

Chapter Title: It Works in Practice, But Would It Work in Theory? JOSEPH STIGLITZ'S CONTRIBUTION TO OUR UNDERSTANDING OF INCOME CONTINGENT LOANS

Chapter Author(s): Bruce Chapman

Book Title: *Toward a Just Society*

Book Subtitle: Joseph Stiglitz and Twenty-First Century Economics

Book Editor(s): Martin Guzman

Published by: Columbia University Press. (2018)

Stable URL: <https://www.jstor.org/stable/10.7312/guzm18672.26>

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

*Columbia University Press* is collaborating with JSTOR to digitize, preserve and extend access to *Toward a Just Society*

## CHAPTER 22

---

# It Works in Practice, But Would It Work in Theory?

JOSEPH STIGLITZ'S CONTRIBUTION TO OUR UNDERSTANDING  
OF INCOME CONTINGENT LOANS

**Bruce Chapman**

### BACKGROUND

What follows is an account of an important input from Joseph Stiglitz regarding the debate and evolution of the theoretical and policy potential of income contingent loans (ICLs). An important contextual issue is that ICLs have a remarkable capacity to influence the way that a particular form of government intervention can improve the workings of economies, and it is a potential that has yet to be properly and formally recognized in the profession. The contribution of Joseph Stiglitz to this issue occurred in 2013, through the auspices of a workshop organized through the International Economic Association (IEA) and held at Dhurajik Pundit University in Bangkok, and has been written in Stiglitz (2015) and Stiglitz and Yung (2014).

As background it is interesting to note that what is curious about the development of a general understanding of ICLs is that even though the first nationally based loan system of this type had been introduced in Australia nearly twenty-five years before the 2013 workshop, and the conceptual understanding of the economics of ICLs had been progressing, the theoretical underpinning of the instrument lacked a critical insight related to the role of the public sector in loan collection, and this (arguably) final piece of the jigsaw was provided by Joseph Stiglitz. This chapter provides both the background to, and the context for, an appreciation of his insights.

We begin with a definition: an ICL is a form of debt in which repayments depend on a borrower's future income, and thus their capacity to pay; this is a critical difference to normal "mortgage-type" loans in which

repayments are agreed on the basis of fixed obligations with respect to time. ICLs began on a national scale in Australia in 1989 with the introduction of a college tuition loan program known as the Higher Education Contribution Scheme (HECS), in which charges were to be financed through loans to students and repaid depending on future incomes (collected through the income tax system, the Australian equivalent of the U.S. Internal Revenue Service [IRS]). Over time, variations of the system have been adopted in essence (although with parameter and design differences) in around seven countries, with the international spread of ICLs being documented in section 1.

Since the adoption of the scheme, considerable research has been done on the potential for the use of ICLs in a wide and disparate array of possible social and economic policy reforms well beyond student loans, with just about all of these being related to Australian case studies in institutional and empirical terms. There has been a small revolution in the social science research agenda in Australia with respect to ICLs, which is documented in section 2. While it is accurate to describe the spread of nonstudent loan ICL research beyond Australia as limited, there is no obvious reason for this to be true in the future.

Section 3 outlines briefly the progression of the theoretical underpinnings of the essence of ICLs over the initial fifteen years or so after HECS, a discussion that illustrates a highly unusual evolution of economic reasoning. What made this process rare, even odd, is that while the general theory of ICLs was incomplete when HECS was adopted, the Australian (and followed by other countries') ICLs operated as planned, with university enrollments progressing satisfactorily, debts being paid in an administratively efficient way, and there being no apparent adverse effects on the access of the relatively poor. We were thus in a situation pertinent to the old joke concerning academic economics and policy manifested in the question: "Well, it works in practice but would it work in theory?"

The contribution of the IEA Bangkok Workshop, and in particular the perspicacity of Joseph Stiglitz in a conceptually critical area of our understanding of ICLs, helped square the circle. The essential insight was to explain and promote the extraordinary significance of the effectiveness of government-operated ICLs; Joseph Stiglitz endorsed and supported arguments for ICLs generally, but also explained the importance for social welfare of controlling ICLs by governments. This contribution is examined in detail in section 4.

## 1. INTERNATIONAL ICL POLICY HISTORY

As noted, in 1989, Australia introduced a student ICL, HECS, which involved domestic higher education students being charged tuition but with the obligation to pay being deferred until debtors earned above a particular threshold of personal income (which is currently around A\$54,000 per annum), at a fixed proportion of income which is (now) set at a maximum of between 4 and 8 percent. A critical aspect of the reform was that the debt would be collected by employers and remitted to the Australian Tax Office (that is, this country's equivalent to the U.S. IRS) in much the same way that personal income taxes are.

Twenty-nine years later, HECS (now known as HECS-HELP) now exists in different forms in more than a handful of countries, although scheme design, eligibility, interest rate, and debt forgiveness regimes differ widely between systems, and have changed over time in most national jurisdictions. Critically, however, the essential characteristics of the loans, income contingency and collection through the auspices of the equivalent of each country's IRS, have not been compromised.

ICLs in other countries typically take forms that are similar to the scheme initiated in Australia. Debts to cover tuition costs (and in most cases, income support) are recorded while a person is studying, and the relevant income tax authority is informed of the individual's future repayment obligation. A typical tuition debt in Australia is about 45–50 percent of the recurrent cost of higher education (which amounts to about US\$5,000 per full-time equivalent annual year of study on average, although in other countries the obligation can be quite different (for example, in England the charge is close to 100 percent of the recurrent costs).

Countries other than Australia that have adopted (or likely soon will adopt) ICLs, and the year in which the arrangement first began, are as follows: New Zealand (1991), England (1998), Hungary (2001), Thailand (for 2006 only), South Korea (2011), the Netherlands (2016), and Japan. The higher education reform debate is alive and well in Ireland, where a paper explaining the problems with mortgage-type loans and offering a suggested ICL is receiving public attention (Chapman and Doris 2016). Similarly, the governments of Colombia and Brazil are currently exploring student loan reforms, away from a mortgage-type arrangement and toward an ICL.

Further, a bill was put to the U.S. Congress in 2013, which could have meant the adoption in that country of an ICL as the default option in an

array of student loan choices. So-called income-based repayment options exist in the U.S. student loan provisions, but they are generally thought to be poorly designed and characterized by extraordinary complexity and other problems; take-up rates are very low. While the 2013 bill did not pass, it is widely regarded in the United States that the reform impetus toward ICLs remains (Dynarski 2014).

## 2. THE AUSTRALIAN INNOVATION AND ICL RESEARCH APPLICATIONS

### 2.1. GOVERNMENT AS A RISK MANAGER

In the Australian debate, ICLs were seen to fit easily into a conceptual framework in which a major role recognized for government involves the management and distribution of risks (Chapman 2006). The concept of risk plays a central and unifying role in current analyses of a wide range of social and political issues, and has been argued to be similar to that performed by the concept of globalization in the 1990s (Quiggin 2003).

The role of government, and particularly of the welfare state, has been reinterpreted with an increasing emphasis on risk and uncertainty, and across the social sciences there are different analytical approaches. Neoclassical economists have stressed the extent to which risk can be rationally managed using the tools of expected utility theory. Psychologists, sociologists, and various groups of other economists have stressed the limitations of expected utility theory.

When government is considered in its role as a risk manager, new aspects of both existing policies and future policy options are revealed. In *When All Else Fails*, for example, David Moss (2003) provides a fine historical analysis of the role of the state as the ultimate risk manager. Through analysis of U.S. government legislative reforms over the last 200 years, Moss promotes an understanding of the risk management role of the state, which can take many diverse forms, such as laws associated with limited liability, the application of speed limits for automobiles, national health insurance, occupational health and safety legislation, disaster relief, and Social Security.

Barr (2001) has written a similar treatment of the welfare state as that promoted by Moss, in which the potential role of government is analyzed in the context of insurance failure, which is conventionally seen in the economics literature to be a consequence of asymmetric information. In the absence of markets providing accessible and affordable insurance, Barr argues that government has a unique role to play as a “piggy bank,”

an efficient institution to manage and decrease the costs to citizens of the unavoidable uncertainties associated with human events. As stressed by many, there are disparate ways in which government intervention can help manage the risk of citizens, an obvious instrument outside the United States, being universal health care insurance.

In the current context, it is critical to realize that ICLs for higher education are simply a subset of the many risk management instruments available to government, a point made most explicitly in Shiller (2003). What ICLs offer, after all, is insurance against consumption hardship and protection against the costs of default that arise with mortgage-type loans when the incomes of debtors are low. To begin to tease this out in the journey toward a general theoretical framework, what now follows are brief notes on several applications of ICLs beyond student loans. Through this process, we are seeking to address the question for policy: under what circumstances are ICLs appropriate and inappropriate instruments for governments to use for social welfare improvement?

## 2.2. ICL CASE STUDIES BEYOND HIGHER EDUCATION TUITION

Since the introduction of HECS, there has been an intriguing development in economic research in Australia that has been motivated by the administrative success of the policy. The basis to this analysis is the notion that if an ICL works in practice for the financing of student loans, it might be that the instrument has the potential to be used in other areas of social and economic policy reform. To date, there have now been as many as around twenty quite different ICL research applications, and what now follows involves a selective presentation of just a few,<sup>1</sup> to offer a taste of the many possibilities.

### 2.2.1. INCOME SUPPORT FOR ALL TERTIARY EDUCATION FINANCING

It is critical to understand that while HECS concerns the collection of tuition charges only, the basic idea can and does apply to the financing of all costs associated with studying, including income support. Indeed, in just about all countries with student loans, the finances distributed are designed to cover living expenses as well as the payment of up-front fees. In at least two of the countries with ICLs—England and New Zealand—the loans have a means-tested component incorporating financial support for student living expenses; and in the Australian context, there have been various attempts to both model and promote for

policy consideration the use of HECS for living costs as well (Chapman, Higgins, and Taylor 2009).

### 2.2.2. ICLS FOR PAID PARENTAL LEAVE

The majority of Organization for Economic Cooperation and Development (OECD) governments have grants-based paid parental leave (PPL) systems, in which parents of infants are provided with income support for short periods to allow time-off paid work for the purposes of child rearing. However, the time involved to cover the expenses is typically quite short<sup>2</sup> because of the costs to government.

Higgins (2010) and Chapman and Higgins (2009) illustrate that there might be a solution to the lack of preparedness of governments and businesses to finance PPL beyond very short periods. Similar to the situation associated with higher education financing, it is recognized that there is a fairly clear market failure, in that in the absence of collateral the private commercial bank sector would not be interested in providing loans for this activity; asymmetric information and the associated adverse selection and moral hazard loom large for this issue.

The main contribution of the research in the area of the application of ICLs to PPL is to explain and present simulations of revenue streams of debt repayments with respect to different household and expected lifetime income streams. Higgins (2010) highlights that there are critical design issues in order to minimize the potential for both adverse selection and moral hazard to undermine the financial basis of the potential policy. Clarification is offered as to what such an approach might mean for government subsidies for particular groups and what the financial implications for PPL borrowers might be.

The PPL analysis involving an optional supplement to a grants system suggests that an ICL approach has the potential to satisfy key policy objectives: it can introduce flexibility and choice without requiring major further contributions from the government; it provides a solution to a financing impasse that would not be solved by commercial banks; and, because repayments of the loan are only required when households are in a position to do so, it provides significant consumption smoothing and income distribution advantages over alternatives. Higgins (2010) and Higgins and Sinning (2013) show the sensitivity of collection of ICLs on the basis of different approaches to the modeling of fluctuations in estimates of future incomes.

### 2.2.3. LOW-LEVEL CRIMINAL FINE REPAYMENTS

A quite different application of the basic principles of ICLs came from a suggestion by John Quiggin in the context of the collection of low-level criminal fines. The basic idea that ICLs could apply to this area was motivated by the facts that current collection processes for low-level criminal activity are inefficient and expensive for the public purse—a large proportion of fines remain uncollected—and with the current fine collection arrangements there can be significant social costs. The latter might even involve the imprisonment of offenders for low-level criminal activity to meet their fine repayment obligations.

Chapman et al. (2004) propose the Fine Enforcement Collection Scheme (FECS), which would use the tax and/or social security systems to collect fines for low-level criminal activity that were not recovered within a grace period (of say, a month); most of these would be in the order of \$1000. The repayments would depend on the offender's future income, and would thus be paid back at a level that would fluctuate with capacity to pay. There would need to be relatively low-income thresholds for repayment to make the scheme viable, implying that the HECS parameters would not be suitable.<sup>3</sup>

FECS can be seen as balancing risks for the individual and the community. For the individual, it almost eliminates the risk of a fine turning into something more costly such as the seizure of a car or even imprisonment. On the other hand, it reduces offenders' chances of avoiding paying some or all of the debt. For the community, it ensures that the loss of revenue through nonpayment of fines is minimized, and the unnecessary costs associated with penalty escalation are avoided. For magistrates, FECS would likely produce a greater certainty that fines imposed would be collected, and this would enhance the credibility of the sanction.

### 2.2.4. THE "BRAIN DRAIN TAX"

One of the most transparent examples of regressive outcomes in international labor markets is the fact that very significant numbers of skilled immigrants trained in poor countries emigrate to more developed countries in search of higher incomes. For example, many engineering graduates from Haiti move to the United States and other rich countries after completion of their degrees, and the situation is very similar with respect to young Indian doctors and nurses trained in the Philippines. A policy

approach using the basic concepts of an ICL could be used to redress some of this injustice.

In this ICL application, skilled immigrants trained in poor countries might be able to contribute to the costs of their education to compensate the government of their country of origin for part of the investments. An associated and essentially the original idea comes from Bhagwati (1972), who suggested the use of an ICL collection mechanism using the income tax system of the developed countries to which the graduates of poor countries typically migrate. Chapman et al. (2016) explain the issue and the possible solution with respect to emigrants to Australia from developing countries. A broader solution would involve internationalization of the collection of a financial contribution from the graduates of developing countries who emigrate to more wealthy destinations, but only if and when their incomes exceed a given threshold. In Australia, New Zealand, and England, for example, the use of the existing ICL collection systems would seem to be ideally suited to such a task.

#### 2.2.5. OTHER POTENTIAL APPLICATIONS OF ICLS

As well as the above examples, over about the last twenty years there has been considerable research output related to the application of the basic principles of ICLs to a large number of other areas of social and economic policy. These examples are as follows, for the financing of or payment of

- i. R & D investments (Denniss, Yuan, and Withers 2009)
- ii. White collar crime and insider trading offenses (Chapman and Denniss 2005)
- iii. Income smoothing for the agricultural sector (Chapman and Botterill 2004, 2009)
- iv. Housing cost relief for low-income households (Gans and King 2006)
- v. Social investment community projects (Chapman and Simes 2006)
- vi. Elite athlete training (Denniss, Fear, and Milane 2012)
- vii. Solar energy devices (Baldwin, Chapman, and Umbu 2015)
- viii. Nursing homes and aged care (Chomit and Piggott 2014)
- ix. Unemployment insurance (Stiglitz and Yung 2014)
- x. Climate change adaptation policies (Dobes and Chapman 2013)

### 2.3. SUMMARY

The introduction of HECS encouraged, indeed motivated, a plethora of economics research in Australia involving the application of ICLs to a diverse range of social and economic policy reform suggestions. While this was going on, theoretical insights with respect to the conceptual basis of ICLs were emerging, and this is the subject of what now follows.

### 3. THEORETICAL DEVELOPMENTS WITH RESPECT TO ICLS

In the beginning of national ICL policy, that is the late 1980s, there was some clear understanding of the benefits of such an instrument. Specifically, there is little doubt that one part of the insurance payoffs to student debtors—insurance against default—was well understood (Barr 1989; Chapman 1997). But other benefits and difficulties associated with ICLs, now well integrated into this area of research, emerged more clearly over time.

In the Australian context, the clearest early exposition of the ICL benefit of intertemporal consumption smoothing can be found in Quiggin (2003, 2014) that provides a more general exposition of the major costs and benefits involved in comparisons of alternative approaches to student loan financing. The first of these papers was the beginning of a more formal economic modeling approach to ICLs, explaining rigorously the insurance benefits of ICLs.

It is of interest to record that the evolution of critical aspects of ICL theory arose, or at least was clarified by, attempts to make practicable applications of ICLs to particular problems. An important example comes from the work that formed the basis of the idea of the earliest analysis and policy design exercise involving the use of ICLs outside of student loans. This provided an explanation of the use of revenue contingent loans as a substitute for government grants designed to relieve the financial stress for Australian farmers experiencing drought (Botterill and Chapman 2004).

An integral aspect of the revenue contingent loan idea related to the need to design a system in which repayments of the debt could not easily be avoided, and this required the input of an astute rural accountant who helped make the policy plan close to foolproof in terms of debt collection (Botterill and Chapman 2009). In retrospect, the policy analysis can be seen as addressing an issue basic to all economic policy design, the need to minimize moral hazard.

Similarly, the thinking involved in the design of the PPL ICL (Higgins 2009) was focused on the very difficult problem of the system not being undermined by the noncollection of the debt from people choosing to take an ICL to help finance child rearing knowing that they were unlikely to rejoin the labor force. Another way of describing this, of course, is the requirement that this form of an ICL policy minimizes the costs associated with the classic problem of adverse selection. The importance of avoiding both moral hazard and adverse selection in an ICL policy design have been analyzed in detail with respect to four case studies examined in Chapman (2010).

These developments meant that before the 2013 IEA Workshop, many of the puzzles behind the conceptual basis of ICLs had been sorted out, and the significance of the policy approach can be characterized as follows. An ICL is a risk management instrument that can be used to deliver both intertemporal consumption smoothing and insurance against default; the challenge involved in the efficacious application of ICLs requires parameters and rules to be designed to minimize the noncollection costs inherent in both moral hazard and adverse selection.<sup>4</sup> While these understandings are a very long way from the conceptual underpinnings related to the original introduction of HECS, there remained an issue that had only been partially thought through, the importance of understanding the institutional basis for the operation of ICLs.

#### **4. ENTER JOSEPH E. STIGLITZ, STAGE LEFT: TRANSACTIONAL EFFICIENCIES AND ICLS**

The 2013 IEA Workshop was designed to address outstanding issues related to the conceptual basis of ICLs. As explained above, there had been an evolution in the thinking that lay behind an understanding of ICLs, yet the analytical framework seemed somewhat incomplete. It is hard to be precise about what was missing, but it seemed to be related to the broad public policy issue concerning the role of the public and private sectors. Specifically, an important question that had yet to be fully addressed seemed to be: Is it important that ICLs are operated through the public sector?

This is addressed comprehensively in Stiglitz (2015), which provides an expansive list of the conceptual case for governments operating ICLs.

The first two issues had already been considered in the literature, and these are that

- i. Governments are able to take advantage of the highly significant economies of scale involved in the collection of income taxes. Indeed, it is reported in Chapman (2006) that an estimate of the Australian Tax Office HECS collection costs were no more than about 3–4 percent of annual revenue, and that this experience seemed to be about the same for the ICLs operating in England.
- ii. Government has access to the best information concerning the true income situation of debtors. Further, it is possible that the public sector has a legal jurisdictional monopoly in knowing the true incomes of citizens, an issue that has yet to be tested constitutionally in any country.

Stiglitz (2015) considers four additional reasons why ICLs can be argued to be the realm of government, and these are as follows:

- i. Because governments are not interested in making a return (profit) on individual borrowers a public sector ICL can be universal and not discriminatory on the basis of expected individual incomes. On the other hand, if private agents were involved in the design and operation of ICLs, they would engage in cherry-picking with adverse consequences with respect to both transaction costs and equity.
- ii. There will be a higher spread between borrowing and lending rates with private sector ICLs because these will reflect the costs of financial transactions faced by the customers. The costs are argued to be higher for the private sector as agents engage in marketing and higher levels of complexity related to likely discriminatory pricing behavior.
- iii. Actions in one market affect outcomes in others, and government engagement in ICLs could be such as to minimize unintended consequences associated, for example, with the disruption to the pecuniary externalities from optimal investments in education.
- iv. As illustrated by the events and lead-up to the global financial crisis, the financial sector has considerable potential to manipulate and undermine markets with major attendant social costs.

In Stiglitz (2015), these benefits are labeled as “transactional efficiencies” arising from government engagement in ICLs, with the issue being

accorded further accessible examination in Denniss (2014). While both authors focus on public-sector operational issues, there is a further aspect of transactional efficiencies inherent in the simplicity of loan collections as far as the debtors—students—are concerned, which is touched on or implied in their analyses. This is that the administrative burdens for borrowers faced with high variances in their individual capacities to repay an ICL are close to zero; this has to be a major issue for student debtors and seems to motivate myriad complaints about the current highly complex U.S. student loan system.

The notions explained and developed under the rubric of transactional efficiencies come close to finalizing a general theory of ICLs, an instrument with great potential for progressive economic reform, able to deliver insurance benefits with minimal social costs if made operational through the public sector. Of course, all of these potential benefits can only be delivered through proper attention in ICL design to the critical concerns related to moral hazard and adverse selection, themselves economics of information issues given much relevance and credibility from earlier Joseph Stiglitz contributions.

ICLs are a potentially critical development in economic thought, and add to the array of risk management instruments operated through government. Under some circumstances, many of them commonplace, it seems to be the case that the use of ICLs to improve social welfare, even without the market failures associated with asymmetric information (Long 2014). Joseph Stiglitz has provided critical input into these developments, most significantly, through an explanation of the importance of transactional efficiencies that are available with the use of the public sector to deliver ICLs.

#### NOTES

The author is grateful to Richard Denniss, Tim Higgins, Ali Khan, Idione Meneghel, John Quiggin and Joseph Stiglitz for conceptual insights. All errors and omissions are the responsibility of the author. The support of the Australian Research Council (ARC, LP110200496) is acknowledged with gratitude.

1. The discussion here follows Chapman (2014) quite closely.
2. This is typically quite short and of the order of four to six months duration.
3. Recent developments in this area highlight the potential to have the collection of fines operate directly through the social security system (Chapman, Ronalds, and Rydgerway 2016).
4. For insightful analysis of the likelihood that the importance of these issues is often overstated, see Palacios (2014).

## REFERENCES

- Baldwin, K., B. Chapman, and U. Raya. 2014. "Improving Access to Solar Energy Systems Using Income Contingent Loans." *Optics for Solar Energy*, Optical Society of America (OSA), USA: 1–3.
- Barr, N. 2001. *The Welfare State as Piggy Bank: Information, Risk, Uncertainty and the Role of the State*. Oxford: Oxford University Press.
- Bhagwati, J. 1972. "The Brain Drain and Income Taxation: A Proposal." Massachusetts Institute of Technology Working Paper 92. <http://dspace.mit.edu/bitstream/handle/1721.1/63416/braindrainincome00bhag.pdf?sequence=1>.
- Botterill, L., and B. Chapman. 2004. "An Income-Related Loan Proposal for Drought Relief for Farm Businesses." *Australian Journal of Public Administration* 63 (3):10–19.
- Botterill, L., and B. Chapman. 2009. "A Revenue Contingent Loan Instrument for Agricultural Credit with Particular Reference to Drought Relief." *Australian Journal of Labour Economics* 12 (2):181–196.
- Chapman, B. 2006. *Government Managing Risk: Income Contingent Loans for Social and Economic Progress*. London/New York: Routledge/Taylor & Francis Group.
- Chapman, B. 2010. "Policy Design Issues for Risk Management: Adverse Selection and Moral Hazard in the Context of Income Contingent Loans." In *Risk, Welfare and Work*, edited by G. Marston, J. Moss, and J. Quiggin. Melbourne, Australia: Melbourne University Press.
- Chapman, B. 2014. "Income Contingent Loans: Background." In *Income Contingent Loans: Theory, Practice and Prospects*, edited by B. Chapman, T. Higgins, and J. E. Stiglitz, 12–28. New York: Palgrave Macmillan.
- Chapman, B., and R. Denniss. 2005. "Using Financial Incentives and Income Contingent Penalties to Detect and Punish Collusion and Insider Trading." *Australian and New Zealand Journal of Criminology* 38 (1):122–140.
- Chapman, B. and A. Doris. 2016. "Modelling Higher Education Financing Reform for Ireland." Working Paper, Department of Economics, Finance and Accounting, Maynooth University.
- Chapman, B., and T. Higgins. 2009. "An Income Contingent Loan for Extending Paid Parental Leave." *Australian Journal of Labour Economics* 12 (2):197–216.
- Chapman, B., T. Higgins, and D. Taylor. 2009. "Income Contingent Loans for Mature Aged Training." *Australian Journal of Labour Economics* 12 (2):167–179.
- Chapman, B., C. Ronalds and G. Rydgeway. 2016. "Repaying low-level criminal fines through income contingent debts." Mimeo, Australia National University.
- Chapman, B., and R. Simes. 2006. "Profit Contingent Loans for Social Community Investment Projects in Disadvantaged Regions." *Public Policy* 1 (2):93–102.
- Chapman, B., A. Freiberg, J. Quiggin, and D. Tait. 2004. "Using the Tax System to Collect Fines." *Australian Journal of Public Administration* 63 (3):20–32.
- Chomit, A., and J. Piggott. 2014. "Elderly Support Policies as Resource Contingent Loans." In *Income Contingent Loans: Theory, Practice and Prospects*, edited by B. Chapman, T. Higgins, and J. E. Stiglitz, 172–179. New York: Palgrave Macmillan.
- Denniss, R. (2014), "Utilizing the Transactional Efficiencies of Contingent Loans—A general Framework." In *Income Contingent Loans: Theory, Practice and Prospects*, edited by B. Chapman, T. Higgins, and J. E. Stiglitz, 248–259. New York: Palgrave Macmillan.

- Denniss, A., M. Yuan, and G. Withers. 2009. "Innovation Financing and the Use of Income Contingent Loans." *Australian Journal of Labour Economics* 12 (2):145–165.
- Denniss, R., J. Fear, and E. Milane. 2012. "Justice for All: Giving Australians Greater Access to the Legal System." Australia Institute Paper No. 8. <http://www.tai.org.au/node/1831>.
- Dobes, L., and B. Chapman. 2013. "Financing Adaptation to Climate-Induced Retreat from Coastal Inundation and Erosion." CCEP Working Paper 1113. Crawford School of Public Policy, Australian National University.
- Dynarski, S. 2014. "An Economist's Perspective on Student Loans." Washington, DC: Brookings Institution.
- Gans, J., and S. King. 2006. "The Housing Lifeline: A Housing Affordability Policy." *Agenda* 11 (2):143–155.
- Higgins, T. 2009. "Essays in the Development and Costing of Income Contingent Loans." PhD thesis, College of Business and Economics, Australian National University.
- Higgins, T., and M. Sinning. 2013. "Modelling Income Dynamics for Public Policy Design: An Application to Income Contingent Student Loans." *Economics of Education Review* 37:73–285.
- Long, Ngo Van. 2014. "Income Contingent Loans: Towards a Piecemeal Linear Scheme In *Income Contingent Loans: Theory, Practice and Prospects*, edited by B. Chapman, T. Higgins, and J. E. Stiglitz, 49–62. New York: Palgrave Macmillan.
- Moss, D. 2003. *When All Else Fails*. Cambridge, MA: Harvard University Press.
- Palacios, M. 2004. *Investing in Human Capital: A Capital Markets Approach to Higher Education Funding*. Cambridge, MA: Cambridge University Press.
- Palacios, M. 2014 "Over-emphasized Costs and Under-emphasized Benefits of Income Contingent Financing." In *Income Contingent Loans: Theory, Practice and Prospects*, edited by B. Chapman, T. Higgins, and J. E. Stiglitz, 207–215. New York: Palgrave Macmillan.
- Quiggin, J. 2003. "The Welfare Effects of Income-Contingent Financing of Higher Education." Working Paper No.428, Faculty of Economics, Australian National University.
- Quiggin, J. 2014. "Income Contingent Loans as a Risk Management Device." In *Income Contingent Loans: Theory, Practice and Prospects*, edited by B. Chapman, T. Higgins, and J. E. Stiglitz, 39–48. New York: Palgrave Macmillan.
- Shiller, R. 2003. *The New Financial Order: Risk in the 21st Century*. Princeton, NJ: Princeton University Press.
- Stiglitz, Joseph E. 2015. "Income-Contingent Loans: Some General Theoretical Issues, with Applications." In *Contemporary Issues in Microeconomics*, edited by J. E. Stiglitz and M. Guzman, 129–136. New York: International Economics Association Series.
- Stiglitz, J., and J. Yung. 2014. "Income Contingent Loans for the Unemployed: A Prelude to a General Theory of the Efficient Provision of Social Insurance." In *Income Contingent Loans: Theory, Practice and Prospects*, edited by B. Chapman, T. Higgins, and J. E. Stiglitz. New York: Palgrave Macmillan.