

WESTERN AUSTRALIAN DEPARTMENT OF INDUSTRY AND RESOURCES RESPONSE TO THE HOUSE OF REPRESENTATIVES ECONOMICS COMMITTEE INQUIRY INTO AUSTRALIA'S SERVICES SECTOR JULY 2006

INTRODUCTION

A key characteristic of all developed countries is a high and growing share of services within the overall economy. Western Australia (WA) is part of this trend. The sector's growing share of employment and output is testament to the importance of the services sector. The current boom in the mining industry is fuelling the WA economy. New industries are being created and other sectors of the economy, including services are growing rapidly as a result of the State's economic growth.

The policies and strategies of the WA State Government are targeted at creating a strong and diversified economic base and a business and investment environment that is productive and internationally competitive.¹ Future global opportunities for WA service exports will be driven by a number of domestic and international factors. Exports of WA services, though relatively small in value compared to exports of resources presents a huge potential for the international trading of services.

As the main State Government agency tasked with the economic development of the State, the Western Australian Department of Industry and Resources (DoIR) will focus its submission on:

- The impact of the resources boom on the service sector;
- Future global opportunities for Australian service exports; and
- Policies for realising these opportunities.

¹ Building Future Prosperity, Industry Policy Statement, Government of Western Australia, 2004.

1 DEFINITION OF SERVICES

There is no universally agreed definition of services in the economy because they tend to be intangible, difficult to measure and encompass broad range of activities. (The Economist once defined services as “something you cannot drop on your foot”).

The Australian Bureau of Statistics (ABS) describes the service industries sector as the most significant component of the Australian economy. The sector is defined in this context as those industries that do not produce goods and consequently excludes agriculture, mining, manufacturing, electricity, construction, and gas and water supply.

The ABS also does not identify any services that might be bundled in with goods. These are counted as merchandise or goods trade. In other words, where supply of a good includes a service component, as is often the case, the item is treated as a good. To an unknown extent, this approach underestimates the service component of the economy as a whole.

Data collected by the ABS on the services industry includes information contained in the National Accounts and specific service industry surveys. Whilst this information is generally useful, there is a need for a comprehensive statistical overview of the WA services sector, which would lay the groundwork for a further analysis of what constitutes the service sector.

Services can be used as inputs into other industries, traded in their own right, or both. Telecommunication services, for example, one of the fastest growing industries within the service sector, are used as a major input by businesses, as well as being consumed by households in many different forms (for example, telephony, facsimile, Internet).

For the purpose of this submission, DoIR adopts the ABS definition of the service sector (Appendix A).

2 *IMPLICATIONS OF THE SERVICES SECTOR*

The services sector has significant implications for the wider economy, including its ability to transform the traditional economic strengths of agriculture, manufacturing and mining industries. The increasing use of Information and Communications Technology (ICT) in business has revolutionised the delivery of goods and services and in the process, created opportunities for new service industries.

The service sector is knowledge and skills based; they are subject to constant business process innovation and in the case of many tradeable services, are very high value-adding.² Innovation and new business processes have changed the way we consume and do business. Service industries dedicated to consumer markets (Business to Consumer) such as tourism, personal services and entertainment have become established in their own right and service industries have become key enablers in Business to Business markets.

Investments in education and skills training have played a key role in developing innovative processes. The Productivity Commission has stated that “education and training ...are important to our economy’s flexibility and adaptability. The development of skills brings with it a greater capacity to anticipate change, to develop strategies to deal with change and to adapt to change”.³

3 *ECONOMIC SIGNIFICANCE OF THE SERVICES SECTOR*

The service sector in the WA economy is significant in terms of its contribution to Gross State Product (GSP) and employment.

² Creating a Better Business Environment for Australia’s Services Industries, Australian Services Roundtable, 2005.

³ Speech to Australian Coalition of Service Industries Council Dinner, Gary Bank, Chairman, Productivity Commission, 1998

In 2004-05, the service sector makes up about 55 per cent or \$50 240 million of the cost of producing the State's GSP⁴, with property and business services being the largest sub-sector. In the year to February 2006, the service sector employed about 70 per cent of the State's labour force or 738 800 workers.

The service sector's significance is heightened further by the fact that in supporting a large labour force, it also provides the labour force population with disposal income for consumption – which in turn, generates flow-on effects to the rest of the economy, including investment.

In the year to 2004-05, WA's services exports rose by 1.5 per cent to \$2.8 billion, with communication services recording the largest growth (13.6 per cent).

**Table 1: WESTERN AUSTRALIA, EXPORTS OF SERVICES
BY TYPE OF ACTIVITY (A\$ million)**

Type of activity	2002-03	2003-04	2004-05	% Growth
				2003-04 to 2004-05
Transportation services	694	701	764	9.0
Travel services	1,699	1,674	1,681	0.4
Communication Services	82	59	67	13.6
Other Business Services	184	228	215	-5.7
Architectural, engineering, and other technical services	100	94	146	55.3
Personal, cultural and recreational services	40	31	32	3.2
Government services n.e.i	20	27	34	25.9
Total Services	2,819	2,814	2,939	

Source: Australia's Trade by State and Territory, DFAT, 2006

⁴ This is measured by total factor income in current price terms. It is that part of the cost of producing gross state product which consists of gross payments to the factors of production (labour and capital). It represents the value added by these factors in the process of production and is equivalent to gross state product less taxes, plus subsidies on production and imports.

PART A: THE IMPACT OF THE RESOURCES BOOM ON THE WA SERVICE SECTOR

1 RESOURCES BOOM

The resource sector consists of the mining and petroleum industries. It is an important source of economic growth for WA, and has been since the gold rushes in the 1890s.

The current resource boom, which started in the second half of 2003, is due largely to a sustained increase in China's demand for non-rural commodities. Compared to previous resource booms, the current boom is broad-based with China (and the world in general) demanding a wide range of raw materials, including alumina, natural gas, iron ore and zinc.

As a result, the resource sector has earned significant profits, (including dividends for its shareholders around the world), and employed more workers at higher rates of pay.

In addition, the boom has improved Australia's terms of trade and strengthened its currency. The State's economy grew by 7.5 per cent in 2003-04 and 5.25 per cent in 2004-05, and is estimated to grow by 4.5 per cent in 2005-06. This has promoted employment growth of 1.7 per cent in 2003-04 and 3.5 per cent in 2004-05. Over the year to May 2006, employment grew by 4.7 per cent, and the unemployment rate fell to 3.5 percent, the lowest rate since the ABS monthly labour force records first started for the State in 1978.

However, the boom has also raised costs in general for WA. Perth's consumer price index increased by 4.2 per cent in the year to March quarter 2006, higher than the national rate of 3.0 per cent, and the highest of all capital cities.

The impact of the resource boom on the service sector has both positive and negative effects. These are evident in some studies and prevailing economic indicators.

2 POSITIVE EFFECTS

The resource boom has raised the demand for a wide range of services required by increases in population, workforce and industry activities. These include: housing, health and education, recreational facilities, police and emergency services, telecommunications, ports, transport facilities, water, industrial areas and service corridors.

Higher incomes generated from the boom will also raise additional demand for services and increased employment within the retail, personal, hospitality, business and property industries; and outsourcing, public-private partnerships and privatisations have been responsible for the emergence of a new range of service industries.

According to a recent empirical study by Dr Qiang Ye (DoIR 2006), more than 80 per cent of up to 26,000 new jobs per annum over the next 20 years, generated by an iron ore boom are projected to be in industries other than the iron ore, particularly, in the service industries. The jobs include those in government services, wholesale and retail trade, business services, construction, other services, financial services and hotel, café and restaurant industries (Appendix B).

It is important to note that while the study is confined to an iron ore boom, the results can be indicative of a broader resources boom. Therefore, it can be argued that a broader resources boom is likely to create more than 26,400 jobs, and consequently, more jobs in the service industries.

It is interesting to note that since the resource boom started in mid 2003, about 103 700 jobs were created in WA, of which around 49 000 were in the service sector. However, it is difficult to determine how many service sector

jobs were created as a direct result of the boom, though jobs such as those associated with mining services are clearly easier to determine.

2.1 Mining Services

Of the services in heightened demand as a result of the resource boom, mining services is an obvious example. Increased activity in the resource sector *naturally* increases the demand for mining services. Depending on how the mining services sub-sector is defined⁵, value can range between \$1.7 billion (in 2001) and \$5.3 billion (in 2002-03).

In spite of this uncertainty, services to mining are very important to the WA economy as a whole. Internally, it is a source of technological innovation and expertise, with flow-on effects, including productivity to other industries within the State, and Australia. Externally, mining services have developed a world-class status as they are being exported overseas. Indeed, it has been claimed by the Committee for Economic Development of Australia that Perth has joined cities such as Denver, Vancouver, Johannesburg and San Francisco as a major world mining centre.

3 NEGATIVE EFFECTS

However, the derived demand for services from the resource boom has forced firms to compete with each other for increasingly scarce inputs (such as capital and labour) during the construction phase of new resource projects⁶.

This has resulted in demand for labour outstripping its supply, leading to higher wage rates, a shortage of labour across many service industries, in spite of the transfer of labour across industries and State borders. The

⁵ The ABS has a narrower definition of mining services compared to others. It includes services provided to exploration, both contract and in-house, and contract mining services including electrical and mechanical engineering, and metal treatment and coatings; but excludes services to mineral processing activities.

⁶ As noted by Dr Ye's reference to the 'non-expanding' export sector which highlights the tension between the resource and non-resource sectors and also, the sub-sectors within the resources sector. When an expanding export sector is unable to supply its output in response to world price increases due to a higher aggregate level of prices in the economy and an upward pressure on the exchange rate, the sector becomes a non-expanding sector of the economy.

shortage of suitable labour has also prompted firms to source workers from overseas, or delay resource projects. Many of these firms are in the non-service industries, such as the construction and mining industries (including BHP Billiton).

The latest ABS data show that the WA's wages growth (4.3 per cent) was higher than the national increase (4.0 per cent) in the year to March quarter 2006. The main industries contributing to the increase in the State were construction and mining. While wage data for industries within the service sector is not publicly available, they would have also recorded increases.

Latest data from the Department of Employment and Workplace Relations indicate that many vacancies are in trades (such as construction, automotive and metal) and professional (such as health). However, within parts of the trade occupational group, it is difficult to separate the vacancies by the service and non-service sectors.

Another negative effect of a resource boom on the services sector is associated with the 'Dutch disease' or 'Gregory Thesis'. Essentially, the resource boom has attracted a large inflow of foreign exchange causing an appreciation in the real exchange rate. This in turn, reduces the competitiveness of traded goods and services relative to goods and services that are not traded internationally.

It is traditionally assumed that the services sector does not compete with imports (whereas the agriculture and manufacturing industries are import-competing industries). However, recent technological advances and labour shortages have resulted in service industries coming under threat from imports. Examples include accounting, engineering and information technology services. Advances in ICT combined with a failure to attract sufficient labour to WA may promote services associated with resource activity to go offshore.

PART B: FUTURE GLOBAL OPPORTUNITIES FOR WESTERN AUSTRALIAN SERVICE EXPORTS AND PROPOSED POLICY RESPONSES

1 WA GOVERNMENT FOCUS ON THE SERVICE SECTOR

The WA Government works closely with industry and companies that have a competitive advantage, developed a capability or identified a new market opportunity. The companies are predominantly in the education, health services, environmental management services, subsea technologies, ICT, biotechnology, services to mining, oil and gas industries; and building and construction design services. Some of these companies operate within an industry sector classed as manufacturing. But increasingly, companies are outsourcing certain functions and/or developing innovative processes which highlight the service component of a product.

DoIR is undertaking a preliminary Strength, Weaknesses, Opportunities and Threats (SWOT) analysis of the WA professional services sector. The information will be used to better understand the sector.

2 FUTURE GLOBAL OPPORTUNITIES FOR WA SERVICE EXPORTS

Future global opportunities for WA service exports lie in the current capabilities of the following industries:

2.1 Information and Communications Technology (ICT) Industry

WA has developed world-class expertise and capabilities in the provision of services such as wireless communications technology and products; remote area communications; digital content; telemedicine; mining, remote sensing and spatial data software applications; niche electronics design and manufacture, including chip design; and systems and applications software, involving the use of ICT to enable strategic development in other sectors such as Oil and Gas, Mining, Marine and Defence.

2.2 Marine and Shipbuilding Industry

WA leads the world in the construction of high speed, lightweight vessels. WA's shipbuilding industry within the Australian Marine Complex (AMC) also excels in building luxury yachts, tugs, rescue, patrol, fishing, paramilitary and offshore supply vessels for burgeoning local and export markets. The purpose-built AMC is a world-class Centre of Excellence for manufacturing, fabrication, assembly, technology, repair and maintenance servicing activities for the marine, defence and resource industries. The AMC has established capability for repair, maintenance and construction of quality ships and infrastructure for offshore oil and gas production, plus a broad range of world-class marine services. Marine service sectors include engineering, design and finance/insurance.

2.3 Biotechnology Industry

Biotechnology is the application of science and technology to living organisms to alter living or non-living materials for the production of knowledge, goods and services.⁷ Biotechnology is emerging as a strategically important industry enabler, essential to WA's global competitive position and applicable across a range of industries.

Innovation in the agricultural sector has led to an emergence of companies specialising in agri-food, biological testing, algal biotechnology, environmental biotechnology, therapeutics and drug discovery.

In biomedicine, WA is home to a broad range of leading-edge research into the molecular basis of disease control, targeting diseases such as Alzheimer's, cancer, diabetes, malaria and other parasitic diseases. Many of the research programs are at various stages of commercialisation and are attracting investment from around the world.

⁷ OECD: Statistical Definition of Biotechnology 2004

Biotechnology has also been applied to the environmental field, with WA developing strengths in potable water treatment biotechnology, bioremediation, and biological treatment of industrial waste. Other biotechnology applications have been used in the mining sector with firms demonstrating their capabilities in bioleaching and hydrometallurgical processing, extractive ore processing, bacterial leaching solutions as well as metallurgical and mineral testing.

2.4 Renewable Energy, Environment and New Technologies

WA companies have developed strong capabilities in a broad range of areas in this sector, including water and waste water management; solid waste management; solar and wind energy technologies; natural resource protection management; land rehabilitation; and infrastructure services.

2.5 Building and Construction

The engineering construction sector is WA's fourth largest industrial sector, contributing at least 8 per cent to GSP. A significant proportion of the State's infrastructure construction involves the development of WA's abundant mineral and petroleum resources. This requires a sophisticated engineering services sector and local fabrication capability, as well as the project management and construction skills base necessary for working in remote, challenging environments.

In addition, there are approximately 2000 architectural practices currently registered in WA offering a range of services in urban design guidelines, urban design, master planning, commercial and civic architecture, public housing, multi and single residential architecture, resort design and architecture, institutional, commercial and industrial buildings, interior design and landscape architecture and services. WA architectural firms have successfully delivered projects overseas with some establishing an offshore presence. Statistics suggest that exports of architectural services doubled in the period between 2001 & 2004. A survey by ABS⁸ of 36 of WA biggest

⁸ K. Walters – “*Outward Bound*”, Business Review weekly, 2 September 2004

architectural practices has found that 24 firms earned around \$61.6 million from overseas clients in 2002-03.

2.6 Oil, Gas and Mining Services

The oil, gas and mining industry continues to be of vital importance to the WA's economy. A world-class oil and gas service industry sector has grown in WA, servicing not only this State, but also making its mark in the oil and gas industry internationally. Services supplied to the oil, gas and mining industry includes front end engineering and design; geophysics, training, electrical engineering, process engineering and control, asset management and development, subsea technologies, human resources and telemedicine.

2.7 Health Services Industry

Health services in WA have been identified⁹ as a knowledge-based service sector with considerable potential for expansion into overseas markets. In addition to directly contributing to WA's economic well being through increased output and high-value knowledge intensive jobs, the export of health services has the potential to improve the State's medical knowledge and skills, technological capacity and health care standards through technology transfer and the experience gained in servicing the export market. It may also lead to greater investment in the health sector in Western Australia. Some of WA's health expertise exists in ophthalmology, child health, sports medicine, emergency services, nursing and midwifery.

2.8 International Education Services

International education is the second largest service industry in WA contributing over AU\$1 billion per annum to the state's economy.¹⁰ The industry creates more than 5,000 permanent jobs and results in other direct purchases including property, motor vehicles, international flights and tourism.

⁹ Drivers and Shapers of Economic Development in Western Australia in the 21st Century, WA Technology and Industry Advisory Council, 2000.

¹⁰ Perth Education City, Western Australia

International students represent a primary source of skilled migration with about 53 per cent of students looking to migrate to WA. In addition, approximately 7,700 international students work part-time. Education available to overseas students include primary and secondary education, vocational and technical education courses, tertiary courses and English language courses.

2.9 International Development Business Services

International Development Business can be classified as the provision of professional and technical services to international development projects in the areas of agriculture, education, health, environmental management and governance. It has been conservatively estimated that \$175million worth of business was generated for WA companies from participation in international aid projects.¹¹ It is anticipated that a significant amount of foreign income can continue to be generated for WA companies in the international development business sector.

2.10 Sport and Recreation Services

Sport and recreation services have the potential to make a significant contribution to WA's economy. A number of initiatives are in place to facilitate the export of WA sport and recreation services. These include planning quality second tier sporting events in WA, working with Singapore to implement a Disabilities Education Program that will be managed, administered and facilitated by WA personnel; and facilitating export initiatives on the back of WA's cricket team tour of India.

2.11 Proposed China Strategy

The WA Government intends to develop a China Strategy, which will include opportunities to capitalise on the services sector in China. China's growing urban middle class provide a potential market for services like tourism, health and education. Export opportunities for WA firms in China also include environmental management services to counter the growing levels of

¹¹ International Development Business and Western Australian Economic Impact, Dept of Industry and Resources, 2006.

pollution; engineering and design services for the building and construction industry; and specialist services in the energy sector in response to China's hunger for fuel.

PART C: SERVICE INDUSTRY ISSUES AND POLICY RESPONSES

1 DATA ISSUES

As noted earlier in the section on the definition of services, it is difficult to separate the "services" component from the "goods" component when trying to understand the services sector. The difficulty in defining the precise nature of services, a lack of comprehensive statistical information and the diverse range of the companies operating within the sector is an impediment to understanding the nature and composition of the services sector, particularly at a state level. Without definitive concepts and reliable data, it is difficult to formulate government initiatives, policies and strategies that are focussed and targeted.

POLICY PROPOSAL 1

That the Commonwealth Government funds the ABS to develop a more precise definition of the service sectors and collect relevant statistics so that Governments in Australia can undertake a comprehensive study of the sector, make informed decisions and implement strategies that assist the development of the service sector.

2 IMPACT OF THE RESOURCES BOOM ON THE SERVICES SECTOR

As noted in Part A of this submission, the resources boom in WA has raised the demand for a wide range of services. However, there is as yet no definitive and authoritative measure of the impact of the resources boom on the WA service sector and the wider national services sector.

POLICY PROPOSAL 2

That the Commonwealth Government commissions a study into measuring and analysing the implications of the resources boom on the services sector.

3 FREE TRADE AGREEMENTS (FTA)

Australia has concluded Free Trade Agreements with a number of countries and is in the process of negotiating more. Services are a crucial part of FTAs. Whilst FTAs create competition for local business, it also promotes business opportunities between Australia and its trading partners. There is potential for exports of services to grow and for new markets to be developed. Much more can be done to exploit opportunities offered by FTAs.

POLICY PROPOSAL 3

That the Commonwealth Government works closely with State Governments and state industry bodies to develop a better understanding of the opportunities presented by FTAs in relation to international trading of services.

4 A SERVICES INDUSTRY POLICY

Increasingly, services are being acknowledged as a driving factor of economic growth. Despite the strength of the services sector in generating employment and exports, enhancing productivity and investments, there is little recognition by Government of the importance of the sector.

POLICY PROPOSAL 4

That the Commonwealth Government establishes a services action agenda, using a variety of mechanisms, including a policy framework, government initiatives and supporting resources.

5 BROADBAND NETWORKS

The communication networks are a critical factor in providing access to resources, markets and trade opportunities, including the rapidly developing opportunities of electronic commerce. It also represents a significant competitive advantage that affects the capacity of existing businesses to grow

and the ability of the State to attract new industries, businesses and professionals as the traditional barriers of geographic distance and low-density population are significantly reduced or eliminated. WA's State Communications Policy is aimed at ensuring that technology is maximised to deliver information and services in regional WA. The WA Government contributes actively to broadband initiatives through ministerial representation at the Online Council and official representation on the National Broadband Strategy Group.

POLICY PROPOSAL 5

That the Commonwealth Government continues to recognise the particular broadband needs of WA due to its geography and demography and acknowledge that WA's economic contribution to the national economy is disproportionate to our population, but commensurate with our size.

6 EDUCATION AND TRAINING

The service industry is knowledge and skills based. The Productivity Commission has stated that "education and training ...are important to our economy's flexibility and adaptability. The development of skills brings with it a greater capacity to anticipate change, to develop strategies to deal with change and to adapt to change".¹² The ability to adapt and respond to change is a vital element of the process of innovation. Previous studies¹³ have shown that innovation and the wide use of information and communications technology in the services economy is credited with increases in productivity, a major determinant of our economic growth.

POLICY PROPOSAL 6

That the Commonwealth Government continues to invest in Australia's education and training; and research and development capabilities.

¹² Speech to Australian Coalition of Service Industries Council Dinner, Gary Bank, Chairman, Productivity Commission, 1998

¹³ Productivity Growth in Service Industries, Occasional Economic Paper, Australian Department of Communications, Information Technology and the Arts, 2005; Services and the Knowledge-Based Economy, Ed. Mark Boden, Ian Miles, 2000; Innovation in Australia's Service Industries, Australian Centre for Innovation and International Competitiveness, University of Sydney, 1993

7 LABOUR REQUIREMENTS

Whilst the global commodities demand has been good for the WA economy, the shortage of skilled labour is driving up costs and may prove to be a barrier for further economic growth. BHP Billiton was recently forced to delay its planned \$900 million expansion of the Worsley alumina refinery near Collie, 200 kilometres south of Perth, due to the high cost of labour and materials. Another major alumina producer, Alcoa has deferred a \$1.5 billion expansion of the Wagerup refinery in WA until prices return to normal.¹⁴ As a result, the industry is being forced to look further afield for labour, mainly at the managerial and professional levels. Labour shortages in the mining industry will have a knock-on effect in other industries, including the service sector.

POLICY PROPOSAL 7

That the Commonwealth Govt endeavours to maintain the integrity of the skilled migration programs, including ensuring smooth access to the programs by employers, while also maintaining appropriate and consistent minimum standards .

6 CONCLUSION

The current resource boom has both positive and negative effects on WA, including those on its service sector. The positive effects include increased economic activity and employment in the service sector, while the negative effects include higher wages growth which adds to inflationary pressures to the State.

The importance of the service sector in generating employment and economic growth cannot be emphasised enough. There needs to be a concerted effort by the Australian Government in addressing some of the challenges faced by Australian service industries and improving the business environment. Some Western Australian service firms are experiencing international success in their fields of expertise but other firms lag behind due to a myriad of factors.

¹⁴ Net cast globally in hunt for staff, The Australian Financial Review, 30 June 2006

Australian Governments can better assist its service industries become more effective competitors domestically and internationally by implementing policies that take into account key factors such as an advanced broadband infrastructure, free trade agreements, levels of education and training, an adequate skilled workforce, a definitive understanding of the concept of services, the collection of relevant statistics and a whole-of-services focus for government and industry. With a coherent policy framework in place, Australian service firms will be better positioned to exploit opportunities in international service markets.

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APPENDIX A

DoIR adopts the Australian Bureau of Statistics' (ABS) definition of the service sector which covers industries other than the goods producing industries (agriculture, mining, manufacturing, electricity, construction, and gas and water supply).

In accordance to the Australian and New Zealand Standard Industrial Classification (ANZSIC), the service industries cover:

- wholesale and retail trade;
- accommodation, cafes and restaurants;
- transport and storage;
- communication services, finance and insurance;
- property and business services;
- government administration and defence;
- education, health and community services;
- cultural and recreational services; and
- personal and other services.

Services can be used as inputs to other industries, traded in their own right or both. But the sector is diverse in many aspects, including the skill composition of workers, intensity of capital and technology, and degree of export orientation.

For this reason, general conclusions about the impact of the current resource boom on WA's service sector are made.

APPENDIX B

Dr Qiang Ye's study, Commodity booms and their impacts on the Western Australian economy: the iron ore case is based on simulations conducted using the Monash Multi-Regional Forecasting Green (MMRF-Green) Model.

The simulations are based on an iron ore expansion corresponding to the magnitude experienced in the iron ore industry during 2004-05 and includes new iron ore projects committed as at February 2006. The simulation includes a 20 year time frame ending in 2024-25. Scenarios considered are:

- i. A sustained increase in iron ore demand; and
- ii. A temporary increase in iron ore demand that ends in 2008-09.

Dr Ye's analysis shows that:

- The cumulative addition to Gross State Product (GSP) is likely to range between \$15 billion and \$52 billion.
- Consumption, a better measure of State benefits than GSP, is likely to increase between \$6 billion to \$26 billion.
- The ratio of export value to imports remains favourable – a reflection of the degree of capital intensity in the iron ore industry.
- More than 80% of about 5,000 to 26,000 new jobs created per annum under the various scenarios are likely to be in industries outside the mining industry.
- Most jobs will be in the high wage end of the services sector distributed across government, wholesale and retail trade, business services and construction.
- Industries closely related to construction activity, energy supply and services are projected to benefit most from the resources boom.
- There is a risk that non-expanding export industries and import-competing industries may contract with associated job losses. Note that the projected job losses are likely to be small and confined to the

agricultural, fishing, textiles clothing and footwear, and transport equipment industries.

It is also important to note that although Dr Ye's analysis is confined to an iron ore boom, the results can be taken as indicative of a broader resources boom.

Dr Ye's reference to the 'non-expanding' export sector highlights the tension between the resource and non-resource sectors and also the sub-sectors within the resources sector. The tension occurs when firms are forced to compete with each other for increasingly scarce factors of production (for example, capital and labour) during the construction phase of new resources projects. A failure to increase the supply of inputs as required results in cost increases and constrained economic growth. Such constraints may mean that a resource sub-sector is unable to adequately respond to world price increases, in effect relegating a part of the 'expanding export sector' to the non-expanding sector of the economy. Such constraints may even exacerbate the volatility of the State's economic growth.