

The benefits of the mining boom

Where did they go?

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Summary

The perception of most Australians is that the mining boom delivered unambiguous benefits for the Australian economy, including more jobs, exports, tax revenues and, for the majority of people, higher incomes. But was this the case? This paper looks more closely at the extent to which Australians have, in fact, benefitted from the boom, which it dates as beginning after the December quarter 2004 when commodity prices clearly began to show the impact of the increased demand from the rest of the world. Developments after 2004 are taken to reflect the effects of the mining boom.

As a result of the boom, revenue received by mining companies increased by over \$60 billion, of which well over half, \$37 billion, represented increases in company profits before interest and tax expenses. Another \$20 billion represented increased input costs, including transport, business services, chemicals, fuels, construction and construction materials. Additional labour costs accounted for \$5 billion and additional royalties to state governments, \$3 billion. A large proportion of the increased revenue was spent by mining companies on investment in new capacity, which went up by \$30 billion. Profits in Australia grew as a result of the increased profits flowing to the mining companies but some of this growth occurred at the expense of non-mining profits.

The mining boom would have had a major stimulatory impact on the Australian economy but for two factors. First, the Gregory effect saw the exchange rate appreciate, which caused a contraction in the rest of the economy. Secondly, the Reserve Bank of Australia increased interest rates in an attempt to offset the stimulatory effects of the boom.

Estimates from the Australian Bureau of Statistics suggest that the terms-of-trade impact of the boom increased real income by over nine per cent. The paper examines the extent to which the two main sources of income in Australian households, wages and government income-support payments, were boosted during the period. The evidence shows that real wages increased at roughly the same rate after the onset of the mining boom as they did before it. Of course, there were strong local effects in WA and Queensland but for Australia as a whole there was no acceleration in wages growth as a result of the boom. There was certainly no indication of an additional nine per cent increase in real wages coming through.

Households on government payments indexed to inflation received no real increase during this time and neither did pensioners receiving pensions indexed to wages, since wages themselves did not reflect any benefit from the mining boom.

Anyone owning resource stocks would have benefited from the enormous paper gains, which peaked in May 2008 but had largely disappeared by the end of 2008. However, to the extent that the gains persisted, the benefits would have gone to the top 20 per cent of wealthy households where share ownership is concentrated. Some companies made investment decisions at the peak of the mining boom that became less viable when the good times evaporated, which would have tended to reduce the present market value of the relevant company shares.

There is a popular view that the mining boom generated massive tax revenues for the government, making tax cuts and spending initiatives possible. However, the tax surprises experienced by the government vastly exceeded any reasonable estimate of the increase in tax revenues from the mining industry; only a fraction of the increased government revenues in this period can be attributed to the mining boom.

Overall, it is hard to identify the benefits to ordinary Australians of the mining boom. The estimated nine per cent increase in real incomes from the terms-of-trade changes do not appear in the figures for wage earners or recipients of government income-support payments. It seems that the benefits of the boom barely went beyond the mining industry itself. Indeed, higher

mortgages and other borrowing costs meant that many households were worse off as a result of the mining boom.

Introduction

The mining boom in Australia appears to have come and gone. In the December quarter 2008, commodity prices collapsed as did the demand for coal and iron ore by China.¹ Subsequently, mining companies have shelved projects and laid off employees. But the years of the boom brought changes to Australia and generated significant wealth. The purpose of this paper is to describe the effects of the mining boom and determine where the benefits went.

In analysing what happened to the benefits of the boom, it is essential to realise that in the first instance the additional revenues associated with the record prices and quantities of commodities sold were received by the mining companies. The value of the shareholdings in mining companies therefore increased, delivering benefits to Australian shareholders. However, the impact on the rest of Australia then depended on how mining companies and their shareholders applied that revenue.

With hindsight it can be suggested that Rio Tinto, for one, wasted a lot of its revenue (as well as some borrowed funds) on acquisitions that are now worth less than it paid for them. For example, Rio Tinto paid US\$38 billion for Canada's Alcan and now faces a substantial write-down over the acquisition. BHP was only just saved from itself when it bid for Rio at what now looks like quite an inflated price. Its offer for Rio Tinto in February 2008 was 3.4 BHP shares for each Rio Tinto share, which valued Rio Tinto at approximately \$147 billion.² The company is now worth approximately \$54 billion.³ Rio rejected the offer when its own fortunes were still high, allowing BHP to pull out when, from its perspective, the deal began to look sour.

Mining companies used the gains of the boom to spend heavily on new developments but, as discussed above, many of these will have to be mothballed now that Chinese demand for commodities has declined substantially. Rio Tinto for example has announced that it will not be proceeding with iron ore projects in WA. A number of coal mines in Queensland have been closed with the loss of thousands of jobs.⁴

For the purposes of the present paper there is a need to date the boom. The approach here is simple and is based on the Reserve Bank of Australia's (RBA) index of commodity prices as it appears in Figure 1.

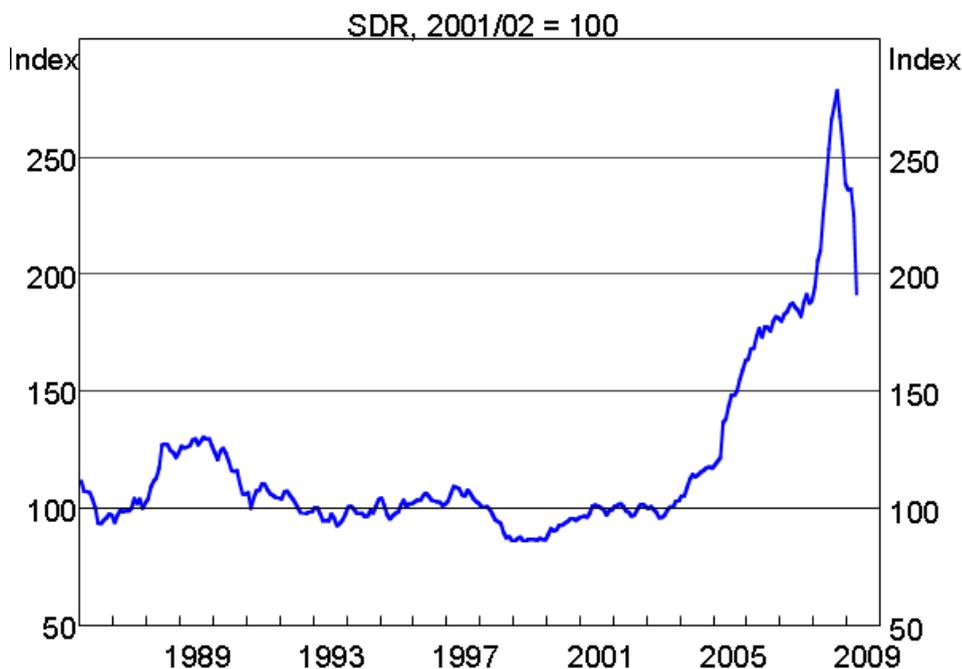
¹ Australian Bureau of Agricultural and Resource Economics, *Australian Commodities*, vol 16 (1), March quarter, 2009.

² B Wassener, 'BHP drops hostile bid for Rio Tinto', *International Herald Tribune*, 25 November 2008.

³ The valuation of \$54 billion uses the number of shares on issue in the UK and Australia and their recent share prices reported in the Rio Tinto site at http://www.riotinto.com/shareholders/219_corporate_overview.asp. The exchange rate at 19 March 2009 was used to convert UK values into Australian currency.

⁴ M Chambers, 'China's demand for coal could save our mines', *The Australian*, 12 May 2009.

Figure 1: RBA Index of commodity prices



Source: Graph taken from RBA site http://www.rba.gov.au/Statistics/commodity_prices.html accessed 5 March 2009.

In 2004, the RBA's index was around 100, the same as in 2001–02 and roughly the value it had assumed for most of the previous decade. Hence for this paper, the year to the December quarter 2004 is taken as the base year and movements in data subsequent to 2004 are taken to reflect the impacts of the resources boom.

To some extent, the recent fluctuations in the fortunes of the mining industry look comparable to the resources boom of the late 1970s and its aftermath. There was similar hype during the 1970s under the Fraser Government as commodity prices, foreign investment and the value of the Australian dollar all surged. By the early 1980s and into the Hawke/Keating years, there was indeed an increase in activity in the mining industry. From 1979–80 to 1985–86 for example, real value-added in the mining industry increased by 40 per cent but by then commodity prices had subsided. The glamour had largely been lost in the industry but it was nevertheless delivering jobs, export income and tax revenues.

Macroeconomic impacts

In addition to the direct expansion of the mining sector, there is no doubt that the mining boom provided a broad stimulus to the Australian economy. For example, much of the Australian construction industry has been involved in the development of the mining industry and the associated need for additional private and public infrastructure. Similarly, incomes generated in the mining industry are dispersed into the rest of the economy through the multiplier effect. People with incomes tend to spend money on goods and services from the rest of the economy and in that way funds flow from the mining and construction industries through to butchers, bakers and candlestick makers. The following table, based on an analysis conducted by the RBA, gives an indication of how the additional income generated by the resources boom was allocated by the mining companies.

Table 1: Distribution of mining revenue, \$billion

	2003–04	2007–08	Increase
Revenue	57	119	62
intermediate input costs	25	45	20
labour costs	6	11	5
gross operating surplus	26	63	37
investment	16	46	30
royalties	4	7	3
taxes	3	n/a	

Source: RBA (2009a)

Table 1 shows that mining revenue grew by \$62 billion between 2003–04 and 2007–08. Additional non-labour intermediate input costs were \$20 billion. Australian Bureau of Statistics (ABS) input-output tables⁵ reveal that those input costs would have included expenditure on items such as fuels, transport, chemicals, construction and construction materials and business services.⁶ Labour costs increased by \$5 billion. The rest of the revenue increase from the mining boom went into the gross operating surplus (profit before deducting interest payments and taxation) of the mining companies.⁷ Well over half of the increased revenue went into profits.

A substantial and apparently growing percentage of the mining industry is foreign-owned, thus a large proportion of any dividend payments will go overseas.^{8,9} However to date, mining companies have not increased dividends substantially, choosing instead to reinvest their income back into the expansion of the mining industry in an effort to increase capacity or to buy up competitors. As shown in Table 1, investment increased by \$30 billion, around 80 per cent of the increase in the gross operating surplus. Table 1 also reveals that there has been a modest but significant increase, from \$4 billion to \$7 billion, in royalties paid to state governments, most of it to Queensland and WA.

Figures on the amount of corporate tax paid by mining companies were not available for 2007–08. However, even if the total additional gross operating surplus is assumed to be profit and all of it was taxed at the company rate of 30 cents in the dollar, additional taxation would have been a relatively modest \$11 billion in that financial year. The true figure is somewhat less due to the fact that interest and depreciation expenses are included in the gross operating surplus and not all companies pay the full 30 per cent company tax rate. While it is a significant figure, it is not a large amount in the context of the budget. It is certainly much less than appears to have been

⁵ The input-output tables show the value of the different inputs that contribute to the output of each industry.

⁶ ABS, *Australian national accounts: input-output tables*, Electronic Publication, 2004–05 Final, Cat N 5209.0.55.001, 19 November 2008.

⁷ Depreciation should be included here but the additional depreciation as a result of the mining boom is likely to be small.

⁸ ABS, *Economic activity of foreign owned businesses in Australia*, Cat No 5494.0, 9 January 2004.

⁹ The figures on foreign ownership in the mining industry are poor. The latest appear to have been those published by the ABS in 2004, referring to the year 2000–01 when foreign-owned mining companies accounted for 45 per cent of the value-added in the mining industry.

assumed in some discussions of the revenue implications of the resources boom, which are considered further below.

Offsetting the positive effects of the mining boom on the Australian economy were two factors working in opposite directions. First, the appreciation of the exchange rate that accompanied the boom had the effect of making other sectors of the economy less competitive, especially the trade-exposed sectors. During this period for example, manufacturing shrank from 10.4 per cent of GDP to 9.4 per cent, a mechanism known as the 'Gregory effect' in Australia after the phenomenon was first described by Australian National University economist Bob Gregory.¹⁰ Overseas, the effect is variously known as the 'resource curse', the 'Dutch disease', the 'Lawson disease' after the UK Chancellor of the Exchequer, and so on. The Gregory effect describes how a surge in commodity incomes, following a surge in prices for example, has the effect of forcing an appreciation of the currency in an economy that specialises in commodities. That appreciation makes the rest of the domestic economy less competitive vis-a-vis imports. The result is that other trade-exposed sectors contract and so 'create room' for the expansion in the incomes of the commodity producers. In this way, the incentives facing the commodity sector and the rest of the economy encourage the movement of resources towards the commodity-producing industries and away from other sectors of the economy.^{11,12}

Second, and possibly more important, the RBA sought to use high interest rates to offset the macroeconomic impact of the mining boom and to confine the booming economy to the mining states. Between May 2006 and March 2008, the RBA steadily increased official interest rates from 5.50 per cent to 7.25 per cent in seven steps of 0.25 per cent. On each occasion, high or rising commodity prices were mentioned specifically:

- as producing 'consequent expansionary effects on incomes and spending'¹³
- as 'adding to the growth in Australia's national income and spending'¹⁴
- as 'add[ing] to incomes and spending in Australia'¹⁵
- as 'remain[ing] an important source of stimulus to Australia's national income and spending'.^{16,17}

More recently, it was almost as if the RBA were targeting the terms of trade when it gave its reasons for interest rate hikes as:

- 'Australia's terms of trade are likely to rise further'¹⁸
- '[they] have further strengthened prospects of Australia's terms of trade'.¹⁹

¹⁰ R G Gregory, 'Some implications of the growth of the mineral sector', *Australian Journal of Agricultural Economics*, 20, 1976, pp. 71-91.

¹¹ C Ebrahim-zadeh, 'Dutch disease: Too much wealth managed unwisely', *Finance and Development (IMF)*, Vol 40, No 1, March 2003.

¹² The discussion in the text assumes a floating exchange rate. The mechanism works in different ways in the case of fixed exchange rates, which applied in Australia at the time Gregory made his contribution. For a more extensive discussion see Ebrahim-zadeh (2003).

¹³ RBA, Media release No 2006-03, 3 May 2006

¹⁴ RBA, Media release No. 2006-05, 2 August 2006

¹⁵ RBA, Media release No. 2006-11, 8 November 2006

¹⁶ RBA, Media release No. 2007-11, 8 August 2007

¹⁷ RBA, Media release No. 2007-20, 7 November 2007

¹⁸ RBA, Media release No. 2008-02, 4 February 2008

The terms of trade were seen by the RBA to be boosting aggregate demand beyond what the Board considered desirable.

To the extent that the RBA was successful in contracting the economy, the spillover from the mining boom on to the rest of Australia would have been offset commensurately. That is, the RBA was using high interest rates to dampen the level of economic activity in the economy to 'make room' for the booming mining industry so that, for example, employment growth in other industries (such as construction) would fall and mortgage holders would reduce their consumption spending. High interest rates also have the effect of encouraging capital inflows, which tend to appreciate the exchange rate and thus reinforce the Gregory effect.

If the figures for the gross operating surplus in Table 1 are deducted from the corresponding figures in the national accounts for the gross operating surplus for all non-financial corporations, the non-mining, non-financial gross operating surplus is obtained.²⁰ For convenience this is referred to as 'other profit'. Other profit increased from \$138 billion to \$173 billion, or 25 per cent, from 2003–04 to 2007–08. However, nominal GDP increased by 36 per cent over the same period, suggesting that the increased profits in the mining industry have indeed squeezed the increase in other profits. Both the Gregory effect and the RBA's high interest rates are consistent with a squeeze on other profits.

While the macroeconomic developments are important, the principal influences on Australia's wellbeing as a result of the mining boom were the terms-of-trade effects explained in the following section.

Measuring the impact of the resources boom on economic wellbeing

The ABS's preferred measure of Australia's economic wellbeing is its concept of Real Net National Disposable Income (RNNDI), which adjusts real GDP for the impact of any changes in the terms of trade.²¹ It is possible to analyse the impact of the mining boom by comparing changes in RNNDI with net domestic product, the difference being the size of the terms-of-trade effect.²² Between December 2004 and December 2008, real net national disposable income increased by 19.17 per cent. Over the same period, net domestic product increased by a much more modest 8.75 per cent, which implies that the terms-of-trade effect increased national disposable income by 9.58 per cent between December 2004 and December 2008.²³ This figure indicates the cumulative impact of the terms-of-trade changes between those two dates.

In the December quarter 2008, the annualised estimate of RNNDI of \$913.2 billion pointed to a total terms-of-trade impact of \$79.84 billion per annum, the total value of the benefit to Australia of the terms-of-trade changes since 2004. This figure is somewhat larger than the RBA's estimate

¹⁹ RBA, Media release No. 2008-03, 4 March 2008

²⁰ ABS, *Australian National Accounts: National income, Expenditure and Product*, December Quarter 2008, Cat No 5206.0, 4 March 2009.

²¹ It also adjusts for real net incomes from overseas and the 'consumption of fixed capital' or depreciation.

²² 'Net domestic product' is GDP less the consumption of fixed capital. It does not adjust for real net incomes from overseas but that would make little difference to the results.

²³ The figure 9.58 is obtained by dividing the growth factor in real net national disposable income by the growth factor in net domestic product and subtracting one. The answer is multiplied by 100 to give the percentage increase, for example, 100 times $(1.1917/1.0875) - 1 = 9.58$. Adjusting for the population growth between December 2004 and December 2008 gives an estimate of 9.01 per cent increase in average per capita incomes as a result of the terms-of-trade effects.

of the additional mining income of \$62 billion.²⁴ However, total terms-of-trade movements in Australia also reflect both agricultural and manufactured goods such as aluminium on the one hand and the movements in import prices on the other. The two figures would be equal only if all the movement in the terms of trade were due to changes in prices for items sold by mining companies. Overall, it appears that the two figures are broadly consistent, suggesting a windfall to the Australian economy of around nine per cent of GDP.

If the benefits of the resources boom had been shared equitably throughout Australia, most groups would have seen their incomes increase by around nine per cent over and above what might otherwise have occurred. The discussion now turns to examine whether, in fact, people in Australia did receive increases in income of that magnitude.

Household impacts

Ken Henry, the Secretary of the Treasury, pointed out that exchange-rate effects are the chief mechanisms through which the benefits of the mining boom spread throughout the economy, eventually reaching the household sector and other groups in Australia. An appreciation in the exchange rate means that the costs of imports are relatively lower, which provides an advantage for Australian consumers. As Henry said:

The appreciation of the \$A has, however, put downward pressure on the price of imports ... of consumption goods. This is one way in which a floating currency redistributes, from shareholders in resource companies to Australian households, some of the real income effect of higher export prices²⁵

It should be noted that the exchange rate may change as a result of terms-of-trade movements but it is only the latter that affect Australia's wellbeing; exchange-rate movements have no direct impact at all. For example, a 10 per cent across-the-board appreciation means not only that the \$A value of imports has fallen by 10 per cent but also that the value of exports has fallen by 10 per cent. So the quantity of imports or the real value of imports that Australia as a nation can buy with the receipts from its exports is unchanged.

The following box attempts to calculate the impact of the mining boom on wages.

Box 1: Calculating the impact of the mining boom on wages

Most groups relying on wage incomes receive income increases that are, on average, greater than indexation. The question is, how have they fared in recent years compared with previous years? The preferred measure for wage movements is the wage price index (WPI), which allows for variable wages in different jobs but assigns constant weights to jobs so as to remove the impact of compositional changes on the value of wages.²⁶ In December 2004, the WPI stood at 103.2 and by December 2008 it had increased to 121.4, a 17.6 per cent increase or an average increase of 4.1 per cent per annum. In the previous four years, December 2000 to December 2004, the WPI had increased from 89.8 to 103.2, an average increase of 3.5 per cent. That could be taken to suggest that wages growth had indeed increased as a result of the mining boom.

²⁴ Despite taking account of the use of financial years by the RBA and annualised December quarter figures in the present paper.

²⁵ K Henry, 'Revisiting the policy requirements of the terms-of-trade boom', Address to the Australian Business Economists, Sydney, 20 May 2008.

²⁶ The concept relied upon before the WPI, average weekly earnings, was notoriously unsatisfactory because of the contamination through compositional effects.

The RBA²⁷ has also commented to the effect that, while wages growth has been running at around four per cent per annum over the past few years, the increases in recent years are above the average for the past 11 years—as far back as the wage price index extends. However, the rate of increase in the consumer price index (CPI) also increased during this time. If the WPI is deflated by the CPI, real wages are calculated as increasing by 0.94 per cent per annum on average since the boom and 0.74 per cent before the boom. At best it could be suggested that wages increased by an additional 0.2 per cent per annum as a result of the resources boom. That would give a total cumulative impact of 0.8 per cent.²⁸

It is generous to attribute the real WPI increases to the boom because the before and after differences are so small and, in any event, are nothing like the nine per cent cumulative increases that would have occurred from wage-earners sharing fully in the fruits of the mining boom. It is probably more accurate to say that, from an examination of the available figures, it is not possible to discern any real impact on wages as a result of the boom.

Of course, there has been a reasonably wide dispersion of wage increases around the average for the last four years. Of the states, WA experienced the greatest wage increase, 22.0 per cent compared with the Australia-wide average of 17.6 per cent and the mining workers increase of 24.0 per cent over the period. Using the less reliable average weekly earnings figures, males in the mining industry over the same time received a 33 per cent increase in earnings,^{29,30} clearly experiencing significant benefits as a direct result of the mining boom. By contrast, workers in 'accommodation, cafes and restaurants' received increases of just 12.3 per cent—well below the amount needed to maintain their real wages.

While it seems wage-earners in aggregate have not experienced any significant benefit from the resources boom, the profit share in national income has increased substantially. The RBA figures cited in Table 1 show a large increase in the gross operating surplus earned by mining companies. For Australia as a whole, the gross operating surplus of private non-financial corporations³¹ rose from 19 per cent of GDP in the four quarters to December 2004 to 23 per cent in the four quarters to December 2008.³² Of course, since the beginning of the decade there have been numerous other factors that would have affected the distribution of income between profits and wages. However, it can be concluded that wage-earners on average do not appear to have benefited from the resources boom and any benefits must therefore have ended up going into the profit share of GDP.

Any group that has relied on indexation since the beginning of the boom has not enjoyed the benefit of the exchange-rate movements. Indexation is a mechanism for ensuring that a given sum of money is able to retain its purchasing power over a particular basket of goods and services. By definition, those groups relying on indexation could buy the same basket of goods in

²⁷ RBA, 'The level and distribution of recent mining sector revenue', *Reserve Bank Bulletin*, January 2009.

²⁸ It should be noted that the estimate of 0.8 per cent as the possible impact of the resources boom on real wages in fact disappears if adjustments are made for the volatile items in the CPI measurement just for the December quarter 2008. For example, the RBA estimates that the CPI ex volatile items increased by 0.5 per cent in the December quarter 2008 compared with the 'headline' CPI movement of minus 0.3 per cent. That adjustment alone would wipe out any benefit to labour incomes from the resources boom as measured above.

²⁹ The figures refer to ordinary time earnings for full-time adult males. See ABS (2009d).

³⁰ ABS, *Average Weekly Earnings, Australia, November 2008*, Cat No 6302.0, 26 February 2009.

³¹ This is the ABS category for private companies excluding those in the financial sector.

³² ABS, *Australian National Accounts: National income, Expenditure and Product*, December Quarter 2008, Cat No 5206.0, 4 March 2009.

2008 that they could buy in 2004.³³ In the main, the people who rely on indexed incomes are the recipients of government benefits and pensions, approximately 4.4 million in number.

From time to time, governments amend entitlements to social security. However, there have been no major changes to the way in which basic allowances and benefits have been adjusted since 2004, with the possible post mining-boom exception of the age pensioner. The only mechanism allowing pensioners to benefit is via the relationship that exists between their pensions and average weekly earnings—but only if the latter had risen as a result of the mining boom. The results discussed above suggest that, at best, in the four years since the mining boom began, real wages increased by 0.8 per cent compared with the increase that might have been expected from the previous four years. An increase of 0.8 per cent is well below the nine per cent increase in incomes generated by the terms of trade as suggested above.

It was pointed out above that many households would have benefited from their direct and indirect holdings of shares in companies such as BHP and Rio Tinto. Between December 2004 and December 2008, resource stocks on the Australian Stock Exchange increased by 57 per cent from an index of 2440 to 3818. They had previously peaked at 6647 for an increase of 172.4 per cent in May 2008.³⁴ Hence, despite the end of the resources boom evident by the December quarter 2008, shareholders in resource stocks had enjoyed a 57 per cent capital gain notwithstanding the collapse in the stock market. It is not possible to estimate how that situation affects the household sector. However, most of the benefits from the increase in share prices would have been experienced by a small number of wealthy households as 86 per cent of all shares are owned by the top 20 per cent of this cohort.³⁵ For the majority of people there would have been few or zero benefits due to capital gains on mining shares.

Earlier it was observed that the actions of the RBA in raising interest rates would have had the effect of reducing consumption on the part of mortgage holders. Indeed, the household sector was significantly affected by interest rates over the period. The following graph plots commodity price indices together with:

- the RBA's estimated indicator rates for banks' standard variable housing loans and
- a measure of the interest rate differential between the Australian and US official interest rates.

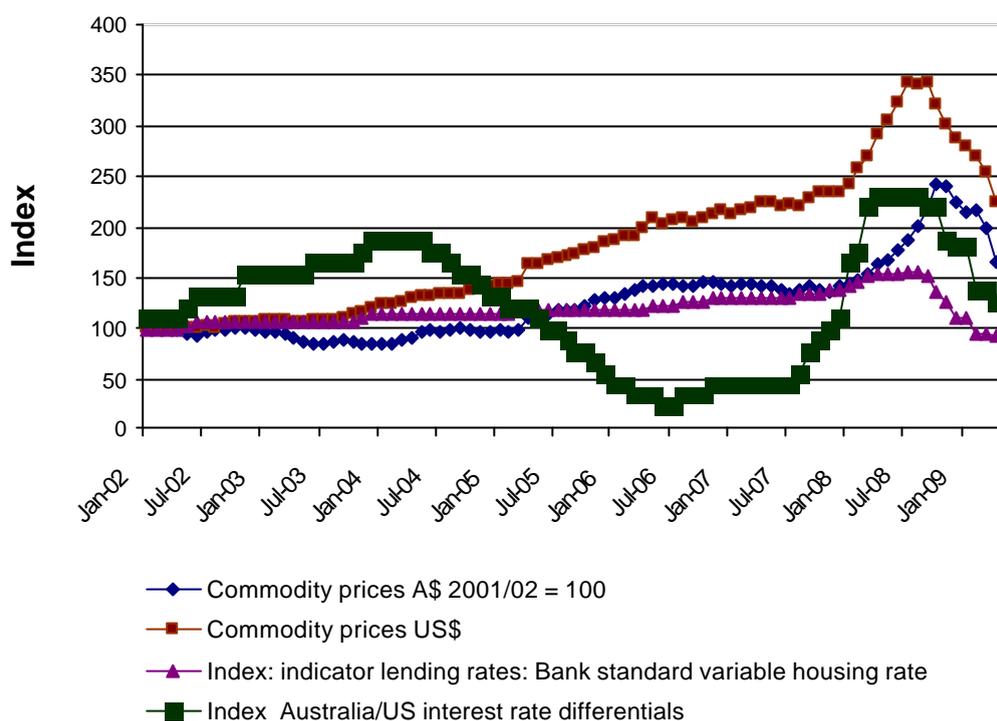
All data in the graph are expressed as an index with the base year 2001–02 set at 100.

³³ While they can only purchase the same basket of goods, they may wish to alter their purchases; for example, people may buy more electronic equipment and cut down on meals out.

³⁴ Figures from Reserve Bank of Australia Bulletin site at <http://www.rba.gov.au/Statistics/Bulletin/index.html>

³⁵ ABS, *2005–06 household wealth and wealth distribution, Australia*, Cat No 6554.0, 9 November 2007.

Figure 2: Commodity prices and Australian financial conditions



Source: *Reserve Bank Bulletin* and TAI estimates.

The graph shows that Australian interest rates followed the commodity-price cycle quite closely as did the Australia/US interest rate differential, especially since 2006. Home mortgage rates were 7.05 per cent in 2004 but increased to a peak of 9.60 per cent in July and August 2008, a steady increase that would have had a strong impact on household budgets. The difference, 2.55 per cent, translates into an increase in mortgage payments of around \$24 billion when expressed on an annualised basis, equivalent to a three per cent reduction in living standards for the household sector as a whole. The impact of the increases would of course have been felt most keenly by recent home buyers, who tend to hold the largest mortgages. For the most part, losses on the part of mortgagees and other borrowers would not have been offset by any benefits flowing from the resources boom unless those affected had resource boom jobs or some other unusual circumstances applied.³⁶

Government revenue

Some benefit from the resources boom may have flowed to average Australians as a consequence of the various tax cuts that governments introduced during recent years. Until lately, the government was flush with revenue, a situation ascribed by many commentators to the impact of the resources boom. This substantial increase in revenue was associated with virtually continuous 'surprises' to the government as economic growth and government revenue came in

³⁶ Figures in the text are based on data in the:

- Reserve Bank of Australia, *Reserve Bank Bulletin*
- ABS, *Australian National Accounts: National income, Expenditure and Product*, December Quarter 2008, Cat No 5206.0, 4 March 2009
- TAI estimates.

well over budget forecasts in each of the recent years. The revenue forecasts tended to err on the conservative side. Each year the government assumed that tax revenue would increase by less, in percentage terms, than the assumed increase in GDP. Hence each year the projections for the forward estimates showed tax revenue falling as a share of GDP.^{37,38,39} In the budget papers, the additional revenue was described as the ‘effect of parameter and other variations’ and it is possible to calculate the cumulative impact on the 2008–09 Budget of all the errors since 2003–04. Table 2 attempts to do that by taking 2003–04 as the base and examining the revenue ‘surprises’ since then. The table does not take account of the downward revisions since the 2008–09 Budget.

Table 2: Impact of parameter and other variations \$m

	2006–07	2007–08	2008–09
Budget			
2004–05	11,907		
2005–06	18,472	18,962	
2006–07	15,862	17,332	17,621
2007–08	4,094	13,279	18,476
2008–09		13,540	16,402
Cumulative impact	50,335	75,020	83,368

Source: *Budget Paper No 1, Statement no 1, 2004–05 to 2008–09, Mid-Year Economic and Fiscal Outlook 2007–08*, October 2007

Table 2 needs to be read as follows.

- In each budget the government attempts to forecast revenue in the budget year and the forward years—the next two years are used in the table.
- In the 2004–05 Budget for example, ‘surprises’ caused the government to increase previous forward estimates of revenue for 2006–07 upwards by \$11,907 million.
- However, back then the present year, 2008–09, was too far away and no forward estimates were presented so far forward.
- In the 2005–06 Budget, the government reported the value of the surprises for the forward estimates for the years 2006–07 and 2007–08.
- Since then there have been estimates for 2008–09.

Table 2 presents the cumulative impact of all the ‘surprises’ since the beginning of the mining boom in the bottom row. However, because the earlier budgets gave no impact for 2008–09, the

³⁷ Technically the forward estimates implicitly assumed that the elasticity of tax revenue to GDP was less than one yet all of the outcomes showed an elasticity significantly greater than one. It was possible to argue that the government’s forecasters seemed incapable of learning from their own mistakes.

³⁸ Australian Government (2004 to 2008) *Budget Paper No 1*.

³⁹ D R Richardson ‘2005–06 Budget: Main features’, *Implications: Budget 2005–2006*, Parliamentary Library, June 2005.

table makes the conservative assumption that the errors in earlier years carry over unchanged into later years. In that way, the cumulative impact is calculated as just over \$83 billion for 2008–09.

These results are very significant. All the ‘surprises’ over the last several years have been associated with huge increases in government revenue, which have been taken as evidence of a massive unplanned revenue impact resulting from the mining boom. However, the figures here are much different from the earlier estimate in the paper, which put the company tax impact of the mining boom at \$11 billion at the most. Making reasonable assumptions about taxation on the additional labour and non-labour inputs, and not adjusting for the attempts by the RBA to contract the economy elsewhere, could push that figure to, at most, approximately \$17 billion.⁴⁰

Conclusions

During recent years, the impact of the mining boom has been clearly evident in the revenue figures of mining companies, in their profit figures and in the significant increase in the market value of their shares. In addition, the mining boom produced an expansion in mining activity that is likely to persist. However, it is to be hoped that the boom generated benefits elsewhere in the Australian economy as well. This paper asks what those benefits were.

The short answer to this question is that any benefits from the mining boom appear to have dissipated soon after the initial impact. Even some of the early increase in the market value of mining companies was lost as a result of unwise investments on the part of these companies. More generally, the paper examines how incomes and other economic data have changed since 2004, which is taken as the base year or benchmark. Commodity prices took off after 2004 and so it is assumed that the benefits of the boom should be apparent by comparing post-2004 data with the data for 2004 and earlier.

Most of the increase in revenue from the mining boom went into the profits of mining companies although some also went into payments on intermediate inputs, including labour costs. Much of the benefit arising from mining company profits would have been diluted in Australia as a result of the substantial foreign ownership of Australia’s mining industry but some accrued to government through higher taxes and royalties.

It could be expected that the mining boom would generate multiplier effects that would increase activity elsewhere in the economy in some multiple of the initial increase of activity in the mining industry. However, those positive effects were offset by two factors; the Gregory effect, which tends to reduce activity elsewhere in the economy and the contractionary impact of the RBA as it tried to offset what it saw as overheating at the time.

In theory, the increase in the terms of trade should have produced an increase in the real incomes earned by the rest of Australia. The ABS publishes a series called the Real Net National Disposable Income that includes the usual measure of Australia’s economic wellbeing together with the terms-of-trade effect, which shows that, as a whole, Australians experienced a nine per cent increase in average incomes due to this effect.

Most people receive the bulk of their incomes through wages or government benefits. It is possible to compare how wage-earners’ incomes behaved in the four years before and after the December quarter 2004. There is a small increase in real wages after 2004 but nothing like the

⁴⁰ This figure is obtained by taking the RBA figure for additional input costs, \$20 billion, and assuming that it generates an additional \$4 billion in government tax revenue while the additional labour costs, \$5 billion, generate an additional \$2 billion in government tax revenue. The sum of those figures, \$6 billion, is then added to the maximum assumed company tax figure of \$11 billion.

nine per cent implied by the terms-of-trade impact. It is probably fairer to conclude that wage-earners generally did not benefit from the resources boom, even though some workers in industries directly affected experienced very large increases in their incomes. There have been no real changes in the indexation arrangements for people who rely on government benefits and pensions. By definition, price indexation alone does not provide for real increases in income and, because pensions are indexed to wages and wages did not increase noticeably, the 4.4 million people who rely on income support received little or no benefit from the resources boom either.

A further mechanism, which could disperse the benefits of the mining boom throughout the economy, involves the tax cuts and additional advantages that governments, awash with money, are able to deliver to taxpayers. Certainly governments have been in this enviable position over recent years. But the additional government revenue far exceeded the additional revenue from the mining industry. At most, the additional taxes raised from the mining industry were about \$17 billion per annum while the government received revenue surprises of \$83 billion. Hence most of the tax and spending initiatives over this period were not dependent on mining revenues. As it happened, the additional mining revenue was roughly equivalent to the amount that governments 'saved' through budgeting for higher surpluses. Of course, the Gregory effect and the repercussions from the RBA's contractionary policies resulted in a reduction of taxable income elsewhere in the economy, thus reducing the net revenue impact of the mining boom.

Overall, the mining boom seems to have had very little positive impact on the wellbeing of the majority of Australians other than those directly affected by the expansion in the mining industry. There are, in fact, no institutional arrangements for delivering such benefits to Australians either through indexation arrangements to those on government income support or through the industrial relations system to those relying on wages. In the meantime, macroeconomic forces worked to offset the beneficial impact on the rest of Australia because of the Gregory effect on the one hand and the contractionary policies of the RBA on the other. Indeed over this period, the high interest rates caused by the mining boom would have meant that many home buyers and other borrowers became net losers.

Despite all this, talk of the end of the mining boom may be an exaggeration. The level of activity in the mining industry,⁴¹ including services to mining, is now 25.6 per cent greater in real terms than it was at the end of the 1990s. Output is 15.8 per cent higher than it was in 2004.⁴² The mining industry in calendar 2008 produced an annual value-added worth \$84.5 billion.⁴³ The RBA's commodity price index still has Australia's commodity prices some 100 per cent higher than they were in 2004. The terms of trade are now 43.9 per cent higher than they were in December 2004. These figures suggest that mining remains a large industry in Australia and should end the decade with a bigger share of the Australian economy than it had at the start.

⁴¹ The value-added in the mining industry is equal to the output of the mining industry less any goods and services used in producing the output. This gives a measure of the level of activity generated by the industry itself as distinct from the supplying industries.

⁴² These figures compare the December quarter 2008 real value of mining with the corresponding figures for December 1999 and December 2004 respectively.

⁴³ In 2006–07 prices.