

Industry Brief

Manufacturing: exposure to international trade

This industry brief examines the impact of the rising Australian dollar exchange rate on local manufacturers. It is divided into two parts. The first part sketches the trade exposure of each of the nine sub-divisions of manufacturing, focussing on the proportion of exports in manufacturers' sales and the extent of import penetration in the domestic market for their products. The second part draws the key points from a survey by the Australian Industry Group, which recorded manufacturers' own conclusions about the effects of Australian dollar appreciation on their sales and profitability, examining the export and import impacts separately.

Introductory remarks

- This analysis of the Australian manufacturing sector is at the 2-digit, or sub-division, level of the ABS' ANZSIC industry classification. There are 9 sub-divisions within the Manufacturing Industry division.
- The value of exports (on an industry of origin basis) as a proportion of manufacturers' sales is referred to as *export propensity*. For manufacturing as a whole, export propensity was around 23% in 2002-03. The value of imports (on an industry of origin basis) as a proportion of domestic market sales (i.e., manufacturers' sales, less exports, plus imports) is referred to as *import penetration*. Import penetration of the manufacturing sector as a whole is around 36%.
- Over the year to March 2003, the latest published ABS data, 68% of export invoices were denominated in US\$ and 27% in A\$, with Euros, NZ\$, yen and sterling accounting for around 1% each. For import invoices, only 50% were in US\$, 31% in A\$, 9% in Euros, 4% in yen, 2% in sterling and 1% in NZ\$. Exports of manufactured merchandise would be expected to have a somewhat lower than average proportion of invoices in US\$, since the pricing of much of Australia's commodity exports in US\$ would bias the average for total exports upward.
- The A\$ appreciated by 33% against the US\$ in 2003, but by only 6.5% against the NZ\$, 11% against the Euro, and 20% against the yen and sterling.
- A useful indication of manufacturing industries' own assessment of the impact of A\$ appreciation is provided by an Australian Industry Group (AIG) survey of 800 manufacturers, more than half of whom were exporters. It was undertaken in November/December 2003, when the exchange rate was around \$US0.74 (it follows a similar survey in February/March

2003, when the exchange rate was around \$US0.60).

The rate impact can manifest in several ways

There are several avenues through which the exchange rate can impact the performance of manufacturers. When exports are priced in a foreign currency against which the A\$ has appreciated, the A\$ returns to local manufacturers will be reduced. At the same time exports priced in an 'appreciated' A\$ will be more expensive, and these less-competitive exports will usually result in some loss of market share. On the import side, product priced in a foreign currency against which the A\$ has appreciated will be cheaper to import and so could be sold at a lower price, thus displacing some locally manufactured product. These impacts are all negative for the Australian manufacturer. However, there is also a benefit to many manufacturers from currency appreciation, since any imports they purchase that are priced in a 'depreciated' currency for use as inputs to the manufacturing process will also be cheaper. This reduction in their cost of production serves as a partial offset for manufacturers to the negative effects on revenue from a stronger A\$.

How significant is international trade?

The extent of exposure to international trade differs substantially among the various sectors of manufacturing. A snapshot of exposure for each sub-division follows.

Food Beverages and Tobacco (FBT) sub-division

Export Propensity – 24.0% Import Penetration – 10.7%

- This large sub-division accounts for nearly one-quarter of total manufacturing sales.
- It also has a substantial export exposure, with some 24% of sales exported; exports are widespread across the food and beverages segments.
- Import penetration is relatively low in this sector, reducing the risk of a large-scale, exchange-rate-driven reduction in manufacturers' sales due to stronger import

competition. At the same time, inputs would be mainly domestically produced, limiting the opportunity to benefit from cheaper imports. The main imports are processed fruit, vegetables and beverages.

Textiles Clothing, Footwear & Leather (TCF&L) sub-division

Export Propensity – 29.0% Import Penetration – 53.8%

- This is a small, and shrinking, sub-division, accounting for only about 3% of total manufacturing sales.
- At nearly 30% of TCF&L manufacturers' sales, export exposure is substantial. Textiles, leather and leather products are the major export items.
- Import penetration is very high, and rising, suggesting lower import prices will only add further to the competitive pressure on local manufacturers. All industries in this sector face heavy import competition, but the worst affected are clothing, textiles and textile products. Imported inputs are just over a fifth of the value of total inputs into the manufacturing process.

Wood and Paper Products (WPP)

Export Propensity – 10.9% Import Penetration – 19.7%

- WPP is another of the smaller sub-divisions of manufacturing, accounting for 6% of total manufacturing sales.
- Relatively speaking, export exposure is low, although export propensity is slowly, but steadily, rising. Timber, woodchips, 'paper and paper products' are the main export categories.
- Import penetration is only moderate, although it is on a gradually rising trend. Imported inputs are less than one-quarter of total inputs. 'Paper and paper products' is the major category of imports.

Printing, Publishing and Recorded Media (PPR)

Export Propensity – 3.4% Import Penetration – 11.6%

- PPR is also a relatively small sub-division of manufacturing, accounting for 6% of total manufacturing sales.
- Dominated by the printing and publishing sectors, export exposure is very low, with only a marginal upward trend in export propensity.
- Import penetration for this sub-division is also relatively low; however, this masks the high exposure to imports of the recorded media segment, which accounts for around

6% of PP&R sales, and where imports are larger than domestic production. (By the same token, exports by this group account for a quarter of group output.)

Petroleum, Coal, Chemicals and associated products (PCC)

Export Propensity – 14.6% Import Penetration – 31.2%

- PCC accounts for nearly one-fifth of total manufacturing sales.
- The export propensity of this sector has been variable around an upward trend - averaging 16% over the latest five years. Kerosene and LPG are significant exports, as well as a range of pharmaceuticals and basic chemicals.
- At over 30%, import penetration is substantial and on a gradually rising trend. The proportion of imported inputs in the manufacturing process is also substantial at 25% for the chemicals and plastics group and 50% for petroleum refining. Pharmaceutical goods are the main imported products.

Non-metallic Mineral Product Manufacturing (NMMP)

Export Propensity – 2.8% Import Penetration – 12.6%

- NMMP is a small sub-division of manufacturing, at 4% of total sales, with a relatively low trade orientation.
- Most manufacture is for the domestic market. Exports are small.
- Import penetration is only modest, but rising steadily. The largest import (and export) categories are ceramics and glass.

Metal Product manufacturing (MPM)

Export Propensity – 45.4% Import Penetration – 29.7%

- MPM is a major sector of manufacturing, accounting for 15% of manufacturers' total sales.
- This sub-division is very open to trade, with exports approaching half of manufacturers' sales. However, an easing trend in export propensity has been apparent in the last two years. Exports are predominantly basic non-ferrous metals.
- Import penetration is substantial, but has past its peak, easing a little in recent years. Significant import categories are: fabricated metal products, non-ferrous metals and iron and steel. We expect A\$ appreciation to have a substantial adverse effect on this sub-division.

Machinery and Equipment (M&E)

Export Propensity – 27.7% Import Penetration – 61.6%

- M&E is one of the largest sub-divisions of manufacturing, accounting for 20% of total sales.
- It is also very open to trade, with substantial export exposure that is increasing. Exports are well spread across all categories. We expect the stronger A\$ to adversely affect export sales.
- M&E has the highest level of import penetration in manufacturing, and the trend is rising. The higher A\$ is expected to assist this rising trend. Imports are substantial in all categories, but the dominant import categories are motor vehicles and parts and electronic equipment manufacture.

Other Manufacturing (OM)

Export Propensity – 11.2% Import Penetration – 31.0%

- OM is another relatively small sub-division of manufacturing (comprised, predominately, of furniture, but also including toys, sporting goods, jewellery and pre-fabricated buildings) with around 4% of total manufacturing sales.
- Export exposure is relatively low. While the pace of exports has been picking up, domestic sales have grown a bit faster, so export propensity has been on an easing trend. Toys and sporting goods are significant exports.
- Import penetration has been edging up, and is substantial at nearly a third of the domestic market. The strong A\$ is likely to cause this to rise further. Imports are well spread, with furniture imports substantial.

Summation for the Manufacturing Division

Based on the above export propensity and import penetration calculations:

- the sub-divisions most heavily exposed to a strong A\$ in terms of the potential impact on sales revenue are **machinery and equipment, metal products manufacture, and textiles, clothing, footwear and leather;**
- the sub-divisions: **petroleum, coal, chemical and associated products, other manufacturing, food beverages and tobacco** and **wood and paper products** are, nevertheless, significantly exposed;

- the sub-divisions with a relatively low exposure are: **printing, publishing and recorded media** (although within this, the recorded media industry group is heavily exposed) and **non-metallic mineral product manufacturing.**

The foregoing analysis is based upon a measurement of the extent to which international trade influences sales performance of the sub-divisions of manufacturing. There are other factors influencing the impact of A\$ appreciation on exporting manufacturers, at least in the short term, including: the extent of hedging, if any, the currency of invoice and the length of contracts. Contracts in A\$ provide some insulation for exporting manufacturers in the short term. According to the AIG, these would be most common in the electrical machinery, beverages and miscellaneous manufactures categories. In contrast exporters in the non-ferrous metals, metal ores, gas, coal and petroleum products categories are more likely to have contracts in US dollars.

The following observations based on the AIG survey of manufacturers provide an indication of their actual experience operating in a strong A\$ environment.

Insights from the AIG survey

The AIG survey revealed that 57% of exporters (some 40% of all manufacturing businesses) were adversely affected by the rise in the A\$.

The survey established a number of interesting points concerning the impact on manufacturers. For example:

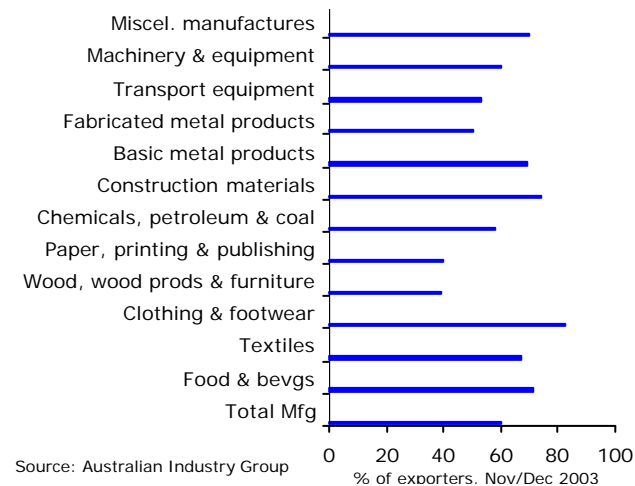
- Broadly, Australian manufactures were uncompetitive at an exchange rate of \$US0.70 and above – for ‘basic manufactures’ the rate was closer to \$US0.65.
- While results are indicative only, the survey showed that for each one-cent appreciation of the Australian dollar, export earnings for manufacturers overall were reduced by 0.3%.
- The AIG survey estimated that reduced export competitiveness could have resulted in a 4.6% loss of export revenue per exporter in 2003, which would amount to some \$3.2 bn for manufacturing overall.
- It also estimated that lost turnover, due to increased import competition from the rise in the A\$, was equivalent to some 2.1% of turnover, on average, per manufacturer, or \$4.1 bn in 2003 - greater in dollar terms than the loss of export income.

- One in five manufacturers is now considering moving some production offshore – most likely to occur, according to the AIG, in industries which have suffered rising import competition and/or lower tariffs, e.g. textile, clothing and footwear industries, transport industries and machinery and equipment industries, particularly the whitegoods sector.
- The proportion of manufacturers hedging against unfavourable exchange rate movements has been low, around 6%. Now one in ten manufacturers say they are more likely to hedge.
- Some manufacturers can cope better than others with A\$ appreciation; distinguishing product features seem to be: lower price sensitivity, e.g. a more elaborately transformed product; the ability to adapt through achieving higher productivity, or through global operations, where businesses operating in several countries can often achieve a 'natural' currency hedge in their operations.
- Exports to the USA were by the far the worst affected by the rise in the A\$ rate. On the imports side, the greatest benefit was gained by China, through imports into Australia of basic manufactures.

Measuring the impact

Particularly useful insights provided by the AIG survey are the proportion of exporters affected by the rise in the A\$ in specific industry groups and their degree of sensitivity to exchange rate appreciation, as well as the extent to which increased import competition due to the stronger dollar has affected manufacturers.

Proportion of exporters reporting export declines due to a higher A\$

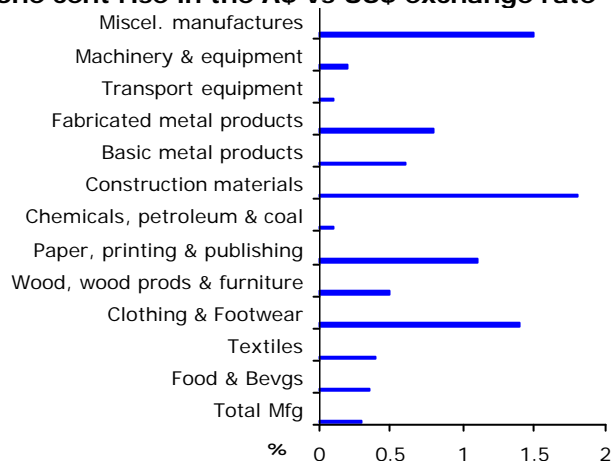


The exporting sectors most severely impacted by the A\$ appreciation appear to be those involved in basic manufacturing processes. Specifically, these were: textiles, clothing and footwear; food and beverages; basic metal products and miscellaneous manufactures (probably toys and sporting goods). In these sub-divisions over two-thirds of exporters reported an A\$-related decline in export earnings, compared with around 60% across all exporters.

The sub-divisions where exporters were least affected in terms of export income were: wood, wood products and furniture, and paper, printing and publishing and the manufacture of elaborately transformed manufactures such as, fabricated metal products, transport equipment and machinery and equipment.

Some products of the least affected sectors have a higher than average proportion of invoices denominated in A\$ and/or are less price sensitive due to the complexity of manufacture.

Estimated % loss in export earnings for each one cent rise in the A\$ vs US\$ exchange rate



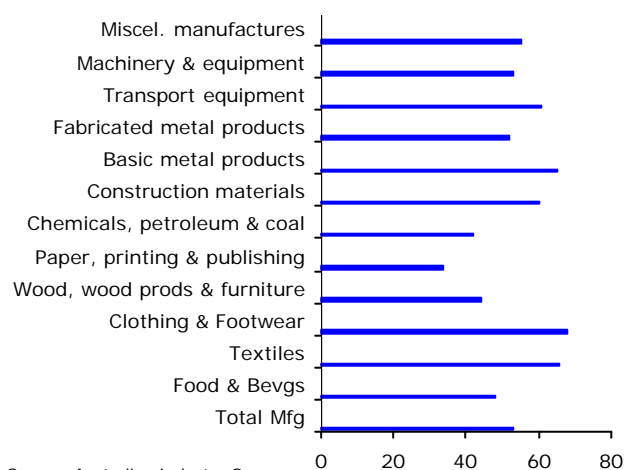
Interestingly, while paper, printing and publishing manufacturers were in the 'least affected' group (i.e. having a low proportion of exporters reporting declines due to the higher A\$), they had a relatively high sensitivity in terms of export earnings to increases in the A\$. This may suggest that within the 'least affected' sectors there are some industries with a particularly high sensitivity to the exchange rate – in this instance the heavy trade exposure of the recorded media segment within paper, printing and publishing may be relevant.

The survey also shows that the stronger A\$ influenced the imports side of manufacturers' international trade in two ways. Firstly, it had a significant impact on their sourcing of purchases. Nearly 27% of manufacturers increased their imports due to the A\$ rise. The survey showed the most price sensitive industries in this context to be:

clothing and footwear (47% with increased import purchases); construction materials (44%); textiles (36%); paper printing and publishing 35%. These are mainly 'basic' manufacturing industries where inputs are more likely to be price-sensitive. Industries with a low percentage of companies reporting an increase in imported inputs tended to be those with more extensive 'value adding' in the production process or where there was a traditional reliance on Australia's natural resources for inputs.

Secondly, more than half of manufacturing industries reported increased competition from imports due to the stronger A\$. For more than one manufacturer in five, the increase was significant. Industries with more than 60% of businesses affected were: TCF industries; transport equipment; basic metal products manufacturers; and the construction materials sector. These are sectors with a history of rising import penetration.

% of firms reporting more import competition due to the higher A\$



Source: Australian Industry Group

Sectors where fewer than 50% of firms reported increased competition were: paper, printing and publishing; chemicals, petroleum and coal products; wood and wood products and food and beverages. With the exception of chemicals, petroleum and coal products, these are sectors that do not have historically high import penetration rates. Pharmaceuticals form a high proportion of the imports of the chemicals etc category, where government regulations and lower brand substitutability would be factors affecting imports in the short run. Based on the survey results, the combination of the negative export and import effects of the higher A\$ could have been equivalent to a \$7.3 bn loss of

turnover in 2003. The strong domestic demand during the period of A\$ appreciation would have masked some of the adverse effects on manufacturing sector revenue. However, the AIG calculated that manufacturers' real sales growth (trend basis) did ease to 1.5% in the year to September 2003, from 5.5% for the same period a year earlier. For the same periods, the AIG calculated that trend growth in profit had slowed from 24.6% to 6.3%.

Furthermore, while 39% of manufacturers benefited from a reduced cost of imported inputs, nearly 29% reported lower selling prices and the same number reported a loss of market share. The net effect of these influences was, according to the AIG, that 40% of manufacturers reported that profits were lower than they would have been without the A\$ appreciation.

Which industries are most exposed?

The sub-division where export revenue is most vulnerable is **metals and metal products**. Vulnerability is also relatively high in **food, beverages and tobacco, machinery and equipment, textiles, clothing, footwear and leather** and **other manufacturing**. Export revenue is least vulnerable in **non-metallic mineral products** and in **printing, publishing and recorded media** (as a whole, but the recorded media industries group on its own would be vulnerable). These outcomes are broadly consistent with expectations based solely on the export propensity measure.

Determining the extent of exposure of manufacturing sub-divisions to lost sales due to increased import competition is more problematic, and the AIG survey did not include sensitivity estimates for manufacturing sub-divisions. On the basis of import penetration rates, tempered by the proportion of firms reporting increased import competition due to the stronger A\$ from the AIG survey, sub-divisions likely to suffer the largest impact on sales are: **textiles, clothing, footwear and leather; machinery and equipment; metals and metal products** and **other manufacturing**. Those likely to experience the lowest impact on sales are **printing, publishing and recorded media** (but again, the recorded media sector is highly vulnerable); **food, beverages and tobacco; non-metallic mineral products** and **wood and wood products**.

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