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Finance Research Dissertation

Destructive Interference? The Effect of Post-GFC Regulation on the Value and Stability of Australian Banks.

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"...we will continue to be threatened by severe financial crises and the recessions and unemployment that often accompany them, or we will face the even worse prospect of an overregulated and politicised financial system that cannot support a dynamic growing economy."

French et al., The Squam Lake Report, 2010.

Non-Technical Summary

This paper is a review of all major announcements of banking regulation relevant to Australia. It evaluates the effect on major bank equities and Credit Default Swap (CDS) spreads. The purpose of this research is to understand to what extent contemporary regulation has effected the value and stability of the domestic banking system. No doubt, there are many long run factors – macroeconomic, political, social etc – that impact value and stability. As such, an attempt to empirically and precisely quantify the total effect, across all time, since the Global Financial Crisis (GFC), would be misguided and inseparable from the innumerable factors that influence markets. Instead, this research makes the assumption that short term movements in markets over one to two weeks are sufficiently immune to such factors. Therefore, assuming no other banking specific news enters the market within these short windows, significant deviations in security prices is evidence of regulation influencing market value and stability perception.

Most of this regulation – Basel III – has become applicable across the developed world, yet continued stress and failure of banks in both the United States and Europe make an assessment of Australia's domestic system relevant and necessary. While regulation is not static, the finalisation of the Macroprudential Policy Framework and changing leadership of APRA (Australian Prudential Regulation Authority) in mid-2022 render now an appropriate time to review the potential effect of the last decade and a half of reform.

A review of past theoretical and empirical research on matters of bank capital theory and regulation event studies led to four hypotheses.

1.1) When regulators signal regulation tightening, bank equity value generally falls as shareholders expect lower risk adjusted earnings.

1.2) When regulators signal regulation tightening, credit market participants generally price lower probabilities of default.

2.1) When regulators signal regulation loosening, bank equity value generally rises as shareholders expect higher risk adjusted earnings.

2.2) When regulators signal regulation will loosening, credit market participants generally price higher probabilities of default.

The findings of this research is not strictly consistent with these theories.

Firstly, when events are divided into time sections depending on expectations, for both equities and CDSs, only events in the "Post Basel II Enhancement" period (roughly through 2011 and 2012) had a significant effect. In this period, the focus of domestic regulation diverged from the rest of the developed world due to Australian banks having low exposure to volatile derivative and securitisation markets. This loosening saw bank equities rise around announcement dates, consistent with 2.1. However, CDS spreads fell, implying greater bank stability, inconsistent with 2.2. It appears those concerned with bank value and bank credibility were extrapolating different information from the same announcements. While both types of investors found roughly the same events significant (by absolute movement in security value) there is no indication of any directional correlation in securities movement around announcement date.

Secondly, it should be acknowledged that less than half of the announcements studied had a significant effect on either value or stability, although if an announcement

was significant for one bank, it tended to be significant for all five major banks. Effectively all announcements relevant for stability (CDS spread) were also relevant for equity holders, although the reverse was not necessarily true. This lower sensitivity may be structural, as CDS are illiquid and only insure against default within five years. It may also be causative. Some regulation may directly impact earnings expectations but not default probability, perhaps due to the sufficiently large equity buffers.

While announcements may explicitly signal a direction of new regulation, they may implicitly signal information about broader stability. If regulation expectations loosen, perhaps it is because the domestic market is more robust than those offshore, as was the case in the 'Post Basel II Enhancement' period. It may also be the case that market conditions have deteriorated, as was the case around the Covid-19 pandemic – where CDS spreads tended to rose, implying an (insignificant) decrease in bank stability.

Thirdly, when events were separated depending on their geographic type or focus of regulation (capital, liquidity etc.), no significant patterns are observed. This non-result suggests market efficiency, where information irrespective of origin can influence prices. It also suggests the priorities of regulators, as observed by regulation type, align with market sensitivities.

Novelties of this research include the assessment of all major post-GFC announcements, the Australian context, the use of CDS spreads concurrently with equities to evaluate stability, the division of regulation 'types' and the use of a range of statistical tests to evaluate robustness, correlation & market efficiency. Those engaged in policy making will be most attracted to Figure 4 in Section 7.1 which suggests the equity market has tended to react with increasing positivity around announcement dates for over a

decade. Perhaps, the political capital to create and maintain systemic reform may be finite, replenished only by the confrontation of crises.

This research challenges the notion of regulation being wholly countercyclical. Regulators argue policy is needed to bound the rises and (especially) falls of the business cycle. Banks and investors may argue such interference is destructive, restricting society's capacity to grow. This ideological friction is inspiration for the paper's title. The research encourages moderation between both views. Regulation can, and does, exacerbate some weakness in society. However, when structured with care, foresight and accountability it is the necessary foundation on which progress is built.

Abstract

This work studies the effect of 94 announcements of new banking regulation on Australian bank equities and credit default swap spreads. Upon review of a number of methodologies and cross-sections, there is a suggestion of time varying cyclicality in market reactions. The aggregate effect of events in the time period from March to November of 2013 is shown to have a significant effect on both bank equity and CDS movements. This period coincides with a redirection of domestic policy as a regulatory ceiling is well defined and regulators clarify the low exposure to overseas securitisation. Events in this period are both a sufficient surprise to market participates and had meaningful impact on the perceived value and default probability of observed banks. It is further suggested that some other subcategories of regulation may have meaningful impact on bank equity value.

The diverging observations in the equity and CDS markets suggest signals from regulators influence perceived value and stability asymmetrically. This occurs in spite of the presumption that participants in both markets have access to the same information, with uniform expectations of future regulation. Broadly, there is some evidence suggesting that in periods of regulation uncertainty or pessimism, equity investors react negatively towards announcements of further regulation. Following events of meaningful information transfer and/or when investors expect a loosening of regulation, the equity market reacts more positively. Similar general findings regarding stability are more ambiguous. While the use of CDS spreads has theoretical advantages; issues with illiquidity and broader market inefficiency render the variable a limited proxy for stability.

Declaration

This essay is the sole work of the author whose name appears on the title page. It contains no material which the author has previously submitted for assessment at the University of Melbourne or elsewhere. To the best of the author's knowledge, the essay contains no material previously written or published by another person except where reference is made in the text of the essay.

Signature of Student

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1 Introduction

Existing literature suggests that tighter bank regulation should put downward pressure on equity valuation and perceptions of risk (Park, 1997). Tighter regulation may limit a banks' capacity to generate earnings while also lowering the probability of default. Yet this mechanism is nuanced. While plausible that tighter regulation lowers valuation through reduced earnings potential, by removing some insolvency risk, regulation may also raise expected earnings and thus valuation. A third possibility is that regulation has menial impact on earnings. Consider an option theory model, where increased regulation lifts the strike price of a real call, lowering the upside to equity investors but stabilising the income of option writers (creditors & depositors). Another model suggested by Steward & Hein (2002) show that debt investors can look favourably on less regulated banks with more potential to generate cash flow.

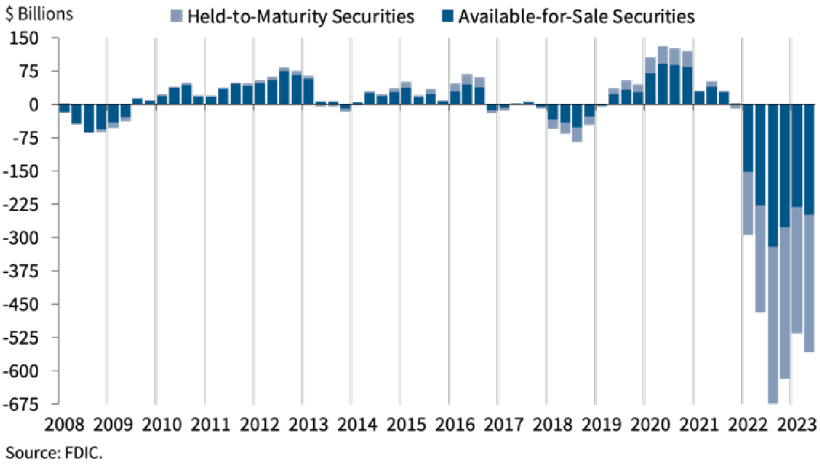
In the decade and a half following the late 2000's GFC vast amounts of new regulation have become applicable to Australian banks. It raises the question: are Australian banks less valuable and more stable as a result of these changes? Both value and stability depend on the potential for earnings and delinquency, as such, inference of one is inextricably linked to inference of the other.

This study utilises a wide-ranging event study that evaluates regulatory impacts based on their timing, regulation type and geography of origin. This methodology distils the individual effects of each announcement and contrasts the effect across event groups. The key contribution of this research is that the observed effect of post-GFC regulation varies across groups as observed by changes in the equity market. While there is a similar suggestion in the CDS market, further research is required to explore issues with illiquidity and asymmetric sensitivity – as CDS investors may be more sensitive to the

periods of perceived high risk and uncertainty. Varying outcomes between equities and CDS spreads also make it apparent that marginal buyers prioritise different sets of information depending on the perceived impact on either expected earnings or credit risk.

An evaluation of bank regulation is a timely and important endeavour. Evaluating and understanding these past changes – or lack thereof – in the banking sector has imperative social and financial consequences, as evidenced by the recent failures or compulsory acquisitions of banks in both Europe and the United States. Figure 1 presents the currently occurring fastest loss of US bank capital since the 1980's, a symptom of the rapid interest rates hikes following the COVID-19 pandemic. As contemporary regulation has emphasised improving bank capital buffers, these tremendous losses may test the effectiveness of past regulation. Such research is also relevant to the current (American focused) debate around so called "Basel Endgame" reform and the potential for greater bank capital ratios (The Economist, 2023).

FIGURE 1: Unrealised Gains (Losses) on Investment Securities – All US Banks



The objective of regulators, to reduce damage done by swings in the business cycle, can be achieved through counter-cyclical market controls. The phenomenon observed in the natural sciences whereby inverse but otherwise identical waves (cycles) nullify each other is known as 'destructive interference'. This product of market controls in either

amplifying or nullifying cyclical peaks and nadirs is a useful metaphor when considering the conflicting objectives of investors and regulators.

While there has been meaningful research on the effects of dynamic bank capital ratios and the various Basel accords on credit activity and GDP growth, there has been less research on bank equities, and less still in an Australian context. Providing a range of testing methodologies and introducing CDSs as a proxy for risk is also a notable contribution.

2 Historical & Theoretical Context

2.1 An Overview of Regulation

2.1.1 Bank Capital Structure Theory

Conjecture on the implication of regulation requires a common understanding of the banking mechanism. Banks borrow at low rates from depositors, typically with unspecified maturity, and lend at high interest rates to borrowers, typically with well-defined maturity. This liquidity mismatch is manged by holding reserves – low return, cash-like assets. The spread between low deposit costs and larger borrowing revenues is a form of carry trade that drives a bank profitability. By investing in banks (providing equity), shareholders receive the potential upside from this carry trade, but also the risk of loss in the event assets (loans) are written down. Lower equity and/or reserves in the bank offers investors higher expected return at higher risk of insolvency. In an event of insolvency, some portion of deposits may also be lost. Due to information asymmetry, depositors are seldom able to understand or price (through rates) this increased risk. The misalignment of socially optimal equity and reserve levels and the levels desired by investors – whose risk appetite is supported by low cost state insurance – creates the necessity for regulation.

The negative externalities of free market bank failure are immense. Unlike conventional creditors – with greater capacity to price risk and access to hedging capacity – depositors may hold life savings in a bank without any perception of insolvency risk. As such (or because), many social planners provide insurance on deposits, transferring the risk of bank default from the lender to the state. This is a crucial agency problem. In the event that depositors lend without risk, banks are incentivised to maximise their carry trade profits by increasing their risk exposure. Cerberus parabis, introducing mispriced state deposit insurance incentivises bank risk taking, increasing default risk (Hugonnier & Morellec, 2017).

This simplified model of regulation fails to adequately describe the complexity and depth of post-GFC regulation. Take for example the risk weighting of assets. The calculation of "assets" from a regulatory perspective requires the predetermined adjustments based on the asset type. This subset of capital regulation ensures the risk profile of bank assets are reasonably comparable. However, this somewhat arbitrary process was a major contributor to the Euro-Zone debt crisis. Here, banks were incentivised to hold high yielding government bonds (i.e. Icelandic and Greek) instead of lower yielding treasuries (i.e. German & French) that faced the same asset risk weight. This carry trade unwound as those exposure to the higher risk bonds faced greater asset write downs following the GFC (Archaya & Steffen, 2015).

2.1.2 The Australian Context

It should be noted that Australia's experience of the GFC was more benign than that of the Eurozone, partly due to the presence of a national, independent central bank. This notion of central bank independence refers to both the ability of Australia to design

macroeconomic policy for the nation (not political union) and the separation from government and regulators. With the Wallace inquiry of 1997 Australia implemented the 'Twin Peaks Model' whereby the functions of the Reserve Bank of Australia (RBA) became responsible for macroeconomic regulation, while the Australian Prudential Regulatory Authority (APRA) became the prudential regulator (Lui, 2017). This separation allows necessary yet unaligned policies to be implemented concurrently. For example, APRA's tightening of liquidity requirements may impede the RBA's requirement for expansionary policies by growing money supply. Under the Twin Peaks Model both policies can exist in tandem without internal contradiction.

An anomaly of the domestic banking sector is its historically low perception of risk. In 2017 four of the worlds nine banks with AA+ credit ratings were Australian. However, the domestic lending market is highly exposed to global commodity demand and the strength of the Australian dollar (Lui, 2017). Stability can only be so great on such shallow foundations. This is a key motivation behind APRA's policy of "unquestionably strong" regulation, a policy whereby Basel III – the global standard for post-GFC regulation – defines the minimum for most domestic regulatory ratios.

Another somewhat unique feature of the Australian banking sector is its oligopoly-like landscape. The Commonwealth Bank of Australia (CBA), Westpac Banking Corporation (WBC), Australia and New Zealand Bank (ANZ) and National Australia Bank (NAB) control roughly three quarters of all domestic residential mortgages (Statistica, 2022). Such market share has been consistent for over a decade (Davis, 2011). These so called "four-pillars" are not permitted to merge with one another. Due to Australia's top-heavy public markets, these four banks also make up a significant portion

of the populations compulsory retirement savings (superannuation). As such, citizens have a vested interest in both a stable and valuable banking sector.

Given this concentration and dependence, this study will focus on the four-pillars and Macquarie Group (MQG). Although MQG's sources of revenue is more diverse and globally exposed than its domestic counterparts, its growth in domestic retail banking has it placed as the fifth largest home loaner (~5% market share). At current, MQG also has a market capitalisation roughly as large as the four pillars ex-CBA. Smaller banks are not reviewed as they are far less systematically important and reliable data on their CDSs was not available. Future study on the comparison of smaller banks and the majors should be considered.

2.2 Contemporary Banking Regulation

2.2.1 A Short History of the Basels

The history of global banking standards follows a cycle of crisis reaction. Periods of financial stress uncover newfound systematic weakness that is identified, debated, amended, and most usually, found to require continued deliberation and development. Following the liquidation of Bank Herstatt[1] in 1974 and the formation of the Bank of International Settlements (BIS), the Basel I accords were drafted then approved in 1988 defining capital and determining the preliminary risk weight of bank assets.

Following high levels of US and European bank stress in the late 1980's and early 1990's (FDIC, 2023), the Basel I accords were replaced from 1999 to 2004 by

[1] During North American Trading hours the bank had been paid significant amounts of Deutche Marks. Prior to open, when it was due to deliver the paid for USD, the bank collapsed. With many international counterparties left unpaid, G-10 intervention was and the subsequently formed Bank for International Settlements to begin implementing global standards to avoid future miscoordination.

Basel II. These dictated the minimum requirement of bank funds, the supervisory process for bank activity and greater market disciple through heightening reporting standards (Shakdwipee & Mehta, 2017). The introduction of Basel II is generally viewed as a modernisation of the Basel I accords which lacked the necessary scope and execution. Implementation of Basel II occurred through the late 2000's. Admanti and Hellwig (2013) and Acharya et al (2009) argue that the ineffectiveness of Basel II at avoiding the GFC was not driven by failures to adhere to the regulation, but rather, due to unsophisticated risk models, misleading credit ratings and an inability to sufficiently hedge against risk.

The severity of the GFC proved a catalyst for momentous change in regulation. This is signified by the Squam Lake Report which was devised by a group of leading economists led by Dr Kenneth French. French (who described capital requirements as a form of Pigouvian tax that restrains credit supply and expands borrowing rates in 1985) et al. provide insightful commentary loaded with both the galvanising context of the late 2000's and the experience of decades of research. Their caution against overregulation at the expense of a seized economy is well supported by Llewllyn (2019) who depicts the benefits of regulation as having diminishing marginal benefits and accelerating marginal costs.

Much of the recommendation of the Squam Lake Report are incorporated into the Basel III accords which were introduced in the decade and a half following the crisis. This elongated introduction was proposed to avoid abrupt economic shocks, especially in global credit supply.

Despite significant overhauls to regulation, Basel III is likely fallible to challenges of the past. This is related to the focus on regulating Authorised Deposit taking Institutions

(ADIs). However, three of the most important institutional failures of the GFC were non-ADIs: investment banks Bear Stearns & Lehman Brothers and insurance company AIG. While there has been increased scrutiny on derivative markets and reporting standards, it is unclear if contemporary regulation would have prevented the crisis to the extent that is often purported (Admanti and Hellwig, 2013). This is supported by Kokkinis & Miglionco (2021) who note that the recent introduction of a supervisory framework for Globally Systematically Important Banks (G-SIBs) is unlikely to have applied to either Lehman Brothers or Northern Rock (a medium-sized British bank nationalised in February 2008). Further, Davis (2011) highlights that Basel III's avoidance of non-bank lenders allows ADI's to circumvent regulation through securitisation. Rather than removing risks, it is possible that Basel III has shifted risk. Davis stresses that this issue may be less relevant in Australia where so described "shadow banks" only play a small role in the market, although recent growth of non-banks in the domestic securitisation market may be challenging this (Schwartz, 2023).

2.2.2 The Importance of Credit Default Swaps

While not central to the Squam Lake Reports' message, it is argued that the CDS market is an important litmus test of implied bank default risk. French et al. argue the function of the market, whereby participants do not need to own underlying bank debt ensures sufficient liquidity and signals an accurate perception of bank default risk. O'Kane (2021) supports this noting that CDSs are a "pure credit play", which unlike bond spreads have little interest rate sensitivity, rendering their market pricing as an isolation

of perceived credit risk. O'Kane does however note the embedded illiquidity premium[2] of CDSs and the distortion of legal systems at the fruition of credit events.

2.3 Models of Regulation

2.3.1 Implication of Capital Requirements

The conjecture that bank value varies with enforced changes to capital structure is framed within the Modigliani & Miller (1958) (M&M) context. M&M stipulates that only in perfect capital markets is firm value independent of its capital structure. Miller (1995) argues that even when considering asymmetric information and agency related frictions, M&M theory is highly applicable to banks. Fama (1985) contributes nuance, arguing that by virtue of lending to firms and individuals who lack access to public debt markets (providing a market price for debt), the relationship between equity value and the level and price of debt is unique. A conclusion of this model – that capital structure does not directly influence costs of debt – dictates that enforcing capital/leverage ceilings could have a negative impact on equity value.

Conversely, Diamond & Rajan (2000) argue M&M theory is not a suitable model for bank capital structure. However, they claim this is due to the negative effect of large scale capital reform on the value of loan portfolios and the inverse relationship between changes in capital and liquidity ratios. Their findings suggest more stringent regulation has a negative impact on bank value. This model is a significant deviation from assumptions of perfect capital markets; while they disagree on the relevance of M&M,

[2] CDSs are illiquid in comparison to bonds. O'Kane highlights that CDSs have historically constituted over 90% of all credit derivative transactions. Much of this however is in the US market. As becomes relevant in results discussion, the Australian CDS market is small, illiquid and – in the case of banks – has very little probability of default to price against.

Diamond & Rajan contradict neither Fama nor Miller. Instead this supports the proposed relationship between regulation and equity value.

There is some evidence suggesting against the consensus that more (less) regulation leads to less (more) equity value. Thakor & Mehran (2011) agree that capital structure does have an impact on bank value, but they suggest the value of loan portfolios increases with tighter regulation. They suggest management underappreciates the shareholder utility of risk aversion. The varying conclusions of these works may be dependent on the time period of study. During periods of investor risk aversion or market pessimism, increased regulation and lower risk may be valued. During periods of higher risk appetite and market optimism, increased regulation may be seen as value destructive.

In the context of Basel III, it was suggested that investors would look upon increased regulation unfavourably. This is well summarised by Miles et al. (2013) and Admanti and Hellwig (2013). They note that increased capital requirements would increase the costs for borrowers and lessen the value for shareholders. However, in regards to stability, Admanti and Hellwig argue a doubling of pre-Basel III capital standards would still see most banks financing ~90% of their assets with debt and that drastically improving bank stability may require ratios well above those proposed in the Basel III accords. It is plausible that the roar of the regulation is less than its bite.

2.3.2 Implication of Liquidity Requirements

Basel III's introduction of liquidity regulation provides a new metric by which to model bank capital structure. Hugonnier, & Morellec (2017) argue that without capital regulation, banks would minimise their reserves to a degree that is socially sub-optimal. Yet with added liquidity regulation, defaults are more prevalent as breaches allow social

planners to forcibly recapitalise banks. Yet, the cost at default for the social planner is lower as deposits can be returned before assets are written down in "fire sales".

This model provides a new perspective on the need for bank capital. If banks trigger a liquidity shortfall but there is excess asset-to-liability value, it is optimal for banks to raise equity to meet liquidity constraints. Conversely, if banks have excess liquidity but there is a shortfall between withdrawals and asset value, it is optimal for banks to default without refinancing. The notable implication is that although introducing liquidity regulation increases default probability and implied cost of capital, it allows scope for a larger degree of equity financing where shareholders trade their liquidity for a share in expected carry profits.

3 Literature Review

3.1 Review of Empirical Studies

3.1.1 Bank Equities

Significant research has been done to test Fama's (1985) argument that increased reserve requirement ratios are effectively a tax on borrowers. Both Kolari et al. (1988) and Osborne & Zaher (1992) suggest that bank stock prices react negatively to announcements in permanent changes to reserve requirements. They suggest reserve changes are a tax on shareholders, subject to a small time delay. Further, Eyssell & Arshadi (1990) find that banks with most deficient capital ratios have their stock prices most severely punished by events of regulation. These papers form the foundation of the methodology in section 5.

In a contemporary setting, Sanders (2015) argues that Basel III's greater emphasises on the bank balance sheets could have a negative impact on bank EPS, P/E

ratio and stock price. They argue such impacts could be compounded by banks' restrained ability to yield high dividends (an effective way of increasing book equity) leading to their exclusion from high income portfolios. Diamond & Rajan (2000) and Thakor & Mehran (2011) find Basel III broadly has a positive impact on earnings and EBIT, but a negative impact on return on equity and return on assets. Note that Kolari et al. (1988) argue that accounting numbers are poor metrics to measure of the impact on banks given they fail to incorporate future expectations.

The relationship effect of lessening regulation is studied by Cosimano & Mcdonald's (1998) time series analysis. They suggest that the reduction in American capital ratios in 1990 had a positive effect on bank value, perhaps due to the presence of monopoly like behaviour. This is consistent with the proposed relationship.

More recent studies suggest nuance in this relationship, perhaps due to the existence of some non-unique optimal capital mix ratio. A study by Nasir & Huynh (2020) on the effect of Basel III on the equity price of Australian and British banks finds, that an optimal capital ratio does exists, although it is broadly in line with the minimum ratios stated in Basel III. They suggests cross-sectional differences between Australian and UK were material.

3.1.2 Credit Default Swaps and Credit Spreads

Given the general consensus on methods of testing bank value, an elected model to measure bank risk is less immediate. Steward & Hein (2002) take the approach of measuring both changes in equity value and risk perception through TED spread (difference between treasury and interbank loan rates) observations. This continuation of Fabozzi & Thurston's work (1986), studies a single event of deregulation in 1990. They fail to show that deregulation leads to an increase in risk perception. Instead, their results

suggest less risk perception following deregulation. They argue the market expected US banks to become more cash flow generative and thus, more able to meet interest obligations. These findings were only observed only in major banks and neither small banks nor firms in other industries.

Acknowledging limitations in the use of TED spreads, CDS spreads provide an alternative. The key issue with TED spread is that value is motivated by many factors other than default risk. Byström (2005) (like O'Kane, 2021) argues credit default swaps allow investors to engage in "pure" default risk, independent of factors such as duration, interest rate and foreign exchange risk. Further, Daniels & Jensen (2005) and Zhu (2006) both find that price discovery is observed in the CDS market before the bond market. While not an event study, Byström's work tests for correlation in CDS spread movements and equity returns using Spearman's rank test. The results suggest CDS spreads widen when stock prices fall and vice versa. There is also suggestion of inefficiencies in the CDS market where market information is more quickly imbedded into stock prices than CDS spreads.

Imbierowicz & Wahrenburg (2013) provide a framework from corporate finance that this paper will loosely emulate. They perform an event study on both CDS spreads and equity returns of firms undergoing mergers and acquisitions. They utilise the Brown and Warner (1980, 1985) model (like Kolari et al. and Osborne & Zaher) using a national index for stock returns and a benchmark of other firms with similar credit ratings as a proxy for CDS market. They divide events into sections (mergers, bidders and targets). In the event of a credit downgrade following announcement, CDS spreads are seen to rise as equity value falls, while if ratings are reviewed for upgrade, CDS spreads show no indication of change as equity values rise.

3.2 Social Implications

3.2.1 GDP Impact

The place of regulation, that sits between supporting growth and reducing cyclicality, has been subject to nuanced debate. Agénor et al. (2018) find that Basel III has the potential to reduce economic and credit growth in the short run, findings consistent with the Basel Committee on Banking Supervision. They argue the focus on cyclicality comes at the expense of understanding wider economic growth. Findings suggest that the mitigation of financial risk has positive long run effects on economic growth, but such benefits are eroded by leakages in regulation due to shortfalls in standardisation, consistent with Clayton & Schaab's (2022) and Allen et al. (2012).

An attribute of cyclicality is that micro and macro-prudential changes tend to occur in parallel. Gambacorta & Murcia (2020) find evidence that micro-prudential tools (such as Basel III) are most effective when supported by macro-prudential policy operating in the same direction. This would dictate contractionary monetary policy working with tighter regulatory controls and vice versa. However the objects of social planners are often misaligned and there are significant advances to independent policy making.

This relationship between micro and macro-prudential policy creates distortion in measuring effects. Slovik and Cournéde (2015) provide evidence that Basel III has the potential to have both a positive or negative effects on economic growth in the medium term, dependent on subsequent central bank policy. They suggest that tighter micro-prudential polices could be enforced if offset by expansionary macro-prudential policy.

Higher capital requirements may demand proportionately lower credit provision per unit of equity. Fraisse et al. (2020), find that due to the frictions associated with raising

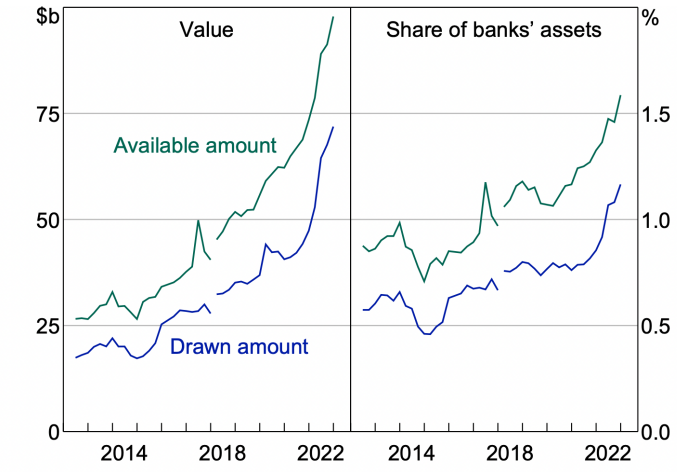
equity, a 1% increase in capital requirement leads to a 1% reduction in lending (or 8% if the margin of lending is considered). Note that Basel III increases minimum capital requirements from 4.5% to 6%. This contradicts Admanti & Hellwig's (2013) argument that equity raising can increase lending volumes. A distinction here should be made between Admanti & Hellwig's theoretical context and Fraisse et al's empirical test.

3.2.2 Credit Supply/Quality Trade-offs

The supposed impact of Basel III's on credit volume has implications for credit quality. Kapan & Minoiu (2013) suggest there was a positive influence of Basel III on the recovery of credit markets after the GFC. They note banks that held the highest capital and liquidity ratios during the GFC fared better. However, they address the necessity for a balance of regulation, arguing that tighter rules of liquidity and capital negatively impact credit provision, hampering short-term economic growth. They argue such costs are outweighed by long term benefits.

Conversely, it may be that shareholder demand for return on equity metrics encourage risk taking behaviour. Furlong and Keeley (1989) argue that increased capital ratios may incentive bank risk taking behaviour, but the potential rewards for such behaviours are reduced. Such a view may be consistent with Hudsen, Kurian & Lewis (2023) and Chen et al. (2023) indicating that post Basel III bank lending to non-banks has far outpaced other lending. Indeed, since banking practises have been restricted, insurance firms have increased funding of Collateralised Loan Obligations from 5% to 40% of the total market (Fringuellotti & Santos, 2021), market share of Asset Backed Securities issued by Australian non-banks increased from ~20% to ~80% (Schwartz, 2023) and global private credit supply has increased 27 fold (Federal Reserve, 2023).

FIGURE 2: Australian Bank Lending to Non-Banks



A simplistic interpretation of a static relationship between credit quantity and quality following regulation is cautioned against. Šútorová & Teplý (2013) show that changes in Basel III capital requirements have positive effect on lending spreads and decreased credit volumes. They conclude that Basel III should have both a negative impact on both profitability and risk taking. While this is broadly consistent with Admati et al. (2010), who also find capital ratios reduce bank risk taking, it is further argued the long run implications for bank efficiency are negligible due to dynamic costs of capital.

Fabozzi & Thurston's (1986) results challenge this notion of improved credit quaility. They find that higher capital ratios have a positive effect on the spread between commercial paper and treasury bills – a measure of risk. However, the finding is muddied by the concurrent effect of tax advantages of investing in treasuries. The use of spreads as risk indicators is problematic due to the dual effect of changes in both treasury and private debt yield. By construction, this leaves the methodology open to omitted variable bias.

In general, the impact of higher lending costs as a result of regulation is most likely driven by a reduction in supply of available loans which raises costs for borrowers. This

supports the premise of a credit supply/quality trade off. On presumption that stricter regulation decreases credit supply, Basel III likely increses both credit quality and cost.

In lieu of this trade off, the consensus supports the argument that Basel III has a net positive social implication. The BCBS (2010) argued that the accords would reduce the amplitude of the business cycle with the greatest effect in advanced economies. They argue this effect increases long run GDP growth in a risk averse society that absorbs the higher borrowing costs for the benefit of lower expected costs of banking crises.

3.2.3 Evidence of Regulation Cyclicality

The push-pull effect on credit markets may have cyclical effects on the broader economy. Research by Goodhart et al. (2004) and Kashyap & Stein (2004) argue that all banking regulation is inherently procyclical due to negative impacts during economic downturns. Anecdotal evidence during the COVID-19 pandemic, whereby APRA exempted banks from some rules to reenforce credit markets is consistent with this.

Regulation cannot wholly remove cyclical patterns in the banking system. Carletti et al. (2020) quantify bankruptcy costs as the difference between the value of a bank's deposits and the value of loans banks realised at insolvency. This is a cost the social planner must reimburse depositors. As the extent of fire sales is lessened with some level of market control, a floor of regulation tightness exists. An upper limit to optimal requirements is also described, whereby regulation acts as a burdensome tax on profits during expansionary periods. By regulating minimum levels of capital and liquidity the amplitude of the credit cycle is subdued, however removing dynamism in capital and liquidity – which drives cycles – is not possible.

4 Data

4.1 Variables and Announcements

Equity data on ANZ, CBA, MQG, NAB and WBC was taken from the Australian Stock Exchange via Refinitiv DataStream. A proxy for a benchmark market value was the All Ordinaries index, taken from the same source. An index provided by FTSE, the 'Australian Banks Index', which includes smaller banks such as Bank of Queensland, Suncorp Metway and Bendigo and Adelaide Bank was used to represent changes in the broader domestic banking system. The index excludes MQG due to its global exposure and diverse source of earnings.

To measure bank stability spreads on ANZ, CBA, MQG, NAB and WBC credit default swaps were used. This data was provided by Markit and soured through Refinitiv Datastream. Where errors existed in the data (such as missing values) it was assumed there was no daily change in the spread. All swaps were of five year maturity and denominated in USD. Markit's Australian CDS index was not utilised as a benchmark, as it is over-concentrated on the major banks and verification of it construction was not possible due to access limitations. Instead, the Commonwealth Treasury CDS spread with five year maturity, denominated in USD is used as the benchmark. While methodologies are not directly comparable, Greenwood-Nimmo et al. (2019) argue that sovereign CDS spreads are a strong measure of systematic default risk. This is the most refined proxy for benchmark risk. An index of the 'big five' bank CDS spreads was created by taking an equal weighted average of bank CDS's. This is the same process by which Markit formulated their market CDS index. Where data was missing for more than two banks, it was assumed the index remained unchanged.

Dates of regulatory changes are taken predominately from past APRA and BIS announcements, while announcements from the OECD, RBA, Australian Treasury and Reserve Bank of New Zealand (RBNZ) are also used to a limited extent. Announcements made outside Australia are adjusted for time zone difference. Articles from the *Australian Financial Review, The Australian* and *Wall Street Journal* were also screened and reviewed for information not provided by regulators directly. Due to the clustering of announcement dates, many dates were combined into single "Events".

These Events were sectioned by their geography, regulation type and into seven distinct time sections. In total, 94 dates were used, condensed into 67 'Events' with 39 estimation windows. Events contain two days prior to announcement and two days post, ensuring a full week of trading for single date/announcement Events. Estimation window lengths and placements are such that no Event exists within another's estimation window and there at least five trading between the each Event and estimation window (to prevent sample contamination). Event 1 has a 91 day window to align with the best CDS data. No window is smaller than 30 calendar days.

TABLE 1 - Summary of Event Window Lengths

Trading Days in Window	Number of Events
5	47
6	3
7	4
8	3
9	2
10	3
11	2
12	2
18	1

Events are divided by geography of origin. 'AU' refers to regulation from Australia, 'EU' regulation predominantly comes from bodies based in Switzerland and broader OECD, 'NZ' is regulation that affects the New Zealand business units of the banks while 'MIX' are Events where dates from different geographies have been combined.

TABLE 2 - Summary of Event Geographies

Regulation Geography	Number of Events
AU	39
EU	18
MIX	8
NZ	2

As different types of regulation may have disproportionate effects on perceived value or stability, Events are also sectioned into capital requirements, liquidity requirements, risk weight requirements[3], mortgage lending regulation, systematic reform and an 'other' section (which reviews events such as APRA leadership changes). Due to the clustering of events, there is crossover between these regulation types.

[3] While risk weight and mortgage lending are separated, they are effectively subsets of capital reform.

TABLE 3 - Summary of Event Regulation Types

Regulation Type	Number of Events
Capital & Alike	28
Systemic & Capital	5
Liquidity & Alike	6
Systemic & Liquidity	4
Systemic	5
Risk Weight (RW) & Alike	9
Mortgage & Alike	6
Other	4

A third separation into time sections is also used. The author acknowledges that, unlike division into geography and regulation type, sections for time were made following preliminary analysis. While efforts were made to avoid look-ahead bias, there are risks of such effects. Detailed information about all Events can be found in Appendix A.

4.2 Time Varying Sections

Following analysis of potential geographic and regulation type varying effects, it became apparent that reactions to regulatory announcements exhibited traits more consistent with time dependence. Upon review of hundreds of news articles (predominately in Australia) and through industry consultation, Events are grouped accordingly between points of expectation inflection. Distilling and categorising market perception is an inexact science made more complex by the long horizon of the study, where journalists consulted were unable to give precise insight into events from a decade ago. However, there is conviction in the analysis that market perception and expectation are the key drivers of measured bank stability and value. The presented sections are explained below.

4.2.1 Detailed Review of Time Sections

1) Pre-Basel II Enhancement

- *Hyperbole and uncertainty of future regulation.*

Following the hysteria of the GFC, there is little clarity with regards to the future regulatory landscape. Rumour of quasi-nationalisation and concerns over the solvency of the non-four pillars still exist. Regulation takes the approach of reshaping existing Basel II regulation, rather than an overhaul into Basel III.

2) Post-Basel II Enhancement

- *Increased clarity and expectations of future regulation loosen.*

The May 2011 APRA announcement (Event 12) "Enhancements to Basel II Framework" (prior to the predominate use of the term Basel III) made it clear that European based reform would focus on derivative trading and securitisation. As Australian banks had comparatively little exposure, the announcement may have led to a structural change in investor buoyancy on the presumption that global regulation would be less impactful in Australia. This fear of future regulation is supported by an industry report written at the time by Codling & Harley (2011), then banking leads at PWC Australia.

Events 19 & 20 are added to this section due to convenience of proximity.

3) Financial System Inquiry (FSI) period & Appointment of Wayne Byres

- *Two directional expectation. FSI speculation indicated stricter domestic regulation, Byres appointment signalled loosening of Basel implementation.*

With the election of the Abbott government in September 2013 the FSI inquiry was announced soon after. The "root and branch examination of the nation's financial system" (Abbott & Hockey, 2013) was viewed by analysts as having material impacts on the

structure and future profitability of domestic banks. This sentiment was strengthened following the interim report released in July 2014. Here, Morgan Stanley analyst, Daniel Toohey argued there would be a shift in value away from major banks and towards less regulated financial institutions, such as wealth advisors (AFR, 2014).

Speculation of the soon annouced FSI period coincides with the appointment of Wayne Byres in April 2013. In an interview in June of 2013 – when market expectations are argued to have changed – Byres signalled support and satisfaction with the BCBSs' regulation of leverage ratios and risk weights. Prior to this, commentary suggested that APRA would be dissatisfied with global standards and put forward stricter rules. Byres further supported Australia's introduction of federal deposit insurance and the need for Australia to align with global standards (AFR, 2013).

The Byres appointment and subsequent announcements were a signal that international regulation would have less impact than international counterparts, yet the FSI period instilled concerns of additional, restrictive regulation. The suggested net effect on market sentiment is not clear.

4) <u>Post FSI Recommendation & 'Basel IV'</u>

- *Clarification of domestic regulation is less strict than anticipated. Risk weight regulation becomes central, with the direction of future expectations non-obvious.*

An inflection point in expectation occurred at release of the final FSI report in 2014 where the report proclaimed a "cautious approach". Credit Suisse analyst, James Ellis, argued the report was about "tinker(ing) and fine tun(ing)" rather than the more significant reforms that had otherwise been expected.

The realise of the FSI report coincided with a shift in APRA and BIS policy towards restrictions on bank risk weights, a set of regulation colloquially called 'Basel IV', a term

never formally adopted. A hypothesis of the significance of such a change in reform strategy is not obvious. Following the NSFR[4] announcement (start of next time period), it is unclear if market perceptions of future regulation were particularly strong.

5) Pre- ACCC and PC review

- *Regulation returns towards business-as-usual. Increasing back profitability was the main driver of expectation, not underlying regulation changes.*

Following the end of 'Basel IV' reform, a shift toward the more conventional capital and liquidity announcements restarted. This coincided with widening spread between deposit and lending rates, causing public outcry (AFR, 2018). This came to a head in late February 2018, where both the PC (Productivity Commission) and ACCC (Australian Competition and Consumer Commission) launch a review of domestic bank competition and "super profits". Such a review was not specifically aimed at improving post-GFC stability.

The negative public sentiment towards the banks is also observed through the Hayne Royal Commission which occurred throughout 2018. The breadth of its focus is more aligned to post-GFC regulatory issues, many of which are discussed in the Squam Lake Report. It signalled some expectation of tightening regulation.

With a redirection of prudential policy and increasing bank profitability it could be argued that expectations normalised. However, the sentiment that lead to the Hayne Royal Commission and ACCC & PC review may also have caused regulatory expectations to tighten.

Break for ACCC & PC Review

[4] Net Stable Funding Ratio

Effects during the competition review (Events 46 & 47) have been excluded as they are influenced by surrounding effects of competition (not post-GFC stability) news. However, the release of the report is seen an inflection point where investors revaluate the importance of Basel, competition and Royal Commission reforms.

6) Pre-COVID-19 Pandemic

- *Business as usual expectations. Negative public sentiment subdues following the Hayne Royal Commission and ACCC & PC review.*

Two months following the ACCC & PC report being published, Event 48 and time Section 6 begin. Regarding the end period, there is no obvious date for a pre/post pandemic separation. The placement of Event 55 in December of 2019 and Event 56 in mid-February 2020 places two events roughly either side of material fear of outbreak in Australia. Between the review and prior to February 2020 regulation took a 'business as usual' approach as some of the last Basel III regulations were finalised.

7) Pandemic and Post Pandemic

- *It is presumed that concession from regulation would lead to exceptions of looser regulation.*

From the pandemic, regulatory announcements stray away from 'business as usual' and begin to focus on delays of Basel III reforms and other temporary concessions designed to maintain robust credit. In March 2020, the Reserve Bank announced a number of reforms including a lower cash rate, significant quantitative easing program and the Term Funding Facility to support credit supply. Such reforms were met with a strongly positive market reaction. As they do not focus on post-GFC reform they are excluded from the time varying study, this includes Events 58 and 59.

4.2.2 Summary of Time Sections

Section	Name	Time	Perception	Number Of Events
1	**Pre Basel II Enhancement**	March 2009 to February 2011	Opaque expectation. Fear of future regulation	11
2	**Post Basel II Enhancement**	Ended March 2013 (addition of events in May and June)	Enhancement clarifies regulation. Australian banks seen as less exposed.	9
3	**FSI & Byres Period**	November 2013 to December 2014	Byres appointment signals limit to regulation & FSI/Hayne reports signals stricter regulation	10
4	**Post-FSI & 'Basel IV'**	Ended April 2014	Following FSI recommendations, expectations of future regulation relax.	6
5	**Pre ACCC & PC Review**	Ended February 2014	Business as usual. Public sentiment worsens.	9
	Gap for ACCC & PC Review	*February 2014 to April 2014*	*Information interference from non-GFC related reform*	*2 events excluded*
6	**Pre Pandemic**	End Early (February) 2020	Basel III reforms finalised. Presumed tail end of reforms	8
7	**Pandemic and Post Pandemic**	February 2020 to end of 2022 (end of study)	Reforms include Basel III delays and concessions, i.e. quasi-deregulation	10
	Gap for non-Basel reforms	*March 2020*	*Information interference with Term Funding Facility.*	*2 events excluded*

5 Hypothesis Testing

5.1 First Hypothesis Set – Direction

H1.1: *Surprise changes in regulation will have a directional effect on both the value and stability (as measured by CDS spread) of Australian banks.*

Relevant regulatory announcements will change investors' view on expected bank earnings and stability resulting in a change in equity value or CDS spread. Grouping events will emphasise which information is relevant to which investors.

H1.2: *If investors view regulation as tighter than expected, equity value will fall.*

As observed by Kolari et al. (1988), increased regulation may be detrimental to investor beliefs regarding future cash flow, impeding value.

H1.3: *If investors view regulation as tighter than expected, CDS spread will fall.*

As hypothesised by Steward & Hein (2002), tighter regulation may lead to lower perceptions of risk, here observed as lower CDS spread.

H1.4: *If investors view regulation as looser than expected, equity value will rise.*

Inverting H1.4, looser regulation may improve investor expectations of future cash flow, improving valuation.

H1.5: *If investors view regulation as looser than expected, CDS spread will rise.*

Inverting H1.5, looser regulation may lead to higher perceptions of risk, observed as higher CDS spread.

5.2 Second Hypothesis Set – Efficiency

H2.1: *New information observed on the date of regulatory announcements is immediately imbedded in prices (market is efficient).*

To observe market reactions in the elected event study methodology, movements in value and CDS spread must occur close to the announcement. An absence of this may indicate significant information leakage, perceived event insignificance or friction in investor behaviour. By carefully selecting events, the potential for information leakage and perceived insignificance has been minimised to distilling the observation of information latency.

H2.2: *The events elected are a surprise and indicate new information.*

While effort has been made to reduce the possibility of information leakage, assuming wholly efficient markets for all 94 events may be unreasonable. Some investors may have non-public information or regulators may have provided market signals that were not observed through back dating expectations.

5.3 Third Hypothesis Set – Robustness & Volatility

H3.1: *Surprise regulatory announcements will be sufficiently meaningful as observed by the volatility of abnormal equity returns.*

H3.2: *Surprise regulatory announcements will be sufficiently meaningful as observed by the volatility of abnormal CDS spread changes.*

If events are perceived as meaningful, the magnitude of movements in bank equities around announcement date should rise. As some conjecture is required to acknowledge

tighter or looser regulatory expectations, this measurement of volatility provides a robustness check.

This acts as a robustness check for the relevance of elected dates in the CDS market.

5.4 Fourth Hypothesis Set – Correlation

H4.1: *Movements in bank equities and CDS spreads will be positively correlated.*

As discussed in H1.2 to H1.5, it may be presumed that movements in bank equities and CDS spreads are positively correlated. Banks seen as more/less valuable by equity investors may be viewed as more/less risky by CDS investors.

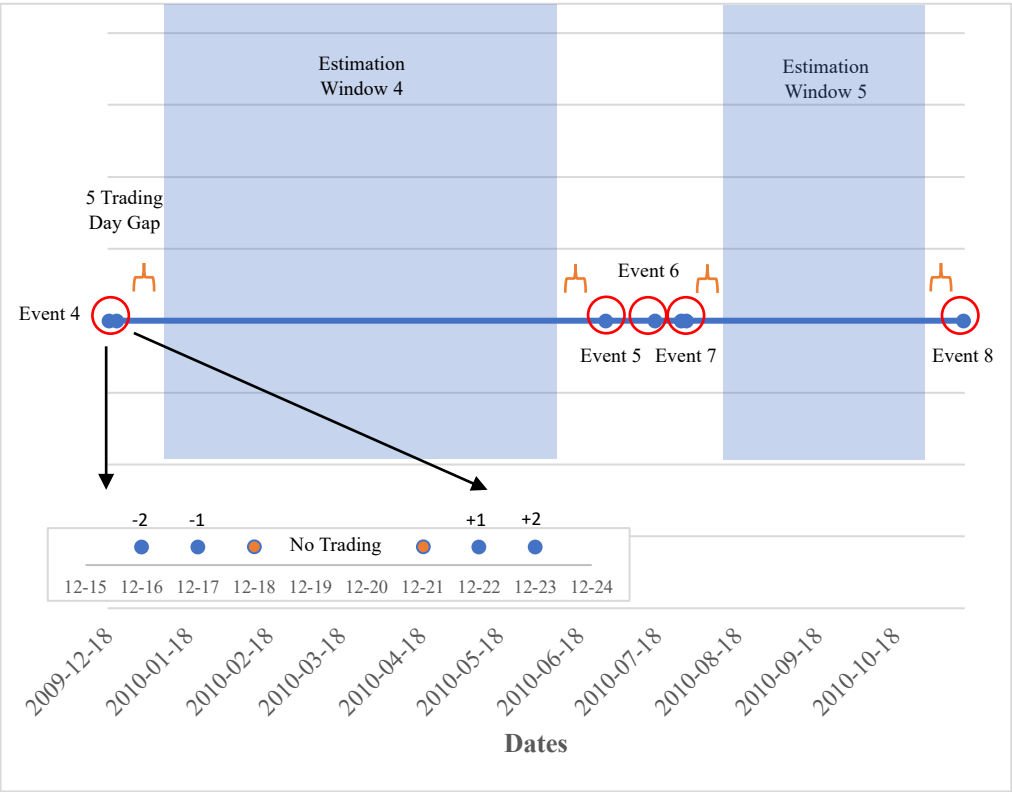
6 Methodology

6.1 Set Up

6.1.1 Controlling for Market Effects

Utilising Expanding on the methodology used by Osborne & Zaher (1992) and Kolari et al. (1988), this paper expands builds on the general event study first utilised by Brown & Warner (1985). Some complexity is introduced as both changes in daily equity value and bank CDS spread are discussed. Alpha's from estimation windows are assumed to be zero. Further, due to event clustering and the varying size of estimation windows the Brown and Warner method is applied dynamically. The generalised event study methodology is visualised accordingly:

FIGURE 3: Diagram of Dynamic Brown & Warner Application



6.1.2 Individual Events

Output from the rolling estimation windows can be found in Appendix B.1 (Equity) and Appendix B.2 (CDS).

For each event, daily abnormal returns (AR) for banks, market benchmarks and indexes are calculated, followed by cumulative abnormal returns (CAR) and subsequent t-tests and p-values. It is assumed markets are efficient and the estimated alpha's shown in Appendix B.1 and B.2 are excluded from calculation of AR.

$$AR_{i,t}{}^{Bank} = R_t{}^{Bank} - \widehat{\beta}^{Bank} R_{m,t}$$

i: Event Number

t: Day in Event

R_m: Market index % daily change (All Ordinaries or Commonwealth CDS Spread)

R^{Bank}: Bank % daily change

$\widehat{\beta}^{Bank}$: Estimated bank/market coefficient

% daily change: the natural log difference between trading days

$$CAR_i^{Bank} = \sum_{t=1}^{\text{days}} AR_{i,t}{}^{Bank}$$

$days$: is days in the event window. It is also the maximum value of t for each $[i, Bank]$

$$T - stat_i{}^{Bank} = \frac{CAR_i^{Bank}}{\sqrt{(\sigma_i^2 * \text{days})}}$$

σ_i^2: is the variance of AR from the estimation window

$$p - value_i^{Bank} = 2 * (1 - \Omega \left(\left|t - stat_i{}^{Bank}\right|, \text{length}(Estimtion\ Window)\right)$$

6.1.3 Visualising Events and Market Efficiency

As a means of presenting all 67 events across all five banks and index, individual CAR's are shown in Appendix D.1 (Equity) and D.2 (CDS). The graph shows CAR as it accumulates through the event window. For clarity, a 95% confidence interval is only presented for the indexes.

$$CI_t = \sum_{t=1}^{t} AR_t \pm \Omega^{-1}(.975, \sqrt{\text{length}(Estimtion\ Window) * t * \sigma^2})$$

6.2 Testing

6.2.1 Modified Patel Standardised Residual Test

As a means of shifting testing the magnitude and direction of equity and CDS movements, a modified Patel (1976) standardised residual method is applied. The method has been adjusted as Patel's work assumes all events have the same window size. To overcome this incongruency, CAR's are averaged by days in event. It is acknowledged such a technique reduces the power of the test. With the adjustment, SCAR's become average SAR (average standardised abnormal returns) according to:

$$\overline{SAR_\iota} = \frac{CAR_i}{\hat{\sigma} * \text{days in event window}}$$

$$\widehat{\sigma^2}(\overline{SAR_\iota}) = \sum_{i=1}^{N} \left(\overline{SAR_\iota} - \frac{\left(\sum_{i=1}^{N} \overline{SAR_\iota}\right)}{Events\ in\ Section} \right)^2 / N$$

$$t - stat_s = \left| \frac{\overline{SAR_\iota}}{\sqrt{(\widehat{\sigma^2}(\overline{SAR_\iota}) * (Events\ in\ Section - 1)}} \right|$$

$$p - value_s = 2 * \left(1 - \Omega(t - stat_s, N)\right)$$

N: Events in Section

6.2.2 Modified Corrado Rank Test

To test the robustness of event selection, a modified Corrado (1989) rank test is used. Modifications used are discussed by Kothari and Warner (2006). This methodology is used for section breaks across time, geography and regulation type.

The $AR_{i,t}$'s for each bank, from the start of estimation window to the end of each event for the specified section is collated. As the $AR_{i,t}$'s in periods of higher volatility will bias towards larger values they are standardised according to:

$$SAR_{s,t}^{Bank} = \frac{AR_{i,t}}{\sqrt{\sigma_j^2(\hat{\epsilon})}}$$

s: is the specified section, i.e. Capital & Alike.

$\sigma_j^2(\hat{\epsilon})$: is the variance of the residuals from the jth (corresponding) estimation window.

The SARi,t's then have their absolute value ranked. By taking the absolute value the magnitude on the announcement is measured, an acknowledgement that market reactions are a measure of changing expectations, rather than an inherent measure of the immediate effect of new regulation. To standardise across sections of different sizes the ranks are divided by the total number of trading days in their section, thus *K*s,t is a measure of average rank.

$$K_{s,t}^{Bank} = \frac{rank(|AR_{i,t}|)}{\text{days in section}}$$

The average rank across the five banks is taken.

$$\overline{K_{s,t}} = \sum_{Bank=1}^{5} K_{s,t}^{Bank} /5$$

To calculate the excess event effect, the average rank in each section has ½ subtracted (the expected average rank). For all events in a section the average effect of this is taken.

$$\overline{Excess\ Event\ Effect_s} = \sum_{1}^{N} \sum_{t=ES}^{EE} (\overline{K_{s,t}} - .5) * \frac{days\ in\ event^{-1}}{N}$$

EE: Index of Event End

ES: Index of Event Start

Variance is measured according to:

$$\widehat{\sigma_s^2} = \sum_{t=1}^{\text{days in section}} (\overline{K_{s,t}} - .5)^2 / \text{days in section}$$

$$t - stat_s = \frac{\overline{Excess\ Event\ Effect_s}}{\sqrt{\widehat{\sigma_s^2}}}$$

$$p - value_s = 1 - \Omega^{-1}(t - stat_s, \text{ length (s)})$$

6.2.3 Sign Test

To test the correlation between movements in CDS spread and bank equity value on event announcement dates a conventional sign test is used. Events are aggregated into their respective sections across time, geography and regulation type.

7 Results and Discussion

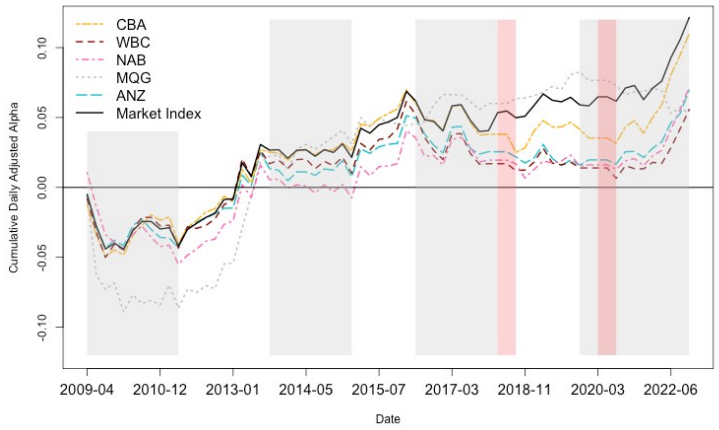
7.1 Testing Direction of Value & Stability

7.1.1 Results of H1.1

H1.1: *Surprise changes in regulation will have a directional effect on both the value and stability of Australian banks.*

FIGURE 4 Cumulative, Adjusted Reactions Through Time:
Each point is the abnormal return on bank equities (Panel A) and CDS spreads (Panel B) from each event period plus the cumulated abnormal returns from all previous events. To adjust for Event length, each return is divided by days in event. The white and grey sections align with the seven time differentiated sections discussed in Section 3. The red sections signal events where the abnormal effect has been removed due to information interference. Their effect has been forcibly made zero but are still included on the x-axis for the purpose of framing the sixth time section.

Panel A Equity:



Panel B CDS Spread:

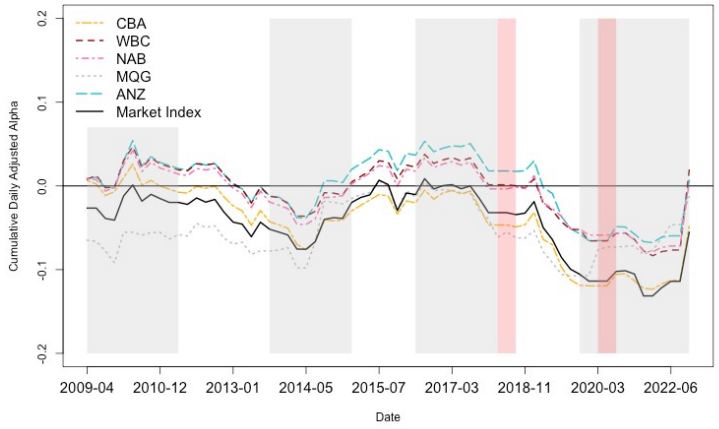


Table 4 – Test of H1 Across Time Sections

Bank Equities, Patel Standardised Residual Method

Average Standardised Abnormal Return (SCAR) is the cumulative abnormal return of events adjusted for the days in event window and estimated residuals. The adjustment for days in event window is a novelty of this research. It is used to concentrate the effect of market announcements while still being able to apply the Patel testing methodology. T-statistic degrees of freedom are events in section less one. P-values follow a two tailed test.

		Pre Basel E'ment		Post Basel E'ment		FSI & Byres		Basel IV		Pre ACCC/PC		Pre Pandemic		Pandemic & Post	
Regulation Movements		**Tighter**		**Looser**		**Mixed**		**Neutral**		**Mixed**		**Neutral**		**Looser**	
Events In Section		**11**		**9**		**10**		**6**		**9**		**8**		**10**	
Variable		**Equity**	**CDS**	**Equity**	**CDS**	**Equity**	**CDS**	**Equity**	**CDS**	**Equity**	**CDS**	**Equity**	**CDS**	**Equity**	**CDS**
ANZ	**Average SCAR**	-0.088	0.015	2.493	-0.403	-0.065	0.014	0.322	0.018	-0.209	-0.025	-0.051	-0.056	0.23	0.046
	T Stat	0.897	0.659	13.394	9.155	0.516	0.373	1.183	0.301	1.441	0.569	0.562	1.023	1.775	1.05
	P Val	0.389	0.523	0.000***	0.000***	0.617	0.717	0.282	0.773	0.183	0.583	0.59	0.336	0.106	0.313
CBA	**Average SCAR**	-0.016	0.001	1.039	-0.424	-0.02	-0.013	0.16	0.007	-0.136	-0.03	0.004	-0.038	0.133	0.053
	T Stat	0.243	0.076	12.751	10.014	0.42	0.443	1.381	0.13	1.829	0.641	0.063	0.717	1.791	1.275
	P Val	0.812	0.941	0.000***	0.000***	0.683	0.667	0.217	0.901	0.101	0.537	0.951	0.494	0.104	0.225
MQG	**Average SCAR**	-0.061	-0.03	1.126	-0.279	0.013	0.038	0.143	0.023	-0.093	-0.037	-0.029	-0.046	0.079	0.071
	T Stat	1.014	0.689	13.829	10.396	0.265	1.03	1.29	0.337	1.669	0.916	0.358	1.255	0.967	1.451
	P Val	0.332	0.505	0.000***	0.000***	0.796	0.327	0.245	0.748	0.129	0.384	0.73	0.245	0.356	0.17
NAB	**Average SCAR**	-0.062	0.012	1.048	-0.425	-0.076	-0.004	0.135	0.014	-0.1	-0.028	-0.019	-0.031	0.109	0.038
	T Stat	1.271	0.611	11.614	9.431	1.586	0.126	0.995	0.233	1.697	0.674	0.365	0.612	1.588	0.818
	P Val	0.23	0.554	0.000***	0.000***	0.144	0.902	0.358	0.823	0.124	0.517	0.725	0.557	0.143	0.428
WBC	**Average SCAR**	-0.034	0.012	0.963	-0.415	-0.062	-0.005	0.165	0.022	-0.156	-0.028	-0.01	-0.04	0.087	0.029
	T Stat	0.646	0.577	11.948	9.32	1.045	0.153	1.276	0.422	2.088	0.666	0.26	0.879	1.632	0.606
	P Val	0.532	0.575	0.000***	0.000***	0.321	0.882	0.249	0.688	0.066*	0.522	0.801	0.405	0.134	0.555

The key finding of this research is that reactions to regulatory announcements fluctuate through time along epochs of expectation and information transparency – expressed most clearly in the Post Basel II Enhancement period. Here, banks become significantly more valuable and stable. This is not observed when sectioning events by geography of origin or by regulation type (results not presented). The visualisation in Figure 4 gives some sense to the dynamism of market reactions. For clarity, it excludes information regarding standard error, giving a false suggestion of highly significant abnormal shifts in CDS spread either side of the pandemic. As discussed in section 3, Events 46, 47, 57 and 58 (shaded in red) have had their adjusted CAR's removed due to the interference of external news. The seven time periods were chosen by electing events that acted as inflection points in market sentiment; more details can be found in Section 3.

The varying results of the Patel test reflect nuance in the relationship of market reactions to regulatory announcements. Consistent with Osborne & Zaher (1992), it is shown that changes in bank regulation impact equity prices through not only the direct impact of the policy but also the influence of investor expectations regarding future regulation and (perhaps) place in the market cycle. However, the results challenge Hull et al (2004) and Norden & Weber (2004) who found movements in CDS spread show signs of asymmetry, being more susceptible to significant movement when there fear of insolvency. It may be the case that regulatory announcements provide difference kinds of information to equity and CDS investors.

The significance of market reactions is concentrated in the Post-Basel II Enhancement period. This period signalled the end of perpetuating fear regarding tightening regulation and bank default probability as regulators indicate that banks would

require less regulation than initially expected. The divergence of equity movements and CDS spreads indicates banks were perceived as more valuable and less risky during this period, challenging much of the theoretical literature. It is plausible that announcements acted as a signal that banks were more stable than initially expected, rather than an indication of greater risk allowances.

This dynamism – or cyclicality – of market reactions should be unsurprising. Alan Greenspan, in a speech to the BIS in 2002 stated: "Financial markets and intermediaries are part of the macroeconomic cyclical process, and thus new rules involving these markets and institutions need to be evaluated in that context". While business cycle fluctuations are inevitable, some may be concerned that periods in which increasingly restrictive regulation is expected (Pre-Basel II Enhancement, FSI period and around the ACCC & PC review) are followed by market exuberance and a belief that regulation will be less influential than was initially expected.

7.1.2 Results of H1.2 & H1.3

H1.2: If investors view regulation as tighter than expected, equity value will fall.

H1.3: If investors view regulation as tighter than expected, CDS spread will fall.

In periods where regulation tightens more than market expectation, the impact on value and stability is ambiguous. The Pre Basel II Enhancement period is the only epoch where investors clearly believe regulation will continue to tighten. However, the FSI inquiry period saw continued media speculation of tightening regulation through a federal inquiry. Due to the APRA chair, Wayne Byres signalling a limit to Basel III's influence in Australia, mixed expectations should be acknowledged. The Pre ACCC & PC review period sits somewhere between this signal of easing global standards and

heightening regulatory expectations exhibited by the Hayne Royal Commission, mirrored by the period closest to the financial crisis. While market expectations during the three periods are nuanced, most of the banks in each period show negative equity returns around dates of announcement. This, combined with the marginally insignificant p-values values in the Pre ACCC & PC period, suggest that more research is required to link tightening regulation expectations to bank value.

The high p-values for all bank CDSs in these three periods challenge any inference regarding bank stability. This is broadly consistent with Hull et al (2004) and Norden & Weber (2004) who found that CDS spreads move with less significance around events that indicate lower risk.

7.1.3 Results of H1.4 & H1.5

H1.4: *If investors view regulation as looser than expected, equity value will rise.*

H1.5: *If investors view regulation as looser than expected, CDS spread will rise.*

There is an indication that loosening regulation begets increased bank equity value. As discussed in Section 7.1.1, the Post Basel II Enhancement period shows a clear increase in bank value around regulatory announcements that signal lessening regulation. This observation is similar to what is observed in the Pandemic & Post period, although p-values are (marginally) insignificant.

Evidence suggests measures of bank stability improve as regulation loosens, although this may be an indication of reassuring market signals. This finding in the Post Basel II Enhancement period is consistent with Steward & Hein (2002). They argue that measures of stability improved following deregulation as credit investors took a positive view of the potential for increased cash flow. In this instance, it is more likely that regulators signalled a degree of confidence, challenging the previous perception that greater

regulation was required to prevent insolvency. While conjecture, this sentiment is consistent with media speculation that shifted away from bearish reports of bank stability to more positive commentary.

Upward movements in CDS spread in the Pandemic & Post period suggest nuance in the implication for bank risk. Whereas regulation loosened in the Post Basel II Enhancement period as a signal of regulator trust, Basel III implementation loosened in this final period to reduce bank stress and prevent credit seizures. While movements in CDS spread are insignificant in the final period, further research is required to extrapolate the intrinsic effect of loosening regulation from the broader market signals that drives such loosening.

7.1.4 Results in Periods with Neutral Expectations

Results from the Pre Pandemic and 'Basel IV' period provide little evidence of meaningful changes in bank value or CDS spread. This non result is consistent with the conjecture that movements around regulation announcement date will depend – to a degree – on the market sentiment regarding future regulation. Without reason for strong views against the guidance of regulators the lack of result should be unsurprising.

7.2 Testing of Market Efficiency

H2.1: *New information observed on the date of regulatory announcements is immediately imbedded in prices.*

H2.2: *The events elected are a surprise to the market and indicate new information.*

Appendix C.1 & C.2 (visualised in Appendix D.1 & D.2) suggest that the efficiency and surprise of information varies.

For equities, between 35 and 38 Events (depending on the bank) of the 67 show some significant abnormal return, whereas between 14 and 22 Events show some significant abnormal CDS spread movement. These events tend to be the same across all banks, with some expectations. Similarly, most events significant for CDS investors are also significant for equity holders, although the reverse is not necessarily true. These significant events are evenly distributed throughout the list. The low liquidity of Australian CDSs attributes to the comparatively lower efficiency. Australian CDS investors are a smaller, less diverse group than Australian equity investors – predominantly being other major banks (Davis, 2023). It is plausible that market dynamics prevent event studies from identifying significant information transfer in short time internals. Also plausible is that regulatory events may provide less new information to credit buyers – other banks – due to greater information access or industry knowhow. This lesser observed efficiency in the CDS compared to the equity market is consistent with Byström (2005).

CDS investors may also be less sensitive to market information. While equity investor returns face only a zero lower bound, hold-to-maturity credit investor returns lie between absolute destruction of capital and the return of promised repayment. While regulation may raise or lower expected bank profits and dividends, the presence of a sufficiently large equity cushion may render such announcements irrelevant to creditors, especially within the contractual five year maturity of the CDSs.

As many Events are insignificant to both equity and credit investors, it is probable that not all regulatory announcements have an effect. The selection of all Events faced the same rigour of analysis and industry oversight. Discussion of relevance is continued in the robustness check in Section 4.3.

7.3 Testing Robustness of Event Selection

7.3.1 Results of H3.1

H3.1: Surprise regulatory announcements will be sufficiently meaningful as observed by the volatility of abnormal equity returns.

Table 5 – Test of H1, Across Time Sections

Bank Equities, Corrado Rank Test

The total days is the sum of estimation days and event days. Average rank of Standardised Abnormal Returns (SAR) ranks the absolute value of all abnormal returns and divides them by days in event. The convergence to a value slightly above 0.5 is mechanical and discussed by Corrado (1989). Taking the average rank of SAR in the event across the five banks takes a measure of excess volatility during event windows. This is a test of the broader significance of annoucements, not an analysis of individual banks. T-statistic degrees of freedom are events in section less one. P-values follow a two tailed test.

	Pre Basel II E'ment	Post Basel II E'ment	FSI & Byres	Basel IV	Pre ACCC & PC	Pre Pandemic	Pandemic & Post
Regulation Movement	**Tighter**	**Looser**	**Mixed**	**Neutral**	**Mixed**	**Neutral**	**Looser**
Number Of Events	**11**	**9**	**10**	**6**	**9**	**8**	**10**
Total Days	532	773	255	210	227	317	309
Average Rank Of SAR	0.501	0.501	0.502	0.502	0.502	0.502	0.502
Average Rank Of SAR In Event	0.667	0.748	0.624	0.668	0.678	0.712	0.417
T Stat	0.167	1.289	0.72	1.018	1.139	1.438	-0.432
P Val	0.190	0.119	0.247	0.171	0.146	0.097*	0.339

Table 6 – Test of H1, Across Regulation Type

Bank Equities, Corrado Rank Test

	Capital & Alike	Systemic & Capital	Liquidity & Alike	Systemic & Liquidity	Systemic	RW & Alike	Mortgage & Alike	Other
Number Of Events	25	4	6	4	5	9	6	4
Total Days	1552	201	410	372	463	406	183	240
Average Rank Of SAR	0.500	0.502	0.501	0.501	0.501	0.501	0.503	0.502
Average Rank Of SAR In Event	0.491	0.759	0.673	0.655	0.635	0.684	0.736	0.420
T Stat	-0.051	1.581	1.096	0.853	0.750	1.075	1.373	-0.448
P Val	0.480	0.079*	0.155	0.211	0.239	0.159	0.106	0.334

Table 7 – Test of H2 Across Geography of Origin

Bank Equities, Corrado Rank Test

	AU	EU	MIX	NZ
Number Of Events	37	16	8	2
Total Days	1622	833	673	170
Average Rank Of SAR	0.500	0.501	0.501	0.503
Average Rank Of SAR In Event	0.446	0.658	0.683	0.704
T Stat	-0.315	0.851	1.010	1.408
P Val	0.381	0.211	0.173	0.101

7.3.2 Results of H3.2

H3.2: Surprise regulatory announcements will be sufficiently meaningful as observed by the volatility of abnormal CDS spread changes.

Table 8 – Test of H2 Across Time

Bank CDS Spreads, Corrado Rank Test

	Pre Basel II E'ment	Post Basel II E'ment	FSI & Byres	Basel IV	Pre ACCC & PC	Pre Pandemic	Pandemic & Post
Regulation Expectation	**Tighter**	**Looser**	**Mixed**	**Neutral**	**Mixed**	**Neutral**	**Looser**
Number Of Events	**11**	**9**	**10**	**6**	**9**	**8**	**10**
Total Days	526	773	255	210	227	317	309
Average Rank Of SAR	0.501	0.501	0.501	0.508	0.502	0.502	0.502
Average Rank Of S In Event	0.378	0.586	0.454	0.367	0.525	0.628	0.667
T Stat	-0.551	0.368	-0.181	-0.565	0.118	0.626	0.816
P Val	0.299	0.362	0.431	0.295	0.455	0.275	0.221

Table 9 – Test of H2 Across Regulation Type

Bank CDS Spreads, Corrado Rank Test

	Capital & Alike	Systemic & Capital	Liquidity & Alike	Systemic & Liquidity	Systemic	RW & Alike	Mortgage & Alike
Number Of Events	25	4	6	4	5	9	6
Total Days	1919	252	410	366	457	403	491
Average Rank Of SAR	0.500	0.502	0.501	0.501	0.501	0.501	0.501
Average Rank Of SAR In Event	0.562	0.649	0.545	0.383	0.383	0.574	0.443
T Stat	0.247	0.590	0.174	-0.523	-0.532	0.300	-0.216
P Val	0.406	0.287	0.433	0.308	0.306	0.386	0.417

Table 10 – Test of H2 Across Geography of Origin

Bank CDS Spreads, Corrado Rank Test

	AU	EU	MIX	NZ
Number Of Events	37	16	8	2
Total Days	2184	893	664	170
Average Rank Of SAR	0.500	0.501	0.501	0.503
Average Rank Of SAR In Event	0.562	0.539	0.456	0.768
T Stat	0.245	0.158	-0.188	1.016
P Val	0.407	0.440	0.428	0.172

7.3.3 Discussion of Robustness

The robustness test indicates many events are deemed insignificant by the equity and CDS market. There no clear signs of bias towards Events targeted towards a particular type of regulation or geography of origin. An advantage of the Corrado test is that by removing the sign of movements the effect of directional expectations can be removed. Andres et al. (2021) argues such non-parametric tests are a superior methodology when using CDS variables (due to the non-smooth return profile), the test is repurposed to validate the robustness of event selection.

Surprising is the lack of a resounding result during the post Basel II Enhancement period, as there was a strongly significant result using the Patel test. As the Corrado test only considers the magnitude of change, not the direction, this may indicate that there were many, relatively small, positive reactions to announcements during this period.

Notable is the comparison of p-values between CDS and equity tests. This suggests a larger degree of significance in the equity market. This is consistent with the finding that the equity market is more efficient than the CDS market.

This testing method highlights the necessity of being able to remove events that have the potential to lack market surprise. However, evaluating this is difficult, especially across a 15 year event horizon. Differentiating events that were expected and events not seen as important by market participants is also complicated. Events significance cannot be evaluated following testing, it is not possible to differentiate events of no significance, significant events that lacked surprise and significant events not fully understood by the market. This test suggests, that rather than events having a varying impact through time, market efficiency and information transfers may vary across groupings.

7.4 Testing Equity & CDS Movement Correlation

H4.1: Movements in bank equities and CDS spreads will be positively correlated.

Table 11 – Test of H3 Across Time Sections | Sign Test

		Pre Basel II E'ment	Post Basel II E'ment	FSI & Byres	Basel IV	Pre ACCC & PC	Pre Pandemic	Pandemic & Post
Regulation Expectation		**Tighter**	**Looser**	**Mixed**	**Neutral**	**Mixed**	**Neutral**	**Looser**
CBA	Pos	7	5	5	3	4	6	7
	Neg	4	4	5	3	5	2	5
	P-Val	0.274	0.5	0.623	0.656	0.746	0.145	0.387
WBC	Pos	4	3	4	3	4	4	8
	Neg	6	6	6	3	5	3	4
	P-Val	0.828	0.91^	0.828	0.656	0.746	0.5	0.194
NAB	Pos	6	4	5	3	3	3	7
	Neg	5	5	5	3	6	4	5
	P-Val	0.5	0.746	0.623	0.656	0.910^	0.773	0.387
MQG	Pos	5	2	2	5	5	5	9
	Neg	4	7	8	1	4	2	3
	P-Val	0.5	0.98^^	0.989^^	0.109	0.5	0.227	0.073*
ANZ	Pos	5	4	6	3	4	5	6
	Neg	5	5	4	3	5	3	6
	P-Val	0.623	0.746	0.377	0.656	0.746	0.363	0.613

Table 12 – Test of H3 Across Regulation Type | Sign Test

		Capital & Alike	Systemic & Capital	Liquidity & Alike	Systemic & Liquidity	Systemic	RW & Alike	Mortgage & Alike	Other
ANZ	Pos	16	3	3	2	1	5	1	2
	Neg	12	2	3	2	2	4	5	2
	P-Val	0.286	0.5	0.656	0.688	0.875	0.5	0.984^^	0.688
CBA	Pos	18	3	3	4	1	3	1	3
	Neg	10	2	3	0	3	6	5	1
	P-Val	0.092*	0.5	0.656	0.063*	0.938^	0.910^	0.984^^	0.313
MQG	Pos	12	2	3	3	2	5	3	2
	Neg	15	3	3	0	2	4	3	1
	P-Val	0.779	0.813	0.656	0.125	0.688	0.5	0.656	0.5
NAB	Pos	14	4	3	3	1	4	1	1
	Neg	14	1	3	1	3	5	5	2
	P-Val	0.575	0.188	0.656	0.313	0.938^	0.746	0.984^^	0.875
WBC	Pos	16	3	3	2	1	4	0	1
	Neg	12	2	3	2	2	5	6	2
	P-Val	0.286	0.5	0.656	0.688	0.875	0.746	1^^^	0.875

Table 13 – Test of H3 Across Geography of Origin

Sign Test

		AU	EU	MIX	NZ
ANZ	Pos	18	10	4	1
	Neg	21	6	4	1
	P-Val	0.739	0.227	0.637	0.750
CBA	Pos	19	9	6	2
	Neg	20	8	2	0
	P-Val	0.625	0.500	0.145	0.250
MQG	Pos	19	6	5	2
	Neg	19	10	2	0
	P-Val	0.564	0.895	0.227	0.250
NAB	Pos	16	8	6	1
	Neg	22	9	2	1
	P-Val	0.872	0.685	0.145	0.750
WBC	Pos	17	8	4	1
	Neg	21	8	4	1
	P-Val	0.791	0.598	0.637	0.750

The insignificant p-values for all sections suggest that movements in bank equities are uncorrelated with those of CDS spreads around announcements of bank regulation. The sign test above arbitrarily assumes a H_0 of negative correlation. As a product of the sign method used, high p-values indicate evidence supportive of negative correlation. The results suggest strong evidence of negative correlation around announcements that regulate bank mortgagees. This finding should be viewed with trepidation as both tests of H1 and H2 fail to find significance in the movements of such announcements.

An issue with the test of correlation is that it requires efficiency in both the equity and CDS market. As shown in the tests of H1 and H2, there is little evidence to suggest such efficiency in the Australian CDS market, despite its theoretical benefits as a measure of implied risk.

7.5 A Digression & Proposition on MQG & CBA Performance

Figure 4 suggests a large underperformance and recovery of MQG in the 2009/2010 period as well as an outperformance of the index and CBA in the pre/post pandemic sections, indicating unique attributes of each bank. The clustering of WBC, NAB & ANZ is unsurprising given their highly comparable business models and the similarity in their historic valuation multiples that track book value, unlike CBA & MQG which have historically traded at high premiums to book value (post GFC).

The cause of MQG's underperformance may be their unique business model. Greg Ward, a past CFO and current executive, noted MQG's business model is to "borrow long and lend short, when the banks (four pillars) were borrowing short and lending long". This inversion of the textbook banking model, shifted risk away from the possibility of loan write downs and onto the possibility of write downs in the hard assets that existed in MQG's satellite funds around the GFC. As such, an investor in MQG may be more concerned with the less regulated, volatile exposure to advisory, commodity and asset management divisions. This contrasts with the four pillars exposure to more conventional commercial banking. As such, risk averse stockholders and creditors may have priced higher risk premiums into MQG at any period of relative pessimism.

The outperformance of CBA and the small bank including index may be driven by micro-prudential policies (regulation of individual firms). It is plausible that the index outperformance is not due to the inclusion of small banks, but rather the increasing correlation with CBA (as the index is market cap weighted), whose market capitalisation grew rapidly in the years surrounding the pandemic. One explanation for the CBA divergence is that the market had materially different expectations for CBA's regulation than other banks. Event 47, the last event before the penultimate time section, includes

an announcement of the CBA Prudential Inquiry Report that lead to a A$1bn addition to CBA's capital requirement. This additional requirement is eased at Event 67 (final event). While these CBA events bookend the banks' outperformance, it is unclear if expectations of future CBA regulation changed. Assuming causality is cautioned, especially as a similar announcement of additional MQG regulation announced at Event 62 did not act as an inflection point.

8 Conclusion

This paper evaluates all meaningful announcements of post-GFC banking regulation in Australia and seeks to test the impact on bank value and stability. With increasing pressure on global banking and credit systems, understandings and evaluating the effect of past regulation is of timely importance.

This study suggests that there are time varying effects to regulatory announcements. Distilling the effect is nuanced, as quantifying the expectation of future regulation is not possible. There is strong evidence that between the announcement of 'Basel II Enhancement' and the beginning of the 'Financial Stability Inquiry', investors view banks as being more valuable and stable. It is suggested that equity investors become pessimistic in periods where there is expectation of tighter regulation. Following periods of significant information transfer, investors become bullish around announces of further regulation. Further study with more refined hypothesis testing is required in this area, as patterns in CDS behaviour may follow sentiment of information transparency rather than regulatory expectation. The lack of consistent correlation between equities and CDSs

suggest the two investors groups take different information from regulatory announcements.

The many non-results using CDS spreads may also suggests the variable is a poor measure of market information. Unlike less direct measures of risk such as interbank credit spreads, the CDS market – where investors are directly hedging against bank default – should provide a pure measure of risk. However, the short term event studies used that require highly efficient information transfer were not appropriate for Australian CDS's. More complex models of abnormal return that reduce alpha/excess return is a potential solution. It is unclear if replicating this research in more liquid CDS markets, such as the US, would present the same challenges.

9 Appendices

9.1 Appendix A: All Dates and Event Classifications

Date	Estimation Period	All Days in Est' Period	Event	Days Since Last Event	Regulating Entity	Geography Category	Event Name	Regulation Category
03/04/2009	1	**95**	1	**95**	BIS	AU	Declaration on Strengthening The Financial System – G20 London Summit	Systemic
14/07/2009	2	**102**	2	**102**	BIS	MIX	Enhancements to the Basel II Framework	Systemic
15/07/2009	2		2		APRA	MIX	Global Rules Hit Local Banks (APRA Writes to Banks Telling Them it Will Quickly Implement Rules Decided in Switzerland)	Systemic
08/09/2009	3	**55**	3	**55**	BIS	MIX	Oversight Body of BCBS, Met to Review Measures to Strengthen The Regulation, Supervision and Risk Management of the Banking Sector	Systemic & Liquidity
11/09/2009	3		3		APRA	MIX	APRA Proposes Enhanced Liquidity Requirements for ADI's	Systemic & Liquidity
25/09/2009	3		3		OECD	MIX	Leaders' Statement to the Pittsburgh Summit	Systemic & Liquidity
18/12/2009	4	**84**	4	**84**	BIS	MIX	"Strengthening the Resilience of the Banking Sector" Consultation Document Published	Systemic & Liquidity
21/12/2009	4		4		APRA	MIX	APRA Consults on Enhancements to Basel II Framework	Systemic & Liquidity
28/06/2010	5	**189**	5	**189**	OECD	EU	Framework for Strong, Sustainable and Balanced Growth – G-20 Toronto Summit	Systemic
17/07/2010	5		6	**19**	APRA	AU	Countercyclical Capital Buffer Proposal	Capital & Alike
27/07/2010	5		7	**10**	BIS	MIX	The Group of Governors and Heads of Supervision Reach Broad Agreement on Basel Committee Capital and Liquidity Reform Package	Systemic & Liquidity
29/07/2010	5		7		RBA	MIX	Australian Exemption from Some Basel III Rules Announced	Systemic & Liquidity
13/11/2010	6	**107**	8	**107**	OECD	EU	Strengthened Global Financial Safety Nets – G20 Seoul Summit	Systemic
16/12/2010	6		9	**33**	APRA	MIX	Australian Implementation Of Global Liquidity Standards	Systemic & Liquidity
17/12/2010	6		9		BIS	MIX	Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems	Systemic & Liquidity
21/12/2010	6		9		BIS	MIX	Capitalisation of Bank Exposures to Central Counterparties	Systemic & Liquidity
14/01/2011	6		10	**24**	BIS	EU	Final Elements of the Reforms to Raise the Quality of Regulatory Capital Issued by the Basel Committee	Capital & Alike
12/02/2011	6		11	**29**	BIS	EU	Revisions to the Basel II Market Risk Framework	RiskWeight & RiskWeightBlend
23/05/2011	7	**100**	12	**100**	APRA	MIX	APRA Releases Enhancements to Basel II Framework	Capital & Alike
01/06/2011	7		12		BIS	MIX	Central Bank Governance and Financial Stability Reform	Capital & Alike
03/11/2011	8	**155**	13	**155**	BIS	EU	Capitalisation of Bank Exposures oo Central Counterparties Reform	Systemic & Capital
05/11/2011	8		13		BIS	EU	Global Systemically Important Banks: Assessment Methodology and the Additional Loss Absorbency Requirement (Paper Released)	Systemic & Capital
26/06/2012	9	**234**	14	**234**	BIS	EU	Composition of Capital Disclosure Requirements (Paper Released)	Capital & Alike
28/09/2012	9		15	**94**	BIS	AU	APRA Releases Final Basel III Capital Reform Package	Capital & Alike

Date	Estimation Period	All Days in Est' Period	Event	Days Since Last Event	Regulating Entity	Geography Category	Event Name	Regulation Category
13/11/2012	10	**46**	16	**46**	APRA	AU	APRA Releases Final Package yo Implement Basel III Capital Reforms	Capital & Alike
21/11/2012	10		16		APRA	AU	Future Forum (Conference for Australian Banking Industry)	Capital & Alike
07/01/2013	11	**47**	17	**47**	RBA	EU	Group of Governors And Heads of Supervision Endorses Revised Liquidity Standard for Banks	Liquidity & Alike
07/01/2013	11		17		BIS	EU	Group of Governors and Heads of Supervision Endorses Revised Liquidity Standard for Banks	Liquidity & Alike
03/03/2013	12	**55**	18	**55**	BIS	AU	APRA Chair, John Laker, Steps Down. Byres to Replace.	Other
06/05/2013	13	**64**	19	**64**	APRA	AU	APRA Releases Second Consultation Package on Basel III Liquidity Reforms	Liquidity & Alike
29/06/2013	14	**54**	20	**54**	APRA	EU	Capital Treatment of Bank Exposures to Central Counterparties Reform	Capital & Alike
11/11/2013	15	**135**	21	**135**	BIS	AU	Prudential Reform in Securitisation	Capital & Alike
13/01/2014	16	**63**	22	**63**	BIS	EU	Basel III Leverage Ratio Framework and Disclosure Requirements	Capital & Alike
15/04/2014	17	**92**	23	**92**	APRA	AU	APRA Improves Capital-Raising Options for Mutual ADI's (Amend APS 111)	Capital & Alike
29/04/2014	17		24	**14**	APRA	AU	APRA Proposes Simplified Prudential Framework for Securitisation	Capital & Alike
05/05/2014	17		24		APRA	AU	Changes to Capital Benefits for NAB, CBA and ANZ	Capital & Alike
26/05/2014	17		25	**21**	APRA	AU	APRA Releases Draft Prudential Practice Guide on Residential Mortgage Lending	Mortgage & Other
16/06/2014	17		26	**21**	APRA	AU	Rules Allowing Big Banks to Hold Less Capital Questioned	Capital & Alike
27/06/2014	17		27	**11**	APRA	MIX	Principles for Effective Supervisory Colleges (Guideline Reform)	RiskWeight & RiskWeightBlend
02/07/2014	17		27		FSI	MIX	Financial System Inquiry Interim Report Released	RiskWeight & RiskWeightBlend
04/11/2014	18	**125**	28	**125**	APRA	AU	APRA Finalises Implementation Of Liquidity Coverage Ratio in Australia	Liquidity & Alike
17/11/2014	18		29	**13**	OECD	EU	Building a Stronger, More Resilient Global Economy – G20 Brisbane Summit	Systemic
07/12/2014	18		30	**20**	FSI	AU	Financial System Inquiry Final Report	Systemic & Capital
09/12/2014	18		30		APRA	AU	APRA Outlines Further Steps to Reinforce Sound Residential Mortgage Lending Practices	Systemic & Capital
23/12/2014	18		31	**14**	BIS	EU	Revisions to the Standardised Approach for Credit Risk	RiskWeight & RiskWeightBlend
03/06/2015	19	**162**	32	**162**	BIS	EU	Developments in Credit Risk Management Across Sectors: Current Practices And Recommendations (Paper Released)	RiskWeight & RiskWeightBlend
13/07/2015	19		33	**40**	APRA	AU	APRA Releases International Capital Comparison Study	RiskWeight & RiskWeightBlend
20/07/2015	19		33		APRA	AU	APRA Increases Capital Adequacy Requirements For Residential Mortgage Exposures Under the Internal Ratings-Based Approach	RiskWeight & RiskWeightBlend
11/12/2015	20	**144**	34	**144**	APRA	EU	Revisions to the Standardised Approach for Credit Risk	RiskWeight & RiskWeightBlend
17/12/2015	20		34		APRA	EU	APRA Announces Countercyclical Capital Buffer Rate For ADI's	RiskWeight & RiskWeightBlend

Date	Estimation Period	All Days in Est' Period	Event	Days Since Last Event	Regulating Entity	Geography Category	Event Name	Regulation Category
15/01/2016	20		35	**27**	BIS	EU	Revised Framework for Market Risk Capital Requirements Issued by the Basel Committee	RiskWeight & RiskWeightBlend
15/01/2016	20		35		BIS	EU	Revised Framework for Market Risk Capital Requirements Issued by the Basel Committee	RiskWeight & RiskWeightBlend
01/04/2016	21	**77**	36	**77**	BIS	AU	Net Stable Funding Ratio Reform	Liquidity & Alike
30/08/2016	22	**151**	37	**151**	APRA	EU	APRA Releases Prudential Practice Guide on Capital Buffers	Capital & Alike
29/09/2016	22		38	**30**	APRA	EU	APRA Releases Consultation Package on the Net Stable Funding Ratio	Liquidity & Alike
11/11/2016	22		39	**43**	FINSIA	AU	FINSIA Conference	Capital & Alike
10/02/2017	23	**91**	40	**91**	APRA	AU	'The Regulators' Panel	Capital & Alike
22/03/2017	23		41	**40**	APRA	AU	Speculation of Interest Loan Regulation	Mortgage & Other
31/03/2017	23		41		APRA	AU	Above Speculation Confirmed	Mortgage & Other
12/04/2017	23		42	**12**	APRA	AU	APRA Releases Consultation Package on Revisions to Large Exposures	Liquidity & Alike
10/05/2017	23		43	**28**	Treasury	AU	Budget 2017 (Contained Significant Banking Regulation)	Other
19/07/2017	24	**70**	44	**70**	APRA	AU	APRA Announces 'Unquestionably Strong' Capital Benchmarks	Capital & Alike
08/12/2017	25	**142**	45	**142**	BIS	MIX	APRA Welcomes Finalisation of Basel III Bank Capital Framework	RiskWeight & RiskWeightBlend
08/12/2017	25		45		APRA	MIX	APRA to Implement Finalisation of Basel III Bank Capital Framework	Risk Weight & Risk Weight Blend
23/03/2018	26	**105**	46	**105**	BIS	EU	Basel Committee Proposes Revisions to Minimum Capital Requirements for Market Risk	Capital & Alike
01/05/2018	26		47	**39**	APRA	AU	APRA Releases CBA Prudential Inquiry Final Report and Accepts Enforceable Undertaking From CBA	Capital & Alike
14/08/2018	27	**105**	48	**105**	APRA	AU	Improving the Transparency, Comparability and Flexibility of the ADI Capital Framework	RiskWeight & RiskWeightBlend
08/11/2018	28	**86**	49	**86**	APRA	AU	APRA Seeks to Increase the Loss-Absorbing Capacity of ADI's to Support Orderly Resolution	Capital & Alike
14/12/2018	28		50	**36**	NZ	NZ	RBNZ to Implement Stricter Capital Reforms	Capital & Alike
29/01/2019	28		51	**46**	APRA	AU	APRA Keeps Countercyclical Capital Buffer on Hold, Releases Assessment of Measures to Lift Home Lending Standards	Systemic & Capital
04/02/2019	28		51		Hayne	AU	Hayne Royal Commission Released	Systemic & Capital
20/05/2019	29	**105**	52	**105**	APRA	AU	APRA Proposes Amending Guidance on Mortgage Lending	Mortgage & Other
09/07/2019	29		53	**50**	APRA	AU	APRA Responds to Submissions On Plans to Boost the Loss-Absorbing Capacity of ADI's To Support Orderly Resolution (Update)	Capital & Alike
11/07/2019	29		53		APRA	AU	APRA Applies Additional Capital Requirements to Three Major Banks in Response to Self-Assessments	Capital & Alike
15/10/2019	30	**96**	54	**96**	NZ	NZ	APRA Urges More Capital be Held Against NZ Banks	Capital & Alike
11/12/2019	31	**57**	55	**57**	APRA	AU	APRA Flags Setting Countercyclical Capital Buffer at Non-Zero Default Level	Capital & Alike

Date	Estimation Period	All Days in Est' Period	Event	Days Since Last Event	Regulating Entity	Geography Category	Event Name	Regulation Category
21/02/2020	32	**72**	56	**72**	APRA	AU	APRA Releases Findings From Stress Testing Assessment Of Authorised Deposit-Taking Institutions	Other
19/03/2020	32		57	**27**	APRA	AU	APRA Adjusts Bank Capital Expectations	Capital & Alike
23/03/2020	32		58	**4**	APRA	AU	APRA Advises Regulatory Approach to COVID-19 Support, APRA Adapts 2020 Agenda to Prioritise COVID-19 Response	Systemic & Capital
30/03/2020	32		58		APRA	AU	APRA Announces Deferral of Capital Reform, APRA Advises Regulatory Approach to RBA Term Funding Facility Implementation	Systemic & Capital
29/07/2020	33	**121**	59	**121**	APRA	AU	APRA Updates Guidance on Capital Management for Banks and Insurers	Capital & Alike
18/11/2020	34	**112**	60	**112**	APRA	AU	APRA Chair Wayne Byres, Speech to the Australian Financial Review Banking and Wealth Summit	Mortgage & Other
08/12/2020	34		61	**20**	APRA	AU	APRA Seeks to Enhance Flexibility and Resilience of ADI Capital Framework	Capital & Alike
15/12/2020	34		61		APRA	AU	APRA Updates Capital Management Guidance and Releases ADI Stress Test Results	Capital & Alike
21/03/2021	35	**96**	62	**96**	APRA	AU	APRA Takes Action Against MQG Over Multiple Breaches of Prudential and Reporting Standards	Capital & Alike
19/07/2021	36	**120**	63	**120**	APRA	AU	APRA Announces Further Regulatory Support for Loans Impacted be COVID-19	Systemic & Capital
21/07/2021	36		63		APRA	AU	Bank Capital Reforms (Update)	Systemic & Capital
29/11/2021	37	**131**	64	**131**	APRA	AU	APRA Finalises New Bank Capital Framework Designed to Strengthen Financial System Resilience	Mortgage & Other
02/12/2021	37		64		APRA	AU	APRA Moves to Strengthen Crisis Preparedness in Banking, Insurance And Superannuation	Mortgage & Other
14/06/2022	38	**194**	65	**194**	APRA	AU	APRA Finalises its Macroprudential Policy Framework	Mortgage & Other
19/07/2022	38		66	**35**	APRA	AU	Wayne Byres to Step Down as APRA Chairman	Other
30/09/2022	39	**73**	67	**73**	APRA	AU	APRA Removes CBA's Operational Risk Capital Add-On	Capital & Alike

9.2 Appendix B.1: Estimation Output, Equity

		INDEX			ANZ			NAB			MQG			NAB			WBC		
Window	**Df**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**
1	89	0.097	0.032	0.005	0.166	0.052	0.002	0.076	0.052	0.003	0.051	0.039	0.007	0.166	0.054	0.002	0.154	0.051	0.002
2	61	0.468	0.375	-0.008	-0.076	0.270	-0.013	0.286	0.284	-0.010	0.575	0.259	-0.005	-0.287	0.258	-0.015	0.223	0.287	-0.011
3	28	1.073	1.094	0.004	0.394	0.997	-0.003	0.495	0.673	0.001	0.457	0.481	0.001	0.382	0.908	-0.002	0.301	0.705	-0.002
4	49	0.184	0.150	0.005	-0.063	0.097	0.006	0.229	0.077	0.005	0.146	0.172	0.006	0.000	0.093	0.006	0.120	0.075	0.005
5	124	0.769	0.075	0.000	0.606	0.056	0.001	-0.027	0.076	0.003	0.689	0.076	0.000	0.337	0.091	0.002	0.575	0.058	0.001
6	66	0.255	0.377	-0.002	0.032	0.255	-0.002	0.202	0.255	-0.002	0.323	0.426	-0.002	0.032	0.255	-0.002	0.033	0.258	-0.002
7	59	0.369	0.095	0.000	0.324	0.081	-0.001	0.324	0.081	-0.001	0.219	0.099	0.000	0.324	0.081	-0.001	0.322	0.082	-0.001
8	100	1.144	0.091	-0.001	1.068	0.084	-0.001	1.104	0.083	-0.001	0.759	0.116	-0.001	1.101	0.083	-0.001	1.099	0.082	-0.001
9	155	0.872	0.062	0.000	0.775	0.057	0.001	0.755	0.058	0.001	0.639	0.070	0.000	0.760	0.058	0.001	0.755	0.058	0.001
10	21	1.171	0.098	0.000	1.017	0.081	-0.001	0.981	0.087	-0.001	1.217	0.149	0.000	1.037	0.089	-0.001	1.035	0.089	-0.001
11	22	0.578	0.217	0.009	0.563	0.158	0.009	0.434	0.172	0.008	0.111	0.274	0.007	0.465	0.155	0.008	0.465	0.155	0.008
12	29	0.854	0.197	-0.001	0.754	0.167	-0.001	0.814	0.151	-0.002	0.761	0.260	0.000	0.749	0.166	-0.001	0.714	0.153	-0.001
13	34	0.616	0.132	0.002	0.548	0.119	0.002	0.619	0.115	0.002	0.299	0.144	0.002	0.632	0.124	0.002	0.632	0.124	0.002
14	29	1.038	0.124	0.001	1.037	0.123	0.000	1.014	0.130	0.000	0.734	0.148	0.007	1.090	0.134	-0.001	1.063	0.123	0.000
15	84	0.598	0.079	-0.002	0.552	0.075	-0.002	0.481	0.064	-0.002	0.584	0.096	-0.002	0.467	0.065	-0.002	0.547	0.074	-0.002
16	34	0.669	0.248	0.000	0.573	0.256	0.000	0.617	0.217	0.000	0.542	0.236	0.000	0.624	0.219	0.000	0.573	0.256	0.000
17	55	0.831	0.192	0.003	0.844	0.189	0.003	0.798	0.180	0.003	1.734	0.378	0.002	0.785	0.184	0.003	0.591	0.150	0.003
18	78	0.353	0.086	0.002	0.225	0.109	0.002	0.153	0.092	0.002	0.080	0.134	0.002	0.261	0.100	0.002	0.209	0.110	0.002
19	105	0.432	0.139	-0.001	0.334	0.119	-0.001	0.213	0.116	-0.001	0.219	0.140	-0.001	0.269	0.121	-0.001	0.345	0.118	-0.001
20	93	0.995	0.094	0.000	0.843	0.080	0.000	0.813	0.080	0.000	0.802	0.175	0.001	0.832	0.087	0.000	0.786	0.086	0.000
21	44	0.727	0.086	-0.007	0.670	0.079	-0.007	0.625	0.084	-0.006	0.791	0.118	-0.008	0.653	0.080	-0.006	0.655	0.076	-0.006
22	96	0.449	0.114	-0.002	0.460	0.103	-0.001	0.430	0.102	-0.001	0.373	0.124	-0.002	0.433	0.101	-0.001	0.423	0.108	-0.002
23	54	0.255	0.222	0.000	0.229	0.194	0.000	0.212	0.200	0.000	0.310	0.163	0.000	0.212	0.200	0.000	0.212	0.200	0.000
24	39	0.230	0.083	-0.003	0.233	0.081	-0.003	0.232	0.080	-0.003	0.070	0.092	-0.002	0.233	0.081	-0.003	0.224	0.080	-0.003
25	91	0.954	0.124	-0.001	0.880	0.093	-0.001	0.971	0.109	-0.002	0.715	0.130	-0.001	0.822	0.090	-0.001	0.816	0.092	-0.001
26	64	-0.107	0.096	-0.001	-0.154	0.082	-0.001	-0.157	0.084	-0.001	0.035	0.228	0.000	-0.135	0.096	-0.001	-0.135	0.096	-0.001
27	64	0.539	0.088	0.001	0.373	0.091	0.001	0.537	0.076	0.001	0.385	0.092	0.001	0.410	0.081	0.001	0.414	0.079	0.001
28	51	0.796	0.082	0.000	0.723	0.078	0.000	0.847	0.099	0.000	0.598	0.060	0.001	0.752	0.093	0.000	0.686	0.078	0.000
29	64	0.788	0.203	-0.001	0.601	0.176	-0.001	0.561	0.159	-0.001	0.729	0.196	-0.001	0.602	0.190	-0.001	0.694	0.193	-0.001
30	57	0.503	0.088	0.001	0.517	0.074	0.000	0.482	0.071	0.000	0.516	0.083	0.001	0.488	0.072	0.001	0.464	0.077	0.001
31	30	0.429	0.152	-0.003	0.453	0.119	-0.002	0.411	0.094	-0.002	0.186	0.163	-0.002	0.355	0.130	-0.002	0.261	0.077	-0.003
32	41	0.367	0.143	-0.001	0.277	0.130	-0.002	0.207	0.119	-0.002	-0.020	0.125	-0.003	0.102	0.126	-0.002	0.073	0.119	-0.002
33	76	0.641	0.152	-0.003	0.932	0.109	0.000	0.761	0.136	-0.002	-0.023	0.112	-0.011	0.418	0.114	-0.006	0.486	0.129	-0.005
34	69	0.222	0.418	0.000	-0.124	0.304	-0.002	0.154	0.316	-0.001	0.334	0.287	0.000	0.110	0.315	-0.001	0.224	0.374	0.000
35	58	0.424	0.124	0.002	0.219	0.049	0.002	0.219	0.049	0.002	0.131	0.054	0.002	0.264	0.062	0.001	0.267	0.045	0.001
36	74	0.000	0.000	0.000	0.115	0.148	0.000	0.115	0.148	0.000	-0.025	0.152	0.000	0.110	0.142	0.000	0.657	0.113	0.001
37	82	0.256	0.082	-0.002	0.261	0.080	-0.002	0.261	0.080	-0.002	0.311	0.095	-0.002	0.219	0.076	-0.002	0.200	0.075	-0.002
38	127	-0.045	0.033	0.005	-0.018	0.034	0.005	-0.049	0.033	0.005	-0.109	0.033	0.005	-0.019	0.036	0.006	-0.022	0.037	0.006
39	42	-0.372	0.181	-0.002	-0.444	0.195	-0.001	-0.430	0.219	-0.001	-0.237	0.108	-0.002	-0.506	0.186	-0.001	-0.518	0.202	-0.003

Window indicates estimation window, Df, Degrees of Freedom, Beta and Alpha are standard regression outputs and SE is the standard error.

9.3 Appendix B.2: Estimation Output, CDS Spread

		INDEX			ANZ			NAB			MQG			NAB			WBC		
Window	**Df**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**	**Beta**	**SE**	**Alpha**
1	89	0.097	0.032	0.005	0.166	0.052	0.002	0.076	0.052	0.003	0.051	0.039	0.007	0.166	0.054	0.002	0.154	0.051	0.002
2	61	0.468	0.375	-0.008	-0.076	0.270	-0.013	0.286	0.284	-0.010	0.575	0.259	-0.005	-0.287	0.258	-0.015	0.223	0.287	-0.011
3	28	1.073	1.094	0.004	0.394	0.997	-0.003	0.495	0.673	0.001	0.457	0.481	0.001	0.382	0.908	-0.002	0.301	0.705	-0.002
4	49	0.184	0.150	0.005	-0.063	0.097	0.006	0.229	0.077	0.005	0.146	0.172	0.006	0.000	0.093	0.006	0.120	0.075	0.005
5	124	0.769	0.075	0.000	0.606	0.056	0.001	-0.027	0.076	0.003	0.689	0.076	0.000	0.337	0.091	0.002	0.575	0.058	0.001
6	66	0.255	0.377	-0.002	0.032	0.255	-0.002	0.202	0.255	-0.002	0.323	0.426	-0.002	0.032	0.255	-0.002	0.033	0.258	-0.002
7	59	0.369	0.095	0.000	0.324	0.081	-0.001	0.324	0.081	-0.001	0.219	0.099	0.000	0.324	0.081	-0.001	0.322	0.082	-0.001
8	100	1.144	0.091	-0.001	1.068	0.084	-0.001	1.104	0.083	-0.001	0.759	0.116	-0.001	1.101	0.083	-0.001	1.099	0.082	-0.001
9	155	0.872	0.062	0.000	0.775	0.057	0.001	0.755	0.058	0.001	0.639	0.070	0.000	0.760	0.058	0.001	0.755	0.058	0.001
10	21	1.171	0.098	0.000	1.017	0.081	-0.001	0.981	0.087	-0.001	1.217	0.149	0.000	1.037	0.089	-0.001	1.035	0.089	-0.001
11	22	0.578	0.217	0.009	0.563	0.158	0.009	0.434	0.172	0.008	0.111	0.274	0.007	0.465	0.155	0.008	0.465	0.155	0.008
12	29	0.854	0.197	-0.001	0.754	0.167	-0.001	0.814	0.151	-0.002	0.761	0.260	0.000	0.749	0.166	-0.001	0.714	0.153	-0.001
13	34	0.616	0.132	0.002	0.548	0.119	0.002	0.619	0.115	0.002	0.299	0.144	0.002	0.632	0.124	0.002	0.632	0.124	0.002
14	29	1.038	0.124	0.001	1.037	0.123	0.000	1.014	0.130	0.000	0.734	0.148	0.007	1.090	0.134	-0.001	1.063	0.123	0.000
15	84	0.598	0.079	-0.002	0.552	0.075	-0.002	0.481	0.064	-0.002	0.584	0.096	-0.002	0.467	0.065	-0.002	0.547	0.074	-0.002
16	34	0.669	0.248	0.000	0.573	0.256	0.000	0.617	0.217	0.000	0.542	0.236	0.000	0.624	0.219	0.000	0.573	0.256	0.000
17	55	0.831	0.192	0.003	0.844	0.189	0.003	0.798	0.180	0.003	1.734	0.378	0.002	0.785	0.184	0.003	0.591	0.150	0.003
18	78	0.353	0.086	0.002	0.225	0.109	0.002	0.153	0.092	0.002	0.080	0.134	0.002	0.261	0.100	0.002	0.209	0.110	0.002
19	105	0.432	0.139	-0.001	0.334	0.119	-0.001	0.213	0.116	-0.001	0.219	0.140	-0.001	0.269	0.121	-0.001	0.345	0.118	-0.001
20	93	0.995	0.094	0.000	0.843	0.080	0.000	0.813	0.080	0.000	0.802	0.175	0.001	0.832	0.087	0.000	0.786	0.086	0.000
21	44	0.727	0.086	-0.007	0.670	0.079	-0.007	0.625	0.084	-0.006	0.791	0.118	-0.008	0.653	0.080	-0.006	0.655	0.076	-0.006
22	96	0.449	0.114	-0.002	0.460	0.103	-0.001	0.430	0.102	-0.001	0.373	0.124	-0.002	0.433	0.101	-0.001	0.423	0.108	-0.002
23	54	0.255	0.222	0.000	0.229	0.194	0.000	0.212	0.200	0.000	0.310	0.163	0.000	0.212	0.200	0.000	0.212	0.200	0.000
24	39	0.230	0.083	-0.003	0.233	0.081	-0.003	0.232	0.080	-0.003	0.070	0.092	-0.002	0.233	0.081	-0.003	0.224	0.080	-0.003
25	91	0.954	0.124	-0.001	0.880	0.093	-0.001	0.971	0.109	-0.002	0.715	0.130	-0.001	0.822	0.090	-0.001	0.816	0.092	-0.001
26	64	-0.107	0.096	-0.001	-0.154	0.082	-0.001	-0.157	0.084	-0.001	0.035	0.228	0.000	-0.135	0.096	-0.001	-0.135	0.096	-0.001
27	64	0.539	0.088	0.001	0.373	0.091	0.001	0.537	0.076	0.001	0.385	0.092	0.001	0.410	0.081	0.001	0.414	0.079	0.001
28	51	0.796	0.082	0.000	0.723	0.078	0.000	0.847	0.099	0.000	0.598	0.060	0.001	0.752	0.093	0.000	0.686	0.078	0.000
29	64	0.788	0.203	-0.001	0.601	0.176	-0.001	0.561	0.159	-0.001	0.729	0.196	-0.001	0.602	0.190	-0.001	0.694	0.193	-0.001
30	57	0.503	0.088	0.001	0.517	0.074	0.000	0.482	0.071	0.000	0.516	0.083	0.001	0.488	0.072	0.001	0.464	0.077	0.001
31	30	0.429	0.152	-0.003	0.453	0.119	-0.002	0.411	0.094	-0.002	0.186	0.163	-0.002	0.355	0.130	-0.002	0.261	0.077	-0.003
32	41	0.367	0.143	-0.001	0.277	0.130	-0.002	0.207	0.119	-0.002	-0.020	0.125	-0.003	0.102	0.126	-0.002	0.073	0.119	-0.002
33	76	0.641	0.152	-0.003	0.932	0.109	0.000	0.761	0.136	-0.002	-0.023	0.112	-0.011	0.418	0.114	-0.006	0.486	0.129	-0.005
34	69	0.222	0.418	0.000	-0.124	0.304	-0.002	0.154	0.316	-0.001	0.334	0.287	0.000	0.110	0.315	-0.001	0.224	0.374	0.000
35	58	0.424	0.124	0.002	0.219	0.049	0.002	0.219	0.049	0.002	0.131	0.054	0.002	0.264	0.062	0.001	0.267	0.045	0.001
36	74	0.000	0.000	0.000	0.115	0.148	0.000	0.115	0.148	0.000	-0.025	0.152	0.000	0.110	0.142	0.000	0.657	0.113	0.001
37	82	0.256	0.082	-0.002	0.261	0.080	-0.002	0.261	0.080	-0.002	0.311	0.095	-0.002	0.219	0.076	-0.002	0.200	0.075	-0.002
38	127	-0.045	0.033	0.005	-0.018	0.034	0.005	-0.049	0.033	0.005	-0.109	0.033	0.005	-0.019	0.036	0.006	-0.022	0.037	0.006
39	42	-0.372	0.181	-0.002	-0.444	0.195	-0.001	-0.430	0.219	-0.001	-0.237	0.108	-0.002	-0.506	0.186	-0.001	-0.518	0.202	-0.003

Window indicates estimation window, Df, Degrees of Freedom, Beta and Alpha are standard regression outputs and SE is the standard error.

9.4 Appendix C.1: Individual Bank Output, Equity

EVENT	REGULATION	GEOGRAPHY	EST	EVENT	ANZ			CBA			MQG			NAB			WBC		
					CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value
1	Systemic	AU	91	5	-0.027	-0.507	0.6134	-0.064	-1.187	0.2383	-0.031	-0.400	0.6900	0.053	1.184	0.2394	-0.041	-0.877	0.3830
2	Systemic	MIX	63	6	-0.139	-3.187	0.0023***	-0.126	-3.766	0.0004***	-0.336	-5.078	0.0000***	-0.146	-3.762	0.0004***	-0.141	-3.760	0.0004***
3	Systemic&Liquidity	MIX	30	18	-0.268	-4.329	0.0002***	-0.282	-4.191	0.0003***	-0.192	-2.216	0.0350**	-0.360	-4.564	0.0001***	-0.328	-5.522	0.0000***
4	Systemic&Liquidity	MIX	51	6	0.034	1.372	0.1764	0.029	1.159	0.2521	0.028	0.790	0.4333	-0.034	-1.144	0.2581	0.057	1.992	0.0520*
5	Systemic	EU	126	5	-0.020	-0.907	0.3663	-0.018	-1.070	0.2868	-0.103	-3.463	0.0007***	-0.025	-1.123	0.2637	-0.021	-0.957	0.3405
6	Capital&Alike	AU	126	5	0.072	3.115	0.0023***	0.071	4.006	0.0001***	0.061	1.953	0.0530*	0.053	2.342	0.0208**	0.071	3.052	0.0028***
7	Systemic&Liquidity	MIX	126	7	0.031	1.264	0.2088	0.047	2.310	0.0226**	-0.044	-1.210	0.2285	0.043	1.616	0.1086	0.065	2.420	0.0170**
8	Systemic	EU	68	5	-0.036	-1.772	0.0810*	0.039	2.351	0.0217**	0.011	0.353	0.7254	-0.040	-1.972	0.0529*	-0.001	-0.029	0.9773
9	Systemic&Liquidity	MIX	68	8	-0.047	-1.863	0.0669*	-0.033	-1.547	0.1267	-0.024	-0.763	0.4483	-0.053	-2.101	0.0395**	-0.048	-1.921	0.0591*
10	Capital&Alike	EU	68	5	-0.002	-0.116	0.9081	0.012	0.722	0.4730	0.070	2.696	0.0089***	0.004	0.249	0.8038	0.002	0.115	0.9087
11	RW&RWBlend	EU	68	5	-0.034	-1.693	0.0952*	-0.095	-4.826	0.0000***	-0.082	-3.931	0.0002***	-0.068	-3.797	0.0003***	-0.082	-3.802	0.0003***
12	Capital&Alike	MIX	61	12	0.172	5.325	0.0000***	0.138	5.534	0.0000***	0.161	3.814	0.0003***	0.076	1.952	0.0557*	0.184	5.072	0.0000***
13	Systemic&Capital	EU	102	7	0.029	1.510	0.1341	0.033	1.446	0.1513	-0.015	-0.352	0.7253	0.031	1.456	0.1486	-0.008	-0.314	0.7540
14	Capital&Alike	EU	157	5	0.013	0.831	0.4075	0.030	2.606	0.0101**	0.025	0.926	0.3559	0.028	1.534	0.1271	0.010	0.666	0.5061
15	Capital&Alike	AU	157	5	0.016	1.094	0.2757	0.012	0.922	0.3578	-0.012	-0.479	0.6326	0.008	0.475	0.6355	0.024	1.519	0.1307
16	Capital&Alike	AU	23	11	0.042	2.054	0.0526*	0.098	4.199	0.0004***	0.196	3.621	0.0016***	0.115	2.983	0.0071***	0.111	3.548	0.0019***
17	Liquidity&Alike	EU	24	5	0.001	0.082	0.9355	-0.017	-1.252	0.2238	0.003	0.158	0.8761	0.013	1.409	0.1728	0.020	2.155	0.0423**
18	Other	AU	31	5	0.118	4.843	0.0000***	0.113	4.469	0.0001***	0.124	4.215	0.0002***	0.129	4.988	0.0000***	0.145	4.682	0.0001***
19	Liquidity&Alike	AU	36	5	-0.037	-2.166	0.0374**	-0.047	-2.611	0.0133**	0.117	2.929	0.0060***	-0.045	-2.733	0.0099***	-0.064	-3.129	0.0036***
20	Capital&Alike	EU	31	5	0.119	3.550	0.0013***	0.119	3.832	0.0006***	0.120	2.919	0.0067***	0.116	3.729	0.0008***	0.093	2.607	0.0143**
21	Capital&Alike	AU	86	5	-0.059	-3.598	0.0005***	-0.010	-0.632	0.5294	0.021	0.715	0.4767	-0.052	-3.120	0.0025***	-0.047	-3.391	0.0011***
22	Capital&Alike	EU	36	5	-0.006	-0.574	0.5698	-0.002	-0.239	0.8124	0.004	0.179	0.8590	0.002	0.195	0.8462	0.013	1.126	0.2679

EST indicates days in estimation window, EVENT the days in Event window and CAR the cumulative abnormal return

EVENT	REGULATION	GEOGRAPHY	EST	EVENT	ANZ			CBA			MQG			NAB			WBC		
					CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value
23	Capital&Alike	AU	57	5	-0.037	-3.288	0.0018***	-0.025	-2.081	0.0421**	-0.052	-2.072	0.0429**	-0.031	-2.369	0.0214**	-0.029	-2.440	0.0179**
24	Capital&Alike	AU	57	9	0.058	3.663	0.0006***	0.059	3.524	0.0009***	0.134	4.138	0.0001***	0.020	1.208	0.2321	0.057	3.368	0.0014***
25	Mortgage&Other	AU	57	5	0.000	-0.031	0.9757	0.006	0.917	0.3633	0.016	0.781	0.4381	-0.005	-0.352	0.7260	0.002	0.144	0.8857
26	Capital&Alike	AU	57	5	-0.012	-0.942	0.3501	-0.020	-2.930	0.0049***	-0.017	-0.886	0.3793	-0.025	-1.987	0.0519*	-0.034	-2.633	0.0110**
27	RW&RWBlend	MIX	57	8	0.036	1.883	0.0651*	0.028	2.184	0.0332**	0.032	1.375	0.1748	0.048	2.375	0.0211**	0.042	2.166	0.0347**
28	Liquidity&Alike	AU	80	5	-0.004	-0.398	0.6920	0.000	0.034	0.9726	0.024	1.474	0.1444	-0.026	-2.088	0.0400**	-0.015	-1.507	0.1357
29	Systemic	EU	80	5	0.034	2.382	0.0197**	0.025	2.155	0.0342**	0.023	1.432	0.1561	0.027	1.663	0.1004	0.030	2.134	0.0360**
30	Systemic&Capital	AU	80	6	-0.070	-3.615	0.0005***	-0.036	-2.591	0.0114**	-0.059	-3.351	0.0012***	-0.057	-2.833	0.0059***	-0.069	-3.663	0.0005***
31	RW&RWBlend	EU	80	5	0.100	5.180	0.0000***	0.096	6.051	0.0000***	0.094	4.703	0.0000***	0.111	5.415	0.0000***	0.107	5.386	0.0000***
32	RW&RWBlend	EU	107	5	-0.016	-1.109	0.2700	-0.006	-0.394	0.6941	0.023	0.955	0.3418	-0.032	-2.232	0.0277**	-0.024	-1.489	0.1394
33	RW&RWBlend	AU	107	10	0.047	2.107	0.0375**	0.053	2.406	0.0179**	0.105	3.285	0.0014***	0.064	2.808	0.0059***	0.076	3.091	0.0026***
34	RW&RWBlend	EU	95	11	0.020	0.620	0.5365	0.039	1.327	0.1878	-0.014	-0.419	0.6759	0.006	0.207	0.8367	0.011	0.344	0.7315
35	RW&RWBlend	EU	95	5	0.003	0.183	0.8553	0.016	1.141	0.2566	0.011	0.559	0.5774	0.008	0.538	0.5920	0.032	1.679	0.0965*
36	Liquidity&Alike	AU	46	5	0.099	4.059	0.0002***	0.069	2.706	0.0097***	0.092	2.343	0.0237**	0.118	4.251	0.0001***	0.098	4.262	0.0001***
37	Capital&Alike	EU	98	5	-0.008	-0.432	0.6665	-0.049	-2.932	0.0042***	-0.010	-0.346	0.7301	-0.025	-1.390	0.1677	-0.046	-2.504	0.0140**
38	Liquidity&Alike	EU	98	5	-0.057	-3.428	0.0009***	-0.061	-3.617	0.0005***	-0.060	-2.114	0.0371**	-0.067	-3.786	0.0003***	-0.083	-4.519	0.0000***
39	Capital&Alike	AU	98	5	-0.040	-2.107	0.0377**	-0.001	-0.064	0.9491	-0.004	-0.113	0.9100	0.003	0.138	0.8903	-0.046	-2.228	0.0282**
40	Capital&Alike	AU	56	5	-0.027	-1.928	0.0591*	-0.036	-3.195	0.0023***	-0.008	-0.576	0.5673	-0.034	-3.077	0.0033***	-0.032	-2.751	0.0081***
41	Mortgage&Other	AU	56	12	0.221	6.233	0.0000***	0.206	6.327	0.0000***	0.173	5.616	0.0000***	0.220	6.736	0.0000***	0.218	6.402	0.0000***
42	Liquidity&Alike	AU	56	5	0.003	0.183	0.8558	0.006	0.437	0.6635	-0.011	-0.752	0.4553	0.007	0.537	0.5934	0.002	0.147	0.8833
43	Other	AU	56	5	-0.079	-4.035	0.0002***	-0.061	-3.306	0.0017***	-0.050	-2.864	0.0059***	-0.034	-2.069	0.0434**	-0.070	-3.913	0.0003***
44	Capital&Alike	AU	41	5	-0.019	-0.954	0.3458	-0.046	-2.895	0.0062***	-0.083	-4.506	0.0001***	-0.054	-2.653	0.0115**	-0.039	-1.832	0.0746*
45	RW&RWBlend	MIX	93	5	0.008	0.687	0.4937	0.003	0.211	0.8333	0.008	0.437	0.6631	0.006	0.441	0.6601	0.002	0.146	0.8840
46	Capital&Alike	EU	66	5	0.077	5.626	0.0000***	0.051	3.203	0.0021***	0.130	5.427	0.0000***	0.070	5.070	0.0000***	0.063	4.714	0.0000***

EVENT	REGULATION	GEOGRAPHY	EST	EVENT	ANZ			CBA			MQG			NAB			WBC		
					CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value
47	Capital&Alike	AU	66	5	0.013	1.214	0.2293	-0.003	-0.213	0.8316	-0.019	-1.072	0.2876	0.005	0.379	0.7056	0.015	1.442	0.1543
48	RW&RWBlend	AU	66	5	-0.019	-1.077	0.2856	-0.065	-3.007	0.0038***	-0.043	-1.979	0.0521*	-0.013	-0.897	0.3731	-0.024	-1.460	0.1492
49	Capital&Alike	AU	53	5	-0.022	-1.205	0.2339	0.015	1.094	0.2792	-0.047	-2.204	0.0320**	-0.051	-2.992	0.0043***	0.001	0.081	0.9357
50	Capital&Alike	NZ	53	5	0.018	0.752	0.4556	0.061	3.236	0.0021***	0.082	3.008	0.0041***	0.031	1.542	0.1292	0.029	1.492	0.1418
51	Systemic&Capital	AU	53	9	0.087	2.163	0.0352**	0.066	2.333	0.0236**	0.104	3.857	0.0003***	0.053	2.009	0.0499**	0.089	2.268	0.0276**
52	Mortgage&Other	AU	66	5	-0.050	-1.741	0.0865*	-0.023	-1.070	0.2886	-0.102	-3.869	0.0003***	-0.006	-0.262	0.7940	-0.053	-1.766	0.0822*
53	Capital&Alike	AU	66	7	-0.035	-1.201	0.2341	-0.001	-0.025	0.9799	-0.009	-0.323	0.7475	0.009	0.332	0.7411	-0.009	-0.281	0.7798
54	Capital&Alike	NZ	59	5	0.020	1.699	0.0948*	0.018	1.051	0.2975	0.043	2.738	0.0082***	0.021	1.434	0.1571	0.010	0.850	0.3986
55	Capital&Alike	AU	32	5	-0.018	-0.828	0.4144	-0.026	-1.909	0.0658*	-0.024	-1.655	0.1084	-0.039	-1.567	0.1276	-0.021	-0.900	0.3750
56	Other	AU	43	5	0.018	0.160	0.8740	-0.031	-0.984	0.3307	-0.014	-0.789	0.4349	0.004	0.031	0.9757	0.000	0.000	1.0000
57	Capital&Alike	AU	43	5	0.092	1.009	0.3189	-0.002	-0.034	0.9728	-0.167	-2.233	0.0311**	0.110	1.222	0.2285	0.187	1.525	0.1350
58	Systemic&Capital	AU	43	10	0.821	4.950	0.0000***	0.301	2.654	0.0113**	0.583	4.079	0.0002***	0.895	5.113	0.0000***	1.053	4.803	0.0000***
59	Capital&Alike	AU	78	5	-0.015	-0.064	0.9489	-0.018	-0.170	0.8655	-0.007	-0.108	0.9139	-0.016	-0.061	0.9514	-0.037	-0.127	0.8990
60	Mortgage&Other	AU	71	5	0.044	1.497	0.1390	0.058	2.986	0.0039***	-0.058	-2.399	0.0192**	0.030	1.008	0.3168	0.045	1.456	0.1500
61	Capital&Alike	AU	71	10	0.004	0.093	0.9265	0.046	1.639	0.1059	0.007	0.196	0.8453	0.016	0.393	0.6958	-0.020	-0.493	0.6234
62	Capital&Alike	AU	60	5	-0.022	-0.153	0.8789	-0.045	-1.208	0.2318	-0.031	-1.034	0.3056	-0.026	-0.154	0.8778	-0.001	-0.004	0.9967
63	Systemic&Capital	AU	76	7	0.047	2.078	0.0412**	0.079	3.565	0.0006***	0.080	3.107	0.0027***	0.049	2.573	0.0121**	0.033	1.526	0.1313
64	Mortgage&Other	AU	84	8	0.036	1.860	0.0664*	0.072	2.043	0.0443**	0.034	1.180	0.2414	0.031	1.270	0.2078	-0.006	-0.180	0.8575
65	Mortgage&Other	AU	129	5	0.069	3.147	0.0021***	0.107	4.722	0.0000***	0.195	6.101	0.0000***	0.076	3.266	0.0014***	0.056	2.452	0.0156**
66	Other	AU	129	5	0.031	1.406	0.1622	0.070	2.945	0.0038***	0.066	2.262	0.0254**	0.070	2.756	0.0067***	0.067	2.448	0.0157**
67	Capital&Alike	AU	44	5	0.085	2.809	0.0075***	0.077	2.846	0.0068***	0.068	2.305	0.0262**	0.081	3.002	0.0045***	0.070	2.865	0.0065***

9.5 Appendix C.2: Individual Bank Output, CDS Spread

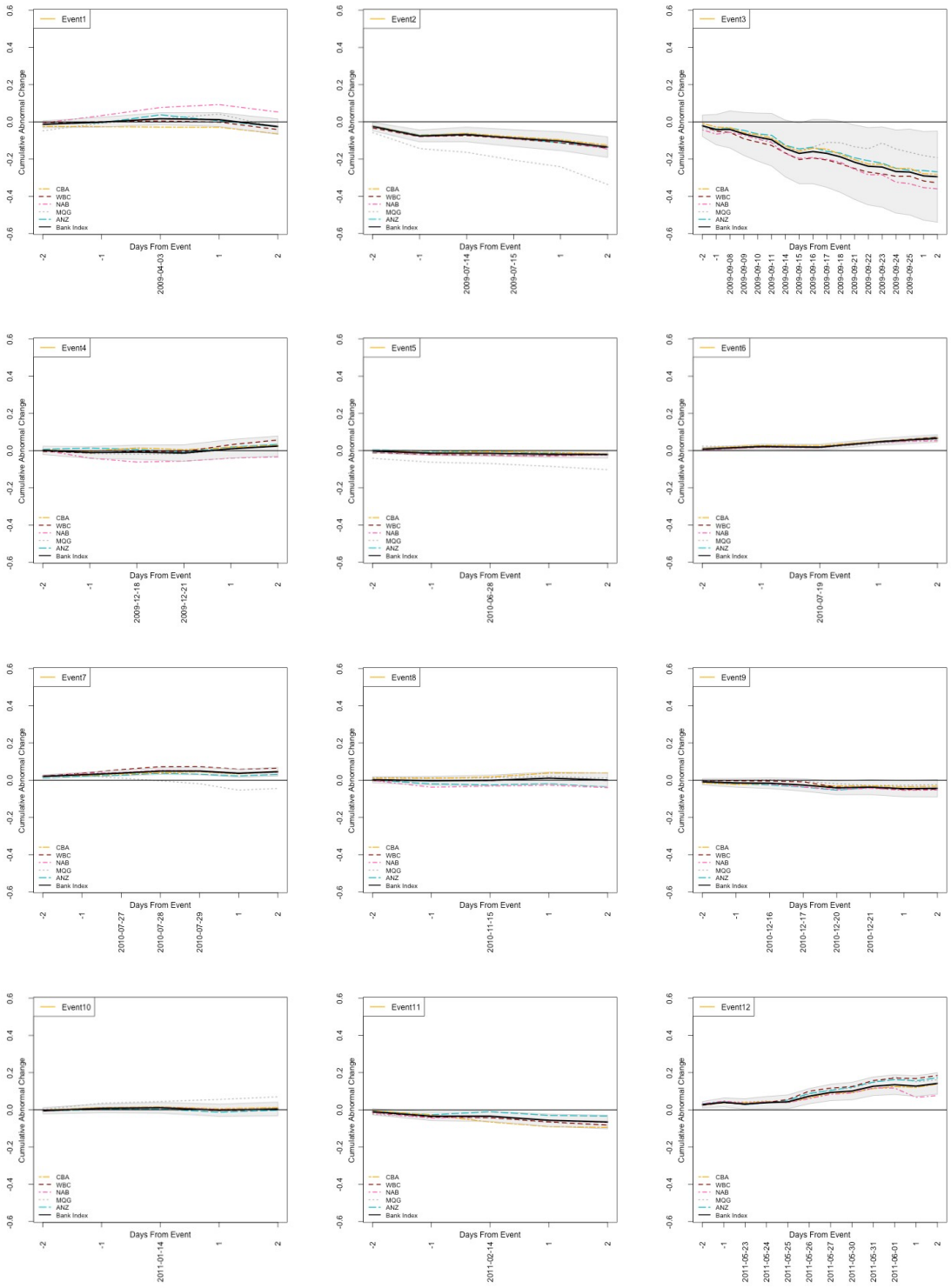
EVENT	REGULATION	GEOGRAPHY	EST	EVENT	ANZ			CBA			MQG			NAB			WBC		
					CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value
1	Systemic	AU	91	5	0.045	0.636	0.5264	0.033	0.469	0.6406	-0.324	-4.470	0.0000***	0.044	0.604	0.5476	0.040	0.558	0.5782
2	Systemic	MIX	63	6	0.009	0.066	0.9472	-0.027	-0.201	0.8415	-0.008	-0.050	0.9607	-0.009	-0.060	0.9520	0.028	0.213	0.8322
3	Systemic&Liquidity	MIX	30	18	-0.229	-0.909	0.3710	-0.246	-0.789	0.4367	-0.209	-0.668	0.5098	-0.244	-0.978	0.3367	-0.259	-1.137	0.2652
4	Systemic&Liquidity	MIX	51	6	0.000	0.000	1.0000	0.028	0.374	0.7103	-0.083	-1.792	0.0793*	0.028	0.392	0.6964	0.000	0.000	1.0000
5	Systemic	EU	126	5	0.160	1.604	0.1112	0.083	0.609	0.5438	0.182	2.104	0.0375**	0.135	1.290	0.1994	0.160	1.541	0.1260
6	Capital&Alike	AU	126	5	0.123	1.232	0.2203	0.080	0.573	0.5678	0.000	0.000	1.0000	0.083	0.836	0.4048	0.083	0.803	0.4238
7	Systemic&Liquidity	MIX	126	7	-0.214	-1.847	0.0671*	-0.174	-1.092	0.2770	-0.025	-0.263	0.7929	-0.174	-1.538	0.1266	-0.174	-1.574	0.1181
8	Systemic	EU	68	5	0.056	1.035	0.3043	0.028	0.500	0.6188	0.016	0.350	0.7274	0.056	1.035	0.3043	0.056	1.046	0.2994
9	Systemic&Liquidity	MIX	68	8	-0.056	-1.129	0.2628	-0.056	-1.034	0.3050	0.000	0.000	1.0000	-0.056	-1.141	0.2579	-0.056	-1.163	0.2490
10	Capital&Alike	EU	68	5	-0.017	-0.424	0.6731	-0.017	-0.393	0.6957	-0.040	-0.785	0.4355	-0.017	-0.428	0.6701	-0.017	-0.462	0.6459
11	RW&RWBlend	EU	68	5	-0.019	-0.473	0.6377	-0.019	-0.480	0.6329	0.027	0.750	0.4558	-0.019	-0.478	0.6341	-0.019	-0.479	0.6334
12	Capital&Alike	MIX	61	12	-0.021	-0.480	0.6331	-0.012	-0.271	0.7873	-0.020	-0.477	0.6355	-0.021	-0.473	0.6380	-0.011	-0.260	0.7958
13	Systemic&Capital	EU	102	7	0.044	0.553	0.5814	0.041	0.513	0.6087	0.075	0.921	0.3594	0.042	0.517	0.6063	0.042	0.522	0.6029
14	Capital&Alike	EU	157	5	-0.015	-0.377	0.7065	-0.013	-0.335	0.7380	-0.024	-0.530	0.5966	-0.008	-0.194	0.8463	-0.007	-0.186	0.8530
15	Capital&Alike	AU	157	5	0.010	0.249	0.8039	0.015	0.373	0.7098	0.009	0.212	0.8327	0.009	0.227	0.8210	0.009	0.220	0.8258
16	Capital&Alike	AU	23	11	-0.140	-2.206	0.0300**	-0.144	-2.186	0.0315**	-0.163	-1.733	0.0867*	-0.143	-2.108	0.0379**	-0.143	-2.105	0.0382**
17	Liquidity&Alike	EU	24	5	-0.065	-2.158	0.0421**	-0.054	-1.862	0.0760*	-0.035	-1.457	0.1593	-0.053	-1.835	0.0801*	-0.053	-1.835	0.0801*
18	Other	AU	31	5	-0.022	-1.060	0.2978	-0.030	-1.423	0.1655	0.012	0.485	0.6312	-0.032	-1.468	0.1530	-0.034	-1.521	0.1391
19	Liquidity&Alike	AU	36	5	-0.079	-2.443	0.0199**	-0.086	-2.671	0.0115**	-0.073	-2.046	0.0486**	-0.084	-2.765	0.0091***	-0.084	-2.666	0.0117**
20	Capital&Alike	EU	31	5	0.092	1.759	0.0891*	0.089	1.611	0.1180	0.021	0.317	0.7534	0.099	1.746	0.0915*	0.095	1.746	0.0913*
21	Capital&Alike	AU	86	5	-0.055	-1.495	0.1388	-0.067	-1.530	0.1299	-0.001	-0.023	0.9815	-0.066	-1.486	0.1410	-0.055	-1.484	0.1417
22	Capital&Alike	EU	36	5	-0.007	-0.342	0.7341	-0.019	-0.869	0.3908	0.005	0.232	0.8182	-0.019	-0.856	0.3980	-0.007	-0.342	0.7341

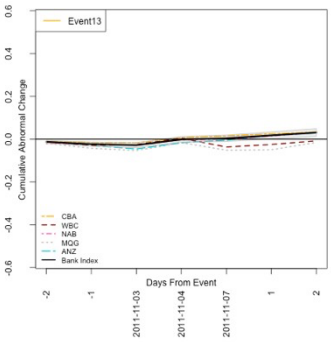
EST indicates days in estimation window, EVENT the days in Event window and CAR the cumulative abnormal return

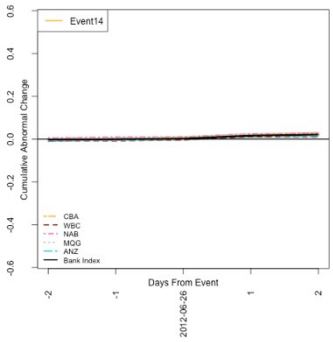
EVENT	Regulation	Geography	Est	Event	ANZ			CBA			MQG			NAB			WBC		
					CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value
23	Capital&Alike	AU	57	5	-0.034	-0.929	0.3568	-0.021	-0.586	0.5605	0.015	0.205	0.8381	-0.020	-0.579	0.5646	-0.036	-1.003	0.3203
24	Capital&Alike	AU	57	9	-0.161	-2.851	0.0061***	-0.172	-3.187	0.0024***	-0.217	-2.259	0.0279**	-0.169	-3.185	0.0024***	-0.135	-2.740	0.0083***
25	Mortgage&Other	AU	57	5	-0.001	-0.027	0.9785	-0.035	-0.760	0.4508	-0.002	-0.033	0.9740	-0.001	-0.021	0.9834	-0.001	-0.017	0.9865
26	Capital&Alike	AU	57	5	0.074	2.010	0.0493**	0.052	1.123	0.2663	0.158	2.398	0.0199**	0.034	0.709	0.4814	0.030	0.675	0.5022
27	RW&RWBlend	MIX	57	8	0.237	4.459	0.0000***	0.208	3.193	0.0023***	0.386	4.081	0.0001***	0.204	3.057	0.0034***	0.177	3.003	0.0040***
28	Liquidity&Alike	AU	80	5	-0.001	-0.019	0.9849	-0.007	-0.118	0.9060	-0.006	-0.144	0.8857	0.002	0.038	0.9696	-0.002	-0.044	0.9650
29	Systemic	EU	80	5	-0.011	-0.233	0.8162	0.005	0.092	0.9266	-0.009	-0.235	0.8147	0.009	0.181	0.8566	-0.011	-0.251	0.8022
30	Systemic&Capital	AU	80	6	0.096	2.072	0.0415**	0.065	1.164	0.2479	0.038	1.051	0.2966	0.084	1.840	0.0695*	0.093	2.107	0.0383**
31	RW&RWBlend	EU	80	5	0.033	0.799	0.4265	0.033	0.667	0.5067	0.023	0.711	0.4790	0.033	0.793	0.4301	0.033	0.849	0.3986
32	RW&RWBlend	EU	107	5	0.033	0.951	0.3436	0.033	0.897	0.3717	0.012	0.404	0.6867	0.033	0.944	0.3474	0.033	0.951	0.3437
33	RW&RWBlend	AU	107	10	0.102	2.066	0.0413**	0.063	1.182	0.2399	0.141	3.946	0.0001***	0.088	1.704	0.0913*	0.121	2.391	0.0186**
34	RW&RWBlend	EU	95	11	-0.022	-0.343	0.7326	-0.019	-0.304	0.7620	-0.066	-0.879	0.3814	-0.021	-0.319	0.7504	-0.018	-0.264	0.7925
35	RW&RWBlend	EU	95	5	-0.115	-2.892	0.0048***	-0.108	-2.658	0.0093***	-0.146	-2.895	0.0047***	-0.112	-2.936	0.0042***	-0.101	-2.459	0.0158**
36	Liquidity&Alike	AU	46	5	0.103	1.713	0.0938*	0.078	1.218	0.2298	0.117	2.203	0.0329**	0.100	1.613	0.1138	0.083	1.351	0.1838
37	Capital&Alike	EU	98	5	-0.011	-0.297	0.7674	-0.012	-0.323	0.7474	-0.039	-1.184	0.2393	-0.012	-0.318	0.7511	-0.012	-0.341	0.7336
38	Liquidity&Alike	EU	98	5	0.083	2.110	0.0375**	0.077	1.935	0.0559*	0.090	2.566	0.0118**	0.078	1.987	0.0497**	0.076	1.966	0.0522*
39	Capital&Alike	AU	98	5	-0.062	-1.558	0.1226	-0.055	-1.369	0.1742	-0.051	-1.319	0.1904	-0.056	-1.401	0.1644	-0.053	-1.358	0.1776
40	Capital&Alike	AU	56	5	0.021	0.750	0.4568	0.037	1.369	0.1767	0.005	0.150	0.8814	0.020	0.710	0.4805	0.020	0.757	0.4522
41	Mortgage&Other	AU	56	12	0.034	0.562	0.5767	0.035	0.560	0.5779	-0.003	-0.046	0.9634	0.035	0.554	0.5821	0.035	0.569	0.5714
42	Liquidity&Alike	AU	56	5	-0.005	-0.132	0.8954	-0.021	-0.581	0.5635	-0.016	-0.522	0.6041	-0.021	-0.572	0.5694	-0.021	-0.596	0.5539
43	Other	AU	56	5	0.018	0.561	0.5773	0.018	0.550	0.5845	-0.001	-0.028	0.9778	0.018	0.553	0.5827	0.018	0.553	0.5827
44	Capital&Alike	AU	41	5	-0.080	-1.826	0.0755*	-0.097	-2.131	0.0394**	-0.105	-2.045	0.0477**	-0.080	-1.826	0.0755*	-0.081	-1.822	0.0761*
45	RW&RWBlend	MIX	93	5	-0.083	-2.286	0.0246**	-0.106	-2.625	0.0102**	-0.051	-1.296	0.1984	-0.079	-2.145	0.0346**	-0.079	-2.120	0.0367**
46	Capital&Alike	EU	66	5	-0.070	-1.824	0.0982*	-0.093	-2.145	0.0576*	-0.109	-2.442	0.0348**	-0.070	-1.888	0.0883*	-0.093	-2.166	0.0556*

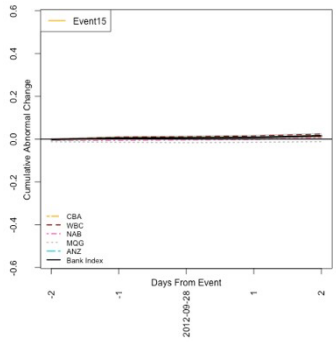
EVENT	Regulation	Geography	Est	Event	ANZ			CBA			MQG			NAB			WBC		
					CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value	CAR	t-stat	p-value
47	Capital&Alike	AU	66	5	0.038	2.685	0.0229**	0.037	1.471	0.1719	0.032	1.840	0.0956*	0.038	2.690	0.0227**	0.038	1.107	0.2941
48	RW&RWBlend	AU	66	5	-0.003	-0.078	0.9379	-0.011	-0.365	0.7160	-0.034	-1.009	0.3169	0.011	0.309	0.7581	-0.005	-0.138	0.8910
49	Capital&Alike	AU	53	5	0.003	0.124	0.9018	0.012	0.549	0.5857	-0.003	-0.083	0.9338	-0.010	-0.414	0.6805	-0.014	-0.543	0.5898
50	Capital&Alike	NZ	53	5	0.060	2.183	0.0337**	0.075	2.866	0.0060***	0.046	1.578	0.1207	0.078	2.716	0.0090***	0.056	2.166	0.0350**
51	Systemic&Capital	AU	53	9	-0.288	-5.388	0.0000***	-0.292	-5.037	0.0000***	-0.227	-4.497	0.0000***	-0.291	-5.128	0.0000***	-0.261	-4.898	0.0000***
52	Mortgage&Other	AU	66	5	-0.034	-0.887	0.3783	-0.031	-0.792	0.4316	-0.065	-1.605	0.1133	-0.036	-0.930	0.3560	-0.044	-1.119	0.2672
53	Capital&Alike	AU	66	7	-0.192	-3.690	0.0005***	-0.189	-2.827	0.0063***	-0.098	-2.429	0.0180**	-0.065	-1.987	0.0512*	-0.094	-2.410	0.0188**
54	Capital&Alike	NZ	59	5	-0.072	-1.509	0.1368	-0.075	-1.424	0.1599	-0.009	-0.210	0.8343	-0.075	-1.434	0.1571	-0.047	-0.918	0.3625
55	Capital&Alike	AU	32	5	-0.032	-0.997	0.3267	-0.032	-0.835	0.4105	0.000	0.000	1.0000	0.000	0.000	1.0000	0.000	0.000	1.0000
56	Other	AU	43	5	-0.041	-1.202	0.2363	-0.003	-0.083	0.9341	0.000	0.009	0.9932	-0.037	-0.982	0.3318	-0.068	-1.450	0.1548
57	Capital&Alike	AU	43	5	0.076	0.618	0.5400	0.077	0.689	0.4945	0.155	1.218	0.2300	0.170	1.384	0.1739	0.084	0.646	0.5218
58	Systemic&Capital	AU	43	10	-0.266	-1.387	0.1729	-0.227	-1.250	0.2183	0.035	0.185	0.8542	-0.159	-0.874	0.3874	-0.084	-0.421	0.6758
59	Capital&Alike	AU	78	5	0.084	1.968	0.0527*	0.068	1.545	0.1264	-0.002	-0.033	0.9740	0.010	0.178	0.8589	0.044	0.920	0.3604
60	Mortgage&Other	AU	71	5	-0.002	-0.053	0.9579	0.003	0.067	0.9471	0.006	0.117	0.9070	0.002	0.049	0.9613	0.004	0.103	0.9182
61	Capital&Alike	AU	71	10	-0.084	-1.258	0.2126	-0.082	-1.309	0.1948	0.002	0.038	0.9697	-0.083	-1.317	0.1921	-0.079	-1.316	0.1924
62	Capital&Alike	AU	60	5	-0.045	-0.961	0.3406	-0.045	-0.961	0.3406	-0.052	-1.219	0.2277	-0.066	-1.628	0.1091	-0.068	-1.330	0.1888
63	Systemic&Capital	AU	76	7	-0.007	-0.288	0.7742	-0.007	-0.288	0.7742	0.038	1.194	0.2364	-0.007	-0.288	0.7742	-0.041	-2.115	0.0379**
64	Mortgage&Other	AU	84	8	0.052	1.150	0.2534	0.052	1.150	0.2534	0.117	2.581	0.0116**	0.043	0.898	0.3718	0.040	0.801	0.4255
65	Mortgage&Other	AU	129	5	0.008	0.190	0.8493	0.020	0.505	0.6148	0.079	1.909	0.0590*	0.008	0.185	0.8534	0.009	0.208	0.8357
66	Other	AU	129	5	0.000	0.002	0.9986	0.000	0.005	0.9962	0.001	0.013	0.9896	0.000	0.002	0.9985	0.000	0.002	0.9982
67	Capital&Alike	AU	44	5	0.331	5.719	0.0000***	0.322	5.359	0.0000***	0.167	5.488	0.0000***	0.377	6.111	0.0000***	0.478	6.083	0.0000***

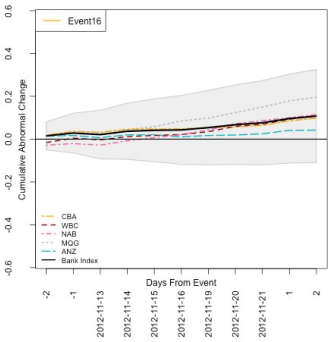
9.6 Appendix D.1: Individual Events, Visualised, Equity

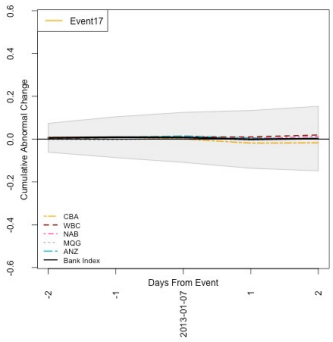


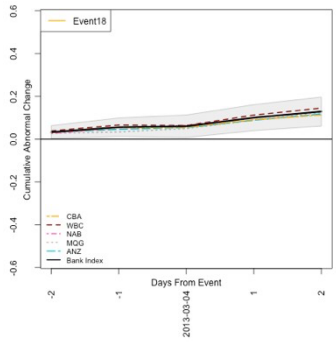

Event13
Cumulative Abnormal Change
Days From Event
2011-11-03
2011-11-04
2011-11-07
CBA
WBC
NAB
MQG
ANZ
Bank Index

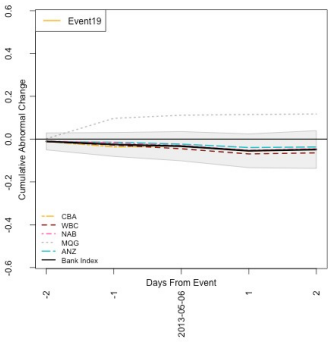

Event14
Cumulative Abnormal Change
Days From Event
2012-06-26
CBA
WBC
NAB
MQG
ANZ
Bank Index

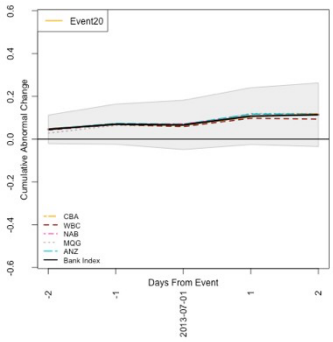

Event15
Cumulative Abnormal Change
Days From Event
2012-09-28
CBA
WBC
NAB
MQG
ANZ
Bank Index

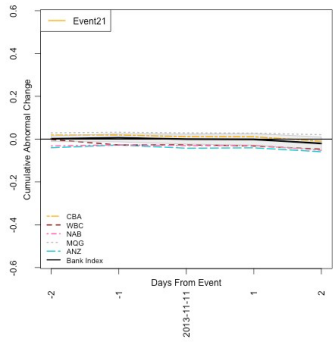

Event16
Cumulative Abnormal Change
Days From Event
2012-11-13
2012-11-14
2012-11-15
2012-11-16
2012-11-19
2012-11-20
2012-11-21
CBA
WBC
NAB
MQG
ANZ
Bank Index

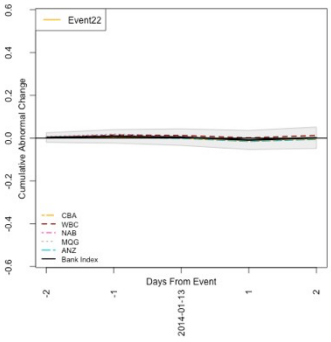

Event17
Cumulative Abnormal Change
Days From Event
2013-01-07
CBA
WBC
NAB
MQG
ANZ
Bank Index

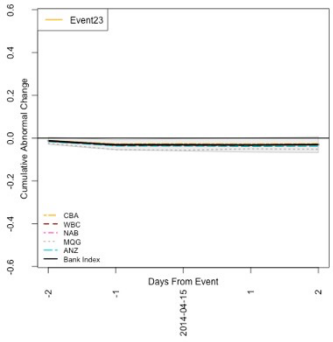

Event18
Cumulative Abnormal Change
Days From Event
2013-03-04
CBA
WBC
NAB
MQG
ANZ
Bank Index

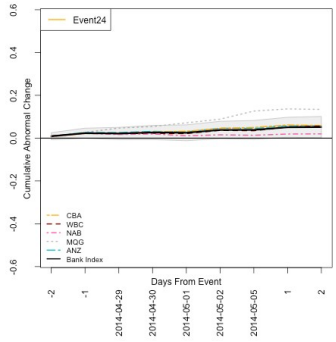

Event19
Cumulative Abnormal Change
Days From Event
2013-05-06
CBA
WBC
NAB
MQG
ANZ
Bank Index

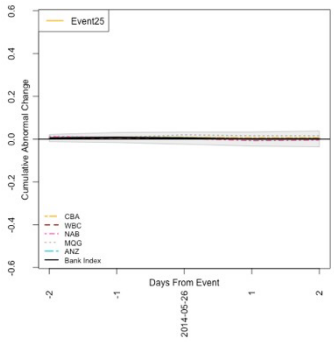

Event20
Cumulative Abnormal Change
Days From Event
2013-07-01
CBA
WBC
NAB
MQG
ANZ
Bank Index

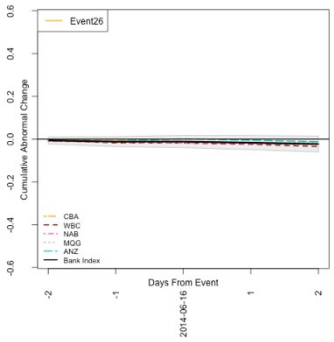

Event21
Cumulative Abnormal Change
Days From Event
2013-11-11
CBA
WBC
NAB
MQG
ANZ
Bank Index

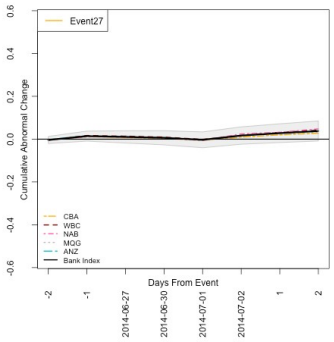

Event22
Cumulative Abnormal Change
Days From Event
2014-01-13
CBA
WBC
NAB
MQG
ANZ
Bank Index

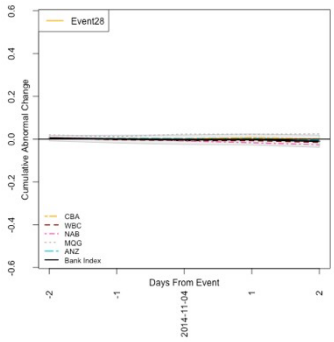

Event23
Cumulative Abnormal Change
Days From Event
2014-04-15
CBA
WBC
NAB
MQG
ANZ
Bank Index

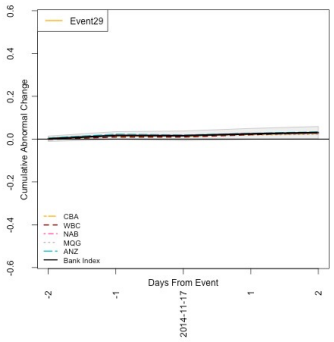

Event24
Cumulative Abnormal Change
Days From Event
2014-04-29
2014-04-30
2014-05-01
2014-05-02
2014-05-05
CBA
WBC
NAB
MQG
ANZ
Bank Index

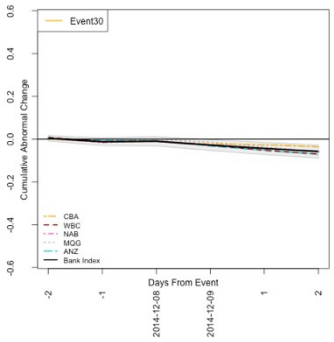

Event25
Cumulative Abnormal Change
Days From Event
2014-05-26
CBA
WBC
NAB
MQG
ANZ
Bank Index

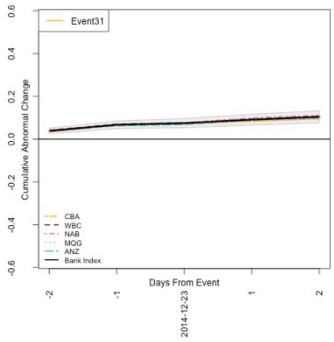

Event26
Cumulative Abnormal Change
Days From Event
2014-06-16
CBA
WBC
NAB
MQG
ANZ
Bank Index

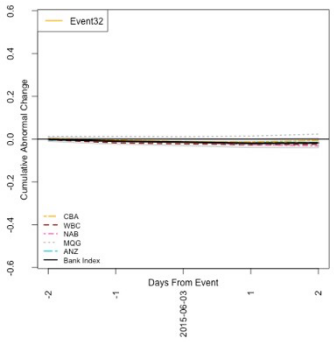

Event27
Cumulative Abnormal Change
Days From Event
2014-06-27
2014-06-30
2014-07-01
2014-07-02
CBA
WBC
NAB
MQG
ANZ
Bank Index

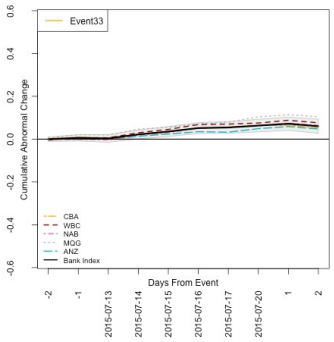

Event28
Cumulative Abnormal Change
Days From Event
2014-11-04
CBA
WBC
NAB
MQG
ANZ
Bank Index

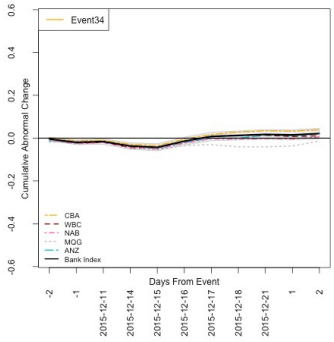

Event29
Cumulative Abnormal Change
Days From Event
2014-11-17
CBA
WBC
NAB
MQG
ANZ
Bank Index

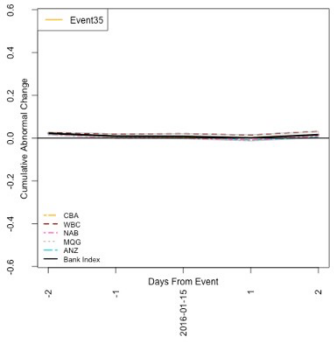

Event30
Cumulative Abnormal Change
Days From Event
2014-12-08
2014-12-09
CBA
WBC
NAB
MQG
ANZ
Bank Index

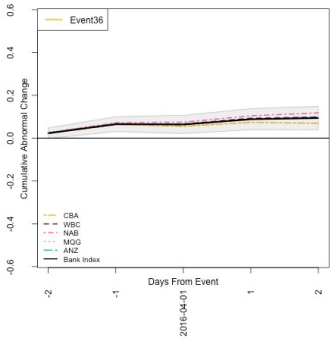

Event31
Cumulative Abnormal Change
Days From Event
2014-12-23
CBA
WBC
NAB
MQG
ANZ
Bank Index

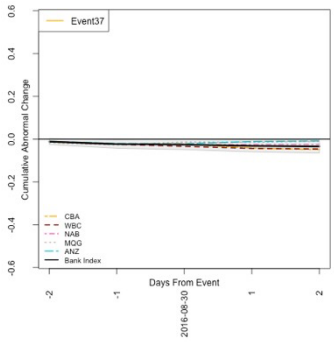

Event32
Cumulative Abnormal Change
Days From Event
2015-06-03
CBA
WBC
NAB
MQG
ANZ
Bank Index

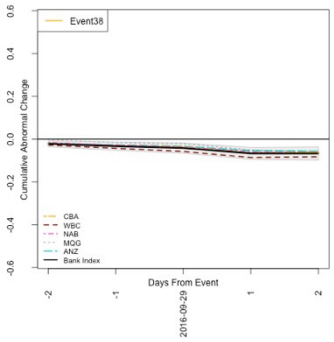

Event33
Cumulative Abnormal Change
Days From Event
2015-07-13
2015-07-14
2015-07-15
2015-07-16
2015-07-17
2015-07-20
CBA
WBC
NAB
MQG
ANZ
Bank Index

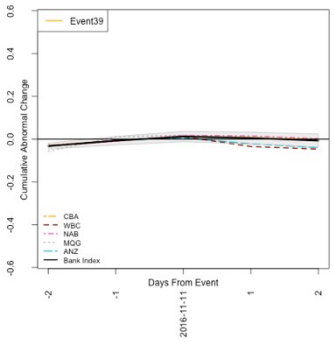

Event34
Cumulative Abnormal Change
Days From Event
2015-12-11
2015-12-14
2015-12-15
2015-12-16
2015-12-17
2015-12-18
2015-12-21
CBA
WBC
NAB
MQG
ANZ
Bank Index

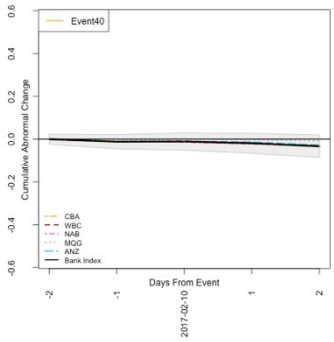

Event35
Cumulative Abnormal Change
Days From Event
2016-01-15
CBA
WBC
NAB
MQG
ANZ
Bank Index

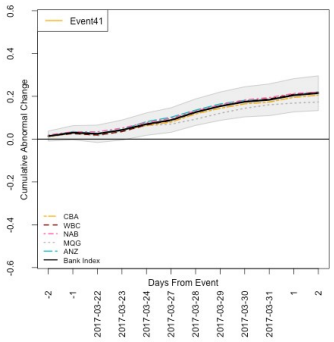

Event36
Cumulative Abnormal Change
Days From Event
2016-04-01
CBA
WBC
NAB
MQG
ANZ
Bank Index

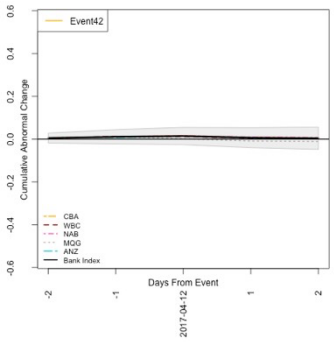

Event37
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2016-08-30

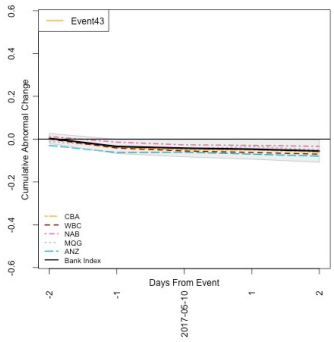

Event38
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2016-09-29

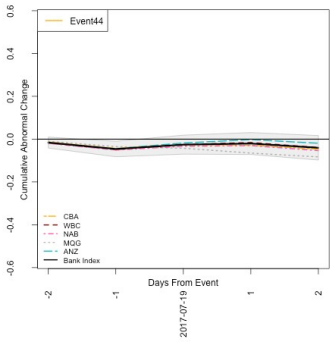

Event39
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2016-11-11

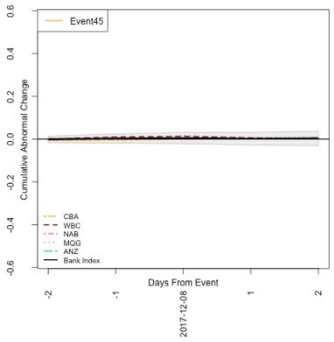

Event40
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-02-10

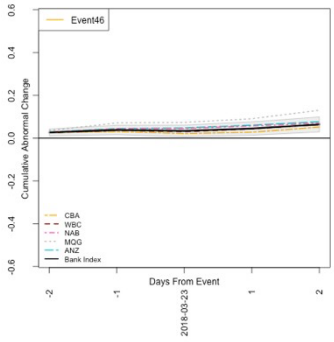

Event41
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-03-22
2017-03-23
2017-03-24
2017-03-27
2017-03-28
2017-03-29
2017-03-30
2017-03-31

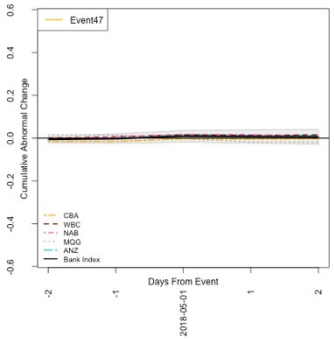

Event42
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-04-12

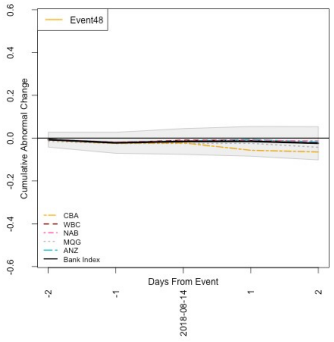

Event43
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-05-10

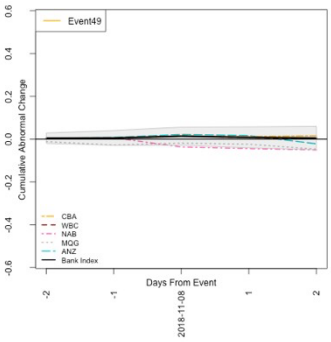

Event44
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-07-19

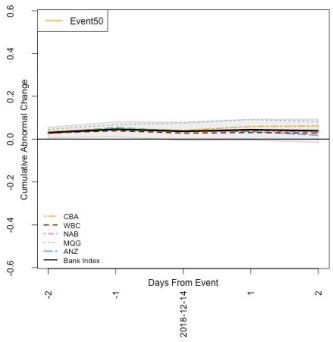

Event45
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-12-08

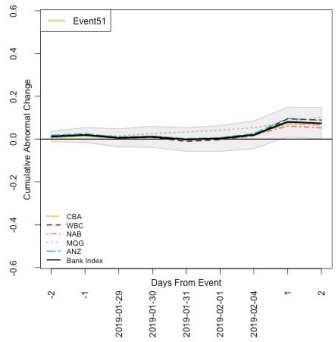

Event46
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2018-03-23

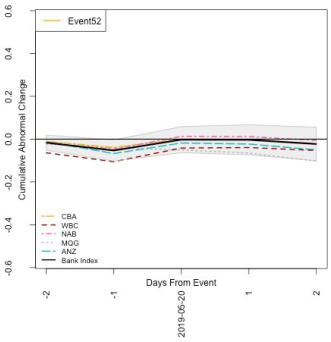

Event47
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2018-05-01

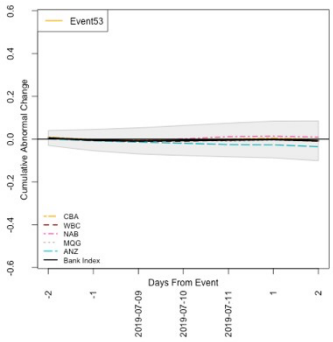

Event48
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2018-06-14

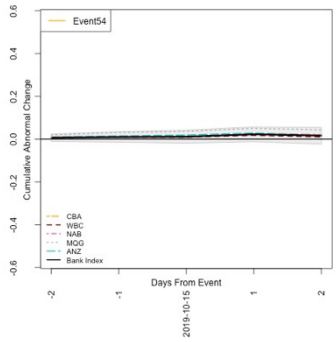

Event49
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2018-11-08

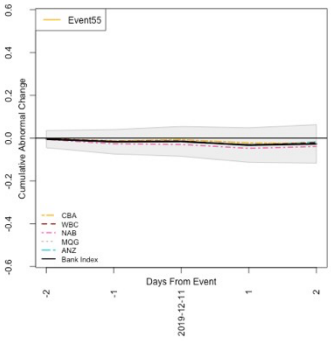

Event50
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2018-12-14

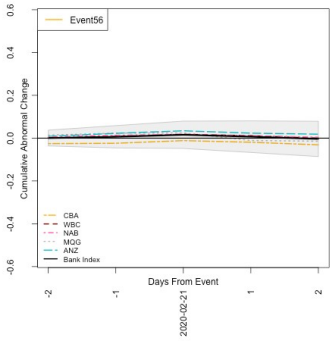

Event51
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2019-01-29
2019-01-30
2019-01-31
2019-02-01
2019-02-04

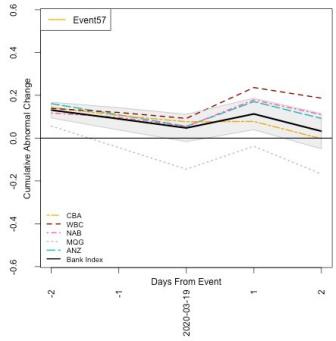

Event52
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2019-05-20

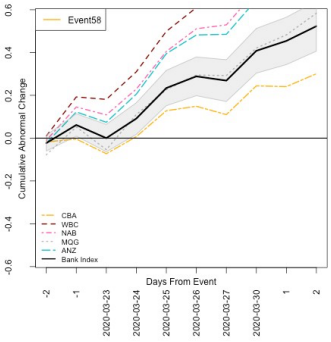

Event53
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2019-07-09
2019-07-10
2019-07-11

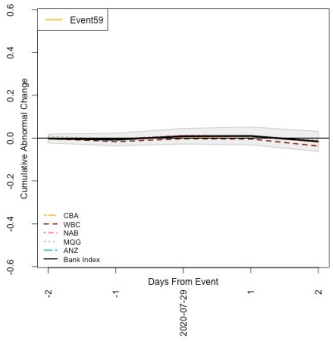

Event54
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2019-10-15

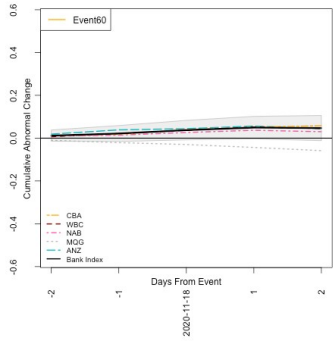

Event55
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2019-12-11

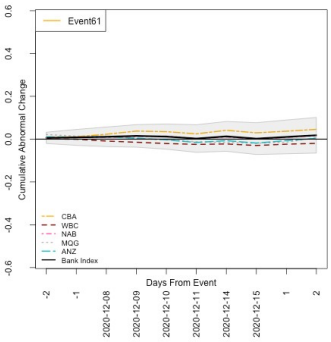

Event56
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2020-02-21

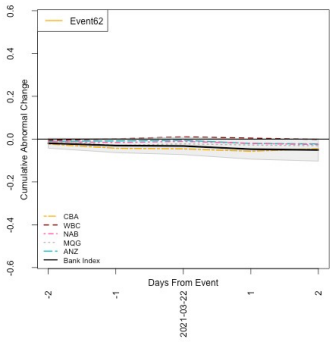

Event57
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2020-03-19

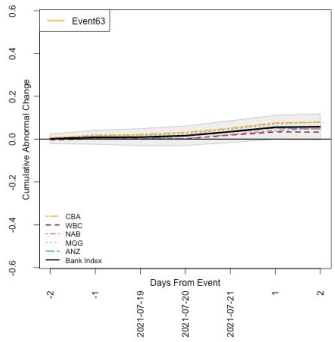

Event58
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2020-03-23
2020-03-24
2020-03-25
2020-03-26
2020-03-27
2020-03-30

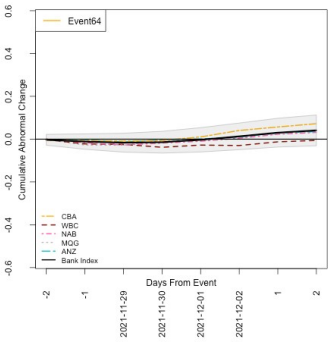

Event59
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2020-07-29

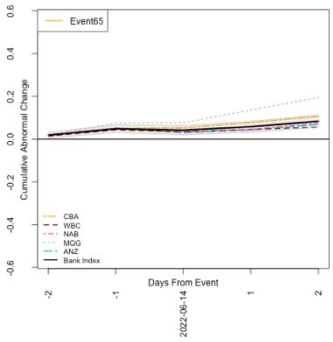

Event60
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2020-11-18

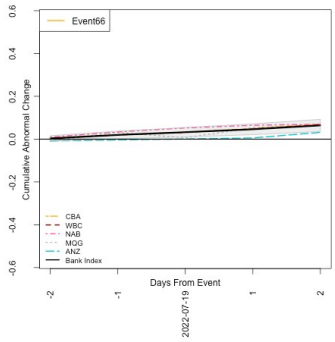

Event61
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2020-12-08
2020-12-09
2020-12-10
2020-12-11
2020-12-14
2020-12-15

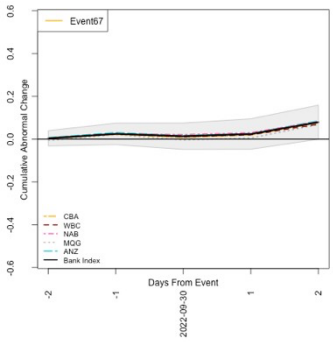

Event62
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2021-03-22


Event63
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2021-07-19
2021-07-20
2021-07-21

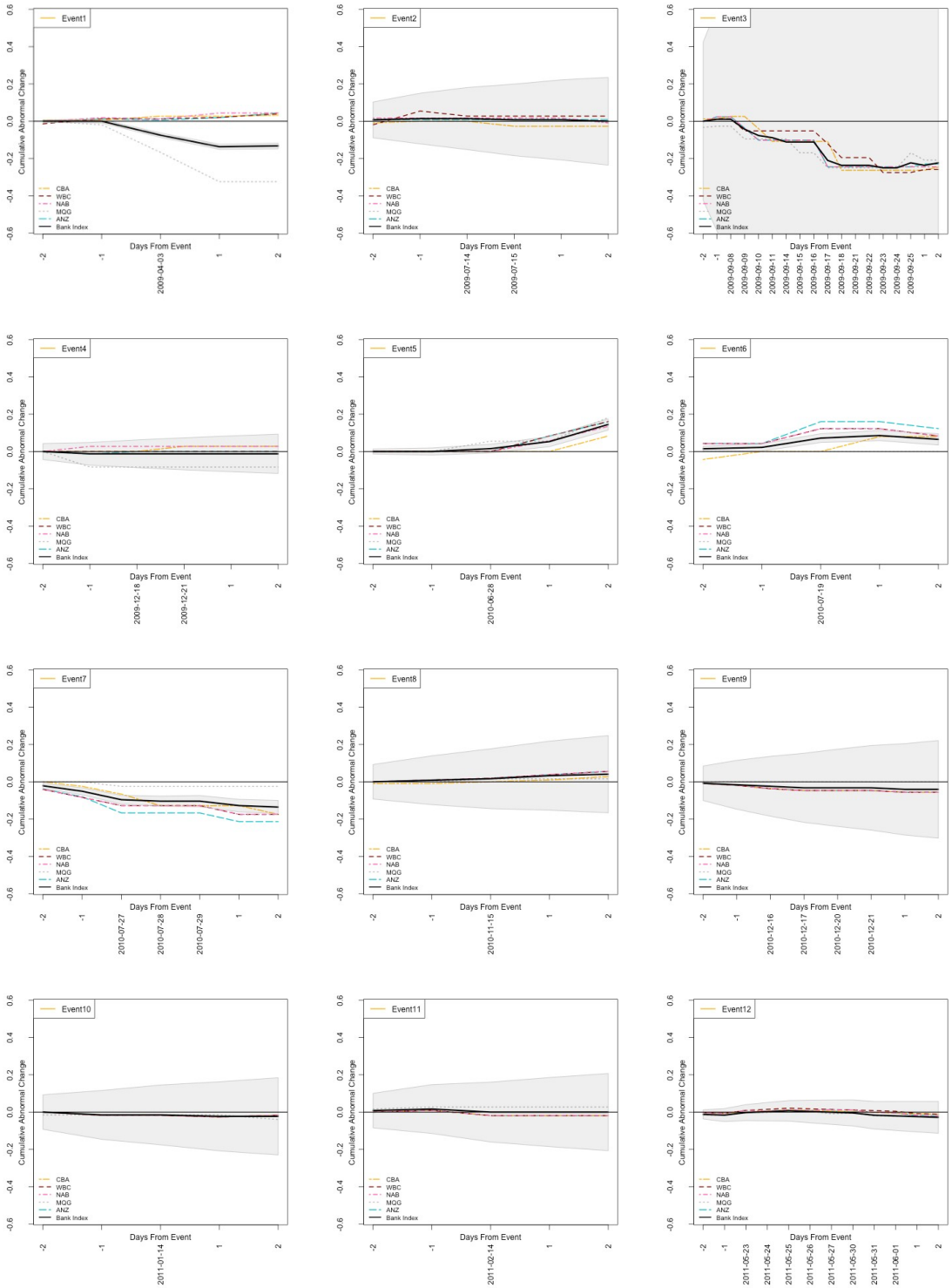

Event64
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2021-11-29
2021-11-30
2021-12-01
2021-12-02

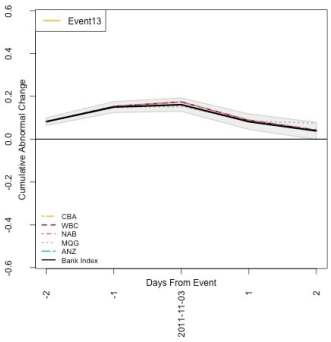

Event65
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2022-06-14

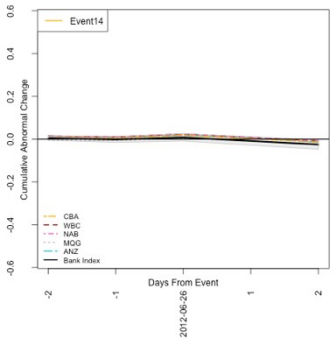

Event66
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2022-07-19

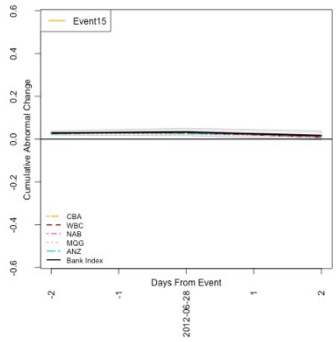

Event67
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2022-09-30

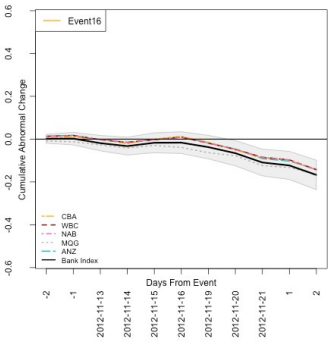
9.7 Appendix D.2: Individual Events, Visualised, CDS Spread

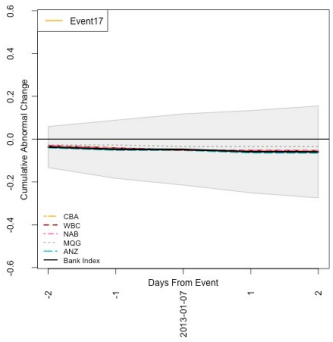


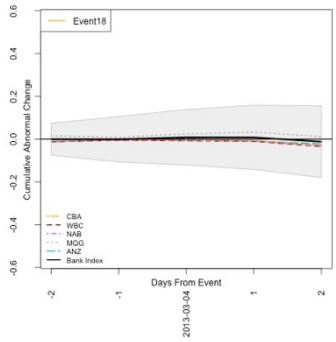

Event13
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2011-11-03

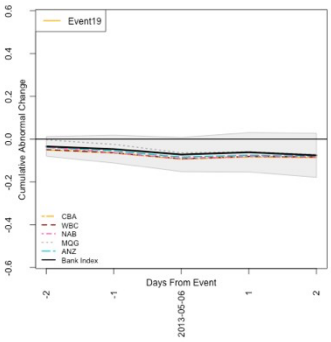

Event14
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2012-06-26

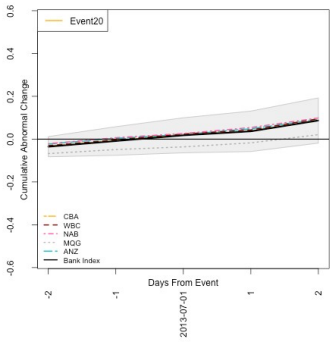

Event15
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2012-06-28

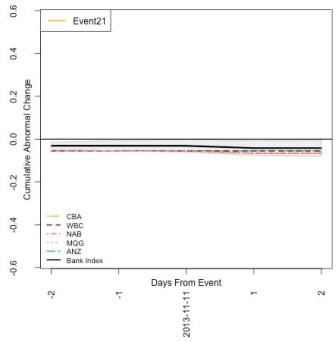

Event16
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2012-11-13
2012-11-14
2012-11-15
2012-11-16
2012-11-19
2012-11-20
2012-11-21

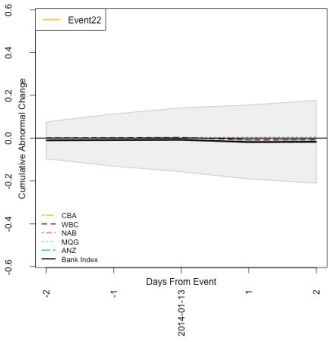

Event17
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2013-01-07

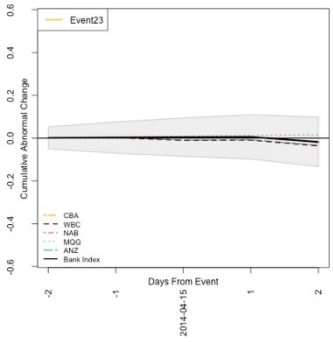

Event18
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2013-03-04


Event19
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2013-05-06


Event20
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2013-07-01


Event21
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2013-11-11


Event22
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2014-01-13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Cumulative Abnormal Change
Days From Event
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WBC
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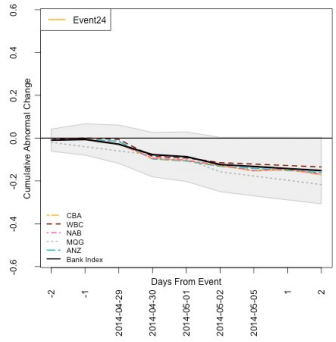
MQG
ANZ
Bank Index
2014-04-15


Event24
Cumulative Abnormal Change
Days From Event
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MQG
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Bank Index
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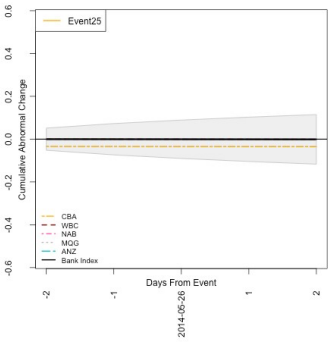
2014-05-02
2014-05-05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Days From Event
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MQG
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Bank Index
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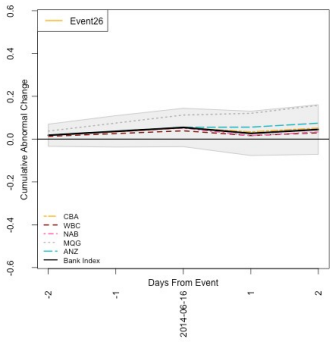
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Cumulative Abnormal Change
Days From Event
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MQG
ANZ
Bank Index
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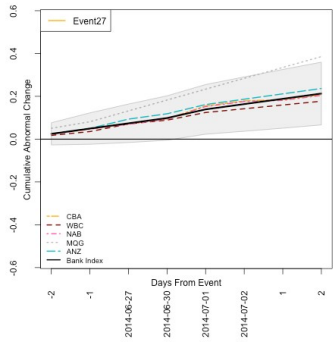
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Cumulative Abnormal Change
Days From Event
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MQG
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Bank Index
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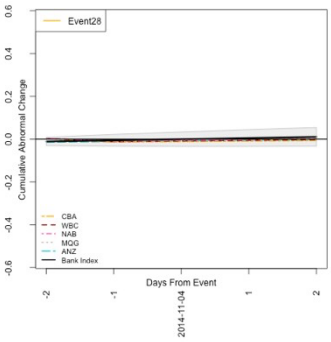
2014-06-30
2014-07-01
2014-07-02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Cumulative Abnormal Change
Days From Event
CBA
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Bank Index
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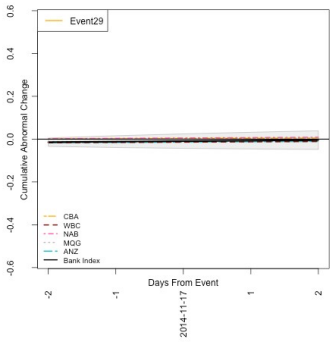
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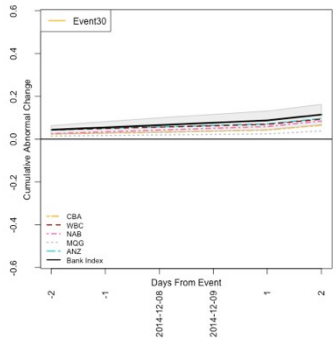
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2014-11-17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Cumulative Abnormal Change
Days From Event
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WBC
NAB
MQG
ANZ
Bank Index
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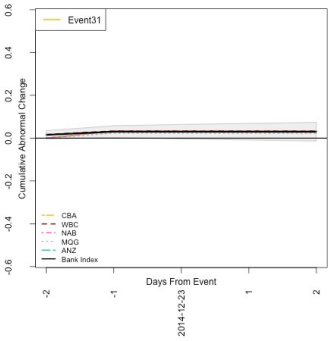
2014-12-09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Cumulative Abnormal Change
Days From Event
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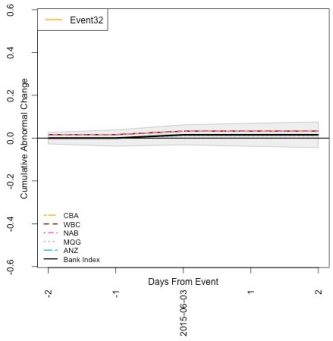
NAB
MQG
ANZ
Bank Index
2014-12-23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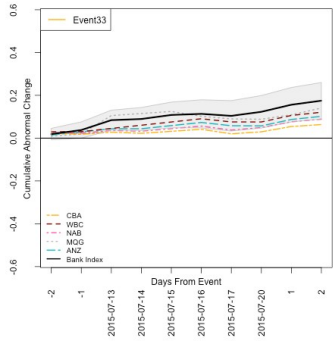
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2015-06-03


Event33
Cumulative Abnormal Change
Days From Event
CBA
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NAB
MQG
ANZ
Bank Index
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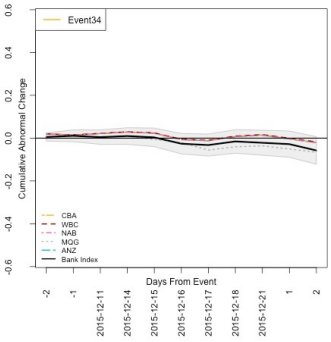
2015-07-20


Event34
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2015-12-11
2015-12-14
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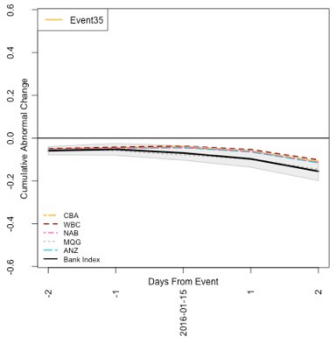
2015-12-17
2015-12-18
2015-12-21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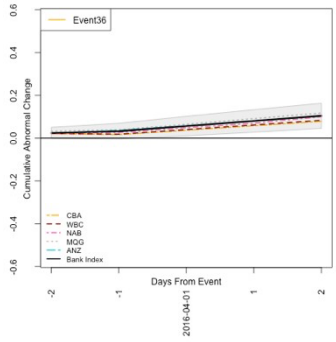
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2016-01-15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Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
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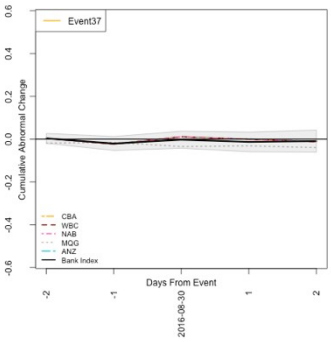
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Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
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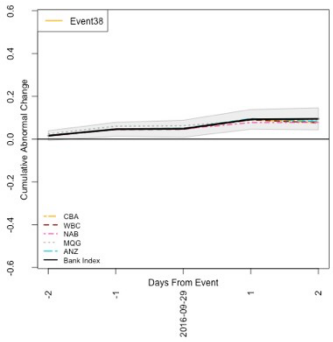
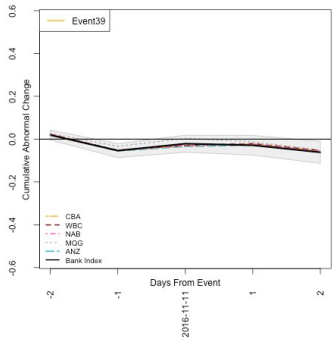

Event38
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2016-09-29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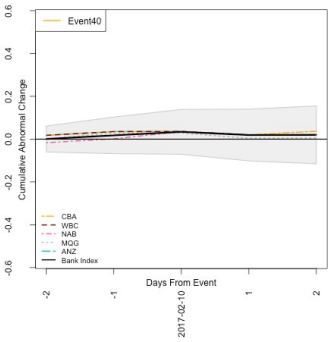
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2016-11-11


Event40
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
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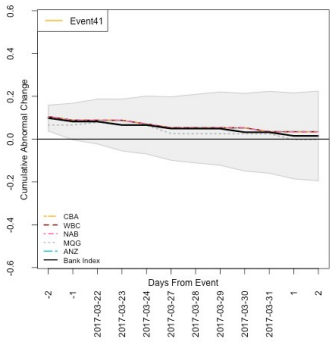
Event41
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-03-22
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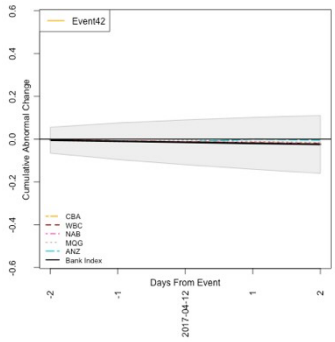
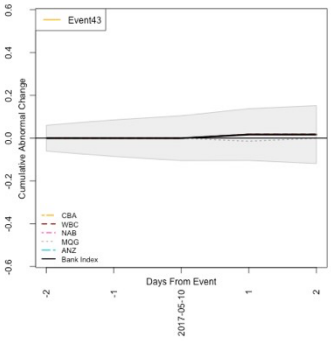
2017-03-28
2017-03-29
2017-03-30
2017-03-31


Event42
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2017-04-12


Event43
Cumulative Abnormal Change
Days From Event
CBA
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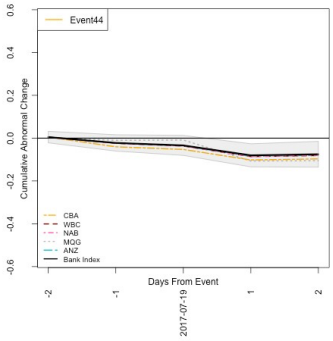
NAB
MQG
ANZ
Bank Index
2017-05-10


Event44
Cumulative Abnormal Change
Days From Event
CBA
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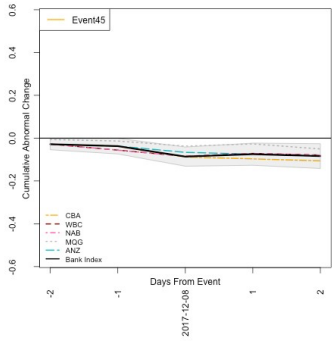
NAB
MQG
ANZ
Bank Index
2017-07-19


Event45
Cumulative Abnormal Change
Days From Event
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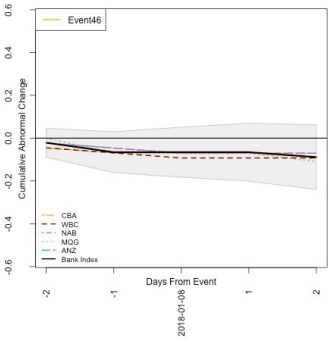
WBC
NAB
MQG
ANZ
Bank Index
2017-12-08


Event46
Cumulative Abnormal Change
Days From Event
CBA
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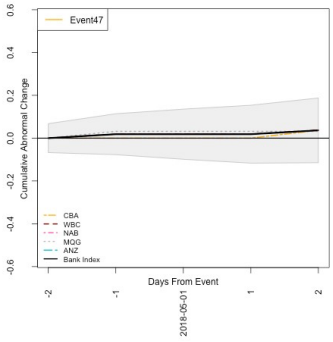
NAB
MQG
ANZ
Bank Index
2018-01-08


Event47
Cumulative Abnormal Change
Days From Event
CBA
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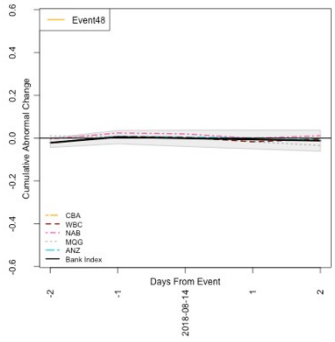
MQG
ANZ
Bank Index
2018-05-01


Event48
Cumulative Abnormal Change
Days From Event
CBA
WBC
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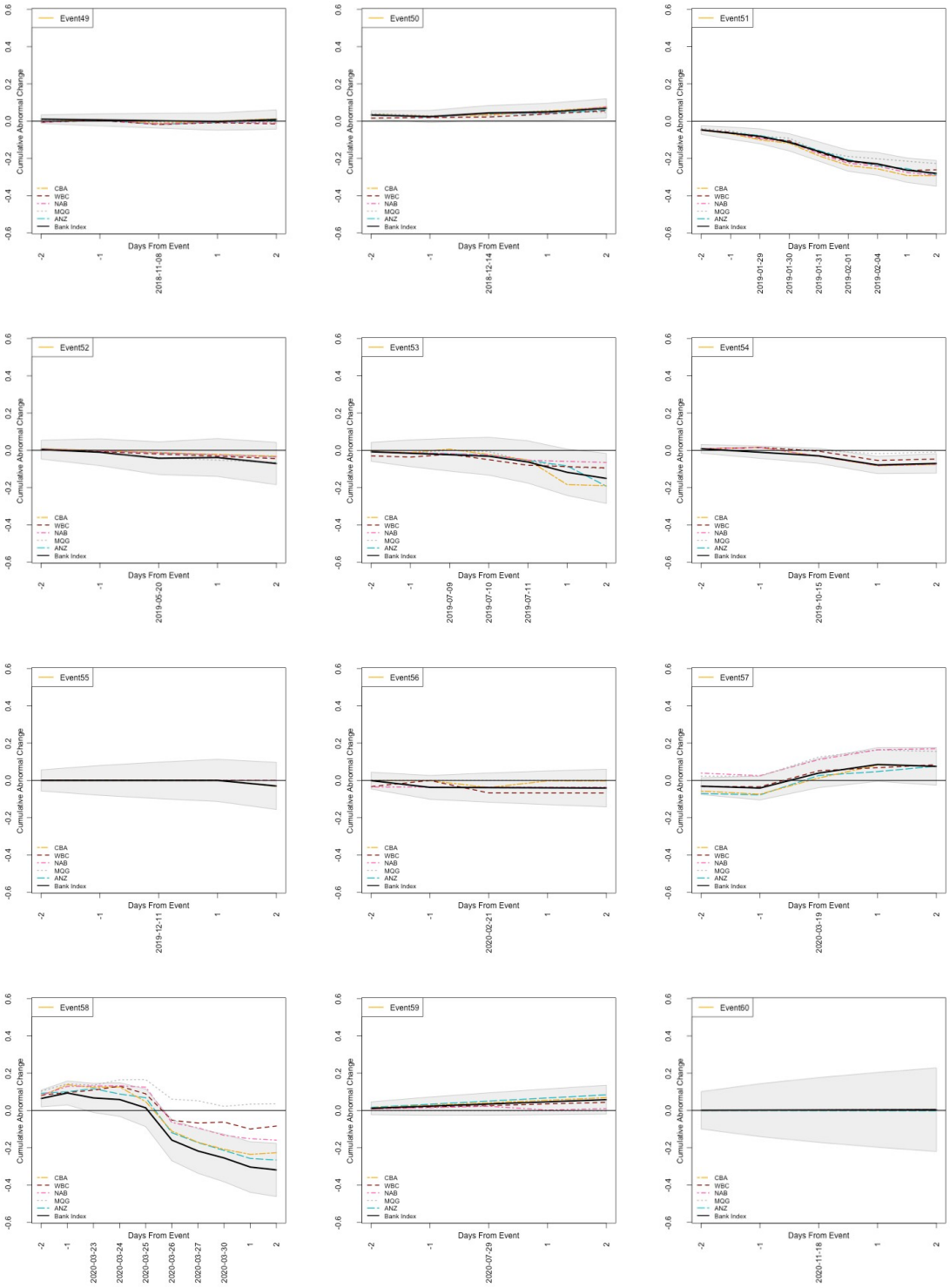
MQG
ANZ
Bank Index
2018-06-14


Event49
Event50
Event51
Event52
Event53
Event54
Event55
Event56
Event57
Event58
Event59
Event60
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2018-11-08
2018-12-14
2019-01-29
2019-01-30
2019-01-31
2019-02-01
2019-02-04
2019-05-20
2019-07-09
2019-07-10
2019-07-11
2019-10-15
2019-12-11
2020-02-21
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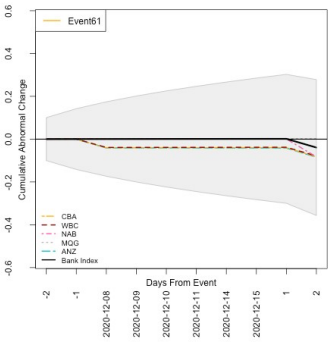
2020-11-18


Event61
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2020-12-08
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2020-12-10
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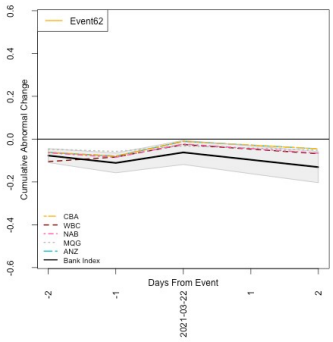
2020-12-14
2020-12-15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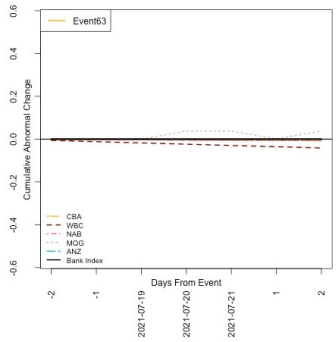
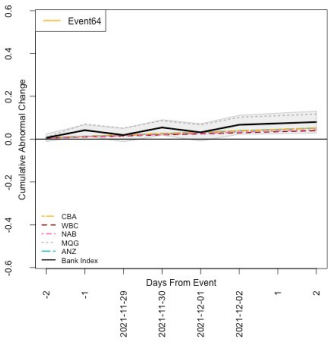
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2021-03-22


Event63
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2021-07-19
2021-07-20
2021-07-21


Event64
Cumulative Abnormal Change
Days From Event
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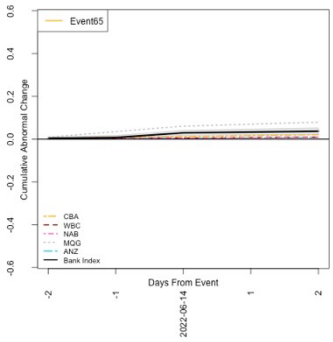
NAB
MQG
ANZ
Bank Index
2021-11-29
2021-11-30
2021-12-01
2021-12-02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Cumulative Abnormal Change
Days From Event
CBA
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NAB
MQG
ANZ
Bank Index
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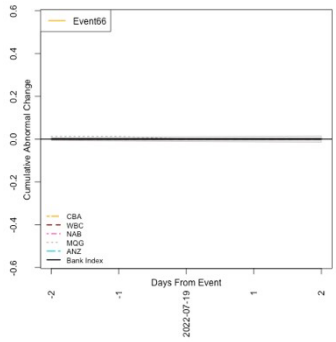
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Days From Event
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WBC
NAB
MQG
ANZ
Bank Index
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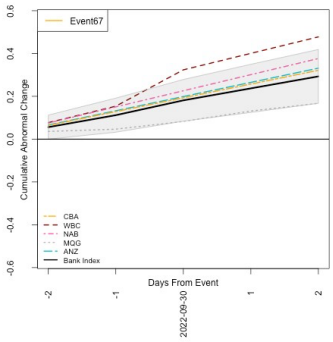
Event67
Cumulative Abnormal Change
Days From Event
CBA
WBC
NAB
MQG
ANZ
Bank Index
2022-09-30

10 References

Abbot, T. & Hockey, J. (2013). *Financial System Inquiry* https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22media%2Fpressrel%2F2853831%22

Acharya, V. v., & Steffen, S. (2015). *The "greatest" carry trade ever? Understanding eurozone bank risks.* Journal of Financial Economics, 115(2). https://doi.org/10.1016/j.jfineco.2014.11.004

Admanti, A. & Hellwig, M. (2013). *The Banker' New Clothes. Princeton* University Press.

Agénor, P., Gambacorta, L., Kharroubi, E., & Pereira da Silva, L. A. (2018). The effects of prudential regulation, financial development, and financial openness on economic growth. *BIS Working Papers*, *752*.

Aladangady, A. (2017). *Housing wealth and consumption: Evidence from geographically linked microdata.* In American Economic Review (Vol. 107, Issue 11). https://doi.org/10.1257/aer.20150491

Allen, B., Chan, K. K., Milne, A., & Thomas, S. (2012). *Basel III: Is the cure worse than the disease?* International Review of Financial Analysis, 25. https://doi.org/10.1016/j.irfa.2012.08.004

Allen, F., Carletti, E., & Marquez, R. (2015). *Deposits and bank capital structure.* Journal of Financial Economics, 118(3), 601–619. https://doi.org/10.1016/j.jfineco.2014.11.003

Allen, L., & Rai, A. (1996). *Bank charter values and capital levels: An international comparison.* Journal of Economics and Business, 48(3). https://doi.org/10.1016/01486195(96)00013-6

APRA. (2009). *APRA consults on enhancements to Basel II Framework* Australian Prudengial Regulatory Authority. https://www.apra.gov.au/news-and-publications/apraconsults-on-enhancements-to-basel-ii-framework.

APRA. (2009). *APRA proposes enhanced liquidity requirements for ADIs*. Australian Prudential Regulatory Authority. https://www.apra.gov.au/news-and-publications/aprapproposes-enhanced-liquidity-requirements-for-adis.

APRA. (2010). *Australian implementation of global liquidity standards*. Australian Prudential Regulatory Authority. https://www.apra.gov.au/news-andpublications/australian-implementation-of-global-liquidity-standards

APRA. (2011). *APRA releases enhancements to Basel II Framework.* Australian Prudential Regulation Authority https://www.apra.gov.au/news-and-publications/apra-releasesenhancements-to-basel-ii-framework

APRA. (2012). *APRA releases final Basel III capital reform package.* Australian Prudential Regulation Authority. https://www.bis.org/publ/bcbs227.pdf

APRA. (2012). *APRA releases final package to implement Basel III capital reforms.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-releases-final-package-to-implement-basel-iii-capital-reforms

APRA. (2013). *APRA releases second consultation package on Basel III liquidity reforms.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-releases-second-consultation-package-on-basel-iii-liquidity-reforms

APRA. (2013). *Prudential reform in securitisation.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/prudential-reformsecuritisation

APRA. (2014). *APRA finalises implementation of Liquidity Coverage Ratio in Australia.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-finalises-implementation-of-liquidity-coverage-ratio-australia

APRA. (2014). *APRA improves capital-raising options for mutual ADIs.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apraimproves-capital-raising-options-for-mutual-adis

APRA. (2014). *APRA proposes simplified prudential framework for securitisation.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apraproposes-simplified-prudential-framework-for-securitisation

APRA. (2014). *APRA releases draft prudential practice guide on residential mortgage lending.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-releases-draft-prudential-practice-guide-on-residential-mortgagelending

APRA. (2014). *APRA releases draft prudential practice guide on residential mortgage lending.* Australian Prudential Regulation Authority. https://www.afr.com/companies/basel-committee-pushes-to-fix-big-banks-buffers-20140627-jgppt

APRA. (2015). *APRA announces countercyclical capital buffer rate for ADIs.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apraannounces-countercyclical-capital-buffer-rate-for-adis

APRA. (2015). *APRA increases capital adequacy requirements for residential mortgage exposures under the internal ratings-based approach.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-increases-capitaladequacy-requirements-for-residential-mortgage

APRA. (2015). *APRA releases international capital comparison study.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-releasesinternational-capital-comparison-study

APRA. (2016). *APRA releases consultation package on Net Stable Funding Ratio*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/aprareleases-consultation-package-on-net-stable-funding-ratio-0

APRA. (2016). *APRA releases consultation package on the Net Stable Funding Ratio.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-releases-consultation-package-on-net-stable-funding-ratio

APRA. (2016). *APRA releases prudential practice guide on capital buffers.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/aprareleases-prudential-practice-guide-on-capital-buffers

APRA. (2017). *APRA announces 'unquestionably strong' capital benchmarks.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apraannounces-%E2%80%98unquestionably-strong%E2%80%99-capital-benchmarks

APRA. (2017). *APRA announces further measures to reinforce sound residential mortgage lending practices.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-announces-further-measures-toreinforce-sound-residential-mortgage

APRA. (2017). *APRA releases consultation package on revisions to large exposures.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-releases-consultation-package-on-revisions-to-large-exposures

APRA. (2017). *APRA welcomes finalisation of Basel III bank capital framework.* Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/aprawelcomes-finalisation-of-basel-iii-bank-capital-framework

APRA. (2018) *Enforceable undertaking given by Commonwealth Bank of Australia ... - APRA*. https://www.apra.gov.au/sites/default/files/20180430-CBA-EU-Executed.pdf

APRA. (2018). *APRA releases CBA Prudential Inquiry Final Report and accepts Enforceable Undertaking from CBA*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-releases-cba-prudential-inquiryfinal-report-and-accepts-enforceable

APRA. (2018). *APRA seeks to increase the loss-absorbing capacity of ADIs to support orderly resolution*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-seeks-to-increase-loss-absorbingcapacity-of-adis-to-support-orderly

APRA. (2018). *Improving the transparency, comparability and flexibility of the ADI capital framework*. Australian Prudential Regulation Authority. https://www.apra.gov.au/sites/default/files/improving_the_transparency_comparability_and_flexibility_of_the_adi_capital_framework_0.pdf

APRA. (2019). *APRA applies additional capital requirements to three major banks in response to self-assessments*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-applies-additional-capitalrequirements-to-three-major-banks-response-to

APRA. (2019). *APRA flags setting countercyclical capital buffer at non-zero default level*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-flags-setting-countercyclical-capital-buffer-at-non-zero-default-level

APRA. (2019). *APRA keeps countercyclical capital buffer on hold, releases assessment of measures to lift home lending standards*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-keeps-countercyclical-capitalbuffer-on-hold-releases-assessment-of

APRA. (2019). *APRA proposes amending guidance on mortgage lending*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/aprapproposes-amending-guidance-on-mortgage-lending

APRA. (2019). *APRA proposes new measures to strengthen capital protection for bank depositors*. Australian Prudential Regulation Authority. https://www.apra.gov.au/newsand-publications/apra-proposes-new-measures-to-strengthen-capital-protection-for-bank

APRA. (2019). *APRA proposes new measures to strengthen capital protection for bank depositors*. Australian Prudential Regulation Authority. https://www.apra.gov.au/newsand-publications/apra-proposes-new-measures-to-strengthen-capital-protection-for-bank

APRA. (2019). *APRA responds to submissions on plans to boost the loss-absorbing capacity of ADIs to support orderly resolution*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-responds-to-submissions-on-plansto-boost-loss-absorbing-capacity-of

APRA. (2020). *APRA adapts 2020 agenda to prioritise COVID-19 response*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apraadapts-2020-agenda-to-prioritise-covid-19-response

APRA. (2020). *APRA adjusts bank capital expectations*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-adjusts-bank-capitalexpectations

APRA. (2020). *APRA advises regulatory approach to RBA Term Funding Facility*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-advises-regulatory-approach-to-rba-term-funding-facility

APRA. (2020). *APRA announces deferral of capital reform implementation*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apraannounces-deferral-of-capital-reform-implementation

APRA. (2020). *APRA reduces CBA's operational risk capital add-on by $500 million*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-reduces-cba%E2%80%99s-operational-risk-capital-add-on-by-500million

APRA. (2020). *APRA releases findings from stress testing assessment of authorised deposittaking institutions*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-releases-findings-from-stresstesting-assessment-of-authorised-deposit

APRA. (2020). *APRA seeks to enhance flexibility and resilience of ADI capital framework*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-seeks-to-enhance-flexibility-and-resilience-of-adi-capital-framework

APRA. (2020). *APRA takes action against Bendigo and Adelaide Bank for breaching prudential standard on liquidity*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-takes-action-against-bendigo-andadelaide-bank-for-breaching-prudential

APRA. (2020). *APRA updates guidance on capital management for banks and insurers*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-updates-guidance-on-capital-management-for-banks-and-insurers

APRA. (2021). *APRA announces further regulatory support for loans impacted by COVID19*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-announces-further-regulatory-support-for-loans-impacted-by-covid-19

APRA. (2021). *APRA finalises new bank capital framework designed to strengthen financial system resilience*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-finalises-new-bank-capitalframework-designed-to-strengthen-financial

APRA. (2021). *APRA moves to strengthen crisis preparedness in banking, insurance and superannuation*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-moves-to-strengthen-crisispreparedness-banking-insurance-and-supeannuation

APRA. (2021). *APRA takes action against Macquarie Bank over multiple breaches of prudential and reporting standards*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-takes-action-against-macquariebank-over-multiple-breaches-of-prudential

APRA. (2021). *APRA updates capital management guidance and releases ADI stress test results*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-andpublications/apra-updates-capital-management-guidance-and-releases-adi-stress-testresults

APRA. (2021). *Bank capital reforms: Update*. Australian Prudential Regulation Authority. https://www.apra.gov.au/bank-capital-reforms-update

APRA. (2022). *APRA finalises its macroprudential policy framework*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-finalises-itsmacroprudential-policy-framework

APRA. (2022). *APRA removes CBA's operational risk capital add-on*. Australian Prudential Regulation Authority. https://www.apra.gov.au/news-and-publications/apra-removescba%E2%80%99s-operational-risk-capital-add-on

Aziz, S., & Lilti, J.-J. (2017). *Bank Deregulation, Consolidation and Stability: Evidence on U.S. M&A Centric Activity.* Finance, 38(1). https://doi.org/10.3917/fina.381.0085

Banerjee, R. N., & Mio, H. (2018). *The impact of liquidity regulation on banks.* Journal of Financial Intermediation, 35. https://doi.org/10.1016/j.jfi.2017.05.008

Basel Committee on Banking Supervision. (2009). (No Title). Bank for International Settlements.. https://www.bis.org/publ/bcbs164.pdf.

Basel Committee on Banking Supervision. (2010). *The Group of Governors and Heads of Supervision reach broad agreement on Basel Committee capital and liquidity reform package*. Bank for International Settlements. https://www.bis.org/press/p100726.htm

Basel Committee on Banking Supervision. (2009). *Comprehensive response to the global banking crisis*. Bank for International Settlements.https://www.bis.org/press/p090907.htm

Basel Committee on Banking Supervision. (2009). *Enhancements to the Basel II framework.* The Bank for International Settlements. https://www.bis.org/publ/bcbs157.pdf

Basel Committee on Banking Supervision. (2009). *Strengthening the resilience of the banking sector.* The Bank for International Settlements. https://www.bis.org/publ/bcbs164.pdf

Basel Committee on Banking Supervision. (2010). *Basel III: A global regulatory framework for more resilient banks and banking systems.* The Bank for International Settlements. https://www.bis.org/publ/bcbs189_dec2010.pdf

Basel Committee on Banking Supervision. (2010). *Capitalisation of bank exposures to central counterparties.* The Bank for International Settlements. https://www.bis.org/publ/bcbs190.pdf

Basel Committee on Banking Supervision. (2010). *International framework for liquidity risk measurement, standards and monitoring.* The Bank for International Settlements. https://www.bis.org/publ/bcbs165.pdf

Basel Committee on Banking Supervision. (2010). *Revisions to the Basel II market risk framework.* The Bank for International Settlements. https://www.bis.org/publ/bcbs193.pdf

Basel Committee on Banking Supervision. (2010). *The Group of Governors and Heads of Supervision reach broad agreement on Basel Committee capital and liquidity reform package.* The Bank for International Settlements. https://www.bis.org/press/p100726.htm

Basel Committee on Banking Supervision. (2011). *Basel Committee issues final elements of the reforms to raise the quality of regulatory capital.* The Bank for International Settlements. https://www.bis.org/press/p110113.pdf

Basel Committee on Banking Supervision. (2011). *Capitalisation of bank exposures to central counterparties.* The Bank for International Settlements. https://www.bis.org/publ/bcbs206.pdf

Basel Committee on Banking Supervision. (2011). *Global systemically important banks: assessment methodology and the additional loss absorbency requirement.* The Bank for International Settlements. https://www.bis.org/publ/bcbs207.pdf

Basel Committee on Banking Supervision. (2012). *Capital requirements for bank exposures to central counterparties.* The Bank for International Settlements. https://www.bis.org/publ/bcbs227.htm

Basel Committee on Banking Supervision. (2012). *Composition of capital disclosure requirements.* The Bank for International Settlements. https://www.bis.org/publ/bcbs221.pdf

Basel Committee on Banking Supervision. (2013). *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools.* The Bank for International Settlements. https://www.bis.org/publ/bcbs238.pdf

Basel Committee on Banking Supervision. (2013). *Capital treatment of bank exposures to central counterparties.* The Bank for International Settlements. https://www.bis.org/publ/bcbs253.pdf

Basel Committee on Banking Supervision. (2013). *Group of Governors and Heads of Supervision endorses revised liquidity standard for banks.* The Bank for International Settlements. https://www.bis.org/press/p130106.pdf

Basel Committee on Banking Supervision. (2014) *Principles for effective supervisory colleges.* The Bank for International Settlements. https://www.bis.org/publ/bcbs287.pdf

Basel Committee on Banking Supervision. (2014). *Basel III leverage ratio framework and disclosure requirements.* The Bank for International Settlements. https://www.bis.org/publ/bcbs270.pdf

Basel Committee on Banking Supervision. (2015) *Revisions to the Standardised Approach for credit risk.* The Bank for International Settlements. https://www.bis.org/bcbs/publ/d307.pdf https://www.bis.org/bcbs/publ/d347.pdf

Basel Committee on Banking Supervision. (2015). *Developments in credit risk*

management across sectors: current practices and recommendations. The Bank for International Settlements. https://www.bis.org/bcbs/publ/joint38.pdf

Basel Committee on Banking Supervision. (2015). *Guidance on credit risk and accounting for expected credit losses.* The Bank for International Settlements. https://www.bis.org/bcbs/publ/d350.pdf

Basel Committee on Banking Supervision. (2015). *Revisions to the Standardised Approach for credit risk.* The Bank for International Settlements. https://www.bis.org/bcbs/publ/d307.pdf

Basel Committee on Banking Supervision. (2016). *Minimum capital requirements for market risk.* The Bank for International Settlements. https://www.bis.org/bcbs/publ/d352.pdf

Basel Committee on Banking Supervision. (2016). *Revised framework for market risk capital requirements issued by the Basel Committee.* The Bank for International Settlements. https://www.bis.org/press/p160114.htm

Basel Committee on Banking Supervision. (2017). *Basel III: Finalising post-crisis reforms.* The Bank for International Settlements. https://www.bis.org/bcbs/publ/d424.pdf

Basel Committee on Banking Supervision. (2018). *Revisions to the minimum capital requirements for market risk*. https://www.bis.org/bcbs/publ/d436.pdf

Basel Committee on Banking Supervision (2010). *An Assessment of the Long-term Economic Impact of Stronger Capital and Liquidity Requirements*. Bank for International Settlements.

Basel Committee on Banking Supervision. (2011). *Basel Committee on Banking Supervision Consultative Document.* The Bank for International Settlements. https://www.bis.org/publ/bcbs190.pdf

Basel Committee on Banking Supervision. (2011). *Basel III: A global regulatory framework for more resilient banks and banking systems - revised version June 2011*. The Bank for International Settlements. https://www.bis.org/publ/bcbs189.htm

Basel Committee on Banking Supervision. (2011). *Final elements of the reforms to raise the quality of regulatory capital.* The Bank for International Settlements. https://www.bis.org/press/p110113.pdf

Basel Committee on Banking Supervisio. (2011). *Revisions to the Basel II Market Risk Framework* . The Bank for International Settlements. https://www.bis.org/publ/bcbs193.htm

Biswas, S., & Koufopoulos, K. (2022). *Bank capital structure and regulation: Overcoming and embracing adverse selection.* Journal of Financial Economics, 143(3), 973–992. https://doi.org/10.1016/j.jfineco.2021.12.001

Black, F., Miller, M. H., & Posner, R. A. (1978). *An Approach to the Regulation of Bank Holding Companies.* The Journal of Business, 51(3). https://doi.org/10.1086/296005

Boyd, T. (2009) *Leeway for Banks on liquidity*, Australian Financial Review. https://www.afr.com/companies/financial-services/leeway-for-banks-on-liquidity20091210-iwbfi.

Boyd, T. (2014). *Banks' problem is a liability*. The Australian Financial Review. https://www.afr.com/policy/economy/banks-problem-is-a-liability-20140925-jg1la

Brogi, M., Lagasio, V., & Riccetti, L. (2021). *Systemic risk measurement: bucketing global systemically important banks.* Annals of Finance, 17(3). https://doi.org/10.1007/s10436021-00391-7

Brown, S. J., & Warner, J. B. (1985). *Using daily stock returns. The case of event studies.* Journal of Financial Economics, 14(1). https://doi.org/10.1016/0304-405X(85)90042-X

Bryant, J. (1980). *A model of reserves, bank runs, and deposit insurance.* Journal of Banking and Finance, 4(4). https://doi.org/10.1016/0378-4266(80)90012-6

Byström, H (2005). Credit Default Swaps and Equity Prices: The Itraxx CDS Index Market. *Working Papers from Lund University, Department of Economics* https://econpapers.repec.org/paper/hhslunewp/2005_5f024.htm

Buhrer, K. (2009). *Too much of a good thing may do harm.* Australian Financial Review. https://www.afr.com/companies/too-much-of-a-good-thing-may-do-harm-20090808jn37v

Byres, W. (2017). Remarks for 'The Regulators' panel. *Australian Prudential Regulation Authority.* https://www.apra.gov.au/news-and-publications/remarks-for-regulators-panel

Byres, W.. (2020). APRA Chair Wayne Byres - Speech to the Australian Financial Review Banking and Wealth Summit. *Australian Prudential Regulation Authority.* https://www.apra.gov.au/news-and-publications/apra-chair-wayne-byres-speech-toaustralian-financial-review-banking-and-0

Carletti, E., Marquez, R., & Petriconi, S. (2020). The redistributive effects of bank capital regulation. *Journal of Financial Economics,* 136(3), 743–759. https://doi.org/10.1016/j.jfineco.2019.12.002

Chen, M., Lee, S., Neuhann, S. & Saidi, F. Less Bank Regulation, More Non-Bank Lending. *Finance and Economics Discussion Series 2023-026. Washington: Board of Governors of the Federal Reserve System*, https://doi.org/10.17016/FEDS.2023.026

Chia, J. L., Yahya, M. H., & Muhammad, J. (2015). The impact of basel III on Malaysian stock performance. *Pertanika Journal of Social Sciences and Humanities*, *23*(September).

Clayton, C., & Schaab, A. (2022). Multinational Banks and Financial Stability. *Quarterly Journal of Economics*, *137*(3). https://doi.org/10.1093/qje/qjac002

Codling, M. & Harley, H. (2011). *PwC analysis of the major banks results for half year 2011*. PwC Australia. https://www.pwc.com.au/industry/banking-capital-markets/assets/mbamay11.pdf

Coorey, P. (2017). *Regulation is eroding 23pc of returns, banks say.* Australian Financial Review.. https://www.afr.com/politics/regulation-is-eroding-23pc-of-returns-banks-say20170829-gy63yu

Cornell, A. (2013). *What lies behind APRA's letter to the banks.* Australian Financial Review. https://www.afr.com/politics/what-lies-behind-apra-s-letter-to-the-banks20131031-j07c3

Corrado, C. J., & Zivney, T. L. (1992). The Specification and Power of the Sign Test in Event Study Hypothesis Tests Using Daily Stock Returns. *The Journal of Financial and Quantitative Analysis*, *27*(3). https://doi.org/10.2307/2331331

Cosimano, T. F., & McDonald, B. (1998). What's different among banks? *Journal of Monetary Economics*, *41*(1). https://doi.org/10.1016/S0304-3932(97)00060-3

Daniels, K. N., & Jensen, M. S. (2005). The Effect of Credit Ratings on Credit Default Swap Spreads and Credit Spreads. *The Journal of Fixed Income*, *15*(3). https://doi.org/10.3905/jfi.2005.605421

Davis, K.(2019). Central Banking and prudential regulation. How the Wheels Turn. *Oxford University Press.*

Davis, K (2011). The Australian Financial System in the 2000s: Dodging the Bullet*. Reserve Bank of Australia.* https://www.rba.gov.au/publications/confs/2011/davis.html de

Krester, A. & Eyres, J. (2022). Wayne Byres to step down as APRA chairman. *Australian Financial Review*. https://www.afr.com/companies/financial-services/wayne-byres-tostep-down-as-apra-chairman-20220726-p5b4ls

de Nicolò, G., Gamba, A., & Lucchetta, M. (2014). Microprudential regulation in a dynamic model of banking. *Review of Financial Studies*, *27*(7). https://doi.org/10.1093/rfs/hhu022

DeAngelo, H., & Stulz, R. M. (2015). Liquid-claim production, risk management, and bank capital structure: Why high leverage is optimal for banks. *Journal of Financial Economics*, *116*(2), 219–236. https://doi.org/10.1016/j.jfineco.2014.11.011

Diamond, D. W., & Rajan, R. G. (2000). A theory of bank capital. *Journal of Finance*, *55*(6). https://doi.org/10.1111/0022-1082.00296

Drummond, M. (2009). *Banks face more stringent future.* Australian Financial Review. https://www.afr.com/companies/banks-face-more-stringent-future-20090912-jn686

Drummond, M. (2010) *APRA to wait and see on Basel reforms*, Australian Financial Review. https://www.afr.com/companies/financial-services/apra-to-wait-and-see-on-baselreforms-20100826-iv1b9.

Drummond, M. (2010). *APRA to wait and see on Basel reforms.* Australian Financial Review. https://www.afr.com/companies/financial-services/apra-to-wait-and-see-onbasel-reforms-20100826-iv1b9

Drummond, S. (2014). *APRA's plans dismay lenders.* The Australian Financial Review. https://www.afr.com/companies/apra-s-plans-dismay-lenders-20140430-ijcir

Drummond, S. (2014). *Basel Committee pushes to fix big banks' buffers.* Australian Financial Review. https://www.afr.com/companies/basel-committee-pushes-to-fix-big-banksbuffers-20140627-jgppt

Dwyer, G. (2019) *Macroprudential Regulation of Banks and Financial institutions.* Oxford University Press.

Eichenbaum, M., Rebelo, S., & Wong, A. (2022). State-Dependent Effects of Monetary Policy: The Refinancing Channel. *American Economic Review*, *112*(3). https://doi.org/10.1257/AER.20191244

Eickmeier, S., Kolb, B., & Prieto, E. (2021). Macroeconomic Effects of Bank Capital Regulation. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3297402

Eyers, J. (2015). *APRA mulls options for lifting bank capital.* Australian Financial Review. https://www.afr.com/companies/financial-services/apra-mulls-options-for-lifting-bankcapital-20150625-ghxl7d

Eyers, J. (2017). *Australian banks take new Basel targets in their stride.* Australian Financial Review. https://www.afr.com/companies/financial-services/aussie-banks-take-new-baseltargets-in-their-stride-20171208-h01d0e

Eyres, J. (2015). APRA mulls options for lifting bank capital. *The Australian Financial Review*. https://www.afr.com/companies/financial-services/apra-mulls-options-forlifting-bank-capital-20150625-ghxl7d

Eyres, J. (2016). APRA 'dampens enthusiasm' on Basel bank capital break. *The Australian Financial Review.* https://www.afr.com/companies/financial-services/apra-dampensenthusiasm-on-basel-bank-capital-break-20161113-gso923

Eyres, J. (2017). Australian banks take new Basel targets in their stride?. *Australian Financial Review*. https://www.afr.com/companies/financial-services/aussie-banks-takenew-basel-targets-in-their-stride-20171208-h01d0e

Eyres, J. (2018). APRA proposes lifting major bank capital levels to protect from any shock?. *Australian Financial Review*. https://www.afr.com/companies/financial-services/aprapropose s-lifting-major-bank-capital-levels-to-protect-from-any-shock-20181108-h17n5x

Eyres, J. (2018). APRA urges more capital be held against NZ banks. *Australian Financial Review*. https://www.afr.com/companies/financial-services/apra-urges-more-capital-beheld-against-nz-banks-20191015-p530py

Eyres, J. (2018). Banks will have to hold more capital in New Zealand. *Australian Financial Review.* https://www.afr.com/companies/financial-services/banks-will-have-to-holdmore-capital-in-new-zealand-20181214-h194e8

Eyres, J. (2020). APRA focuses capital risk on avoiding the next crisis. *Australian Financial Review.* https://www.afr.com/companies/financial-services/apra-to-tweak-capital-rulesrevise-dividend-caps-20201118-p56fnp

Eyres, J. (2020). *APRA warns banks on new stress test focus.* Australian Financial Review. https://www.afr.com/companies/financial-services/apra-says-bank-stress-tests-to-focuson-cyber-and-climate-risk-20200221-p54324

Eyres, J. (2020). *APRA warns banks on new stress test focus.* Australian Financial Review. https://www.afr.com/companies/financial-services/apra-says-bank-stress-tests-to-focuson-cyber-and-climate-risk-20200221-p54324

Eyres, J. (2021). *APRA lifts bank capital buffers to protect savers.* Australian Financial Review. https://www.afr.com/companies/financial-services/apra-lifts-bank-capitalbuffers-that-protect-from-financial-crisis-20211202-p59e6u

Eyres, J. (2021). *Banks to hold more capital for interest-only loans.* Australian Financial Review. https://www.afr.com/companies/financial-services/banks-to-hold-higher-capitalfor-interest-only-loans-20211129-p59d3l

Eyres, J. & Frost, J. (2017). *APRA strengthens macroprudential rules for banks.* Australian Financial Review.. https://www.afr.com/companies/financial-services/apra-strengthensmacroprudential-rules-for-banks-20170331-gvaibn

Eyres, J. & Frost, J. (2017). *Banks surge as APRA capital plans deliver clarity?.* Australian Financial Review. https://www.afr.com/companies/financial-services/banks-surge-asapra-capital-plans-deliver-clarity-20170719-gxeeni

Eyssell, T., & Arshadi, N. (1990). The wealth effects of the risk-based capital requirement in banking. The evidence from the capital market. *Journal of Banking and Finance*, *14*(1). https://doi.org/10.1016/0378-4266(90)90043-2

Fabozzi, F. J., & Thurston, T. B. (1986). State Taxes and Reserve Requirements as Major Determinants of Yield Spreads Among Money Market Instruments. *The Journal of Financial and Quantitative Analysis*, *21*(4). https://doi.org/10.2307/2330690

Fabozzi, F. J. (Chapters by O'Kane, D. & Barclays)…(2021). The Handbook of Fixed Income Securities. Ninth Edition. *McGraw Hill.*

Fama, E. F. (1985). What's different about banks? *Journal of Monetary Economics*, *15*(1). https://doi.org/10.1016/0304-3932(85)90051-0

Federal Deposit Insurance Corporation (FDIC). (1997). *History of the Eighties: Lessons for the Future.* Vol. 1, *An Examination of the Banking Crises of the 1980s and Early 1990s*. Washington, DC: FDIC.

Federal Reserve. (2023). Private Credit: Characteristics and Risks, Accessible Data. *Board of Governors of the Federal Reserve. https://www.federalreserve.gov/econres/notes/feds-notes/private-credit-characteristics-and-risks-accessible-20240223.htm#fig1*

Financial Stability Board. (2009). *London Summit*. OECD https://www.fsb.org/wpcontent/uploads/london_summit_declaration_on_str_financial_system.pdf

Financial Stability Board. (2009). *Pittsburgh Summit*. OECD https://www.oecd.org/g20/summits/pittsburgh/G20-Pittsburgh-Leaders-Declaration.pdf

Financial Stability Board. (2010). *Toronto Summit*. OECD https://www.oecd.org/g20/summits/toronto/g20-declaration.pdf

Finnerty, J. D., Miller, C. D., & Chen, R. R. (2013). The impact of credit rating announcements on credit default swap spreads. *Journal of Banking and Finance*, *37*(6). https://doi.org/10.1016/j.jbankfin.2013.01.028

Fraisse, H., Lé, M., & Thesmar, D. (2020). The real effects of bank capital requirements. *Management Science*, *66*(1). https://doi.org/10.1287/mnsc.2018.3222

Franco Modigliani; Merton H. Miller. (1958). The cost of capital, corporation finance and theory of investment. *Journal of Craniomandibular Disorders : Facial & Oral Pain*, *5*(1).

Fringuellotti, F. & Santos, J. (2021). Insurance Companies and the Growth of Corporate Loans' Securitization. *FRB of New York Staff Report No. 975, Rev. September 2023. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3899341*

French, K., Rajan, R., Baily,M., Scharfstein., Campbell, J., Shiller, R., Cochrane, J., Shin, H., Diamond, D., Slaughter, M., Duffle, D., Stein, J., Kashyap, A., Stulz, R. & Mishkin, F. (2010). *The Squam Lake Report.* Princeton University Press.

Frost, J. (2017). Banks may need up to $40b for risk weightings. *Australian Financial Review*. https://www.afr.com/companies/financial-services/banks-may-need-up-to-40billion-for-risk-weightings-20170323-gv4yl8

Frost, J. (2019). APRA flags new capital safety net. *Australian Financial Review.* https://www.afr.com/companies/financial-services/apra-flags-new-capital-safety-net20191211-p53ivq

Frost, J. (2020). APRA to mitigate mortgage concentration risks. *Australian Financial Review.* https://www.afr.com/companies/financial-services/apra-to-address-systemicmortgage-problem-20201116-p56f3n

Frost, J. (2020). APRA's capital plan targets higher risk loans and big banks. *Australian Financial Review*. https://www.afr.com/companies/financial-services/apra-s-capital-plantargets-higher-risk-loans-and-big-banks-20201208-p56lp1

Furlong, F. T., & Keeley, M. C. (1989). Capital regulation and bank risk-taking: A note. *Journal of Banking and Finance*, *13*(6). https://doi.org/10.1016/0378-4266(89)90008-3

Gallagher, J., & Hartley, D. (2017). Household finance after a natural disaster: The case of Hurricane Katrina. *American Economic Journal: Economic Policy*, *9*(3). https://doi.org/10.1257/pol.20140273

Gambacorta, L., & Murcia, A. (2020). The impact of macroprudential policies in Latin America: An empirical analysis using credit registry data. *Journal of Financial*

Intermediation, *42*. https://doi.org/10.1016/j.jfi.2019.04.004

Gandel, S. (Data from Frederal Reserve) (2024). US lenders' debt to shadow banks passes $1tn. *The Financial Times.* https://www.ft.com/content/aaf74ab1-0dc0-4965-92d5-87aacaa8fc30

Goodhart, C., Hofmann, B., & Segoviano, M. (2004). Bank regulation and macroeconomic fluctuations. *Oxford Review of Economic Policy*, *20*(4). https://doi.org/10.1093/oxrep/grh034

Gornall, W., & Strebulaev, I. A. (2018). Financing as a supply chain: The capital structure of banks and borrowers. *Journal of Financial Economics*, *129*(3), 510–530. https://doi.org/10.1016/j.jfineco.2018.05.008

Greatrex, C. A. (2011). The Credit Default Swap Market's Reaction to Earnings Announcements. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1104888

Greber, J. & Eyres, J. (2015). *Banks told to rein in house lending*. The Australian Financial Review. https://www.afr.com/property/residential/banks-told-to-rein-in-house-lending-20141210-123pkb

Greenwood-Nimmo, M., Huang, J., & Nguyen, V. H. (2019). Financial sector bailouts, sovereign bailouts, and the transfer of credit risk. *Journal of Financial Markets*, *42*. https://doi.org/10.1016/j.finmar.2018.11.001

Gross, T., Notowidigdo, M. J., & Wang, J. (2020). The marginal propensity to consume over the business cycle. *American Economic Journal: Macroeconomics*, *12*(2). https://doi.org/10.1257/mac.20160287

Haslag, J. H., & Hein, S. E. (1992). Macroeconomic Activity and Monetary Policy Actions: Some Preliminary Evidence. *Journal of Money, Credit and Banking*, *24*(4). https://doi.org/10.2307/1992803

Hugonnier, J., & Morellec, E. (2017). Bank capital, liquid reserves, and insolvency risk. *Journal of Financial Economics*, *125*(2), 266–285. https://doi.org/10.1016/j.jfineco.2017.05.006

Hudsen, C., Kurian, S. & Lewis, M. (2023). Non-bank Lending in Australia and the Implications for Financial Stability. *The Reserve Bank of Australia.* https://www.rba.gov.au/publications/bulletin/2023/mar/pdf/non-bank-lending-in-australia-and-the-implications-for-financial-stability.pdf

Hull, J., Predescu, M. & White, A. (2004). The relationship between credit default swap spreads, bond yields, and credit rating announcements. *Journal of Banking & Finance*, 2004, vol. 28, issue 11, 2789-2811

Ingves, G & Risksban, B.. (2011). *Central bank governance and financial stability.* The Bank for International Settlements. https://www.bis.org/publ/othp14.pdf

Ingves, S. & Riksbank, S. (2011). *Central bank governance and financial stability*. The Bank for International Settlements. https://www.bis.org/publ/othp14.pdf

Jorion, P., & Zhang, G. (2007). Good and bad credit contagion: Evidence from credit default swaps. *Journal of Financial Economics*, *84*(3). https://doi.org/10.1016/j.jfineco.2006.06.001

Joyce, C. (2012). *The price of bank safety.* The Australian Financial Review. https://www.afr.com/opinion/the-price-of-bank-safety-20121127-ilvuy

Joye, C. (2014). *Murray's report good news for banking's little guys*. The Australian Financial Review. https://www.afr.com/politics/federal/murray-s-report-good-news-forbanking-s-little-guys-20141208-1226yl

Joye, C. (2017). *APRA to force big banks to raise more capital*. The Australian Financial Review. https://www.afr.com/opinion/apra-to-force-big-banks-to-raise-more-capital20170212-guaxi2

Joye, C. (2018). *Capital ratios pose another reform challenge for APRA.* Australian Financial Review. https://www.afr.com/wealth/new-capital-ratios-pose-another-reform-challengefor-apra-20180824-h14fov

Joye, C. (2019). *Prepare for a tsunami of riskier bonds.* Australian Financial Review. https://www.afr.com/wealth/personal-finance/prepare-for-a-tsunami-of-riskier-bonds20190712-p526jf

Kapan, T., & Minoiu, C. (2013). Balance Sheet Strength and Bank Lending During the Global Financial Crisis. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2247185

Kashyap, A. K., & Stein, J. C. (2004). Cyclical implications of the Basel II capital standards. *Economic Perspectives*, *28*(1).

Kim, S. B., & Moreno, R. (1994). Stock Prices and Bank Lending Behavior in Japan. *Federal Reserve Bank of San Francisco*, *May 2016*.

Kokkinis, A. & Miglionico, A. (2021). *Banking Law. Private Transactions and Regulatory Frameworks.* Taylor and Francis Group.

Kolari, J., & Pynnönen, S. (2010). Event-Study Methodology: Correction for Cross-Sectional

Correlation in Standardized Abnormal Return Tests. *The Review of Financial Studies*, *23*.

Kolari, J., Mahajan, A., & Saunders, E. M. (1988). The effect of changes in reserve requirements on bank stock prices. *Journal of Banking and Finance*, *12*(2). https://doi.org/10.1016/0378-4266(88)90034-9

Kothari, S. P., & Warner, J. B. (2007). Econometrics of Event Studies. In *Handbook of Empirical Corporate Finance SET* (Vol. 2). https://doi.org/10.1016/B978-0-444-53265-7.50015-9

Kovner, A., & van Tassel, P. (2022). Evaluating Regulatory Reform: Banks' Cost of Capital and Lending. *Journal of Money, Credit and Banking*, *54*(5). https://doi.org/10.1111/jmcb.12875

Le, T. N. L., Nasir, M. A., & Huynh, T. L. D. (2020). Capital requirements and banks performance under Basel-III: A comparative analysis of Australian and British banks. *Quarterly Review of Economics and Finance*. https://doi.org/10.1016/j.qref.2020.06.001

Lepetit, L., Saghi-Zedek, N., & Tarazi, A. (2015). Excess control rights, bank capital structure adjustments, and lending. *Journal of Financial Economics*, *115*(3), 574–591. https://doi.org/10.1016/j.jfineco.2014.10.004

Liew, R (2014). *Morgan Stanley outlines FSI report expectations.* Australian Financial Review. https://www.afr.com/companies/financial-services/morgan-stanley-outlines-fsireport-expectations-20140711-jgx9u

Liondis, G. (2013). *Basel bonus hinges on APRA response.* Australian Financial Review. https://www.afr.com/companies/financial-services/basel-bonus-hinges-on-apra-response20130107-jiesk

Liondis, G. (2013). *New rules could force NAB to reassess dividends.* Australian Financial Review. https://www.afr.com/companies/new-rules-could-force-nab-to-reassessdividends-20131031-j078u

Llewellyn, D. (2019) *Central banks and the New Regulatory Regime for Banks.* Oxford University Press.

Lui, A. (2017). *Financial Stability and Prudential regulation. A comparative approach to te UK, Canada, Australia and Germany.* Taylor and Francis Group.

Maley, K. (2017). *Why banks will resent APRA's latest capital move.* Australian Financial Review.. https://www.afr.com/companies/financial-services/why-banks-will-resentapras-latest-capital-move-20170405-gve7ph

Malloy, M. (2003). *Principles of Bank regulation.* West – A Thomson Reuters Business.

Mather, J. & Han, H. (2019). *APRA weighs capital boost.* Australian Financial Review. https://www.afr.com/companies/financial-services/apra-mulling-additional-capitalrequirements-20190522-p51pxr

McLeay, M., Radia, A., & Thomas, R. (2014). Money Creation in the Modern Economy. *Bank of England Quarterly Bulletin*, *Q1*.

Mehran, H. & Thakor, A. (2009). Federal Reserve Bank of New York Staff Reports Bank Capital and Value in the Cross Section. *Federal Reserve of New York*, *390*.

Miller, M. H. (1995). Do the M & M propositions apply to banks? *Journal of Banking and Finance*, *19*(3–4). https://doi.org/10.1016/0378-4266(94)00134-O

Moullakis, J. (2023). *RBA plan for CBA's Macquarie buy revealed.* The Australian.

Murray, D. et al. (2014). *Financial System Inquiry Final Report*. The Commonwealth of Australia. https://treasury.gov.au/publication/c2014-fsi-final-report

Murray, D. et al. (2014). *Financial System Inquiry Interim Report*. The Commonwealth of Australia. https://www.ausbanking.org.au/wp-content/uploads/2022/06/FinancialSystem-Inquiry-Interim-Report-Treasury-2014.pdf

Norden, L. & Hull, M. (2004) Informational efficiency of credit default swap and stock markets: The impact of credit rating announcements. Journal of Banking & Finance, 2004, vol. 28, issue 11, 2813-2843

OECD. (2009) *Leaders' statement the Pittsburgh Summit - OECD*. https://www.oecd.org/g20/summits/pittsburgh/G20-Pittsburgh-Leaders-Declaration.pdf.

OECD. (2010). *Framework for strong, sustainable and balanced growth*. G20 Research Group. http://www.g20.utoronto.ca/2010/g20seoul-doc.html

OECD. (2010). *The Seoul Summit*. University of Toronto http://www.g20.utoronto.ca/2010/g20seoul-doc.html

OECD. (2014). *G20 Leaders' Communiqué Brisbane*. G20 Research Group. http://www.g20.utoronto.ca/2014/2014-1116-communique.html

Osborne, D. K., & Zaher, T. S. (1992). Reserve requirements, bank share prices, and the uniqueeness of bank loans. *Journal of Banking and Finance*, *16*(4). https://doi.org/10.1016/0378-4266(92)90009-O

Papadimitriou, T., Gogas, P., & Athanasiou, A. F. (2020). Forecasting S&P 500 spikes: an SVM approach. *Digital Finance*, *2*(3–4). https://doi.org/10.1007/s42521-020-00024-0

Park, S. (1997). Risk-taking behavior of banks under regulation. *Journal of Banking & Finance* 21, 491-507. https://doi.org/10.1016/S0378-4266(96)00050-7

Patell, J. (1976) *Corporate forecasts of earnings per share and stock price behaviour: Empirical tests,* Journal of Accounting Research 14, 246–276. No DOI

Pesando, J. E. (1974). The Supply Of Money And Common Stock Prices: Further Observations On The Econometric Evidence. *The Journal of Finance*, *29*(3). https://doi.org/10.1111/j.1540-6261.1974.tb01490.x

Repullo, R., & Suarez, J. (2013). The procyclical effects of bank capital regulation. *Review of Financial Studies*, *26*(2). https://doi.org/10.1093/rfs/hhs118

Sanders, T. B. (2015). The Unintended Consequences of Basel III: Reducing Performance Ratios and Limiting Bank Acess to Equity Funding Markets. *Quarterly Journal of Finance & Accounting*, *53*(1/2).

Schwartz, C. (2023). Australian Securitisation Markets: Responding to Change. *Reserve Bank of Australia*, https://www.rba.gov.au/speeches/2023/sp-so-2023-11-21.html

Segoviano Basurto, M., Hofmann, B., & Goodhart, C. A. E. (2021). Default, Credit Growth, and Asset Prices. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.941285

Shakdwipee, P., & Mehta, M. (2017). From Basel I to Basel II to Basel III. *International Journal of New Technology and Research*, *3*(1).

Shapiro, J. (2009) *APRA delay gives banks a reprieve*. Australian Financial Review. https://www.afr.com/markets/debt-markets/apra-delay-gives-banks-a-reprieve-20091218iw9cd

Shapiro, J. (2009) *Liquidity submissions deadline extended*. Australian Financial Review. https://www.afr.com/companies/financial-services/liquidity-submissions-deadlineextended-20091208-iwbwo.

Shapiro, J. (2016). *APRA changes set to ease deposit war pressures.* The Australian Financial Review. https://www.afr.com/companies/financial-services/apra-changes-set-to-easedeposit-war-pressures-20160929-grrlqv

Shapiro, J. (2017). *Budget 2017: Are Australia's banks on the road to nationalisation?.* Australian Financial Review.. https://www.afr.com/companies/financial-services/budget-2017-are-australias-banks-on-the-road-to-nationalisation-20170510-gw16y9

Shapiro, J. (2022). *APRA gives CBA all clear, removing $1b capital penalty.* Australian Financial Review. https://www.afr.com/companies/financial-services/apra-gives-cba-allclear-removing-1b-capital-penalty-20220930-p5bm7h

Slovik, P., & Cournede, B. (2015). Macroeconomic Impact of Basel III. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2650033

Smith, M. (2015). *APRA gives big banks wiggle room on capital.* The Australian Financial Review. https://www.afr.com/chanticleer/apra-gives-big-banks-wiggle-room-on-capital20150713-giaugh

Statista (2022*). Largest mortgage providers Australia 2022, by value of gross lending*. Statista research Department. https://www.statista.com/statistics/1211627/leadingmortgage-lenders-australia-by-value-of-lending/

Stewart, J. D., & Hein, S. E. (2002). An investigation of the effect of the 1990 reserve requirement change on financial asset prices. *Journal of Financial Research*, *25*(3). https://doi.org/10.1111/1475-6803.00024

Sundaresan, S. M., & Wang, Z. (2014). Bank Liability Structure. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2495579

Šútorová, B., & Teplý, P. (2013). The impact of basel III on lending rates of EU banks. *Finance a Uver - Czech Journal of Economics and Finance*, *63*(3).

Tan, S. (2017). Crackdown on bank lending through tougher macroprudential policies imminent. *Australian Financial Review.* https://www.afr.com/property/crackdown-onbank-lending-through-tougher-macroprudential-policies-imminent-20170320-gv1v36

Taylor, M., Arner, D. & Gibson, Evan. (2019). Central Banks' New Macroprudential; Consensus. *Oxford University Press.*

The Economist. (2023). Why America's banks need more capital. *The Economist.* https://www.economist.com/leaders/2023/10/19/why-americas-banks-need-more-capital

The Economist. (2023). Why it might be time to buy banks. *The Economist.* https://www.economist.com/finance-and-economics/2023/12/07/why-it-might-be-time-to-buy-banks

Thomson, J. (2020). APRA gives banks wriggle room on dividends. *Australian Financial Review.* https://www.afr.com/chanticleer/apra-shows-wisdom-of-solomon-on-dividends20200729-p55gij

Thomson, J. (2021). Two big-picture aims in APRA's capital rules. *Australian Financial Review.* https://www.afr.com/chanticleer/two-big-picture-aims-in-apra-s-capital-rules20211129-p59d7c

Turner, G. (2011). Depositor Protection in Australia. *Reserve Bank of Australia.* https://elischolar.library.yale.edu/cgi/viewcontent.cgi?article=9412&context=ypfsdocuments

Tyree, A. (2017). Banking Law in Australia. *Lexis nexus Butterworth Australia.*

Vickovick, A. (2021). Macquarie slapped with $500m capital buffer after 'multiple breaches'. Australian Financial Review. https://www.afr.com/companies/financialservices/macquarie-slapped-with-500m-capital-buffer-after-multiple-breaches-20210401p57fsk

Winestock, G. (2009). Global rules hit local banks. *Australian Financial Review.* https://www.afr.com/companies/global-rules-hit-local-banks-20090728-jmzrh

Winestock, G. (2010). Banks win relief from global rules. *Australian Financial Review.* https://www.afr.com/politics/banks-win-relief-from-global-rules-20100728-iv2c1 Yeates,

Yeates, C. (2013). APRA chair steps down. *The Sydney Morning Herald.* https://www.smh.com.au/business/apra-chair-steps-down-20130403-2h6y0.html

Yeates, C. (2014). Rules allowing big banks to hold less capital questioned. *The Australian Financial Review. https://www.afr.com/companies/financial*-services/new-capital-rulesto-hit-big-bank-returns-20140506-itzx9

Yeates, C. (2014). APRA rule to dampen banks' return. *The Australian Financial Review.* https://www.afr.com/companies/apra-rule-to-dampen-banks-return-20140506-itzuz Yeates, C.

Yeates, C. (2014). New capital rules to hit big bank returns. *The Australian Financial Review.* https://www.afr.com/companies/financial-services/new-capital-rules-to-hit-bigbank-returns-20140506-itzx9