THE CARBON EMISSIONS OF DEBT REPAYMENT

As a consequence of the GFC most western governments are taking on large amounts of debt. The Australian government plans to have a debt of about $300 billion and be in a position to pay this off and return to surplus before 2020. At the same time the same countries, including Australia, are implementing targets to reduce carbon dioxide emissions by 2020. These two targets are mutually contradictory.

Most of the debt raised will come from foreign sources so that in order to pay off the debt, with all other things being equal, foreign income will need to be generated from exports. The added value from the foreign income can then be taxed and the receipts used to pay down the debt. Since the export industries are in private hands, the tax income will arise though company tax and taxes on the workers producing the goods. If the governments total tax take is in the region of 30% (say) then the $300 billion debt will be repaid from about $1 Trillion of added value exports.

One way or another, all of Australia's export industries emit carbon dioxide. They range from relatively low emission industries such as mining where the emission arise form the diesel fuel used in operating mines and in the logistics of the export trade. Farming ranges from relatively low emissions of basic agricultural commodities to higher emissions of added value agricultural based industries. The high emission end is for products produced in many energy intensive stages. Aluminium is a good example being produced from bauxite, then alumina refining and finally smelting operations.

In order to generate the trillion dollars of taxable added value, all of the efforts of the export industries will be required and the government will not be in a position to pick and choose which industries will be contributing. The question is what will be carbon emission outcome of the debt repayment.

Generally speaking the more energy is used to produce a good, then the higher the added value. We can gain some insight as to the likely carbon emissions from the governments discussion papers for the introduction of a carbon emission scheme.

For energy intensive trade exposed industries (including all the major export industries) a range of carbon intensity values in terms of tonnes of carbon dioxide emitted per million dollars of added value (t/M$) are estimated. Values range from about 750t/M$ for basic mining operations like iron ore to over 20,000t/M$ for aluminium.

If we arbitrarily take a value of 1000t/M$ of added value (and this is at the low end of the range) then the 1 trillion dollars required for taxation will represent 1 billion tonnes of carbon dioxide. This should be compared to Australia's current annual emission of about 580 million tonnes. If the debt is to be repaid over 5 years then the Australia's emissions will have to rise by about 20% per year over the repayment period.

Clearly this will make either the government's debt repayment target or the carbon reduction target impossible to achieve by 2020.

Duncan Seddon, May 20, 2009

References: CPRS Green Paper Appendix D lists emissions per unit revenue (tCO2/M$) and the CPRS White Paper develops assistance points for EITE industries in terms of tCO2/$M added value by multiplying the emissions per unit revenue figure by 3.