

This PDF includes a chapter from the following book:

## **Assetization**

### **Turning Things into Assets in Technoscientific Capitalism**

© 2020 Massachusetts Institute of Technology

#### **License Terms:**

Made available under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International Public License

<https://creativecommons.org/licenses/by-nc-nd/4.0/>

#### **OA Funding Provided By:**

The open access edition of this book was made possible by generous funding from Arcadia—a charitable fund of Lisbet Rausing and Peter Baldwin.

The title-level DOI for this work is:

[doi:10.7551/mitpress/12075.001.0001](https://doi.org/10.7551/mitpress/12075.001.0001)

## 10 English Higher Education: From a Public Good to a Public Asset

Sveta Milyaeva and Daniel Neyland

### Introduction

The introduction of university tuition fees has been a contentious issue in UK politics for the past decade. As well as igniting wide public debate, it also gave rise to fierce student protests and contributed to a decline in support for the Liberal Democrat Party (Lewis et al. 2010; Phipps 2014; Gil 2015). This social unrest and change in the political landscape are one outcome of the profound transformation of the way English higher education is funded. It used to be regarded as a “public good,” funded through a block grant that allowed English universities to provide education at a very low cost. But through gradual withdrawal of central government funding, the provision of undergraduate university teaching is now financed by tuition fees covered by government loans. As a result, higher education has been transformed from a public good to a public asset.

In this chapter, we focus on the reorganization of government funding for higher education that has enabled this creation of a public asset, what this entails, and the consequences that follow. We analyze this transformation in order to understand the specific features of financialization (Chiappello 2015; Engelen 2008; Van Der Zwan 2014; Davis and Kim 2015) that transform the public sector. The financialization of services that used to be considered the responsibility of the state has attracted little sociological attention and so here we will shed light on the practices of valuation to see how the monetary value of both the public good of higher education and the student loans are performed and accounted for.

The chapter starts by exploring the notion of a public good as understood by economists and how this has been analyzed and critiqued by sociologists and scholars from science and technology studies (STS). We

then focus on recent STS work on assetization to open up a space for considering the creation of public assets. We use the empirical focus of higher education funding in England and its transformation from direct funding to income contingent repayment loans to explore in detail how a public asset is made. We argue that what is particularly important is the creation of an impaired asset through accounting techniques that continuously (re) compose its value. Impairment, we conclude, is what enables the asset to maintain the principal features of a public good even when transformed into a public asset.

### Theorizing a Public Good and a Financial Asset

The provision of public education was first formally classified in economics as a public good by Paul Samuelson (1955), a Nobel Prize laureate. It is said that Samuelson was an economist who “transform[ed] his discipline from one that ruminates about economic issues to one that solves problems” (Weinstein 2009) and was noted for making public good a textbook category. According to economics, public goods have a set of particular characteristics. A public good is non-rivalrous, it is a “collective consumption good,” which means it can be used simultaneously by more than one individual without undermining the quality of the good (i.e., all the individuals using the good would benefit from its consumption in equal measure) (Samuelson 1954). A public good can also be consumed by everyone and not just those who paid for it (i.e., it is non-excludable). As a result of these features, economists suggest private (commercial, market) producers are prevented from benefiting from the provision of public goods to consumers, resulting in their underproduction, prompting governments to enter the marketplace and become the provider of public goods.<sup>1</sup>

Publicly funded universities are routinely praised for delivering economic and social benefits (OECD 2015; Mountford-Zimdars et al. 2013; AAAS 2016) fitting a broader, normative sense of public good. However, transforming higher public education into a governmental asset is a relatively new development. We start by looking more closely at the notion of a public good before paying close attention to the practices of economic *valuation* which we suggest underpin the transformation of such goods into assets.

Callon (1994) rejects the notion that science can be considered a public good through being non-rivalrous and non-excludable. Instead he argues

that scientific knowledge is as rivalrous and excludable as any other good. Science in this view accomplishes its status as a public good through “hybrid collectives” that continuously produce variety that leads to social change (Callon 1994, 407). Alternatively, Mirowski (2011) discusses public goods through the lens of its origin and evolution within neoliberal economics. He suggests that the concept has been contingent on the justification of government military spending changing attitudes to the public funding of scientific knowledge and resulting in “the now-pervasive habit of treating the genesis of scientific knowledge as if it were production of a ‘thing,’ on a par with any other commodity” (Mirowski 2011, 58). Despite these differences in ways of critiquing the notion of public good, one shared premise of these authors is that science attains its status as a public good as a result of overly simplistic assumptions regarding the production of scientific knowledge.

Recently the range of public goods discussed has been broadened to include sustainability regulations and government cultural policies (Doganova and Laurent 2016; Pallesen 2016; O’Brien 2016). Here variation in public goods is linked together not only by the specific public nature of these goods but also by the focus of analysis, namely the practices of economic valuation (Roscoe and Townley 2016). The process of valuation is of an instrumental importance to these accounts of negotiating the worth of public goods, and this choice of an analytical tool is grounded in the turn of sociological attention to economic value and its formation (Stark 2011; Helgesson and Muniesa 2013; Kornberger et al. 2015).

Although this move to study the practices of valuation that underpin the constitution of public goods is appealing, what of the move to transform such goods into assets? The empirical case considered here is how English higher education funding underwent a transformation from direct public financing (a public good) to funding through the provision of loans to students; since loans are considered to be *financial* assets, here we focus on this type of asset being fully aware that an asset could be anything that enables capitalization. A financial asset is a category of financial accounting that is defined as “a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity” (IASB 2015, 220). Accounting for this resource thus requires stating a financial position that includes not just its costs but also the likelihood of accruing future financial benefits from an asset. In this way, financial assets, as an income-generating resource, produce capital, and can be viewed as

vehicles for capitalization. The latter is regarded as “the present value of a future stream of earnings: it tells us how much a capitalist would be prepared to pay *now* to receive a flow of money *later*” (Nitzan and Bichler 2009, 153, emphasis in original).

Research on the practices of valuation can be applied to these forms of assets in a similar manner to the aforementioned treatment of goods. Hence emerging STS research on the practices of valuation of future income streams—or assetization—focuses on practices that “settle” the value of “unsettled” assets, be it a financial value that accommodates moral and political values (Ortiz 2013) or a business model as an assetization device (Doganova and Muniesa 2015). One of the most immediate and primary practices are accountancy techniques, or “the miracles of bookkeeping” (Quinn 2017). Placing accounting practices at the heart of constructing profits and losses (or assets and expenses) and stressing that “‘profits’ are, quite literally, constructed by accountants,” Hatherly et al. (2008) emphasize the importance of up-close study of financial reporting in the making (e.g., how accounting and bookkeeping training affects practices of classification and concept-application). This importance is further emphasized by Menniken and Millo (2016) in their study of the development of UK impairment rules for asset accounting wherein the authors demonstrate how such rules are rooted in different forms of valuation that result in the “hybridization” of managerial knowledge and financial economics. Intangible asset accounting is also responsible for theorizing business entities (e.g., a firm) (Birch and Tyfield 2013; Birch 2017).

Collectively, these studies of goods and assets share an analytical focus on valuation practices that moves away from treating value as a stable, objective, exogenous entity that exists independent of practices of valuation. Instead, following Dewey (1915, 1939), Muniesa (2012, 28, 24) suggests a “pragmatics of valuation in finance,” that assumes no “distance between value and its measure.” In this way, financial value is a *practice* (an act) and financial valuation involves double acts of capitalization involving both “the appraisal of the characteristics of something in terms of its value and the setting that thing for the purpose of making it valuable” (Muniesa 2011, 31).

How, then, might we take on this focus on valuation practices, accounting, and double acts of capitalization in making sense of the switch from public goods to public assets in English higher education? We suggest that one means to do this is provided by an expansion of the pragmatics of

valuation. Of crucial importance here is how acts of valuation relate to what is valued. To understand the process of assetization it is important to see value as action, a social practice, and process of doing (Muniesa 2012; Birch 2017) since “value both as an idea and as existence depends upon judgement on what to do” (Dewey 1915, cited in Muniesa 2012, 26). But what is also important, we argue, is to pay attention to what to do with what—the “thing” that has been made valuable that appears in the theoretical account of valuation (Muniesa 2012; Birch 2016).

Here we can return to Dewey (1937). He rigorously analyzed how a matter “is subjected to controlled inquiry,” how judgments are made about endlessly diverse subjects. Dewey (1937, 102) argued that in making a judgment about something—in our case committing an act of valuation—“formal conceptions arise out of the ordinary transactions; they are not imposed upon [the transactions] from on high or from any external and *a priori* source.” This happens through inquiry that turns “indeterminate situations” (what is the value of something?) into “determinate” situations (the value is this) and such transformation is not just a matter of doubt, a mental task. “The doubtful [does not entirely] belong to us,” it belongs to the indeterminate situation (which involves the composition of the act of valuation, but also the matter that is subjected to the valuation). It becomes determinate or conceptualized “only by operations which...modify *existing* conditions” (Dewey 1937, 106, emphasis added). The matter under valuation cannot be disregarded, it is central to the valuation and, subsequently, its value. In the case of public assets what we need to understand, then, is the specific acts through which accounting becomes a basis for constituting in our case higher education and associated student loans as an asset. In treating the transformation of public goods into public assets as a valuation practice, we thus need to account for the *kinds* of entities under assessment—the form that goods, commodities, and assets take—and the valuation practices that accomplish those forms (see Braun, this volume).

### English Higher Education and Its Funding

How does a public good become a public asset? In what way is the anomalous nature of a public good consequential to the form of asset the good becomes? We address these questions by looking at the ways in which conversion from public good to public asset is achieved while still maintaining

the characteristics of education as a public good provided through its non-excludable and non-rivalrous characteristics. The aim of what follows next is not to provide a detailed history of the relationship between the state and universities in England, but rather to signpost the changing logic of this relationship in terms of its evolution from how higher education became a public good to changes in higher education that enabled its gradual move toward being accounted for as an asset.

### **English Higher Education—Becoming a Public Good**

The record of state involvement in higher education in England could be said to begin in the nineteenth century. Prior to this period of time, the two major centers—Oxford and Cambridge—were independent wealthy entities reliant on endowments with no financial support from the state. The nineteenth century saw the state's involvement in shaping English higher education through its legal interventions in Oxbridge which aimed to reorient these institutions toward national education, as part of a government move to expand university provision (Vernon 2004).

The direct and centrally coordinated financial support of higher education institutions through block grants—the initial transformation of university education into a public good—began with the establishment of the University Grants Committee (UGC) in 1919. The UGC was accountable to the Treasury until 1963 and then moved under the jurisdiction of the Department of Education and Science.<sup>2</sup> Until 1946, the UGC's role was to guide the allocation of "deficiency grants" designed to help financially when required (Shattock and Berdahl 1984, 472). However, in 1946 its purpose was reassessed with the view that "the time had come when the Government was bound to assure itself that somewhere in the University system provision is made for every field of scholarship or science which is necessary to the *national interest*" (Hetherington 1954, cited in Owen 1980, 264, emphasis added). The Education Act of 1962 made higher education free by requiring local authorities (but effectively the Treasury) to pay university fees for students,<sup>3</sup> while the Robbins Report of 1963 introduced the idea of higher education as a citizens' right, thus articulating the concept of higher education as a public good. The government financing of higher education grew from 33.6 percent of all income received by universities (including endowments and fees) in 1921 to 76.4 percent in 1973 (Owen 1985, 46–47).

The steady increase in public financing of universities became problematic with the expansion of higher education. There were no new universities established between 1969 and 1992 in the UK, although higher education participation was growing steadily (Collini 2012).<sup>4</sup> This changed with government reform through the 1988 Education Reform Act and the 1992 Further and Higher Education Act. The reform reclassified polytechnics into universities and triggered the expansion of these new universities; as a result, the higher education participation rate in England rose from 15 percent in 1988 to 47 percent in 2014 (McGettigan 2013; UK Government 2015b). New legislation has also reformed the funding bodies: the University Grants Committee was replaced by the Universities Funding Council in 1989, and in 1992 the Higher Education Funding Council for England (HEFCE) was formed to oversee funding of English universities.<sup>5</sup>

The post-1992 rise in student numbers and the expansion of universities was a tipping point that led to a rethinking of higher education as a public good funded by tax revenues. Yet doubts regarding the sustainability of such funding had already set in during the late 1970s and early 1980s, as “the virtual zero growth of GNP [gross national product] has meant that increased education expenditure in real terms can only come at the expense of real reductions elsewhere” (Craven et al 1983, 579). Along with growing funding in the 1960s and 1970s came risk: exposure to government cuts resulting from economic fluctuations was the corollary of universities’ dependence on public money (Anderson 2016).

### **The Introduction and Reclassification of Student Loans**

Growing concerns over the sustainability of public financing of university teaching prompted the first introduction of student loans in 1990. Kenneth Baker (1986, cited in Wilson 1997, 12), at the time the Secretary of State for Education, reasoned that “student numbers in higher education are at an all-time record level [and] we want still more to benefit. ... But in doing so we must have regard to the claims on national resources. That is why I think that the time is ripe to investigate with an open mind all possible forms and sources of support.” Limited national resources became a basis for justifying the introduction of alternative sources of support for students—in the form of loans. However, these changes in the government’s vision of how higher education ought to be financed did not start with the introduction of tuition fees payable by students to cover the costs of courses (that would



come later). Making students pay expenses previously settled by government was initially implemented through the introduction of loans to cover students' costs of living (rather than the cost of courses) and these loans were designed to make up the difference that resulted from a freeze in the annual increase of student maintenance grants (Barr 1989).<sup>6</sup>

Through the Education (Student Loans) Act of 1990 (UK Government 1990) maintenance loans were introduced. These took the form of fixed-term mortgage-style loans with sixty equal monthly payments that had to be made once the borrower's income was over 85 percent of national average earnings. Once this threshold was met, monthly repayments ensued, depending on the size of the outstanding balance rather than any subsequent fluctuations in the loanee's salary. The loans were implemented in September 1990 and the Student Loan Company (SLC) was established to handle the administration of these and all subsequent loans (Hillman 2013).

However, this solution to the rising cost of higher education was not viewed entirely as a success. Among other concerns with higher education spending, was the so-called classification problem (Barr and Crawford 1998) of how to list (or classify) loans on government account books. Inquiring into how higher education funding should be organized in the UK, the Dearing Report (1997) made a number of recommendations. The report is mainly known in the UK for its recommendation to introduce a tuition fee to cover 25 percent of the cost of tuition. However, it also contained a seemingly obscure and technical argument. Recommendation 80 urged the government to consider adopting a different method to account for or classify student loans. The report advised: "Do not treat the repayable part of loans in the same way as grants to students." The maintenance loans had been classified as public spending on government accounts. This paid no recognition to the fact that some of these loans would be repaid in the future. The problem would seem to be urgent, but solvable: "The Report is spot-on in saying that this problem needs to be fixed, and fixed fast. If not resolved, it is terminal. It is true that loans will bring in additional resources from around 2020—but you cannot revive a corpse. Resolution, in contrast, will release a 'pot of gold' of over £1 billion, *immediately* and *every year*" (Barr and Crawford 1998, 75, emphasis in original).

This act of reclassification of student loans needed to be accommodated within the accounting framework used by the UK government. At the time of the Dearing Report, UK government accounting reform was in full swing.

It started in 1993 in order to account for the complex nature of government transactions. Founded in 1866, government accounting practice had been calculating profits and losses on a cash basis, focusing on cash flows in real time. In this way, money was accounted for when it was received or paid out, whereas “accruals accounts record costs and revenues as they are respectively incurred and earned. By contrast, cash accounting records cash payments and receipts when they are made” (Likierman 1995, 563).

Moving from cash accounting to the private sector technique of accruals accounting meant that the books showed government performance during a financial year, rather than merely recording cash flows. Most importantly, it provided a tool to account for student loans by classifying them as “financial transactions” instead of an outright expenditure (which was how the student grants had been accounted for). From the financial year of 2001–02 the Department for Education and Skills (the Treasury’s responsibility) was fully reliant on resource (accruals) accounting (RA) (Heald 2005).

### **The End of Direct Funding of English Undergraduate Teaching and the Income Contingent Repayment (ICR) Loans**

Facilitated by the UK government accounting reform that enabled the reclassification of student loans, the transformation of English higher education from a public good continued with what Hillman (2013, 259) called “the triumph of tuition loans.” But these triumphant loans introduced in 1998 had a specific nature that differed from their predecessors. Whereas loans launched in 1990 were fixed-term mortgage-style loans, from 1998 they were *income-contingent repayment (ICR) loans* covering living costs only. As with mortgage style loans, repayments would start only once a graduate’s income was over a certain threshold (although this changed from 85 percent of national average earnings to a threshold of minimum earnings of £10,000 a year rising to £15,000 in 2003). What was new was income contingency. This meant that monthly repayments would be linked to a graduate’s salary—9 percent on total earnings—rather than the size of the outstanding debt. Moreover, outstanding loans would be written off after a number of years.

Further changes followed. To cover “deficiencies in the university estate [of] £11bn” (Dearing 2004), tuition fees rose to £3,000 a year in 2006. This reform caused controversy in parliament, where the Higher Education Bill passed its second reading by only 5 votes (UK Parliament 2004). But,

equally important, up-front tuition fees that had been in place since 1998 were now to be covered by the ICR loans. Here is how Nicholas Barr, a key figure in the 2006 reform (Barr and Crawford 2003), describes the events:

The introduction of small mortgage type loans in 1990 was a response to fiscal pressures from the growing system. The 1997 Dearing Report said, in effect: “Loans are the right way to go, but income contingent loans, not mortgage loans.” This was Iain Crawford’s and my great victory. Dearing had a rational strategy of income contingent loans, and fees of £1,000 covered by loans. That was a strategy—more cautious than I wanted, but a genuine stepping-stone. The government then subverted the strategy by introducing fees but without loans to cover them. The next round of reform was 2006, which was the one time that the government stuck to its strategy, because we had an education minister, Charles Clark, who was bright enough to understand the idea of a strategy and sufficiently a political big beast to be able to protect it from cherry-picking. So, the 2006 reforms included income contingent loans to cover living costs, variable fees of up to £3,000 fully covered by income contingent loans, and pro-access policies earlier in the system. That was a proper strategy. (Barr interview)

The strategy of ICR loans was designed to maintain higher education as a public good: resolving *problems of access* and *problems of fairness*. The problem of access posed the question of how to widen higher participation rates, given that the cost of a university degree is high and the return is not guaranteed:

Suppose that you borrow to buy a house and the repayments are £500 a month. If your income falls you can sell the house and repay the loan. If you borrow to finance a degree and the repayments are £500 a month, the risk you take is that if your income falls, the repayments will be an intolerable burden. So what you are going to do? You are not going to borrow. Or you are not going to borrow enough. And this is Milton Friedman writing in 1955.... The income contingent formula protects the borrower against low income this month, forgiveness after thirty years protects him/her from low life-time income. Thus the argument is the risk you face is contained. (Barr interview)

Nicholas Barr refers to the work of Milton Friedman (1955) here as a means to introduce the economic logic of ICR loans: that the policy points to a way of solving a market imperfection that results in underinvestment in human capital. The source of the imperfection is tied to mortgage-style “fixed money loans” that have to work without collateral—an asset that could be retained to reimburse the lender if the borrower cannot continue with repayments. The absence of collateral means the loans are risky to the (private) lender who might compensate the risk by high interest, but that

would deter the borrower. The mortgage style terms of the loan are also risky to the borrower, discouraged by fixed payments regardless of her future income. The lender could be encouraged to invest by “buy[ing] a share in an individual’s earning prospects,” but administering such investment is very costly in terms of monitoring the location and income of borrowers as well as the long term of the loans.<sup>7</sup> The resulting market imperfection gives grounds for government to become the issuer of income contingent loans.

The second problem that ICR loans are designed to solve is the problem of fairness concisely captured by former Conservative Minister for Universities and Science David Willetts (2015, 14): “Even though there are public benefits from a graduate going into a very-well-paid job, it is not clear that on its own it justifies less affluent tax-payers subsidising it. Repayments by graduates who enjoy earnings above the average as a result of their university education appears fair—otherwise lower income non-graduate tax payers would be meeting the cost of a university education.” Solving these two problems—of access and of fairness—through ICR loans resulted in the state covering only for a proportion of the costs of higher education provision, in particular when loans are not repaid. This public subsidy has continued and enabled English higher education to (at least nominally) retain its status as a public good.

However, the financial crisis of 2008 and the emergence of austerity measures in UK politics have led to further change. The Browne Report (2010) recommended a course of action to optimize the financing of the provision of higher education in England. As a result the UK coalition government of the Conservatives and Liberal Democrats initiated a reform in how it financed higher education in England. If the tuition fees introduced in 1998 and raised in 2006 had been providing resources in addition to what English universities were receiving (in the form of the direct block grant for teaching from the government), the increase to £9,000 a year in tuition fees for full-time UK and EU students was set to replace direct government funding in “low-cost” subjects and a significant reduction of government funding in “high-cost” subjects.<sup>8</sup>

The existing income contingent repayment (ICR) loans were modified to fit the purpose of the reform. The salary threshold at which repayments would kick in was raised to £21,000, and the write-off period was extended to thirty years (Cartwright 2016). Interest paid on outstanding loans taken after September 2012 varied between the Retail Price Index (RPI, when

income was below the threshold) and RPI plus 3 percent (while students were studying, but also once income is £41,000 or more, rising to 4.6 percent in 2016). For pre-2012 loans the interest rate was not changed (SLC 2016).<sup>9</sup> Andrew McGettigan, an expert on UK higher education and its financing, explains:

There are good arguments about why you do have a real interest rate on student loans, because then you are not subsidising wealthy people. Because the only people who ever likely to pay any of the interest rather than principal on these student loans are very high earners. So if you have zero interest rate, you are basically letting very high earners get out of the system quicker. ... Most people in finance get this wrong—they think that the cost of student loans is the interest, and yet this cannot be, because the income contingent structure [of the loans]. The reason why the interest rate—while people are studying—is RPI plus 3 percent is to stop people from wealthy background having a subsidised loans for three years while they are studying, invest it somewhere else, then pay it off as soon as they graduate. (McGettigan interview)

Since 2012–13, the size of the issued income contingent repayment loans has surged, prompted by the near tripling of tuition fees (from just over £3,000 to £9,000), mostly covered by the ICR loans, and lifting of the cap on the number of high-performing students a university can enroll. In 2015–16 alone the amount lent to students was £11.8bn (rising from £6bn in 2011–12), with total outstanding balance being £76.3bn (compared with £39.6bn in 2011–12; Cartwright 2016).

### **Income Contingent Repayment (ICR) Loans as an Impaired Public Asset**

Given the scale of lending, and the fact that the loans have been reclassified on the government books as a financial asset that produces future revenues rather than a direct and irredeemable cost, the question of crucial importance is how to *value* repayments to government made in thirty years? When a sum of money is lent in a conventional way, fixed-period repayments start coming in immediately after borrowing and, given the interest paid on the borrowed amount, bigger repayments are made by the borrower in the early years of the loan. This certainty makes it quite straightforward to know the full sum borrowed together with interest and when the outstanding balance will be cleared. However, the income contingent nature of student loan repayments has a corollary. An ICR loan is a long-term (thirty-year) asset, with most of the repayments accruing in the future (once, and if, the graduate's income rises). Consider, for instance, an ICR loan of £40,351

a UK student took out in 2012 to cover their tuition fees and maintenance expenses for three years of study. The highest growth of their real earnings and thus highest repayments are estimated to be coming in 2027–29 (Shephard 2013, 3), while a certain proportion of the loans will not be repaid in full, or at all, if the graduate's income is never above the threshold. In other words, the financial asset will not generate value equal to what is spent on issuing the loans today or, using economic terms, the face value of the asset is not the same as its fair value, therefore the asset is impaired.

Since the impairment is the value that is never going to be returned to government, it is viewed as a cost (i.e., public spending on university teaching in England). As such it has various elements to cover for, which reflect not only nonpayments per se (due to death, disability, and income below the threshold) but also the cost of money used to issue the ICR loans (the interest rate subsidy). As a cost, the impairment needs to be budgeted for today. Yet how should this sum be calculated of what will not be repaid in the future? Keeping in mind that student loans are the biggest financial asset on the government books—it amounted to £76bn in 2016 (UK Government 2016)—it makes the techniques of valuation that will account for ICR loans, specifically for the size of the asset's impairment, of particular importance: “The accounting has changed several times with student loans. It's one of the most dynamic aspects of accounting.... Government is experimenting here; it's doing something that has not really been done before [because] there is no commercial expertise to draw on, there is no preexistent databases, so you need a good accounting system” (McGettigan interview).

A discount rate is a measure instrumental in resource accounting (the initial valuation practice that made it possible to consider student loans as an asset). A discount rate can accommodate time difference in the ICR loans' costs and revenues, and can thus be used to determine the size of impairment of ICR student loans. The impairment is called the Resource Accounting and Budgeting (RAB) charge by the UK government. To calculate this charge (or to put a figure on the government commitment to cover for what will not be returned by graduates) is a twofold task. Since the impairment is the difference in two values (face and fair), it should be found by subtraction that is only possible once a fair value, or net present value (NPV), of the future incoming payments is calculated (UK Government 2016a). For instance, if a graduate who took a loan in 2017 is forecast to pay £1,000 in 2027, how much is this worth now? This valuation is done by discounting

payment forecasts back to the time of issuing the loans. This involves applying the discount rate produced by the Treasury department with the advice of the Financial Reporting Advisory Board (FRAB). The current discount rate that is applied to repayment forecasts is the Retail Price Index (RPI) plus 0.7 percent. So the graduate's payment of £1,000 in 2027 is worth £933 today:

$$£933 = \frac{£1000}{(1 + 0.007)^{10[\text{years}]}}$$

But this calculation is for illustration only. The precise monetary value is indicated “as a proportion of the initial loan outlay” and currently is between 41 percent and 52 percent (with an RPI higher than 1), which could be viewed as for each £1 lent the return is 48–59 pence (UK Government 2019). Since its first introduction as part of the funding policy in 2011, the RAB charge proved to be rather volatile. Initially estimated at between 28 percent and 30 percent, by the beginning of 2014 it had risen to 45 percent. Gavan Conlon, a partner in London-based economic policy consultancy that undertook RAB charge modeling, reflects on the change:

Initially, the Browne [Review] suggested that the RAB charge would be unchanged, which is absolutely nonsensical. Then, over the next three to four years it was revised from 30 percent to 32 percent to 35 percent to 40 percent and it finished at 45 percent. The reason why the RAB charge estimate increased to approximately 45 percent was because it is vastly dependent on both the size of the loans offered to students (which increased sharply) but also graduate earning growth (which was much lower than expected). (Conlon interview)

In 2014, the Office for Budget Responsibility (OBR, an independent examiner of the UK public finances) lowered its forecast of loan repayments due to the low “earnings growth for less well-paid graduates.” Coupled with higher tuition fees that pushed up the size of the loans, the rise of the RAB charge caused controversy as it would seem that the government “has saved little or no public money by trebling fees to £9,000 and scrapping direct [teaching] grant” (Morgan 2014).

In March 2015, the Institute for Fiscal Studies (IFS) issued a report where it calculated the way the RAB charge could be lower if the discount rate was RPI+1.1 percent rather than RPI+2.2 percent (the discount rate used in RAB calculation at the time) arguing that “the assumption made about the discount rate is a key driver of this debate”: “What is clear from our analysis is that the discount rate matters hugely when estimating the cost of higher education. In fact, it matters more than plausible changes to the rate of real

earnings growth. Reducing the discount rate means valuing future repayments more highly; hence the estimated loan subsidy (and the RAB charge) falls” (Britton and Crawford 2015).

A change in assumptions regarding future repayments of the loans had been called for since 2012, when a letter in the *Financial Times* argued that if the discount rate were linked to the actual cost of government borrowing, it would be “sufficient to completely eliminate the predicted losses” (Leunig and Shephard 2012). Indeed, the discount rate that the government used in their RAB calculation was set in 2006 and bore no relation to its cost of borrowing:

If you are a commercial operator, or a company, you set [the discount rate] first in relation to your cost of borrowing, and also expectation of inflation, and alternative investment opportunities, and you set your discount rate at your safest investment opportunity [but] this was never set in relation to cost of borrowing [and] we don’t know which gilts [bonds issued by the government] have paid for student loans. (McGettigan interview)

In December 2015, the Treasury announced that “the real financial instrument discount rate to be applied at 31 March 2016 is 0.7 [and] the rate as applied to flows expressed in current prices is  $RPI+0.7$ , where the financial instrument is index linked to RPI” (UK Government 2015a). The reduction of the discount rate drove the RAB charge from 45 percent down to 20–25 percent and “by the stroke of the pen all those estimates, all the figures have become happy figures”:

It undercuts the Labour party, their whole strategy gets undermined, because they’re attacking the RAB charge, suddenly the RAB charge drops 20 percent—nothing to attack. Strategically, politically it’s brilliant and obvious. At the same time it changes the budgeting for the Department for Business and Innovation, and for the Department for Education now that got responsible for student loans—they now don’t have a budget crisis. (McGettigan interview)

The “budget crisis” here relates to the Departmental Expenditure Limit (DEL) of the department responsible for HE (it used to be the Department for Business, Innovation and Skills, or BIS). Each year the Treasury allocates a certain amount of budget to cover the RAB charge for the new loans issued that year. At the same time the existing loans are revalued, and if their value is less than budgeted for then the department covers the difference from a “stock charge,” which is part of the RAB charge within their DEL. However, since the RAB charge was growing quickly and steadily, and Department budgets until the end of 2015 were set in 2010, the BIS department needed



more money to cover for it. As a result, the accounting rules changed in 2013 to provide additional funds for unexpected volatility—Annually Managed Expenditure (AME). This has to be “serviced.” The Treasury charges BIS “a thirtieth of it every year for 30 years, it’s like an internal loan but within your own budget,” which needs to be paid with real money and “this payment goes in cash from their budget.” The “lower discount rate... reduce[d] the spread between the target impairment and the current RAB charge, which... then translate[d] into a smaller spillover into other expenditure reductions” (McGettigan interview; McGettigan 2015a, 41).

Given the volatility in size of the impairment that is, arguably, arbitrarily managed through the discount rate, as well as the contingent nature of the rules governing budget that covers for the asset’s impairment, the technique by which the ICR loans are accounted for is highly consequential. But, as Nick Hillman pointed out, “there [were] a number of reasons of why the RAB charge fell, it was not just the discount rate” (Hillman interview). He explained during a hearing in the House of Lords Select Committee on Economic Affairs: “The system has some flex built into it: you can change the terms and conditions of the loans” (House of Lords 2016). Subsequently Philippa Lloyd, the director general of higher and further education at the Department for Education (responsible for the loans since July 2016), was asked whether the question of higher education funding is gradually becoming a question of “managing the loan book.” She replied, “You may decide to adjust levers in order to keep it [the higher education funding policy] on a sustainable footing” (House of Lords 2016). For example, one of the “levers” was the earning threshold of £21,000 beyond which graduates would have to start repaying loans. This was controversially frozen for five years (2015–2020) despite a promise to change it according to national average earnings (Elgot 2016). Managing the loan book thus involves steering higher education funding in certain directions and, as McGettigan (2015a, 43) argues, “is pushing policymakers towards certain solutions, which may not be in the general interest of universities and colleges or students.”

## Conclusion

In this chapter, we have explored the ways in which the reorganization of government funding for English higher education has created a public asset. In doing so, we have steered away from more general public and

academic debates on English higher education focused on marketization (Molesworth et al. 2011), neoliberalization (Canaan and Shumar 2008), or financialization (Holmwood 2014). Instead, we oriented notions of financialization (Chiapello 2015; Engelen 2008; Van Der Zwan 2014; Davis and Kim 2015) toward problems tackled within the public sector and drew our inspiration from studies of the practices of economic valuation in public goods (Roscoe and Townley 2016; Doganova and Laurent 2016; Pallesen 2016; O'Brien 2016) and through forms of capitalization (Muniesa 2012) and assetization (Birch 2017). From here, we suggested an expansion of pragmatics of valuation by returning to Dewey (1937) and paying close attention to what is done to what in the accomplishment of assets. Although this has required a detailed study of the mundane details of the seemingly technical processes of assetization, we suggest this is immensely important given the long-lasting and highly political consequences of these processes that indeed give the new meaning to “the role and subjectivity ... of public service users and providers” (Mennicken and Muniesa 2017).

Our empirical focus drew together complex successive actions through which English higher education and student loans came to occupy a particular asset form (see Birch and Muniesa, this volume). This focus on succession enables us to move away from any sense that these policies followed a single logic or intent. As Nick Hillman, the former chief of staff and special adviser for the Department for Business, Innovation and Skills once put it, “The fact that higher fees could make higher education more like a regulated market, with students coming to resemble consumers, was a bonus, but it was not the primary purpose” (Hillman 2016, 338–339). In this way, interventions in English higher education were successive in the sense that each basis for putting forward a means to resolve an issue built on previous attempts at resolution and on-going concerns raised regarding the form of resolution.

What began, then, as an articulated concern over the sustainability of public financing of university teaching came to be understood as resolvable through mortgage style fixed repayment loans. Yet the loans appeared to trigger a “classification problem” (Barr and Crawford 1998)—unlike other forms of government spending, these were not a straightforward cost but an initial outlay that would at some point bring in a return. The classification problem coincided with governmental accounting reform and the switch from cash accounting to accrual or resource accounting that took

place over several years of UK government action. At the same time, concerns were raised regarding the fixed thresholds and fixed repayment terms of the loans, which seemed to undermine government policy and universities' hopes to ensure fair access to higher education. The public good was getting in the way of the financial asset.

Issuing Income Contingent Repayment (ICR) loans became a means to apparently repair this deficiency. With repayments indexed to fluctuations in salary and debts canceled after a fixed period, the public good would be transformed into an asset. Yet this also made it more challenging to value the emerging asset, as the size of repayments, length of term and even the possibility of any payments at all, were rendered less secure. Although various accounting techniques (such as discount rates) could be used to calculate a present value for these future repayment-based income streams, these values were below the amount lent to students. Accounting techniques made the loans appear as a significant cost to government, especially as student numbers and then loan amounts increased significantly in a short space of time, particularly when tuition fees were tripled. Although a RAB charge could be used to cover this shortfall, economists made clear in their discussion of the discount rate and the necessity to lower it: "note that nothing *'real'* has changed. No additional repayments are being made; we have simply changed how highly we *value* these future repayments in the present" (Britton and Crawford 2015, emphasis added).

Our close focus on the pragmatics of valuation draws attention to what is done to what in the constitution of this peculiar impaired asset. Yet its impairment appears to be an inescapable feature of the type of asset it became. Moreover, ultimately, the tenacious impairment would seem to become so looming that the process of turning the public good into an asset has been reversed. In December 2018, the UK Office for National Statistics ruled that the way income contingent student loans are accounted for, specifically the RAB charge, is to be changed and the loans are to be "reclassified as public spending" (Coughlan 2018). Student loans proved to be not just any asset, available to be made sense of through standard techniques of accounting. Impairment results from the continuing need of the UK government to cover the costs of loans' income contingency that provides the current UK government basis for dealing with fair access. In this way, impairment fundamentally affected the ability of higher education to move from a public good to an asset that retains (at least nominally) its goodness: a public asset.

## Notes

1. We are aware of the fact that the concept of higher education as a (nonexcludable) public good could be criticized given that it is different from compulsory primary and secondary education as higher education is “a matter of choice” (Barr 2012, 491). However, here we term English higher education a public good because until 2012 for the most part it had been financed through general taxation.
2. The Treasury as well as the Board of Education had been providing some financial assistance to universities in the form of grants since 1907 (Owen 1980). Also, the UGC’s influence on higher education in England and the UK went beyond direct allocation of financial support, but given the focus of the essay we discuss its financial activity.
3. Granted that the tuition fee payments by local authorities “were partially means-tested until the late 1970s” (Hillman 2013, 251).
4. With the exception of the University College of Buckingham, which was founded in 1976 as an independent (not financed by the state) higher education institution (Shattock 1994).
5. The 1992 Further and Higher Education (Scotland) Act made separate HE funding provisions for Scotland.
6. By 1989 with the introduction of the Research Assessment Exercises (RAEs had been initiated by the UGC in 1985) the financial provisions (block grants) for teaching and research were set apart and, following the change from the UGC to HEFCE, the system of financial provision for higher education that had been formed through the establishment of the UGC as a main body providing vision for as well as management of university funding, ceased to exist (Shattock 1994).
7. Notably, the unusual nature of the loans is said to be the reason the agency that currently administers UK ICR loans, the Student Loan Company—owned by the UK government and devolved administrations—is called a company. According to Willetts (2015, 18) the name was initially chosen in “the expectation that the clearing banks would co-own it and lend the funds [but] they backed out because the scheme was so different from their usual commercial lending.”
8. The “low-cost” subjects are Arts and Humanities, Mathematics, Law, and Business, whereas “high-cost” subjects are Clinical Medicine, Science, Engineering, and Technology. McGettigan (2013, 27) shows how the funding for full-time undergraduate study per student fell from £3,898 and £2,709 for “low-cost” subjects in 2011–12 to no government funding in 2012–13, whereas the funding for “high-cost” subjects was significantly reduced—from £14,601 and £5,484 to £10,000 and £1,500, respectively.
9. Although there was a proposal to increase the interest rates for pre-2012 loans in order to make the loan book attractive for private purchasers in government asset sell-off (Chakraborty 2013; McGettigan 2015b).

### List of Interviewees

Nicholas Barr, November 25, 2016. Skype interview.

Gavan Conlon, July 28, 2016. London.

Nicholas Hillman, November 30, 2016. London.

Andrew McGettigan, December 8, 2016. London.

### References

AAAS (American Academy of Arts and Sciences). 2016. *Public Research Universities: Serving the Public Good*, [https://www.amacad.org/multimedia/pdfs/publications/researchpapersmonographs/PublicResearchUniv\\_PublicGood.pdf](https://www.amacad.org/multimedia/pdfs/publications/researchpapersmonographs/PublicResearchUniv_PublicGood.pdf).

Anderson, R. 2016. University Fees in Historical Perspective. *History & Policy*. Policy Paper, February 8, 2016, <http://www.historyandpolicy.org/policy-papers/papers/university-fees-in-historical-perspective>.

Barr, N. 1989. The White Paper on Student Loans. *Journal of Social Policy* 18 (3): 409–17.

Barr, N. 2012. The Higher Education White Paper: The Good, the Bad, the Unspeakable—and the Next White Paper. *Social Policy & Administration* 46 (5): 483–508.

Barr, N., and Crawford, I. 1998. The Dearing Report and the Government's Response: A Critique. *Political Quarterly* 69 (1): 72–84.

Barr, N., and Crawford, I. 2003. Myth or Magic? *Guardian* December 2, 2003, <https://www.theguardian.com/education/2003/dec/02/highereducation.tuitionfees>.

BBC News. 2012. Senior Lib Dems Apologise over Tuition Fees Pledge, <http://www.bbc.co.uk/news/uk-politics-19646731>.

BBC News. 2016. Lib Dems Blame General Election Defeat on “Perfect Storm,” <http://www.bbc.co.uk/news/uk-politics-35615285>.

Birch, K. 2017. Rethinking Value in the Bio-economy: Finance, Assetization, and the Management of Value. *Science, Technology, & Human Values* 42 (3): 460–490.

Birch, K., and Tyfield, D. 2013. Theorizing the Bioeconomy: Biovalue, Biocapital, Bioeconomics or ... What? *Science, Technology, & Human Values* 38 (3): 299–327.

Britton, J., and Crawford, C. 2015. *There's More to Higher Education Funding Than the RAB Charge*. Institute for Fiscal Studies, <https://www.ifs.org.uk/publications/7673>.

Callon, M. 1994. Is Science a Public Good? *Science, Technology, & Human Values* 19 (4): 395–424.

Canaan, J., and Shumar, W., eds. 2008. *Structure and Agency in the Neoliberal University*. Abingdon: Taylor & Francis.

Cartwright, D. 2016. *Student Loans in England: Financial Year 2015–2016. Statistical First Release*. Student Loans Company (SLC), June 16, 2016, <http://www.slc.co.uk/media/7594/slcsfr012016.pdf>.

Chakraborty, A. 2013. Raise Interest Rates on Old Student Loans, Secret Report Proposes. *Guardian*, June 13, 2013, <https://www.theguardian.com/money/2013/jun/13/raise-interest-rate-student-loans-secret-report>.

Chiapello, E. 2015. Financialisation of Valuation. *Human Studies* 38 (1): 13–35.

Collini, S. 2012. *What Are Universities For?* London: Penguin Books.

Coughlan, S. 2018. Student Loan Ruling Adds £12bn to Government Borrowing. *BBC News*, December 17, 2018, <https://www.bbc.co.uk/news/education-46591500>.

Craven, B., Dick, B., and Wood, B. 1983. Resource Allocation in Higher Education in Britain. *Higher Education* 12 (5): 579–589.

Davis, G., and Kim, S. 2015. Financialization of the Economy. *Annual Review of Sociology* 41: 203–221.

Dearing, R. 1997. *Higher Education in the Learning Society*. London: Her Majesty's Stationery Office 1997, <http://www.educationengland.org.uk/documents/dearing1997/dearing1997.html>.

Dearing, R. 2004. We Will All Benefit from Tuition Fees. *Guardian*, January 8, 2004, <https://www.theguardian.com/politics/2004/jan/08/publicservices.studentpolitics>.

Dewey, J. 1937. *Logic—The Theory of Inquiry*. Carbondale: Southern Illinois University Press.

Doganova, L., and Laurent, B. 2016. Keeping Things Different: Coexistence within European Markets for Cleantech and Biofuels. *Journal of Cultural Economy* 9 (2): 141–156.

Doganova, L., and Muniesa, F. 2015. Capitalization Devices: Business Models and the Renewal of Markets. In *Making Things Valuable*, edited by M. Kornberger, L. Justesen, A. Koed Madsen, and J. Mouritsen, 109–125. Oxford: Oxford University Press.

Elgot, J. 2016. Student Loans: Fight over “Disgraceful” Freeze on Income Threshold. *Guardian*, November 22, 2016, <https://www.theguardian.com/money/2016/nov/22/student-loans-fight-over-disgraceful-freeze-on-income-threshold>.

Engelen, E. 2008. The Case for Financialization. *Competition & Change* 12 (2): 111–119.

Friedman, M. 1955. The Role of Government in Education. In *Economics and the Public Interest*, edited by R. Solo. New Brunswick, NJ: Rutgers University Press.

Gil, N. 2015. LSE Takes Legal Action to Evict Occupying Student Protesters. *Guardian*, April 30, 2015, <https://www.theguardian.com/world/2015/apr/30/lse-takes-legal-action-to-evict-occupying-student-protesters>.

Hatherly, D., Leung, D., and MacKenzie, D. 2008. The Finitist Accountant. In *Living in a Material World*, edited by T. Pinch and R. Swedberg, 131–160. Cambridge, MA: MIT Press.

Heald, D. 2005. The Implementation of Resource Accounting in UK Central Government. *Financial Accountability & Management* 21 (2): 163–189.

Helgesson, C.-F., Lee, F., and Lindén, L. 2016. Valuations of Experimental Designs in Proteomic Biomarker Experiments and Traditional randomized Controlled Trials. *Journal of Cultural Economy* 9 (2): 157–172.

Helgesson, C.-F., and Muniesa, F. 2013. For What It's Worth: An Introduction to Valuation Studies. *Valuation Studies* 1 (1): 1–10.

Hillman, N. 2013. From Grants for All to Loans for All: Undergraduate Finance from the Implementation of the Anderson Report (1962) to the Implementation of the Browne Report (2012). *Contemporary British History* 27 (3): 249–270.

Hillman, N. 2016. The Coalition's Higher Education Reforms in England. *Oxford Review of Education* 42 (3): 330–345.

Holmwood, J. 2014. Beyond Capital? The Challenge for Sociology in Britain. *British Journal of Sociology* 65 (4): 607–618.

House of Lords. 2016. *Inquiry on Student Loans: Revised transcript of evidence taken before the Selected Committee on Economic Affairs*, July, <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/economic-affairs-committee/student-loans/oral/35022.html>.

IASB (International Accounting Standards Board). 2015. *International Financial Reporting Standard for Small and Medium-Sized Entities*, [http://eifrs.ifrs.org/eifrs/sme/en/IFRS%20for%20SMEs\\_Standard\\_2015.pdf](http://eifrs.ifrs.org/eifrs/sme/en/IFRS%20for%20SMEs_Standard_2015.pdf).

Kornberger, M., Justesen, L., Koed Madsen, A., and Mouritsen, J., eds. 2015. *Making Things Valuable*. Oxford: Oxford University Press.

Latour, B. 1987. *Science in Action*. Cambridge, MA: Harvard University Press.

Leunig, T., and Shephard, N. 2012. The Cost of Expanding Higher Education Is—Zero. *Financial Times*, February 8, 2012.

Lewis, P., Vasagar, J., Williams, R., and Taylor, M. 2010. Student Protest over Fees Turns Violent. *Guardian*, November 10, 2010, <https://www.theguardian.com/education/2010/nov/10/student-protest-fees-violent>.

Leys, C. 2001. *Market-Driven Politics: Neoliberal Democracy and the Public Interest*. London: Verso.

Likierman, A. 1995. Resource Accounting and Budgeting: Rationale and Background. *Public Administration* 73 (4): 562–570.

McGettigan, A. 2013. *The Great University Gamble: Money, Markets and the Future of Higher Education*. London: Pluto Press.

McGettigan, A. 2015a. *The Accounting and Budgeting of Student Loans*. Higher Education Policy Institute. Report 75.

McGettigan, A. 2015b. Cash Today. *London Review of Books*, March 5, 2015, <http://www.lrb.co.uk/v37/n05/andrew-mcgettigan/cash-today>.

Mennicken, A., and Millo, Y. 2016. *Testing Asset Values: Financialization, Organization and the Emergence of Asset Impairment Rules*. Presentation at 4S/EASST Conference: Science and Technology by Other Means. September, Barcelona, Spain.

Mennicken, A., and Muniesa, F. 2017. Governing Through Value: Public Service and the Asset Rationale. *CARR: Risk & Regulation* 34.

Mirowski, P. 2011. *Science-Mart: Privatizing American Science*. Cambridge, MA: Harvard University Press.

Molesworth, M., Scullion, R., and Nixon, E., eds. 2011. *The Marketisation of Higher Education and the Student as Consumer*. London: Routledge.

Morgan, J. 2014. "Massive" Budget Hole Predicted as RAB Charge Rises. *Times Higher Education*, March 21, 2014, <https://www.timeshighereducation.com/massive-budget-hole-predicted-as-rab-charge-rises/2012189.article>.

Mountford-Zimdars, A., Jones, S., Sullivan, A., and Heath, A. 2013. Framing Higher Education: Questions and Responses in the British Social Attitudes Survey, 1983–2010. *British Journal of Sociology of Education* 34 (5-6): 792–811.

Muniesa, F. 2012. A Flank Movement in the Understanding of Valuation. *Sociological Review* 59 (2): 24–38.

Ng, I., and Forbes, J. 2009. Education as Service: The Understanding of University Experience Through the Service Logic. *Journal of Marketing for Higher Education* 19 (1): 38–64.

Nitzan, J., and Bichler, S. 2009. *Capital as Power: A Study of Order and Creorder*. London: Routledge.

O'Brien, D. 2016. What Price Evidence? The Ethics of Office and the Ethics of Social Science in British Cultural Policy. *Journal of Cultural Economy* 9 (2): 127–140.

OECD (Organisation for Economic Co-operation and Development). 2015. *Education at a Glance 2015*, [http://www.oecd-ilibrary.org/education/education-at-a-glance-2015\\_eag-2015-en](http://www.oecd-ilibrary.org/education/education-at-a-glance-2015_eag-2015-en).

Ortiz, H. 2013. Financial Value: Economic, Moral, Political, Global. *HAU: Journal of Ethnographic Theory* 3 (1): 64–79.

Owen, T. 1980. The University Grants Committee. *Oxford Review of Education* 6 (3): 255–278.



- Owen, T. 1985. Financing University Education in Britain. *Western European Education* 17 (3): 45–60.
- Pallesen, T. 2016. Valuation Struggles over Pricing—Determining the Worth of Wind Power. *Journal of Cultural Economy* 9 (6): 527–540.
- Phipps, C. 2014. Demonstrators in “Scuffles” with Police as Students March Against Fees—As It Happened. *Guardian*, November 19, 2014, <https://www.theguardian.com/education/live/2014/nov/19/students-march-tuition-fees-live>.
- Quinn, S. 2017. “The Miracles of Bookkeeping”: How Budget Politics Link Fiscal Policies and Financial Markets. *American Journal of Sociology* 123 (1): 48–85.
- Roscoe, P., and Townley, B. 2016. Unsettling Issues: Valuing Public Goods and the Production of Matters of Concern. *Journal of Cultural Economy* 9 (2): 121–126.
- Rose, N., and Miller, P. 1992. Political Power beyond the State: Problematics of Government. *British Journal of Sociology* 43 (2): 173–205.
- Samuelson, P. 1954. The Pure Theory of Public Expenditure. *Review of Economics and Statistics* 36 (4): 387–389.
- Samuelson, P. 1955. A Diagrammatic Exposition of the Theory of Public Expenditure. *Review of Economics and Statistics* 37 (4): 350–356.
- Shattock, M. 1994. *The UGC and the Management of British Universities*. SRHE & Open University Press.
- Shattock, M., and Berdahl, R. 1984. The British University Grants Committee 1919–83: Changing Relationships with Government and the Universities. *Higher Education* 13 (5): 471–499.
- Shephard, N. 2013. *The Actual Financing Costs of English Higher Education Student Loans*, <https://www.nuffield.ox.ac.uk/economics/papers/2013/FundingCosts20130508.pdf>.
- SLC (Student Loan Company). 2016. *Interest Rates*, <http://www.slc.co.uk/services/interest-rates.aspx>.
- Stark, D. 2011. *The Sense of Dissonance: Accounts of Worth in Economic Life*. Princeton, NJ: Princeton University Press.
- UK Government. 1990. *Education (Student Loans) Act*, <http://www.legislation.gov.uk/ukpga/1990/6/contents/enacted>.
- UK Government. 2015a. *HM Treasury. Discount Rates for Post-Employment Benefits, General Provisions and Financial Instruments: Announcement of Rates*, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/488228/PES\\_\\_2015\\_08\\_-\\_discount\\_rates\\_-\\_for\\_publishing.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/488228/PES__2015_08_-_discount_rates_-_for_publishing.pdf).
- UK Government. 2015b. *Participation Rates in Higher Education: Academic Years 2006/2007–2014/2015*. Department for Education, <https://www.gov.uk/government>

/uploads/system/uploads/attachment\_data/file/552886/HEIPR\_PUBLICATION\_2014-15.pdf.

UK Government. 2016a. *Department for Business, Innovation & Skills: Annual Report and Accounts 2015–16*, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/537425/bis-annual-report-accounts-2015-16-web.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/537425/bis-annual-report-accounts-2015-16-web.pdf).

UK Government. 2016b. *Department for Business, Innovation and Skills: The RAB Charge*, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/501419/BIS-16-131-RAB-charge.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501419/BIS-16-131-RAB-charge.pdf).

UK Government. 2019. Department for Education: Student Loans Forecasts, England, 2018 to 2019, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/811997/Student\\_loan\\_forecasts\\_2018-19\\_-\\_text.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/811997/Student_loan_forecasts_2018-19_-_text.pdf).

UK Parliament. 2004. *House of Commons Votes and Proceedings Tuesday 27th January 2004*, <https://www.publications.parliament.uk/pa/cm/cmvote/40127v01.htm>.

Van Der Zwan, N. 2014. Making Sense of Financialization. *Socio-Economic Review* 12: 99–129.

Vernon, K. 2004. *Universities and the State in England, 1850–1939*. Abingdon, Oxon: Routledge.

Weinstein, M. 2009. Paul A. Samuelson, Economist, Dies at 94. *New York Times*, December 13, 2009, <http://www.nytimes.com/2009/12/14/business/economy/14samuelson.html>.

Willets, D. 2015. *Issues and Ideas on Higher Education: Who Benefits? Who Pays?* London: Policy Institute at King's College London.

Wilson, W. 1997. *Student Grants, Loans and Tuition Fees*. Research Paper No 97/119. House of Commons Library, <http://researchbriefings.files.parliament.uk/documents/RP97-119/RP97-119.pdf>.

