National Audit Office

Report
by the Comptroller
and Auditor General

**Department for Education, HM Treasury,
UK Government Investments**

The sale of student loans

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Department for Education, HM Treasury,
UK Government Investments

The sale of student loans

Report by the Comptroller and Auditor General

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Sir Amyas Morse KCB
Comptroller and Auditor General
National Audit Office

17 July 2018

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This study examines the value for money of the first sale of income-contingent student loans. We reviewed the preparation, process and proceeds of the transaction.

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Contents

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Key facts

£3.5bn

face value of the loans sold before taking account of any impairments

£1.7bn

proceeds to the government from the sale of student loans and reduction in public sector net debt

411,000

approximate number of borrowers whose loans have been included in the sale

£43 billion	face value of all English student loans issued before 2012 and identified for sale as of March 2017
£12 billion	government's planned proceeds from the initial wave of student loan sales between 2017 and 2022
£0.9 billion	accounting loss on the Department for Education's accounts resulting from the sale
£0.6 billion	estimated net loss of future receipts from student loan repayments as a result of the sale
£102 billion	face value of all English student loans as of March 2018
£473 billion	government forecasts for the face value of all student loans as of March 2049 in 2018-19 values
55%–60%	government's long-term estimate of the value of loans that will be repaid

Summary

Introduction

1 Since 1990 the government has allowed universities and higher education providers to charge fees to students. Over time it has also replaced grant-based support with a system of student loans. The terms of these loans have changed with time and student loan repayments are now based on the level of income students earn after leaving higher education.

2 Government's student loan portfolio is expanding rapidly. The face value of all outstanding student loans rose from £89 billion in March 2017 to £102 billion in March 2018. The value of outstanding student loans is expected to reach £473 billion by March 2049. Government's long-term estimate is that 55–60% of the loan value will be repaid.

3 In 2013 the government decided to sell a portion of the student loans issued before 2012. At March 2017, the face value of all outstanding loans issued before 2012 was £43 billion. It plans to complete a programme of sales between 2017 and 2022, and to raise around £12 billion. In December 2017 the government completed its first sale of loans to private investors, consisting of most loans that entered repayment between 2002 and 2006.

4 Government had three objectives for the sale:

- to reduce public sector net debt;
- to ensure there was no detrimental impact on borrowers; and
- to achieve value for money.

5 The Department for Education (the Department) sets student loan policies and oversees the administration and collection of student loans by the Student Loans Company and HM Revenue & Customs. HM Treasury identified the assets as available for sale and UK Government Investments (UKGI), a company wholly owned by HM Treasury, managed the sale and acted as the Department's transaction adviser.

Study scope

6 In this report we consider the value for money of this sale of student loans and set out:

- the main outcomes of the sale (Part One);
- how government assessed value for money in deciding to sell (Part Two); and
- how UKGI managed the sale (Part Three).

Key findings

Outcomes of the sale

7 **The sale of student loans raised £1.7 billion.** The government sold the loans of over 400,000 borrowers that became eligible for repayment between 2002 and 2006. These loans had an outstanding face value – total loans including accrued interest and deducting repayments already made – of £3.5 billion repayable up to 2052 (paragraphs 1.13, 1.14 and Figure 4).

8 **Government received less than half the outstanding value of the student loans.** The government received 48p for every £1 of loans sold which exceeded its retention value. When issuing loans, government does not expect to receive all the money back. It estimates that for loans issued before 2012, only 65%–70% by value will be repaid. Loans in the 2017 sale are expected to have even lower repayment rates because they are older loans and nearly half had been repaid in full by the time of the sale. Investors also require compensation for taking on risk over future payments due to changes in borrowers' earnings (paragraphs 1.14, 1.15 and Figure 10).

9 **The sale of student loans does not affect borrowers.** HM Revenue & Customs, the Student Loans Company and UKGI will continue to administer loans and collect repayments on current terms. Investors will have no contact with borrowers and no influence over repayment rates. The government has in effect sold an uncertain stream of future repayments in exchange for a lump sum. If government chooses to change repayment terms in future or makes specific mistakes in administering the loans it will need to compensate investors (paragraphs 1.16 to 1.21).

10 **The sale reduces a headline measure of public debt.** By selling student loans the government reduces its headline debt measure of public sector net debt (PSND). This measure does not take account of the loss of future receipts from student loan repayments which we estimate at around £604 million. Selling loans for cash therefore reduces PSND by the full sale amount of £1.7 billion (paragraphs 1.22 to 1.27, 2.2 to 2.5, 2.17 Figure 7, Figure 10 and Appendix Three).

11 Other measures of the sale's impact show a different effect on government's financial position. For measures which take account of future repayments, the sale of student loans crystallises impairments against outstanding loans. For example, a measure of public sector net financial liabilities (PSNFL) increased by £1.8 billion as a result of the sale. However, PSNFL does not take into account that, when the Department issued the loans, it did not expect them to be fully repaid. This subsidy explains some of the £1.8 billion loss. The Department previously recorded the loans at £2.6 billion in its balance sheet, at a discount to face value but more than the sale value of £1.7 billion. It has therefore had to record a loss of £0.9 billion in its 2017-18 accounts. While each measure has its limitations, HM Treasury's objectives for the sale only focused on PSND (paragraphs 1.25 to 1.27, Figure 7 and Appendix Three).

Analysis supporting the decision to sell

12 Government aims to retain only those assets that are required to meet its public service obligations. This sale falls into a wider programme of asset sales, announced in the December 2013 Autumn Statement and 2015 Budget, designed to reduce PSND. Government's current plan is to achieve sale proceeds of around £12 billion by 2022 from student loans issued to borrowers starting university between 1998 and 2012 before considering whether to sell the remaining student loans. As in any asset sale, HM Treasury expects the asset-owning department to assess whether a sale should occur on value-for-money grounds (paragraphs 1.10, 1.24, 2.3 and Figure (3).

13 The Department was accountable for assessing the value for money of the sale; HM Treasury set the value-for-money criteria. In 2007, HM Treasury wrote to the then Department for Education & Skills, setting out the value-for-money criteria to be applied to a sale of student loans. HM Treasury subsequently agreed the sale objectives with the Department and worked with it to understand the impact of different sales options. As with other asset sales, HM Treasury's *Green Book* set several key assumptions used to calculate the monetary value of retaining the student loans, which in turn drives the Department's value-for-money assessment (paragraphs 1.8, 1.9, 2.2 to 2.5, Figure 3 and Figure 8).

14 The way that government assesses value for money is sensitive to discount rates used. In determining the loans' retention value HM Treasury requires future cash flows to be discounted by the Social Time Preference Rate, to reflect that money today is worth more than money in the future. This rate is currently higher than market interest rates (which affect how investors discount future cash flows) and so selling the assets looks attractive for government. In determining the retention value HM Treasury also discounts for inflation more heavily than, for example, potential investors may do. If market interest rates rise by a few percentage points this could mean that market valuations of student loans fall below government's retention value, preventing completion of the planned programme of student loan sales (paragraphs 2.4, 2.6 to 2.15, Figure 9 and Figure 10).

Managing the transaction

15 Once the decision to sell had been made UKGI took a clear approach to identifying and selecting options. It reviewed sale options against HM Treasury's objectives, including ensuring that the accounting treatment for the sale removed student loans from the government's balance sheet. Some options which did not 'declassify' the asset were estimated to achieve a higher transaction value but left risk with the government. These options were discarded to achieve the declassification objective. A whole loan sale and a securitisation were shortlisted but their associated costs not evaluated. UKGI selected a securitisation process, which is a familiar structure for investors and maximises potential demand (paragraphs 3.2 to 3.11 and Figure 11 to Figure 14).

16 UKGI ran the sale process effectively and met the tests HM Treasury set for the sale process. UKGI conducted extensive market testing to ensure there was an appetite for securitised student loans. It provided potential buyers with information to understand the underlying assets and price them efficiently, soliciting investor interest from just under 200 investors, and holding more than 60 face-to-face meetings. Excess demand in the pricing phase allowed UKGI to increase the final sale price from its initial estimates (paragraphs 3.12 to 3.21, Figure 3, Figure 15 and Figure 16).

17 UKGI developed a model to help investors value the loans. The model used for the Department's accounts forecasts cash flows for a population with a constant flow of new borrowers but is not designed to predict repayment rates for a closed portfolio of loans with a fixed group of borrowers. UKGI, therefore, provided investors with a bespoke model, developed in conjunction with the Government Actuary's Department, to help investors estimate future cash flows. Comparing this bespoke model against historic data suggests it performs within the tolerances the Department expects but fluctuates, highlighting the uncertainty in estimating future cash flows (paragraphs 3.14 to 3.18, Figure 17 and Appendix Four).

18 UKGI sold the student loans at its upper estimate of what the market would pay. The government's retention value is not an indicator of what the market will pay for an asset. Following a previous National Audit Office recommendation, UKGI also estimated a market value of the loans. The sale price of £1.7 billion was broadly in line with UKGI's estimate of market value (paragraphs 2.6 to 2.15, Figure 9 and Appendix Four).

19 The ultimate value of student loans is uncertain. If the forecasts in UKGI's model are correct, for example on macroeconomic and repayment assumptions, the sale price suggests investors collectively will receive a yield to maturity of around 6.5% per year on their investment. If UKGI's model underestimates actual cash flows then investors' returns will increase, likewise if new information reduces investors' perception of risk, the value of the loans may increase in the secondary market. The reverse is also true. Only time will tell how the real cash flows compare to those forecast and consequently the buyers' investment return (paragraphs 3.14 to 3.21, Figure 9 and Appendix Four).

Conclusion on value for money

20 The sale of student loans was conducted under government's policy to sell assets where there is no policy reason for continued public ownership. In this context UKGI prepared well for the sale, creating a structure which encouraged investor interest and maintained competitive tension during the process. The value of the loans is subject to a high level of uncertainty, but UKGI's estimates of what investors would pay were reasonable, and the sale achieved prices at the upper end of these estimates. In terms of the preparation, process and proceeds of the transaction itself UKGI has achieved value for money.

21 But the sale of student loans also shows limitations in the way that government assesses value for money and measures for the costs of student loans over time. The Department uses one set of assumptions for the cost of student loans when they are added to government's balance sheet, and HM Treasury uses another set of assumptions in support of its decision to sell them. This offers two different ways of calculating the subsidy to, and value of, its rapidly growing student loan portfolio. The two approaches give different answers which risks government: not knowing with enough certainty the cost to the taxpayer of student loans when they are issued; and of selling assets too cheaply relative to their long-term value despite achieving its objective of reducing public sector net debt.

Recommendations

22 For any asset which the government intends to dispose of we expect to see the use of multiple measures to assess the impact on the government's current and future financial liabilities and a fuller consideration of the financial impact of the sale on government.

23 For future sales of student loans we would expect the Department and UKGI to:

a **Include details of the timing and sizing of the remaining programme in the transaction approval documents** to provide transparency on the future plans and their impact;

b **Reassess disposal options for every sale**, and include considerations about the transaction and ongoing costs related to the alternatives; and

c **Refine the value-for-money framework applied to calculate the valuations as new data on this novel asset class emerges**.

Part One

Overview of the student loans sale

1.1 In this Part we provide background on student loans and the main outcomes of the sale. We also set out the impacts of selling student loans on measures of government's assets and liabilities.

The evolution of student loans

1.2 The government introduced student loans in 1990 to encourage people to participate in further and higher education. The first loans were mortgage-style loans with fixed repayment terms. In September 1998, income-contingent repayment loans were introduced instead of the mortgage-style loans. The first repayments were made in April 2000.

1.3 Income-contingent loans link repayments to a borrowers' income. At first, the government only provided loans to help cover living costs (maintenance loans), but in 2006 it extended the scheme to include tuition fees.

1.4 From 2012, the government began reforming the further education system including student finance.[1] For student loans, these included changes to the repayment threshold (at what income level students start contributing to repayments), the capital repayment (how much is repaid), the maturity (when the loans are cancelled) and the interest rate (**Figure 1**). Loans made after this time are reported separately in the Department for Education's (the Department's) annual accounts.

1.5 The Department is responsible for student loans policy and holds the government-owned portfolio of loans. HM Revenue & Customs (HMRC) and the Student Loans Company collect payments from borrowers.

1 Department for Business, Innovation & Skills, *Students at the Heart of the System*, June 2011.

Figure 1

Key terms for different types of student loans

Terms for student loans have changed over time

	Mortgage-style loans (issued 1990–1998)	Income contingent loans 1 (issued 1998–2012)	Income contingent loans 2 (issued after 2012)
Repayment threshold (from 1 April 2018)	Eligible to defer/postpone repayments if earnings are under £29,219	£18,330	£25,000
Maturity	When the borrower reaches 50 or 60 – depends if they were over/under 40 when the last agreement for a student loan was made	When the borrower reaches 65 (1998–2006 loans) 25 years (2006–2012 loans) after loan enters repayment	30 years after loan enters repayment
Interest rate	Charged at an annual rate equal to retail price index (RPI)	Lower of RPI and bank base rate +1%	In study: RPI +3%. After study: Varies depending on income between RPI and RPI +3%
Capital repayment	Monthly repayment amount based on total amount borrowed plus interest (based on inflation) divided by the number of months over which repayment is due: ● 60 monthly instalments for four or fewer loans before 1998; and ● 84 monthly instalments if five or more loans Each monthly repayment is fixed for 12 months beginning in September	9% of income above threshold	9% of income above threshold

Source: Student Loans Company, UK Government Investments

The growth of government's student loan portfolio

1.6 Government's student loan portfolio is growing rapidly. The outstanding face value of loans[2] – taking into account accrued interest and repayments already made – rose from £89 billion in March 2017 to £102 billion in March 2018. The Department expects it to reach £473 billion by March 2049.

1.7 The student loan portfolio is a significant public asset. However, future repayments are likely to be much less than the face value of the loans. Some borrowers will not reach the threshold level of income for repayment and others will not have repaid the loan by the time it matures. The government's long-term estimate is that 55%–60% of the value of loans will be repaid. Repayments of loans are uncertain and will also depend on economic conditions (**Figure 2**).

Figure 2
Key macroeconomic factors affecting student loan repayments

The main factors affecting repayments are wider economic indicators

Factor	Description
Earnings	Higher real or nominal earnings increase repayments by: ● increasing the number of borrowers above the repayment threshold; and ● increasing the amount of repayments collected from borrowers.
Employment level	Higher employment is expected to increase repayments by increasing the number of borrowers in work, some of whom may be above the repayment threshold.
Inflation measured by retail price index (RPI)	Higher RPI increases balances to be repaid, although it also has a mitigating effect: ● increasing the amount of interest accrued on loans, which increases the total size of loans; and ● increasing the repayment threshold (which increases with inflation) and so reduces the number of people above the threshold.
Base rate	Higher base rate (the interest rate set by the Bank of England) may increase the balances to be repaid by: ● increasing the amount of interest accrued on loans, which increases the total size of loans if the base rate cap is in place.

Note

1 Impacts here are indicative of expected impacts based on UK Government Investments' analysis of Income-Contingent Loans Plan 1.

Source: Investor presentation, UK Government Investments

2 Face value is the total outstanding balance of loans issued to students plus any interest that has accrued, less any repayments.

Objectives for selling student loans

1.8 In 2007, HM Treasury and the then Department for Education & Skills, which was responsible for student loan assets, began discussing the sale of student loans. HM Treasury provided early guidance on the objectives in 2007, and developed them together with the Department, which finalised them in 2013. The objectives for the sale are to:

- reduce public sector net debt (PSND), while not having a significant impact on the public sector current budget;
- ensure that the sale does not alter the terms of the loans to the borrowers' detriment, or have a negative effect on the operational and policy objectives to provide access to higher education; and
- achieve value for money, and have a reasonable expectation of being repeated.

1.9 Government has a wider policy not to hold assets unless there is a policy reason for continued public ownership. HM Treasury was concerned with the growth in the loan book and the resulting exposure of public finances to the risks within the portfolio. This concern is reflected in the first objective (reduce PSND). The remaining two objectives relate to: the Sale of Student Loans Act 2008;[3] and part of principles of regularity and propriety the responsible accounting officer is required to follow as set out in *Managing Public Money*.

The student loans sale programme

1.10 Plans for the sale of student loans took several years to develop (**Figure 3** overleaf). This long development period was affected by the parliamentary timetable, elections, changes in government, the financial crisis and the decision to leave the European Union. Because of the novel nature of the asset, significant work was also required to develop and refine the best way to achieve the sale's objectives.

1.11 The government intends to sell loans from the first wave of income-contingent student loans (issued between 1998 and 2012) in a programme of sales over the course of 2017–2022. In March 2017 the total face value of these loans was £43 billion and the government aims to sell around £3.5 billion to £4.9 billion in face value of loans each year, raising around £12 billion in proceeds.

1.12 Estimates of sales proceeds have been communicated to the Office for Budget Responsibility and appear in national debt forecasts. Although the programme of sales has been announced, there was limited detail in the business case and no specific details on the loan portfolios to be sold or the timing of sales have been communicated to investors.

1.13 The government announced the first sale within the programme in February 2017, and completed the sale in December 2017.

3 The Sale of Student Loans Act 2008 provides the legal basis for selling student loans, and requires government to treat sold and unsold loans in the same way.

Figure 3
Timeline of events for selling student loans

The first sale of student loans took place in 2017

Key events leading up to the sale

April 1990	The Education (Student Loans) Act 1990 introduces the student loan scheme.
July 1998	The Teaching and Higher Edcucation Act 1998 introduces income-contingent student loans.
March 2007	HM Treasury (HMT) and Department for Education & Skills start discussing sale objectives and value-for-money framework for a future sale.
July 2008	The Sale of Student Loans Act 2008 provides the legal basis for student loans to be sold.
May 2010 – July 2013	Feasibility study – the Department for Business, Innovation & Skills (BIS) appointed advisers to identify options for a future sale announced in June 2010 Budget.
August 2013 – May 2014	BIS appointed advisers to prepare for a sale. HMT confirms announcement in December 2013 Autumn Statement but in May 2014 ministers decide to postpone market testing to the following Parliament. A limited internal programme continues in order to ensure the project is in a position to provide the next government with the option of conducting and completing a sale.
June 2015 – January 2017	Ministers decide to proceed with the sale and HMT announces and confirms intention to sell in Spending Review and Autumn Statement announcements in 2015 and 2016. Sale preparations are relaunched.
February 2017	Government announces the first sale of the income-contingent student loans as part of a sales programme. Intended completion by May 2017. Sales programme relates only to loans issued before 2012.
April 2017	The first sale was put on hold during purdah as an election had been announced.

Timeline of the sale process

31 October 2017	The sale is relaunched after some market testing of investor interest.
28 November 2017	Initial price thoughts are announced and Joint Lead Managers start building an order book.
4 December 2017	Department for Education (DfE) and UK Government Investments (UKGI) agree that Joint Lead Managers can release price guidance to investors.
6 December 2017	DfE and UKGI agree to a price on the securities with investors.
13 December 2017	Sale completes with securities being issued to investors and HMT receiving the proceeds.
2018–2022	Further sales of pre-2012 student loans anticipated.

Notes

1 Multiple departments were responsible for student loans during this time. These include the Department for Education & Skills, the Department for Business, Innovation & Skills and the Department for Education.

2 Names and roles of external parties, such as financial advisers or Joint Lead Managers, are detailed in Figure 17.

Source: UK Government Investments, National Audit Office analysis

The first sale of student loans

1.14 The first sale consisted of loans made to borrowers that became eligible for repayment between 2002 and 2006.[4] The loans relate to around 411,000 borrowers and had a total face value of £3.5 billion in March 2016[5] (**Figure 4**).

1.15 The Department sold the loans for £1.7 billion to private investors. This suggests that government received 48p for every £1 of loans sold. This is less than the estimate in its latest accounts that 65%–70% of the value of loans issued before 2012 will be repaid. This is partly explained by the loans in this sale having a longer repayment history: nearly half had been repaid in full by the time of the sale, reducing the average repayment rate expected in the remaining pool of loans. Sale proceeds are also affected by the discounts applied by investors for risk, given the novel nature of the asset.

Figure 4
Key facts about the loans sold

60% of borrowers are earning above the repayment threshold in 2015-16

Description	Value
Face value	£3,547m
Carrying/book value	£2,584m[5]
Sale price	£1,719m[6]
Number of borrowers	411,000 approximate
Weighted average age of borrower	37 years old
Weighted average term to maturity (borrower=65)	28 years
Average balance per borrower	£8,626
Average annual repayment	£885
Percentage of borrowers that made a repayment during 2015-16	60%

Notes

1 Face value is the total outstanding balance of loans issued to students plus any interest that has accrued, less any repayments.

2 The carrying value reflects the amount the Department expects to receive from the loans given out to students and interest it accumulated over time, discounted at a rate determined by accounting standards.

3 The face value and carrying value excludes 5% that is retained by the Department in order to comply with European securitisation regulations.

4 All data are as at end of the 2015-16 financial year unless otherwise stated.

5 Value as at March 2016, using data available at March 2018.

6 Value as at December 2017.

Source: Investor presentation, Prospectus, UK Government Investments

4 Repayments will only commence if the borrower's income is above a certain threshold.

5 Due to the tax collection and reporting cycle of student loans, the face value as at March 2016 is the most accurate for the sold loans.

Impact on borrowers

1.16 Borrowers are unaffected by the sale of student loans. The Department's sale arrangements mean that the Secretary of State for Education is responsible for collecting repayments on behalf of investors. The Department carries out this obligation through a 'Master Servicer' function. The Secretary of State has delegated this function to:

- HM Revenue & Customs and the Student Loans Company for collecting repayments from borrowers; and
- UK Government Investments (UKGI, a wholly owned entity within HM Treasury) and the Student Loans Company for transaction-specific activities such as reporting information to investors.

1.17 The Department is only selling the rights to the future cash flows from the loans and so borrowers will experience no change in either repayment terms or collection processes (**Figure 5**). They will have no contact with investors, and investors will pay a fee to the Department for performing the Master Servicer function. The Department distributes this fee to those performing the function. This means there is no additional privatisation benefit from the sale, as the new owners cannot invest in the asset to, for example, make collecting repayments more efficient and improve returns.

Risk in the administration of student loans

1.18 The activities carried out under the Master Servicer function are similar to those the government has performed in the past, in particular in relation to collecting cash, but the external reporting function is new. There are risks to performing both aspects, such as failure of software or systems for collecting and administering the loans. If these materialise, are detrimental to investors and cannot be rectified, the government may be liable to compensate investors.

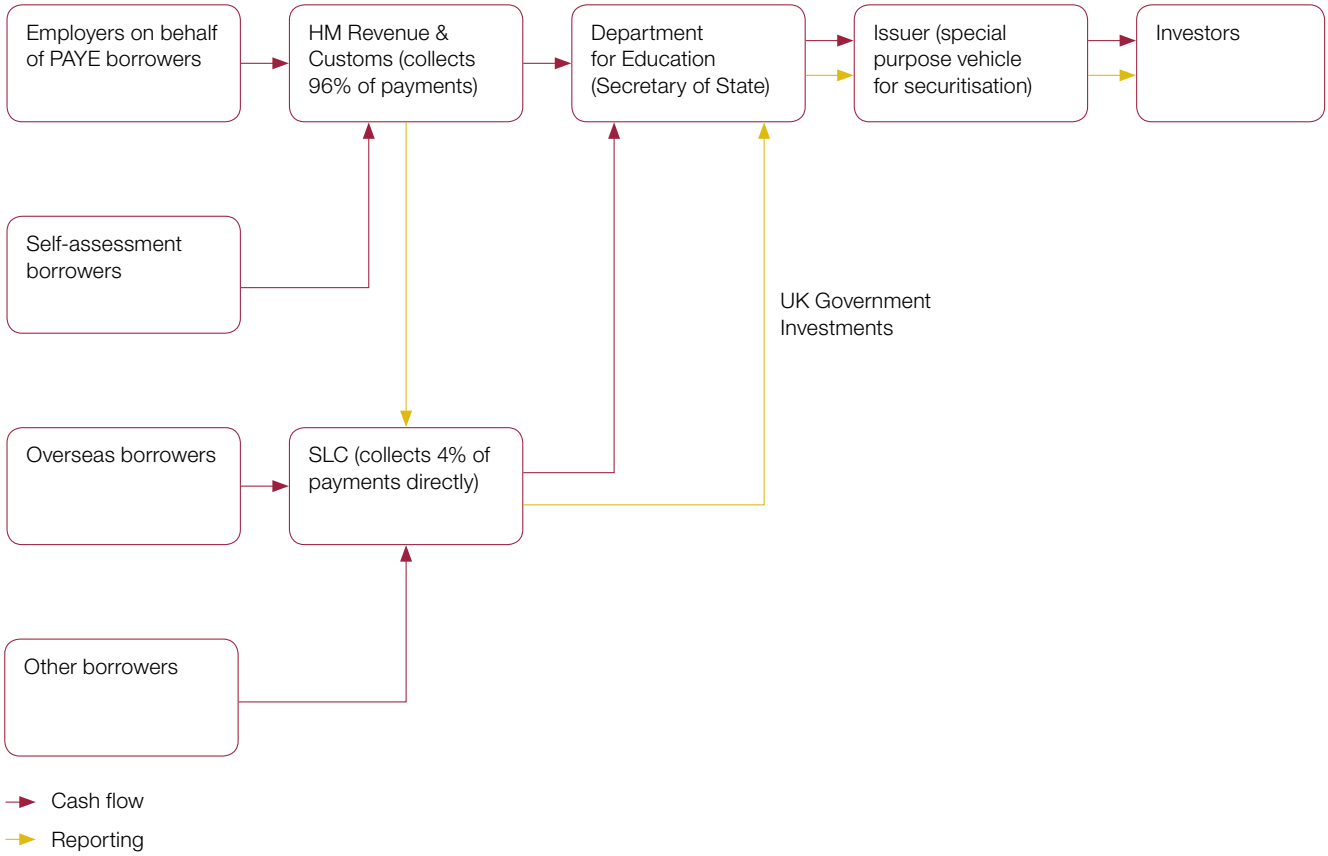
1.19 The arrangements for the sale also include a number of warranties and indemnities that give rise to contingent liabilities for government, which the Department has disclosed to Parliament.[6] These warranties and indemnities principally aim to protect investors should the Master Servicer function not perform as expected or should government make policy changes that are to investors' detriment. For example, should government change the threshold at which students repay loans, UKGI estimates that for loans sold at an illustrative £2 billion today, a 20% increase in the repayment threshold in five years may result in compensation payments to investors of £160 million over the remaining life of the transaction.

6 Departmental Minute from the Department for Education on behalf of government, *Notification of sale of student loans*, October 2017.

Figure 5

Overview of ongoing cash flows and reporting requirements

Loans will continue to be collected via HMRC and SLC



Notes

1 SLC – Student Loans Company, HMRC – HM Revenue & Customs.

2 Other borrowers consist of those who make direct repayments and voluntary repayments.

Source: Prospectus

1.20 UKGI and the Department completed internal and external testing of the systems and controls in place and concluded that these risks are remote. UKGI estimated that if 10% of repayments were not collected and this was undetected for five years, compensation could amount to £50 million.

1.21 The Department and UKGI also put in place governance arrangements surrounding the Master Servicer function to minimise risks (**Figure 6**). The arrangements have been tailored to the activities the Master Servicer performs, but the board membership does not include independent representatives.

Figure 6
Master Servicer governance arrangements

The Master Servicer board does not include independent members

Governance arrangements – Master Servicer board

- is accountable within government for ensuring that all Master Servicer functions are discharged by DfE as Master Servicer;
- is a point of escalation for any issues/decisions that are outside the remit of the Master Servicer working group;
- meets quarterly or in extraordinary circumstances; and
- is chaired by a DfE senior civil servant (on behalf of Secretary of State for Education as Master Servicer) and formed of professionals from SLC, HMRC and UKGI.

Governance arrangements – Master Servicer working group

- is responsible for day-to-day management of the Master Servicer and delegates functions to HMRC and SLC;
- oversees the discharge of the government's annual responsibilities regarding predictable, cyclical events (such as data reporting to investors);
- is the first body to discuss any emerging issues or risks, and escalate these as appropriate; and
- holds monthly meetings, which are chaired by UKGI (head of Master Servicer) and attended by SLC, HMRC and DfE.

Note

1 SLC – Student Loans Company, DfE – Department for Education, UKGI – UK Government Investments, HMRC – HM Revenue & Customs.

Source: UK Government Investments, Prospectus, full business case

Impacts on government's financial position

1.22 The impact of the sale on government's overall financial position depends on the measure chosen. There is no single measure of financial impact and different measures treat the £1.7 billion proceeds of the sale very differently (**Figure 7**).

Figure 7
Impact of student loan sale under different accounting treatments

Public sector net debt is reduced by £1.7 billion and public sector net financial liabilities is increased by £1.8 billion

		National accounts		Departmental accounts
		PSND (£bn)	**PSNFL (£bn)**	**DfE accounts (£bn)**
Initial impact of loan issuance		4.2 increase in debt	0.0	2.8 increase in assets
Impact of the sale	Value of student loans recognised (at the time of the sale) (A)	–	3.5 asset	2.6 asset
	Proceeds from the sale (B)	1.7 increase in cash	1.7 increase in cash	1.7 increase in cash
	Impact of sale (B–A)	1.7 decrease in debt	1.8 increase in liabilities	0.9 write-off
Impact if no sale (at maturity)		–	0.3 to 1.0 cancellation avoided	0.0

Notes

1 PSND – public sector net debt; PSND does not include future repayments as assets offsetting debt. At initial issuance, it records the amount paid out to borrowers. At a sale, it only records the amount received from the sale. No impact if no sale occurs.

2 PSNFL – public sector net financial liabilities; PSNFL includes future repayments as offsetting future liabilities. At initial issuance, it records both the amounts paid out to students and the full nominal value of the loans – these net each other off. At a sale, it records the proceeds from the sale against the nominal value of the loans. If no sale occurs, the outstanding amounts are cancelled.

3 DfE accounts – Department for Education accounts. At initial issuance, DfE records the loans at face value less an initial impairment (the Resource Accounting and Budgeting charge) to reflect that not all loans will be repaid. At a sale, it records the proceeds from the sale against the carrying value of the loans. If no sale occurs, assuming the ongoing impairment charges are accurate, no further write-off occurs.

Source: Department for Education Annual Report and Accounts 2017-18; National Audit Office analysis of HM Treasury debt and liability measures, Office for National Statistics

1.23 HM Treasury's primary measure for the sale is public sector net debt (PSND). PSND is part of the National Accounts compiled by the Office for National Statistics and includes cash or near-cash government assets and liabilities. PSND excludes illiquid assets such as student loan repayments. The effect of the sale is therefore recorded as a £1.7 billion reduction in PSND.

1.24 The sale of student loans also allows HM Treasury to avoid future write-offs of student loan repayments. Under the National Accounts unpaid student loans would be written off at maturity. The 2017 sale allows HM Treasury to avoid £0.3 billion to £1 billion in write-offs over the term of the loans.[7] The planned programme of sales up to 2022 would reduce PSND by £12 billion and the National Accounts would avoid future write-offs of £13 billion.

1.25 The impact on PSND is due to the exclusion of future repayments from the calculation of government assets. Alternative measures such as public sector net financial liabilities (PSNFL) include these repayments, and the effect of the sale is very different. By selling £3.5 billion in loans for £1.7 billion, the government has in effect crystallised a loss of £1.8 billion under the PSNFL measure. However, PSNFL does not show the Department's planned subsidy of student loans – when the Department issued the loans, it did not expect them all to be repaid. This subsidy explains some of the £1.8 billion loss.

1.26 Although PSNFL was introduced in 2016, before the full business case for selling the loans was produced in early 2017, it was not considered alongside the sale objectives. If the government were to assess the impact of the sale on the national accounts using PSNFL rather than PSND the decision to sell would not have been so clear-cut.

1.27 The impact on the sale on the Department's accounts is different again. Unlike PSNFL, the Department already marks down the value of student loans to take account of future unpaid loans. The £3.5 billion of loans was 'carried' at a value of £2.6 billion in the Department's 2016-17 accounts.[8] In the Department's accounts the sale requires a further write-down of £0.9 billion to take account of the difference between the 'carrying value' of the loans and sale proceeds. We discuss the accounting treatment of the sale in more detail in Appendix Three.

7 The figures are based on two valuation methodologies and are uncertain. Based on the methodology in the department's accounts the expected write-off is £1 billion; based on the methodology used in the sale valuation the expected write-off is £0.3 billion.

8 The carrying value reflects the amount the Department expects to receive from the loans given out to students and interest it accumulated over time, discounted at a rate determined by accounting standards.

Part Two

Assessing the value for money of the sale

2.1 In this Part we consider the student loan sale objectives and how government assessed the value for money of the sale. We also consider how the government determined the retention value for the loans.

Government's value for money framework

2.2 In addition to the objectives to reduce public sector net debt and avoid detriment to borrowers, HM Treasury required the sale of student loans to achieve value for money and have a reasonable expectation of repeating this for the remaining programme.

2.3 Because determining the value for money of selling student loans is not self-evident, HM Treasury set out a value-for-money framework to clarify how its *Green Book* guidance should be applied. It agreed this with the Department for Education (the Department) in 2013. The final framework consists of three tests:

- the Department should satisfy itself that an efficient market exists for this asset and that this market appears to be functioning efficiently at the time of sale;
- the Department should ensure that sales are structured and executed in such a way as to promote efficient pricing; and
- the sale price needs to exceed or be broadly neutral when compared with the retention value to government.

These are very similar to the tests HM Treasury suggested in 2007 when it first identified these loans could be sold (see paragraph 1.8).

Responsibilities for value for money within government

2.4 The Department 'owns' student finance policy and the associated student loan assets; it is therefore accountable for the sale. It delegated implementation of the sale to UK Government Investments (UKGI) as the 'centre of excellence' for asset sales in government. A UKGI official acted as the senior responsible officer for the transaction.

2.5 UKGI worked closely with key stakeholders, including the Department, the Student Loans Company (SLC), and HM Revenue & Customs (HMRC). HM Treasury was involved at all stages of the transaction. **Figure 8** overleaf provides a simplified overview of the key parties' responsibilities and the internal assurance process that was in place.

Figure 8

Main parties involved in the first sale of student loans

UK Government Investments acted as senior responsible owner (SRO) for the December 2017 sale of student loans

Party	Roles
Department for Education (Accounting officer)	• Responsible for sale • Working team involved in all key work streams but main focus on strategy, finance and analysis • Set sale objectives alongside HMT • DfE's ongoing obligations after the sale, as Master Servicer, have mostly been delegated to UKGI, HMRC and SLC
UKGI (SRO)	• Appointed by DfE and responsible for delivering the sale in accordance with the objectives and framework set • Project lead for the sale • Coordinated with all parties • Have continuing obligations to investors as a result of Master Servicer function
HM Treasury	• Set sale objectives alongside DfE and government's value-for-money framework • Attended weekly meetings • Part of the project board and the senior-level cross-government steering group responsible for the project
Student Loans Company	• Provided data that fed into the model used to calculate future repayments • Received external assurance on process and data quality • Will continue to service both sold and unsold loans • Will collect and compile information and repayments to be sent to investors
HM Revenue & Customs	• Provided data that fed into the model used to calculate future repayments • Will continue to collect repayments for both sold and unsold loans
Assurance	• Multiple boards and steering groups • Internal audit • Infrastructure and Projects Authority assurance and gateway reviews (part of government major projects portfolio) • HMT approval process panel

Notes

1 HMT – HM Treasury, DfE – Department for Education, UKGI – UK Government Investments, SLC – Student Loans Company, HMRC – HM Revenue & Customs.

2 External advisers – see Figure 17.

Source: National Audit Office analysis, UK Government Investments, full business case

Assessing government's valuation of student loans

2.6 One of HM Treasury's value-for-money tests is to ensure that the "sale price exceeds or is broadly neutral to" the government's value of holding the asset, known as the retention value. Repayments are uncertain and any student loan valuation must make a series of assumptions about future payments as well as discounting future cash flows so that they can be compared with sale proceeds today. Below we set out how government calculated its retention value, and compare this to other approaches to valuing student loans.

Calculating the government's retention value

2.7 The first step was for UKGI to estimate repayments from student loans. It used a financial model of future cash flows, which we discuss in more detail in paragraphs 3.14 to 3.18. It then developed an approach to discounting those future cash flows so that they could be compared with expected or actual sale proceeds.

2.8 UKGI's discount rate consisted of several elements:

- A social time preference rate. HM Treasury's *Green Book* guidance recommends discounting future cash flows by a social time preference rate that reflects the value to society of cash today rather than in the future. HM Treasury sets this rate at 2.5%.[9]
- Expected inflation. The social time preference rate is a real rate, so to account for inflation UKGI used the retail price index (RPI), which was 3% at the time. Together, the nominal social time preference rate was therefore 5.5%.
- An asset-specific risk premium. The *Green Book* guidance recommends adding an asset-specific risk premium to the nominal social time preference rate to reflect that cash flows are uncertain.[10]

2.9 UKGI asked the Government Actuary's Department (GAD) to estimate the asset-specific risk. GAD's analysis resulted in a wide range for the risk premium because student loans have limited relevant data with which to accurately predict future payments and how market participants might value those payments. GAD therefore estimated the asset specific risk using a theoretical approach, which depends critically on a number of assumptions.[11] It noted that "whilst some of these assumptions could be reasonably challenged, [it did] not believe that such challenges prevent the use [in a valuation]".

9 The social time preference rate is 3.5%, which was adjusted down by 1% to remove the catastrophe risk element to prevent any double-counting when the asset risk premium is added.
10 We do not disclose this asset risk premium as it is potentially commercially sensitive. It could give investors information about the government's minimum retention value and therefore minimum sale price, affecting future loan sales.
11 The theoretical approach is based on the Capital Asset Pricing Model.

Comparison with other valuations of student loans

2.10 The government retention value calculated by UKGI can be compared with several other valuations of student loans including:

- **a sale valuation**, an estimate of how a potential buyer is likely to value student loans. We have previously recommended that UKGI calculates sale valuations to ensure that the retention value is informed by prices that may be achieved in competitive market conditions;[12]
- **the actual sale proceeds**, from which we can infer some of the investor assumptions in valuing student loans; and
- **the carrying value** of loans on the Department's accounts. The value of £2.6 billion is in accordance with international accounting standards.

2.11 Each approach to valuing student loans results in different estimates. To a large extent these differences reflect the way that future cash flows are discounted. The higher the discount rate used, the lower the value of future payments in today's terms, and the lower the valuation. **Figure 9** compares the discount rates used in each approach.

2.12 UKGI's sale valuation used a similar approach to the retention value of discounting future cash flows. However, prospective buyers do not use a predefined discount rate such as the social time preference rate as their hurdle rate, and instead tend to use actual yield on government bonds, which is referred to as the risk-free rate. UKGI estimated this as the yield on 12-year government bonds,[13] which offered a 1.6% nominal return at the time of valuation.

2.13 UKGI then added the asset risk premium calculated by GAD, plus an additional novelty premium. This novelty premium can be considered as a discount observed when a company first lists its shares on the stock market. In the NAO's report on 'The Privatisation of Royal Mail' the government's advisers estimated this discount to be in the range of 5% to 15%. UKGI estimates most of this novelty premium to disappear within five years as the market becomes more familiar with the asset class. The *Green Book* does not require government to be compensated for the novelty premium.

2.14 Actual sale proceeds can be used to infer the total return investors required to buy the loans from the government. Assuming the government's base case economic forecast as of March 2017, this return is equivalent to an average return of 6.5% when taking into account the securitisation structure. Assuming investors used a 1.6% risk-free rate, this implies that the asset premium plus any novelty discount investors required was 4.9%.

12 UKGI calculated four different valuations – two retention valuations and two sale valuations. For simplicity we only focus on one in each category.

13 UKGI used the 12-year UK government bonds because it has the most comparable weighted average life (duration) as the sold loans.

Figure 9

Overview of valuation methodologies and discount rates

The higher discount rate used means that government's retention value leads to the lowest valuation

Type	Valuation methodology	Risk-free rate (%)	Asset risk premium (%)	**Total discount rate (%)**	**Value (£bn)**
Retention value	Discounted cash flows	5.5	Undisclosed	**>6.5**	**<1.7**
Sale valuation	Discounted cash flows (plus novelty premium)	1.6	Undisclosed	**>6.5**	**≤1.7**
Accounting valuation	HM Treasury's Government Financial Reporting Manual 2017-18	–	–	**[3.8]**	**2.6**
Actual sale	Average actual yield based on price paid	1.6	4.9	**6.5**	**1.7**

Notes

1 The Department's accounting valuation used a discount rate of retail price index (RPI) +0.7%, with RPI at 3.1%. The Department also used a different model from the other valuations for future repayments.

2 The discounted cash flow valuation methodology first estimates the future cash flows of an asset and then discounts them to arrive at present value estimate. The future cash flows of all the valuations stated above are estimated by the transaction-based earnings & repayment model (TERM) model (see paragraphs 3.17 to 3.19 for more details on the TERM model). Each type of valuation applies a different total discount rate to these cash flows.

3 The risk-free rate is the return an investor can achieve on a government bond with a similar maturity, for the retention value it is a hurdle rate.

4 The asset risk premium is the minimum return by which the expected return on a risky asset must exceed the known return on a risk-free asset.

5 The 'Total discount rate' used in the 'Actual sale' is the estimated weighted average yield investors may receive based on the prices investors paid for the notes, the characteristics of the notes, the TERM model and the government's base case macro-economic forecast as of March 2016. This average yield is based on the cash flows to investors based on the securitisation structure – the equivalent yield excluding the securitisation structure is 7.1%. The difference is due to the timing of cash flows.

Source: Full business case, Department for Education Annual Reports and Accounts 2017-18, National Audit Office analysis

The impact of the government's retention value

2.15 Government's retention value was conservative. The application of the *Green Book* methodology meant that the government's retention value was lower compared with: what investors were likely to pay; and how the Department valued the loans in its accounts. The main differences resulted from:

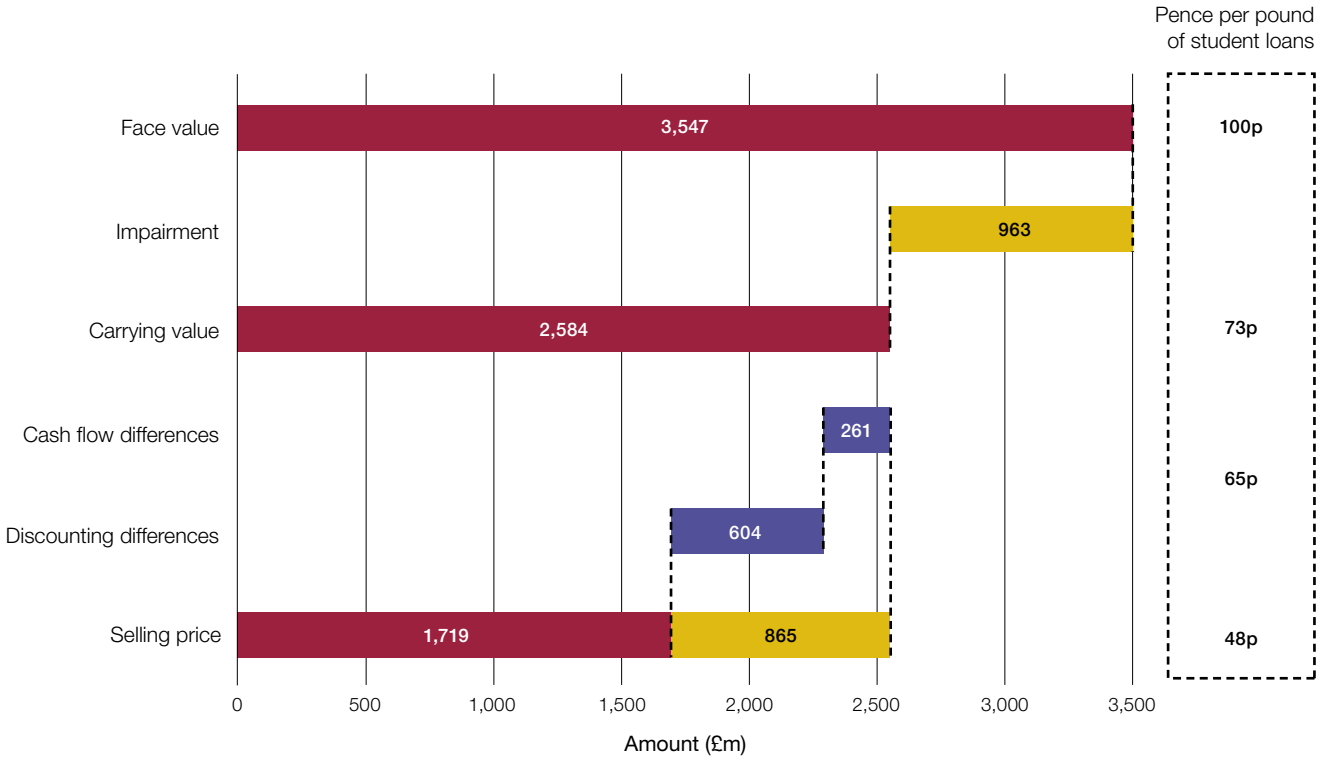
- the use of the social time preference rate according to the *Green Book* methodology of 5.5% instead of the return on government bonds of 1.6%. The discount rate used in the accounting valuation is also lower at 3.8%;
- the use of RPI of 3% to calculate a nominal social time preference rate. RPI is the inflation measure used for setting the interest rate students pay on loans, but is increasingly criticised and seen as a non-standard inflation measure. The more common Consumer Price Index (CPI) inflation measure stood at 2%; assuming no other changes, using this measure would have increased the retention value by around £110 million; and
- the methodology applied to estimate the future cash flows differed from the one used in the accounts. While it was a more appropriate methodology for the assets sold, it resulted in £261 million less cash flows than the forecast used in the Departmental accounts (paragraphs 3.14 to 3.18 and Appendix Four).

2.16 Assumptions about cash flows and the discount rate are inevitably subject to a high degree of uncertainty and judgement. However, government's approach to calculating the retention value could create unintended risks to the planned sale of student loans if economic conditions change. For example, a rise of a few percentage points in the cost of government borrowing would decrease the sale valuation (and investors' willingness to pay) below the retention value. Should such an increase occur by 2021-22 it could put the current sale programme at risk, reducing sale proceeds at the same time that the cost of funding through government borrowing is rising.

2.17 Although we do not reveal government's exact retention value for commercial reasons, we can use the actual proceeds from the sale to estimate the impact of differences between discounting in UKGI's retention value and the Department's accounts (**Figure 10**). Given that the sale went ahead you can assume that the retention value is at or below the actual proceeds. The figure shows that the estimated net loss of future receipts from student loan repayments in selling the assets is around £604 million. This is calculated by comparing the sale price to future receipts; the latter derived from government's macroeconomic sale model discounted to a present value using the same rates as the Departmental accounts.

Figure 10
Accounting for the first sale of student loans

Differences in discount rate account for £604 million



Notes

1 Face value is the total outstanding balance of loans issued to students plus any interest that has accrued, less any repayments. This is as at March 2016.

2 Impairment has been recognised by the Department over time. It reflects the Department's assessment of the amount it does not expect to receive back from borrowers.

3 The carrying value reflects the amount the Department expects to receive from the loans issued to borrowers and interest it accumulated over time, discounted at a rate determined by accounting standards. This is as at March 2016, using data available at March 2018.

4 The face value and carrying value excludes 5% that is retained by the Department to comply with EU securitisation requirements.

5 The difference in the cash flows are from the two models (the transaction-based earnings and repayments model versus the stochastic earnings pathway, see paragraphs 3.17 to 3.19). The 65 pence per pound relates to the carrying value less the cash flow differences.

6 The discounting differences is due to the different discount rates used and the model's macroeconomic assumptions, and not on investor assumptions. Therefore, the split between the cash flows and return rates for investors may be different (see paragraphs 2.11 to 2.13).

Source: Full business case, Department for Education Annual Reports and Accounts 2017-18, National Audit Office analysis

Part Three

Managing the sale

3.1 In this Part we consider how UK Government Investments (UKGI) prepared and managed the sale to meet the objectives both in terms of the sale's accounting treatment and efficiency tests for the transaction. We also consider how UKGI set up, structured and managed the sale process.

Considering options for the sale

3.2 The first step was to select the method for selling student loans. In 2010, the Department for Education (the Department) engaged advisers to conduct a sale feasibility study and identify disposal options (**Figure 11**).

3.3 The Department's advisers conducted detailed analysis of the disposal options. The Department's main selection criteria were whether a sale could achieve a reduction in public sector net debt (PSND); and, the loans could be declassified from the government's balance sheet. It identified that some options might achieve higher proceeds, but this came at increased risk of failure and would not have achieved the declassification objective so they were not evaluated further. The additional proceeds and risk were not quantified.

3.4 In 2013, when financial markets had improved, the sale adviser recommended proceeding with one of two options: a whole loan sale or a securitisation which bundled loans together and sold off cash flows in tranches. Neither approach would affect borrowers' terms or the process of collecting repayments. UKGI and the Department evaluated both options comprehensively in the full business case for selling student loans in January 2017 and reassessed key aspects prior the launch in October 2017.

3.5 The Department and UKGI concluded that the securitisation structure was the better option. Market testing had shown that demand and early pricing indications for a whole loan sale were lower. In addition, a securitisation could reach a wider range of investors, which would increase competitive tension.

Figure 11

The different options identified for the sale of student loans

Declassification 'Reduce Public Sector Net Debt (PSND)' was a major selection criterion

	Early options					Full business case	
					Conventional sale		
Sale objectives	Retain "do nothing"	Utility structure	Buyback	Trust structure	With derivative	Whole loan sale	Securitisation
Reduce PSND	✗	✗	Minimal	Possible	Max with risk	✔	✔
Value for money to taxpayer	N/A	✔	✗	✔	✔	✔	✔
Loan terms not altered to borrowers' detriment	✔	✔	✔	✔	✔	✔	✔
No policy impact	✔	Fix	✔	Fix	Fix	Fix	Fix

Notes

1 Retain "do nothing" – government maintains the student loan book on its balance sheet.

2 Utility structure – government establishes a regulatory framework similar to the water and energy sectors. A regulator would predefine returns investors are allowed to make.

3 Buyback – borrowers are offered to pay back their student loans at a discount.

4 Trust structure – government sells loans to a trust company, which uses the loans as a means to raise financing.

5 Conventional sale – selling the loans to an investor, this could be with or without a protection instrument (financial derivative). Such instruments can increase proceeds (reduce public sector net debt) at the expense of exposing the government to a higher level of risk.

6 Securitisation – see paragraphs 3.8 to 3.12.

7 Policy impact – none of the options have an impact on higher education policy. If an option has the term fix it means that retroactive change of the terms agreed with students, which are detrimental to investors will result in a compensation to investors.

Source: Original business case, full business case, Feasibility study

3.6 The execution of securitisation is more complicated and costly. The process of securitising the cash flows requires more parties to be involved in the sale process, for example rating agencies, as well as a wider scope of work. In addition, the Department must keep a material economic interest in the transaction of no less than 5% of the asset sold.[14] This increases the cost and resources required to execute a securitisation, but it did not affect the choice of options.[15]

The securitisation structure

3.7 Securitisation is a financial process in which cash flows from a series of assets such as student loans are pooled together and then divided into tranches (**Figure 12**). The tranches are similar to fixed income securities like bonds. The holders of each tranche are paid according to set rules such as maturity (when the principal will be repaid), coupon (how much interest is paid, and when) and priority in the payment of interest and repayment of principal. Each tranche has a different set of characteristics and risks associated with them and therefore attract a wide range of investors.

3.8 The priority in the payment of interest and principal is a distinguishing factor in securitisations, which results in some tranches with a low level of risk (with lower returns) and others with a high level of risk (with higher returns). The highest-risk tranche is sometimes known as the equity tranche since holders will only be paid after all other tranches in the event that cash flows are high enough.

3.9 UKGI and the sale adviser designed the capital structure to maximise expected proceeds considering the long-term riskiness of the loans sold (**Figure 13** on page 32). UKGI set the tranches and their characteristics in order to minimise the equity tranche (the X-note). Advisers confirmed, based on significant market testing, that the final structure was the most efficient structure for the pool of loans sold. In addition, UKGI tested investors' interest in a whole loan sale before the final launch, and had no indication that it would achieve a better price. A better price would be an indication that a third party, which is likely to use a securitisation as well, could structure it more efficiently.

3.10 Tranches A1, A2 and B represent the lower risk tranches in the securitisation. The tranches have some novel characteristics but there are sufficient comparable securities which investors can use to make an assessment of the price and therefore return on the investment. The higher risk X-note, however, has no direct comparable securities, and the uncertainty of the future cash flows makes it difficult to price this tranche. This is reflected in the low pricing of this tranche in the securitisation structure (**Figure 14** on page 32 and Figure 16 on page 35).

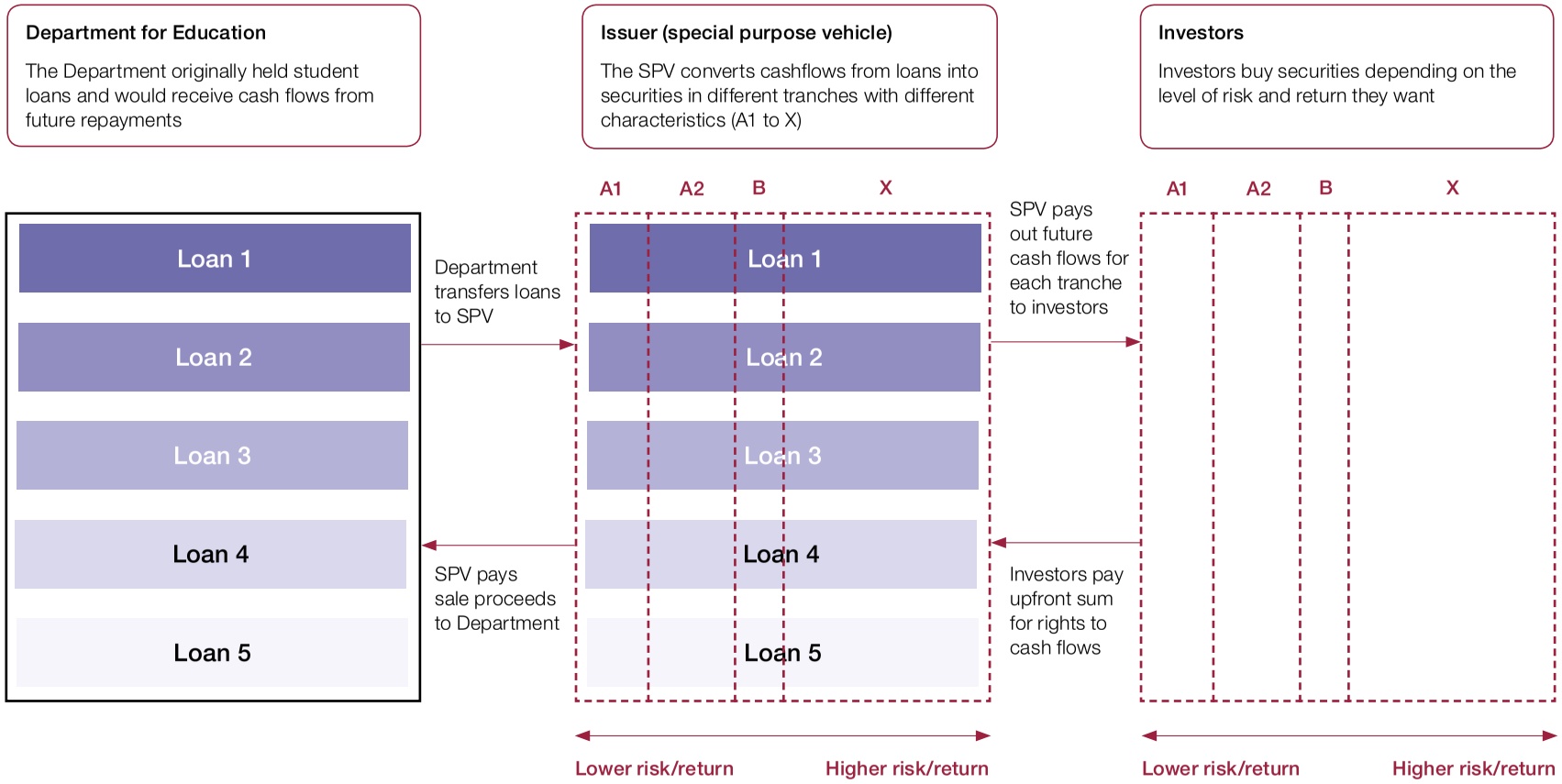
14 Capital Requirement Directive IV.

15 The cost differential between a securitisation and a whole loan sale is difficult to estimate. Some advisers such as credit rating agencies would not be required, but most other advisers would. These would perform a similar function although the scope of their work might be reduced.

Figure 12

Overview of the securitisation process

The issuer buys the loans of the Department for Education and converts the cash flows into securities for a sale to investors



Note

1 See Figure 14 for details on final securitisation structure (A1, A2, B and X).

Source: National Audit Office analysis of sales adviser report

Figure 13
Details of the tranches in the securitisation structure

The A1, A2 and B notes are listed, the X-note is not

Tranches	Face value (£m)	Face value (%)	Proceeds (£m)	Credit rating	Duration (Years)	Coupon (%)
A1	810.60	22.85	803	A	2.9	12-month Libor +1
A2	697.10	19.65	649	A	11.5	2.5
B	120.60	3.40	104	BBB	12.5	LPI +1.45
X	1,919.10	54.10	163	Not rated	N/A	0.5
Total	**3,547.40**	**100**	**1,719**			

Notes

1 Face value is outstanding balance of the loans as of March 2016 including accrued interest and after deducting repayments made.

2 Credit rating is based on S&P and Fitch ratings, which were the same for each tranche at the time of pricing.

3 Duration is not at a fixed maturity date of the tranches but rather the average weighted life of the cash flows in the tranche.

4 Coupon is the interest rate paid to investors.

5 Notes are listed in the level of priority of payment (A1 first, X last).

6 Certain features in the notes are novel in the securitisation market, in particular, A1 note linked to 12-month Libor as opposed to one- or three-month Libor, A2 notes having a scheduled amortisation, B notes being inflation-linked.

Source: Investor presentation, UK Government Investments

Figure 14
Comparable securities for the individual tranches

The X-note has no direct comparators and represents more than half of the securitisation structure

Tranches	Percentage of total face value (%)	Most appropriate comparators
A1	22.85	Traditional asset-backed securities, buy-to-let mortgage-backed securities and non-conforming residential-backed securities
A2	19.65	Long-dated, fixed-rate bonds with exposure to the UK economy
B	3.40	Index-linked bonds with exposure to UK economy
X	54.10	No direct comparable securities. Advisers expected equity return requirements of the target investors – alternative asset managers and private equity funds

Notes

1 Tranches – each tranche is a financial security which offers investors a return over a certain period at a certain level of risk.

2 Percentage of total face value – each tranche has a certain size relative to the total face value of the loans sold.

3 Most appropriate comparators – this is a list of financial securities with similar characteristics.

Source: Full business case, National Audit Office analysis of sales adviser report

3.11 Uncertainty about the future cash flows also creates a possibility that investors will fare much better than expected. In order to allow government to benefit from an increase in the value of the X-note, this tranche includes a five-year profit sharing mechanism whereby the government is entitled to 50% of the profit from any sale above a predefined threshold. The threshold is set at 1.25 times the expected return investors expected at pricing of the notes. The expected return at pricing was 13.1%. Should such outperformance occur, the mechanism is unlikely to kick-in materially, as the investment horizon of investors may be longer than five years.

Supporting market and price efficiency

3.12 As part of HM Treasury's value-for-money tests the Department must satisfy itself that an efficient market exists for student loans and that it is functioning efficiently at the time of sale. If markets are not efficient – either because the market is under-developed, investors have insufficient information about the asset, or because there is insufficient competition – proceeds are likely to be affected negatively. UKGI and its advisers took a number of steps to meet HM Treasury's tests for market and price efficiency.

Assessing market demand

3.13 Advisers perceived market conditions between October and December 2017 to be supportive of a sale launch despite some uncertainty in the UK's macroeconomic outlook which might lead investors to be cautious. The advisers indicated that excess demand for similar 'asset-backed securities' meant issuers were achieving good prices for the assets. And while advisers expected supply to increase by the year end, they did not expect the fundamental imbalance to change.

Giving investors adequate information

3.14 To promote efficient pricing, investors need sufficient information to make an accurate judgement of the fair value of the loans for sale based on an analysis of their risk and return characteristics. With poor information investors are likely to place a higher risk premium on novel assets and proceeds would be lower.

3.15 After the transaction announcement, UKGI and its advisers provided investors with information about the loans and the transaction via a virtual data room. This is standard for this type of transaction.

3.16 UKGI went beyond standard levels of disclosure by providing investors with a model to forecast the cash flows on a 'non-reliance basis' to help its analysis. This was necessary because income-contingent loans are a novel asset and some of the information required to adequately model future repayments is not publicly available. UKGI and the Government Actuary's Department (GAD) analysts produced this model (known as the transaction-based earnings & repayments model (TERM)), after reviewing a number of alternative options. External advisers quality-assured TERM, and it included a review by the credit rating agencies.

3.17 TERM differs from the model the Department uses for accounting purposes (known as the stochastic earnings pathway (StEP)). TERM forecasts repayments of the loans sold to investors while StEP forecasts repayments for the total population of student loans. Back-testing showed that TERM was more accurate than StEP at forecasting repayments of the sold loans.[16] This is because StEP is fitted to a population with a constant supply of new borrowers, but the sold loans represent a closed pool which will deplete over time as borrowers pay off their loans and, as a result, reduce the credit quality of the remaining pool.

3.18 The different designs of the two models means they produce different forecasts of the future cash flows. TERM forecasts the future cash flows of the sold loans at £2.3 billion,[17] which is £261 million below the expected cash flows using StEP.[18] A comparison of TERM's predicted and actual cash flows have shown to be reasonably accurate to date and within the 5% tolerance level the Department set. In addition to the back-testing, the Department and UKGI tested the accuracy of the model twice: TERM was 0.9%[19] above actuals in October 2017 and 4.9%[20] below in March 2018. This deviation is within tolerance levels but it highlights the uncertainty in estimating future cash flows. More information on the two models is provided in Appendix Four.

Testing competitive tension

3.19 The securitisation structure was tested with more than 20 investors prior to the February 2017 announcement. Subsequently, just under 200 investors expressed interest in the transaction and UKGI, together with its joint lead managers and the SLC, met more than 60 investors face-to-face.

3.20 Demand and competitive tension was subsequently confirmed during the book-building process, which checks investors' price and volume interest prior to pricing the tranches. The joint lead managers started the book-building process on 28 November 2017. They recorded £300 million of investor interest after day one and £690 million after day two. By the third day overall demand exceeded the size of the offering, and by the final day, on 5 December 2017, the order book was 187% of the total notes on offer. This strong level of demand enabled the government to improve the pricing terms during the book-building phase (**Figure 15** and **Figure 16**).

3.21 Figure 16 illustrates the evolution of the pricing terms during the book-building phase and the expected return investors would make at the time of pricing. The prices are expressed as a percentage of the face value of the sold loans. The returns are based on the characteristics of the notes (Figure 14) and the expected future cash flows from UKGI's financial model (TERM). Against the face value, the final sale achieved 48 pence (48.47%) for every £1 of student loans sold and, on average, provides investors an expected annual return at pricing of 6.5%.

16 Back-testing is a process of verifying the predictive accuracy of a financial model by using historical data.
17 The cash flows excludes 5% that is retained by the Department to comply with EU securitisation requirements.
18 Note: the net present value under both models uses the discount rate for accounting purposes (RPI+0.7%).
19 Based on annual numbers.
20 Based on interim numbers.

Figure 15
Overview of the order book

The order book had an overall subscription of 187%

Tranches	Face value (£m)	Investor orders (£m)	Percentage covered (%)	Number of investors placing orders
A1	810.6	1,050	130	23
A2	697.1	1,290	185	17
B	120.6	320	265	9
X	1,919.1	3,980	207	10
	3,547.4	**6,640**	**187**	

Notes
1 The order book is the composition of investors' price and volume interest prior to pricing the tranches.
2 Face value is the total outstanding balance of loans issued to students plus any interest that has accrued, less any repayments.
3 Percentage covered is the investor orders divided by the face value.

Source: UK Government Investments

Figure 16
Development of price guidance to final pricing

The final pricing reached improved throughout the book-building phase

Tranches	Initial price thoughts (28 Nov 2017) (%)	First price guidance (4 Dec 2017) (%)	Final pricing (6 Dec 2017) (%)	Estimated investor return (6 Dec 2017) (%)
A1	98.60 area	98.60–99.30	99.03	2.3
A2	88.80–90.80	91.00–93.10	93.12	3.3
B	84.50 area	84.50–86.50	86.55	6.0
X	7.00–8.00	8.00–8.50	8.50	13.1
Weighted average			[48.47]	6.5

Notes
1 Book-building is a systematic process of generating, capturing and recording investor demand for securities during their issuance process, in order to support efficient price discovery.
2 The numbers in the table represent the price investors are offered/paid and is expressed as a percentage of face value. For example, for the X tranche, the investor paid 8.5 pence for every £1 of loans sold by the government and for the A1 tranche, the investor paid 99.03 pence for every £1 of loans sold by the government.
3 Estimated investor return – this is an estimate of the returns investors are likely to make on the day of pricing based on the characteristics of the tranche and the cash flow forecasted in the model assuming the government's base case economic forecast as of March 2017.

Source: UK Government Investments, National Audit Office analysis

Adviser costs

3.22 The Department used a wide range of advisers in order to prepare for and sell this novel asset. **Figure 17** lists the advisers and their roles.

Figure 17
Main external parties involved in the sale of student loans

Department of Education made use of a wide range of advisers

Main parties	Firm	Role
Sales adviser/arranger	Barclays Bank	Provided advice on potential sale structures, potential investors and information requirements from Student Loan company (SLC)/HM Revenue & Customs (HMRC). Managed all interaction with potential investors as 'arranger' of the securitisation.
Independent adviser	NM Rothschild & Sons	Provided third-party challenge to the sales adviser and reviewed their advice and recommendations. Advisor on the feasibility study.
Transaction reviewer	J.P. Morgan	Reviewed, challenged and commented on the sales structure, materials and investor list. Appointed pre-launch to provide additional structuring input on the securitisation structure.
Vendor assistance	Pricewaterhouse-Coopers	Provided advice and on-site assistance to SLC and HMRC on servicing data, systems and processes.
Legal adviser	Hogan Lovells	Provided legal advice on the feasibility study and the sale, including the transaction structure, documentation, legal due diligence and statutory framework. Additionally provided tax opinion.
Model adviser	Government Actuary's Department	Provided advice, a model, skills and resources to UK Government Investments (UKGI) in order to ensure that the model used for predicting student loan repayments was as accurate as possible.
Insurance adviser	Ernst & Young	Provided advice on the insurance regulatory aspects of the structuring, including providing a report to potential investors on the likely regulatory treatment under Solvency II.
Tax adviser	Pricewaterhouse-Coopers	Reviewed and commented on some of the tax aspects of the transaction structure.
Joint lead manager(s)	Barclays, Credit Suisse, J.P. Morgan and Lloyds	Priced and distributed securities to investors as part of the sales process.
Buy-side securitisation adviser	Third-party consultancy	Provided independent views on the structure and process.
Ratings agency(s)	Fitch Ratings, Standard and Poor's	Rating agencies are not advisers, they do not provide advice. They conducted analysis of the loans to provide a credit rating for the A and B notes.

Source: Full business case

3.23 The Department used more than 10 advisers, incurring related fees of more than £15 million (**Figure 18**) and estimated total transaction costs of £23 million when approximate government spend on headcount is included. Advisers were engaged on a combination of fixed and success-based fees. Given the numerous delays in the process – most of which were outside of the project team's control – costs were higher than expected at the outset when HM Treasury announced a sale in 2013.

3.24 The transaction reviewer, independent adviser and buy-side securitisation adviser provided complimentary functions of reviewing and challenging the securitisation structure. While the scope of the advisers' work covered similar areas, it provides the Department with additional assurance on the sales advisers' proposed strategy which was valuable considering the novelty of the transactions. The additional cost of this assurance was marginal but over time, as the government and investors become more familiar with this financial instrument, not all advisers may be required.

Figure 18
Transaction costs

Advisers' costs equate to approximately two-thirds of the total transaction costs incurred since 2013-14

Spend type	Expenditure			
	2013-14 to 2015-16 (£m)	2016-17 (£m)	2017-18 (£m)	**Total (£m)**
External advisers (includes £0.7m stamp duty)	5.2	3.1	7.4	**15.7**
Estimated internal costs	4.5	1.3	1.3	**7.1**
Total	**9.7**	**4.4**	**8.7**	**22.8**

Note

1 Costs incurred before the original business case in 2013-14 have not been provided.

Source: Full business case, UK Government Investments

Appendix One

Our audit approach

1 This study examined the value for money of the first sale of income-contingent student loans. We reviewed the preparation, process and proceeds of the transaction to opine on:

- the main outcomes of the sale;
- how government assessed value for money in the decision to sell; and
- how UK Government Investments (UKGI) managed the transaction to sell student loans.

2 **Figure 19** gives our evaluative criteria. Our evidence base is described in Appendix Two.

Figure 19
Our audit approach

The objective of government

In 2008, HM Treasury (HMT) and the Department for Education (the Department) agreed the following objectives, to reduce public sector net debt, to ensure there was no detrimental impact on borrowers and to achieve value for money. In 2017, the government announced the first in a programme of sales to dispose of a portion of the Income-Contingent Repayment Plan 1 student loan book. The sales aimed to raise £12 billion by 2020-21. The first sale completed on the 13 December 2017 with proceeds of £1.7 billion.

How this will be achieved

HMT set the objectives for the sale and the value-for-money framework to be applied to the sale, which the Department agreed to. The Department as the accountable officer for the sale engaged UKGI to sell the assets as it is the 'centre of excellence' for asset sales in government. UKGI considered different sale options, market conditions and investor demand. It aimed to maximise the price for the notes while ensuring no students would be affected by the new purchaser of the loans, as they have no ability to effect repayment.

Our study

The study examined whether the sale secured value for money.

Our evaluative criteria

Preparation

Were the disposal options and timing of these options assessed appropriately?

Process

Was the process effective to support the objectives of the transaction?

Proceeds

Have the proceeds been maximised? An expectation of this being repeated for the remaining programme?

Our evidence

(see Appendix Two for details)

- We interviewed officials in UKGI and the Department and reviewed their advice to ministers.
- We reviewed the business cases and the analysis provided by advisers and also interviewed them.

Our conclusions

The sale of student loans was conducted under government's policy to sell assets where there is no policy reason for continued public ownership. In this context UKGI prepared well for the sale, creating a structure which encouraged investor interest and maintained competitive tension during the process. The value of the loans is subject to a high level of uncertainty, but UKGI's estimates of what investors would pay were reasonable, and the sale achieved prices at the upper end of these estimates. In terms of the preparation, process and proceeds of the transaction itself UKGI has achieved value for money.

But the sale of student loans also shows limitations in the way that government assesses value for money and measures the costs of student loans over time. The Department uses one set of assumptions for the cost of student loans when they are added to government's balance sheet, and HM Treasury uses another set of assumptions in support of its decision to sell them. This offers two different ways of calculating the subsidy to, and value of, its rapidly growing student loan portfolio. The two approaches give different answers which risks government: not knowing with enough certainty the cost to the taxpayer of student loans when they are issued; and of selling assets too cheaply relative to their long-term value despite achieving its objective of reducing public sector net debt.

Appendix Two

Our evidence base

1 Our conclusion was reached following an analysis of evidence collected between January and May 2018. Our main methods are outlined below:

Document review

2 We reviewed key documents including:

- the Department for Education's (the Department's) annual reports;
- letters between accounting officers of the Department and HM Treasury and their predecessors;
- the original and final business cases;
- submissions to ministers seeking authority to proceed;
- information obtained from the transaction's data room that was shared with investors;
- presentations to investors, servicing and collection presentation, investor prospectus and legal documentation, credit rating agency reports;
- the UK Government Investments' (UKGI's) valuation model and independent valuation report;
- the different models used to predict student loan repayments;
- records of the progress of book-building and allocations of notes;
- contracts between the Department and its advisers; and
- adviser documentation, which included assurance reports, model review, update reports, readiness review and market testing advice.

Interviews

- we interviewed officials at HM Treasury, the Department, and UKGI. We also discussed the sale with the Students Loans Company and the Government Actuary's Department; and
- we interviewed the advisers involved in the sale.

Quantitative analysis

- we examined the different models and assumptions; and
- we analysed the valuation approaches and the methods underpinning them.

Appendix Three

Accounting treatment

1 National Accounts and the Department for Education (the Department) accounts report information on student loans each year. The Office for National Statistics produces the National Accounts to record the UK's economic activity to statistical standards on a consistent basis with international comparators. The government values the sold loans at £3.5 billion on the National Accounts, while the Department records the same assets at £2.6 billion on Departmental Accounts.

2 The difference arises because the National Accounts reflect the nominal value[21] of the loans issued, whereas the Departmental Accounts applies International Accounting Standards and takes into account that not all loans will be repaid. The Department writes off a large proportion of loans in the year issued and makes appropriate adjustments in subsequent years, as it does not expect the loans to be repaid in full. The National Accounts are not required to incur the same write-off until the end of the repayment terms; for the loans sold this is when the borrower reaches 65 years of age.

3 Due to the different accounting frameworks, the National Accounts and Department accounts also treat and present the sale differently. The Department records a sale of £2.6 billion worth of assets for proceeds of £1.7 billion, representing a loss on the sale totalling £865 million. The Department must record this loss to comply with the required accounting framework, which has an adverse effect on its financial position and performance.

4 Despite the National Accounts recording the same asset at £3.5 billion, it records no loss on the sale. This is because the different accounting framework does not require a loss to be recognised; instead, the assets are revalued at the sale figure of £1.7 billion.

5 The sale also avoids the National Accounts having to write off the loans, as the Department does when it issues the loans, because they are moved off the National Accounts before they are cancelled at the end of their repayment terms. This, understandably, means that the Department does not have the same incentive to sell student loans as HM Treasury.

21 Nominal value = face value + accrued interest – repayments (of principal and interest) – loan cancellations.

6 The Department sought assurance from HM Treasury that any loss incurred from loan sales would not have an impact on its budget. HM Treasury advised the Department that any loss would not affect future budgets. While the Department is responsible for the sales' value for money, HM Treasury initiated the decision to sell. The Department has been proactive and engaged on matters regarding the accounting impact, dating back to the first discussions in 2007.

Fiscal position

7 The government reduced public sector net debt (PSND) by £1.7 billion through the sale (**Figure 20** overleaf). PSND only recognises assets if they are cash or 'near cash'. Thus, the financing of the original issuance of student loans will have impacted PSND (through either the liability of the gilts issued or a decrease in the government's liquid assets) but the student loan assets are not recorded within the PSND aggregate. In turn, when they are sold only the positive impacts of increased cash are recognised, not the corresponding loss of an asset worth £3.5 billion.

8 PSND is only one measure of national debt available from the National Accounts. An alternative measure, public sector net financial liabilities (PSNFL), provides a different view of the sale. HM Treasury introduced PSNFL as it gives a broader view of national debt than PSND. PSNFL takes account of a number of assets that PSND does not, including student loans. However, PSNFL does not show the Department's planned subsidy of student loans – when the Department issued the loans, it did not expect them all to be repaid.[22] As such, the impairment that the Department applies on its accounts is not included in the National Accounts through PSND or PSNFL. The Office for National Statistics is aware of this and has commenced some work with the international statistical community to consider whether this remains the most appropriate statistical treatment of student loans, given their income-contingent nature.[23]

9 PSND is limited in its scope, providing a narrow view of debt. HM Treasury's continued focus on PSND as a measure has been criticised in the past. The Treasury Committee[24] warned that selling these loans does not improve the government's financial position, and the Office for Budget Responsibility and the International Monetary Fund have described government asset sales that reduce the net debt as a fiscal illusion.[25] Although the government's objective is to reduce PSND, it should have reviewed this before the sale, considering the impact on alternative measures such as PSNFL.

10 The use of PSND in this first sale of student loans has allowed the sale to be successful in achieving its objective of reducing national debt, despite the government exchanging £3.5 billion worth of assets for £1.7 billion.

22 Government estimates that 65% to 70% of loans issued before 2012 and 55% to 60% of loans issued after 2012 will be repaid.
23 Office for National Statistics, *Public sector finances*, *UK: March 2018*, 24 April 2018, section 14.
24 Treasury Committee, *Student Loans*, Seventh Report of Session 2017–2019, HC 478, House of Commons, February 2018.
25 Office for Budget Responsibility, *Economic and fiscal outlook*, November 2017.

Figure 20
The effects of the sale on PSND and PSNFL

The impact of the sale differs substantially according to different measures

	Public sector net debt (PSND) (£m)	Public sector net financial liabilities (PSNFL) (£m)
Student loan contribution before the sale[1]	–	(3,547)
Sale		
£1,719 million cash received for £3,547 million loan asset	(1,719)	1,828
No sale		
Loans held on National Accounts until maturity, requiring write-off[2]	–	257 – 963[3]

Notes

1 Student loans are included in PSNFL at nominal value, whereas they are not included in PSND.

2 The National Accounts only require write-off after the end of repayment terms, for example the borrower reaches 65 years of age. When the loans mature, the National Accounts will cancel the loans for non-repayment, increasing PSNFL.

3 £963 million uses the accounting model (StEP) to estimate write-offs and assumes no further impairment in the Department's accounts to the loan book until maturity. £257 million write-off uses the sale model (TERM) to estimate future impairments.

Source: Department for Education Annual Report and Accounts 2017-18; National Audit Office analysis of HM Treasury debt and liability measures, Office for National Statistics

11 The government benefits further from the sale when considering the deficit, with the National Accounts avoiding significant impairments which would be incurred at maturity. Once the sale programme is complete, the National Accounts will have avoided £13.1 billion of impairments.[26] The government recognises this write-off as a purposeful design feature of student loans, and that it represents a significant cost of higher education funding to the government. The sale clears a substantial cost to the government of higher education off the deficit, not faithfully representing the true cost at the National Accounts level. If the government extends the sales programme to post-2012 student loans, the deficit may exclude further costs of higher education of at least £14 billion.[27]

26 These are the impairments recognised on the income-contingent loans 1 held as at 31 March 2017 – meaning this is the minimum impairment which the government will avoid when selling.

27 These are the impairments recognised on the income-contingent loans 2 held as at 31 March 2017 – meaning this is the minimum impairment which the government will avoid when selling.

Appendix Four

Purpose of the different student loan models

1 In 2013-14, the Department for Education (the Department) modelling team (then part of the Department for Business, Innovation & Skills) created the Stochastic Earnings Pathway Model (StEP). This model incorporated recommendations from the National Audit Office's 2013 technical report on its former model HERO.[28] The Department developed StEP in order to provide the most accurate valuation of all student loans held by government. This also generates the impairment figure used in the Department's financial statements.

2 In 2015, back-testing showed that the StEP model – while fit for the purpose of forecasting repayments of the total population of student loans – was less suitable for forecasting the repayments of loans to be sold to investors. This is because the population within StEP has a constant supply of new borrowers, whereas the individual tranches to be sold will deplete over time as higher earners pay off their loans. In turn, UK Government Investments and the Government Actuary's Department (GAD) analysts produced TERM to value the net present value of future repayments for loans to be sold in the first tranche.

Comparison of assumptions and model mechanisms

3 As such, the model assumptions and mechanisms are designed for their respective purposes and so differ in various ways. **Figure 21** overleaf explains in more detail these differences.

28 Comptroller and Auditor General, *Student loan repayments technical paper*, Session 2013-14, HC 818, National Audit Office, December 2013.

Figure 21
Differences between TERM and StEP

The assumptions and mechanism are designed for different purposes

Modelling	Transaction-based earnings & repayments model (TERM)	Stochastic earnings pathway (StEP)
Underlying mechanism of the model	Markov transitions Employment: ● the model assesses the probability of remaining in employment or moving to employment based on a borrower's current earnings level or number of years since their last employment. Earnings: ● an individual's earnings are probabilistically driven by the prior year's earning band; and ● only longer-term memory is used to determine earnings band of someone coming out of unemployment and is based on their last earnings state.	Logistic and linear regressions Employment: ● the model uses data from the previous three years for that specific individual to determine the probabilities of each possible employment state from the logistic regressions, giving highest weighting to the prior year; and ● an employment state is randomly assigned to the individual based on these probabilities. Earnings: ● the model uses data from the previous three years for an individual to calculate earnings from the linear regressions, giving highest weighting to the prior year; and ● earnings are perturbed from the value derived from the linear regressions, based on a random selection from a normal distribution.
Data to set assumptions	Sale cohort-specific Student Loans Company (SLC) data is used. When creating the transition probabilities at older ages, as SLC data is limited, it is overlaid by HM Revenue & Customs data on the wider tax-paying base.	SLC data (1998–2014), British Household survey (1991–2009), Labour Force survey (2001–2014) and Destinations of Leavers of Higher Education (2005, 2009).
Population	Population being forecasted is borrowers with a latest statutory repayment due date of 2002 to 2006. The residual individuals who have not fully repaid their student loan and therefore are anticipated to not be the highest earners.	All borrowers with balances outstanding.
Gender	There is no difference in treatment between men and women when assessing the transition probabilities.	There are different coefficients used for each gender which influence earnings and employment status.
Age	Age impacts on the transition probabilities.	Age impacts the employment likelihood and earnings of an individual. Actual age is also combined with graduation age to provide a weighted age that more appropriately affects an individual's circumstances.
Historical individual data used to develop employment and earnings status	Each individual in the population is 10 years plus post-Statutory Repayment Date and therefore it is not required to produce a position for a new or relatively new loan holder. Only current earnings and age rather than any higher education information is factored into transition probabilities.	The StEP model considers an individual's earnings potential and employment status to be dependent and therefore modelled on the following three criteria: ● the type of higher education institution attended; ● degree subject studied; and ● degree level achieved, including completion. This is only in the short term, until the actual position for that individual starts to become available in SLC data for the specific individual.

Source: National Audit Office analysis

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