonised reporting framework, and better use of leverage limits. Irish funds have access to the majority of liquidity management tools and generally use some form of stress test.⁴² The main macroprudential tool currently available is leverage limits, however, this is only for a cohort of investment funds.⁴³ This tool has not yet been applied by any relevant jurisdiction and guidelines on the application of this tool are expected from ESMA.

The Central Bank engages with its European counterparts on the development of prospective tools and monitoring techniques. On a more global basis, the Financial Stability Board also published recommendations to address structural vulnerabilities from asset management activities,⁴⁴ and the International Organisation of Securities Commissions have developed a framework for assessing investment fund leverage.⁴⁵

Forthcoming changes to the macroprudential framework

Financial regulation continues to evolve in the aftermath of the financial crisis with a view to implementing the lessons of the crisis to make the financial system more resilient and stable and this has led to changes to the European legislative framework. Changes to the European rules on capital requirements (CRR II/CRD V) and resolution (BRRD/SRM) are being implemented through the so-called "banking package".⁴⁶ The changes implemented with CRD V include revisions to the macroprudential policy toolkit. Member States have 18 months to transpose the Directives, including the macroprudential amendments. Subject to transposition, the Central Bank will incorporate these changes to the European legislative framework into the domestic macroprudential framework by this time.

The main changes to the macroprudential toolkit relate to the O-SII and systemic risk buffers and are made with a view to enhancing their effectiveness. The new requirements increase the O-SII buffer range from 2 per cent to 3 per cent (with the possibility of an O-SII buffer above 3 per cent being set subject to authorisation from the European Commission). As such, the revised O-SII buffer provides authorities with greater scope to effectively mitigate the risk associated with the

⁴⁰ See Box 3: *Who invests in Irish commercial real estate* for a discussion of the role of market-based finance in the Irish CRE market.

⁴¹ ESRB (2018) [Recommendation on leverage and liquidity in investment funds](#).

⁴² Daly, P., and K. Moloney, "Liquidity and risk management: results of a survey of large Irish-domiciled funds", [Central Bank of Ireland Quarterly Bulletin Q3 2017](#).

⁴³ AIFMD Article 25

⁴⁴ [Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities](#), includes 14 policy recommendations to address liquidity mismatches, leverage, operational risks, and security lending.

⁴⁵ IOSCO (2018), [Report: Leverage](#).

⁴⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2019:150:FULL&from=EN>

systemic importance of individual institutions. The O-SII buffer cap, which applies when an institution is a subsidiary of a G/O-SII, has also been adjusted upwards.

For the SyRB, the new requirements clarify its use to prevent or mitigate those systemic risks not covered by other instruments (e.g. CCyB, O-SII etc.). The scope of the SyRB will also become more flexible with authorities being able to apply a buffer rate to certain sectoral exposures (e.g. mortgage exposures, CRE exposures) or indeed a subset of sectoral exposures, in addition to on a geographic basis (e.g. domestic exposures, third country exposures, other MS exposures) as is the case currently. Moreover, individual SyRB rates may be used to target different sources of systemic risk i.e. more than one SyRB may be set. This would result in differing requirements for different subsets of institutions or exposures. Where more than one SyRB rate applies the buffers will be cumulative.⁴⁷ Furthermore, the combined SyRB rate will now be cumulative with a G/O-SII buffer – as opposed to the current case where in certain circumstances only the higher of the buffers would apply.⁴⁸

⁴⁷ A combined SyRB rate of >3 per cent on any set of exposures will however require a Commission opinion while a combined rate of >5 per cent would require authorisation from the Commission.

⁴⁸ Where the sum of the SyRB rate and the G/O-SII buffer to which an institution is subject would be >5 per cent, authorisation from the Commission will be required.

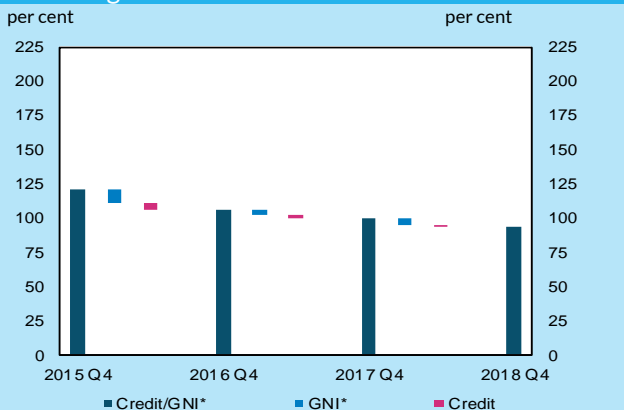
Box 7 An enhanced measure of cyclical risk for Ireland

By Sofia Velasco and Martin O'Brien (Macro-Financial Division)

Analysing developments in indicators of cyclical systemic risk, such as the credit gap, informs macroprudential policy, especially the CCyB. The credit gap is an estimate of the difference between the ratio of the actual level of credit relative to the size of the economy (Credit-to-GNI* ratio in the case of Ireland) and the long-run trend of that ratio. Fluctuations in the gap can be divided into stages: upward trajectories can be interpreted as a build-up of cyclical vulnerabilities, while downward trajectories might be read as periods of risk materialization or dissipation.

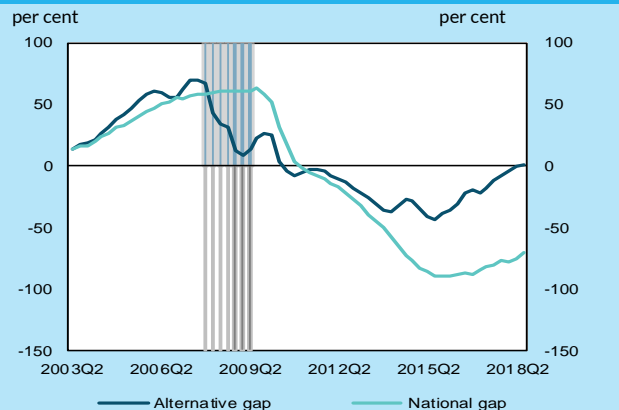
This Box examines the model-based estimate of the credit gap (i.e. alternative credit gap) used by the Central Bank.¹ This gap estimate has been on an upward trajectory since mid-2015, consistent with the gradual build-up of cyclical risk, and in recent quarters has moved into positive territory. These developments in the gap should also be considered in the context of the slower decline in the Credit-to-GNI* ratio in recent years, driven mostly by increases in GNI*, with the pace of active deleveraging and declines in credit easing back in more recent times (Chart A).

Chart A: Active deleveraging playing less of a role in the changes of the credit to GNI* ratio



Source: CSO and Central Bank of Ireland.
Notes: Credit is the national preferred credit measure used in evaluating the CCyB.

Chart B: Comparing turning points of the credit gap measures



Source: Central Bank of Ireland.
Notes: National gap refers to the estimate of the gap from applying the H-P filter to the Credit-to-GNI* ratio.

The Alternative credit gap uses data and statistical techniques that, unlike other methods such as the Basel-gap, more accurately reflect the peculiarities of the Irish economy. As the estimation of the Alternative gap includes the joint behaviour of a number of key macro-financial variables – specifically house price misalignment and sovereign spreads – it allows for a more complete economic interpretation of the drivers of cyclical risk and may also improve its early warning properties. For example, the Alternative gap measure peaked over a year earlier in advance of the previous crisis than the more standard approach to estimating the credit gap (Chart B). In addition, the estimation technique used allows for changes in the underlying structure of the economy and financial system over time.²

The two additional variables included in the estimation of the Alternative gap aim to capture the broader aspects of cyclical risk. The estimated misalignment in house prices is included to monitor vulnerabilities related to key asset prices.³ There is substantial evidence that these are positively relevant when assessing the potential for rising cyclical vulnerabilities.⁴ In order to capture the perception of the general level of risk, the Irish 10-year sovereign bond spread vis-à-vis the equivalent German bond is

included. Lower spreads may be indicative of risk-mispricing, which itself is associated with the build-up of cyclical vulnerabilities.

The correlation between these additional variables and the Alternative gap estimate points to their association with broader cyclical risk assessment. Table A provides these correlations for two time windows: the period prior to the financial crisis and the times that followed the lowest level of the gap. In both instances the deviation of house prices from their fundamental values is strongly associated with the build-up of cyclical risks. The sovereign bond spread holds a negative correlation with the gap over the entire sample, supporting the view that a compression of the spread goes along with an increase in risk taking. This association is stronger in the recent build-up phase since 2015 than it was during the build-up of the last financial crisis.

While the Alternative gap has many benefits over standard credit gap measures, it remains only one of a suite of indicators considered when evaluating the level of cyclical risk. The discussion of the CCyB decision in this FSR gives a complete assessment based on the framework used by the Central Bank.

Table A: Correlation between auxiliary variables and the alternative credit gap

	House-price misalignment measures	Sovereign Spreads
2003Q1-2007Q4	0.88	0.09
2015Q4-2018Q3	0.91	-0.57

Source: Central Bank of Ireland calculations.

¹ See O'Brien, M., E. O'Brien and S. Velasco (2018), "[Measuring and mitigating cyclical systemic risk in Ireland: The application of the countercyclical capital buffer](#)", *Financial Stability Notes*, 2018, No.4.

² This model-based approach applies state of the art econometric techniques drawing on univariate trend-cycle decomposition models in a state space framework (see e.g. Clark, P.K. (1987), "[The Cyclical Component of U.S. Economic Activity](#)", *The Quarterly Journal of Economics* 102, 797-814) as well as extensions to a multivariate framework (see e.g. Borio, C, P. Disyatat and M. Juselius (2013), "[Rethinking potential output: Embedding information about the financial cycle](#)", BIS Working Papers, no 404, February and Lang, J.H. and P. Welz (2018), "[Semi-structural credit gap estimation](#)", ECB Working Paper No 2194). Also its set-up is more flexible with respect to standard methods as it allows the distribution of the cycle to fluctuate between two regimes; one characterised by tranquil times and another defined by a large mean and high volatility. As Kelly et al. (2011) show allowing for structural breaks is of particular relevance to the Irish economy as substantial fundamental changes took place over the recent decades (for more information see Kelly, R., K. McQuinn and R. Stuart (2011) "[Exploring the Steady-State Relationship between Credit and GDP for a Small Open Economy - The Case of Ireland](#)", Research Technical Papers 1/RT/11, Central Bank of Ireland).

³ The estimated misalignment in house prices is the average misalignment implied across a number of statistical and model based approaches.

⁴ Drehmann et al. (2010) motivates the choice of a measure related to house price developments due to its early warning properties. Moreover, Lozej et al. (2017) conceptually assess the macroeconomic performance of different countercyclical capital buffer reference variables in a rules based framework, finding that the optimal reference variable relates to house prices (for more information see Drehmann, M., C. Borio, L. Gambacorta, G. Jimenez and C. Trucharte (2010), "[Countercyclical capital buffers: exploring options](#)", BIS Working Papers, no 317 and Lozej, M., L. Onorante, A. Rannenberg (2017), "[Countercyclical capital regulation in a small open economy DSGE model](#)", Central Bank of Ireland Research Technical Paper 03/RT/2017).

Box 8 Allocation of allowances under the macroprudential mortgage limits

By Christina Kinghan & Fergal McCann (Macro-Financial Division)

This Box provides an overview of recent research focusing on the allocation of allowances under the mortgage measures. In each year from 2016 to 2018, 20 to 25 per cent of the value of total mortgage lending was originated with an allowance to exceed either the LTV or LTI limit (Chart A). Understanding the profile of this lending is key to understanding the impact and effectiveness of the measures.

The potential impact of the mortgage measures on housing choice is most salient for FTBs, who tend to obtain an allowance to exceed the LTI limit, rather than the LTV limit. Controlling for other factors, FTBs in Dublin are estimated to have a 20 per cent higher probability of getting an LTI allowance than those outside of Dublin. Single FTB borrowers have an 8 per cent higher probability of getting such an allowance than couples, both within and outside Dublin. And, across the country, FTB borrowers in the middle of the income distribution tend to have a higher probability of getting an LTI allowance relative to borrowers in the lowest or highest income quintiles.¹ These findings are consistent across lenders.

Borrowers with an LTI allowance are highly likely to have an LTV just below the threshold of the mortgage measures and vice versa. Borrowers with allowances are also more likely to have a loan term close to their possible maximum (often 35 years for FTBs and 30 years for SSBs). In line with rapid house price growth since 2015, the LTI and LTV levels of loans issued with an allowance have grown each year, while remaining substantially below pre crisis levels. In the case of FTBs, loans issued with an allowance with LTI above 4 times has increased from circa 30 to almost 50 per cent over the three years from 2016 to 2018 (Chart B).

These findings suggest that the allowances framework is functioning broadly as intended. The allowances were introduced in recognition that loans at higher LTV and LTI ratios can be appropriate in certain circumstances. In practice, borrowers who would typically demand higher-LTI lending in order to access the housing market (such as those living in parts of the country where house prices are particularly elevated relative to incomes, those on single incomes and younger borrowers) are more likely to receive these loans. The findings also point to some increase in lenders' willingness to finance house purchases with higher LTIs within the allowance framework. The Central Bank will continue to monitor this trend over time and assess its implications for borrower and lender resilience.

Chart A: Share of new PDH lending with an allowance to exceed the LTV/LTI limits (share of value), 2016-18

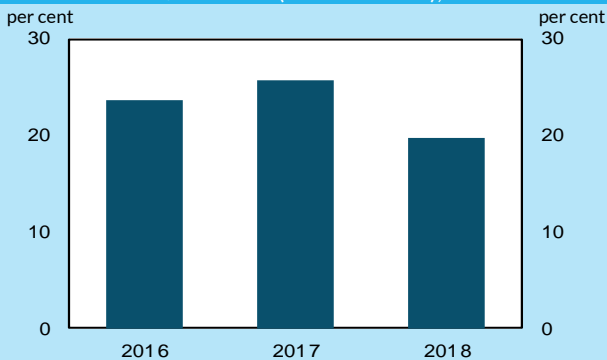
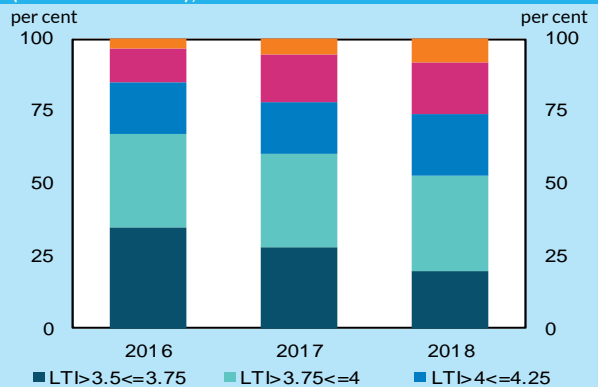


Chart B: LTI distribution for FTBs with an LTI Allowance (share of volume), 2016-18



Source: Central Bank of Ireland Monitoring Templates and authors' calculations.

Source: Central Bank of Ireland Monitoring Templates and authors' calculations

¹ Quintile 1 represents the lower income in the distribution and Quintile 5 the highest income in the distribution.

Annex

A lifetime mortgage is defined in the Central Bank's Consumer Protection Code 2012 as "a loan secured on a borrower's home where:

- interest payments are rolled up on top of the capital throughout the term of the loan;
- the loan is repaid from the proceeds of the sale of the property; and
- the borrower retains ownership of the home whilst living in it."

As there is no contractual obligation on the borrower to repay the capital or any interest on the loan during its term, underwriting of a lifetime mortgage does not consider affordability issues, as the amount borrowed and rolled up interest is repaid at the end of the mortgage, when the home is sold or it is no longer the principal dwelling of the owner. Consequently, an LTI restriction, an important concern of which is to promote affordability, is irrelevant for this type of mortgage. Lifetime mortgages are, for example, exempt from the LTI limit in the United Kingdom on this basis.

A more important consideration or risk related to this product is the potential for negative equity at the time of final settlement. As a result, LTV limits are still relevant in the case of lifetime mortgages.

As with any other mortgage products, lenders are obliged to comply with the relevant provisions in the Consumer Protection Code 2012 ('the Code') when offering lifetime mortgages. The Code contains a number of specific pre-contractual information provisions imposing requirements on regulated entities selling lifetime mortgages and home reversion agreements (Provisions 4.41 to 4.45). These transparency requirements provide that prior to offering, recommending, arranging or providing a lifetime mortgage to a consumer, a regulated entity must inform the consumer of the consequences of purchasing a lifetime mortgage and provide a range of information. In addition to these provisions, the post-sale information provisions in the Code that apply to credit also apply to lifetime mortgages (including Provisions 6.5 to 6.12).

These products will continue to be monitored by the Central Bank as part of the ongoing monitoring of the mortgage market.

Abbreviations

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

AIB	Allied Irish Bank	HH	Households
AMECO	Annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs	IMF	International Monetary Fund
AMNE	Activity of multinational enterprises	JLL	Jones Lang LaSalle
BIS	Bank of International Settlements	KBC	Kredietbank ABB Insurance CERA Bank
BOI	Bank of Ireland	LCR	Liquidity coverage ratio
BPFI	Banking & Payments Federation Ireland	LTI	Loan to income ratio
BRRD	Bank Recovery and Resolution Directive	LTV	Loan to value ratio
BTL	But-to-let	MFI	Monetary financial institution
CBOE	Chicago Board Options Exchange	MREL	Minimum requirement for own funds and eligible liabilities
CBRE	Coldwell Banker Richard Ellis Group	MSCI	Morgan Stanley Capital International
CCP	Central clearing counterparty	NFC	Non-financial corporation
CCR	Capital Requirements Regulation	NPL	Non-performing loan
CCyB	Countercyclical capital buffer	NTMA	National Treasury Management Agency
CET1	Common equity tier 1	OECD	Organisation for Economic Co-operation and Development
COREP	Common Reporting Framework	OFI	Other financial institution
CRD	Capital Requirements Directive	O-SII	Other Systemically Important Institutions
CRE	Commercial real estate	PDH	Primary dwelling house
CSD	Central Securities Depository	PMI	Purchasing managers' index
CSO	Central Statistics Office	PTSB	Permanent PTSB
EBA	European Banking Authority	REIF	Real Estate Investment Fund
ECB	European Central Bank	REIT	Real Estate Investment Trust
EEA	European Economic Area	ROA	Return on assets
EIOPA	European Insurance and Occupational Pensions Authority	ROE	Return on equity
EPS	Earnings per share	RWA	Risk-weighted asset
ESM	European Stability Mechanism	SCR	Solvency capital requirement
ESMA	European Securities and Markets Authority	SCSI	Society of Chartered Surveyors of Ireland
ESRB	European Systemic Risk Board	SME	Small and medium enterprise
ESRI	Economic and Social Research Institute	SRM	Single Resolution Mechanism
EU	European Union	SSB	Second and subsequent buyer
FDI	Foreign direct investment	SSM	Single Supervisory Mechanism
FINREP	Financial reporting	SVR	Standard variable rate
FOE	Freedom of establishment	UBI	Ulster Bank Ireland
FOS	Freedom of service	VA	Value added
FSR	Financial Stability Review	WTO	World Trade Organisation
FTB	First-Time Buyer		
GDP	Gross domestic product		
GNI	Gross national income		
GOS	Gross operating surplus		

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