

Submission to: The principles of the Higher Education and Research Reform Bill 2014, and related matters

An Incentive Compatible Model for Higher Education deregulation

Sean Leaver

27th Feb 2015

This submission is a statement of my personal views and do not reflect the position of RMIT University

Dear Senate Committee,

The purpose of this submission is to suggest a model which combines the social equity benefits of Income-contingent Loans with a market design that is 'incentive compatible' through an appropriate price discovery mechanism¹.

Executive Summary

- Key objective of this model is to create an 'incentive compatible' nexus between the credit risk of student loans and quality of education at the university level.
- The key social objectives of income-contingent loans will remain intact.
- Universities gain the flexibility of setting course fee levels and quality.
- The fundamental change is that universities will receive student fee revenue from fund managers in exchange for the future payments arising from the student loan liability generated.
- Fund managers will pay the universities the nominal value of the loan liability less amount to cover the credit risk of some of the loans not being repaid.
- Universities thereby bear the risks associated with the level of fees charged and the quality of education delivered.
- Price inflation at the expense of quality is resolved via a costly-signalling mechanism where fund managers have a strong incentive to reduce credit risk on student loans funded by debt pooled by a university.
- Critically, the two market participants best able to resolve the problems of uncertainty and information asymmetry, fund managers and universities, bear most of the risk.
- Students bear no greater risk than they currently incur.
- The model allows the Federal government to achieve social and economic objectives via specific subsidies such as tax credits for low SES students.

¹ Hurwicz, L., & Reiter, S. (2006). Designing economic mechanisms. Cambridge University Press.

My background

I'm an accounting CPA with extensive experience in banking (ANZ, Morgan Stanley, Societe Generale), both locally & internationally, and also universities (ANU, UNSW, La Trobe). I specialise in profitability analysis, productivity-driven process re-engineering and business cases. My Masters of Applied Finance from Macquarie University focuses on financial risk and I'm currently a PhD student at RMIT focusing on the Behavioural Economics of Education. My undergraduate degrees are in Science (Molecular Science) and Arts (Philosophy) from the ANU.

Introduction

Higher Education in Australia is progressively moving towards a free-market approach in order to improve flexibility and diversity of choice. However a free-market approach has important budgetary, quality and social equity implications that need to be addressed. Any market oriented solution needs to meet both social equity and economic efficiency considerations.

There is a significant risk that a combination of Income-contingent Loans with uncapped, deregulated free markets will lead to university fee inflation - where the price paid for education is not reflected by underlying value. Importantly, contingent loans are a form of government insurance² subsidy which removes the wealth constraints from the decision making of disadvantaged students. Combining government subsidies and free-market dynamics without constraints will lead to increasing pressure on the Federal budget.

Currently, higher education providers are enjoying a substantial free-carry subsidy on the credit risk of student loan liabilities they generate through course fees.

Any deregulation of higher education should address both market and social objectives.

The social objectives of higher education deregulation are:

- 1) Equity: all members of society are able to participate on an equal footing with all other members of society independent from constraints of wealth.
- 2) Opportunity: uncertainty about the future should not constrain educational choices.
- 3) Cost efficiency: mechanisms to achieve equity and opportunity are cost efficient so as not to negate the benefits of reforms.

The market objectives of higher education deregulation are:

- 1) There exists a 'price signal' that drives incentive compatible behaviour,
- 2) A financial constraint that necessitates trade-offs between price and quality so that choice can be optimised.
- 3) That transaction costs of any market mechanism be kept to a minimum.

² Chapman, B. J. (2006). Income-contingent Loans in Public Policy. Academy of the Social Sciences in Australia.

Income-contingent loans achieve these social objectives³. A free-market approach with flexible pricing of university fees achieves market objectives within a normal market. However, a market where debt is funded through government subsidized debt, income-contingent loans, is not a normal market. Income-contingent loans weaken the responsiveness of course fee levels as a price-signal and removes the financial constraints of wealth.

Importantly, income-contingent loans do achieve the third market criteria of low transaction costs which suggests the solution lies in finding the right price-signal and financial constraint in order to achieve compatibility between social and market objectives of deregulating higher education.

Problems of uncertainty & information asymmetry

Choices in education are complex. Economic returns from investing in education are realised over long time frames and subject to a large number of interacting variables. This leads to a high degree of uncertainty which requires a high level of expertise and resources to resolve meaningfully.

Additionally, different levels of information are held by various agents within the higher education sector, such as students and universities, which leads to information asymmetry⁴. As an example, university education is considered an 'experience good'⁵ because only after experiencing university do students understand how well the education experience suits their particular circumstances. University quality in this way can therefore only be evaluated at a macro-level aggregating the past outcomes of students.

This information asymmetry falls disproportionately on students. Universities themselves have inside information about how they resource teaching and the trade-offs they make to achieve a balance between cost and quality. Universities also have the advantage of large student data sets to evaluate which students are more likely to achieve relative to others.

What a price-signal should achieve

Price-signals naturally reveal information by the participants in order for markets to be self-regulating. A price-signal should resolve problems of uncertainty and information asymmetry through the communication of collective behaviour. Critically for markets in higher education, the price-signal needs to resolve the problem of asymmetric information between universities and students with regards to quality.

An effective price-signal in higher education should lead to choices that optimise trade-offs between the price of education (fees) and quality (future earnings). A price-signal has failed if participants in the market make choices where the investment in education is greater than the expected returns.

³ Chapman, B. (2006). Government Managing Risk: Income-contingent loans for social and economic progress. Routledge.

⁴ Dill, D. D., & Soo, M. (2004). Transparency and quality in higher education markets. In *Markets in Higher Education* (pp. 61-85). Springer Netherlands.

⁵ Jongbloed, B. (2003). Marketisation in higher education, Clark's triangle and the essential ingredients of markets. *Higher Education Quarterly*, 57(2), 110-135.

For normal markets the price-signal is simply the price of a good reflecting the competing forces of supply and demand in the market. However, a higher education price-signal needs also to reflect the likelihood a student's income-contingent loan will be repaid. University course fees are not an appropriate price signal for an efficient and effective economic outcomes. Any deregulation of university fees needs to incorporate a mechanism which allows the market to communicate naturally (incentive compatible) price-signal linked to the expected value of student liabilities.

For markets in debt the price-signal is the 'yield to maturity' on the debt – a discount rate on the nominal value of debt reflecting the time value of money (interest rates) and the risk of default (credit risk). For high education, the contingent loan liability arising from university fees represents the nominal value of the debt and the **key price-signal is credit-risk** given that the student loan liability is indexed.

Alternative solutions and why they won't work

Capping student places: a student centric non-financial constraint that requires students to compete for university places. Focuses student quality entering university and not on student quality exiting university. Competition between universities is weak leading to lower diversity and quality differentiation. The objective of capping student places is to keep budgetary impacts within a prescribed limit and relying on assortative rationing to maintain quality.

Uncapping student places with fixed fees: Weak student and university competition leading to significantly lower diversity and quality. Lack of financial and non-financial constraints leading to sub-optimal price/quality trade-offs. Results in significant adverse impact on budget due to no limit on demand.

Uncapping student places with flexible fees: Income-contingent loans remove student wealth constraints leading to sub-optimal price/quality trade-offs for those students that do choose to attend university. A greater adverse impact on budget due to any (small) reduction in demand more than offset by cost of higher fees due to price inelasticity of university education.

Uncapping student places, flexible fees but capped student liability: In theory should provide the necessary financial constraint to drive optimal price/quality trade-offs but maybe be difficult to administer. However, a flexible fee regime would require real-time information flow between Australian Tax Office and universities to ensure limits were not breached. Reduced impact on Federal budget burden would be offset by significantly higher transaction costs associated with real-time information. More viable under a system of fixed fees.

Uncapping student places, flexible fees with ‘high fee taxes’: In theory should limit the incentives for universities to charge higher fees. In practice however, the price-inelasticity of university education will mean any increase in fee price due to a tax ‘surcharge’ will have little impact on demand. A university education is considered a “Veblen good”⁶, where price is a proxy for quality and status, taxes will have little impact. An analogy is the imposition of a luxury car tax. Higher taxes actually increase demand not reduce demand in the absence of wealth constraints. Consequently, ‘high fee taxes’ will not constrain fee prices nor improve the problem of optimising price/quality trade-offs in university choice.

An Incentive Compatible Model for Higher Education deregulation

The key mechanism of this model is to create an ‘incentive compatible’ nexus between the credit risk of student loans and quality at the university level while maintaining the social equity benefits of student income-contingent loans. This is achieved by universities selling a pool of income-contingent loan debt to fund managers which is repaid via government tax collection.

The amount of debt funding that a university will be able to raise will be dependent upon the quality of the student loans. ‘Quality’ being measured by the likelihood the loan will be repaid in full which in itself is dependent upon the level of fees charged and the quality of the educational experience.

Critically, the two market participants best able to resolve the problems of uncertainty and information asymmetry, fund managers and universities, bear most of the risk. Fund managers having the resources and expertise to price risk under uncertainty and universities the inside knowledge to resolve issues of information asymmetry.

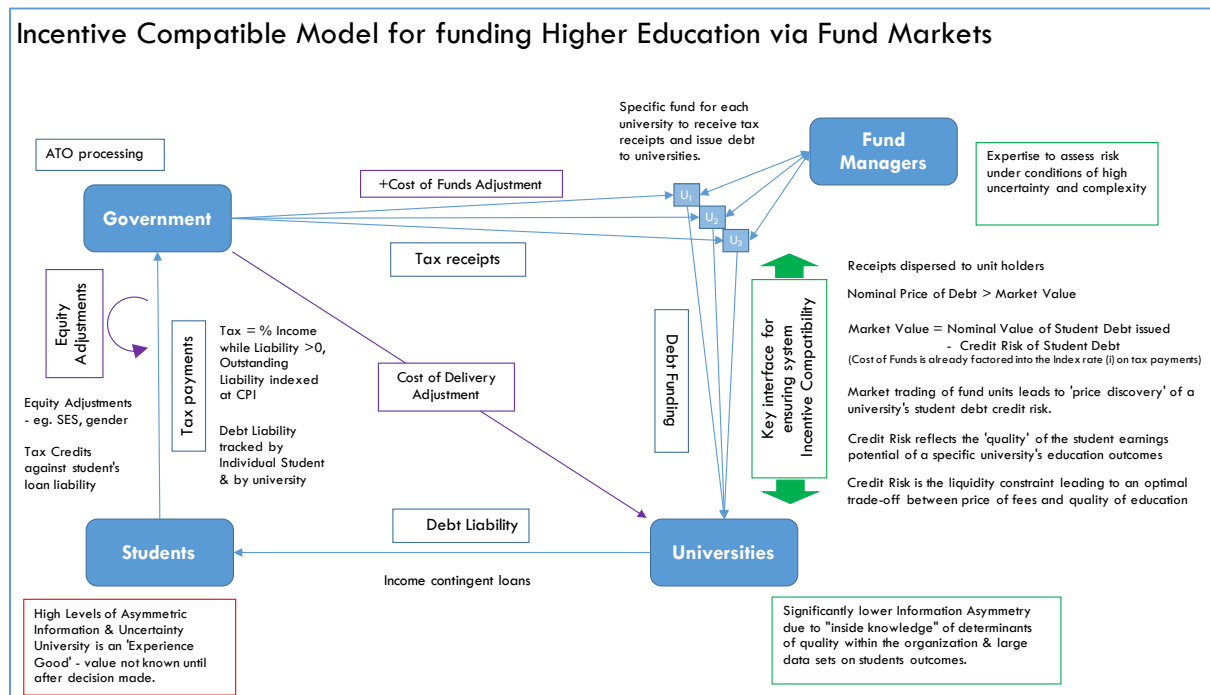
This market design leads to more efficient price discovery and optimal economic outcomes via an appropriate price-signal – credit risk. Differences between market cost of funds, for example the 10 year bond rate, and the rate at which the loan liability is indexed can be subsidised by the government in the form of a tax payment premium to fund managers.

Importantly this model combines the social equity benefits of Income-contingent Loans with a market design that is ‘incentive compatible’ through an appropriate price discovery mechanism. ‘Incentive compatibility’ ensures that the right price-signal and financial constraints lead to economically optimal trade-offs between the price of education (fees) and quality (future earnings). Universities in return for bearing the credit risk for student loans, gain the flexibility of setting fee levels and creating course offerings.

⁶ Abbott, A., & Leslie, D. (2004). Recent trends in higher education applications and acceptances. *Education Economics*, 12(1), 67-86.

Model Design

There are four main agents in the model: a) universities, b) students, c) government & d) fund managers. There are no changes to the fundamental mechanism of income-contingent loans for students. Students will bear no greater risk than they currently incur. The key social objectives of income-contingent loans will remain intact.



The fundamental change is that universities will receive student fee revenue from fund managers in exchange for the future payments arising from the student loan liability generated. Fund managers will pay the universities the nominal value of the loan liability less amount to cover the credit risk of some of the loans not being repaid. Universities thereby bear the risks associated with the level of fees charged and the quality of education delivered.

Funds are raised via specific pools of student loan liabilities segregated by university. Real-time market pricing of individual funds by unit holders provides the pricing for the issuance of new student loan funds to a university.

The Federal government is able to achieve various social and economic objectives via specific subsidies (purple boxes):

- **Equity** (such as SES or gender) is addressed through tax credits applied directly to student's loan liability. Early payment of loan liability via tax credits makes these groups attractive to fund managers.
- **Economic priority areas** for education (such as STEM) are targeted via a cost of delivery payments to universities. This subsidy is important to avoid crowding in low cost courses.

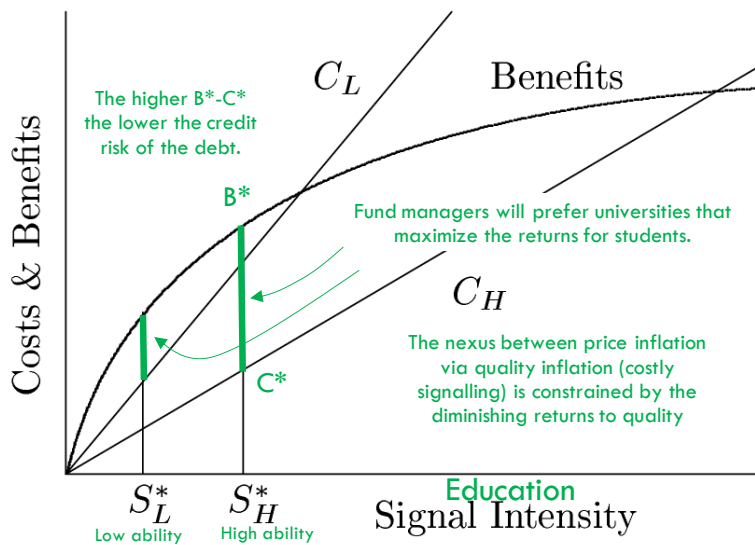
- **Socially preferable index rate** achieved by adding a cost-of-funds premium to tax receipt payments to fund managers. This allows student loan balances to be indexed at a social preferable rate, such as CPI, while ensuring fund managers receive an appropriate interest rate on the loan funds, such as the 10yr bond rate.

Mechanism by which prices are restrained and quality maximised

Incentive compatibility - resolving price/quality and price inflation issues - is achieved through a costly-signalling mechanism^{7,8} via fund managers' strong incentive to reduce credit risk on student loans funded by debt pooled by a university. Universities will be unable to break the link between price and quality or engage in price inflation without significant cost of receiving substantially lower funding than nominal loan value.

Importantly, this mechanism ensures that universities differentiate pricing and quality based on the ability of students in an economically optimal manner.

Costly Signaling: how Credit Risk increases Quality while constaining Price Inflation



⁷ Johnstone, R. A. (1995). Sexual selection, honest advertisement and the handicap principle: reviewing the evidence. *Biological Reviews*, 70(1), 1-65.

⁸ Spence, M. (1973). Job market signaling. *The quarterly journal of Economics*, 355-374.