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The Prevalence Of Procyclicality In The Financial Industry

Procyclical Behaviour Through The COVID-19 Crisis

by Varun Bajaj, Gareth Mee, Dick Rae, Raj Saundh, Adeline Tan, Pablo Vasquez Lopez, Denis Walsh

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The Prevalence of Procyclicality In The Financial Industry

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Abstract

The topic of procyclicality within the financial system has represented a regular feature of discussions amongst investment market participants, regulatory institutions, and policymakers alike. Its relevance lies in the apparent tendency for behaviours and actions by institutional investors and financial intermediaries (either unintentionally or otherwise), to exacerbate trends, with such actions leading to negative or worse outcomes than might otherwise have been achieved. This paper examines the evidence for a hypothesis that institutional investors behave procyclically by considering past research, recent practice and testing some hypotheses as evidence emerged over 2020 through the COVID crisis.

Keywords

Procyclicality, Insurance, Pension Schemes, COVID-19, Investment Cycles

Introduction

Much has been written on the topic of procyclicality in the past. In the light of the COVID crisis, this group set out to revisit past literature and test the behaviour of insurance companies and pension schemes (together, "institutional investors") globally over the crisis.

The working group did not seek to perform an exhaustive analysis. The authors recognised that, whilst there are large bodies of research performed, there would be value in summarising some of those themes, testing them against recent practice and, where feasible, considering emerging impacts of the COVID crisis.

The group has intentionally not focused on herding behaviours, which has been extremely well covered by several research pieces, including the comprehensive and relevant 2014 Bank of England paper "Procyclicality and structural trends in investment allocation by insurance companies and pension schemes" (Bank of England, 2014)[1].

Methodology

The working group has reviewed the most relevant available literature related to aspects in connection with procyclicality and investments in the insurance sector. For each paper, a member of the working group summarised the themes and the wider group debated the findings and themes. As a result of the analysis, it created hypotheses to test against the literature and supplement this with anecdotal evidence, personal experience and emerging experience over the COVID crisis where possible.

The paper is structured in four sections, in which the paper briefly introduces the subject, then moves onto presenting the two key observed hypotheses tested and the key take away items observed in the literature validating or invalidating these hypotheses.

The four sections are:

1. Procyclicality and **Risk Based Capital** models
2. Procyclicality and **credit ratings**
3. Procyclicality in **investment strategies amongst institutional investors**

4. Procyclicality mitigation through **dynamic provisioning** and other successful tools in banking regulation

Procyclicality and Risk Based Capital Models

In this section, the working group covers an examination of the regulatory and accounting frameworks (including their models) and their influence on procyclicality. Given that the equities pricing correction and unprecedented volatility were at the spotlight of financial market disruptions during March 2020, the authors gravitate towards the role of equity exposures under a Solvency II regime, or Value at Risk as a cyclical risk measure.[2]

The working group sets out to test two hypotheses in this section:

1. **"Risk Based Capital Models are inherently procyclical particularly in their investment module"**
2. **"Temporary measures by regulators can contribute further to this inherent procyclicality"**

Literature Review

The working group notes that there are a number of different models (regimes) in the scope of this analysis. Examples include:

- Statistical Risk Based Capital (RBC) regimes, predominantly used in insurance: Europe's Solvency II, Bermudian Monetary Authority's (BMA) Solvency Capital Regime, South Africa's Solvency and Assessment Management (SAM), Australia's Life and General Insurance Capital Standards (LAGIC), Singapore's Risk Based Capital 2 (RBC2), Swiss Solvency Test (SST)
- Factor based RBC regimes: US RBC
- Non RBC regimes, predominantly used in pension scheme regulation: UK Defined Benefit (DB), Australian Superannuation

The authors have observed a diverse set of investment strategies, both at normal times, and in times of stress across the different regimes. But are these regimes to blame for this? The group would argue that RBC regimes have contributed to taking less risk within the investment strategy compared to similar regimes without a RBC overlay. Observations in the UK market support this affirmation, with UK insurers largely investing in fixed income to better match annuities (see figure 1) compared to a relatively larger investment in risk seeking assets from DB pension schemes, particularly equity for UK schemes (see figure 2), albeit at a reducing level. The working party would note that there is another significant difference between insurers and pension schemes which is that pension schemes retain a sponsor "covenant" which provides an additional backstop if the investment performance is not sufficiently strong. However, it could be expected that introducing RBC regulation would reduce the current level of riskier asset investment even in the presence of this covenant.

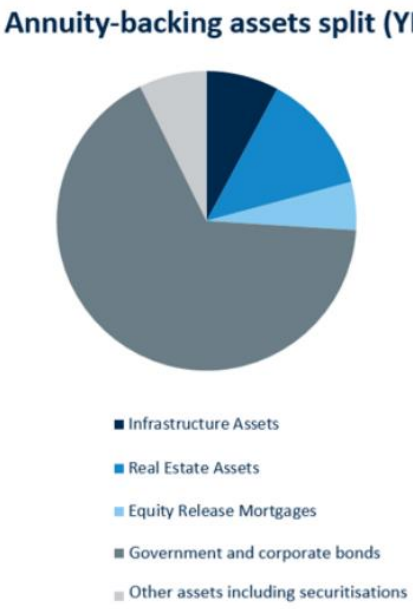


Figure 1. Asset split of annuities (Rule, D., 2019)[3]

Year/ *The Purple Book* dataset	Asset class								
				Breakdown of other investments					
	Equities	Bonds	Other invest-ments	Property	Cash and deposits	Insurance policies	Hedge funds*	Annuities*	Misc
2006	61.1%	28.3%	10.6%	4.3%	2.3%	0.9%	n/a	n/a	3.1%
2007	59.5%	29.6%	10.9%	5.2%	2.3%	0.8%	n/a	n/a	2.5%
2008	53.6%	32.9%	13.5%	5.6%	3.0%	1.1%	n/a	n/a	3.8%
2009	46.4%	37.1%	16.5%	5.2%	3.9%	1.4%	1.5%	n/a	4.5%
2010	42.0%	40.4%	17.6%	4.6%	3.9%	1.4%	2.2%	n/a	5.4%
2011	41.1%	40.1%	18.8%	4.4%	4.1%	1.6%	2.4%	n/a	6.3%
2012	38.5%	43.2%	18.3%	4.9%	5.1%	0.2%	4.5%	n/a	3.6%
2013	35.1%	44.8%	20.1%	4.7%	6.7%	0.1%	5.2%	n/a	3.5%
2014	35.0%	44.1%	20.9%	4.6%	6.1%	0.1%	5.8%	n/a	4.3%
2015	33.0%	47.7%	19.3%	4.9%	3.5%	0.1%	6.1%	n/a	4.7%
2016	30.3%	51.3%	18.4%	4.8%	3.0%	0.1%	6.6%	2.1%	1.7%
2017	29.0%	55.7%	15.3%	5.3%	-0.9%	0.1%	6.7%	3.3%	0.8%
2018	27.0%	59.0%	14.0%	4.8%	-2.5%	0.1%	7.0%	3.4%	1.2%
2019	24.0%	62.8%	13.2%	5.0%	-4.4%	0.3%	7.4%	4.0%	1.0%
2020	20.4%	69.2%	10.4%	4.9%	-7.2%	0.1%	6.8%	5.0%	0.8%

Figure 2. Asset split of Pension Plans (Pension Protection Fund, 2020) [4]

The introduction of RBC regimes has also contributed to marked reductions in equity backing ratios for With Profits business in UK, France and Germany, though this is difficult to disentangle from the similar timing of the reduction in interest rates, making the guarantees more valuable.

Building on the affirmation that different regimes cause different investment decisions, would this result in differential behaviour under stress? 2020, through COVID-19, has been informative to the working group research in considering this question. In line with (Bank of England, 2014) on this same

topic, which concluded that there was evidence both for and against the idea that institutional investors are procyclical, the working group has observed that evidence over the course of 2020 would seem to echo those findings.

Anecdotally, the authors are aware that some insurers took decisions to de-risk right at the start of the crisis. Whilst it cannot be certain that the RBC regime was that rationale for this behaviour, the working group understands that the desire to protect Solvency ratios was a driver for some of the activity.

There are a number of counter-examples:

- The UK bulk annuity market showed evidence of better pricing being offered to pension schemes through the crisis as insurers were able to capitalize on the benefit of wider spreads, aided by the matching adjustment (see Figure 3). We would note that these insurers are generally more skilled in analysing credit risk than the average insurance company might be expected to be.
- Solvency ratios through Europe, Asia, South Africa and Bermuda remained relatively resilient to the crisis. The biggest single driver of Solvency ratio hits seems to have come from changes in interest rates (see Figure 4)

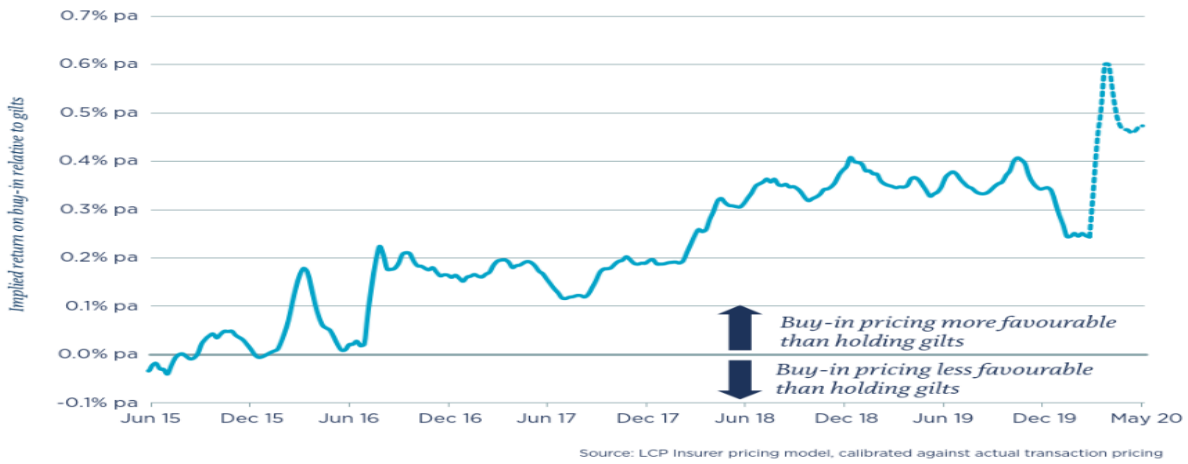


Figure 3. Implied return on Buy-in relative to gilts (Finch, c. and Cothay, I., 2020)[5]

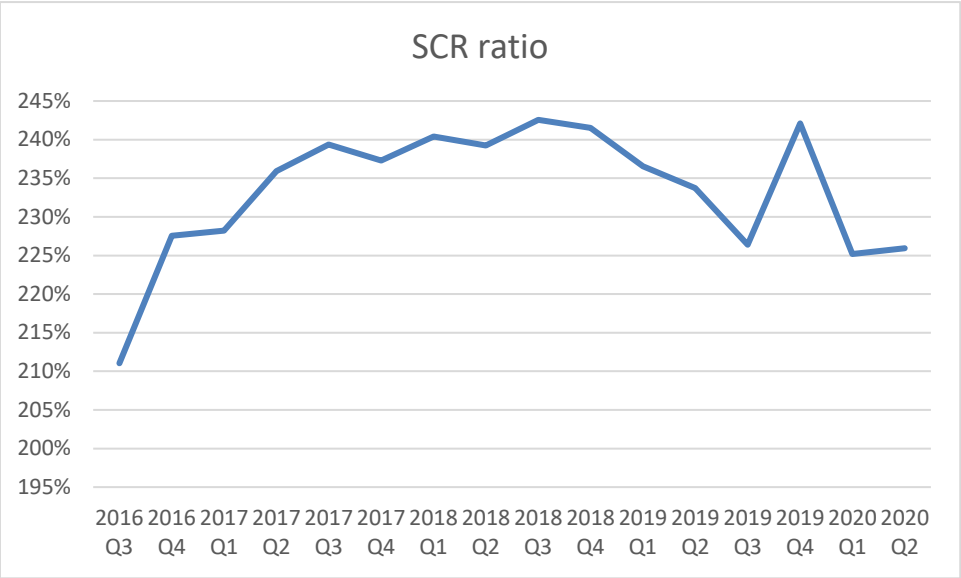


Figure 4. Historical SCR Ratios across Europe (Working Party Analysis of published EIOPA insurance data)

Insurers have not obviously behaved counter-cyclically in response. In addition, regulators claim that the counter cyclical measures (e.g. volatility adjustment, symmetric adjustment, Transitional Measures on Technical Provisions (TMTP), matching adjustment) have "*done their job*" (EIOPA, 2020)[6]

- In a speech at the Westminster & City conference, Charlotte Gerken of the PRA stated *"The matching adjustment performed its expected function in 2020, allowing insurers to look through the sharp spike in credit spreads. And it also served broader financial stability as insurers did not behave in a procyclical way, as they did not need to sell assets as market prices fell."*(Gerken, C., 2021) [7]
- This is explored further by another group of actuaries researching the impact of COVID-19 who published this excellent summary of the countercyclical measures in Solvency II (Fulcher, P., 2020)[8]. The paper concludes that the measures "*potentially reduce volatility in insurers' solvency positions during the Covid-19 induced market turmoil in H1 2020."* However, it also points out that *"the different measures each have certain issues in the ways they operated, which the recent experience confirmed*" and also that *"Further some measures, such as the Volatility Adjustment, are specifically designed to reduce procyclicality, while for others, such as the Transitional Measure on Technical Provisions, that is not really the main purpose. And others, such as the Symmetrical Adjustment for Equity Risk prove ineffective just when they are most needed."* Despite the limitations in the EIOPA measures, which are not the scope of this paper, it is clear that the measures have, at least to some extent, "done their job".

The analysis of investment strategies through 2016-2020 at an aggregate level (EIOPA, 2020)[9] shows insurers maintaining a relatively consistent investment strategy even if interest rates drop (see figure 5)

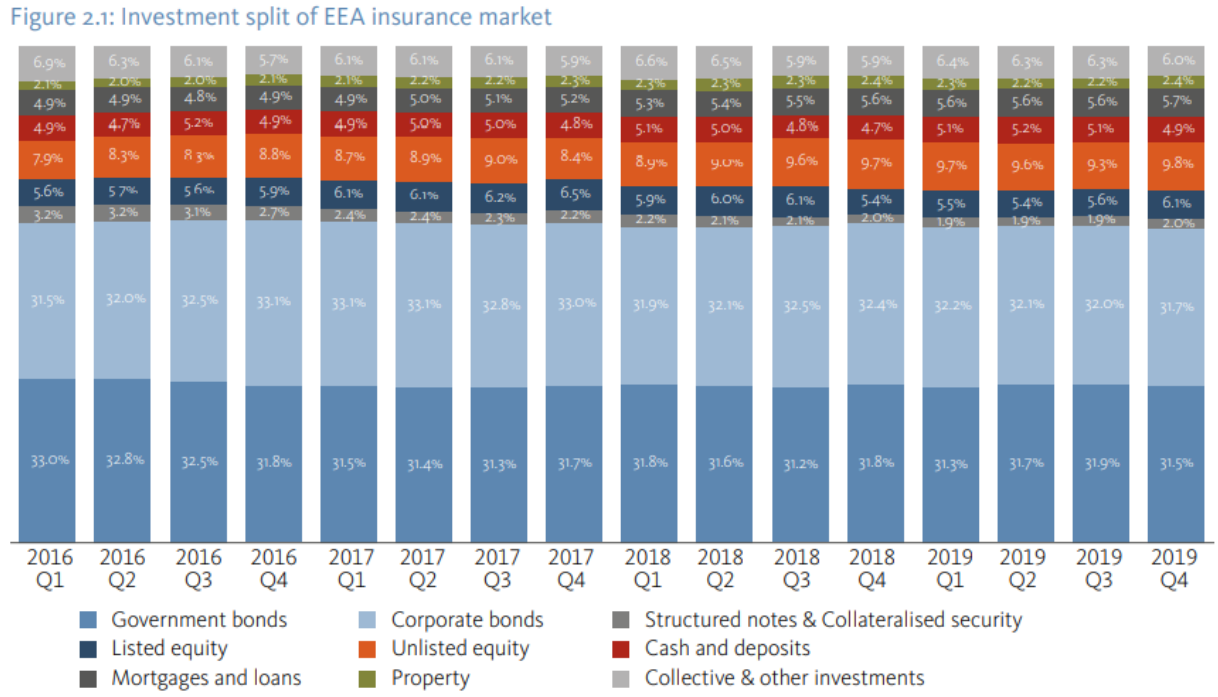
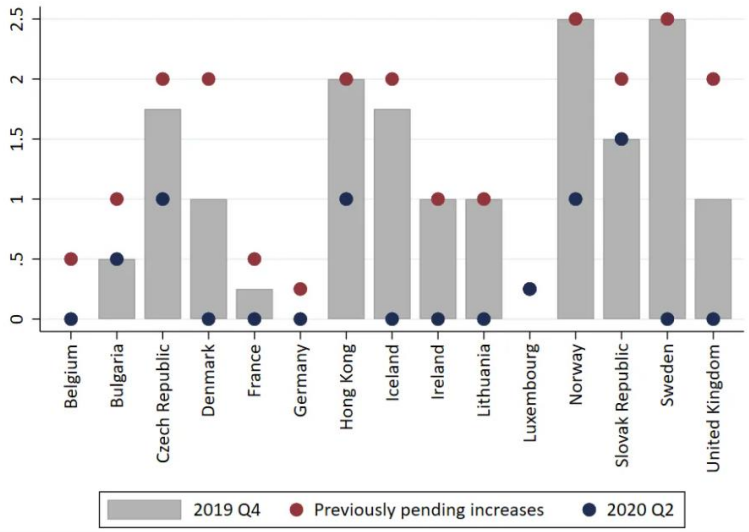


Figure 5. Investment Split EEA Insurance Market (EIOPA, 2020)

Conversely, some regimes without RBC regimes have seen stress through the crisis. The UK Defined Benefit market has seen a particularly tough crisis with DB sponsors more than twice as likely to have suffered a profit warning through 2020 than those corporates without a DB scheme (EY, 2020). As a result, sponsors have had challenging negotiations with trustees about injecting more cash to contribute to the scheme, at arguably the most challenging time for them to do so. This is an unusual manifestation of procyclicality given it focuses on cash and liquidity drain rather than change in investments.

So have the regulators helped? The authors considered the situation in the banking market where regulators provide temporary relief to banks by easing regulatory requirements. This avoids banks passing on their financial stress to retail customers and smaller businesses as seen in the reduction to counter-cyclical capital buffers (“CCyB”) by several central banks in the chart below:

Chart 1: Effective CCyB rates before and after the Covid-19 Shock (%)



Source: ESRB, HKMA, BIS, national authorities' websites

This makes sense as it gives the banks a chance to shore up their balance sheet and also doesn't add further strain to the customers. However, there isn't an obvious parallel in the insurance and pensions markets. In fact:

- The UK pension regulator has this year increased pressure on companies to inject more money into their pension schemes: Pension fund deficit crackdown 'could hit economic recovery' (O' Dwyer, M., 2020). Whilst injection of money doesn't generate procyclicality, it does if it strains already weak companies who could do without a liquidity pinch.
- There is anecdotal evidence that the European insurance regulators are requiring insurers to recapitalize where their Solvency ratios are falling below their targets.
    - Does this make sense? It does if one wants to ensure a solvent insurance regime well beyond 1 in 200 year events but the Solvency II regime is designed to protect against a single 1 in 200 year shock.
    - This should mean that the current crisis should be allowed to weaken balance sheets but that recapitalization is not required immediately
    - Whilst there is limited hard evidence to show this in the market, the debt raising of listed European insurers may point to some additional caution. It may also point to strong conditions for borrowing at low rates.
- Ultimately, many European regulators are set up with prudence at the heart of their regulation, rather than competition. Where there are joint objectives, the cost of requiring more capital can be weighed up against the benefit of doing so. Where there are simply prudent objectives, the regulators will always require recapitalization. Recapitalization doesn't necessarily mean procyclicality but it does encourage it as insurers need to be more cautious as their solvency weakens.

In summary, we find that:

- Risk Based Capital regimes are not inherently procyclical, certainly in today's incarnation. The counter-cyclical measures present in most modern risk-based capital regimes offset the potential procyclical nature.
- Regulators have the potential to exacerbate procyclicality, particularly where they have a prudential objective.
- There is no evidence that the COVID crisis has challenged the procyclicality in aggregate though there is anecdotal evidence of procyclical behaviour.

- Insurers are not banks. Whilst the banking regulators offer forbearance to ensure the economy remains stimulated, there are fewer incentives to consider the same for insurers given they remain secondary lenders rather than primary lenders.

Procyclicality & Credit Ratings

In this section the working group looks into the potential relationship between procyclicality and credit ratings. Credit ratings are widely used as a basis for assessing credit risk across the financial industry. Their prevalence stems from their role as a gauge of perceived levels of credit or default risk of entities in respect of their financial obligations, including that of financial instruments (such as bonds) issued by those entities. In light of this, credit ratings feature prominently across the institutional investor landscape, with references to credit ratings a key feature of many institutional investment mandates, investment risk frameworks and regulatory capital regimes (e.g. Solvency II, LAGIC, Asia's Risk Based Capital (RBC) regime).

The importance of credit ratings is widely accepted and the role played by Credit Rating Agencies (CRAs) in assigning those ratings is widely known. However, the dependency of institutional investors on credit ratings, and the associated susceptibility to credit rating changes has more recently been the subject of intense scrutiny by policymakers, academics and indeed regulators. Credit rating downgrades arising from the recent COVID-19 pandemic have provided a renewed impetus for this focus. Of specific interest in this discussion, is the issue of procyclicality with respect to credit ratings and potential implications of procyclical effects arising from the reliance on credit ratings.

The working group sets out to test two hypotheses in this section:

1. **"CRA Methodologies show evidence of contributing to procyclicality"**
2. **"Reliance on credit ratings (specifically ratings of financial instruments), and actions taken by financial institutions in the event of rating downgrades contribute to procyclicality"**

Procyclicality of Credit Rating Agency Methodology

Credit Rating Agencies play an important role in assessing credit risk. There is an acknowledged limited number of major credit rating agencies in the market, with Standard & Poor's, Moody's and Fitch Ratings representing approximately 92%[10] of the market in EU and a similarly representative figure[11] for the US.

While there are acknowledged differences in the precise methodologies and definitions used by each rating agency in assigning credit ratings, and indeed in the rating scales published by CRAs, there are a number of common principles associated with each credit rating approach.

- Credit Ratings are intended to represent views or opinions about credit risk, which in the context of an entity, typically refers to the ability and willingness of that entity to meet their financial obligations. Credit ratings can also be assigned to financial instruments (such as debt securities), issued by entities which may make some allowance for the instruments' seniority in the capital structure.
- Credit Ratings are intended to reflect a "through the cycle" approach. As such, change is expected when relative fundamental creditworthiness changes. Since relative fundamental credit risk generally changes quite slowly, ratings should be "broadly stable" through the course of the business cycle.
- Credit ratings are intended to represent relative measures of credit risk, rather than absolute measures of credit risk. In other words, the credit rating scale is intended to represent a rank ordering of credit risk amongst securities. According to S&P, "ratings express relative opinions about the creditworthiness of an issuer or credit quality of an individual debt issue, from strongest to weakest, within a universe of credit risk" (Standard & Poors, 2019)[12]

A credit rating is therefore not intended to represent an absolute measure of default risk at a single point in time – actual default rates can and do vary for a given rating. The below charts from Moody's indicate this important distinction.

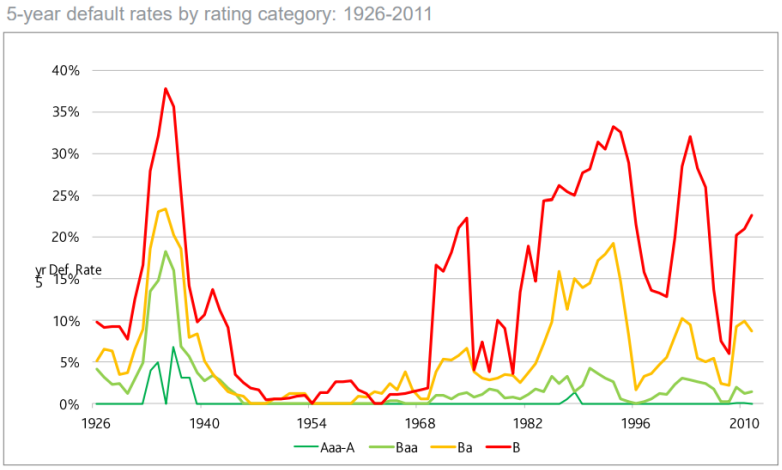


Figure 6. Default rates across ratings (Moodys Analytics, 2012)[13]

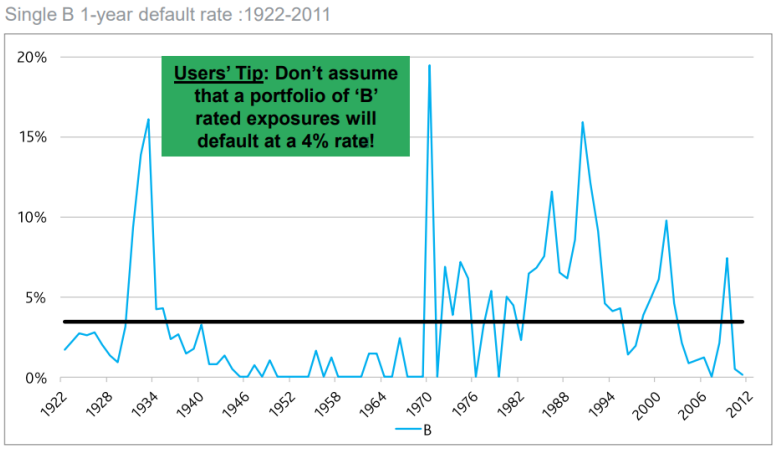


Figure 7. Rank Ordering Risk (Moodys Analytics, 2012)

The working group has observed a number of studies in academic literature, which have examined the connection between CRAs' methodologies and procyclicality.

(Amato & Furfine, 2003)[14] considered the influence of the state of the business cycle on credit ratings assigned to companies in the US rated by Standard and Poor's from 1981 to 2001. We would note that the ratings considered for this study represent company ratings rather than debt securities or financial instruments ratings. Noting this distinction, the paper nonetheless provides a useful examination of procyclicality regarding CRA policy.

- The paper found that credit ratings applied to firms changed little over the period observed, implying little evidence of procyclicality in credit ratings. The authors however indicated some caution regarding this conclusion, indicating that a lack of continuous monitoring by CRAs could represent a reason for this finding. In light of this, with further analysis of the data, when they consider the timing of when a rating evaluation was made, (i.e. initial ratings or rating changes), they find that such changes exhibit excess sensitivity to business cycle conditions. As indicated in the findings of the paper, "*most of the time, ratings do not change[…] however, when rating agencies do make a change, they overreact relative to present conditions, and the nature of this overreaction is positively correlated with the state of the aggregate economy".*

(Ferri, et al., 1999)[15] considered the role credit rating agencies may have played in aggravating the East Asia Crisis.

- Their paper concludes that credit rating agencies aggravated the crisis by becoming excessively conservative as the crisis unfolded, with credit rating agencies downgrading East Asian crisis countries in their view *"by more than the worsening in these countries' economic*

fundamentals would justify". The paper concludes that this *"unduly exacerbated, for these countries, the cost of borrowing abroad and caused the supply of international capital to them to evaporate. In turn, lower than deserved ratings contributed at least for some time to amplify the East Asian crisis"*.

Analysis by CRA agencies themselves points to the broad stability of ratings, but this conclusion warrants careful interpretation.

- A study by Moody's (Moodys Investor Services, 2009)[16] examined an 88-year period of rating experience (1920 through 2008). The analysis indicated that while "the average rating level was observed to be cyclical, (i.e. average credit ratings fall more sharply in recessions and during periods when default rates were above average), the study also indicated that the "*magnitudes of these changes in average credit ratings are extremely small. Since the Great Depression, the average rating level has never fallen as much as a half a rating notch (one sixth of a broad letter rating category) within in a single year, nor has it ever fallen as much as an entire rating notch over a four-year period. On average, when default rates are rising, the average rating level declines by one one-tenth of a rating notch*". The conclusion drawn was therefore that *"Average rating levels generally move in tandem with the cycle, but the magnitude of the variation of average rating levels is small over the course of most cycles.*
- *In respect of changes in credit ratings,* the paper indicated "*Rating changes are strongly correlated with cyclical indicators such as economic activity, default rates, and credit spreads. Few rating changes are subsequently reversed, even over long horizons, which implies that rating changes reflect enduring, rather than cyclical, changes in credit quality, even if such enduring changes are in part induced by cyclical market forces"*

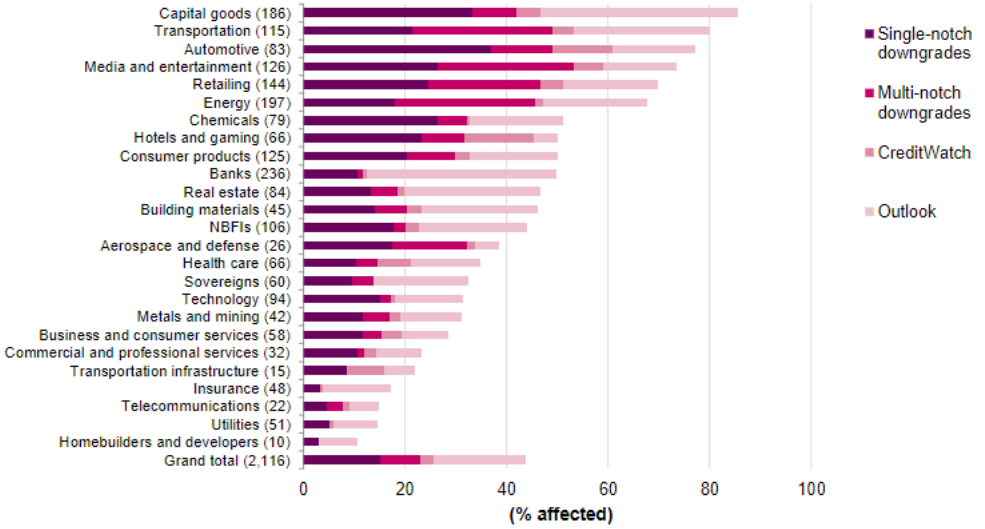
Furthermore, more recent analysis by Moody's (Moody's Investors Services - Rating Transitions - Global, 2020)[17] indicates that based on their ratings since 1920 *"on average, only around 10% of ratings have changed broad rating category in any given year. Furthermore, rating reversals are uncommon. Over 5 years, only about 20% of broad rating changes will have been unwound".*

- This broad stability of ratings implies a lack of procyclicality in assigning credit ratings. The paper further argues that "*the overall stability of ratings does not mean that ratings will be immune to cyclical developments".*
- Indeed the same (Moody's Investors Services - Rating Transitions - Global, 2020) analysis indicated a positive correlation between net downgrades and credit spreads (as a proxy measure for the credit cycle). It finds, for example, the correlation between the spread and rating changes of 0.44 for Investment Grade is less pronounced than the correlation of 0.73 between the default rate and rating changes, however *"both are significant and positive indicating that ratings are procyclical in the sense of moving with the credit cycle"* acknowledging that creditworthiness may improve during more robust economic growth and deteriorate during recessionary periods.
- They indicate that this is one reason credit ratings may be considered to demonstrate evidence of procyclicality – i.e. *"the balance of rating downgrades and upgrades may correlate with the economic cycle").* It is also argued, these represent small rating moves, and based on their analysis, these moves are not typically reversed, thereby reflecting a fundamental deterioration in creditworthiness.

Recent experience has been more measured but also more polarising than we have seen in prior crises. According to analysis of (Standard & Poors, 2021 [2])[18] , there is evidence that ratings agencies downgraded, en masse, some of the most obviously affected bonds affected by the COVID crisis (e.g. transport, aerospace, retail, energy and chemicals). But other sectors (e.g. banks and real estate) have been instead placed on "downgrade watch" or "negative outlook" where ratings agencies have been more nuanced in their approach.

Sector Breakdown Of Corporate And Sovereign Downgrades By Number Of Notches

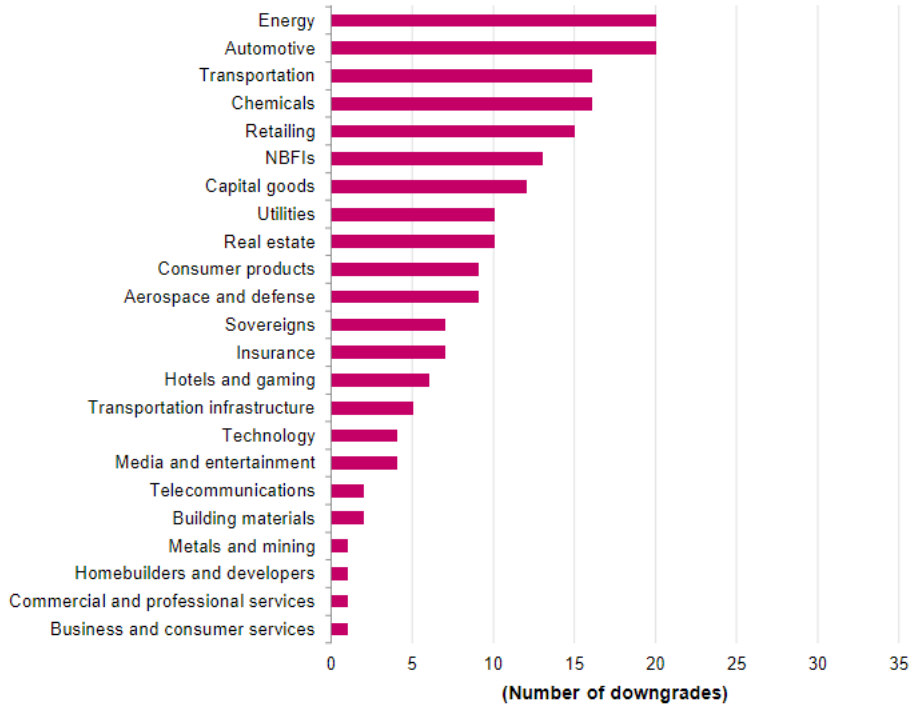
Percent of issuers affected by COVID-19 and oil prices



Numbers in parentheses signify the number of rating actions in that sector (including downgrades, negative outlook revisions, and negative CreditWatch placements). NBFIs--Nonbank financial institutions. Data as of Feb. 22, 2021. Source: S&P Global Ratings Research.

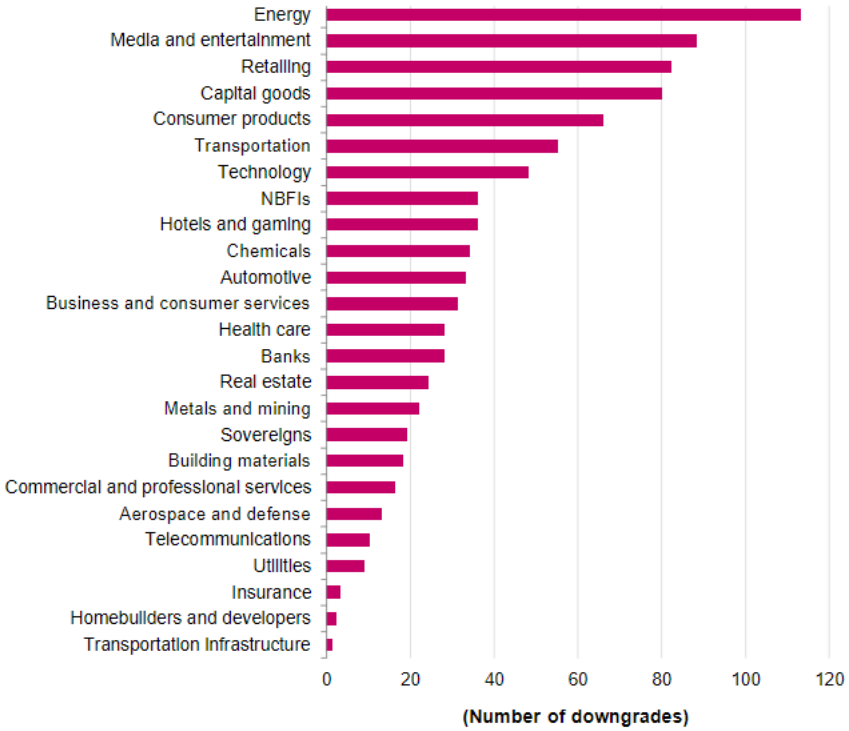
However, this has also been a crisis in which larger issuers have benefited more from the government aid and so the issuers with better credit ratings have seen more resilience than those with lower credit ratings which have seen more of a downward trend, shown in the following two charts, from the same paper. The charts demonstrate almost 6 times the number of ratings actions for sub investment grade energy companies than investment grade equivalents.

Sector Breakdown Of Investment-Grade Corporate And Sovereign Downgrades Related To COVID-19 And Oil Prices By Rating Category



NBFIs--Nonbank financial institutions. Data as of Feb. 22, 2021. Source: S&P Global Ratings Research.

Sector Breakdown Of Speculative-Grade Corporate And Sovereign Downgrades Related To COVID-19 And Oil Prices By Rating Category



NBFIs--Nonbank financial institutions. Data as of Feb. 22, 2021. Source: S&P Global Ratings Research.

When considered in aggregate, research suggests that the broad stability exhibited in credit ratings indicates a lack of evidence of procyclicality by CRAs in assigning credit ratings. However, as indicated by CRAs themselves and in part supported by some of the academic studies considered, rating changes can be procyclical in nature – given that for example net downgrades increase during market downturns.

Impact on financial institutions due to reliance on credit ratings

The working group considers that investment decisions made by financial institutions driven by their reliance on credit ratings during a market crisis is an issue of concern for regulators and policymakers on an international level.

In the US, we observe that a key initiative of the US Securities and Exchange Commission (SEC) interdisciplinary COVID-19 Working Group has been "*the exploration of whether credit assessments and credit rating agency downgrades—and market anticipation of, and responses to, those ratings actions—may (1) contribute to negative procyclicality in certain circumstances and (2) have implications for financial stability.*"[19]

From an international perspective, the group has noted the Financial Stability Board (FSB) has referenced this risk in a recent paper[20] which states; "*Potential procyclical effects of credit rating downgrades and the risk of further liquidity stress require continued attention. Any residual mechanistic reliance on ratings may exacerbate the impact of downgrades on the cost and availability of financing for corporates, including through the effects on asset values, haircuts and margins. Deteriorating credit quality calls for attention to the potential procyclical effects of credit rating downgrades.* "

Furthermore, a letter[21] by Christine Lagarde, Chair of the European Systemic Risk Board (ESRB) to the Chairman of the European Securities and Markets Authority highlighted the issue in detail, raising concerns of *"Large-scale downgrades by credit rating agencies (CRAs) can amplify the initial fall in asset values due to the deterioration of fundamentals. In particular, the ESRB is concerned about cliff-effects linked to BBB-rated issuers (or bonds) losing their investment grade status (and becoming 'fallen angels')* ".

- The letter goes on to note, that "*significant increases of capital or liquidity prudential requirements may contribute to excessive procyclicality if they happen in time of crisis and affect a large number of financial institutions, in particular when they cannot be handled within day-to-day operations and cannot be offset with the release of buffers. Rating downgrades, in particular and whether or not they correctly reflect changes in firms' fundamentals, may have a large impact since they cumulate such effects in a single point in time. Moreover they may lead some financial institutions to engage in forced sales.*"

Analysis undertaken by the ESRB (ERSB, 2020)[22] noted that most of the BBB-rated bonds in Europe are held by investment funds (51%) and insurers (32%), and as commented on in the letter by Christine Lagarde, "*in a severe downgrade scenario with corresponding yield shock, EU financial institutions would suffer EUR 150 to 200 billion market losses stemming from repricing effects when considering bonds issued by financial and non-financial corporations.*"

On the opposite side, a number of actions have been considered to help alleviate this risk although there remains a lack of consensus with regards to which could be the best approach. In particular:

- Increased monitoring and reporting to identify where such possible systemic risks may arise
- A consideration of alternative approaches to credit quality monitoring other than credit ratings

An additional interesting perspective from rating agencies comes from Moody's (Moody's Investors Services - Rating Transitions - Global, 2020) where it is argued that "*While ratings have historically been procyclical in the sense of being correlated with the investment cycle, this does not necessarily mean that rating changes amplify effects […] changes in market implied measures of credit risk are more volatile and pronounced than changes in ratings: during the 2008 downturn ratings declined less than market measures of credit risk, consistent with ratings dampening rather than amplifying the cycle*".

- The working group considers that this represents a reasonable argument, with an acknowledgement that market derived metrics are more volatile than credit ratings, and investment behaviour in response to changes in market derived metrics could lead to procyclical effects. For example, were corporate bond spreads to be referenced as a measure of credit risk in investment mandates or regulatory capital regimes instead of credit

ratings, and in the event of a market stress event occurring corresponding with a spike in corporate bond spreads, this could result in the forced selling of corporate bonds in a much more immediate manner, thereby creating a procyclical effect).

While there has been some reference to forms of credit risk metrics being considered as an alternative to credit ratings, any such measure would need to consider the relative merits of the approach and the likelihood of procyclicality arising from changes in that measure of credit quality.

The group has observed that there is a widespread acknowledgement of the potential for procyclical effects arising from the actions taken by investors arising from changes in credit rating. The literature that the working group has reviewed indicates that this is a source of widespread concern. The authors consider however that there is less material published looking to expand the range of possible solutions to this issue.

While the processes, approaches and practices of credit rating agencies in past financial crises have been the subject of criticism, the working group considers that the role played by credit rating agencies in providing opinions on credit risk remains an important one for financial markets today.

Arguments in favour of and against the hypothesis of CRA Methodology contributing to procyclicality have been found. The key opposing arguments are (against procyclicality) the 'broad stability' exhibited by credit ratings over time (which is by and large supported by academic studies) and (for procyclicality) the admission by CRAs themselves that changes in credit ratings can be procyclical in nature, with some sensitivity to the credit cycle.

In summary, we find a disconnection between:

- How CRAs describe credit ratings as an opinion by CRAs on the relative measure of credit risk, and
- the embedded reference to credit ratings through regulatory regimes (or investment mandates) which tends to be constructed in more absolute terms, corresponding with or requiring specific action in the event of ratings deteriorating below a certain level (the sale of securities, or increased capital requirements)

Such a disconnection can result in actions that could exacerbate market crises, ultimately leading to procyclical behaviour by these institutions during stress market events. However, the group would note that the more measured approach during the COVID crisis allowed institutional investors to avoid spikes in regulatory capital, funding or other pressures which have negated any potential short term procyclicality arising from credit rating action.

Procyclicality in Investment Strategies Amongst Institutional Investors

Insurers, pension schemes and endowments invest in a broad spectrum of asset classes and are subject to a set of different constraints, rules and motivations. Within this section, the working group discusses whether procyclical behaviour by asset class varies significantly across these investors and across the different asset classes.

The working group sets out to test two hypotheses in this section:

1. **"Insurers, pension schemes and endowments, whilst all being investors in long term assets to fund liability positions, are subject to very different determinants of cyclical behaviour; including their investment purpose, regulatory environment, incentives for leadership and others"**
2. **"Investment strategies are different across the key asset classes (equity, sovereign and corporate fixed income) which leads to different contributions to procyclicality"**

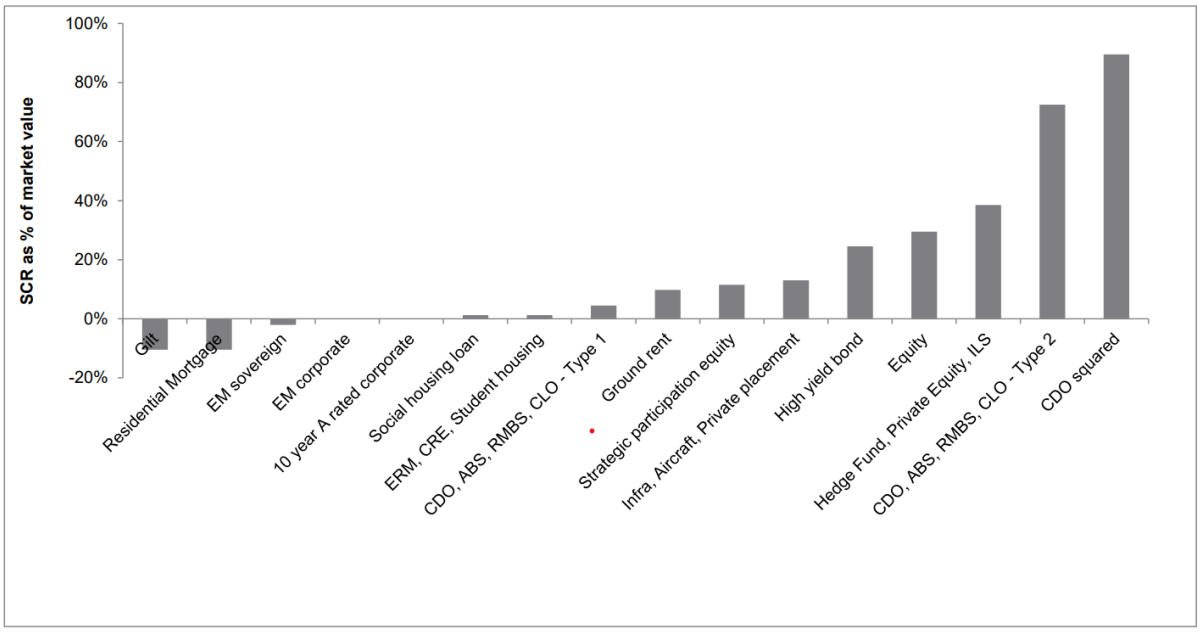
Equity investments in insurers – "Insurers for the long term, short term equity behaviours"

One may expect that insurers investing in equity will invest long term and stay that way through market cycles given the long term nature of their business. UK research (Bank of England, 2014) did not show visible equity selling behaviour in UK specific portfolios in crisis. There is also specific research that suggests there has been some countercyclical behaviour in German insurers that invest in equity [23], though the authors also note that factors such as enhanced quantitative easing in Europe may have contributed to this trend.

However, several academic papers provide at least some evidence that, in times of crisis, European insurers act in a pro-cyclical manner and are net sellers of equity domestically (DNB Working paper, Dec 2015) and internationally (Bank of England, 2014). The working group noted that most of the research that has been conducted does not cover derivative exposures (through options and futures holdings especially) We consider that this could be masking other trends that the studies cannot observe.

Two of the potential reasons to explain this potential pro-cyclical behaviour observed in the reviewed literature were:

- The regulatory treatment of equity investments within insurance companies, where assets are fair valued in particular, leads to reductions in asset fair values during times of market stress and a weakening of the regulatory capital position. This treatment means that insurers observe more volatility around reporting cycles, and may then look to take more conservative asset positions to re-stabilise their capital base.
- Furthermore, insurers within risk-based capital regimes hold far more capital for investments in equities than for most other assets. For example, under Solvency II, equity investments carry double or more capital charges than most corporate bonds and infinitely more capital than government bonds of EEA countries. A simple summary of capital charges under Solvency II is captured by this graph from (IFOA, 2015) [26]



- A number of studies suggest the existence of certain herding behaviour across insurers, where downside experience relative to other peers in the market is considered more important to mitigate than the potential upside of each individual company taking a bespoke, higher risk (hence potential reward) asset position.

The authors observe that after the dot-com crisis in the early 2000s, and again after the GFC, there has been a more pronounced structural shift away from equity investments by insurers. For reasons covered above, this can be attributed to a move to risk-based capital regimes and customer sentiment. In addition, with falling interest rates and a growing understanding of the cost of guarantees by insurers and with prices passed onto consumers, there has been a change in products and investment mixes. This was explored further in "The Great Risk Transfer" (IFOA, 2021)[27]. *"While these 'with-profits' investment products provided reassurance to investors, they have declined in popularity for a number of reasons over the last few decades, not least because of capital requirements. For similar reasons, another product line that offered reassurance to investors – guaranteed products – has also declined in popularity."*

This structural trend could also affect the procyclical behaviour towards the asset class. This reduction of equity investments is not observed in unit-linked type products, where typically insurers look to outsource investment management and asset allocation duties to investment / fund managers to run on their behalf. In this case there are no guarantees and the link to the insurance company balance sheet is "indirect". (i.e. the insurer only sees balance sheet volatility through fee income as assets are typically held to directly match the majority / all of the unit-linked element).

How things will develop going forward with regards to insurers' cyclical behaviour related to equity portfolios is open for debate. The authors particularly highlight that:

- As equity investment risk becomes less prevalent on insurance companies' balance sheets, particularly with the decline in popularity of With-Profits, it's no longer clear that the pro-cyclical actions of insurers could lead to a market-wide shift, simply due to lower levels of investment overall.
- There is also evidence of regulatory measures being introduced to counter any short termism, with reduced capital requirements for "buy and hold" equity investments being one of the focus areas for the EU 2020 Solvency II review.
- These findings are consistent with findings across the largest companies in Europe and Asia (those with >$100bn AUM) where we graph below the current asset mix of companies across a number of jurisdictions, based on working party analysis as at 31st December 2019. Outside of a handful of examples, the equity backing ratios are low.

Figure 8. Large European insurers' asset mix

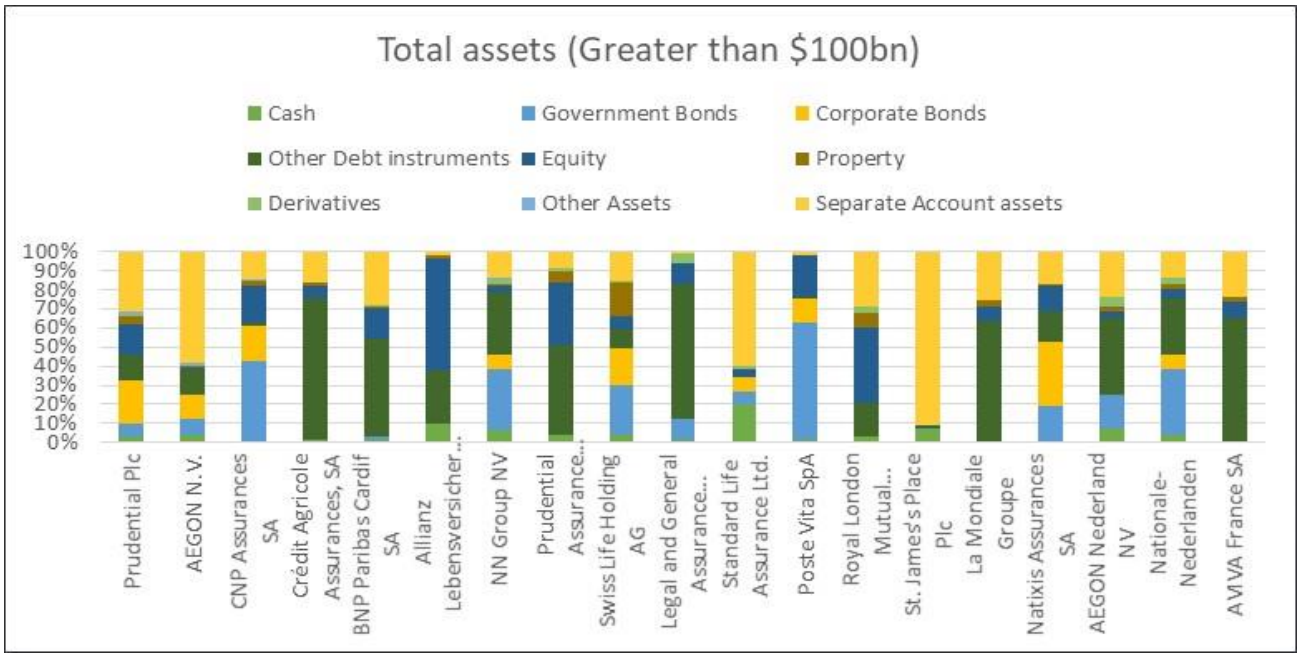
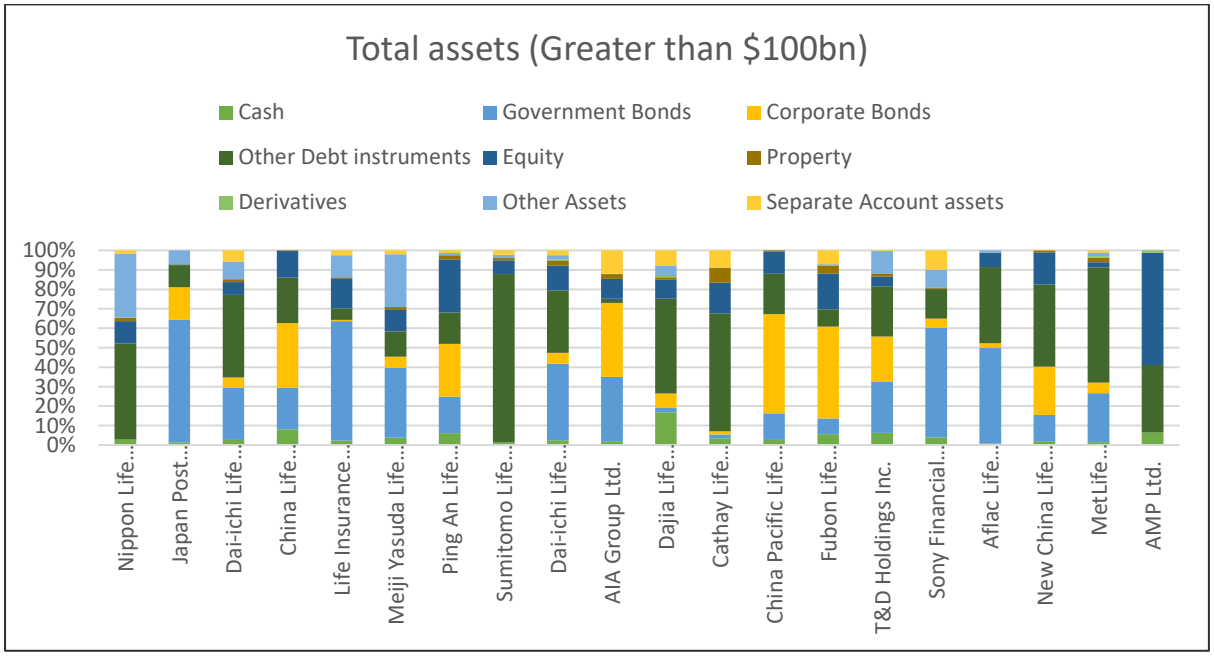


Figure 9. Large Asian insurers' asset mix



Sovereign fixed income investments in insurers – "People feel safe at home and will continue to do so"

Insurers generally invest heavily in sovereign debt, with large allocations of government debt in their balance sheets. During periods of stress, a staple economic theory is that investors "fly to quality" (i.e. they move some of their portfolio exposed to equity and corporate paper into sovereign debt as equity and corporate bond markets experience turmoil). Emergency repo facilities used as a tool of monetary policy during and in the aftermath of economic crises has contributed to this behaviour.

The authors observe that a number of areas of literature suggest that this "flight to quality" has not been observed in certain parts of the sovereign market. In particular, literature shows that insurers have shown a "countercyclical" attitude towards domestic sovereign debt in times of stress. It has been observed that during the Sovereign debt crisis, where sovereigns were at risk of downgrade or highly affected by the crisis (e.g., Greece, Italy, Portugal, Spain), insurance companies across the EU

sold down large portions of their holdings. This selling attitude was not observed for domestic sovereign debt, which insurers continued to invest in. There was an added risk in the Eurozone where these countries were unable to print their own Euros which gave rise to more concern about sovereign and domestic corporate credit quality.

The working group observed that revised literature suggests that the most important driver of this behaviour is the risk premia attached to non-domestic sovereign holdings (Rousova, 2019)[28]. It is common insurance practise to manage asset-side risk free rate exposures against their liabilities, meaning changes in risk free rates are carefully managed.

However, changes in risk premia largely fall into company equity, meaning gains / losses and the requirement for further investment activity, albeit this is dampened by some of the countercyclical measures covered in the risk-based capital section e.g. volatility adjustment. This form of procyclicality, particularly with the level of insurance investment in sovereign debt, has the potential to be catastrophic to markets if it unwound.

Corporate fixed income investments in insurers – "Sometimes you make your bed and just lie in it"

The authors observe that within the UK annuity market in particular, long dated corporate fixed income assets are used to back long dated liabilities. Yield chasing has been the key factor in competition among insurers, which have either passed it onto policyholders through lower pricing or have used increased yields to boost profits. Empirical evidence (Bank of England, 2014) from the GFC shows that insurers kept their holdings of corporate fixed income at roughly the same levels (as a % total asset allocation) throughout 2006 – 2013 in the face of reducing quality of assets and increased spreads. The working group considers that this suggests that there is neither a procyclical nor a countercyclical insurance investor behaviour in this asset class. The group highlights the following key relevant arguments:

- Liquidity in the corporate fixed income market is not constant, which can result in the inability to sell these assets in times of stress, as many bonds experience dislocation in prices and reduced liquidity. This can be exacerbated by purchases of certain "eligible" assets by central banks which increases liquidity of those purchased but at inflated prices.
- Corporate bonds are bought for the long term and insurers (and regulators) show preference for these instruments for cash-flow matching purposes. This may also have been aided by regulatory countercyclical measures that reduce the potential increase in capital requirements, providing an extra incentive to hold (particularly within the UK, US and Canadian annuity markets). The result of this is that insurers can consider only the defaults and genuine costs of rebalance post downgrade rather than spread volatility.
- The return on certain insurance products is intrinsically linked to the profitability of the fixed income book, and the ability to write new business could also be then linked to the availability and spread of these assets

The working group notes the existence of "cliff edges", which are perceived to be widely understood by insurers. These "cliff edges" are the relevant potential impact on annuities and other business should the asset portfolio be downgraded to sub-IG levels. Although the COVID crisis has not extended this far yet, and has not delivered widespread downgrades of corporate fixed income, the authors perceive that there could be a risk of a regulatory driven "en masse" sale of corporate debt. This might be exacerbated by the willingness of insurers to improve their pricing for certain products through taking on more credit risk in the crisis (as explored above in the bulk annuity pricing graph). The working group is aware of anecdotal evidence of certain insurers taking material de-risking actions in their corporate bond portfolio over the COVID crisis. In extremis, this involved a wholesale movement into higher credit ratings; other examples noted removing those at "cliff edge" risk or purchasing credit default swap protection over individual names, sectors or whole portfolios.

Such a unique situation could have a seismic effect on credit markets given the size of insurance companies' holdings in this sector relative to the liquidity of the market. We would observe that assets close to the "investment grade cliff" are more exposed, although this "en masse" sale would likely depend on

- how the crash emerged
- which assets started to slide

- the specific company rebalancing philosophies. For example, companies employing tactical trading to sell those that have dropped or are at high risk of dropping to sub-IG to protect the SII capital position will be more exposed to cliff edge risk. However, those employing something more systemic to rebalance the entire portfolio back to an overall target rating to get back to a long term goal when portfolio ratings have slid downwards will be more open to the procyclicality of ratings agencies overall.

Equity investments in pension schemes – "Pension funds are also long term and use equity to get there"

The authors have reviewed several studies of behaviour during the GFC, which highlighted that in the short term, pension funds were "net buyers" of equity in times of crisis. Figure 2 also demonstrates pension schemes removing equity investments over the recent bull market leading up to the COVID crisis.

There is no perceived clarity on the reasons supporting this behaviour; some research suggests that this is due to more rational long term investment behaviour of "buying low and selling high", whilst other research points to a function of price interacting with investment mandates / target asset allocation in the funds (i.e. as equity prices fall, pension schemes need to buy more of them to maintain the target allocation split).

The group however notes that this effect does appear to differ across different countries in the EU, with some countries showing pro cyclical and other countries showing counter cyclical behaviours. The literature reviewed suggests that the key reason behind this country disparity is the pace at which deficit positions can be managed across different jurisdictions. Trustees are generally less incentivised by short term metrics such as annual profits, since their role is to ensure security of the member benefits over the lifetime of those benefit payment periods. Although they might be given different amounts of time to resolve deficit positions in different jurisdictions, the "required reaction time" is longer than for insurers and it is provided with sufficient regulatory flexibility to allow pension schemes to manage to a longer-term horizon.

The working group also notes a structural trend towards "de-risking" that makes it difficult to extract absolute conclusions: as pension schemes are lowering their equities exposures due to their ability to transfer some of their risk (evidenced by the growth of the UK, US, Canadian and Irish pension risk transfer sectors for example). This "de-risking" trend however is perceived to be less pronounced in some central European markets (e.g. Netherlands and Germany). In some cases, the authors believe that this may reflect the relative maturity of the pension schemes and the large volume of DB schemes that have significant in payment or near retirement members.

The cycle of "de-risking" is interesting in itself given the ultimate aim (to pay policyholders over a long term) remains constant. Therefore, a movement from equity heavy investment to cash and government bonds prior to purchasing an insurance contract is counterintuitive. Similarly, once the insurer takes on the assets, it purchases corporate bonds and loans which is somewhere in between. The de-risking trend highlights an unusual example of very different investment strategies to meet the same aim.

Fixed income investments in pension schemes – "Something in common with the insurers?"

Through its review of the available literature, the working group has noted that pension schemes have shown a tendency to favour domestic sovereign paper, in line with the observation made for investments in sovereign debt by insurers. This preference translates into a more cyclical behaviour towards non-domestic sovereigns in time of stress, and into a "natural over-weight" of domestic sovereign paper in the pension schemes' portfolio allocations.

Given the average size of pension schemes, the management of cross currency hedges may be too onerous for an average scheme.

Equity and fixed income investments in endowments – "Do more diversified portfolios exacerbate procyclical behaviours?"

The working group notes that the model of wide portfolio diversification with a focus on alternative asset classes has been a prevalent trend in the investment strategies of endowments, following the pioneering work of David F. Swensen with the Yale endowment. Many endowments have been allocating an increasing share of their portfolios into illiquid assets such as private equities, hedge funds and real assets (see figure 8).

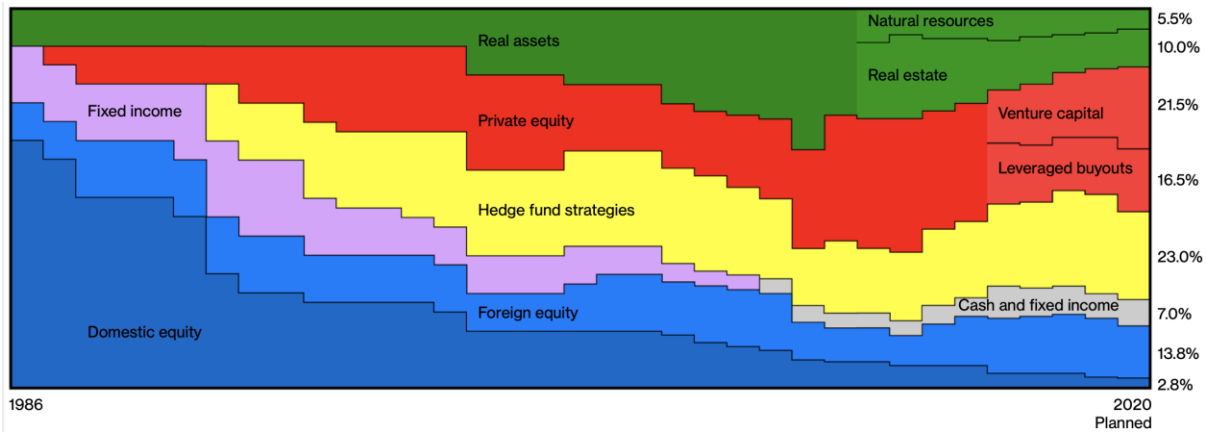


Figure 8. Yale's Endowment Asset Allocation as a % of Assets (Yale University via Bloomberg)

Interestingly, the authors note that although the allocation to liquid assets has been decreasing across most of the endowments, this might have translated into an increase in pro-cyclical behaviour by these investors. In particular, (Papaioannou, et al., 2013)[29], found that in the rush to secure liquidity in their highly-diversified portfolios, endowments may have worsened trading conditions for more liquid assets. In addition, (Humphreys, 2010)[30], observed that 6 university endowments played a role in magnifying certain systemic risks in the capital markets during the financial crisis, when *"[…] illiquidity in particular forced endowments to sell what few liquid holdings they had into tumbling markets, magnifying volatile price declines even further […]"*.

Pension schemes, endowments, insurers – "Similar but different pro-cyclical behaviour"

In summary, we find that:

- The balance sheet treatment of each of these assets plays a key role in influencing pro-cyclical behaviours across these investors.
- Whilst insurance management is more focused on short to mid-term profits (which drives management remuneration), pensions and endowments are perceived to have a greater degree of flexibility and incentive to behave in a less cyclical manner
- The "Herd Mentality" effect of not being worse than the company next door in the very public light is very important for insurers, and less relevant for pension schemes and endowments given their lower exposure to the final consumer. "Herd Mentality" is understood as an a-priori contributor towards pro-cyclical behaviours.
- In insurers, the biggest perceived concentration of risks appears to be in the corporate bond sector, where insurers play a leading role and could be sitting on "cliff edges". Any potential pro-cyclical behaviour could be exacerbated if only parts of the credit portfolio can be sold (due to the recent increase in appetite towards assets of lower liquidity). This could lead for example to annuity players using their corporate fixed income portfolio as the key source of liquidity which may be challenged if assets become increasingly illiquid.
- In pension schemes, equity allocations are likely to continue to be very relevant for DB and DC schemes, though the overall level of investment from DB schemes is in terminal decline.
- In pension schemes, investment behaviours are perceived to be more driven by mechanistic aspects; such as "de-risking" strategies, target asset mixes and "life styling" close to retirement. The extent of pro-cyclical behaviour is perceived to depend on where the scheme is in its lifecycle overall and how this translates into its asset allocation. The current trend observed is for much of this risk (and investments) to land in the arms of de-risking solution providers over the next 10 – 15 years in those markets looking to de-risk.

Procyclicality Mitigation through Dynamic Provisioning and Other Successful Tools in Banking Regulation

Looking at the market turmoil that took place during the start of widespread lockdowns driven by COVID 19, and in the context of expanding on the concept discussed in the prior section about risk based capital regimes, the working group seeks to discuss the evolution of countercyclical measures in banking regulation and its potential application to the insurance sector.

The working group sets out to test two hypotheses in this section:

1. **"The effectiveness of banking-like countercyclical buffers as mitigants of pro-cyclical behaviours might not work in insurance"**
2. **"Although the role of insurers as lenders to the economy has increased, banks are still the key lenders to the sensitive sectors of the economy"**

Dynamic Provisioning

Conventional provisioning in banking balance sheets tends to be procyclical, due to the lagging nature of general provisions based on loan losses incurred in the past:

> During a boom, when economic activity accelerates and credit servicing is generally good, provisioning requirements are lower. Due to the role of banks as key creditors to the real economy, this translates into increased levels of lending via the release of funds into the system.
>
> During stress, when economic activity slows down and credit servicing falters, higher provisioning requirements come into place, restricting the flow of funds into the system and exacerbating cyclical problems.

Dynamic Provisioning was one of the first countercyclical tools utilized in the banking sector in the early 2000s. Dynamic Provisioning attempts to correct procyclicality by modelling the provisioning requirements around 'expected' losses (instead of actual / incurred losses).

This is akin to the concept of moving averages that plays the role of smoothing numbers spread over time to give a better sense of the trend amidst the short-term fluctuations. Dynamic provisioning effectively takes advantage of the mean-reversion tendency of economic cycles to spread losses (input for provisioning) across the cycle (rather than at a point within it). In another sense, it aims to reduce cyclicality in the loss ratios.

Countercyclical buffers are general provisions not linked to specific losses on loans. They are conceived as a portfolio capital "add-on" which in good times results in a build up of buffers in own funds, which can then be used to cover realized losses in bad times.

The Spanish Experience

There are multiple examples of the use of dynamic provisioning as a tool for mitigating procyclicality. In particular: Dynamic Provisioning in Spain (2000); Uruguay (2001); Colombia (2007); Peru and Bolivia (2008). The Spanish experience offers the most interesting framework given its length and well documented effects on the overall financial system.

Between 1987-1989, the banking sector in Spain saw real credit growth at >10%pa. Much of this was attributable to residential mortgage loans and housebuilding credit to property developers. The crisis of 1992-93 caused credit risk to shoot up and non-performance on these loans rose. In the 1990s, Spanish banks saw the highest (negative) correlation between the provisioning ratio and GDP growth rate (-0.97) A clear sign of procyclicality in the Spanish banking system (Saurina, 2009) .

The Spanish financial regulator introduced dynamic provisioning in Q3 2000. This caused increased provision requirements across most of the banks but at different levels depending on the composition of their credit portfolios

- Banks generally cut lending to the real economy as a result of this increase in provisions

- The decrease in available lending had a lag against the implementation of the Dynamic Provisioning rule.

In Q1 2005, the Spanish financial regulator changed Dynamic Provisioning, which resulted in a general loosening of provision requirements across banks

- After this change, certain increase in credit available to the economy was observed, in particular among those banks which benefited the most from the loosening in reserving requirements

Interestingly, the reviewed literature demonstrates certain evidence of companies not being affected by this lower availability of credit given the ample level of substitute credit from other market participants

In Q4 2008, the Spanish financial regulator allowed for a greater release of provisions, causing a wide spread positive effect on profitability which partially offset the losses from the GFC

- After this change, banks that had buffers closer to the floor value cut lending to the economy more than those with greater buffers available to sustain shocks

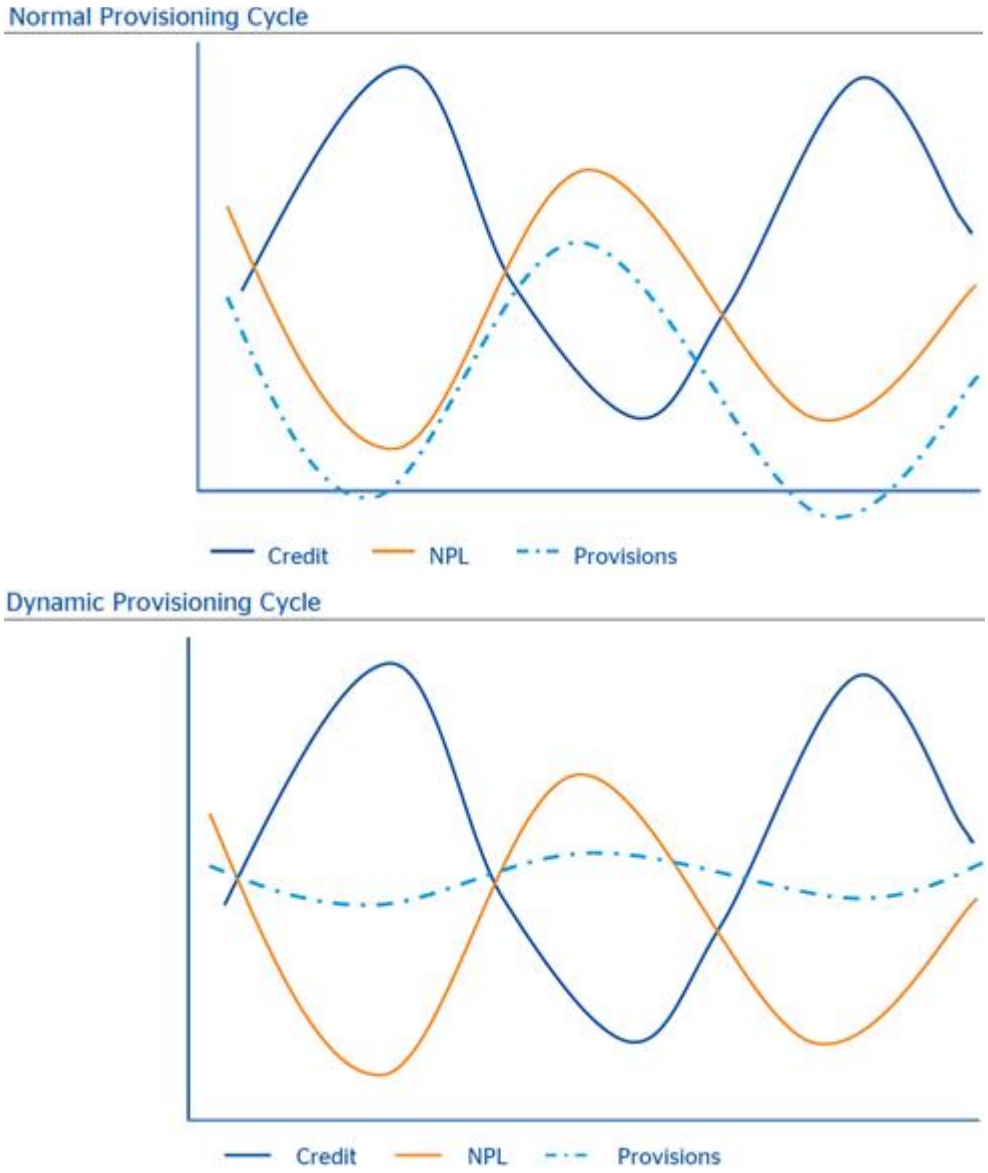


Figure 9. Illustration Normal Provisioning vs. Dynamic Provisioning (Santiago, et al 2012)

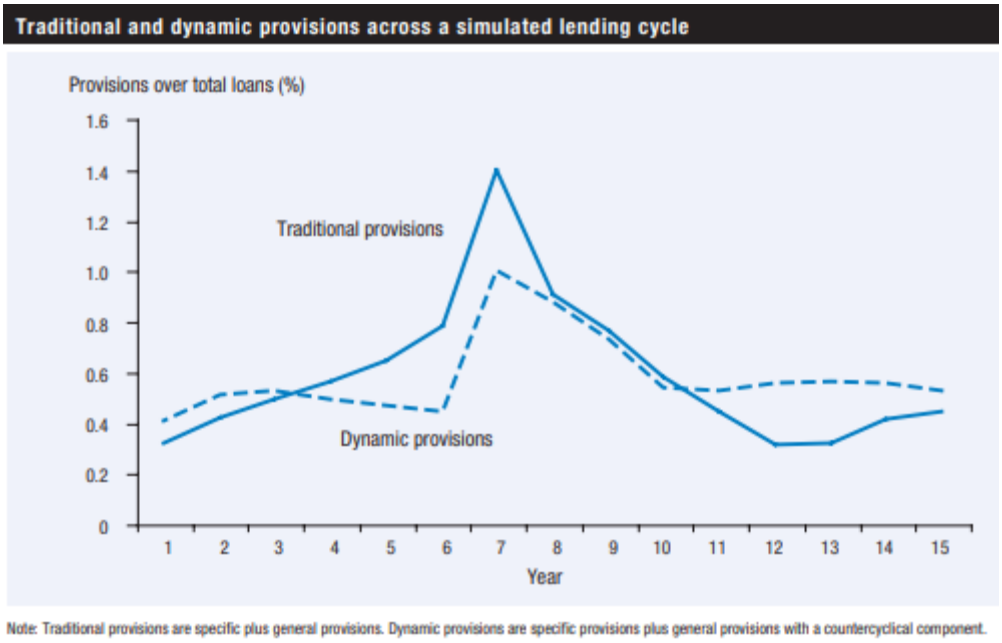


Figure 10. Traditional vs. Dynamic Provisioning Across The Lending Cycle (Bank of Spain)

Pillar II, CCyB & IFRS 9

Following the positive experience with dynamic provisioning, countercyclical tools started to have a growing role in banking regulation. The introduction of the Pillar 2 in the Basel Framework looked to guarantee that management would maintain, *"capital above minimum levels at all time"*. The working group considers that this goal is inherently countercyclical, and that Pillar 2 provided regulators with a supervisory tool that, based on an effective dialogue, would allow them to take action if needed. The Basel Framework proposed a Pillar 2 approach mostly principle based, allowing local regulators to tailor their approach towards the application of any countercyclical add-on. These principles allow local regulators to use different approaches, methodologies and strategies to support financial stability.

Prescribed actions within the Pillar 2 supervision have been mostly either corrective (for specific issues) or prospective (looking at setting certain capital expectations on a forward looking basis)

- In the literature reviewed, the working group has found corrective actions where the local regulator has imposed certain mandatory Pillar 2 capital add-ons to cover risks that were considered not adequately provided for under Pillar 1. This adequacy was analysed mostly based on the ICAAP, which provides a forward-looking (through the cycle) view of capital adequacy. Other regulators on the other hand had taken a holistic approach to Pillar 2 and considered it separate from Pillar 1
- In addition, the working group noted how some other jurisdictions have applied countercyclical capital buffers to address imbalances in certain sectors (such as Real Estate and Domestic Mortgage Lending) imposing add-ons on outliers and overly exposed banks

In 2010, the Basel Committee of Banking Supervision published Basel III, and brought in an additional layer of tools to manage procyclicality in banking. The most relevant one was the introduction of a Countercyclical Capital Buffer (CCyB), which would help to manage any risk of regulatory capital driven credit-supply constrains during cycle downturns. These credit-supply constrains could eventually impact the real economy and cause further stress in credit and banking systems (i.e. exacerbating procyclicality).

- This CCyB was formulated as a flexible tool, to allow national regulators to impose greater capital requirements on a holistic level or targeting specific areas of the of the market which could be considered to be "overheating"
- Another key aspect was the "prompt release" of this buffer in times of stress. The working group observed examples in local regulations of this prompt release during the COVID-19 crisis, in countries like Switzerland, where the CCyB targeting residential mortgage loans was deactivated on March 27th 2020 with immediate effect.

Joining this wave of introducing countercyclical tools within banking, the introduction of IFRS 9 is considered by the working group as an additional step towards managing procyclicality in the banking sector. The update of the IAS 39 Financial Instruments accounting directive brings in a forward-looking view on “expected credit losses” for certain assets.

- This forward-looking view requires that credit losses are taken into account on an expected basis, rather than “when incurred” as they were considered under IAS 39
- The working group considers however that these could result in certain procyclical exacerbation in times of increasing delinquencies, which might lead to greater provisions

Insurers are not banks

The working group acknowledges the increasing role of insurers in the real economy via their investment portfolios. There has been a perceived structural trend in insurers’ investment strategies towards illiquid assets, among which direct lending is included. In addition, as substantial holders of corporate debt, insurers are unequivocally an important provider of financing to private and public entities.

- Besides this increasing role, insurers are generally more exposed to big firms, whose ability to source alternative financing in times of stress is substantially greater than the ability of small firms. Banks on the other side, play a key role financing the SME sector and smaller market participants.
- Although it is possible that countercyclical buffers in insurance could result in increasing credit available to the economy in times of stress, the overarching effect of this would be marginal in comparison to the effect of increased bank lending. Consequently, the macro-prudential effect of countercyclical buffers in insurance companies is perceived to be limited.

In summary, we find that:

- The variability of insurance reserves, although exposed to items like inflation and real rates, is generally less correlated to the economic cycle than the variability of banking provisions.
- Credit insurers present a different profile given the nature of their line of business and their inherent exposure to the economic cycle. Credit insurers would be expected to have tools available to react to an economic downturn and to protect their capital buffers.
- Given this lower correlation of reserves with the economic cycle, any buffer on the insurance balance sheet would mainly be designed to cover temporary shocks on the asset side, which might not necessarily change pro-cyclical behaviour and decisions to sell or raise liquidity. The working group considers that these would not fundamentally limit credit-supply constrains in down cycles as they do in banking.

Concluding thoughts

Similar to much of the literature that we reviewed, we found evidence of procyclicality and counter-examples across geographies and sectors. However, we found no overwhelming evidence that the institutional markets behave procyclically and indeed we found some of our hypotheses challenged in an unexpected way. In particular:

- It isn't the risk-based capital regime which is procyclical but regulators' incentives might be
- Credit ratings aren't inherently procyclical given their broad stability over time, however changes in credit ratings appear to exhibit procyclicality. Importantly, the way in which credit ratings are used in regulation may unintentionally be a contributor to procyclical effects.
- Institutional investors invest differently for similar aims. This in itself doesn't lead to procyclicality and, in fact, it's illiquidity rather than riskiness that has demonstrated more signs of procyclicality.
- The wide set of countercyclical tools available for banking regulators are helpful to avoid credit-supply constrains in down cycles, however insurers and banks are not the same and countercyclical measures in insurance regulation might not have the same effect on credit-supply.

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