

Measuring & Improving the International Competitiveness of Australian Book Producers

Interim Report Data Analysis Phase

7th May 2004



Australian Government

**Department of Industry
Tourism and Resources**

This project is funded by the Department of Industry, Tourism and Resources under the Enhanced Printing Industry Competitiveness Scheme – Infrastructure and Industry Growth Fund

TABLE OF CONTENTS

INTRODUCTION.....2

1 TYPES OF COMPANIES SURVEYED.....3

1.1 Domestic Producers3

1.2 International Producers.....3

2 FACTS.....4

2.1 Capital Structures5

2.2 Types of Ownership.....14

2.3 Impact of Production Factors.....15

2.4 Impact on Production Costs.....19

2.5 Strategies.....30

3. CONCLUSION.....37

3.1 Bigger Pond37

3.2 Working Culture38

3.3 Risk Taking38

INTRODUCTION

This comprises the report on Phase 4.1 of a project to "Measure and Improve the International Competitiveness of Australian Book Producers", as detailed in Schedule 1 to the Deed between Commonwealth of Australia and Printing Industries Association of Australia for the provision of funding.

The report is formatted to align with

- The requirements numbered as items 3 in Schedule 2, Funding Schedule, Performance Indicators and Reporting Requirements, of the deed, and
- Attachment 3 (Schedule of Activities and Deliverables – Page 2 of 2) of the proposal at Attachment 3 Schedule 2.

It records the analysis of:

- The relative strategic approaches of Asian and Australian book producers,
- The depreciation regimes, taxation rates, and similar factors where they may provide a potential competitive advantage or disadvantage,
- Cultural aspects of domestic and foreign producers.

Previous reports have described the design of the research, the publishers' inputs; the building of analytical models; and the data gathering phases.

This report records the facts extracted from the data, and our initial analyses of them.

The analyses constitute a basis on which the printing industry may make representations to government when assistance is required to improve competitiveness of the industry.

This report informs the development of tools that Australian producers can use to assess where they have a competitive advantage, or the minimal competitive disadvantage. They are currently being built and tested with industry stakeholders.

Over the next several weeks the tools will be refined for presentation to the industry at a series of workshops across the country in the last week of May 2004.

This report is ***not for public distribution*** as it contains information and photographs that could lead to identification of companies and people who provided information on the basis of their anonymity.

1 TYPES OF COMPANIES SURVEYED

We established in Phase 3, that the types of companies included in the survey ensured a representative sample. We also demonstrated, by listing the type of production facilities represented, that we achieved a representative sampling across the production value chain of the book production industry.

This representation is reinforced by the facts of the data that shows the sampling embraced a suitably diverse range of companies by type.

1.1 Domestic Producers

A key finding of the Joint Industry Study was that commercial printers, as opposed to specialist book printers undertake a large proportion of Australian based book production¹. Our analysis shows that such printers are adequately represented in the sampling. Half of those surveyed were not specialist book producers, and the other half were 100% dedicated to book production.

Our initial plan was to visit a representative sampling of 11 Australian producers, provided by the Printing Industries Association of Australia. We were able to add one more in the latter stages of our research, for a total of 12.

1.2 International Producers

In the Asian segment, the situation is not dissimilar. There are several very large book producers and some consolidation is making them even larger². However, our survey of publishers uncovered that relationships exist with smaller, non-specialist producers, so we included them in the sampling.

The table below summarises the extent and spread of the facilities that were covered in our sampling, and demonstrates that we covered both large and small facilities in Australia and Asia.

¹ See Joint Industry Study.

² The acquisition of Hong Kong owned Lee Fung Asco by Singapore owned SNP Corporation is one recent example.

Types of Operations Represented in Survey

Percentage of Production dedicated to Books	< 50%	50% to 75%	>75% and < 100%	100%	Total in Sample
Australia	5		1	6	12
Singapore	1			1	2
Malaysia	1			1	2
Thailand				1	1
Hong Kong	1	2		4	7
China	3			3	6
	11	2	1	16	30

Refer also to Table 1, page 3 of Interim Report - Phase Three. (Totals not equal because this lists sites, not type of facility.)

2 FACTS

In this section we report the sorted data for each line of enquiry we pursued, in tables that list Asian and Australian facts. We begin each section with a précis of the question our research asked, then provide a table that summarises the key data we extracted, and follow it with summarised comment(s) on the implications the data has for the relative competitive position for Asian and Australian book producers.

Throughout this report, all values are nominated in Australian Dollars, unless otherwise stated. We used the following exchange rates to convert financial data.

Exchange Rates Used

Currency	Australian Equivalent
Singapore Dollar	\$ 0.8129
US Dollar	\$ 1.3851
China Yuan	\$ 0.1673
Hong Kong Dollar	\$ 0.1776

Source: www.xe.com 02May04

2.1 Capital Structures

The first set of data concerns capital structures. It compares the various components of capital structure that we used to compare Asian and Australian book producers.

2.1.1 Cash and Accounts Receivable

Our research questions were aimed at quantifying the amount of cash tied up in accounts receivable. Only one printer had any significant cash on hand, and all in Australia mentioned bad debts as a concern, many able to cite examples from recent times.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Bad debts seem not to be a concern • Letter of credit common for first order • Australian publishers get more generous terms than US, Europe and others. • Australian publishers typically paid up to 120 days 	<ul style="list-style-type: none"> • Bad Debts a concern • Credit check common for first order
<ul style="list-style-type: none"> • Terms: 60 – 90 days 	<ul style="list-style-type: none"> • Common: 60 – 90 days, average may be 45 – 50 days

There are two competitive implications in this data for the cash flows of producers in both places; bad debts and terms of credit.

Bad Debts

It appears that Asian producers (in all countries covered), while not free of concerns regarding debtors seem at less risk than Australian producers.

None of the Asian producers could cite any recent examples of bad debts. All referred to an example of a broker defaulting on a debt in 1996 – which indicated that such examples were rare.

For those businesses run out of Hong Kong, there is a low cost facility to insure their accounts receivable, which lowers their risk in any event.³

Australian producers cite bad debts as a constant risk.

We show below (Section 2.4.6) that net margins on sales in Asia are in the range of 8% to 12%. At these levels, for each bad debt of \$1,000 a producer must sell an extra \$12,500 and \$8,330 respectively just to break even in total profits.

The following table illustrates this concept.

³ The Hong Kong Exporters Insurance Fund is a non-profit quasi government institution mandated to provide low rates (currently 1%) by ploughing all profits back to the fund as a means of keeping premiums low.

Impact of Bad Debts

Sales Required to Cover Bad Debt Losses		
If Sales are	\$ 1,000	\$ 1,000
and Net Margin is	8%	12%
This is required to recover to zero	\$ 12,500	\$ 8,333

Credit Terms

When Asian producers provide more generous credit terms to Australian publishers, they create pressure on Australian printers to match them. Two of the Asian companies surveyed (one each in Singapore and China) mentioned that 120-day terms were unique to their Australian customers. Others were in the range of 60 to 90 days.

The availability of extra credit terms is it is reasonable to assume that Australian producers are disadvantaged.

2.1.2 Inventories

Our research asked producers to describe the strategic base, and the operational factors that influenced the amount they held in inventory.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Common to hold paper stock • Delivery time for special stocks is eight weeks FOB and four weeks transit. • Complicated customs rules in China require reconciliation of imported materials and exported product, allowing for "approved" rates of spoilage. 	<ul style="list-style-type: none"> • Minimum stock held – generally get daily deliveries • Inventory values are increasing as dedicated book producers exploit their volume to arrange deals directly with mill agents.

Stock Holdings

It has been common practice for Asian producers to invest significant amounts in paper stocks, confident enough in the knowledge that they can secure the volume to use it that they are prepared to put this cash at risk. This cash commitment seems to

be embedded in their business model to a greater degree than is observed in Australia.

China and Hong Kong based printers appear to “take a position” on paper stocks, buying when they think prices are about to increase, and speculating that they can make profit on the paper as prices increase⁴.

We were not able to measure the detailed dollar costs, but from on site observations and comments it is clear that despite the high cost of storage (except in China), and the cash flow impacts, Asian producers generally hold about a month’s supply of speculative paper stock in storage – in addition to their normal holdings.

In China the situation is somewhat different because special conditions there mitigate in favour of large stock holdings.

First is the complicated duty regime that applies to imported paper. When raw material is imported to China a duty is payable. For material that is to be processed for export, the duty is not payable. Official rates of spoilage apply, and are deducted when the product is subsequently exported. This gets enormously complex when printed material is provided to a third party (as with packaging, or instruction books included with manufactured items) multiple reconciliations are needed. The response of China producers is to receive fewer, larger shipments. Some import in reels and convert their own stocks because the duty regime is somehow simpler for reels.

Reels are between 7 and 10% cheaper than sheeted paper, and the internal cost of conversion is not great.

One plant we visited used a paper converter – for paper and packaging board – for which they claimed an investment cost of \$135,000⁵ that would pay for itself within a year.

⁴ One merchant in Hong Kong (who services there and China) reported that he almost ran out of stocks when this occurred just prior to Chinese New Year in response to rumours of a likely increase in paper prices, although no increase in demand was yet evident.

⁵ Australian Dollars. Unless otherwise stated, all values in this report are reported in Australian dollars, converted at the rates included as Appendix.

Reel conversion unit (China)



Second is the relatively low cost of building, compared to Hong Kong and Singapore. We observed that factories in China are built on several levels, and about 25 to 35% of the space is used for paper storage.

The photo below shows one of six bays of the storage area at a book printer in China, where there were 2 x 5 colour and 2 x 2 colour presses. This bay was for coated stocks of a single grammage. Others were for special stocks. Storage space in China is considered cheap, so printers build large buildings of which about 25 to 35% is used for raw material storage.

1 of 6 Bays in Printer's Paper Storage Area (China)



In Australia, larger companies with long-term contracts commit to (up to) 3 months of paper stock ahead of orders to deliver within the terms of those contracts.

Mid-sized book producers are – in recent times – beginning to buy from mill agents, which requires them to hold inventories up to (about) 2 months stock. They limit such purchases to a standard range of types and sizes, and achieve significant price advantages over those generally available through merchants⁶.

Publishers rank availability of the correct stock as the fifth most important component of the value proposition they seek from producers, so these moves can be expected to improve the competitiveness of those Australian printers who adopt such strategies.

We think Australian producers may be wise to investigate the cost of internal conversion of imported reels. The most recent data shows that reel conversion costs are about \$30 to \$50 per reel in Asia and about \$140 to \$200 in Australia⁷. If conversion plant is available at the prices quoted to us, it is not difficult to make a business case that justifies an investment in sheeting equipment.

⁶ This is discussed in more depth in section 3.4.3, Paper below.

⁷ JIS Sec 5.24, p 102

Special Stocks

Special stocks (either grammage, size or finish) are subject to extended deliveries. In Australia they may take up to 16 weeks; and about 12 in Asia⁸. However, such is the volume of paper shipped into China and Hong Kong, that merchants and mill agents are able to juggle individual shipments of special stocks so that they can accelerate deliveries with relative ease.

Publishers mention this in almost every discussion we had regarding paper availability. The availability of special (non-standard) papers is perceived by publishers as a competitive edge enjoyed by Asian producers.

2.1.3 Plant and Equipment

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Prepress equipment usually previous or old generation • Press equipment includes latest generation but includes old generation (particularly China) • Bindery equipment generally old generation in China but latest generation in Hong Kong (Photo) • Duty on equipment into China – 17% • Also refer to equipment generation charts. • Usually pay back loan on presses in 4 to 6 years. Heidelberg terms include 6 months repayment holiday. (Singapore) 	<ul style="list-style-type: none"> • Prepress equipment generally latest generation • Printing equipment usually previous generation • Bindery equipment generally old generation • Also refer to equipment generation charts

Plant in all markets comes from the same manufacturers and there is no discernable difference in the investment cost of equivalent plant between the Australian and Asian operations surveyed. In all the companies surveyed, in all regions equipment is generally financed by debt.

There is a generational difference in prepress and, to a lesser degree in printing equipment.

⁸ We interviewed one producer in Hong Kong who stated that they can print and ship books to Australia faster than Australian producers can order and receive special paper stocks.

Prepress

Prepress equipment in Australia is usually of the latest generation, and CtP has become almost universally adopted. In Hong Kong and Singapore CtP is not yet the norm, but the technology is gradually replacing film-based equipment. In China there are not many CtP installations, although everyone we spoke to has plans to acquire it.

A special, unique facet of prepress in Asia is the role played by colour separation businesses who use wet proofs as the basis of their unique competitive advantage.

We could not find one wet proofing press in Australia, nor any publishers who demanded wet proofs.

But there is a segment of the market, (for very high quality printed output such as found in the very best art reproductions, and some specialist texts where 100% colour fidelity is required) where foreign publishers require wet proofs.

This small segment (we estimate it is valued at about \$16.5 million in prepress alone) is evolving into a hybrid where CtP is used to make plates that are used for wet proofs instead of digital proofs.

Presses

A similar scenario is evident in press technology, where installations of latest generation technology are common. (Two of the plants surveyed in Australia were installing new sheet-fed presses during our visit.)

Binding and Finishing

Apart from perfect binding, where most plant was similar in age and capacity, there is a marked difference in the binding and finishing segment.

Plants in China tend to be self sufficient in finishing, with investments in coating equipment (most of it quite new), folding, sewing, saddle-stitching, and casing in. In Singapore and Hong Kong we noted the use of trade binders.

Coating plant at printer (China)



The approach to case binding in China is of special interest.

There, it is not uncommon to use manual labour (at a cost of less than \$3.51 per 9 hour day) to case in. In one plant we noted a team of 20 people able to case in (to a high standard of quality) about 10 to 12 units per minute. The owners of the plant pointed out that when they need to increase throughput they call on more people, and saw no pressing need to invest in a casing in line. Though unspoken we suspect this has to do with a desire to employ people.

Casing in Line (China)

There are 20 people in this production line, producing 10 to 12 units per minute.

Case making

Inserting Block



Fold and Check

Hand feed to clamping press



The same is not true for perfect binding, although most installations we saw were larger than the average in Australia (where we observed the largest unit is 27 stations) is not as clearly ahead on the technology curve, especially in case binding.

Australia’s case binding equipment is not as modern as most of that we saw in Asia.

Given that the equipment is similar and requires similar investment, and considering that the plants we visited in Australia and Asia were of similar sizes, we concluded that there is no large difference in the value of plant. (There are differences in the costs of financing their purchase and in the depreciation regimes that are noted in section 2.3.1 below and will be discussed in more detail in our final report.)

2.1.4 Accounts Payable

The research sought to discover the amount of cash, and the extent to which Asian and domestic producers put it at risk in the extension of credit to their customers.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • 30 days on paper otherwise 60 – 90 days (China) • Average is 40 days. 	<ul style="list-style-type: none"> • 60 days, but paper generally 60 – 90 days • Average is 72 days.

There is a large difference in credit terms provided in Australia versus Asia, where paper suppliers are less generous with credit terms, especially in China.

The impact of this is discussed in the following section, when we address working capital needs in both Asia and Australia.

2.1.5 Working Capital

There is a clear difference between the amount of working capital required to produce books in Asia versus Australia.

Accounts payable and receivable are key components of working capital. When Asia is compared to Australia, it becomes apparent that the former requires much more working capital than the latter. Asian producers report shorter periods for paying accounts, and longer periods for receiving payments. We modelled these facts against two companies with the same level of sales, and terms of payment.

Because Asian producers hold an average of 70 days in accounts receivable against an average of 30 days in accounts payable, they require more working capital than Australian producers whose comparative working capital requirements are 60 and 90 days.

	Days		\$	
	Asia	Australia	Asia	Australia
Accounts Recievable	70	60	\$ 191,781	\$ 164,384
Accounts Payable	30	90	\$ 49,315	\$ 147,945
			\$ 142,466	\$ 16,438

This shows that once it is in an established cycle, an Asian book producer requires over \$142,000 of working capital to support each million dollars of sales, while the Australian counterpart requires only \$16,400.

2.2 Types of Ownership

We noted that the type of ownership and its relationship to management was of a similar pattern in all locations.

Types of Ownership of Printing Companies Surveyed

Location of Operations	Public Company	Privately Owned	Total in Sample
	Australia	2	10
Singapore	1	1	2
Malaysia	1	1	2
Thailand	1		1
Hong Kong		7	7
China	2	4	6
	7	23	30

Of all the privately owned business, in all locations, only one was *not* managed by the owners.

We noted that comments from publishers suggest that Asian producers are generally more responsive than Australian ones because the owners operate the businesses and can make immediate decisions. The data indicates that better responsiveness is not the result of ownership involvement in the management of the business.

2.3 Impact of Production Factors

The third set of data uncovered facts regarding factors that impact on production costs.⁹

Depreciation rates vary widely. There are two elements to their impact on company performance; the higher the depreciation rate, the higher the cash return from sales (provided all depreciation is charged into all jobs systematically). The second is on profitability where the low depreciation rates lead to lower returns.

2.3.1 Depreciation

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Hong Kong registered companies are able to depreciate 100% of their investment in manufacturing equipment in the year of purchase. • One China based company depreciates over 5 years for tax purposes, and 10 years for costing purposes. They operate on a 3 years payback. • All plant depreciated over 5 years (Hong Kong) • Depreciate prepress over 4 years (Singapore). 	<ul style="list-style-type: none"> • The depreciation regime in Australia allows most plant to be written off over 5 to 20 years. • Typically they match depreciation expense to their hire purchase loan repayments.

Depreciation treatments are quite different in their tax effect, but similar in the way they are used to assess operating costs.

⁹ See Impacts on Production Costs, p4 of Interim Report - Phase Two, dated 5th March 2004.

The tax effects are very different. Hong Kong registered companies can write off their new equipment in the year it is purchased. A practical effect of this regime is the regular upgrading of equipment because companies will choose to buy it instead of paying an equal amount in tax. (Surprisingly, not all the companies we surveyed were aware of this allowance.) Australian producers must follow a schedule that requires them to write off plant over 5 to 20 years, depending on the type of equipment involved.

Asset	Life Years	
	Australia	Hong Kong*
Prepress	5	1
Printing	10	1
Finishing	20	1

** These rates apply to all companies with Hong Kong assessable income, regardless of where their factories are located.*

The operating cost impact of depreciation is evident in costing, calculation of profit, and cash flow. Asian producers tend to write off plant in 5 years. Australian producers match their depreciation expense to their hire purchase expense.

2.3.2 Cost of Capital

ASIA	AUSTRALIA
<ul style="list-style-type: none"> Nature of capital structure less important than utilisation of cash – more importantly, plant and equipment China – borrow 60% of capital costs Hong Kong – banks very aggressive due to real estate slump. Hong Kong government offers SME's bank guarantee of 70% of loans to purchase new equipment (up to a limit of \$355,000) Singapore government offers a subsidy on interest for investment in plant. Currently get 2-2.5% off the market rate of about 6%. 	<ul style="list-style-type: none"> 7% - 8.5%

- | | |
|---|--|
| <ul style="list-style-type: none"> • In Hong Kong smaller companies qualify for a government bank guarantee for up to 70% of the value of plant purchased. | |
|---|--|

We did not find one producer who was able to discuss the weighted average cost of capital. In Asia this discussion generally turned to one about access to finance. In Australia it was generally turned to one about interest rates, which ranged from 7 to 8.5%.

No one mentioned any restriction on the availability of credit.

The following table shows that Australian producers pay a higher interest rate than any of their Asian competitors. We have researched the prime rate in each country and added 2% to achieve a realistic commercial lending rate.

Country	Current Rate
Australia	7.5%
Singapore	5.3%
Hong Kong	5.0%
China	5.3%

Source: HLB Mann Judd & Bloomberg

2.3.3 Hours worked per week

The research asked for total shifts, times the hours per shift, times shifts per day to ascertain how much of available time was used in production.

We used the following conventions to analyse the use of time.

- **CLOCK TIME** – 24 hours, 7 days per week is the maximum time available. (168 clock hours)
- **OPERATING HOURS** – the number of shifts times the hours per shift and the days worked; e.g: 2 shifts x 7.6 hours x 5.5 days = 83.6 operating hours.
- **PRODUCTIVE HOURS** – the number of operating hours that generate revenue (a rate of productivity). e.g: In the preceding example the plant operates at 90% productivity = (83.6 x 90%) which is 75.24 productive hours.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> China – 2 shifts x 8-9 hours x 6 days (48 – 54 hours per person per week) China – seem to be excess staff Hong Kong - 2 shifts x 12 hours x 6 days (72 hours per person per week) Singapore – 12 hours x 6 days per week (72 hours per person per week). Days per week in peak times. Overtime paid (T x 1.5) after 44 hours. 	<ul style="list-style-type: none"> 3 shifts x 12 hours x 6 days 2 shifts x 8 hours x 5.5 days

There is clearly a difference between Asian and Australian producers in the time they operate equipment. Analysis of the data is summarised in the following table.

Comparison of Productive Hours

	Australia	China	Hong Kong	Singapore
1 Clock hours per week	168	168	168	168
2 Typical shift times	2x8x5.5	2x9x6	2x12x6	2x12x6
3 Standard operating hours per week	88	108	144	144
4 Productivity %	90%	90%	90%	90%
5 Productive hours per week	79	97	130	130
6 Productivity % vs Clock Hours	47%	58%	77%	77%
7 Opportunity (clock hours - operating hours)	89	71	38	38

2.3.4 Average % of productive hours worked

The data for each department was not clear for Asian producers, but for domestic companies it showed that Case Binding operates at less than one quarter of its available capacity, Prepress slightly more and Web-fed printing presses are the most highly utilised at slightly more than 52% of the available time being sold.

AUSTRALIA
Prepress - 31%
Web Fed Print - 52%
Sheet Fed Print - 45%
Limp Binding - 46%
Case Binding - 24%

While the prepress and case binding productivity is very low, in the peak season, from October to December year case binding (and presses) operates on 24 x 7 hours per week.

Seasonal factors are also important in Asia, where they tend to come in two phases, March for colour separations and July/August for book production.

2.3.5 Time from order entry to delivery

We could not find meaningful data that quantified the time taken to produce a finished order from the time usable files were received, until the product was shipped. The run length varies considerably as does the type of book being produced, which in Australia includes all types, but in Asia is concentrated on colour books of which some are limp and the balance case bound.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Many isolated examples but no clear data on averages. • Sometimes call on extra people to meet very short delivery (example: 47,000 of 27 section perfect bound delivered 24 hours after file receipt) 	<ul style="list-style-type: none"> • Generally 3 weeks • 7 days from acceptance of file (in-house bindery)

2.4 Impact on Production Costs

Our research was designed to isolate various components of costs along the value creation chain from pre-press to delivery. We were able to obtain enough data to make that analysis. However, when attempting to compare gross margins the task was made impossible because there are many definitions of what constitutes gross margin.

We were able to obtain, and cross check net margin performance in all countries surveyed.

The following facts report the production costs we included in our research¹⁰

¹⁰ See Section 2.2 *Model Typical Operating Costs* in Interim Report – Phase Two, 5th March 2004

2.4.1 Labour

The cost and availability of labour in China is an overwhelming reality that provides a fertile field for analysis. Tasks that require one worker in Australia, Hong Kong or Singapore are performed with 5 or 6 in China.

ASIA	AUSTRALIA
<ul style="list-style-type: none">• China – seem to be excess staff (see photos)• China Salary equivalent to \$3.51 per day• <i>Comment from industry consultant:</i> “Whenever I visit and notice a lot of people watching others work, I am told they are trainees - suspect they are simply excess.”	<ul style="list-style-type: none">• Ranges from 20% to 28.3% of invoiced value.

The use of labour in China is illustrated in the following two photographs that show typical manning levels on various types of production equipment.

Photo – 4 people operating a guillotine (China)



In an Australian plant this work is done by one person, and sometimes 2.

Photo – 21 people “casing in line” (China)



In the Australian context this work is done by machinery, and usually manned by 3 or 4 people.

We notice a commonality in training patterns in Australia, Singapore and Hong Kong, where there is a perceived dearth of new apprentices and a lost sense of direction for training programs¹¹.

It is counter-intuitive, but no one we spoke to was able to identify a formal training structure in China. It appears that most training is on-the-job. There is a large degree of skills training for labour intensive finishing operations, including a lot of work that would be done mechanically in Australia.

¹¹ The closure of one of the two main training schools in Hong Kong (Caritas) coincided with our visit to gather this data.

2.4.2 On-costs

The research was designed to ascertain whether or not, and to what degree the on-costs for labour in Australia placed domestic producers at a disadvantage. We asked for typical base salaries and extra payments made for what are generally labelled as “entitlements” in Australian industry parlance.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> China top printer salary is \$888, + \$23.00 (2.6%) super, + \$5.32 (0.6%) insurance. 	<ul style="list-style-type: none"> Payroll tax – varies across states Super – 9% Work Cover – Varies Long Service Leave – 1 week per 60 weeks of service – 1.7% Annual Leave – 20 days Sick Leave Allowance 6 - 10 days

One large Australian producer claims on-costs are 40% of wages – data suggests less. In Asia it is much lower. However, there is a clear cost disadvantage to Australian producers from labour on-costs.

To calculate on-costs, we used two sets of numbers. First are mandatory costs that (except for superannuation contributions) may vary by state.

The following table summarises the various components of labour on-costs and compares them across the countries surveyed. (The Australian numbers are a median of the national numbers).

Mandatory Labour On-Costs by State

	NSW	VIC	QLD	WA	SA	TAS	NT	ACT
Superannuation	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
Payroll Tax (see note 1 below)	6.00%	5.75%	4.80%	6.10%	6.00%	6.53%	6.60%	6.85%
Paid Public Holidays	13	10	11	13	11	11	11	13
- Pub Hols as % of total weekdays	5.00%	3.85%	4.23%	5.00%	4.23%	4.23%	4.23%	5.00%
Workcover Insurance	2.87%	2.15%	1.06%	1.42%	1.10%	1.31%		
Total Mandatory Oncosts	22.87%	20.75%	19.09%	21.52%	20.33%	21.07%	19.83%	20.85%

While it is not in the scope of this study to compare states, we note that Queensland has the lowest percentage of on-costs and NSW the highest. We used the median and averages to determine the nationally relevant figure.

National Averages and Median Mandatory Labour On-Costs

	Average	Median
Superannuation	9.00%	9.00%
Payroll Tax (see note 1 below)	6.08%	6.05%
Paid Public Holidays	11.63	11.00
- Pub Hols as % of total weekdays	4.47%	4.23%
Workcover Insurance	1.65%	1.37%
Total Mandatory Oncosts	20.79%	20.80%

The second set of on-costs are allowances – although they are generally mandated by regulation or law, where there is some degree of flexibility in an individual company's treatment of them. We label them as discretionary.

The following table details this type of on-cost and adds it to the Mandatory on-costs to calculate the total.

Discretionary Labour On-Costs by State

	NSW	VIC	QLD	WA	SA	TAS	NT	ACT
Overtime & Shift All.	Excl	Excl	Excl	Excl	Excl	Excl	Excl	Excl
Annual Leave Days	20	20	20	20	20	20	20	20
Annual Leave as % of total weekdays	7.69%	7.69%	7.69%	7.69%	7.69%	7.69%	7.69%	7.69%
Leave Loading	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%
Sick Leave Days (min entitlement)	5	5	8	10	10			
Sick Leave as % of total weekdays	1.92%	1.92%	3.08%	3.85%	3.85%			
Long Service Leave	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%
Total Allowances	11.79%	11.79%	12.95%	13.71%	13.71%	9.87%	9.87%	9.87%
Total Oncosts (as % of direct labour costs.)	34.66%	32.54%	32.04%	35.23%	34.05%	30.94%	29.70%	30.72%

National Averages and Median Discretionary Labour On-Costs

	Average	Median
Overtime & Shift All.	Excl	Excl
Annual Leave Days	20.00	20.00
Annual Leave as % of total weekdays	7.69%	7.69%
Leave Loading	1.35%	1.35%
Sick Leave Days (min entitlement)	7.60	8.00
Sick Leave as % of total weekdays	2.92%	3.08%
Long Service Leave	0.83%	0.83%
Total Allowances	11.70%	11.79%
Total Oncosts (as % of direct labour costs.)	32.48%	32.29%

The total on-cost is slightly higher than 32%.

In Asia we the mandatory on costs range below 5%, and the quantum on which they are paid is comparatively so low that they have almost no impact. There is a clear disadvantage to Australian producers in labour costs, and the on-cost factor serves to reinforce it.

2.4.3 Paper

The price of paper is a commonly cited reason used to explain the difference in production costs in Asia versus Australia. Recent trade press articles reinforce this notion¹². Closer examination shows a different story.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • 40% of invoice value • Paper cost USD\$ 820 / metric ton • Paper and consumables for case bound books as high as 70% on mono limp bound books. (Singapore) 	<ul style="list-style-type: none"> • Prices range around USD800 to USD900 metric ton. • 33% of turnover but may depend on type.

Price of Paper per se

We obtained Asian pricing information from merchants in Hong Kong (who also services China), buyers in Singapore, Hong Kong and China, and several industry

¹² See for instance, Andy McCourt article in Print21 March 2004.

specific intelligence reports that track such matters. We noted that the prices paid in Hong Kong, when normalised to Australian prices, are essentially the same as Australia. The similarity of paper prices was a surprise.

A new paper mill in China has made large in-roads throughout Guangdong (where most of the export oriented industry is based) by executing a well-timed strategy of saturation at low prices to establish a network.

There are changes afoot in the marketing of paper in Australia as more mill agents become active, displacing the dominance of more traditional merchants. All Asian printers reported prices around USD820 per metric ton. The prices in Australia are almost exactly the same, except that one printer reported buying at a lower price (USD800 per metric ton.)

There is no constraint on Australian producers to buy at the same price as Asian competitors, and indeed the large ones do. Those locked into merchants pay about 15% more than those who don't.

Australian producers pay on longer terms than their Asian competitors (as detailed in section 2.1.4 above), which provides a more advantageous working capital structure for them, but also places them at significant risk should their suppliers restrict credit.

Price of Paper as Percentage of Sales

The price of paper as a percentage of selling price is not so similar. Asian producers follow a rule of thumb that states 40% for paper, 20% for production, 20% for general administration and selling, and 20% for margin.

When we attempt to apply this formula to the Australian industry, it does not fit. In searching for reasons, we concluded that the difference reflects the company structures in each market, and especially the impact of binding and finishing is factored in. Australian book printers often use 3rd party finishers, especially for case bound books. In Asia, where having in house binding facilities is what defines who is a book printer from who is not, this doesn't occur. We would expect that the cost of binding in this circumstance would be lower, therefore the percentage of paper in the total price would be higher.

Our sampling did not provide conclusive costs comparisons in Australia, but binding costs appear to be between 17% and 22% of the invoice price to the publisher.

2.4.4 Other cost data

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Case binding about 17-25% of total price. • Pay \$8.20 for PS plates and \$20.35 for thermal. Now thermal coming down to same price as PS. (Singapore) • Standard case binding costs are \$0.0035 to fold and to sew, \$0.0021 to \$0.0026 to cover, and \$0.09 to case in. 	<ul style="list-style-type: none"> • Fold 16 pp section = \$0.014; sew = \$0.01; Collate = \$0.01; Case = \$0.16-20 plus materials. Board \$0.28; Material (Webalin) \$0.22. • Materials range from 3% - 17% of turnover in the bindery sector.

It is common knowledge that Asia offers lower prices for case bound books than Australia producers. We were however surprised at the degree of difference in production costs that lies under this price advantage.

The following table used data collected from several producers in Hong Kong and China, and their counterparts in Australia.

Comparison of Case Binding Costs				
Operation	Australia Costs	China Costs	Variance	Variance %
Fold	\$ 0.0140	\$ 0.0023	\$ 0.0117	-83%
Sew	\$ 0.0100	\$ 0.0023	\$ 0.0077	-77%
Collate	\$ 0.0100	\$ 0.0014	\$ 0.0086	-86%
Cover (Perfect bound)		\$ 0.0017		n/a
Case In	\$ 0.1600	\$ 0.0600	\$ 0.1000	-63%
	\$ 0.1940	\$ 0.0678	\$ 0.1279	-66%

2.4.5 Freight

All Australian producers report freight cost of about 1.5% of sales.

The other key freight factor is time. Our preliminary analysis is that shipments from Asia take about 12 days, plus 2 days to load and ship, and 2 or 3 days to clear and arrive at the distribution warehouse once they reach Australia.

We are still examining the freight cost and time factors to determine whether or not, and to what degree domestic producers would be disadvantaged if they chose to supply the same export markets as their Asia-based counterparts.

This data and analysis will be detailed in the final report.

2.4.6 Net Margin

It was difficult to extract gross margin data because there is no universally applied convention to define it. However, we were able to obtain accurate information regarding net margin on sales.

The most counter-intuitive information of the research concerned the net margin on sales, which we define as profit before interest and taxes as a percent of sales value.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • HK – 8-12% (books), 20% (other) • Singapore – 8 to 12% • China - 8-12% 	<ul style="list-style-type: none"> • 10% to 15%

In Australia the data was provided by reference to financial reports. When we cross-referenced it to the most recent research – PIAA Benchmarking Study 2002 – we found that current margins are slightly more than those reported at that time.

In Asia the data was offered in response to direct questions, and validated by reference to several independent experts, including an accounting firm, an industry investor and other well placed contacts.

The similarity of net margins across Asia allowed us to assess and compare the returns on investment there and in Australia.

We used a modelling approach that assumed the same investment, to produce the same amount of sales, (this model is consistent with benchmarked sales of about 2.1 times asset values.) and allowed for a different median net margin for both regions.

Because the majority of facilities included in our research are ultimately owned in and assessed for taxes in Hong Kong, we concentrate our comparison there. We show

that at prevailing taxation and interest rates, an investment in Hong Kong will achieve a 3.8% greater net return than a similar investment in Australia.

Net Profit Comparison From Same Sales & Same Productivity				
	Hong Kong		Australia	
Investment	\$ 1,000,000		\$ 1,000,000	
Sales	\$ 2,000,000		\$ 2,000,000	
EBIT	\$ 200,000	10.0%	\$ 250,000	12.5%
Interest	\$ 50,000	5.0%	\$ 80,000	8.0%
Tax	\$ 26,250	17.5%	\$ 51,000	30.0%
Net Profit	\$ 123,750		\$ 119,000	
Hong Kong Advantage	3.8%			

Productivity data (see 2.3.3 above) shows that a Hong Kong factory will operate for an average of 130 hours per week, versus 79 hours in Australia. When this greater output is converted to sales they increase from \$2,000,000 to \$3,290,000. With the same net margin factor, the return to capital increases to \$230,175, or 48% more than the Australian investment would return.

Net Profit Comparison From Same Sales and Actual Productivity				
	Hong Kong		Australia	
Investment	\$ 1,000,000		\$ 1,000,000	
Sales	\$ 3,290,000		\$ 2,000,000	
EBIT	\$ 329,000	10.0%	\$ 250,000	12.5%
Interest	\$ 50,000	5.0%	\$ 80,000	8.0%
Tax	\$ 48,825	17.5%	\$ 51,000	30.0%
Net Profit	\$ 230,175		\$ 119,000	
Hong Kong Advantage	48%			

When measured in terms of the net return on investment, the Asian producer has a superior result, even when the net margin on sales is lower. This appears to be due to the lower prevailing interest rates, and more importantly the lower corporate tax rate.

However, when we increase sales from the Australian producer to the same level, (which implies a productivity increase of 75%), there is no advantage for the Hong Kong producer, but a -0.7% advantage to the Australian investment.

The model shows that if the Australian producer was to achieve the same level of productive hours, and the same sales, they would achieve the same return on their investment, despite having to pay higher interest and taxes that the Hong Kong based competitor.

Net Profit Comparison From Same Sales and Same Productivity				
	Hong Kong		Australia	
Investment	\$ 1,000,000		\$ 1,000,000	
Sales	\$ 3,290,000		\$ 3,290,000	
EBIT	\$ 329,000	10.0%	\$ 411,250	12.5%
Interest	\$ 50,000	5.0%	\$ 80,000	8.0%
Tax	\$ 48,825	17.5%	\$ 99,375	30.0%
Net Profit	\$ 230,175		\$ 231,875	
Hong Kong Advantage	-0.7%			

The implications of this analysis are significant in that they demonstrate how Australian producers are disadvantaged at the return on capital because they are over-invested in equipment relative to the hours they operate it. In other words, if the productive hours were the same, Australian and Asian (at least Hong Kong based Asian) printers would achieve the same return on investment.

2.4.7 Volumes

ASIA	AUSTRALIA
<ul style="list-style-type: none"> Scale – a single example: Phoenix just placed 2 orders, first for 600K case bound, second for 1.2million. One job 16.5x21inch, 15K each year, 66 pp. 2 months to bind (by hand). (China) 	<ul style="list-style-type: none"> Except for trade paperbacks, run lengths in Australia are generally 7 to 10K.

Scale is a major factor. Asian printers “fish in a bigger pond” and all are adept at chasing volume. They are also highly flexible because they have access to labour for finishing by hand.

The impact of volume is obvious and overwhelming. The reasons it occurs in Asia and not in Australia have more to do with the strategic approach and working practices than they do with the fundamental costs and the large advantages in direct labour costs enjoyed by Asian (particularly China-based) producers.

This leads to the final type of data we researched, that concerning strategy.

2.5 Strategies

The strategic approach in Asia is to grow through exports, whereas in Australia it is more directed at growth through domestic competition – redistributing the available volume by taking it from other domestic producers.

2.5.1 Marketing Strategies

The following table lists responses to questions regarding the source of individual company’s competitive advantage (CA). The location of the respondent company is noted in parenthesis where appropriate.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • No real marketing strategy, we rely on relationships with brokers and other printers. (China) • Not much into Australia, too hard to exploit publishers there. • CA based on quality and management systems backed up by constant work in progress updates & communications to clients, before and after orders. • Have to have sales and marketing base in Hong Kong as China not suitable for managing customer service issues. (China) • CA is based on timeliness for domestic market; quality for export. (Hong Kong) • Support <i>other book printers</i> and brokers. Deal with only a few publishers directly. • CA is our ability to do work that can't be done in China (sex, religion/politics, maps) (Hong Kong) • Use relationships and full service to secure clients (Hong Kong) • Maintain flexibility of schedule, freedom, proximity to printers, quality. • Business is based on relationships with brokers and printers. 	<ul style="list-style-type: none"> • Our CA is all about responsiveness to publishers’ needs. • CA is price, quality, delivery • CA is the advise we can give printers and publishers on where and how job may be done better. • CA is based on our environmental standards. • Our strategy is to push clients into being value driven.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • All relationships managed by CEO. "they like to deal with me." (Hong Kong) • Our CA is based on decisiveness. (Hong Kong) • We secure scanning and prepress as entrée to market for printing. (Singapore) • Rely on relationships at both marketing (office in Belgium, keen to do something similar in Australia) and production - have "facilities" in China and an office in HKG. (Singapore) • Pricing is left to individual sales person, who understands what their clients will accept. (Singapore) 	

This is a significant difference between Asian and Australian producers approach to strategy. There are also significant similarities.

In Asia the talk on strategy is focused in a general sense on growth, without much regard to where the sales will come from, and confident knowledge that they exist somewhere. The Asian printer has access to international markets through the broker system, which many use, or through direct representation. Put simply, for Asian producers growth means exports.

Even SME's think and act this way, as exemplified by a Singapore company with sales of less than \$10 million, who has established a sales office in Belgium to manage relationships with clients and potential clients in the EU.

While Asian producers talk of growth, Australians talk about survival, competition and pricing. The notion of dealing with foreign markets is abstract and usually absent.

The similarities are to do with a heavy emphasis on price, in which opportunities to sell on a less obvious value are not generally acknowledged, except for the larger companies who link their strategic intent into their structure and processes.

2.5.2 Production

The following comments were made in response to questions regarding the strategies that drive a company’s approach to production and production systems.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Planning to get ISO 14000 need to teach workers about compliance. (China) • Production Competitive Advantage is based on abundant cheap labour. Hence our move to books & other labour intensive products. (China) • Some manufacturers are leaving China for Vietnam chasing lower cost labour. (China) • We replace machines only to get an upgrade. This works out to adding 1 machine each year. (HK) • We maximise volume through prepress and farm out as much printing as necessary to satisfy clients. • Run the plant 24x6 on 2 shifts, and add 7th day in busy times. • Manage production thru daily morning meetings between customer service & production teams. Weekly meeting with all teams, including CEO, 	<ul style="list-style-type: none"> • Look for efficiency gains • Encourage publishers to comply with requirements.

This data reflects the “growth” approach in Asia, versus “survival” strategy in Australia.

2.5.3 Technology for Production

The following comments were in response to our questions regarding the strategy that drives investment in production plant and equipment.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Convert paper from reels, using Philippines made equipment., to access paper and board 3-7% cheaper. Much higher yield (for customs) than sheets. (China) • CIP3 has low uptake in Asia because the quality of digital proofs 	<ul style="list-style-type: none"> • Total integration of all production systems. • Investments based on increasing reliability of plant. • Look for speed, speed of make ready and reliability.

<p>are not yet good enough for most buyers of colour books.</p> <ul style="list-style-type: none"> We are looking for CtP to increase productivity of presses. (Hong Kong) 	
---	--

The responses from all producers were similar in that they see technology as a way to stay competitive. Australian producers appear to have a more analytical approach to the technology, although the evidence suggests that there is far too much of it.

All Australian producers look at technology to protect their market share and lower their costs. This is essentially a defensive approach.

Asian producer have a different strategic approach, in which they see technology primarily as a way to grow their business, through exporting, by increasing their capacity. They are also very focused on investing in technologies that allow them to lower their costs.

2.5.4 MIS

These are responses to questions regarding the strategy for purchasing MIS and the degree to which they are integrated into workflow systems.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> My system doesn't show detail. Like many Asian businesses I only know at the end of the year if I've made money. (Hong Kong) We do estimates by hand. Don't know of a good enough print specific system. No integration of workflow and MIS. Invested \$300K for server to support Creo. (Singapore) 	<ul style="list-style-type: none"> MIS ranges from not integrated with workflow to total integration. We manage our inventory, electronic placement of orders, integrated to workflow management system. Combination of several platforms because print specific packages not suitable for finishers. PRISM integrated into workflow using manual data input. We have a new server and network, and an FTP connection is being installed to make the process more efficient. The company uses PRISM, will shortly upgrade to the latest version. Data is input by hand. It isn't integrated into the workflow system. Reports are provided and reviewed monthly. We use several platforms and

ASIA	AUSTRALIA
	integrate them into an MIS and workflow system. <ul style="list-style-type: none"> • Propriety system for workflow management system that is partially integrated with accounting system, • Nothing specific to the needs of finishers. • Use Printstream for MIS, and Prinergy workflow, • PRISM not integrated and requires too much manual input. • We use PRISM, integrated into workflow systems. • MIS is not integrated into workflow - start with time recording but "prism want too much money" • We now capture all data electronically and only estimating is not integrated. Use "Printers Choice".

There are stark differences in the approach to MIS.

Australian book producers have adopted, and continue to refine integrated MIS and workflow systems, whereas their Asian competitors have not yet done so.

This may have its roots in different management approaches. Australian book producers share information regarding costs and/or the assumptions on which they are based with their management teams. In most Asian companies we visited this information is closely held by the owners, and is considered highly confidential. It is difficult to reconcile this approach with the adoption of MIS which by its nature and structure is about sharing information so that it guides behaviour.

2.5.5 HR & Labour

The lower cost of labour in Asia is generally acknowledged across all manufacturing sectors as a fact. Our research was directed toward finding out how productive the labour was, how skilful, how it was trained and what other factors surrounded this area.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> • Labour (and environmental) regulations re sound, ventilation, waste disposal are regulated but generally observed only by foreign companies. (China) • No training or apprenticeships, no one interested anymore (Hong Kong) • 98 employees producing about \$3.650 million p.a. in colour separations. (Singapore) • We explain to young workers that youth is time to advance career and earning potential. (Singapore) • Do a lot of internal training in software, production, quality needs and how to satisfy customers. (Singapore) • Pays people to go to night school for English, etc. (Singapore) • No government training is available. (China, Singapore) • Employs mostly Malaysian Chinese who come for the income and stay for the career opportunity. (Singapore) 	<ul style="list-style-type: none"> • We have a very flexible AWA in place. • There is a heavy emphasis on training in our culture based on a system that connects everyone to customer. • No agreement in place, except with printers who are on AWA's. • Sales incentive based on volume, independent of margins. • We follow the award. • Bindery operators very hard to find. • Our printers are on AWA's, others on the award. • We haven't had an apprentice for about 10 years. Used to have 3, had a responsibility to the industry until we stopped growing. • Do in-house training but no formal apprenticeships.

Some Asian managers speak of their employees in paternalistic tones that would not be heard in Australia. The work practices and mutual expectations of managers and workers in Asia is different, where workers tend to be deferential and the entire organisation understands very clearly that their customer always comes first.

We noted similarities in approaches to training, especially the lack of emphasis on training apprentices¹³.

¹³ This dovetails neatly with the preliminary observations of APIS study on training needs.

2.5.6 Communications

The research sought to understand the manner in which Australian and Asian book producers communicate with their customers and with their markets in a general sense.

ASIA	AUSTRALIA
<ul style="list-style-type: none"> Use 2 or 3 key people to manage communications with overseas clients. They use daily and weekly production meetings to inform both ways between client and production. (Singapore) 	<ul style="list-style-type: none"> Active across 3 levels. Proactive during production. 3-tiered relationships the norm with majors (20%), CEO deals w/top 5. Via customer coordinators who accept orders, no sales reps, business development managers who look for value seeking customers (min 1MM+ p.a.) Our choices for communications technologies are reactive and include an FTP facility, satellite in and out, greater bandwidth. 3-tiered relationship.

The communications strategy is another reflection of the internationality of the Asian based producers. They are used to dealing across time zones and languages and have developed systems that communicate customer needs into their production systems. Australian producers work in a different manner, where the structure of their organisation is not as well aligned, and the degree to which they communicate customer needs into their organisations is not as clear of obvious.

- To varying degrees, Australian producers maintain relationships at the Strategic, Operational and Transactional level with their publisher clients. In Asia this is generally not the case and the publisher will often have a strong operational relationship but not a strong strategic one.

3. CONCLUSION

When we look at the comparative situation through an Australian lens, the long and strongly held belief is that Australian book producers cannot compete with their Asian counterparts because:

- Paper prices there are lower because they buy such large volumes, and probably a fair amount of dumping prevails,
- Labour is far more expensive here than there.

Many also believe that the cost of equipment is lower – partly because that part of the world is a dumping ground for old plant.

All this seems to support an Australian industry held conclusion that Asian producers must be making much higher margins, and those margins allow them to offer low prices.

However the reality is quite different.

This research has demonstrated, that with the exception of labour costs, there is no validity in these long held beliefs.

We show that paper costs are essentially the same, and in isolated cases Australian book producers sometimes buy at lower prices. The purchase cost of plant and equipment is much the same.

In Asia the machine cost per unit of output is lower, but only because the plant utilisation is much higher.

And while it is certainly true that they sell at lower prices than Australian book producers, we found that net margin on sales (being earnings before interest and tax as a percentage of sales revenue) are actually higher in Australia than they are in Singapore, Hong Kong and China.

There were three underlying themes that recurred in our data gathering and analysis, and ultimately explained why the Asian producers are so successfully competitive in the Australian book market: they fish in a bigger pond, the working culture and practices are different in Asia than they are in Australia, and there is an entrepreneurial willingness in Asia to take risks in order to grow the business.

3.1 Bigger Pond

Every Asian printer we spoke with mentioned the impact on their business on 9/11 and SARS. This underscores the internationality of their business. The book producers of Singapore and Hong Kong, who have expanded their production into Thailand, Malaysia and Hong Kong, are part of a world market. Australian

