

INNOVATION FINANCING AND THE R & D TAX INCENTIVE SCHEME: DIFFERENT WAY OF THINKING ABOUT UNIVERSITY RESEARCH AND INDUSTRY LINKAGES

Bruce Chapman and Glenn Withers

February 2016

1 Background

The Government's inquiry into the effectiveness of the R&D Tax Incentive scheme is both timely and important. The critical issue of "additionality" is an important motivation for this review and we wish to make a contribution to the conversation in this context. Below we promote the notion that if loans were made available, instead of or as part substitution for direct subsidies, such as the R & D tax incentive, this issue would be of much less budgetary significance, simply because a major benefit of loans is that potentially considerable amounts of government financial assistance are returned to the public purse.

We also believe that the best form of loans to business are not repaid over a set time period, but are instead collected from debtor firms depending on the future capacity of the firm to repay. They are thus "profit" or "revenue" contingent debts, and there are currently many research applications of such approaches, including with respect to: the financing of drought assistance (Botterill and Chapman, 2009); R & D investments (Gupta and Withers, 2014); and social investment community projects (Chapman and Simes, in Chapman (2006). What is somewhat different in what follows is that we are motivated to co-ordinate R & D financing policy between the business and university sectors, although the basic ideas do not require any explicit links of this type.

The background to the proposal is that is clear that the Government considers there is inadequate university research that helps business improve productivity and/or to introduce innovation to augment profits and employment. This is likely to be a well-placed concern: it is generally accepted from international benchmarking that Australia lags in commercialisation of its university research activity. It is also documented from Australian studies of business innovation that finance for SME start-ups is a major barrier to the pursuit of more successful innovation.

What now follows is a brief outline and motivation for a scheme that potentially helps contribute to meeting these needs. Two critical points are that the arrangement involves: modest or even zero net imposition on the public purse; and, it is very likely to be administratively uncomplicated. The basis of the idea builds on the successful Australian innovation of income contingent loans, as deployed in university financing arrangements for domestic university students, and emulated now in many other countries.

2 The Proposal

The idea is to explicitly link research grants to university teams that have developed their plans in conjunction with business/industry, and which are designed with profits to the business as a major motivating factor. The idea is motivated in part by the view that collaboration between university researchers and the private sector has potential to advance the interests of both sectors, and in ways

that can be instituted with negligible longer-term budgetary costs. The way it might work is now explained.

Projects would be suggested, promoted and explained, and costs estimated, through interactions between university and business partners (in much the same way that ARC Linkage grants currently operate). If successful, the research plans would involve the provision of financial resources which take the form of grants to finance university activities and contingent loans for the business partner. The repayment of the loans is a critical aspect of the arrangement and is now explained.

Businesses benefitting from the research funding would be required to repay some (or even all) of the loan, but when and only if they are in a comfortable financial situation. This can be ensured by having the obligation depend on future profits, as explained in a similar policy scheme suggested by Chapman and Simes (2006). For example, this could be handled with an additional 2 percentage points being added to company tax obligations, with the amount/proportion of the loan to be recovered to be a policy parameter set by government.

For example, the government could decide to treat the financial assistance as part grant/part loan, and in this case the recovery of the initial outlay would be set at less than the initial level of financial assistance, say 50 per cent. Or, in an extreme, business so assisted could be required to repay more than the present value of the initial outlay, which raises the possibility of the scheme being close to revenue-neutral with respect to the outlays which go directly to business. An additional and related issue is that a decision would need to be made about the nature and level of interest rates on the loans.

An important point relates to the need for administrative simplicity. That is, there are complex and simple ways of making such a scheme operational, and we believe that simple is the right way to go. For example, some might argue that the government should only require repayments of the loan conditional on the success of the proposed joint research activity, and this seems to be the way related schemes have been designed elsewhere. However, it would arguably be an administrative nightmare in many cases to try to trace and measure accurately the effects of a particular project on profits; this complexity then raises the likelihood of moral hazard taking the form of companies rearranging their reporting to restrict repayments. A far easier way would be to have the government set a proportion of the loan to be repaid from company tax and to cease collection once this level of repayment is achieved.

We note that the transactional efficiency from government collection of debts through the tax system is a major advantage of the scheme, a point explained in full in Stiglitz (2014). The apparent administrative simplicity of contingent loans is given empirical content through the reporting from Chapman (2014) that the collection of HECS revenues costs the government less than 3 per cent per annum of the annual revenue raised.

A final conceptual point related to contingent loans is that arrangements of this form provide insurance to the agents assisted: insurance against repayment difficulties and, critically, insurance against default. If the business is not in a comfortable financial position to repay no repayment would be required. Capacity to repay, as with all contingent loans, is the defining characteristic such arrangements.

Applications for support would need to be vetted/assessed by the same sort of process now used in the awarding of ARC/NHMRC grants *plus* the extra element of business assessment too. This joint

approach would ensure projects have both university and industry merit and some industry financing is also likely to be required as “skin in the game”.

3 Parallel Schemes

The scheme does have related precedent in the CRC field and in development of capital funds. But:

- CRCs are budget appropriations and hence are capped and not ultimately self-funding for future grants. The suggested scheme could be constructed for monies to be returned to the Fund, for example, via royalties, thus providing important assurances of scale and continuity;
- Development capital funds do have good private engagement but not contingent repayment government capital. It is the blend of government, university and business that matters, as each party has a different time profile or objective, but all are important for ensuring that such a scheme can work.
- This scheme could be seen as a pilot operating under controlled circumstances to test the potential for extending the approach to provide a wider research and development income contingent loan scheme for SMEs. The idea could ultimately extend to outside the initial focus on projects with direct university links and hence move the arrangement beyond the limited domain of CRCs and development capital funds.

4 The Research Basis for the Financing Proposal

The original idea of this type of initiative comes from several papers summarised in Gupta and Withers (2014), and the institutional design issues of such an arrangement are available in Chapman and Simes (2006). Also available is public opinion analysis as reported in Higgins and Withers (2009) which shows that there is likely to be substantial community support in Australia for a similar scheme involving innovation financing in Australia.

References

Linda Botterill and Bruce Chapman (2009), “A Revenue Smoothing Alternative for Australian Agricultural Drought Policy: revenue Contingent Loans”, *Australian Journal of Labour Economics*, September.

Bruce Chapman (2014), "Income Contingent Loans: Background", in Bruce Chapman, Timothy Higgins and Joseph E. Stiglitz (2014) (eds.), *Income Contingent Loans: Theory, practice and prospects*, Palgrave MacMillan, New York: 12-29.

Bruce Chapman and Ric Simes (2006), “Profit Contingent Loans for Social Community Investment Projects in Disadvantaged Regions”, (2006), *Public Policy*, Vol. 1 (2) (December): 93-102.

N. Gupta and G. Withers (2014), "Income contingent loans for business innovation" in Bruce Chapman, Timothy Higgins and Joseph E. Stiglitz (2014), (eds.), *Income Contingent Loans: Theory, practice and prospects*, New York, Palgrave MacMillan: 156-164.

Tim Higgins and Glenn Withers (2009), "Community Attitudes towards Income Contingent Loans", *Australian Journal of Labour Economics*, September: 301-318.

Joseph E. Stiglitz (2014), "Remarks on Income Contingent Loans: How Effective Can They be at Mitigating Risk?:", in Bruce Chapman, Timothy Higgins and Joseph E. Stiglitz (2014), *Income Contingent Loans: Theory, practice and prospects*, Palgrave MacMillan, New York (2014): 31-38.