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The impact of the mining boom on rural exports

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Matt Grudnoff

TAI

Policy Brief

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LPO Box 5096
University of Canberra, Bruce ACT 2617
Tel: (02) 6206 8700 Fax: (02) 6206 8708
Email: mail@tai.org.au
Website:www.tai.org.au

Summary

Since the beginning of the mining boom Australia's rural sector has lost $43.5 billion in export income. This includes $14.9 billion in 2010-11 alone. These losses have occurred because the mining boom has forced the Australian dollar to historic highs.

The damage the mining boom is doing to other sectors has created what has been dubbed the 'two speed economy'. The booming mining industry has pushed up the Australian exchange rate and in doing so has cut the export earnings of trade-exposed parts of the economy.

Most Australian exporters are price-takers. They do not set the world price but rather accept the current world price. So when the value of the exchange rate increases, the amount the exporter receives in Australian dollar terms falls.

The rural sector is heavily reliant on export earnings. In 2010-11 it exported over $36 billion worth of produce, but in Australian dollar terms this has been reduced by $14.9 billion. This represents a decrease of 41 per cent in export income because of the high exchange rate attributable to the mining boom.

Within the rural sector the beef and veal industry has also been adversely impacted with exporting income being cut by $2 billion in 2010-11 and $6.2 billion over the boom. The sugar industry lost $566 million in 2010-11 and $1.8 billion over the boom.

Just as the Reserve Bank of Australia tries to smooth the ups and downs of the economy with monetary policy, state and federal governments need to manage the ups and downs of the commodity cycle. The growth in the mining sector has come at a cost to other sectors of the economy, especially the rural sector – and these costs are substantial.

The idea that any growth in the mining sector will serve to enhance Australia's income is simply untrue. The macro economy is far more complex, with unintended consequences like the high Australian exchange rate negatively impacting on non-mining sectors – particularly, as has been shown here, the rural sector.

The mining boom has not been managed well. It has been allowed to expand with little consideration for the collateral damage it causes to other sectors of the economy. The rural sector is one part of the economy that has been badly affected. There needs to be a stronger focus on the boom's full effects rather than a reliance on the simple belief that unrestrained growth in the resource sector is in Australia's national interest.

Introduction

Australia is experiencing what has been dubbed the 'two-speed economy'. Two speed because the mining sector is experiencing rapid growth, while other sectors like manufacturing, retail, agriculture and tourism are barely growing at all. The mining sector's rapid growth has seen high commodity prices – growth in much of the rest of the economy has been reduced as a result of the high exchange rate, high interest rate and wage growth that have accompanied the mining boom.

The high exchange rate has a direct effect on the income of exporters and import-competing firms – to remain competitive in world markets local producers must reduce the Australian dollar price of their goods and services. The rural sector is a large exporter that sells its products into competitive world markets and, as such, it has been negatively affected by the high exchange rate.

The analysis below finds that the rural sector has lost $43.5 billion of export income from the beginning of the mining boom in 2003-04 until 2010-11, including $14.9 billion in 2010-11 alone. This represents a decrease of 41 per cent in export income because of the high exchange rate attributable to the mining boom. With the exchange rate rising further since, it is likely that those losses will be even larger in 2011-12.

Australia's record high exchange rate is caused primarily by the mining boom. Demand for the Australian dollar has increased as the rest of the world has increased its willingness and ability to pay higher prices for greater volumes of our commodities. Large mining investments that are predominantly funded by foreign capital have further increased demand for the Australian dollar. More recently Australia's relatively high interest rates have also attracted foreign money. The Reserve Bank of Australia has maintained relatively high interest rates because of the mining boom.

Producers within the rural sector have fared badly as a result of the high Australian dollar. Beef and veal producers have lost $6.2 billion in export income during the boom while the sugar industry has lost $1.8 billion. This represents substantial decreases in incomes that flow right through to Australian farmers.

What's causing the exchange rate to go up?

We regularly hear news about the effect of the high exchange rate on Australian businesses. The media reports that firms are cutting back or closing down and industries are no longer exporting. The high exchange rate is putting enormous strain on some sectors of the Australian economy. The industries that are most affected are those that rely heavily on exports or which compete with imports.

The price of the Australian dollar, known as the exchange rate, is determined on the foreign exchange market. The exchange rate is determined by the supply and demand for Australian dollars. Put simply, people demand Australian dollars in the foreign exchange market mainly to buy Australian exports or to invest in Australian projects. People use Australian dollars in the foreign exchange market to obtain foreign currency in order to purchase foreign goods and services or to invest in foreign projects.

The current high exchange rate is being driven by high demand for the Australian dollar. In recent years most of this demand has come from the rest of the world's demand for Australia's mineral exports. Commodity price increases coupled with the rest of the world wanting large quantities of Australian minerals means foreigners need more Australian dollars to buy those exports. This in turn fuels demand for the dollar and drives up its price.

The rise of the Australian dollar since 2004 has been approximately aligned with the rising value of mineral exports during the mining boom. Australian minerals now account for over 60 per cent of Australia's exports by value.[1] While in recent months commodity prices and volumes have fallen, this decrease comes off historically high levels and commodity prices and the exchange rate remain very high.

The high commodity prices have also encouraged a large increase in mining investment. Many new mines and expansions of old mines have been or are being constructed. Mining industry investment projects reached a record high of $260 billion in April 2012.[2] Since 83 per cent of mining companies are foreign owned,[3] the majority of this capital comes from overseas sources. Large amounts of foreign money flowing into Australia to fund these projects further increases demand for the Australian dollar which in turn increases the exchange rate.

The other main factor fuelling Australia's high exchange rate is Australia's relatively high interest rates. While Australia's interest rates are in domestic terms historically low, they remain relatively high compared with interest rates overseas. In Europe, the United States and Japan interest rates remain at or close to zero. Australia's high interest rates are attractive to foreign investors because they can get a higher rate of return by investing in Australian securities. To buy these securities they need Australian dollars and this too increases demand, and puts pressure on the price of the Australian dollar.

The high interest rate is driven primarily by the mining boom.[4] The Reserve Bank has maintained high interest rates relative to the rest of the world in an attempt to free up capital and labour to move from lower-growth parts of the economy to the booming mining sector. The causes of the high exchange rate are therefore linked to the mining boom. While the mining boom may not be the sole cause of the Australian dollar's historic high, it is clearly a major contributor.

The effect of the high exchange rate on exporters

Movements in the exchange rate have a major impact on the futures of trade-exposed industries like the rural sector. For Australian exporters a stronger exchange rate reduces the amount they receive in Australian dollars for their goods and services. Consider the following example:

> An Australian car manufacturer builds a car in Australia for the United States market. To compete in the US market the car is sold for US$10,000. Let's assume that one Australian dollar buys 50 cents US. This means that the US$10,000 the firm receives for the car represents AU$20,000, since the US dollar is worth twice as much as the Australian dollar.
>
> Now let's assume the Australian dollar goes up in value so that the new exchange rate is at parity, meaning that one Australian dollar buys one US dollar. Now when the car is sold in the US market for US$10,000 it is only worth AU$10,000. Because the Australian dollar has doubled in value, the amount of money the Australian exporter receives has halved.

It might seem fanciful that the Australian dollar could double in value but in 2001 the Australian dollar was worth only 50 cents US. Ten years later, in 2011, it was consistently

[1] ABS (2012)

[2] BREE (2012)

[3] Edwards (2011)

[4] Richardson (2011)

above parity.[5] Most Australian exporters are price-takers. This means they do not set the world price but rather accept the current world price. So if the value of the exchange rate were to double and an Australian exporter had no power to change the world price then the amount the exporter would receive would have halved.

The Australian rural sector

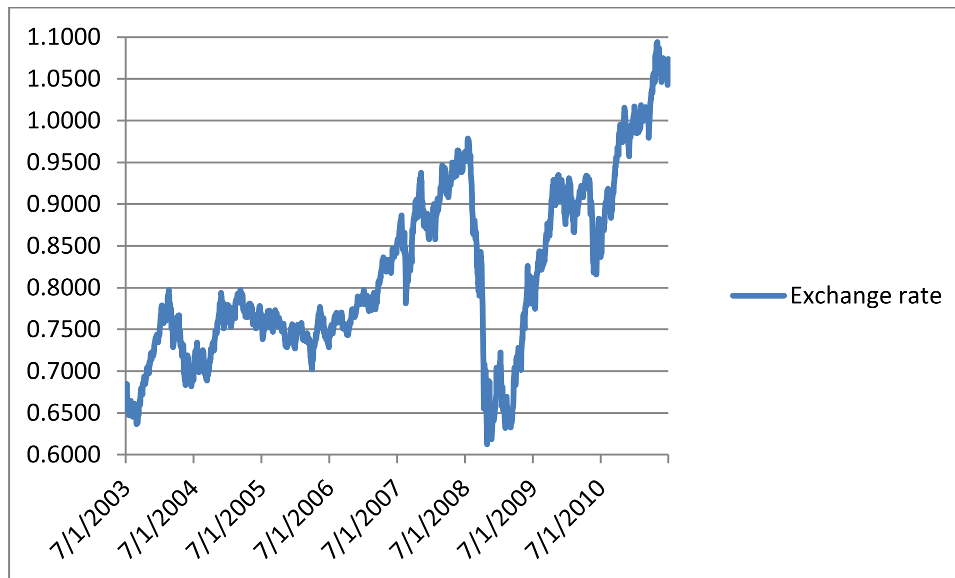
The rural sector in Australia relies heavily on exports of its produce. In 2010-11 the rural sector exported just over $36 billion worth of goods.[6] It typically sells at a world price which is predominantly denominated in US dollars. For the purposes of this paper exchange rates are quoted as the value of one Australian dollar in terms of US dollars. Not all Australia's rural exports go to the United States, but most export contracts are denominated in US dollars.[7]

The rural sector's strong reliance on exports has put it under pressure in recent years because of the high exchange rate. The higher exchange rate has reduced the Australian dollar value of the rural sector's exports. This in turn has reduced the income of Australian businesses and farmers.

Rise of the exchange rate

The mining boom began in 2004 with a rise in commodity prices. As the commodity price went up so did the value of Australia's mineral exports. This in turn drove demand for the Australian dollar and pushed up the exchange rate. The history of the exchange rate since the beginning of the mining boom is linked with the commodity price and investment in the mining sector. The exchange rate over the period of the mining boom is shown in Figure 1.

Figure 1 – AU$/US$ exchange rate



The average exchange rate from when the Australian dollar was floated in 1983 to the beginning of the boom in 2004 was US$0.70 – one Australian dollar purchased 70 cents US.

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5 All exchange rate data comes from the RBA (2012)

6 Data on the rural sector comes from ABARE (2011)

7 For this reason the US dollar acts a bit like an international currency for the purposes of trade and so its value predominantly represents the income our rural exporters will receive.

In the early years of the boom from 2004 to early 2007 the exchange rate hovered for most of the time above 70 cents US and below 80 cents US.

At the beginning of 2007 the iron ore price was US$ 73.50 per tonne.[8] By the end of 2007 it was over one and a half times higher at US$188 per tonne. Over the same period thermal coal prices jumped 75 per cent. The exchange rate responded by breaking through 80 US cents in March 2007 – by late 2007 it was touching 90 cents and by February 2008 it was consistently above 90 cents US.

In early- to mid-2008 commodity prices peaked and by July 2008 so did the exchange rate. The first phase of the mining boom was coming to an end. Lehman Brothers collapsed on 15 September and this marked the beginning of the Global Financial Crisis (GFC).

With the onset of the GFC commodity prices fell dramatically with iron ore falling from US$186.50 in early August to just US$63.50 four months later. Thermal coal prices also dropped from US$161.35 in early September to US$78.19 four months later. The GFC and falling commodity prices also drove the Australian exchange rate down. It fell through 90 cents in August 2008 and crashed to 61 cents by October, just two months later.

For Australia the impact of the GFC was short-lived. The second phase of the mining boom got underway in early 2009 when Chinese demand for commodities re-emerged. Commodity prices began to climb and so did the exchange rate. By June 2009 the exchange rate was up above 80 cents and by October it had passed 90 cents. The Australian dollar reached parity with the US dollar in November 2010.

The GFC provides a clear indication of the interrelationship between the Australian dollar and commodity prices. The exchange rate has affected all our export industries, not just those that have been subject to rising commodity prices. It has also affected those industries that compete with imports. As the Australian dollar has risen, our exports have become more expensive in foreign currency terms and imports into Australia have become cheaper.

The impact of a high exchange rate on the Australian rural sector

The high exchange rate has a significant impact on the amount of income that Australia receives for its exports. If the exchange rate had been closer to the historical average that existed before the boom then Australia's export industries, such as the rural sector, would have received more than would have been expected for their exports. By calculating the reduction in export income due to exchange rate movements we can gauge how big an effect the historically high exchange rate is having on the rural sector.

The average exchange rate from when the Australian dollar was floated in 1983 to the beginning of the boom in 2004 was one Australian dollar for 70 cents US.[9] We can use this average as indicative of what the exchange rate might have been if we had not experienced the recent mining boom. From this we can estimate rural sector earnings if the exchange rate had not risen because of the mining boom.

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[8] All commodity price data comes from Bloomberg (2010)

[9] RBA (2012)

The reduction in rural exports because of the high value of the dollar over the eight years from 2003-04 to 2010-11 is $43.5 billion. This is shown in Table 1.

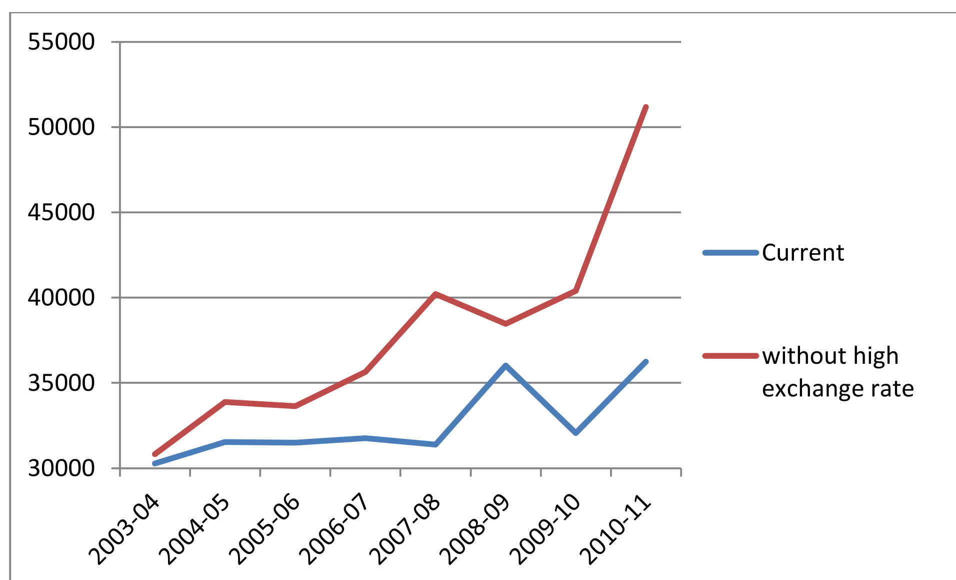
Table 1 – Effect of the high exchange rate on rural export income ($million)

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Total
Value Rural – Current	30,270	31,531	31,501	31,754	31,384	36,020	32,058	36,252	260,770
Value Rural - 70 cents	30,824	33,891	33,648	35,642	40,207	38,475	40,398	51,172	304,256
Difference	-554	-2,360	-2,147	-3,888	-8,823	-2,455	-8,340	-14,920	-43,486

Source: ABARE (2011) and author's calculations

The effect is also shown in Figure 2. Figure 2 shows the value of actual rural exports and the value of rural exports without the high exchange rate associated with the mining boom.

Figure 2 – Value of rural exports: actual and without the high exchange rate



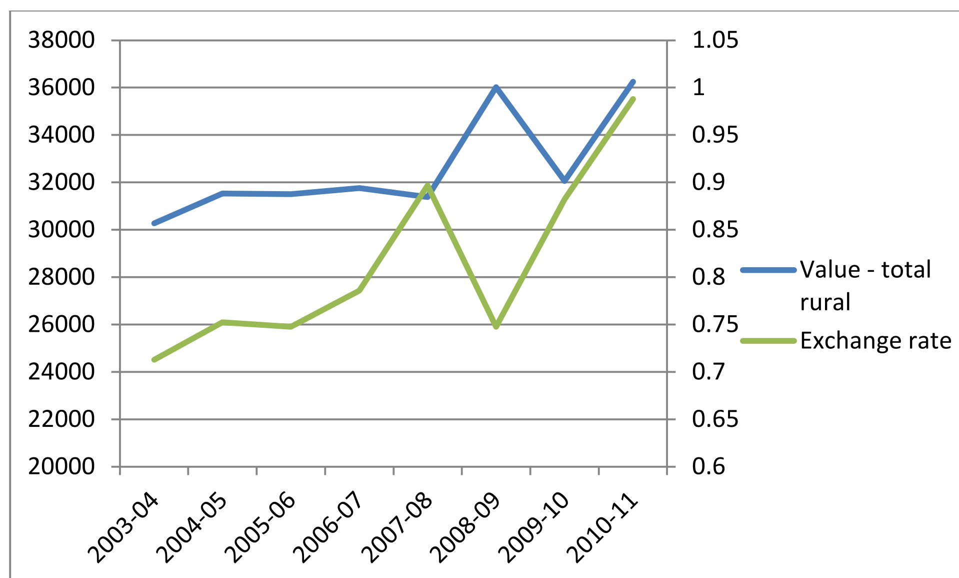
The loss in rural export earnings shown in Table 1 and Figure 2 represents the mining boom's effect on rural export income. In the early years of the boom the effect is quite small. It grows with the exchange rate before dropping during the GFC. The cost of the high Australian dollar to farmers then rebounds quite quickly in the last two years. The largest single yearly loss to farmers occurred in 2010-11 with a loss of $14.9 billion. This represents a decrease of 41 per cent in export income because of the high exchange rate attributable to the mining boom. It should be noted that the average exchange rate in 2010-11 was 99 cents.[10] In recent times the exchange rate has been consistently above parity, so if more recent data was available the loss in rural export income would be expected to be even higher.

As discussed above, both commodity prices and the Australian dollar collapsed during the GFC and this episode during 2008-09 gives us a glimpse into the impact a drop in the exchange rate has on rural export income. Figure 3 shows the value of rural exports and the

[10] RBA (2012)

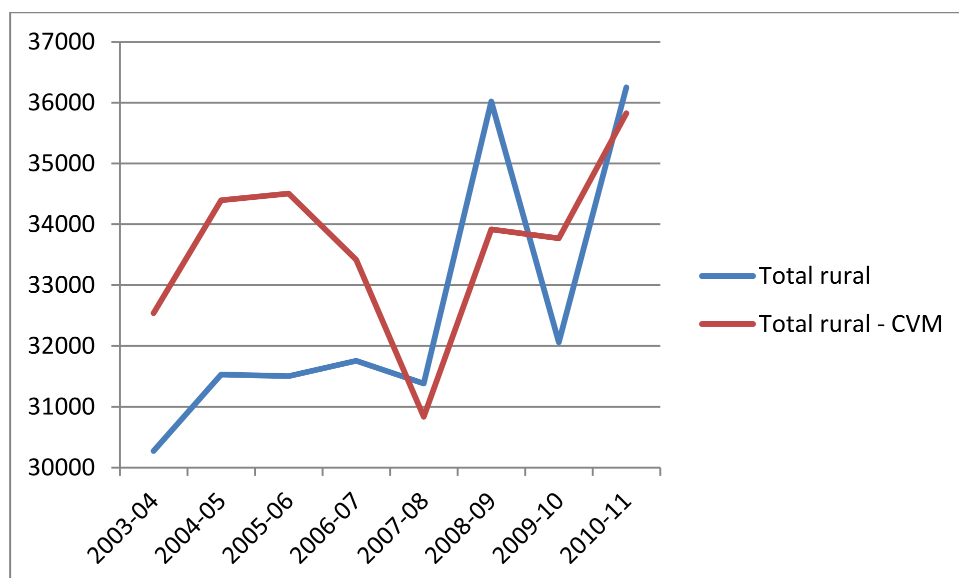
exchange rate. We can see that in 2008-09 as the exchange rate falls dramatically the value of Australia's rural exports increases dramatically. This is to be expected. As the exchange rate falls the value of exports increases in Australian dollar terms.

Figure 3 – Value of rural exports and the exchange rate



The following year the exchange rate returned to boom levels and the Australian dollar value of exports fell again. Figure 4 shows the volume and value of rural exports.[11] We can see that from 2008-09 and 2009-10 the volume of exports stayed approximately the same. That is, the amount of produce that was exported remained largely unchanged during the GFC. At the same time the value of exports decreased. This was primarily due to the rebound in the exchange rate after the GFC.

Figure 4 – Value of rural exports and constant price estimates of rural exports



[11] Volume measure is from ABARE (2011) and is calculated by taking constant prices so any change in magnitudes are a quantity effect.

Sensitivity analysis

Sensitivity analysis is a tool used to highlight the sensitivity of a particular conclusion to the selection of assumptions made by the modeller. Throughout this paper we have used the pre-mining boom average exchange rate as the 'business as usual' scenario against which the impact of the mining boom on rural export revenue was compared. That said, while there would be few, if any, economists who would dispute that the mining boom has significantly increased the Australian dollar, no economist can say with certainty exactly what the exchange rate would be if the mining boom had never occurred. To that end Table 2 provides a sensitivity analysis which shows the impact of a range of different assumptions about the exchange rate on rural export revenues. As the table shows, even if it is assumed that without the mining boom the Australian dollar would be 90 cents, the cost to the rural sector would be $3.5 billion. To put this into context, the last time the Australian dollar was at 90 cents before the record mining boom was in 1984.

Table 2 - Effect on rural export income at different exchange rates ($million)

	2010-11
Value Rural - Current	36,252
Difference Rural 70c	-14,918
Difference Rural 80c	-8,524
Difference Rural 90c	-3,548

Source: ABARE (2011) and author's estimates

Why these estimates are likely to understate the impact on rural producers

The methodology used to estimate the loss in export income as a result of the high exchange rate associated with the mining boom is likely to understate the full loss in earnings. This is primarily due to the assumption that the quantity of exports is not altered by the decrease in the Australian dollar price the exporter is receiving. This method for measuring export income loss only looks at the loss caused by a fall in the price that exporters are receiving.

In normal circumstances it would be expected that as the price falls less will be supplied to the market. The lower price makes some farms unprofitable and others less willing to supply to the market. An example of this occurred recently with the export of Tasmanian apples. In September 2012 it was announced that for the first time in 130 years no apples would be exported from Tasmania.[12] One of the primary reasons given was the high exchange rate.

The end of Tasmanian apple exports will be reflected by a drop in the value of rural sector exports. If the exchange rate had not risen Tasmanian farmers would still be exporting but this would not be picked up by the methodology used in this paper. Therefore that lost export income would not be included in the lost income shown in this paper. The size of the underestimation could be substantial and will depend on the number of exporters that have decided to decrease their overseas sales.

[12] Woodgate (2012)

The beef and veal industry

The rural sector as a whole is being adversely impacted by the high exchange rate, and the beef and veal industry is no exception.[13]

The beef and veal industry is highly dependent on exports. In 2010-11 the industry exported $4.8 billion worth of product. Using the same methodology outlined above for all rural exports we can estimate the size of the loss in income to the beef and veal industry. These losses are shown in Table 3.

Table 3 – Effect of the high exchange rate on beef and veal export income ($million)

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Total
Value Beef – Current	4,107	4,919	4,613	5,070	4,636	5,395	4,503	4,827	38,070
Value Beef - 70 cents	4,182	5,287	4,927	5,691	5,939	5,763	5,674	6,814	44,277
Difference	-75	-368	-314	-621	-1,303	-368	-1,171	-1,987	-6,207

Source: ABARE (2011) and author's estimates

The impact on beef and veal is substantial, with income decreasing by $2 billion in 2010-11 and $6.2 billion over the eight years.

The sugar industry

Another industry within the rural sector that is affected by substantial falls in export income is the sugar industry.[14] In 2010-11 the industry exported $1.4 billion of product. If we assume that the exchange rate would have been 70 cents without the boom there is a loss in export income of $566 million in 2010-11 and $1.8 billion over eight years. This is shown in Table 4.

Table 4 – Effect of the high exchange rate on sugar export income ($million)

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Total
Value Sugar – Current	982	1,098	1454	1,510	1,006	1,338	1,887	1,376	10,651
Value Sugar - 70 cents	1,000	1,180	1,553	1,695	1,289	1,429	2,378	1,942	12,466
Difference	-18	-82	-99	-185	-283	-91	-491	-566	-1,815

Source: ABARE (2011) and author's estimates

[13] Data on beef and veal industry comes from ABARE (2011)
[14] Data on sugar industry comes from ABARE (2011)

Conclusion

The adverse impact on the rural sector of Australia's historically high exchange rate is substantial. The sector is estimated to have lost $43.5 billion in export income since the beginning of the mining boom. The unrestrained growth of the mining industry has pushed Australia's exchange rate to historically high levels. Because of this, Australian exporters and import-competing industries have been faced with substantial decreases in export income.

Just as the Reserve Bank of Australia tries to smooth the ups and downs of the economy with monetary policy, state and federal governments need to manage the ups and downs of the commodity cycle. The growth in the mining sector has come at a cost to other sectors of the economy, especially the rural sector – and these costs are substantial.

The idea that any growth in the mining sector will serve to enhance Australia's income is simply untrue. The macro economy is far more complex, with unintended consequences like the high Australian exchange rate negatively impacting on non-mining sectors – particularly, as has been shown here, the rural sector.

The mining boom has not been managed well. It has been allowed to expand with little consideration for the collateral damage it causes to other sectors of the economy. The rural sector is one part of the economy that has been badly affected. There needs to be a stronger focus on the boom's full effects rather than a reliance on the simple belief that unrestrained growth in the resource sector is in Australia's national interest.

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