

# FWPA Data Aggregation Program Softwood Data Series Market Coverage Reconciliation Discussion Paper

### Background

The FWPA data aggregation program is aimed at improving the information available to industry through the confidential collection of individual company data. The information can then be aggregated and interpreted on a regular basis and provided back to industry within 2 weeks of submission.

As well as providing valuable trend information on market conditions the data can be used to monitor specific market segments and track market shares. In turn the data can be used to forecast future demand.

It is important to note that as the FWPA program is voluntary with data provided by medium to larger companies the aggregated data will not represent the total market. Consequently, in order to consider the data within the national context an understanding of the market coverage for any given data set is therefore required.

The national context is provided by ABARES with the publication of annual data in the Forest and Wood Products Statistics for such activities as:

- Sawnwood production (softwood and hardwood)
- Log production (native forest, hardwood plantation softwood plantation)

## FWPA Softwood Data Series (sawnwood)

The softwood data series was established in 2002 by Australia's major softwood sawmilling companies. The data series provide monthly sales data on 44 detailed product categories. Since 2013 work has been progressing to expand participation in the data series and today 13 sawmilling companies are involved in providing data. On an annual basis the data series covers softwood timber sales of more 2.5 million m3.

To understand the context of those sales a project has been undertaken with ABARES to reconcile the national data series with the FWPA softwood data series.

#### Market Coverage Reconciliation

ABARES softwood sawntimber production annual volume is derived from a Mill Survey which is conducted on a periodic basis. In recent times Mill Surveys have been conducted for the period 2006-07, 2010-11 and 2012-13.

In between Survey periods ABARES generates an estimate of sawnwood production based on the domestic sawlog harvest information provided by forest owners in the the annual Gross Value of Production (GVP) survey and a notional recovery rate estimated by ABARES. So it important to appreciate that the national sawnwood production volume is a combination of survey data and statistical extrapolation for in-between Mill survey periods.

#### **Notional Recovery Rate**

To establish a notional recovery rate ABARES uses a data smoothing approach based on information derived from the Mill Survey and the Gross Value of Production Survey.

The Mill Survey seeks information from respondents on a number of matters including:

- Volume of Sawlogs in
- Volume of Sawnwood production out

The **Gross Value of Production** survey seeks information from respondents on a number of matters including:

- Volume of domestic sawlogs produced
- Volume of domestic roundwood posts and poles

It is the relationship between sawlogs and sawnwood production that generates the notional recovery rate. To even out survey discrepancies several methods have been used including:

- 1) Sawmill survey recovery rate (Sawmill survey sawnwood production/Sawmill survey logs in)
- 2) AFWPS notional recovery rate (Sawmill survey sawnwood production/GVP domestic sawlogs)
- 3) AFWPS rolling average recovery rate (rolling average from previous calculated recovery rates)

Table 1	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
AFWPS Table 6 Softwood Sawlogs	9477	9631	8552	9525	8988	8282	8302	9287
Less: Exports								
Less: Posts and Poles								
Less: Cypress	224	210	211	198	182	161	168	158
ABARES GVP domestic softwood sawlogs	8331	8966	7671	8652	7887	6988	6914	7610
Mill Survey softwood log input - Softwood sawlog (excl. posts, piles etc)	8394				7967		7674	
AFWPS Table 11A Softwood								
Sawnwood	4012	4263	3740	4202	3826	3643	3849	4090
Less: Cypress	87	82	82	85	81	73	78	74
AFWPS softwood sawnwood production	3925	4181	3658	4117	3745	3570	3770	4016
ABARES Mill Survey softwood sawnwood production	3925				3745		3770	
AFWPS notional recovery rate	47%	47%	48%	48%	47%	51%	55%	53%
ABARES Mill Survey recovery rate	47%				47%		49%	

The assessment is also tempered by consideration of how well the log consumption data provided in the various surveys align. For instance in the Mill surveys for 2006-7 and 2010-11 the estimated volume of sawlogs processed domestically are within 1% of the GVP estimate of domestic sawlogs. While the results for 2012-13 show a variation of some 10% which is understood to have been caused by issues arising from reduced survey participation.

### FWPA Softwood Data Series

Having established an understanding in Table 1 of the composition of the ABARES data used in the Forest and Wood Products Statistics it is now possible to compare the data generated from the FWPA softwood data series. The first matters to be considered are the differences that exist between the two data sets and in turn determine an appropriate adjustment to ensure a side by side comparison is possible.

### 1. Survey data compared to actual data series

The ABARES Mill survey generates responses from a statistically meaningful sample in order to report with a reasonable degree of confidence the level of industry activity. This is a relatively complex process where a stratified sample is created based on such factors as log type, mill size and geographic location. Other data such as the Gross Value of Production survey is also used to cross reference results and further validate findings. The survey results are therefore generated from a robust process.

However, it is important to note that a survey result is derived from a random sample of the "total population". In the case of the Mill survey this represents a stratified sample of the total number of sawmills in Australia. This is not the same as an actual result which would be derived from the "total population". So depending on the margin of error and the confidence level which can be used the survey result can be seen as having an upper and lower range.

By comparison the FWPA data series aggregates the actual results for the contributing companies. To ensure consistency in the data series the results are not published until all the contributing companies have provided data.

Please note that in order to control the data set comparisons, no allowance for statistical variation has been included in this analysis at this time.

#### 2. Nominal vs Actual

Sawmilling involves the production of sawnwood at the "green" mill which is often dried and then dressed to produce a finished product. The nominal volume of sawnwood represents the production ex the "green" mill. While the actual volume represents green and dried saleable product.

The ABARES Sawmill Survey is based on mill production which would be regarded as <u>nominal</u> while the FWPA softwood data series is based on <u>actual</u> saleable product. Depending on the sawnwood dimensions companies have indicated the percentage variation can range from 15 to 20%. An examples of the variation for some standard products is shown in the following table:

Nominal			Actual			Variation
w	t	mm2	w	t	mm2	
75	40	3000	70	35	2450	18%
100	50	5000	90	45	4050	19%
100	40	4000	90	35	3150	21%

#### Table 2 Nominal vs Actual comparison Dimensions mm

The FWPA softwood data series (sawnwood) includes both dried and green finished products. An assessment of historic of sales indicates a split of 70% dried and 30% green and by applying a variation for actual to nominal of 15% to 20% to the dried volume results in a **weighted adjustment of 11% to 14%**.

# 3. Drying Losses/Stock Losses – pre planer

During the process of drying, timber losses can be experienced due to breakages and also overdrying making the timber unsaleable. These are effectively rejects pre-planer and companies have indicated that they **allow 1-2**% for these type of losses.

# 4. Fault Working/Docking Losses - post planer

Some losses/product downgrade also occur after the planer. As the dried timber is dressed the final inspection for knots may result in docking a section to ensure maximum dried structural value is achieved. The docked material may result in a lower structural recovery which will generally be sold as a lower grade product or used for internal packaging. So no allowance has been used in this analysis.

## 5. Packaging

A sawmilling business requires a range of packaging material including bearers for packs of timber and strips for separating timber pieces in the drying kilns. Companies have indicated that generally they will generate this material from their own production with an **allowance of 2-3**%.

## 6. Inventory

At present industry does not collect inventory data through the data aggregation program. In periods where inventory levels are relatively stable then comparisons with the ABARES sawnwood volume would not be affected. However if inventory levels were say 10% of saleable product then a change in inventory levels to 11% or 15% would have the following impact:

		Assumed level of inventories (% of production)				
2013-14		10%	11%	15%		
ABARES estimate (production)	m3	4,016,000	4,016,000	4,016,000		
Assumed inventory level	m3	401,600	441,760	602,400		
Change in inventories	m3		40,160	401,600		
Implied sales	m3	4,016,000	3,975,840	3,614,400		
Sales relative to production	%		-1%	-10%		
FWPA Sales Data Series	m3	2,697,120	2,697,120	2,697,120		
FWPA share of Total Sales	%	67%	68%	75%		

## Table 3 Change in Inventory Levels % Impact

Note: figures in tables are examples, and are provided for demonstration only.

No analysis has been undertaken on the level of inventories or their change over time.

Based on the above table it can be seen that if inventory levels increased to say 11% then the change in implied sales (production less inventory) and the relationship to the softwood data series would be relatively small. However, if inventory levels increased to say 15% then the impact on the assessed market coverage of the softwood data series could be significant. In the absence of specific data this potential variation should be noted but has not been included in this analysis.

The Mill Survey which is used to determine the national sawnwood production volume does not specifically identify the type of sawnwood products. However where it is known that a sawmill produces treated posts and poles to the agriculture sector or indicates in the comments section of the Mill Survey that they produce posts and poles then these volumes are excluded. Hence the ABARES sawnwood production is regarded as net of any post and pole production. By comparison the FWPA softwood data series (sawnwood) includes sales of posts and poles which are listed as a separate product category. In the period under review these sales were as follows:

Posts and Poles	FWPA SDS
M3	Year end
06/2007	29,246
06/2008	31,163
06/2009	36,202
06/2010	36,525
06/2011	34,367
06/2012	33,900
06/2013	28,052
06/2014	30,332

### **Table 4 Softwood Data Series Post and Poles Sales**

# Market Coverage Assessment

To accurately reflect the variation in some of the adjustment factors discussed above an upper and lower assessment has been developed for the periods 2006-07 through to 2013-14. This timeframe covers the 3 most recent Mill Surveys and also the most recent ABARES sawnwood production volumes. Taking into account all of the adjustments mentioned above the FWPA softwood data series (sawnwood) market coverage is summarised in the following tables.

Table 5 Lower Assessment	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
	'000s							
AFWPS Table 11A Softwood								
Sawnwood <sup>1</sup>	4012	4263	3740	4202	3826	3643	3849	4090
Less: Cypress	87	82	82	85	81	73	78	74
AFWPS softwood sawnwood production	3925	4181	3658	4117	3745	3570	3770	4016
Less: 11% allowance for nominal vs actual	432	460	402	453	412	393	415	442
Less: 1% allowance for Drying and Stock Losses	39	42	37	41	37	36	38	40
Less: 2% allowance for Packaging	79	84	73	82	75	71	75	80
Adjusted AFWPS softwood sawnwood production	3376	3596	3146	3541	3221	3070	3242	3454
FWPA Softwood Data Series <sup>2</sup>	2612	2617	2246	2649	2352	2270	2314	2697
Less: Posts and Poles	29	31	36	37	34	34	28	30
Adjusted FWPA Softwood Data Series (sawnwood)	2583	2586	2209	2613	2317	2236	2286	2667
% market coverage	77%	72%	70%	74%	72%	73%	71%	77%

Note 1 and 2 Includes domestic and export

Table 6 Upper Assessment	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
	'000s							
AFWPS Table 11A Softwood								
Sawnwood <sup>1</sup>	4012	4263	3740	4202	3826	3643	3849	4090
Less: Cypress	87	82	82	85	81	73	78	74
AFWPS softwood sawnwood production	3925	4181	3658	4117	3745	3570	3770	4016
Less: 14% allowance for nominal vs actual	550	585	512	576	524	500	528	562
Less: 2% allowance for Drying and Stock Losses	79	84	73	82	75	71	75	80
Less: 3% allowance for Packaging	118	125	110	124	112	107	113	120
Adjusted AFWPS softwood sawnwood production	3179	3387	2963	3335	3033	2892	3054	3253
FWPA Softwood Data Series <sup>2</sup>	2612	2617	2246	2649	2352	2270	2314	2697
Less: Posts and Poles	29	31	36	37	34	34	28	30
Adjusted FWPA Softwood Data Series (sawnwood)	2583	2586	2209	2613	2317	2236	2286	2667
% market coverage	81%	76%	75%	78%	76%	77%	75%	82%
Note 1 and 2 Includes domestic								

Note 1 and 2 Includes domestic and export

#### Conclusion

In building a bridge between the two data sets the following adjustments have been made:

Adjustment Measure	Lower Band	Upper Band
Actual vs nominal	11%	14%
Drying Losses	1%	2%
Internal Packaging	2%	3%

This is a relatively conservative approach as no allowance has been made for any statistical variation in the ABARES survey data which may typically be associated with such factors as; sample size, sample strata and consistency of data. In addition for the in between Mill Survey periods a notional recovery rate has been used to estimate the sawnwood production. However, it is expected that the use of a lower and upper band would address most of the potential statistical variation.

After standardising the two data series the market coverage for 2013-14 would appear to be within the range of **77% to 82%**.

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