

<b>Institution: University College London</b>		
<b>Unit of Assessment: UoA 23 Education</b>		
<b>Title of case study: Transforming the design of student loan systems around the world</b>		
<b>Period when the underpinning research was undertaken: September 2015 to 2020</b>		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Lorraine Dearden	Professor of Economics and Social Statistics	1 September 2005 to present
<b>Period when the claimed impact occurred: September 2015 to 2020</b>		
<b>Is this case study continued from a case study submitted in 2014? N</b>		
<b>1. Summary of the impact</b> (indicative maximum 100 words) <p>Most student loan systems around the world are in crisis, with significant defaults ruining the credit reputations of graduates, and prohibitive government subsidies impacting on taxpayers. Dearden's rigorous and innovative research has been instrumental in helping many governments rethink the design of their student loans to facilitate a move to affordable and fairer systems using a different approach: income-contingent loans (ICLs). Dearden has been working with policy makers in Brazil, Chile, Colombia, Japan, Malaysia and the US to provide state-of-the-art loan modelling methodology. This contribution, always using local microeconomic data, has enhanced understanding of current failing systems, with her input providing training and tools fundamental to the design of more effective and fairer country-specific loan arrangements. Much of the impact involves behind-the-scenes within-government modelling and policy development, as highlighted in several testimonials.</p>		
<b>2. Underpinning research</b> (indicative maximum 500 words) <p><b>Context:</b> For higher education to both flourish and to be effective in addressing poverty, effective student loan policies are essential. The most common form, used for example in the US and Canada and most South American and Asian countries, require repayments of set amounts for a given length of time (for example, 10 years in the US), and are known as 'time-based repayment loans' (TBRL). An alternative, known as 'income-contingent loans' (ICL), requires repayments only when borrowers have the financial capacity to do so; ICL operate inter alia in Australia, the UK and New Zealand. The distinctions between TBRL and ICL are profound; TBRL students must repay even when unemployed or with low earnings, implying, for some, major repayment hardships and even default which results in permanent damage to credit reputations. In contrast, ICL provide insurance against having to repay in periods of financial adversity thus meaning the avoidance of debtor hardship and defaults. As well, for governments, ICL are associated with higher levels of loan repayment, and thus more sustainable budgets. Accurate economic forecasts of levels and distributions of graduate lifetime earnings are essential to clarify and illustrate both the consequences of student loans and the power of efficacious ICL design.</p> <p>Dearden's innovative and rigorous modelling is vital for the many governments now aware of the need for policy reform towards ICL. Her painstaking and authoritative contribution has and continues to involve working in detail with local country data, researchers and policymakers to design ICLs suitable for different countries' labour market idiosyncrasies.</p> <p><b>Research methods:</b> To design a sustainable and equitable student loan system it is essential to simulate lifetime graduate earnings and employment. Dearden's methodological innovations</p>		

provide a sophisticated way of simulating lifetime labour market experiences, importantly in a way that can be accommodated even with the partial data available for most countries and can point to successful reform. Most countries have International Labor Organisation compliant surveys, but for most purposes these data are very limited. However, Dearden's approach demonstrates that even with only two observations of earnings and employment one year apart, Copula methods, allowing for complicated non-linear dependencies including non-symmetric tail dependence, can be employed to reliably capture observed dependencies across the entire distribution of graduates by age. This is a unique contribution from Dearden enabling, for the first time, accurate simulations of graduate labour market dynamics including stochastic elements despite the shortcomings of the data. Traditional regression methods cannot do this properly with the restricted information available. Her work illustrates the effectiveness of this method using US Current Population Survey data (**R1**) and explains conceptual and empirical issues for alternative student loan design (**R2, R3**).

An important and complementary aspect of her methodological contribution has been to point out and correct significant weaknesses in earlier statistical approaches to analysing student loan design. In a Special Issue in 2019 of a top economics of education journal, *Economics of Education Review*, the editors wrote '*... the most important empirical contribution comes from Lorraine Dearden's paper...[it] is having a profound effect on econometric approaches now being used to analyse different aspects of student loans...*'.

**Key findings:** Dearden has worked with researchers and stakeholders in numerous countries, using these methods to assess the problems with existing loan systems leading to the development and costing of country specific ICLs that would alleviate these problems, whilst being affordable and equitable. While the application is indirect in terms of explicit policy reform, the influence behind the scenes of this long-term collaborative approach in the development of alternative student loan approaches is profound, as highlighted in the various country-specific testimonials.

(i) **US:** Paper **R1** shows that the current US Stafford Loan system creates huge repayment difficulties for a significant number of students, and paper **R4** builds on these findings to help explain the damage of the US loan system in which currently over 8 million borrowers are in default, with many more at risk given that the stock of outstanding debt is \$1.3 trillion, and rising by over \$100 billion per year. Paper **R4** also illustrates how an affordable and equitable ICL could easily be designed for the US and demonstrates its advantages over the current complex and dysfunctional income-based repayment system in that country.

(ii) **Brazil:** Paper **R5** shows the problems with the current TBRL loan system in Brazil and illustrates how a fair and well-functioning ICL could be designed for the Brazilian context.

(iii) **Japan:** Paper **R6** examines the problems with the Japanese TBRL and the recently introduced means-tested income-based loan, which has major design flaws that can be overcome with an ICL tailored for the Japanese labour market and based on the successful ICLs in other countries. It is shown that this can be done in a way that facilitates the access of the poor and with virtually no cost to taxpayers.

**Researchers and Funding:** Dearden's work was part of the programme of work for the ESRC, Office for Students and Research England funded Centre for Global Higher Education (*ESRC award ES/M010082/1* GBP4,931,091) based at IOE, UCL and Oxford University with Professors Bruce Chapman and Dr Dung Doan (Australian National University) under Project 2.5. Additional funding for overseas visits was provided by the Research School of Economics at ANU, Australian Department of Foreign Affairs and Trade, the Institute of Applied Economic Research Brazil, Ministry of Education Chile and Universidad de los Andes Colombia.

**3. References to the research** (indicative maximum of six references)

**R1** Dearden, L. (2019) Evaluating and designing student loan systems: an overview of empirical approaches. *Economics of Education Review*, 71, 49–64.

<https://doi.org/10.1016/j.econedurev.2018.11.003>

**R2** Chapman, B. and Dearden, L. (2017) Conceptual and Empirical Issues for Alternative Student Loan Designs: The Significance of Loan Repayment Burdens for the US. *The ANNALS of the American Academy of Political and Social Science*, 671(1), 249–268.

<https://doi.org/10.1177/0002716217703969>

**R3** Chapman, B., Dearden, L. and Doan, D. (2020) Global Higher Education Financing: The Income-Contingent Loans Revolution, in Callender, C., Locke, W. and Marginson, S. (eds), *Changing Higher Education for a Changing World*. London: Bloomsbury, Chapter 6.

<https://www.bloomsbury.com/uk/changing-higher-education-for-a-changing-world-9781350108417/>

**R4** Barr, N., Chapman, B. J., Dearden, L., & Dynarski, S. M. (2019) The US College Loans System: Lessons from Australia and England. *Economics of Education Review*, 71, 32–48.

<https://doi.org/10.1016/j.econedurev.2018.07.007>

**R5** Dearden, L., & Nascimento, P. M. (2019) Modelling alternative student loan schemes for Brazil. *Economics of Education Review*, 71, 83–94.

<https://doi.org/10.1016/j.econedurev.2018.11.005>

**R6** Armstrong, S., Dearden, L., Kobayashi, M., & Nagase, N. (2019) Student loans in Japan: Current problems and possible solutions. *Economics of Education Review*, 71, 120–134.

<https://doi.org/10.1016/j.econedurev.2018.10.012>

**Research quality indicators:** publications that have been through a rigorous peer review process; Dearden's work has been published in the world leading Economics of Education journal, a Bloomsbury book and a US social science journal.

**4. Details of the impact** (indicative maximum 750 words)

It is critical to understand that much of the intellectual and research basis leading to policy development and reform is invisible outside the internal processes of government; nor is there a straightforward path from research method and analysis to legislation. Dearden's impact is a consummate example of the powerful yet indirect route from research to reform. Importantly, her contribution and influence in many countries is on-going with legislative change in progress, yet the signs of her analytic authority and sway in student loan advancement is unmistakable, as evidenced by the testimonials provided.

The motivation for Dearden's engagement is that an effective higher education system is necessary for a healthy and flexible skilled labour market, which is a foundation to prosperity; moreover, educational opportunity is key to resolving inter-generational and entrenched poverty. Getting higher education financing right is thus at the heart of both economic efficiency and equity, and this is what Dearden's contribution provides with respect to the design of appropriately informed student loans systems.

Dearden's methodological and empirical advances, always undertaken interactively with different countries' senior educational policymakers, are now providing the foundation for sweeping changes with respect to the future operation of many student loan systems.

Examples of the international impact of this body of research include:

**Colombia:** Dearden was invited to Colombia in June 2016 and November 2019 to help the student loan company ICETEX design an ICL. Dearden has worked closely with ICETEX analysts to obtain earnings data for all debtors to design ICL solutions to help with the current student loan crisis. A critical issue is the informal labour market as the necessary administrative machinery for loan collection is not possible there. However, Dearden used the new data to show in presentations to the ICETEX director and Vice-minister of Higher Education that just

over 95% of ICETEX loan holders had been in the formal labour market in the last 10 years and that an ICL could be designed that would not only involve insurance against hardship for borrowers but higher loan recovery rates for ICETEX. As a result of this work legislation is urgently being pushed through to switch current and likely defaulters to an ICL. The President of ICETEX writes: *'Professor Dearden's engagement with ICETEX and key stakeholders in Colombia has impacted hugely...reforms should be finalized in the next few months and her involvement has been extremely important, indeed critical. Moreover, she has shared her years of expertise in a collaborative, generous and helpful way which will ensure ICETEX will be able to utilize and extend the ICL student loan model'* (S1). The importance of this work has also been highlighted in the testimonial from the Vice-Minister of Higher Education who comments that the work Dearden is doing with ICETEX will *'have important implications for thousands of Colombian students and will mean a substantial change in the financing mechanisms for higher education currently available in the country'* (S2).

**Other Latin American countries:** Dearden was invited to Brazil in February 2018 and July 2019, and met with Brazilian officials in Canberra, Australia in December 2018. She began collaborating with a Brazilian academic with whom she shared her model template, and this resulted in a joint publication examining both the current Brazilian TBRL loan and ICL reform options (R5). This academic is now working with the Department for Education in Brazil, and continues to use and refine the model developed with Dearden (S3).

Dearden was invited to visit the Chilean Ministry of Education in October 2018 to consider options for Chile with key government stakeholders and is still providing policy feedback and modelling advice to officials. She is currently engaged with officials at APICE (the Pan American Association of Educational Credit Institutions involving 40 affiliates in 12 countries in the Americas) and the World Bank and is advising on potential ICL loan reform in Latin America in countries with failing TBRL loans. The work that Dearden is doing in Colombia is a test example for other Latin American countries. The Executive Director of APICE comments in his testimonial that *'[T]he COVID-19 pandemic adds a further degree of complexity to higher education financing in Latin America and the Caribbean, and has placed huge financial strain on students, graduates with loans, universities, as well as Educational Credit Institutions. Several short-term solutions have been implemented in different countries, but they are costly and may simply defer the troubles faced by those with student loans'* and says that the Colombian work being undertaken by Dearden in collaboration with ICETEX *'is extremely important and could be very transformational for my member organisations if successful'* (S4).

**Malaysia:** Professors Dearden and Chapman visited Malaysia in March 2019 to help with a review of the Malaysian student loan system administered by the student loan company PTPTN. The government had previously announced, but then changed the parameters for, a new ICL system after student protests. They held sessions with the head of the review team and senior officials from PTPTN and the Prime Minister's Securities Commission, to understand the political context. After gaining access to Malaysian micro data, they built a student loan model and trained officials from the review team, PTPTN and the finance and education departments on how to use this new model for loan design. The model developed by Chapman and Dearden showed that the favoured ICL model would not be viable from a budgetary perspective. They helped the review committee and PTPTN devise new ICL loan models which were affordable and equitable. These revised proposals were put out for further consultation immediately after their visit (S5). Chapman and Dearden also gave a media conference on 26th March which gained extensive press coverage and highlighted the importance of their contribution (S6).

**US:** Dearden visited Washington DC in June 2016 at the invitation of Professor Susan Dynarski (University of Michigan) and met with Democrat and Republican politicians, White House economic and education advisors, and other key stakeholders. This resulted in an important joint paper on reform of the US student loan situation (R4); Dearden conducted a radio interview on the student debt crisis in July 2017 (S7) and was on a panel of international experts in a debate in the *New York Times* (S8). This issue is again topical due to the result of the 2020 Presidential election and the need to reform the US student loan system and she is currently working with



Jain Family Institute in the US to further this work using new US administrative data linking loans and earnings.

**Japan:** Dearden met with Japanese officials in London in February 2017 who were part of a Japanese Education Ministry (MEXT) panel reviewing international student loans. The Japan Center for Economic Research (JCER) anchored a project with Japanese and Australian researchers led by Dearden to promote loan reform in Japan, with that country's social, gender and institutional issues required major innovations in modelling. The policy research work involved significant engagement with MEXT, university stakeholders, top government economists and all the major media outlets. Dearden was a keynote speaker at a major JCER conference in October 2017 opened by the Minister of Education and participated in a media conference at MEXT. Student loan reform debate continues and JCER president, writes that with this debate: *'the conceptual and empirical contributions from Professor Dearden will be essential to the Japanese government's deliberations'* (S9).

Dearden has been involved with other countries where student loan reform is high on the policy agenda. Dearden presented at a forum in Vietnam in July 2018 involving policymakers and student loan administrators. She was an invited keynote speaker in Dublin, Ireland in September 2017 at the Government Forum on student higher education financing, and a report on possible funding models is due in early 2021 at which stage the Parliamentary Committee will make a final recommendation. She is working with policymakers in France about proposed higher education financing reforms.

Dearden presented at the World Bank organised webinar on 'Income Contingent Loans for Higher Education and COVID-19' in May 2020, after an invitation by the Practice Manager Education at the World Bank and has been invited to do another webinar on her Latin American work in 2021.

The current COVID-19 pandemic has seen unprecedented increases in graduate unemployment rates worldwide, and this economic trauma will have long-lasting effects for those unlucky enough to be newly graduating. The additional adversity lies with the dire consequences for the millions of recent and future graduates required to repay TBRL student loan systems even when jobless. Never before has there been such a stark and significant illustration of the importance of the insurance benefits of ICL and the major positive impacts of Dearden's research, which has provided country-specific templates for reform (S4).

##### 5. Sources to corroborate the impact (indicative maximum of 10 references)

**S1** Testimonial from President of ICETEX.

**S2** Testimonial from Vice-minister of Higher Education, Colombia.

**S3** Testimonial from Special Adviser, Cabinet for Higher Education Affairs, Brazil.

**S4** Testimonial from Executive Director of APICE.

**S5** 'PTPN Public Consultation: Upholding Transparency' issued shortly after Dearden's visit.

**S6** The [Star article published following press conference](#) held in Malaysia in 2019 about the research.

**S7** [On point radio show on student loans](#) corroborates claim of influence in attitudes towards loan reform in US.

**S8** [NYT article https://www.nytimes.com/2018/04/02/upshot/an-international-final-four-which-country-handles-student-debt-best.html](https://www.nytimes.com/2018/04/02/upshot/an-international-final-four-which-country-handles-student-debt-best.html)

**S9** Testimonial from President of Japanese Center for Economic Research corroborates claim of conceptual impact on student loan reform debate among Japanese policy makers.