SUBMISSION 2

Inquiry into the state of Australia's manufacturing industry now and beyond the resources boom.

Committee Chairman: The Hon Bruce Baird MP

Submission by: Ted Roach. CEO. Sydney Business & Technology Centre.

- The Australian Government spends $5-6billion on research and development and it is not monitored for manufacturing export outcomes.

- Countries with strong manufacturing and export industries are Japan, Germany, South Korea and China. These countries develop their innovation that is manufactured and exported in **large private sector commercial research centres.**

- In Japan, 100% of all government and private sector R&D expenditure is spent in private sector commercial research centres. Japan has several thousand private sector commercial research centres, China has 600, with 200 built in the past 12 months. Asia is following the Japanese model.

- **Australia has no private sector commercial research centres.**

- The thrust of the Australian Government's R&D policy is 64 government-run R&D centres. These centres develop little or no innovation that is manufactured and exported. Government-run R&D centres are highly inefficient at commercialising research. Australia has socialised its development of innovation.

- The other thrust to the Australian Government's R&D policy is to fund private companies in isolation or small clusters. All the studies identify that this is highly inefficient.

- Commercialising research needs to be conducted in large private sector commercial R&D centres where government funding is based on outcomes. Outcomes are easily assessed by the level of exports achieved from the manufactured innovation developed in the private sector commercial R&D centres.

- Australia needs several hundred private sector commercial research & development centres, similar to those in Japan.

- Commercialisation of research should only be undertaken in competitive private sector commercial R&D centres. Studies show that Government-run R&D centres and funding individual companies not in R&D centres is highly inefficient.

- Australian manufacturers have been starved of leading edge innovation and this has been the major cause for the relative decline to the bottom of OECD countries of ETM (elaborately transformed manufactured) goods exported.

- The type of R&D developed in the private sector R&D centres should be decided by the centres. Governments and committees should not try and pick winners when it comes to funding R&D.

- There are two areas of research for policy makers to consider.

    - Pure research, applied research and research for the public good, such as medical research, astronomy, physics, studying the ozone layer etc. These are areas of research for universities and the CSIRO.
    - Commercialisation of research, such as re-engineering technologies to provide the next level of innovation for manufacturers, providing the latest innovation to downstream process raw materials, and the commercialisation of pure and applied research should be carried out in large private sector commercial research centres, not in government-run research institutions or by private companies in isolation.

- Australia needs to allow the private sector R&D centres to identify for themselves the niche markets to compete in on the world stage.

- Private sector commercial R&D centres should be located throughout Australia, especially in regional areas and areas of high unemployment.

- Innovation from the commercial R&D centres in Japan is manufactured in technology parks, normally located adjacent to the centres.

- The Japanese government's commercial R&D policy of directing its expenditure at private sector R&D centres has resulted in three times the private sector level of investment in R&D per capita than in Australia.

- Japanese private sector R&D centres are 1800 times more efficient at producing exports from their innovation than Australian government-run R&D centres. Australian R&D centres develop little manufacturing locally from their R&D.

- Japanese government expenditure on R&D is 12 times more efficient at producing exports from its expenditure than the Australian Government. The Japanese Government spends its entire R&D budget in private sector R&D centres. The Australian Government directs its budget to public sector R&D centres, and to individual and small clusters.

- Japanese business is 4 times more efficient than Australian business in achieving ETM exports from their R&D expenditure. Japanese businesses develop their R&D in private sector R&D centres. Australian firms develop their R&D in isolation.

- Overall Japan is 6 times more efficient than Australia in its expenditure of R&D that results in manufactured exports.

The R&D Club

An R&D Club has become entrenched over the past 5 decades and controls R&D committees and the Australian Government's $5billion R&D expenditure.

The bulk of the R&D funding goes to government-run institutions. Some large grants are provided to major companies and influential small firms. There are a large number of very lucrative jobs to senior and middle management in Federal and State bureaucracies. A scattering of funding is provided to firms in isolation. The whole system is highly inefficient at developing exports from innovation developed from Government R&D expenditure. There is no accountability of the funding distributed.

The members of the R&D Club include senior and middle management in the Federal and State bureaucracies, executives in business associations, the senior management in some large firms, especially mining companies, and influential smaller companies on various committees. It is easy to identify the players by the funding levels and the jobs.

Government inquiries into Australia's inability to commercialise R&D and the decimation of its manufacturing base to develop exports have been nobbled by this R&D Club with politicians either turning a blind eye or being completely snowed.

Conclusion

The Australian Government should encourage the development of large private sector commercial R&D centres to provide SME manufacturers with the latest innovation to manufacture and export. After an initial establishment phase, government funding needs to be based on exports achieved.

Attachments:

Comparison of the efficiency of R&D expenditure between Japan and Australia
Article "R&D centres driving Japanese industry" July 2006 issue Manufacturers Monthly
Article: "Saving Aussie Science" Australasian Science June 2006 issue.
Graph: Australia's foreign debt 1975 to 2005 and extrapolated to 2010.
Article: MuNet 225.

For detailed background information go to:

www.roachindustries.com.au and check out "Roach CRC Study 2005", and "Strategies for Innovation Success" icons.

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ATTACHMENT A

COMPARISON OF R&D EXPENDITURE TO EXPORTS IN ETM'S REQUIRING ON-GOING R&D□ JAPAN & AUSTRALIA

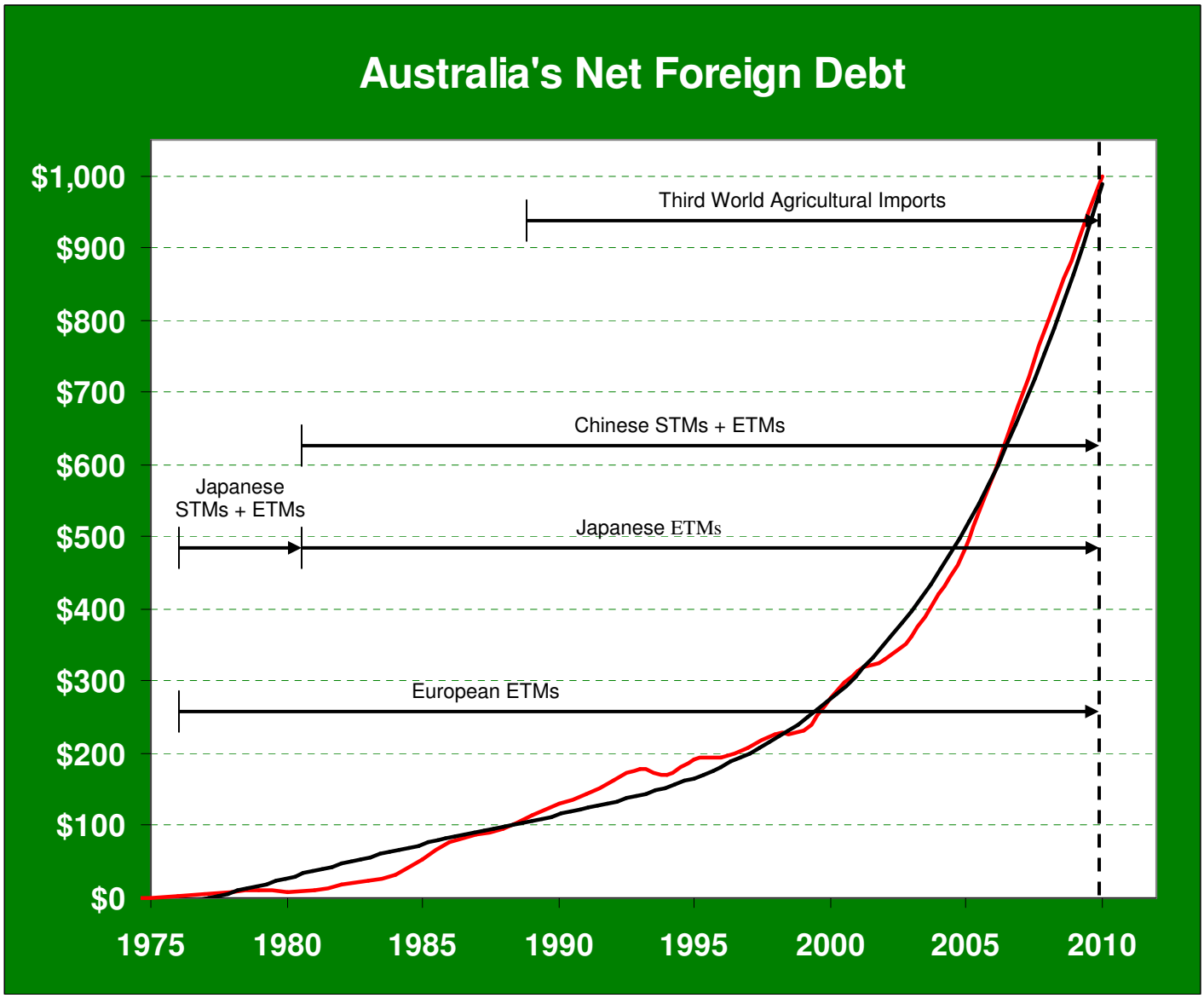
	EXPENDITURE ON R&D (Billions A$)	***EXPORTS OF ETMs*□ (Billions A$)***	***EXPORTS OF ETMs / $ EXPENDITURE ON R&D***	***EFFICIENCY OF R&D RESULTING IN EXPORTS***
JAPAN	**222.7**	**650.27 (90% of 722.52) □**	**$2.92**	**2.92 / 0.49 = 5.96**
AUSTRALIA	**11.03 (90% of 12.25) ■**	**5.45 (30% of 18.164) □**	**$0.49**	**JAPAN IS 6 TIMES MORE EFFICIENT THAN AUSTRALIA+#¥**
JAPANESE GOVERNMENT	**53.81**	**650.27 □**	**$12.08**	**12.08 / 1.02 = 11.84**
AUSTRALIAN GOVERNMENT	**5.32 (90% of 5.915) ■**	**5.45 □**	**$1.02**	**JAPANESE GOVERNMENT IS 12 TIMES MORE EFFICIENT THAN AUSTRALIAN GOVERNMENT + # ¥**
JAPANESE BUSINESS	**157.68**	**650.27 □**	**$4.12**	**4.12 / 1.01 = 4.07**
AUSTRALIAN BUSINESS	**5.38 (90% of 5.979) ■**	**5.45 □**	**$1.01**	**JAPANESE BUSINESS IS FOUR TIMES MORE EFFICIENT THAN AUSTRALIAN BUSINESS # ¥**
CSIRO: 2002, 2003, 2004	**R&D appropriation. Mean for 2002, 2003, 2004**	**Sale of IP & Shares. Mean for 2002, 2003, 2004.**	**Income return per $ of R&D appropriation by Australian Government.**	**12.08 / .0065 = 1816**
	$606.8 million	**$4.05 million**	**$0.0065 (0.65 cents)**	**JAPANESE GOVERNMENT IS 1800 TIMES MORE EFFICIENT THAN AUSTRALIAN GOVERNMENT ****

KEY:

* ETM. Elaborately Transformed Manufactured Goods.
■ 10% allowed for agricultural R&D. Approximation only.
□ % of ETMs requiring on-going R&D. Approximation only.
\+ Japanese Government spends large proportion of its R&D in private sector.
\# Japanese R&D clustered in private sector commercial research centres.
** Japanese Government does not commercialize R&D in Government-run research institutions.
¥ Australia has NO private sector commercial research centres. Refer to "Roach CRC Study 2005".

Source: Statistics obtained from; OECD, Australian Bureau of Statistics, CSIRO 2002/3/4 Annual Statements.

ATTACHMENT B



Trend in Foreign Debt levels, extrapolated to 2010

Actual Foreign Debt levels to 2005, extrapolated to 2010

2010 – Major economic depression

2009 – 2010: Foreign debt rising at $200 billion per annum ($4 billion per week)

Solution:

- Lower Australian dollar
- Reduce level of imports
- Export ETMs and downstream process raw materials by commercial research and development in private sector Commercial Research Centres (CRCs), similar to Japan, Europe and China

STMs – Simply Transformed Manufactured Goods
ETMs – Elaborately Transformed Manufactured Goods