

# Thinking Differently About University/Business Research Partnerships

## 1 The issue

Of great relevance for the deliberations of the University Accord Review is Australia's internationally very poor record of commercialising university research, perhaps in large part because of its underdeveloped venture capital market. As a result, few research-based start-up companies succeed in passing the 'valley of death', the difficult point where an innovation is yet to be successful in revenue terms despite longer term promise.

Our submission proposes a different mechanism for the funding of R & D to help overcome this problem involving agreed partnerships between university researchers on the one hand and business on the other. A critical point for public policy is that the approach proposed has the great benefit of delivering research outputs with very little funding support required from government. But while we believe that the idea is conceptually and administratively sound, a modest and sensible further exploration would involve a pilot program that could be promoted from the University Accord Review.

## 2 The Potential Policy Solution

We propose the introduction of publicly financed, revenue-contingent loans (RCLs - analogous to HECS) to facilitate innovative companies being able bridge the start-up funding gap at the same time as generating revenue to be shared with the direct university-based originators of the research ideas. Thus, if successful, the policy will potentially offer solutions to two major public policy objectives:

- (i) Increasing the level of sustainable R&D coming from university/business partnerships; and
- (ii) Providing financial incentives to universities for the commercialisation of research which do not rely on government funding.

To begin, explaining what an RCL is, and why it is a useful concept, is essential. An RCL is a debt collected from business that depends on a measure of the company's financial health, its gross revenue, as reflected in quarterly financial statements (as required by law as part of the Business Activity Statement). RCLs have a major advantage over company grants or tax concessions because much of the finance outlaid by the government will be returned, but only when the firms benefitting have the capacity to repay in the future on the basis of revenue, thus allowing greater support for and coverage of prospectively good investments. Risks for the company are minimised, in much the same way as the Higher Education Contribution Scheme minimises the risks to students in repaying tuition costs of their university education. In both cases careful selection mechanisms can be in place to minimise poor investments overall.

To make sure that there are no financial difficulties for the companies assisted, the loan is not repaid until the innovating firm returns a profit, which will be particularly significant if the scheme is applied to start-ups, the commercial space in most need of government assistance, and with the debt being paid based on a percentage of the company's annual revenue. Thus, this feature of the RCL provides insurance for the innovating firm that is not available from commercial loans. The system can be designed to incorporate subsidies, with there even being the potential for full cost recovery, or more.

### **3 Process**

The way this could work would be as follows:

- Research-based projects involving agreements between a university and companies are proposed, and these are peer-reviewed by a government-appointed committee that includes both industry and research experts;
- Successful applicants will receive government-provided funding, which takes the form not of a grant but an RCL;
- Expected turnover/revenue based on past revenue will determine loan limits applying to the project;
- Loans are recovered through the BAS system, starting with a very low percent of annual revenue (for example, 5 per cent) until the loan outlay is recovered;
- Government subsidies are minimised because it is a loan and not a grant, and repayments could even be structured such that successful companies make a net contribution above their repayments to the cost of the scheme (this is of course an issue for policy design);
- A proportion of the revenue returned from the RCL is delivered to the university unit to encourage and help finance future university/business commercialisation research projects and their facilitation.

### **4 Risks**

The risk to the government with RCL start-up loans takes the form of the non-repayment of debts, and this needs to be addressed through careful scheme design. The two main issues of concern relate to what are known as “adverse selection” and “moral hazard”, now explained.

#### **3 (i) Adverse selection with RCL**

Adverse selection in this context takes the form of the problem posed by firms most interested in acquiring RCL being those least likely to have to repay i.e. with the poorest prospective projects. This is important because these are also firms with, for example, start-up plans which have not been able to be financed through other commercial or personal arrangements and thus might be relatively risky. The risks must be mitigated through several mechanisms, such as peer-reviewed vetting procedures and/or the agreement of a university to partner with the venture; careful selection procedures and processes are fundamental to the success of such projects.

### 3 (ii) Moral hazard with RCL

Moral hazard would take the form of some projects, particularly with respect to start-up companies, acting in ways to minimise repayments. This can be addressed very effectively through the use of quarterly revenue information required by law as part of the Business Activity Statement, with the process and benefits being explained in Chapman, Botterill and Egan (2006). An additional aspect of moral hazard might involve the use of “phoenix-type” behaviour, in which a debtor company illegally declares bankruptcy to avoid loan repayments and sets itself up in the future as a different company. This can be addressed too by requiring some part of the debt obligation be shared with owners of the enterprise.

## 5 Illustrations of expected outcomes from modelling.

For different but related RCL applications (Chapman, Botterill and Egan, 2006), we have undertaken simple illustrative modelling of the repayment of RCLs. These exemplar calculations restricted debt levels for firms on the basis of four different expected annual future revenue streams, ranging from \$75,000 to \$3,000,000, using four different loan amounts, ranging from \$25,000 to \$325,000. The rate of collection of the RCL was assumed to be 8 per cent of annual revenue, with the results for different scenarios of future aggregate economic health showing that in all cases the aggregate recovery of the debt for the government exceeded 95 per cent by the 4<sup>th</sup> year of repayment.

## 6 Recommendation

Further and fully detailed modelling associated with a pilot program is required to determine:

- (a) viable loan caps dependent on different expectations of future revenue;
- (b) the implications for repayment of the debt given different assumed rates of repayment and interest; and
- (c) the consequences for expected debt repayment given different scenarios for successful companies to make a net contribution to the cost of the scheme.

A pilot program seems to us to be the sensible way for the Accord process to recommend how to proceed here.

## References

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

Bruce Chapman, Linda Botterill and Michael Egan (2006), “[Income Contingent Loans for Drought Relief](#)” (2006), *Farm Policy Journal*, Vol. 3, No. 2: 59-67.