# Submission to Productivity Commission Inquiry Data Availability and Use

# Australian Financial Markets Association

**29 July 2016**

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# Summary of Observations and Recommendations

- AFMA approves of the direction of Government policy in relation to data availability and use. However, further progress will require an accountability framework to ensure that the public sector delivers on this policy intent, as well as the commitment of additional resources.
- Given the large potential economic pay-offs from improved access to and use of data, AFMA submit that the commitment of additional public sector resources to data collection and dissemination is warranted.
- Financial markets have been at the forefront of technologies that have improved data availability and use because of the strong economic incentive to quickly incorporate new information into financial market prices. The efficiency of data availability and use is essential to the transparency on which price discovery depends.
- The widespread adoption of computer technology for data handling in financial markets has driven significant improvements in market quality and liquidity, reduced profits for many financial intermediaries and lowered costs for investors and consumers.
- More complete information about financial market activity would assist in evaluating market liquidity and the quality of trade execution, potentially lowering transaction costs, benefiting investors and the consumers of financial services.
- Financial system regulators are uniquely placed to compel and compile this information, as well as publish it authoritatively in ways that protect its proprietary and commercially-sensitive content.
- Significant resources have been expended by the private and public sectors in collecting data on financial market activity. These data are already the subject of aggregation and analysis by regulators. The additional resource cost in making these data publicly accessible is relatively small in comparison, yet would make data holdings on the part of regulators more valuable to the community that has already incurred the cost of their collection.
- Regulatory data collection should increasingly rely on passive, automated processes rather than traditional survey-based methodologies. This would reduce the compliance burden on market participants of regulatory reporting, as well as lower the cost of data dissemination.
- The Productivity Commission should recommend that the Council of Financial Regulators establish a comprehensive data dissemination framework for financial market data collected for regulatory and other purposes, given that the CFR members are uniquely placed and resourced to perform this function. The Council of Financial Regulators should also facilitate Australian Bureau of Statistics access to data collected for regulatory purposes to improve the scope and quality of ABS data. This may require legislative change to facilitate data sharing currently precluded by law.
- Financial system regulators can make use of the existing Comprehensive Knowledge Archive Network (CKAN) open source data portal software that underpins the data.gov.au web site for data dissemination purposes.
- The public sector in Australia often falls short of meeting basic data dissemination standards, including those set out in the Australian Government's recent Public Data Policy Statement.
- The Australian National Audit Office should be tasked with evaluating the performance of public sector agencies against the policies and principles contained in the Statement in its regular reviews of government agencies.
- The IT infrastructure of the ABS and many overseas statistical agencies is designed to support a survey-centric mode of production for economic statistics measuring an industrial economy outputting tangible goods and services. This infrastructure is increasingly misaligned with what is required to measure a modern economy.

- The Productivity Commission should recommend that the ABS produce the CPI at a monthly frequency and that the Government should include additional funding in the Budget for this purpose. At the same time, the ABS should be encouraged to use innovative data collection technologies to augment its existing approach to compiling the CPI and other data in collaboration with the private sector with a view to improving the efficiency of data collection and dissemination.
- The ABS should aim for greater certainty and coordination in determining the date for data releases. The ABS should consult with financial market participants, other users and the Council of Financial Regulators on the choice of an earlier release time for its data. ABS should also use dedicated feeds or media lock-ups to communicate data to financial market participants via major newswires and quote vendor systems.
- The Productivity Commission should recommend that state and federal Parliaments add metadata to their legislative and regulatory outputs to enhance the transparency and accountability of the political process and government activity.
- The Productivity Commission should recommend that the Government explore the data-generating and use potential of prediction and macro futures markets as part of the Government's innovation and fintech agenda, with a particular focus on the regulatory barriers to the creation and growth of such markets.

# About AFMA

The Australian Financial Markets Association (AFMA) was formed in 1986. Today we are the leading industry association promoting efficiency, integrity and professionalism in Australia's financial markets – including the capital, credit, derivatives, foreign exchange and other specialist markets. We have more than 120 members, from Australian and international banks, leading brokers, securities companies and state government treasury corporations to fund managers, energy traders and industry service providers. Our role is to provide a forum for industry leadership and to advance the interests of all these market participants.

AFMA promotes best practice in financial markets so they can continue to contribute to Australia's economic health. We do this by:

- Effectively managing Australia's $78 trillion over-the-counter (OTC) markets;
- Developing widely accepted industry standards for transactional processing;
- Dealing with policy makers on effective regulation of Australia's financial markets to inspire investors' confidence; and
- Encouraging high standards of professional conduct through our professional development and accreditation programs.

*Our mission – advancing the interests of members*

- Promote Australia as a global centre for financial services;
- Help members grow their businesses and contribute to Australia's economic wellbeing;
- Develop new markets for financial products;
- Encourage existing markets to reach their full potential;
- Lead and sustain effective management of OTC financial markets;
- Represent market participants in exchange-traded markets to ensure effective and efficient market processes and regulation;
- Encourage high standards of professional conduct;
- Develop individual expertise through professional development and accreditation programs; and
- Promote government policies and business conditions that support a strong financial sector.

# 1. Introduction

This inquiry has its origins in a recommendation of the 2014 Financial System Inquiry (FSI) and a reference from the Government as part of its response to the FSI Final Report. The Government's National Innovation and Science Agenda has prioritised improving the availability and use of public data. The federal Coalition made a commitment at the 2013 federal election to 'provide expanded access to useful public sector data.'[1] The Government's Commission of Audit also recommended increased use of data for the purposes of policy development and evaluation and the release of de-identified personal administrative datasets for that purpose.

AFMA note the work of the Public Sector Data Management Project commissioned by the Secretary of the Department of Prime Minister and Cabinet and the Government's Public Sector Data Policy Statement. Other important Government initiatives include the data.gov.au web site managed by the Department of Finance.

AFMA welcome these initiatives as recognition of the importance of improving public sector data availability and use, but also recognition of some of the shortcomings in current practices. The Public Sector Data Management Project noted that 'the Commonwealth does not have a strong culture of publishing data to foster economic opportunities,' and that Australia lags comparable jurisdictions in the application of data to policy design.[2]

AFMA approves of the direction of Government policy in this area. However, further progress will require an accountability framework to ensure that the public sector delivers on this policy intent, as well as the commitment of additional resources. Given the large potential economic pay-offs from improved access to and use of data, AFMA submit that the commitment of additional public sector resources to data collection and dissemination is warranted. It is for Government to decide how this commitment is funded in the context of other competing priorities. This submission will nonetheless suggests some ways in which the Commonwealth could economise on the production and dissemination of some data, offsetting some of this increased resource cost.

The Issues Paper for this inquiry outlines in broad terms some of the potential economic pay-offs associated with improved data availability and use. Historically, governments have used their control over information to obscure the costs and benefits of some public policies. An important set of potential benefits flowing from improved data availability and use is improved public policy design, implementation, evaluation, transparency and accountability.

This submission discusses the efficiency of public and private data provision and its use with particular reference to the role of financial markets in the Australian economy. It notes that the data currently collected on financial markets by regulators can be used more effectively.

The submission also suggests some low costs ways in which government legislation and spending could be made more transparent, facilitating improved public policy.

Finally, the submission notes the potential of prediction, policy and macro futures markets to generate useful data for policy evaluation and private and public sector decisionmaking.

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[1] "The Coalition's Policy for E-Government and the Digital Economy," September 2013.
[2] Australian Government, "Public Sector Data Management" (Department of Prime Minister and Cabinet, July 2015).

# 2. Public and Private Data and Australian Financial Markets

## 2.1 Role of Data in Financial Markets

Financial markets are both consumers and producers of large amounts of data. The most important economic function of financial markets is price discovery. Just as market-determined prices ensure the efficient allocation of goods and services, financial market prices determine the efficient allocation of saving, investment and the capital stock.[3] Financial market efficiency is largely a function of the speed of price discovery.

Financial markets have been at the forefront of technologies that have improved data availability and use because of the strong economic incentive to quickly incorporate new information into financial market prices. The efficiency of data availability and use is essential to the transparency on which price discovery depends.

Data that is costly to acquire, untimely or uneven in its dissemination can result in financial market frictions and inhibit price discovery and the efficient allocation of capital. In extreme cases, it can lead to incomplete markets or a lack of pricing for particular assets.

The widespread adoption of computer technology for data handling in financial markets has driven significant improvements in market quality and liquidity, reduced profits for many financial intermediaries and lowered costs for investors and consumers.[4]

Both financial market participants and market regulators have invested significant resources into improving data availability and use to make financial markets more efficient and transparent and to promote public policy objectives such as financial stability. This has been particularly important in over-the-counter (OTC) financial markets for foreign exchange, equity, debt and derivative securities, where data availability and pre- and post-trade transparency has historically been more limited relative to exchange-traded markets.

The economic incentives of some financial market participants have not always been aligned with maximising market transparency and efficiency. For example, broker-dealers often have specialised private knowledge of the demand and supply for particular securities which would enable them to match buyer and seller, but also to charge a spread that provided a return to this specialised knowledge. As financial markets have increasingly moved to more transparent electronic trading platforms, the value of this specialised knowledge has been reduced and buy-sell spreads have narrowed, benefiting investors at the expense of some financial intermediaries. The role of algorithmic and high frequency trading in improving liquidity, price discovery and lowering transaction costs is a good example of how technology has improved the use of data in financial markets.

The lack of a common platform for trading many financial securities, including government and corporate bonds, has limited the availability of information about some financial markets. Even in very large, sophisticated and liquid financial markets, such as those for US Treasury cash securities,

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[3] Australian Financial Markets Association, "Financial Sector Growth, Capital Formation and Productivity" (Sydney: AFMA, January 9, 2016), http://www.afma.com.au/media/01_02_2016_FinanceCapFormProd.pdf.
[4] Stephen Kirchner, "High Frequency Trading: Fact and Fiction," *Policy* 31, no. 4 (Summer 2015).

there is often a lack of basic market information that would enable market participants to assess the quality of trade execution and for regulators to form a clear picture about market developments.[5]

In addition to price discovery, financial markets perform the role of storing and agreeing upon data for financial obligations and the ownership of financial and other assets. Financial securities are subject to multiple layers of custody from broker-dealers, sell-side financial institutions, local and global custodians and central securities depositories (CSDs). As Euroclear and Oliver Wyman note, 'the current methods [for processing data] are highly complex, utilise fragmented IT and data architecture and suffer from a lack of common standards. This creates the continual need to reconcile data with massive systems and process duplication, leading to high costs and protracted time to execute tasks,' including clearing and settlement of trades.[6]

Distributed ledgers have the capacity to realise significant economies in data handling and securities servicing, as well as in the collateralisation of clearing and settlement of financial securities. However, a permissive regulatory environment will be needed to facilitate these innovations and their rapid adoption by capital markets.

## 2.2 Central Clearing and Trade Reporting

In the wake of the financial crisis, G20 financial system regulators have responded to perceived and actual shortcomings in market transparency by imposing central clearing mandates and trade reporting requirements on financial intermediaries in relation to financial instruments such as derivatives. These initiatives aim to improve financial market transparency and enhance financial stability by improving regulatory oversight.

Whether these measures improve market quality and enhance financial stability is an open question. For example, central clearing mandates have facilitated the aggregation and compression of derivatives exposures, reducing some counter-party risks. On the other hand, the socialisation of counter-party risk through central clearing counterparties (CCPs) means that private information about credit risk may no longer be priced into centrally-cleared securities, reducing the information content of financial market prices.[7]

The costs incurred by market participants in complying with central clearing mandates and trade reporting requirements have been considerable. The benefits of these regulatory changes in terms of increased financial stability are difficult to quantify. Regulators are now potentially better informed and have much better data about financial market transactions and risks, although the judgements they bring to these data will largely determine its value from a regulatory and financial stability perspective.

Given the costs incurred by financial markets participants in complying with central clearing mandates and trade reporting requirements, it is incumbent upon financial system regulators to

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[5] Robin Wigglesworth, "US in Hunt for 'real Time' Government Bond Data," *Financial Times*, May 17, 2016, http://www.ft.com/cms/s/0/735d255c-1baa-11e6-b286-cddde55ca122.html.
[6] Oliver Wyman and Euroclear, "Blockchain in Capital Markets: The Prize and the Journey," February 2016, http://www.oliverwyman.com/content/dam/oliver-wyman/global/en/2016/feb/BlockChain-In-Capital-Markets.pdf.
[7] Craig Pirrong, "The Inefficiency of Clearing Mandates" (Washington, DC: Cato Institute, 2010), http://www.cato.org/publications/policy-analysis/inefficiency-clearing-mandates.

ensure that the value of these data is maximised, including by making them more widely available, as discussed below.

## 2.3 The Australian Financial Markets Report

AFMA has traditionally compiled an annual survey of financial market activity in Australia's over-the-counter and exchange-traded financial markets, known as the *Australian Financial Markets Report*. The report has been viewed as an authoritative source of information by both market participants and regulators and is frequently cited by regulators such as the Reserve Bank. The authoritative status of the report largely flows from the fact that it is the only report of its type.

In previous years, the AFMR was based on a survey of market participants. Responses to the survey were aggregated to generate turnover figures for individual financial instruments, broader asset classes, exchange-traded and OTC markets.

The survey-based methodology has become increasingly difficult to implement due to several factors, including the burden the survey methodology imposes on AFMA members in addition to regulatory reporting requirements and because of regulatory compliance issues. These difficulties have made its production increasingly problematic.

AFMA is changing the methodology of the AFMR from a bottom-up survey to a top-down collection using publicly available sources. However, this change in methodology has highlighted the limitations of publicly-available data, particularly in relation to turnover in over-the-counter financial markets. This suggests a role for regulators in improving the publication and dissemination of data on Australian financial markets.

## 2.4 Role of Financial System Regulators in Data Collection and Dissemination

While regulators are now collecting more data on financial markets that ever before, much of this data is not being publicly disseminated or disseminated in an accessible form. In some cases, this is because the data are proprietary or commercially sensitive. It may not be possible to confidentialise data at the individual transaction level, for example. However, much of this data could be aggregated and disseminated in ways that would address these concerns and would result in better information being available to financial market participants and the public about market activity. In particular, more complete information about financial market activity would assist in evaluating market liquidity and the quality of trade execution, potentially lowering transaction costs, benefiting investors and the consumers of financial services.

The data collected on financial markets for regulatory purposes is potentially very valuable, not only for regulators and market participants, but also for academics and others involved in evaluating public policy. **What makes this publicly-held data particularly valuable is that, in many cases, the regulator is uniquely placed to compel and compile this information, as well as publish it authoritatively in ways that protect its proprietary and commercially-sensitive content.**

The Reserve Bank of Australia already collects and disseminates a significant amount of data relevant to Australia's financial markets. However, the scope and frequency of these data could be expanded. The Director of Research at the Federal Reserve Bank of New York has described the increased priority his organisation has given to the collection and publication of data:

*the former Statistics function is now the Data and Statistics function, reflecting the addition of a new entity, the Data Capabilities Office (DCO). The DCO is working bankwide to improve the way that the Bank manages data—how it acquires or creates, catalogues, retrieves, shares and controls, manipulates, and understands data. That is a big challenge for us, and one we are understandably excited about. In addition, the **Statistics side of the function has increased the amount of information that it collects by one or probably two orders of magnitude**...Post-crisis we've come to realize that data is so central to our business model and ability to monitor financial institutions and the economy that we need a group with combined expertise in both data collection and data management, hence the Data and Statistics function.*[8]

An example of these enhanced data collection and publication efforts at the New York Fed is a visualisation tool, which shows historical volumes, haircuts, and concentrations of the top three dealers in the US tri-party repo market, aggregated by asset class. The rationale given for publication of these data is noteworthy:

*The data are being provided to the public in the interest of creating greater transparency on the size of the U.S. tri-party repo market and the nature of its activity.*[9]

The RBA and APRA should aim to benchmark their data collection and dissemination efforts to the practices of their overseas counterparts.

ASIC collects comprehensive data on exchange-traded markets, but only publishes very limited data on market turnover and quality on its web site in an inaccessible form that makes it significantly less valuable. This may partly reflect issues in relation to the ownership of the data, given that securities exchanges depend upon the sale of real-time data about market activity for a growing share of their income. It should nonetheless be possible to improve data availability about exchange-traded and other financial markets through appropriate licensing and data dissemination agreements. Since the value of financial information erodes quickly with time, a delay in publication could be sufficient to protect the proprietary interest in financial market data.

ASIC also maintains a registry of information on Australian companies, the future ownership of which is currently under consideration by the government. In changing the ownership of the registry, government should give careful attention to ensuring a private registry operator is not able to exploit a monopoly position that inhibits access to business information that is required by legislation and which benefits the community by being made accessible. This may require the imposition of an access pricing regime. Such information is made freely available in jurisdictions such as the United States.

Significant resources have been expended by the private and public sectors in collecting data on financial market activity for regulatory purposes. These data are already the subject of aggregation and analysis by regulators. The additional resource cost in making these data publicly accessible is relatively small in comparison, yet would make data holdings on the part of regulators more valuable

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[8] Jamie McAndrews, Hey, Economist! How Is the Research and Statistics Group Changing?  Liberty Street Economics, June 27, 2016, http://libertystreeteconomics.newyorkfed.org/2016/06/hey-economist-how-is-the-research-and-statistics-group-changing.html. Emphasis added.
[9] Federal Reserve Bank of New York, "Triparty Repo," n.d., https://www.newyorkfed.org/data-and-statistics/data-visualization/tri-party-repo/index.html.

to the community that has already incurred the cost of their collection. As Harper argues, 'execution of key government functions, creation of data about that execution and publication of that data should all be essentially the same thing,'[10] making the cost of data collection and dissemination low. **Regulatory data collection should increasingly rely on passive, automated processes rather than traditional survey-based methodologies. This would reduce the compliance burden on market participants of regulatory reporting, as well as lower the cost of data dissemination.**

Financial system regulators can make use of the existing Comprehensive Knowledge Archive Network (CKAN) open source data portal software that underpins the data.gov.au web site for data dissemination purposes. Given that this infrastructure is already available, this should limit the additional resource cost of disseminating additional data.

**Recommendation:** AFMA submits that the Productivity Commission should recommend that the Council of Financial Regulators establish a comprehensive data dissemination framework for financial market data collected for regulatory and other purposes, given that the CFR members are uniquely placed and resourced to perform this function. The Council of Financial Regulators should also facilitate Australian Bureau of Statistics access to data collected for regulatory purposes to improve the scope and quality of ABS data. This may require legislative change to facilitate data sharing currently precluded by law.

# 3. Public Sector Data Dissemination Standards and Accessibility

Making data accessible is an important element of maximising its value. Yet the public sector in Australia often falls short of meeting basic data dissemination standards, including those set out in the Australian Government's recent Public Data Policy Statement. While the Statement can be viewed as an implicit recognition of these shortcomings, significant progress still needs to be made in improving data dissemination. Similar criticisms can often be made in relation to privately-held data, although private sector organisations often have a commercial incentive to improve data availability that is absent in the public sector.

The Government's Public Data Policy Statement should recognise and create an accountability framework for the following general principles:[11]

- **Permanence:** data needs to be recorded and maintained permanently for the public to have confidence in its use. Data that appears and then disappears cannot be relied upon and governments have a duty to taxpayers not to lose information that has been generated at public expense. For example, the Asian Century White Paper and associated materials were removed from their web site and consigned to the National Archives, so that it is now difficult to find.[12] Governments have a duty to maintain the permanent record of policies and activities of their predecessors.

- **Stability:** Data held by government should always be found in the same location. This has often not been the practice of Australian governments, government departments and agencies.

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[10] Jim Harper, "Publication Practices for Transparent Government," Briefing Papers (Washington, DC: Cato Institute, September 23, 2011).

[11] These principles are adapted from Harper (2011).

[12] Brendan Nicholson, "Asian Century Plans Consigned to History," *The Australian*, October 28, 2013, http://www.theaustralian.com.au/national-affairs/defence/asian-century-plans-consigned-to-history/story-e6frg8yo-1226747866681.

- **Machine-discoverability:** permanence and stability facilitate another important principle, which is machine discoverability. This requires a framework and conventions for how data is identified, organised and referenced, including a consistent uniform resource locator (URL) structure so that a computer can discover the data and following linkages between data. Ideally, data should be enabled by an Application Programing Interface (API).

- **Machine-readability:** machine readability refers to the ability of a computer to make sense of the data it can discover. This may require the use of distinct identifiers to disambiguate data (for example, a unique identifier to identify a particular financial transaction or financial security); adopting particular formats for data; and the inclusion of metadata to enable a computer reading the data to put it in context.

**Recommendation:** The above principles should be reflected in the Government's Public Data Policy Statement. To ensure that the Statement is adhered to, the Australian National Audit Office should be tasked with evaluating the performance of public sector agencies against the policies and principles contained in the Statement in its regular reviews of government agencies.

# 4. The Role of the Australian Bureau of Statistics

The Australian Bureau of Statistics has traditionally been well-regarded both domestically and internationally for the quality of its data. More recently, questions have been raised about the ability of the ABS to maintain this quality in the face of resource constraints and an aging IT infrastructure,[13] notwithstanding a recent $250 million capital injection to modernise its systems in the 2015 Budget. Questions about data quality and reliability have occasionally been raised by other public sector users, including the RBA. Resource constraints have also hindered development of the ABS's data dissemination and accessibility.

The IT infrastructure of the ABS and many overseas statistical agencies is designed to support a survey-centric mode of production for economic statistics measuring an industrial economy outputting tangible goods and services. This infrastructure is increasingly misaligned with what is required to measure a modern economy. As Bostic *et al* note, statistical agencies like the ABS 'need to learn how to architect, develop and provide the hardware, software and human capital infrastructure required to create and disseminate statistics constructed from a variety of sources including surveys, administrative sources, transaction data, social media, sensors and so on.'[14] Bostic and his co-authors suggest that statistical agencies should no longer attempt to control the entire production chain for official data and instead work more collaboratively with the private sector. This will likely require a significant change in organisational culture on the part of statistical agencies like the ABS.

While the quality and integrity of the data collection function should be the main focus of the ABS, accessibility also needs to be an important consideration to maximise the value of the data collected. An example of what can be achieved in terms of accessibility at very little cost is the

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[13] Jacob Greber, "Outdated Statistics Bureau a Disaster Waiting to Happen," *Financial Review*, January 28, 2014, http://www.afr.com/news/outdated-statistics-bureau-a-disaster-waiting-to-happen-20140128-iy69n.
[14] Ron S. Jarmin, Brian Moyer, and William Bostic, "Modernizing Federal Economic Statistics," *American Economic Review* 106, no. 5 (May 2016): 163, doi:10.1257/aer.p20161061.

widely used [FRED database](#) and associated web site maintained by the Federal Reserve Bank of St Louis in the United States.[15] According to one report:

> *what's remarkable is that for such a powerful [web] site, the team building it is incredibly light, with only 5-6 people working on it at a level that could be called "full time." When I asked further how the site got to be what it is, I was quite impressed by how obvious it was that it operated with the experimental and agile nature of the most dynamic web startups.*[16]

The ABS might find FRED a useful model for improving its data dissemination, accessibility and integration capabilities. In particular, the ABS should more actively support the integration of its data with widely used databases and statistical software packages. The ABS currently releases data in Microsoft Excel spreadsheets, the format of which are subject to regular change, creating considerable frictions in integrating ABS data with other applications. The release of data in spreadsheets needs to be complemented by the release of fully structured data using the Statistical Data and Metadata eXchange (SDMX) format[17] to facilitate stable integration with other applications. Even a Microsoft Excel add-in for ABS data would be a welcome addition to its data dissemination capabilities.

## 4.1 The Consumer Price Index

The Consumer Price Index is an important benchmark index for the Australian economy and a significant input and benchmark for monetary policy. Timely information is crucial to the conduct of a forward-looking and pre-emptive approach to monetary policy. Yet the single most important input into the monetary decision-making process is also one of the least timely by international standards. Australia, along with New Zealand, is one of the few countries to release its inflation data at a quarterly rather than a monthly frequency. Even New Zealand publishes a monthly food price index, a useful series for forecasting the quarterly CPI inflation rate.

The RBA's submission to the ABS's 16th CPI Review noted that:

> *More timely data would help provide an earlier indication of the trend in inflation, which is particularly important around turning points. It could also be helpful in distinguishing between signal and noise. In recent years there have been a couple of instances of quarterly readings for inflation that subsequently proved not to be representative of the general trend. The greater frequency of monthly data is likely to allow earlier identification of situations where an observation is unrepresentative.*[18]

There is also strong support for a monthly CPI among financial market participants.[19]

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[15] https://research.stlouisfed.org/fred2/

[16] Joe Weisenthal, "The Most Amazing Economics Web Site in the World," *Business Insider*, March 23, 2012, http://www.businessinsider.com.au/fred-2012-3.

[17] https://sdmx.org/

[18] Reserve Bank of Australia. Economic Group, "Submission to the 16th Series Review of the Consumer Price Index" (Reserve Bank of Australia, March 2010), 1–2, http://www.rba.gov.au/publications/submissions/prices/16th-series-review-of-cpi/pdf/16th-series-review-of-cpi.pdf.

[19] Paul Bloxham, "Monthly Measure of Inflation Needed," *The Australian*, October 4, 2010, http://www.theaustralian.com.au/business/monthly-measure-of-inflation-needed/story-e6frg8zx-1225933517558.

The lack of timeliness in compiling and issuing inflation data potentially gives monetary policy a backward-looking bias. This is suggested by the fact that changes in the official cash rate occur most frequently at the monthly RBA Board meeting immediately following the quarterly CPI release. For example, during the 2002-08 tightening episode, 67 per cent of interest rate changes followed this pattern, including every one of the six increases in the cash rate from May 2006 to February 2008.[20] This suggests the Reserve Bank may sometimes delay policy action by one or two months while it waits for the latest inflation data. This is also potentially confusing to the public and their inflation expectations, implying that the Bank is passively responding to past inflation outcomes rather than actively targeting the future path of inflation.

A monthly CPI release would ensure that each Reserve Bank Board meeting had the benefit of an update on the inflation rate, which also serves as the baseline for the RBA's inflation forecast. The RBA would no longer have a bias to changing interest rates in the wake of the quarterly CPI release. The RBA and financial markets could more quickly identify potential turning points in the inflation rate and the economy.

It is considered desirable for central banks to smooth changes in interest rates over time, to minimise the risk of policy errors. This argues for a gradualist approach to policy. More timely policy action could facilitate this gradual approach by reducing the need for future changes in interest rates.

A monthly CPI would also facilitate offshore participation in Australia's inflation indexed bond market and could be expected to increase offshore holdings of Treasury indexed bonds (TIBs). Globally, most inflation-linked bonds are priced based on the Canadian Treasury model for the indexation of cash flows on a monthly basis introduced in 1991. Australian inflation indexed bonds do not fit neatly into global bond portfolios based on a quarterly CPI and would benefit from harmonisation with the global standard.

While the Reserve Bank and financial markets would welcome a monthly CPI, the Australian Bureau of Statistics has traditionally resisted the idea, claiming that the increased cost of a monthly data collection would outweigh the benefits to users. This is a very narrow reading of benefits. If a higher frequency CPI leads to more timely monetary policy action, the economy-wide benefits could be very large. Most other developed countries have decided that a monthly CPI is worth the cost. The ABS has previously estimated that a monthly CPI would cost $25 million a year compared to the $10m it spends compiling the existing quarterly release or a net additional cost of $15 million a year.[21]

It is worth noting that the Melbourne Institute has produced a monthly inflation gauge with a low tracking error to the official CPI and at low cost, making innovative use of data sources. It is also worth noting overseas efforts to create real-time measures of inflation, such as the Billion Prices Project at MIT, also making innovative use of low cost data collection technologies.[22] There are a number of commercial enterprises focused on providing real-time measures of economic activity

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[20] Stephen Kirchner, "Benefits Grow in Monthly CPI Data," *Canberra Times*, March 1, 2010, http://www.institutional-economics.com/images/uploads/ctoped1mar10.pdf.
[21] Australian Bureau of Statistics, "Outcome of the 16th Series Australian Consumer Price Index Review" (Canberra: Australian Bureau of Statistics, December 6, 2010), Appendix 5.
[22] http://bpp.mit.edu

and prices.[23] In China, the leading internet search engine, Baidu, is developing indices of employment and consumer spending based on search and other user-generated data.[24]

Savings could potentially be made by reducing the frequency of other ABS releases, such as the monthly labour force data. The labour force data are very noisy at a monthly frequency and subject to a number of problems in relation to the survey sample and the use of population benchmarks. A former head of the ABS has said that the current iteration of the monthly labour force survey methodology produces data that 'aren't worth the paper they are printed on.'[25] Monthly readings on the labour market can be left to private sector surveys, like the ANZ job advertisements series. Most ABS users welcomed the discontinuation of the similarly volatile and revision-prone monthly current account data in 1997 in favour of a quarterly release. The combination of a volatile monthly labour force release and a quarterly CPI release distorts public debate about economic policy, by giving labour market outcomes greater media prominence than inflation outcomes.

The ABS could also realise savings by not duplicating data produced by the private sector. Shortcomings in the ABS data on house prices led the private sector to develop improved measures, notably, CoreLogic-RP Data's hedonic measures of dwelling prices. Where the private sector has a strong commercial incentive to compile and disseminate data, the ABS should not duplicate or crowd-out these efforts. There is also scope for the ABS to partner with the private sector on data collection and dissemination with a view to reducing costs to the ABS.

**Recommendation:** The Productivity Commission should recommend that the ABS produce the CPI at a monthly frequency and that the Government should include additional funding in the Budget for this purpose. At the same time, the ABS should be encouraged to use innovative data collection technologies to augment its existing approach to compiling the CPI and other data in collaboration with the private sector with a view to improving the efficiency of data collection and dissemination.

## 4.2 ABS Release Calendar, Release Times and Procedures

The ABS forward publication calendar has some undesirable variability in the schedule for data releases, with some data released on irregular days, creating uncertainty for financial market participants. By contrast, the forward calendar for US data releases is generally known with certainty a year in advance. The ABS should aim to work to a fixed and predictable calendar for data releases.

There is scope for greater coordination between the ABS and the RBA in releasing key economic data. For example, the quarterly National Accounts release on Wednesdays falls immediately after the monthly RBA Board meeting on Tuesdays. A Monday release for the National Accounts would allow the RBA Board to consider these data in a more timely fashion. In this context, it worth noting that on at least three occasions (June quarter 2002, 2003 and 2007), the day for the release of the National Accounts was brought forward to Tuesday to accommodate the federal Treasurer's travel

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[23] For example, https://www.now-casting.com

[24] David Ramli, "Baidu Creates Own Indexes to Paint Picture of China's Economy," *Bloomberg.com*, accessed June 22, 2016, http://www.bloomberg.com/news/articles/2016-06-22/baidu-creates-own-indexes-to-paint-picture-of-china-s-economy.

[25] Jacob Greber, "Former ABS Boss Says Jobs Data 'Not Worth Paper They're Written On'," *Financial Review*, October 14, 2015, http://www.afr.com/news/economy/former-abs-head-says-employment-data-not-worth-paper-theyre-written-on-20151014-gk8syh; Bill McLennan, "Full Letter: Why the ABS Is Broken," *Financial Review*, October 15, 2015, http://www.afr.com/news/politics/national/full-letter-why-the-abs-is-broken-20151015-gka3j2.

plans for the APEC Summit.[26] As a general principle, the ABS should not accommodate politicians' requests to change release dates for official data in the absence of a more compelling reason than ministerial convenience. However, if the National Accounts can be released earlier to accommodate a Treasurer's press conference, it should be possible to permanently change the release schedule to accommodate the needs of monetary policy decision-making.

AFMA understand that the ABS is reviewing the time of day for data releases.[27] AFMA support changing the release time for ABS data from 11:30am Canberra time to earlier in the day. Historically, the ABS has used both earlier and later release times. The current release time is a legacy of earlier, pre-electronic, delivery requirements and logistics. It has also been suggested that the current ABS release time is designed to accommodate the Western Australian time zone, but this is not a compelling rationale. Most US economic data is released 8:30 am US EST, even though many US market participants are located in the US Central and Pacific time zones.

Current practices for the release of market sensitive data to news wires and quote vendors are undesirable and are in need reform. Newly released ABS data is made available to newswires in the first instance by voice communication over the phone, which has led to incorrect flash reporting of headline data to financial markets via newswires and quote vendor systems. These arrangements should be replaced with either a dedicated feed from the ABS to newswires similar to that maintained by the RBA or a media lock-up for accredited media. Lock-up arrangements are used for the release of US economic data. This would improve the reliability of communicating new data releases to market participants.

**Recommendation:** The ABS should aim for greater certainty and coordination in determining the date for data releases. The ABS should consult with financial market participants, other users and the Council of Financial Regulators on the choice of an earlier release time for its data. ABS should also use dedicated feeds or media lock-ups to communicate data to financial market participants via major newswires and quote vendor systems.

## 4.3 Cost Recovery

AFMA note and support recommendation 13 of the Public Sector Data Management Project that 'where Australian Government agencies (non-corporate Commonwealth entities) publish data, it should be at no cost to the user unless there are costs associated with tailoring the data for publication.'[28]

At the same time, AFMA note Government and media speculation that a user-pays or cost recovery model might be imposed for ABS data to fund improvements to ABS systems and processes. AFMA is opposed to a cost recovery funding model being applied to ABS data, as this would inhibit both data

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[26] See the following press releases from Treasurer Peter Costello:
http://ministers.treasury.gov.au/DisplayDocs.aspx?doc=pressreleases/2002/041.htm&pageID=003&min=phc&Year=2002&DocType=0
http://ministers.treasury.gov.au/DisplayDocs.aspx?doc=pressreleases/2003/072.htm&pageID=003&min=phc&Year=2003&DocType=0
http://ministers.treasury.gov.au/DisplayDocs.aspx?doc=pressreleases/2007/083.htm&pageID=003&min=phc&Year=&DocType=0
[27] Geoff Winestock, "ABS Rethinks Timing of Its Morning Data Dump," *Financial Review*, September 9, 2015, http://www.afr.com/markets/abs-rethinks-timing-of-its-morning-data-dump-20150909-gjilam.
[28] Australian Government, "Public Sector Data Management," 35.

availability and use. A cost recovery model would also be inconsistent with recommendations by the Productivity Commission in relation to the ABS in the context of its previous inquiry into cost recovery by government agencies.[29]

# 5. Data on Legislation and Regulation

Legislation and regulation are two of the most important outputs of the political process. The quantity and complexity of acts of parliament and delegated legislation have increased considerably over time.[30] This volume and complexity hinders transparency and public accountability. Traditionally, oversight of government activity and policy making has been costly in terms of information gathering. This facilitates rent-seeking activity, since only those sufficiently resourced or with strong incentives to influence the political process could be expected to incur these costs.

Adding machine-readable metadata or semantic information to legislation and regulation, for example XML-format codes, can facilitate transparency and accountability in government. The metadata can be used to identify references to government agencies, other related laws and regulation, as well as spending authorisations and appropriations. The metadata can also be tied to parliamentary procedures and processes, for example, the voting records of members of parliament. Computers can then be used to interrogate these data for information about government activities, reducing the cost of government oversight.

A good example and model for this process is the Cato Institute's Deepbills Project, which added computer-readable code to the more than 10,000 bills introduced to the 113th United States Congress.[31]

The Mercatus Center in the United States has compiled a database of regulation by industry called RegData, which has been useful in quantifying the cost of regulation and regulatory accumulation.[32] Adding metadata to legislation and regulation would assist in compiling similar databases. The RegData database has been used by researchers at the Stigler Center at the University of Chicago Booth School of Business to establish an empirical relationship between regulatory accumulation and corporate profitability in the United States, yielding insights into the economic importance of rent-seeking.[33] The Productivity Commission could develop and maintain a similar database for Australia.

A US government initiative is the creation of a machine readable government organisation chart to capture organisational directories as machine-readable data in a consistent format across the federal government. Making this data public and consistently available can assist individuals and business in their dealings with government.[34]

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[29] Productivity Commission, "Cost Recovery by Government Agencies" (Melbourne: Productivity Commission, 2002), C4.

[30] Stephen Kirchner, "Federal Legislative Activism in Australia: A New Approach to Testing Wagner's Law," *Public Choice* 153, no. 3–4 (May 12, 2011): 375–92.

[31] http://www.cato.org/resources/data

[32] http://regdata.org/

[33] Guy Rolnik, "Political Rents and Profits in Regulated Industries -," *ProMarket: The Blog of the Stigler Center at the University of Chicago Booth School of Business*, July 21, 2016, https://promarket.org/political-rents-regulated-industries/.

[34] The White House, "The Open Government Partnership: Third Open Government National Action Plan for the United States of America" (Washington, DC: The White House, October 27, 2015), 10,

In Australia, responsibility for coding legislation could be given to the Office of Parliamentary Counsel (OPC). The OPC could also be given responsibility for compiling official statistics on legislative and regulatory outputs.

**Recommendation:** The Productivity Commission should recommend that state and federal Parliaments add metadata to their legislative and regulatory outputs to enhance the transparency and accountability of the political process and government activity.

# 6. Data on Government Spending and Revenue

There have been some recent improvements in the accessibility of data on government spending and taxing in Australia. For example, in recent years, the federal Budget has for the first time included the release of machine-readable versions of the data contained in Budget papers. Private sector initiatives, such as theopenbudget.org have made progress in visualising data on government spending to improve transparency.[35] The ATO has also released de-identified sample data on taxpayers to facilitate research on tax policy and taxpayer behaviour.

Further progress can be made in making data available on government spending and taxing. Government spending data can also be coded with metadata, making it possible for computers to interrogate government spending programs and their relationship to the political process systematically and in greater detail. This information is likely to be valuable to the Parliamentary Budget Office in improving the transparency of fiscal policy.

# 7. Prediction, Policy and Macro Futures Markets

As noted previously, the main economic function of financial markets is price discovery, which in turns coordinates the efficient capital allocation within an economy. The price discovery function of markets potentially has wider application in the form prediction markets. Prediction markets 'are markets where participants trade in contracts whose payoff depends on unknown future events…the price of these contracts can be directly interpreted as a market-generated forecast of some unknown quantity.'[36] Prediction markets can help aggregate dispersed or tacit knowledge, generating uniquely informative data, improving the effectiveness of public policy and private and public decision-making. Prediction markets can also generate contingent probabilities, showing the relationship between discrete events. Prediction markets are currently underutilised in public policy evaluation, both in Australia and internationally.

Some large corporates, most famously Google, run internal markets on corporate policies and strategies to enable the organisation to better reveal and act upon tacit or implicit knowledge within the firm.[37]

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https://www.whitehouse.gov/sites/default/files/microsites/ostp/final_us_open_government_national_action_plan_3_0.pdf.

[35] http://theopenbudget.org/

[36] Justin Wolfers and Andrew Leigh, "Prediction Markets for Business and Public Policy," *Melbourne Review* 3, no. 1 (May 2007): 8, http://users.nber.org/~jwolfers/policy/PredictionMarketsforBPP.pdf.

[37] Philip Broughton, "Prediction Markets: Value among the Crowd," *Financial Times*, accessed May 25, 2016, http://www.ft.com/cms/s/0/f03fc956-9586-11e2-a151-00144feabdc0.html.

Public prediction markets can be similarly used to generate implied probabilities on the outcome of elections and other political processes, public policy initiatives and macroeconomic variables. Robert Shiller has noted the potential for macroeconomic futures markets to enable society to better manage economic risks.[38] Scott Sumner has noted the potential of nominal GDP futures markets to inform monetary policy decision-making and provide policymakers with information about the macroeconomic effects of government policies.[39]

Prediction, policy and macro futures markets have a mixed record of success internationally, partly due to regulatory barriers to their creation and operation.

The Iowa Electronic Market, which runs futures markets on US elections, was established in 1988 and is perhaps the most long running prediction market, although run primarily for teaching and research purposes with limited individual account sizes.[40]

The Pentagon's attempt to establish a Policy Analysis Market for terrorism and other political events in 2003 met with political opposition and the project was disbanded.[41]

Another prediction market, Intrade, was forced to operate in Ireland because of a hostile regulatory environment in the United States and was eventually forced to close the accounts of its US customers for regulatory reasons. This was likely a factor in its eventual commercial failure.[42]

iPredict, a New Zealand prediction market that obtained regulatory forbearance from New Zealand's Financial Markets Authority, was eventually forced to close its doors to new accounts because of the compliance burden imposed by anti-money laundering regulations, from which it was unable to secure an exemption.[43] A related market in the US, PredictIt, has regulatory forbearance from the Commodity Futures and Trading Commission, but operates within strict limits.[44]

Macro futures markets also have a patchy record of success. Economic derivatives were launched on the Chicago Mercantile Exchange in partnership with Goldman Sachs in 2002, but were discontinued in 2007 due to low market participation.[45] A difficultly with macro futures markets is that while there may be demand to speculate in these markets, there may be insufficient demand on the part of hedgers to take the other side of these speculative trades.

While Australia has well established sports betting markets, there has been relatively little experimentation with prediction markets. As Andrew Leigh and Justin Wolfers note, 'in Australia, the

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[38] Robert J. Shiller, *Macro Markets Creating Institutions for Managing Society's Largest Economic Risks* (Oxford: Oxford University Press, 1998).

[39] Scott Sumner, "The Case for Nominal GDP Targeting" (Arlington, VA: Mercatus Centre, George Mason University, October 23, 2012), http://mercatus.org/publication/case-nominal-gdp-targeting.

[40] http://tippie.uiowa.edu/iem/

[41] Carl Hulse, "Pentagon Prepares a Futures Market on Terror Attacks," *The New York Times*, July 29, 2003, sec. Politics, http://www.nytimes.com/2003/07/29/politics/29TERR.html.

[42] Gerry Mullany, "Online Betting Site Intrade Faces Liquidation," *The New York Times*, April 6, 2013, http://www.nytimes.com/2013/04/07/business/online-betting-site-intrade-faces-liquidation.html.

[43] https://www.ipredict.co.nz/app.php?do=message

[44] Reuters, "Betting on a Trump Win or a North Korea H-Bomb: A Predictions Site Gains Traction," *The New York Times*, May 16, 2016, http://www.nytimes.com/reuters/2016/05/16/us/politics/16reuters-usa-election-betting.html.

[45] "Derivatives Market for Economic Indicators Closes," *Wall Street Journal*, June 29, 2007.

legal environment has prevented prediction markets from establishing themselves in most States…Since Australian betting agencies already handle significant sums of money for elections and major sporting events, relaxation of the regulation governing such markets would bring little risk but a significant public benefit.'[46] ASIC's Innovation Hub potentially provides a framework within which such markets could be established with regulatory forebearance.[47]

Prediction markets have considerable unrealised potential in generating useful data about public policy, but need a more favourable regulatory environment in order to move beyond small experimental markets that are currently used mainly for teaching and research purposes and small time betting.

**Recommendation:** The Productivity Commission should recommend that the Government explore the data-generating and use potential of prediction and macro futures markets as part of the Government's innovation and fintech agenda, with a particular focus on the regulatory barriers to the creation and growth of such markets.

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[46] Wolfers and Leigh, "Prediction Markets for Business and Public Policy," 12.
[47] http://asic.gov.au/for-business/your-business/innovation-hub/