Submission to APRA on

"Implementing Basel III Capital Reforms in Australia"

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1.0 Introduction and Recommendation

1.1 Mòrgij Analytics ("Mòrgij") welcomes the Basel III capital reforms proposed by APRA. Mòrgij has prepared this submission specifically to highlight a number of the requirements under APS 110 and their implications for loan level, reliable data bases and analytic tools needed for ADI's to meet the full requirements of APS 110, and to recommend a process to assist the development of solutions.

1.2 Mòrgij addresses the following issues relating to residential mortgages ("RMs") in this submission:

1.2.1 Basel III and APS 110 requirements and principles
1.2.2 Risk weighting of residential mortgages, credit risk and the implications for capital adequacy
1.2.3 Loan level data and its availability
1.2.4 Standardised reporting
1.2.5 Standardised methods analyzing data, stress testing and scenario analysis
1.2.6 Cheap, reliable and efficient delivery platforms for standardized analytic methods

1.3 **Mòrgij recommends that APRA should set criteria and provide a process to enable standardised data, reporting and analytic methodologies developed by third parties to be approved for calibration and use by Australian ADIs in order to provide a cost effective solution to the analytic and reporting requirements of Basel III and APS 110. APRA and the Australian banking industry would benefit greatly from implementing this recommendation**

2.0 Basel III and APS 110 requirements and principles

2.1 Mòrgij proposes that for the purposes of the matters outlined in this submission, the relevant important purposes of the Basel III recommendations to be adopted by APRA are:

2.1.1 To improve an ADI's ability to absorb adverse financial shocks and continue to operate
2.1.2 To improve an ADI's overall risk management
2.1.3 To strengthen an ADI's transparency and disclosures

2.2 RMs represent the largest asset class of all Australian ADIs from the smallest mutual to the largest of the major banks with a total balance outstanding as at 31 March 2012 of $1.15 Trillion compared to total assets outstanding for all ADIs of $2.67 Trillion.

2.3 The allocation of adequate capital to the risk of RMs is one of the most important issues facing all ADIs. Australian RMs are generally assessed as low risk assets. This is reflected in the both the standard risk weighting and the IRB methodologies used to calculate risk weighted assets by CBA,ANZ, NAB and Westpac. For this reason any knowledge of a change in the risk of RMs, even if small, can have a significant effect on the adequacy of capital an ADI allocates to RMs. Therefore the importance of the Basel III and APS 110 changes and how they effect the risk assessment of RMs, is a significant issue to be addressed by all ADI directors and senior management.

2.4 Mòrgij specifically acknowledges the increased responsibilities for ADI directors to take account of prospective changes in risk profile in para. 10 of APS 110

The Board of directors of an ADI has a duty to ensure that the ADI maintains an appropriate level and quality of capital commensurate with the type, amount and concentration of risks to which the ADI is exposed from its activities. In doing so, the Board must have regard to any prospective changes in the ADI's risk profile and capital holdings.

2.5 With greater responsibilities on capital adequacy requirements also come the requirement for better and more extensive reporting through the Internal Capital Assessment Process ("ICAAP") and the ICAAP Report. The ICAAP at a minimum must include, amongst a number of other important things; *stress testing and scenario analysis relating to potential risk exposures and available capital resources.*

2.6.1 For ADIs, the ICAAP raises many issues relating to RMs which may significantly change their approach to capital and risk management. Such issues relate to:

2.6.2 reliable and detailed data capture
2.6.3 standards for analytic methodologies
2.6.4 the method used to conduct useful stress testing and scenario analysis.
2.6.5 reporting standards for internal and external consumption

2.7 **Mòrgij submits that, given agreed criteria, there are and will be developed low cost effective solutions to an ADI's needs and the capital adequacy requirements of Basel III and APS 110.**

3.0 Risk weighting of Residential Mortgages, Credit Risk and the implications for Capital Adequacy

3.1 Assessing the risk of RMs on a dynamic and continual basis is not a trivial exercise. Whilst all ADIs may have very robust underwriting policies and procedures to approve a mortgage, circumstances change and therefore risk needs to be continually reassessed using current data bases.

3.2 In an environment where house prices, ie the value of mortgage collateral, are increasing, dynamic risk assessment may be less important as adverse changes to a borrower's circumstances may not have a detrimental effect. On the other hand, in an environment where house price are declining or unstable, many factors that affect the risk on an RM become very important to the assessment of an ADI's capital adequacy.

3.3 In addition to the current environment an ADI is required to construct possible scenarios affecting the risk of RMs which need to be used to stress the ADI's capital adequacy.

3.4 By far the majority of RMs on the balance sheets of all Australian ADIs do not carry a 100% risk weighting whether using the standard method or internal risk based methods. The average portfolio risk weighting for ADI's using the standard method is around 50%, whilst the average for the major banks using IRB methods is around 20%. Taking account of the risk weighting of RMs used by ADIs, it is clearly deduced that small changes in the risk assessment of RMs can have an important effect on the assessment of the adequacy of capital for all ADIs.

3.5 In order to assess even small changes in risk requires methodologies which look at multiple factors which affect the risk of a mortgage in a changing environment. Basic factors such as LVR, documentation and credit history are always important but many other factors should be taken into account including serviceability, cash drawings, interest only periods, other repayment structures, loan size, type of property and costs of foreclosure need to be captured and assessed to be able to understand the real changes in credit risk as circumstances are updated. Mòrgij understands from a speech given by John Laker, Chairman of APRA, on 11 May 2012 that underwriting standards and serviceability risk is a key focus currently for APRA

3.6 **Mòrgij submits that all ADIs require the ability, skills and system resources to analyse the credit risk of RMs as the risk changes, stress the risk assessment, assess the adequacy of capital within the stressed scenarios, and report the results of the analysis clearly both internally and externally**.

4.0 Loan Level Data and its Availability

4.1 The ability to risk assess RMs for the purpose of capital adequacy and to be able to stress that risk assessment hinges on reliable and timely loan level data. Data also needs to be stored and historical performance results made available for assessment.

4.2 Detailed data capture and storage whereby performance can be assessed against all relevant risk parameters is a critical part of the risk assessment and capital adequacy process as described in Basel II and affirmed within Basel III. Not only does measuring performance against risk parameters assist directors and senior management in confidently assessing the adequacy of capital, it may also give APRA added confidence in their own assessments of an ADI.

4.3 Data bases generally kept by ADIs do not cover a full range of risk parameters that may be required to provide adequate risk assessment in the likely future financial environment in Australia. Risk factors that may affect RM performance have been masked as house prices have been increasing or relatively stable since the late 1980s or early 90s, a time when many ADIs started to build or acquire computerized servicing systems. During the intervening period, arguably it has not been necessary for risk assessment purposes to keep detailed data bases on all the risk factors and performance of RMs. As Australia may be entering a period of less stable house prices and a much greater focus on risk assessment and capital adequacy, data bases capturing detailed risk parameters and performance must be high on the agenda for all ADIs.

4.4 Many ADIs with legacy servicing systems have difficulty in easily capturing and storing all the data which may be required to risk assess and stress RMs even though all the data required would be available somewhere within the organization whether in different IT systems or in hard form. Whilst the cost of building and maintaining a reliable usable data base needs to be taken into account, it must be weighed against the ability to safely and reliably assess risk and determine an adequate level of capital as described in the proposed APS 110.

4.5 From a regulatory supervision view, ADIs developing and maintaining detailed data bases provide benefits in not only assessing an individual ADIs risk but aggregation of data enables benchmarks to be constructed. These benchmarks could be used to compare ADIs individually or as groups, or identify potential systemic risks.

4.6 **Morgij submits that the development of loan and RM data standards and requirements allows and encourages the development of useful entity only and centralized data bases.**

5.0 Standardised Reporting of Risk Parameters and Performance

5.1 Standardised reporting is a feature of all financial markets. ADIs report publicly under accounting, ASX and regulatory standards (including Pillar 3). ADIs also report to APRA under standardized formats. Without standardized formats, regulators, analysts or any other interested party would find it almost impossible to assess and compare different organisations.

5.2 The creation of detailed data bases that capture detailed risk parameters and the performance of RMs relative to the risk parameters through a number of varied economic cycles will lead to the need to report the data and results in a standard format. Reporting standards ensure that results are easily assimilated by analysts and management.

5.3 All ADIs report a level of risk data and performance but currently, Mòrgij's research reveals that the reporting reflects the market conditions and requirements over the last 20 years. Such historical reporting is likely to be inadequate for the possible and probable economic conditions that may exist over the next 20years.

5.4 Reporting risk data and performance is a sensitive issue with both privacy concerns and perhaps an ADI being concerned about revealing confidential intellectual property. **Mòrgij submits that once these issues are addressed, standardized reporting of risk parameters and performance will be of great benefit to the transparency of risk assessment and the determination of the adequacy of capital for RMs by ADIs.**

6.0 Standardised methods analyzing loan data, stress testing and scenario analysis

6.1 For the same reasons that detailed data bases and standardized reporting for RMs is useful, ADIs could benefit greatly from having standardized methodologies for analyzing the loan data and performance, and stress testing. For standard analytic methodologies to be universally acceptable to ADIs and regulators, they need to be developed by independent third parties using modern efficient means for delivery and adaptation to an ADI's individual situation and view of risk.

6.2 Analytic method standardization does not mean all ADIs use the same analysis on their RM pools. Rather it's the use of an underlying method that is open book and easily understood by analysts and regulators but is calibrated to the ADI's (and perhaps APRA's) view of risk and any special circumstances that affect their risk. In addition, stress testing and scenario analysis is able to again be tailored to the particular ADI but with a consistent methodology tuned to regulatory requirements.

6.3 Together with the detailed guidance of Basel II, a few additional documents produced by the Basel Committee on Banking Supervision are useful in outlining certain requirements of risk assessment methodologies, models, disclosure and their use. Mòrgij has made use of these documents in its research. All the documents can be found on the Basel Committee website.

6.3.1 Use of Vendor Products in the Basel II IRB Framework (March 2006)
6.3.2 Vendor Models for credit risk measurement and management (Working Paper 17 Feb 2010)
6.3.3 Principles for sound stress testing practices and supervision (May 2009)

6.4 Development of analytic, stress testing and scenario analysis tools which would meet all the requirements of the Basel Committee, APS 110 and an ADI's internal compliance is a costly and time consuming exercise which may be beyond the means of many smaller ADIs or considerably expensive for any ADI which embarks on the exercise. Nevertheless, it is now the responsibility of directors and senior management of all ADIs to have access to acceptable analytic tools.

6.5 As an example of a standard method that's been successfully used, Moody's Analytics has developed a methodology (amongst many other methodologies) for assessing the risk of commercial mortgages. In the US this methodology and its standards have been adopted by the banking industry as the risk metric used by all banks and regulators to assess, compare and report commercial mortgage risk. The methodology does not replace internal risk assessment but augments the understanding and regulation of the commercial mortgage market in the US.

6.6 **Mòrgij submits that APRA and the banking industry would benefit greatly from Australia having a process whereby standardized analytic methodologies and tools can be assessed in accordance with recommended criteria by the regulator. Such criteria could set out APRA's view of how such methodologies are operated and criteria for transparency, validation and calibration by each ADI proposing to use the methodology.**

6.7 As a guide and reference, please note a publication and process from the European Central Bank, *"Acceptance Criteria for Third-Party Rating Tools within the Eurosystem Credit Assessment Framework-December 2006*". The document can be found on the ECB website and was used by Mòrgij in its research. The purpose of the document is to outline an alternative method that a European bank may use to assess the credit of a security which can then become eligible for the repurchase facility with the ECB. Such an approach is an alternative to other credit assessment approaches, for instance the opinions of Credit Rating Agencies.

6.8 **Mòrgij submits that whilst the ECB framework document is for a different but related purpose to that required by Australian ADIs to be able to meet the requirements of APS110, the ECB requirements for an eligible credit rating tool could have much in common with possible requirements in Australia for a standardized methodology and tool for analyzing credit risk and determining adequate capital allocation and stress testing**. As an example, the ECB criteria cover the following selected aspects which are summarized as follows:

6.8.1 Objectivity of the methodology
6.8.2 Input must be readily available
6.8.3 Must produce a one-year probability of default
6.8.4 Methodology must be extensively documented
6.8.5 Documentation must be readily available
6.8.6 Model should be primarily mechanical
6.8.7 Procedures for the collection of data must be documented
6.8.8 The provider must be independent
6.8.9 There must be transparency of model outputs for all parties with interests
6.8.10 Provider must have sufficient resources and a governance process
6.8.11 Model outputs should be frequent, timely and aligned with data changes
6.8.12 Regulators should be able to assess the methodology and validation process
6.8.13 Data should be accurate, complete and appropriate
6.8.14 A provider should have data quality standards and definitions
6.8.15 Methodologies and models must undergo a validation process
6.8.16 Validation should be both quantitative and qualitative
6.8.17 Validation processes should be subject to independent review

7.0 Cheap, Reliable and Efficient Delivery Platforms for Standardised Analytic Methods

7.1 Mòrgij believes that any party with the relevant expertise should be able to have the opportunity to develop system solutions to provide ADIs with the tools to meet its capital adequacy obligations. The ability to innovate and develop such solutions can only strengthen the Australian banking system. For this reason Morgij embarked on the development of a uniquely Australian solution.

7.2 The keys to be able to deliver a standardized analytic platform for the benefit of ADIs and APRA are cost effectiveness and reliability. The avoidance of great cost on an ADI to meet its capital obligations through the availability of an effective standard solution is an initiative the Australian banking industry and APRA should strongly encourage.

7.3 A delivery platform which is capable of providing a low cost solution and is also capable of meeting required regulated criteria is the necessary system foundation. Providing a single source of the methodology software available through the internet with the ability of an ADI to calibrate the risk analysis to their view of risk meets ease of use requirements. Add to that an open availability of the documentation supporting the methodology and the ability of the ADI to upload all their own loan data, creates the basis for a low cost, reliable and efficient solution to analytic requirements.

7.4 Mòrgij has created an Australian solution for the standardization of data and reporting, and a standard method of analytics of RMs calibrated to a users view of risk with its MARQ Services (www.MARQAnalytics.com.au). Mòrgij intends to expand its services and methodologies to include all loan asset classes as its standardised analytics process is not designed only for RMs. The existence of MARQ Services proves that effective solutions can be developed which have wide application. Nevertheless, as no criteria currently exists the acceptance, by ADIs and by extension APRA, of MARQ Services is more problematic than it could be.

7.5 MARQ Services for RMs is available now to all ADIs for calibration of risk weights to internal policies and regulatory requirements. Scenarios can be created for stress testing the risk according to accepted practice and regulatory guidelines. The output can then be used by the directors and senior management to make decisions in relation to the adequacy of an ADI's capital.

7.6 **Morgij submits that MARQ Services is consistent with the principles and capital adequacy requirements of Basel III and APS 110 and are able to be delivered at an affordable price with great benefits to all ADIs and APRA**.

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