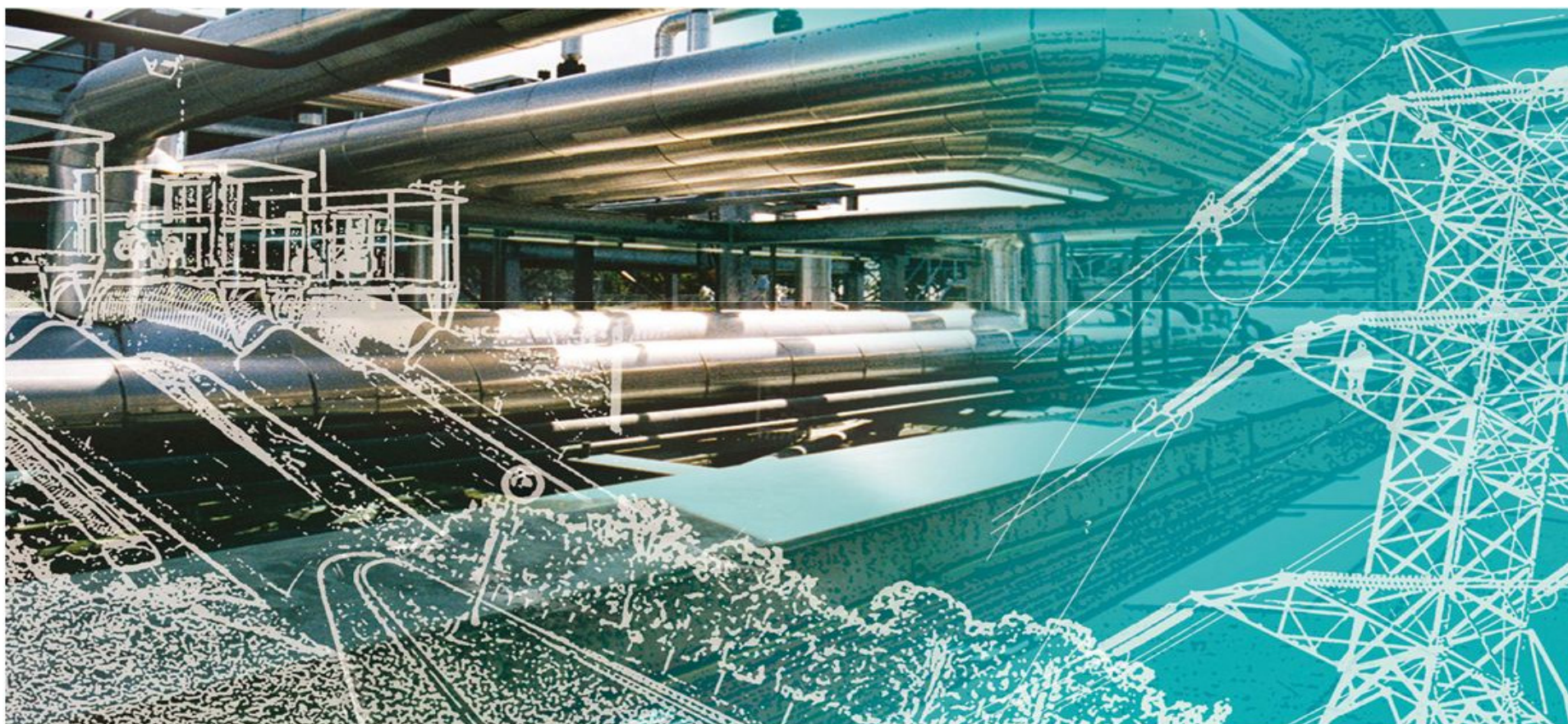




# Economic Regulation Authority

WESTERN AUSTRALIA

*Promoting fair prices, quality services and choice*



Debt Risk Premium – 24 March 2011

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**DEBT RISK PREMIUM:**  
**A Bond-Yield Approach**  
**Presentation to the MRCPWG**

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**Division of References and Research**  
**Economic Regulation Authority**

**24 March 2011**

# Overview

- The Bond-Yield approach was used in the Final Decision for WAGN and Draft Decision for DBNGP in 2011.
- Main objectives of this presentation:
  - Present the Authority's method of estimating the Debt Risk Premium: A Bond-Yield Approach.

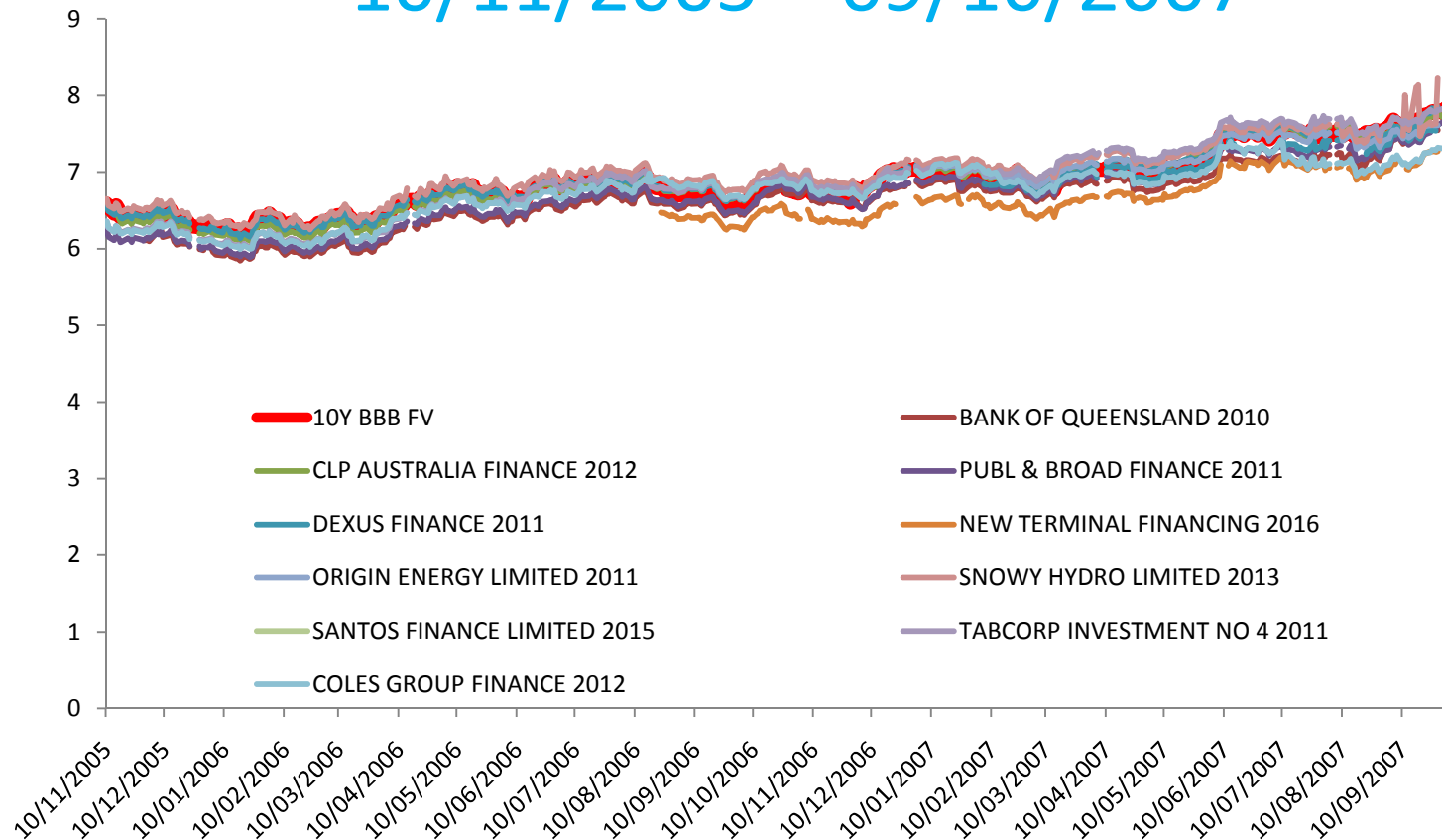
# Structure

- The structure of this presentation:
  1. Present rationales for a departure of the approach to estimate the debt risk premium;
  2. Discuss the Authority's recent position to estimate the Debt Risk Premium: A Bond-Yield Approach; and
  3. Use practical example to illustrate this new approach.

# Rationale 1

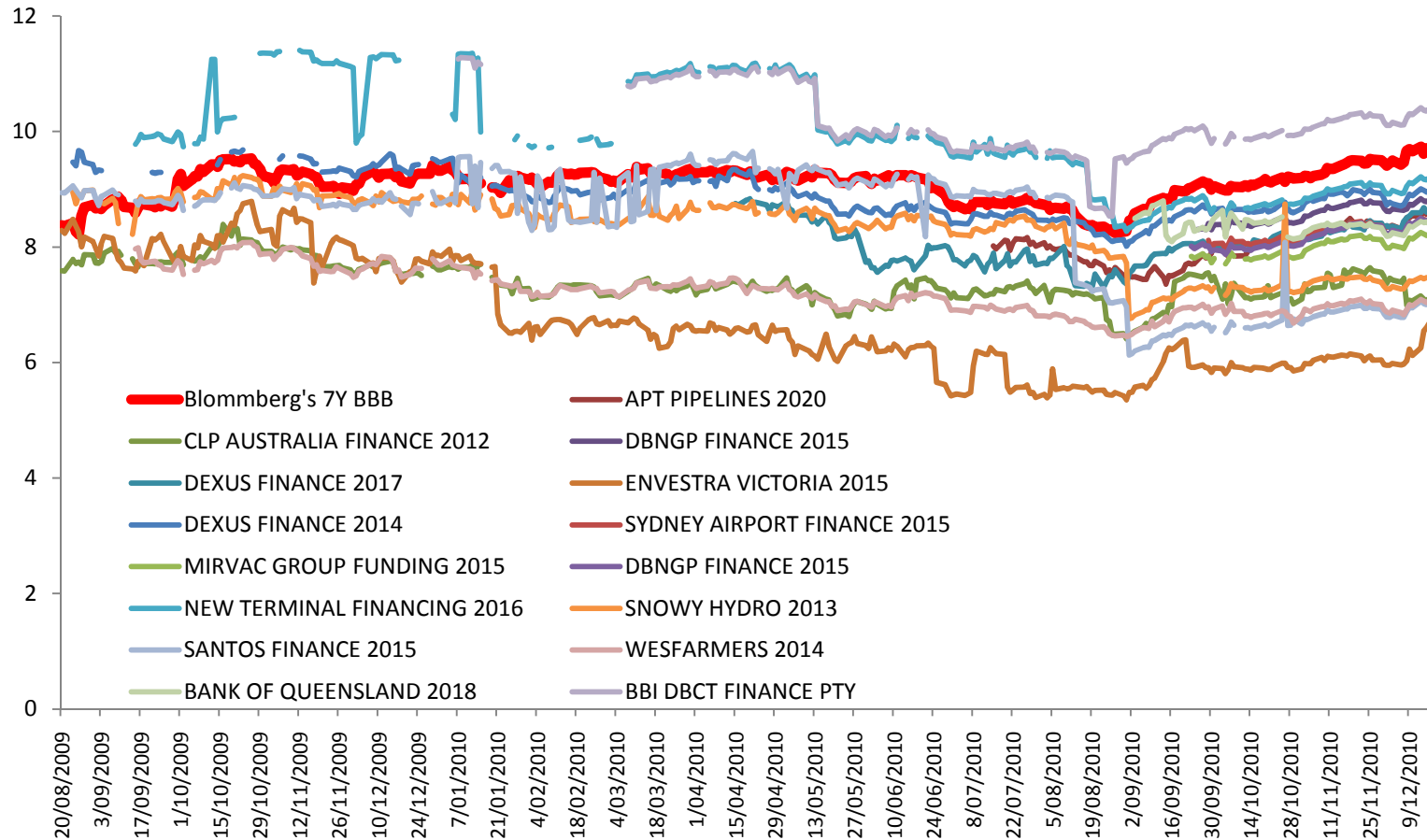
## Is Bloomberg out of touch?

# Observed Bond yields vs. 10Y BBB Bloomberg's fair yield curve 10/11/2005 – 09/10/2007





# Observed Bond yields vs. 7Y BBB Bloomberg's fair yield curve 20/8/2009 – 20/12/2010



## Rationale 2

### Are Bloomberg's estimates transparent?

- *No*
- *Confidential method*
- *Impossible to verify and replicate*



# Rationale 3

## Are Bloomberg's estimates accurate?

- *What happened?*
  - DNSPs/CEG/PwC in August 2010 for the Victorian AMI final determination:  
*“... Bloomberg's curves are not a reliable indicator of the true value...”*
  - DNSPs/CEG/PwC in October 2010 for the Victorian DNSPs Final Decision:  
*“... the most appropriate methodology for setting the DRP would be to adopt the Bloomberg fair value estimates...”*

# Rationale 4

## Extrapolation is inaccurate

- *Why 10-year time horizon?*
  - High level of imprecision to extrapolate 7Y to 10Y. Why Bloomberg stops? Why regulators continue?
  - AER extrapolates 7Y to 10Y BBB using “**outdated**” AAA fair value [20 days **to** 22 June 2010]. Until when?
  - Why bother looking for something that **does not** actually exist in the market?

# Estimating the Debt Risk Premium: A Bond-Yield Approach

- The Authority issued the Discussion Paper on Debt Risk Premium on 1 December 2010.
- Deadline for public submissions:

Fri 7<sup>th</sup> January 2011

- 13 submissions were received

# Elements of a Bond-Yield Approach

- Data on observed bond yields from Bloomberg.
- Bonds with the following features:
  - ✓ Australian corporate bonds;
  - ✓ Issued in Australia;
  - ✓ Denominated in AUD;
  - ✓ S&P credit rating of BBB-band (BBB-/BBB/BBB+);
  - ✓ 2-years to maturity and longer;
  - ✓ Fixed and floating bonds; and
  - ✓ Bonds with “callable” feature.

# Public submissions

- 13 submissions were received from:.
  - Verve Energy;
  - DBP;
  - WAGN;
  - GGT (with the consultant report by Synergy);
  - Western Power (with the consultant report by KPMG);
  - BHP Billiton;
  - Brookfield;
  - WestNet Rail;
  - ARTC (Australian Rail Track Corporation);
  - Horizon Power (with the consultant report by Economic Insights);
  - Alinta Gas;
  - Water Corporation and
  - WACOSS

# Key arguments & responses – 1

## Inclusion of BBB- bonds

### Verve Energy & WACOSS

- Inclusion of BBB- in the sample:
  - Current sample has 4 BBB- bonds (out of 16)

# Key arguments and responses – 2

## Liquidity Issue

- Presentation by Michael Lee, Fixed Income Specialist, Bloomberg, Taiwan 2007 re. “Bloomberg Fair Value Market Curves”
  - Most bonds are traded over-the-counter
  - High quality executable prices generally unavailable



# Key arguments and responses – 2

## Liquidity Issue (cont.)

Source: Michael Lee's presentation 2007

- Bond prices we receive from our price providers can be categorized into:
  - Indicative prices
  - Executable prices
  - Traded prices
- Indicative prices account for nearly 90% of the bond prices available on the Bloomberg bond database. Since market makers have no obligation to execute trades at indicative prices, it is not unusual to find indicative prices being way off the actual market prices.
- Executable prices are available **only** for bonds traded at **some** electronic trading platforms. However, most electronic trading platforms offer executable prices to **non-competitors only** and the subscription costs for executable prices could be very expensive.
- Providing a free platform on the Bloomberg for electronic trading is one of our major bond initiatives in recent years. Currently, more than 10,000 bonds out of 510,000 bonds on Bloomberg database have **CBBT prices**, which are **BGN prices** based on **executable prices**.

# Key arguments and responses – 2

## Liquidity Issue (cont.)

**ARTC, Western Power & Synergy;  
Horizon Power & Economic Insights; GGT and KPMG;  
GGT and Synergy**

- Illiquidity of bonds:
  - Indicative prices [**90%** of all of the bond prices available on the Bloomberg database. Provided by bond market participants].  
**Market expertise vs. Bloomberg's expertise**
  - Exclude outliers [as Bloomberg does].  
**[ACT SAYS NO]**

# Key arguments and responses – 3

## The ERA's sample vs. Bloomberg's sample

### Exclusive ERA's approach (16)

- APT PIPELINES LTD (2020)
- BANK OF QUEENSLAND LTD (2018)
- NEXUS AUSTRALIA MGT (2017)
- NEXUS AUSTRALIA MGT (2019)
- DEXUS FINANCE PTY LTD (2017)
- ENVESTRA VICTORIA PTY LT (2015)

### 10 Bonds in common

- LEIGHTON FINANCE LTD
- WESFARMERS LTD
- MIRVAC GROUP FUNDING LTD
- SYDNEY AIRPORT FINANCE
- SANTOS FINANCE LIMITED
- DBNGP FINANCE CO PTY
- BBI DBCT FINANCE PTY
- MIRVAC GROUP FINANCE LTD
- NEW TERMINAL FINANCING C
- SNOWY HYDRO LIMITED

### Exclusive Bloomberg's FV (19)

- PUBL & BROAD FINANCE LTD (Mature in 2011)
- ENERGY PARTNERSHIP GAS (2011)
- TRANSURBAN FINANCE CMPNY (2011)
- ORIGIN ENERGY LIMITED (2011)
- TABCORP INVESTMENT NO 4 (2011)
- CLP AUSTRALIA FINANCE (2012)
- COLES GROUP FINANCE (2012)
- HOLCIM FINANCE AUSTRALIA (2012)
- TRANSURBAN FINANCE CO PT (2014)

# Key arguments and responses – 3

## The ERA's sample vs. Bloomberg's sample

### Consideration

- Term to maturity
- Industry
- Cut-off point
- Method

### ERA's Bond-yield approach

- 2-years & longer
- Regardless of industry
- Lower bound of 2 years
- Publicly available

### Bloomberg's FV

- Any bond
- Regardless of industry
- Upper bound of 7 years for 7-Y BBB FV
- Confidential

# Key arguments and responses – 4

## Inconsistency

### WAGN

- Inconsistency between  
**10-year Risk free rate and shorter-than-10-year bond yields**

It is now adjusted...

Yields for 10-year CGS bonds from RBA are adjusted in accordance with term to maturity of the bonds in the benchmark sample (i.e. 16 adjusted risk free rate for 16 bonds in the benchmark sample).

# Key arguments and responses – 5

## Which bonds included?

### Western Power and KPMG

- Concerned to include bonds with maturity of less than 5 years
  - More bonds are better. 8 (out of 16) bonds excluded if cut-off point is 5-years or longer;
  - 2-year cut off: previous regulator’s benchmark, including AER; IPART and ERA.
- Do not support the approach, but propose to develop a “weighting mechanism” for 2 industries: “Utilities” and “Others”
  - Add complexity and arbitrary into the approach

# Key arguments and responses – 6

## The issue of extrapolation

**Western Power and KPMG**  
**GGT and Synergy**  
**Horizon Power and Economic Insights**

- Extrapolate to 10-year BBB yield using:
  - **7-year and 5-year BBB yields (WP);**
  - **10-year and 7-year CGS (GGT and HP).**



# Key arguments and responses – 7

## Bond-Yield approach: Any further convincing evidence?

### BHP Billiton

- **YES.... There Is...**
- Retrospective analysis: See below

# The ERA's Bond-Yield approach: Further enhanced evidence

- Carry out a back-testing for Nov 2005 – Nov 2007:
  - ✓ 67 bonds were found;
  - ✓ Search for YTM for 10 Nov 2005 till 9 Oct 2007; (15 bonds with data)
  - ✓ Reduce to *29 Mar 2007 to 13 Sep 2007* where most data were available (for 14 bonds).
  - ✓ Estimate risk free rate for the same period.

# The ERA's Bond-Yield approach: Further enhanced evidence (cont.)

*29 March 2007 – 13 Sep 2007:*

Item	Bond-yield approach (%)	Bloomberg's 10-year BBB fair yield (%)
Risk free rate	6.007	6.007
10-year BBB fair yield		7.333
DRP	0.996	1.326
Difference	0.330 [or <b>33 bps</b> ]	

# The ERA's Bond-Yield approach: Further enhanced evidence (cont.)

*29 March 2007 – 13 Sep 2007:*

*Exclude 3 floating bonds:  
Bendigo & Adelaide Bank; CLP Aus Finance  
& Santos Finance*

Item	Bond-yield approach (%)	Bloomberg's 10-year BBB fair yield (%)
Risk free rate	6.007	6.007
10-year BBB fair yield		7.333
DRP	1.192	1.326
Difference	0.133 [or <b>13 bps</b> ]	

# The ERA's Bond-Yield approach: Further enhanced evidence (cont.)

*23 Nov 2010 – 20 Dec 2010:*

*Exclude 2 floating bonds:  
Wesfarmers & Bank of Queensland*

Item	Bond-yield approach (%)	Bloomberg's 7-year BBB fair yield (%)
Risk free rate	5.535	5.535
7-year BBB fair yield		9.554
DRP	2.685	4.019
Difference	1.335 [or <b>134 bps</b> ]	

# The ERA's Bond-Yield approach: Further enhanced evidence (cont.)

*23 Nov 2010 – 20 Dec 2010:*

*Exclude 2 floating bonds:  
Wesfarmers & Bank of Queensland*

Item	Bond-yield approach (%)	Bloomberg's 7-year BBB fair yield (%)
Risk free rate	5.535	5.535
7-year BBB fair yield		9.554
DRP	2.685	4.019
Difference	1.335 [or <b>134 bps</b> ]	

# Observed Bond Yields: Who else is using?

- New Zealand Commerce Commission (NZCC):
  - **Final Determination, March 2011: WACC for regulated services, including Electricity Distribution Services; Gas Pipeline Services; and Airport services.**
- Independent Pricing and Regulatory Tribunal of NSW (IPART)
  - **Final Report, Feb 2011: Review of prices for the Water Administration Ministerial Corporation.**



*Thank You*