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ABSTRACT

This report compares education systems, incentives, and evidence of saving for education in four countries--Denmark, Japan, New Zealand, and the United States--with implications for the United Kingdom. The report's objective is to identify evidence of saving for education in each comparator country, along with government policies and mechanisms that provide incentives for individuals or families to save for education. The report begins with an overview of the education system in each country to better understand the importance of education and its impact on household finances. The next section offers an overview of theories of household saving and outlines trends in saving rates for each country. The next section discusses forms of saving for education. Results of analyses show that the most important determinant of saving for education is simply the cost of education. Therefore, if the costs were to rise in the UK, there would be a rise in saving for education. Also, tax breaks to encourage saving for education in the UK are unlikely to alter saving patterns. Individuals tend to save regardless of whether tax incentives are in place. (Contains a glossary, 4 appendices, 7 Internet resources, 11 tables, 14 figures, and 37 references.) (WFA)

Research report

Saving for Learning
Strand 2:
An international comparison

learning &skills research centre

An international comparison of education systems and patterns of saving for learning in Denmark, Japan, New Zealand and the USA. The report reviews the evidence in each country, identifies policies that act as incentives for saving, and considers the implications for the United Kingdom.

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Research report

Saving for Learning
Strand 2:
An international comparison

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Charles River Associates

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Contents

Tables

Figures

Foreword

This publication is one of a series of papers produced as part of the LSRC project on Saving for Learning, which is being managed by Mick Fletcher (LSDA) with consultancy support from Mark Corney. The project aims to develop an understanding of how individuals and families are thinking and acting in relation to financing their own learning, and how such behaviour might change in the future. The research is intended to inform the development of a lifelong learning policy in the longer term and to assist in discussions of the options for change.

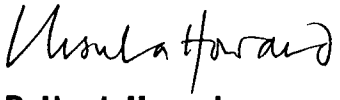
The project began with a substantial scanning and scoping study carried out by Mark Corney (MC Consultancy) and Nigel Brown (Nigel Brown Associates). A copy of their report can be downloaded from the LSRC website at www.LSRC.ac.uk/research. The study showed clearly that while much had been written about savings behaviour, and a substantial literature existed on the financing of education and training, there was an absence of studies that attempted to link the two fields. In the light of the government's welfare reform agenda, and in particular the indication in the Green Paper *The Learning Age* that individuals need to take greater responsibility for planning and financing their own learning, this gap in the literature was felt to be serious. A project steering group, representative of all key stakeholders, agreed a programme of work to address the gap.

The second stage of the project had two components. The National Institute for Adult and Continuing Education (NIACE) was commissioned to develop a concept paper that sought to apply life-cycle theory to the interactions between savings behaviour, the need for education and education finance. An initial draft of the paper, which will be updated as the project progresses, is available for comment on the LSRC website.

The second component was the review of practice in selected other countries by Charles Rivers Associates, presented here. The aim was to describe the arrangements for financing education, and particularly the balance of public and private funding, alongside a description of behaviour in relation to saving and borrowing. The four countries, Denmark, Japan, New Zealand and the USA, were identified as having arrangements that contrasted with each other as well as with the UK. While no firm conclusions can be drawn from this short survey, it is a rich source of ideas and potential hypotheses.

The next stages of the work involve a desk study of potential policy scenarios and a major empirical survey of attitudes and practice. The design of this latter research will be informed by each of the other elements and is planned to be commissioned in autumn 2002 for reporting in the summer of 2003. An invitation to tender for the work on scenarios has been prepared and a copy can be downloaded from the LSRC website.

The LSRC is keen to encourage a wide debate on these issues from a variety of perspectives. In addition to the series of publications, therefore, the website will include updates on work in progress and links to related research and policy documents. Those interested are encouraged to contact the leaders of the research programme by email at mfletcher@LSDA.org.uk or by phoning the LSRC on 01823 345950.



Dr Ursula Howard
LSRC Director

Executive summary

This report comprises Strand 2 of the LSRC's research programme on Saving for Learning. It focuses on comparing education systems, incentives and evidence of saving for learning in four OECD countries, namely Denmark, Japan, New Zealand and the USA. Each country was carefully selected so that as a group – together with benchmark reference to the UK – they cover the full spectrum of public to private investment in education, financing arrangements for learning and household savings behaviour.

The primary objective of this report is to identify evidence of saving for learning in each comparator country, and where such evidence exists to locate government policies and/or mechanisms that provide incentives for individuals or their families to save specifically for education.

Educational structures and household savings rates

We start with an overview of the educational structures in each country. This is necessary to understand the importance of differing stages of education and their likely impact on household finances. The key characteristics of the educational structures of each of our comparator countries can briefly be summarised as follows:

- Denmark is characterised by a highly state-subsidised education system, where tuition fees for students are nominal (or non-existent) at all levels of education, and participation is high by international standards.
- New Zealand chooses to fully subsidise its primary and secondary education, but requires students to make a private contribution towards post-secondary education costs. The level of tuition fees at this stage has grown significantly since they were first introduced in 1990, and for a growing number of students this cost is now met through the use of an income-contingent loan scheme.
- The USA also chooses to subsidise compulsory schooling, but at least some private investment in post-secondary education is required at state-funded colleges, and significant private investment is required at private universities. When compared internationally, the cost of tertiary education is shown to be high in the USA and the availability of loans is somewhat restricted.
- Japan is unusual among the comparator countries in that private contributions to education expenses are required from the end of compulsory education. Given the young age of the students at this point (15), the majority of the education expense is borne by the family. Moreover, the tuition costs at high school (including cram schools and after-school tuition) and university are very high and represent a large proportion of family expenditure.

In addition to stark differences in educational structure and financing, the comparator countries exhibit a broad spectrum of household savings behaviour, from Japan at 11.1% to New Zealand at -2% (2000). These savings rates arise from differences in consumption behaviour as well from a number of structural differences in each country, such as retirement provision, demographics and the holdings of financial assets.

Saving for learning

There are many economic reasons to believe that education and savings may be linked. For example, individuals with higher education are generally expected to earn a greater income and thereby have higher savings, and higher education levels increase the overall productivity of a nation, which is then able to generate greater aggregate income and hence more savings. However, the emphasis of this research is not on the link between education and saving per se, but rather on locating evidence of targeted savings that are motivated by a desire to purchase education products in the future.

Nevertheless, targeted (or ex-ante) saving for learning is but one method by which such savings could occur. Indeed, we find that saving for learning can take many forms, including:

- saving for learning in a bank account or education-specific financial product
- dis-saving through borrowing (which is equivalent to saving later to repay)
- dis-saving by drawing down assets – financial or property (which is equivalent to saving to rebuild assets later)
- saving through the tax system.

We find that, on the whole, citizens of Denmark choose to save via the tax system and in New Zealand through loans. For Denmark, where there are no tuition fees and savings rates are low, most education is fully state subsidised. In New Zealand, where tuition fees at tertiary level have been growing rapidly and savings rates are negative, we see that dis-saving – permitted by the student loan system – is the predominant method of saving for learning.

By contrast, Japan and the USA provide convincing evidence of specific ex-ante saving for learning. Evidence suggests that saving for education is listed among the top four reasons why people save in each country, with the exact rank depending on the stage of life of the survey recipient. In both countries the majority of this saving is not undertaken by the student (although there is some evidence that this occurs in the USA) but rather is borne by the parents or grandparents.

Implications for the UK

In summary, we identify four primary factors that determine whether saving for learning occurs within a country and the level of those savings. These are:

- the private cost of education to the individual or family
- the constancy of government policy on education expenditure
- the availability of alternative sources of finance for education
- the availability of tax breaks for education-related expenses.

The most important determinant of saving for learning is found to be the cost of the education. In the absence of student loans (or other alternative means of finance), high anticipated education expenses effectively force households to save. When loans are made available some (or most depending on the rules of the loans scheme) of this saving is moved:

- from the family (parents and/or grandparents) to the individual student
- from ex-ante to ex-post.

We would anticipate, therefore, that if the costs of education were to rise in the UK, education-related savings would also increase. However, the extent of the savings and the distribution of them across differing age groups would depend on the availability of student loans.

Finally, we show that the availability of tax breaks has not been shown internationally to alter saving for learning behaviour materially, and we expect that this result would also hold for the UK.

Section 1 Introduction

In 2000 FEDA (now the LSDA) began a series of research initiatives to investigate the institutional arrangements and funding for post-16 training, learning and education. As part of that effort the LSDA and the LSRC have set out plans for a comprehensive research agenda entitled the Saving for Learning Project. The objectives of this project are as follows:

- to examine the current and future funding policies for post-16 further and higher education and welfare reform
- to build up a picture against the above background of saving for learning, and especially of how different social groups and age groups in the UK save in order to invest in education and training
- to describe the existing and proposed savings products – commercial and state-subsidised – to encourage saving for learning
- to make recommendations to funding councils, financial institutions and government to encourage saving for learning to underpin a lifelong learning culture.

This report comprises Strand 2 of that research and focuses on comparing education systems and the policies, incentives and evidence of saving for learning in a selection of OECD countries. In order to meet the objectives of the broader project (laid out above), we have chosen four comparator countries: Denmark, Japan, New Zealand and the USA. Each country has been carefully selected so that as a group the comparator countries – together with the UK[1] – cover the full spectrum of public to private investment in education, financing arrangements for learning and household savings behaviour.

1 The UK is used throughout the report as a reference benchmark.

There are many economic reasons to believe that education and savings may be linked. For example, individuals with higher education are generally expected to earn a greater income and thereby have higher savings, and higher education levels increase the overall productivity of a nation, which is then able to generate greater aggregate income and hence more savings.

However, the emphasis of this research is not on the link between education and saving per se, but rather on locating evidence of targeted savings that are motivated by a desire to purchase education products in the future. That is, the focus of the following research is on identifying evidence of saving for learning, as well as identifying governmental policies and mechanisms that provide incentives to save specifically for education.

The report is structured as follows. Section 2 provides a brief description of the educational structures in each country. Section 3 offers an overview of theories of household savings and the main determinants of savings behaviour, and outlines the trends in savings rates in each of the four countries. Sections 2 and 3, therefore, provide the institutional background to the educational structures and welfare systems that we need to understand in order to evaluate and compare saving for education behaviour. In Section 4 we turn to our first discussion of specific saving for learning behaviour. Here we discuss the different types of saving for learning – of which we find there are a number – and outline the experiences of saving for education in each of our four comparator countries. Section 5 concludes our report by summarising the analysis presented and providing a final discussion on why targeted saving for learning is seen to occur in some countries and not others.

Section 2 Overview of the educational structures in comparator countries

This report is an international comparison study of Denmark, Japan, New Zealand and the USA, with benchmark reference to the UK. These countries were chosen specifically for this research as they provide case studies that depict the full spectrum of possibilities:

- educational provision: from public provision in Denmark and the UK, through shared public/private provision in New Zealand, to predominantly private provision in the USA and Japan
- personal savings rates that are comparatively low (the USA and New Zealand), medium (Denmark and the UK) and high (Japan)
- governments that range from interventionist, using policies actively to manage the economy (Denmark and Japan), to more market-oriented economies that are less likely to stimulate behaviour through targeted policy (the USA, UK and New Zealand)
- Anglo-Saxon, European and Eastern cultures
- a range of student financing arrangements – grants, subsidised loans, non-subsidised loans and fees.

As background to understanding saving for learning behaviour in each of the chosen countries, the following section provides a brief overview of the educational structures of each country. We provide particular detail on tertiary and adult education, as these later stages of learning often involve financial contributions from private individuals and hence have a greater probability of attracting savings.

2.1 The Danish education system

The Danish education system receives significant public finance. Each year around 40% of the Danish population – approximately 2m people – take part in education and training activities that are wholly or partially financed by the state. This level of governmental support requires that 7.2% of Denmark's GDP be spent on education, which is substantially greater than the OECD average of 5.7% (OECD 2001, p23). The section below provides a brief overview of how Denmark's education system fits into its cultural structure before looking at the system itself in more detail.

The Danish education system is a direct product of the country's cultural, economic and political background. Culturally Denmark has maintained its regional flavours, which has not only supported a wide range of cultural activities – both mainstream and avant-garde – but also helped produce strong regional differences between the local high schools. This is reflected in a wide range of educational philosophies and varying cultural approaches to education. Hence, a decentralised cultural system leads to a high degree of local variation and flexibility within the Danish education system.

In addition, economic and political frameworks provide a strong national emphasis on learning. Denmark has few natural resources and its traditional industries – such as fishing and farming – have long been declining. In spite of this, however, the country has one of the most successful economies in the world, with few OECD nations producing more per capita. The success Denmark has had in developing high-value industries is linked to the strong and consistent national policy of investment in education and the integral links between the education system and the labour market developed by both industry and government.

Thus the Danish education system owes much to Denmark's particular mix of cultural, economic and political factors. The cultural system allows tolerance, flexibility and regional differences, the economic circumstances drive investment, while the political framework supports and encourages the links between these factors as well as further emphasising the importance of education itself.

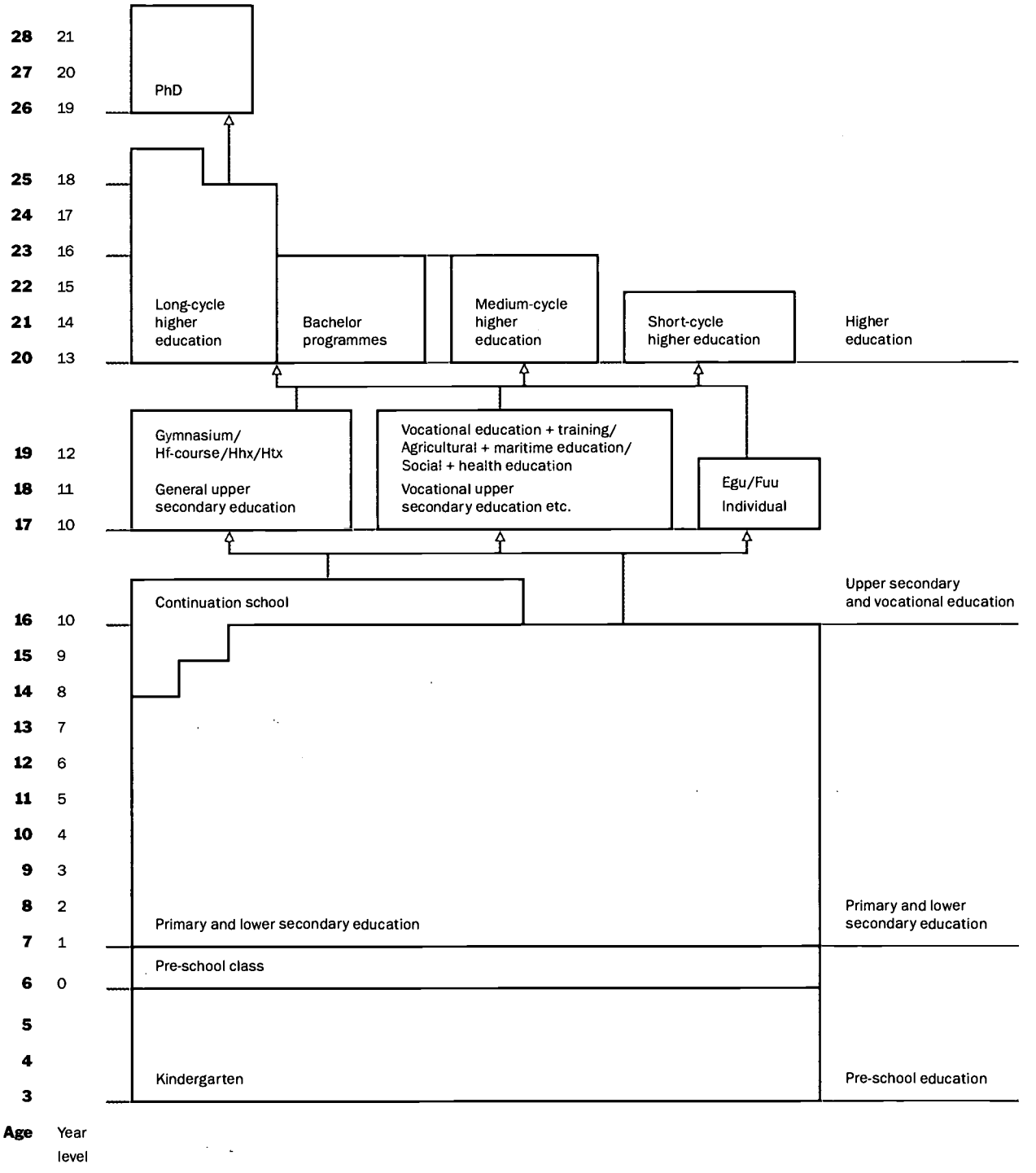


Figure 1
Diagram of the Danish education system
Source: Danish Ministry of Education

Overview of the education system

The Danish education system consists of four levels of training: basic school, youth education, higher education and adult education, as shown in Figure 1. Each level is described in more detail below.

Primary and lower secondary education

Compulsory education in Denmark begins at the age of 7 and lasts for 9 years ending at age 16. Most Danes, however, also attend a voluntary state-funded pre-school class when they are 6 and many stay on for a voluntary 10th year of school.

Approximately 90% of children attend the local state-funded school for their basic education. The remaining 10% attend private schools, which are chosen because of their alternative types or methods of educating. Unlike many countries there is no perceived difference in quality between these two types of educational institutions and funding systems.

In keeping with the Danish government's policy of supporting compulsory education, private schools receive significant government subsidies, albeit at a lower level than their state-owned counterparts. Fees are charged in the private sector to make up the funding shortfall. In 2000 the average annual tuition fee per student in a private school was approximately DDK8000[2] (£660).[3]

2 The range of costs are DDK6000–12,000 (£500–1000).

3 All exchange rates in this report are determined as average rates for the year to which they pertain. They are taken from www.oanda.com.

Youth education (upper secondary education)

Once basic schooling is completed at age 16, students make a determined choice between an academic education or vocational training, with academic schooling running from 16 to 19 and vocational training ending at 18 or 19.

Higher education

Upon completion of youth education, most students go on to higher education, where they have the choice between courses that are run on a short cycle (1–3 years), medium cycle (3–4 years) or long-cycle (5–6 years). Short-cycle courses typically take place outside the university system and – due to relatively recent reform (August 2000) – are now mostly designed to prepare students for middle-management functions in business. Medium-cycle courses can be offered at a non-university or a university institution. They thus cover a broad range of education from vocational training through to traditional academic higher education study. By contrast, long-cycle courses must take place at a university (of which there are 11), be academically focused and involve research of some kind. These courses are often thought to be comparable to a master's degree qualification from a UK institution.

Higher education in Denmark is predominantly financed by the state. The level of funding is such that students are entitled to receive generous grants of up to DDK76,000 (£6600) and pay no tuition costs. Maintenance costs are met through the use of student loans, or part-time work.

Adult education

Danish adult education is highly developed and strongly supported by the government. The system is organised into two categories, general and vocational adult education, as described below.

The general adult education centres are controlled by the Ministry of Education, and are open to Danes aged 18 and over. The Danish state has, or feels, an obligation to ensure that every adult has an opportunity to go back and start general education again, or pick up qualifications that they lack, in order to move ahead. These adult local schools offer the full range of courses and resources necessary to complete the standard *folkeskole* (primary) education, to take advanced leaving exams or to take standard secondary school examinations. The programmes are flexible and are designed to allow students to start and end when they like, at a pace that they desire. There is also the choice of self-study – which can be supplemented by a counsellor – or of joining study circles where teaching is seminar-based.

There is a charge for these courses but it is nominal[4] and the entire system is heavily subsidised by the government. The state takes a very active role in encouraging participation in adult education and training. Not only does it largely fund the system, but also new programmes have been started to encourage those in employment to return to school and re-take any part of the *folkeskole* education that they have not yet completed. While this learning takes place the government pays full unemployment benefits to the student's employer, who in turn pays the regular salary to the individual.

4 Range of costs DDK2000–7000 (£160–800), Danish Ministry of Education. These costs are often subsidised further by local authorities.

In contrast to general adult education, vocational adult education is controlled by the Ministry of Labour and delivered via 24 specifically designed vocational training centres in various parts of the country. Like the general adult education centres, the courses provided at these locations are flexible and organised into modules. There is much emphasis on liaising with the labour market and a key element of each qualification is that it must be transferable throughout the industry and not specific to any one employer.

Again, as with the general adult education centres, the government heavily subsidises the system and pays the full unemployment benefit to the firm, which in turn continues to pay the salary of the employees while they are in training. If the cost of the salary or wage exceeds the amount of the unemployment insurance, it is the employer who will usually pay the difference rather than the employee.

Summary of the Danish education system

In summary, the Danish state believes that heavy investment in education will produce a highly skilled and productive workforce. For this reason education at all levels is heavily subsidised by the state and participation by residents is high throughout. The individual is thus unlikely to face significant costs in terms of either tuition or maintenance at any step in the educational process.

How do the Danes view their education system?

The Danes view their education system as absolutely critical to the success and development of their nation. There is an awareness that costs are high but the innovative taximeter system is considered an effective method of ensuring efficiency and high standards.[5] One concern that has been raised is the adequacy of the youth counselling system, which many view as being too underdeveloped a structure to cope with the requirements. However, despite these reservations and in spite of the high tax rates that it creates, the Danish system is broadly supported by the population, and this backing is demonstrated by the number of small businesses and employers who participate in youth training schemes and continuing education programmes. Acutely aware of Denmark's lack of natural economic resources, the Danish system and the population agree that the most efficient form of investment possible is in their youth.

5 The taximeter system is a comprehensive financing system based on per capita (cash per student) grants to institutions.

Japan is often described as a *gaukureki shakai* (education-orientated society), as education has such a pervasive effect on all facets of society. Education is critical in terms of social and cultural prestige and economic success.

In many ways the Japanese system is driven by two very different contexts: the social, cultural and political traditions of imperial Japan, and the economic climate of the post-war period. The administration of the education system with its complex system of national, municipal and local responsibilities had its origins in the early 18th century, when various educational establishments developed to serve the needs of the different social classes. For example, provincial lords set up special schools for the children of the warrior class, and rural communities operated schools for the wealthier members of the merchant and farming classes. The origins of the education system were therefore inextricably linked to social and cultural backgrounds and these links have continued to be important.

The intense competition in Japanese education that has become its hallmark and the strong links between the education system and the labour market are products of the post-war period. Japanese society became slowly more uniform after the social reforms of the 1950s. As it did so, education became the primary barometer of social, cultural and financial success, as Japan's lifetime employment policy ensured that those with a good education entered the most profitable jobs. To secure their children's financial future, a strong culture of parental support developed, resulting in today's system in which parents fund not only the tuition costs of their children's education but also the costs of extra tuition and cramming schools.

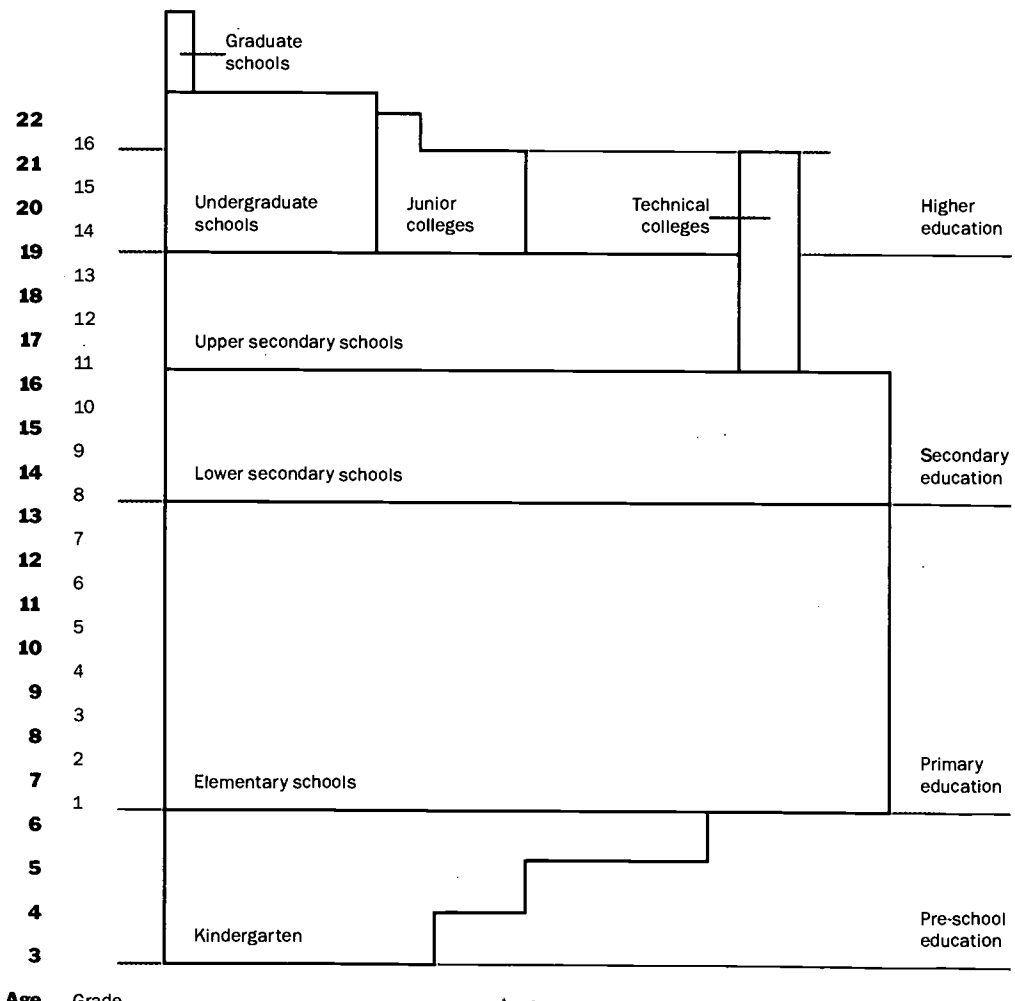


Figure 2
Diagram of the Japanese education system

Source: Japanese Ministry of Education

Box sizes provide an estimation of the total participation rates by age group

Overview of the education system

Primary and lower secondary schooling

Primary schooling starts at age 6 in Japan, although many Japanese children also attend pre-school from the age of 3. The municipalities – via local taxes – shoulder the vast majority of primary education costs, with specific grants provided by central government for one-off educational activities and to subsidise the funds of lower-income areas.

Post-compulsory schooling

Unlike primary and lower secondary schooling, post-compulsory schooling in Japan is not offered free of charge. As compulsory schooling ends relatively early, at age 15, the tuition fees charged past this age impose a significant financial burden on parents greater than that in the other countries studied.

In addition to the tuition costs of upper secondary school classes, a highly competitive university entrance process adds additional expense. Universities in Japan are ranked according to their perceived quality, and many studies have shown that there is a strong relationship between college rankings and lifelong career and family prospects. For this reason, Japanese students work hard to be accepted by the most prestigious universities, which are at the top of the list. However, to be accepted students must pass strict university entrance exams that require significant preparation. While some students are able to pass these exams with little additional help, most require after-school tuition or year-long courses at a preparatory school to be successful. Both options are costly, as no state funding is available for this type of education.

Tertiary education

Universities are also heavily reliant on student fees and the tuition costs at this education level are high. The average cost of a year at university is currently over 20% of average annual income.[6] In general, parents shoulder around 70% of the financial burden, with the remainder of the cost split between government grants and student work (Shiraishi 1998, p58). In spite of these costs, university rates are rising as students seek the security of a university education in these times of economic uncertainty.

6 Range of tuition costs for public university JPY300,000–480,000 (£1600–2560) per annum. For private universities the range is JPY700,000– 1,000,000 (£3700–5400) per annum. Source: Japanese Ministry of Education.

Adult education

Adult education in Japan is more limited than in Denmark. Aside from a few basic literacy programmes, most adult education is focused on recreational learning or training programmes for the employed. There are two such training schemes in operation.

- The first allows employers to be granted aid to pay the wages and expenses needed to carry out planned research and education for their employees in consultation with the labour union.
- The second – labelled the Ability Garden – allows experts from various fields to teach small groups, using new technologies and training techniques. Although the state offers some funding for the scheme, there are direct costs to the individuals, who are required to pay an hourly fee. In 1997 there were already 45 courses offered under the Ability Garden scheme covering eight different industries.

There are currently very few re-training programmes for the long-term unemployed, but due to the recession there has been an increase in the number of programmes that are offered for the short-term unemployed. Under the slogan 'transfer labour to avoid lay-offs', the government has provided subsidies to corporations to provide re-training for adults. This support includes funds for employment adjustments, for increasing the degree of sophistication of employment and for labour transfer and ability development. The conditions for receiving such funding are the reduction of operating activities, placement conversion due to the recession, re-structuring and measures for long-term lay-offs. These programmes – which are heavily funded by the government – are seen as a form of mitigation against the current crisis.

Summary of the Japanese education system

In summary, the Japanese education system is provided free of charge only during compulsory education (until a child reaches the age of 15). Due to the strong cultural emphasis on education nearly all children continue their studies past this point at a significant cost to their parents. In addition, almost 70% of students go on to university, and not only is this costly in itself (with tuition costing approximately 20% of the average income per year) but preparatory courses designed to help students to enter university are also expensive. In contrast to the UK, therefore, Japanese parents are asked to contribute significantly to their child's education over a prolonged period of time, typically from age 15 until graduation from university at 22.

How do the Japanese view their education system?

The Japanese education system has been the subject of much criticism during the last few years. There have been accusations that the structures are too complex and unwieldy (particularly in the later stages of the system) and that governmental support is insufficient. Yet the education system is still regarded as critical to development and economic success, and parental expenditure has been rising steadily over the past decade in spite of the downturn. In fact, the economic recession has only increased the attractions of a prestigious education and hence competition and expenses have also intensified.

New Zealand has undergone great change over the last 20 years in terms of its economic and cultural attitude towards education. Historically, the New Zealand system of education was very similar to that of the UK, with all levels of education heavily state subsidised. During this time publicly provided education was seen as an integral component of a comprehensive welfare system, but during the late 1980s that system – and its accompanying attitudes – was changed. By the early 1990s tertiary-sector tuition fees had been introduced, along with performance-related pay for school teachers and greater say for parents in the financing decisions of their local schools. There was, therefore, a major change in attitude over the role of education in society. The new system was focused on producing good teachers who trained high-quality students who were willing to pay to maximise their economic potential. Education was now not so much a right as a primary tool of economic development.

The New Zealand educational structure is divided into early childhood education, primary, secondary and tertiary stages as shown in Figure 3 and described in the text below.

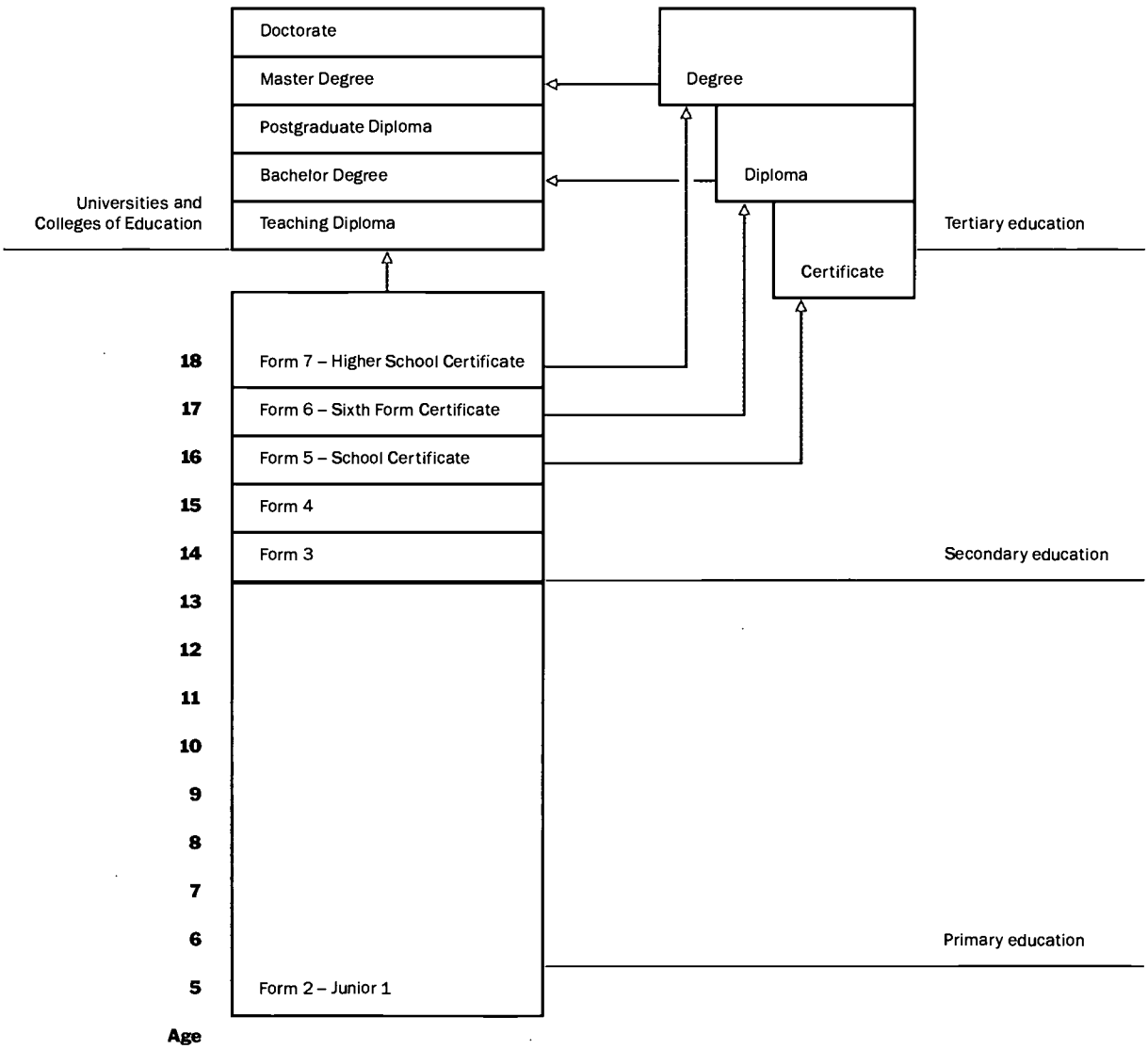


Figure 3
Diagram of the New Zealand education system

Source: New Zealand Ministry of Education

Overview of the education system

Early childhood education

Early childhood education is available to children under 6 years old and is supplied through a wide range of institutions and agencies (many of which are administered by voluntary groups), all of which receive some form of government assistance.

Primary

Primary school education is compulsory from 6 years, but most children start formal schooling at the age of 5. The final 2 years (usually ages 11–13) of the primary course may be taken at a full primary school, an intermediate school, an area school,[7] or a form 1–7 school, depending on where a child lives. On completing form 2 (usually after 8 years of school attendance) a child will enter form 3 at a local secondary college.

7 An area school is usually based in a rural area and combines primary, intermediate and secondary schooling in one location.

Secondary

Most pupils take the School Certificate examination (the first major national examination) at the end of 3 years of secondary education (usually 15 years of age), with the Sixth Form Certificate following 1 year later. The final stage of the secondary element is the Seventh Form Higher School Certificate, which is sat by those who have completed 5 years of study in a secondary school.

Almost all primary and secondary education takes place at state-funded local schools, although private schooling is on the increase. Approximately 4.9% of secondary students study at private schools and the popularity of these institutions has been stimulated by the introduction of a new voucher system which allows children with a familial income of less than NZ$25,000 (£7250) to attend independent schools.

Tertiary

New Zealand's post-school education providers include both state-owned and privately owned institutions. The state-owned providers, known as tertiary educational institutions (TEIs), consist mainly of eight universities, primarily offering higher education, and 21 polytechnics and institutes of technology, where vocational training is the main priority. Costs and fees operate in a similar manner for both universities and polytechnics.

Since 1990, New Zealand's policy towards state support for tertiary education has changed significantly. Prior to that date, students paid nominal fees and for the most part received generous grants for maintenance costs. Since then, however, private contributions to tertiary education have grown significantly due to rising tuition charges.[8] In order to allow students the opportunity to defer the cost of this fee until such time as their incomes are greater, the government has provided an income-contingent loan scheme for all those undertaking tertiary study. The repayment conditions associated with this loan are quite stringent as it seeks to recover from the student borrowers the full costs of the government's borrowing. (See Appendix 2 for a full description of the repayment characteristics of New Zealand loans.)

8 Tuition charges now range from NZ$2000–20,000 (£600–6000). Source: Education New Zealand.

Adult education

Lifelong learning in New Zealand benefits from a strong formal structure but suffers from a weak informal system. For example, no distinction is made between students aged 18–22 and older learners in the formal tertiary system. For this reason the costs of adult learning are similar to those faced by younger learners and this produces relatively high participation rates (almost 3% of the population aged over 40 were enrolled in tertiary education in 1999).[9]

9 Education New Zealand: *Profile and trends*, 1999.

By contrast, access to informal learning and training is limited, under-funded and poorly organised. Despite continual promises of support for this sector, it still lacks resources and funding. Moreover, the controlling bodies of adult education are fragmented and hence not well coordinated. The main membership organisation – the Adult and Community Education Association – has increasingly little contact or influence with the Ministry of Education. Hence adult education has become marginalised in terms of New Zealand's educational priorities.

The failure of the informal sector has been made public in a new report (Koia Koia 2001). This report announced the following goals, which the government is now committed to achieving:

- full recognition of adult and community education within the education sector
- increased funding
- increased government support to allow adult and community education to meet the needs of local communities.

Summary of the New Zealand education system

The New Zealand education system is characterised by full subsidy of the tuition costs for students aged 5 to 18, covering all primary and secondary education. At the tertiary level higher tuition fees have been imposed since 1990, increasing the private investment required by students. For the most part this education expense is met through the use of loans (as discussed later in Section 4). Adult education works well in the formal sector, but is currently lacking support and coordination in the informal sector, which the government is now committed to redressing over the coming year.

How do New Zealanders view their education system?

Two major issues dominate opinions of the New Zealand system: quality and access. The reforms of the 1980s and 1990s have seen New Zealand's education system perform well in terms of international comparisons, but have prompted growing concern about the accessibility of the system. The loan scheme is seen to have cut costs, but is also regarded as harsh and burdensome. There are also concerns about the quality of the tertiary system – many see the need for more universities if standards and specialities are to be maintained. Thus the issue of costs is becoming critical as funds are needed for expansion, yet there is growing unease at maintaining the loan system in its current form, even though it has proved successful in cutting costs. These fundamental tensions will determine the future development of the New Zealand system.

Like Denmark, the US education system is a direct product of strong cultural and social values together with a decentralised system. The 10th amendment to the US constitution states that federal government has no authority to establish a national education system, and hence federal agencies cannot and do not prescribe policy or the curriculum for local schools. For this reason education programmes vary greatly from state to state and district to district, so the resulting system largely reflects local values and traditions. For example, Mormon schools dominate Utah, large areas of New York and New Jersey have strong Catholic links, and education in the southern states is mainly determined by local religious traditions.

As in Japan, the education system is also influenced by competitive entrance to tertiary education. Again, in the USA we find that education is seen as an investment, which pays good returns in terms of career and financial success in later life. College education is thus seen to offer not only the reward of a degree but also the opportunity to enter a different social system and the prospect of social mobility.

As stated above, the American education system is comprised of a complex set of networks. Many aspects of the educational structure are decided at the state level – such as the curricula – while a school's funding is often decided at a local level, and education reforms are coordinated at a federal level. In all, the system creates significant diversity across the 50 states, but the bureaucratic cost of this is high, with almost 15,000 public agencies involved in the provision of elementary and secondary education services.

Education programmes in the USA are generally clustered under three rubrics: compulsory primary education, secondary education (usually compulsory until 16) and undergraduate education, which includes two degree levels – associates and bachelors – as illustrated in Figure 4 and discussed below.

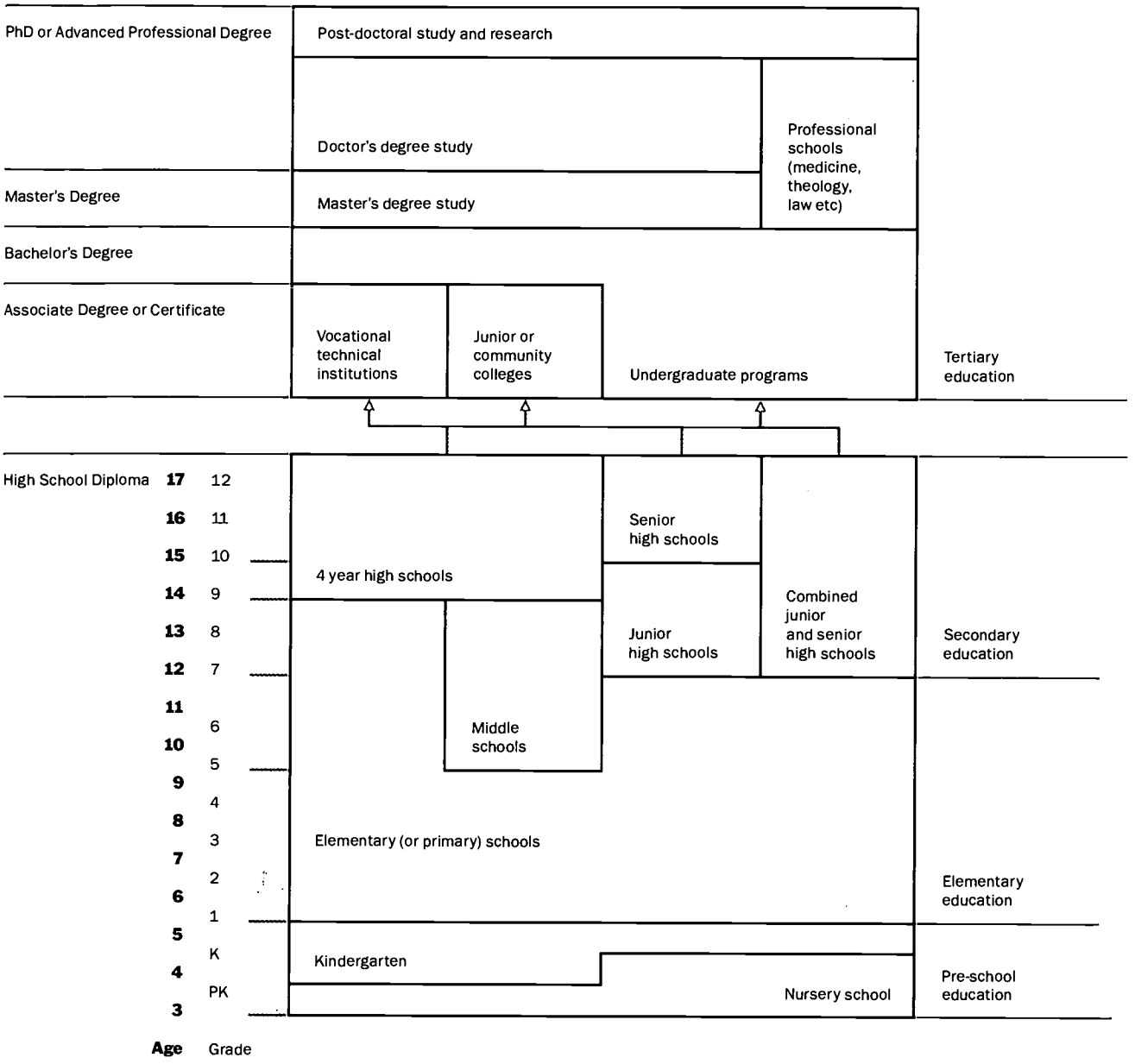


Figure 4
Diagram of the US education system

Source: US Department of Education, National Center for Education Statistics

Overview of the education system

Primary and secondary education

Compulsory schooling in the USA is predominantly state and federally funded, although some private schools do exist. There is much debate about the efficiency and success of the primary and secondary stages of education in the USA and there are frequent calls for greater federal investment.

Around 11% of primary and secondary students attend private institutions (OECD 2001, p136). Charitable or religious bodies fund the majority of these providers and costs are highly subsidised. Thus, although some schools in prosperous areas – such as San Francisco – charge over US$15,000 (£10,400), many institutions in less wealthy states charge under $4000 (£2800). The choice of private schools often owes more to religious or cultural issues than to educational concerns.

Tertiary education

Most Americans – sooner or later – enrol in college. Among young people who graduated from high school in 1992, 62% had enrolled in some form of tertiary education by 1994 (Bailey *et al.* 1998, p5). Enrolments in higher education totalled around 15m in 1997, with undergraduates accounting for some 86% (NCEHE 1997).

The tertiary system is divided – unequally – between public and private institutions. Public institutions rely on both public and private sources of funds, the main source of income being state support. Private institutions also receive government aid but to a lesser degree and rely more heavily on tuition fees. For this reason costs vary considerably between the two types of providers, with tuition fees as low as $6000 (£4100) per annum in public institutions and as high as $30,000 (£21,000) in private institutions (NCEHE 1997). Financial aid and grants are available to cover these expenses but a large proportion of fees and maintenance costs are covered by individual and familial finances through a mixture of debt and savings. Most of American tertiary education therefore takes place in public institutions. In 1997 around 12m students were enrolled in public colleges and only 3m in private institutions.

Universities are free to offer either 2-year or 4-year programmes. The 2-year courses lead to an associate degree and the 4-year courses lead to bachelor degrees. Public institutions offer 63% of 2-year courses, while 79% of 4-year courses are offered by private providers. Thus although the public sector enrols some 78% of the total higher university population, it only serves 65% of students undertaking 4-year courses, compared to 95% of students taking 2-year courses (NCEHE 1997).

Adult education

Participation in adult education has risen steadily over the past three decades, to 46% by 1999 (Creighton and Kim 2000, p1). Although it is becoming increasingly popular and a broad range of courses and training are offered, adult education is still marginalised in the USA. Funding from the government is relatively low, with combined state and federal funding amounting to $1.3bn (£780m) in 1998 for 4.2m enrolees, or $300 (£180) per student.

In spite of the low level of funding, there is a wide array of institutions in the USA offering a very diverse range of activities aimed at adult learners. There are classes for those who do not have English as their first language, basic adult education classes, credential programmes, work-related courses, and personal development courses.

The most popular adult education programmes are the General Educational Development (GED) test and the National External Diploma (NED). The GED tests are offered in all states and comprise basic secondary education skills leading to the equivalent of a high-school diploma, while the NED requires students to demonstrate their ability in a series of simulations that parallel job and life situations.

Summary of the United States education system

In summary, the US education system is heavily state subsidised throughout the primary and secondary stages. By contrast, at the tertiary level significant private contribution is required. This is true of both public and private institutions, although the latter require a far greater contribution. In some cases public institutions cost one-sixth of their private counterparts, and therefore have attracted much higher participation rates. Over time adult education is becoming increasingly popular and diversified, in spite of its lack of funding.

How do Americans view their education system?

The US system has been the subject of much internal criticism and debate. The main area of contention is over access to education by low-income earners. Many feel that the level of funding – both state and federal – is a continuing problem for high schools and this makes access to tertiary education difficult for many under-privileged children, which is further exacerbated by the high costs of university tuition. Despite these concerns, however, there is a belief that the tertiary system – although expensive – is extremely efficient, proficient and a worthy investment.

The following section provides a comparison of the educational structures in Denmark, Japan, New Zealand, the USA and the UK. We focus particularly on the differences between public and private contributions to education in each of these countries, as we believe that the costs of education are a significant factor in determining whether or not saving for education is likely to occur. In summary, our results show that:

- Japan spends a lower percentage of GDP on education than the OECD average, while all other comparator countries spend above this level
- Japan and the USA rely on significant levels of private finance to support their education systems, particularly at the tertiary level
- by comparison with the other countries, New Zealand relies significantly more on student loans to support students in tertiary education.

Public and private contributions to education

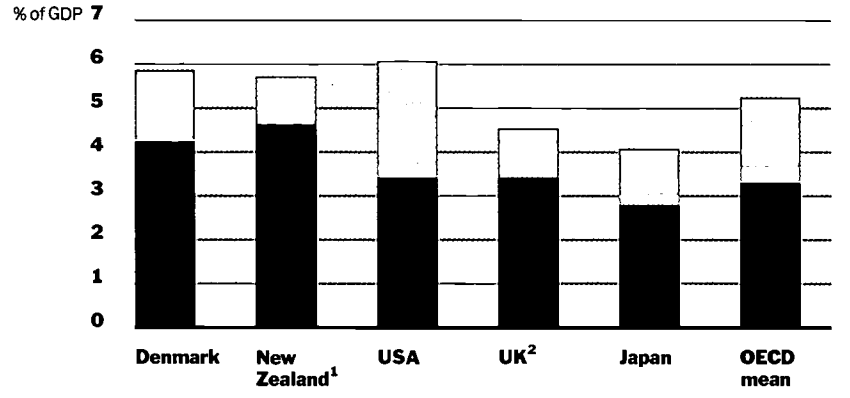
As mentioned above, only Japan spends a percentage of its GDP on education that is lower than the OECD average. All other countries in the sample spend 5–6% of GDP, as shown in Figure 5.

Figure 5
Public and private contributions to education

Source: OECD

1 No private contribution data available

2 No private contribution data available for the non-tertiary sector



The chart shows that both Japan and the USA rely more heavily on private contributions at both the non-tertiary and the tertiary level than the other countries. This is also depicted in Table 1, which shows that both countries obtain more than 50% of the total contributions to tertiary education from the private sector. This degree of private investment in tertiary education is shown to be more than twice the OECD mean.

As Table 2 demonstrates, there are fundamental differences in the four approaches to student support at the tertiary level. At one extreme is the Danish system, which offers funding at, or above, the OECD mean for both grants and loans. At the other extreme is the USA, which offers a level of support just under the OECD average for grants but somewhat higher for loans. The table illustrates that Danish students receive more than twice the value of grants available to their US counterparts, but that they are less likely to be able to access loans. By contrast, loans are the preferred policy tool in New Zealand, where the level of public support for loans is more than five times the OECD average.

Table 1
Relative proportions of public and private funds for educational institutions by level of education (1998) (%)
Source: OECD 2001

	Non-tertiary:		Tertiary:	
Country	**Public**	**Private**	**Public**	**Private**
Denmark	97.9	2.1	97.2	2.8
Japan	91.7	8.3	41.7	58.3
New Zealand	NA	NA	NA	NA
USA	90.8	9.2	46.8	53.2
UK	NA	NA	75.1	24.9
OECD mean	90.9	9.1	77.3	22.7

Table 2
Public subsidies to the private sector as a percentage of total government expenditure on education
Source: OECD 2001

	Financial aid to students:		
Country	**Grants**	**Loans**	**Total**
Denmark	26	5	31
Japan	NA	NA	NA
New Zealand	17	26	43
USA	11	9	20
UK	25	10	35
OECD mean	12	5	17

2.6 Summary of educational structures

In summary, the preceding analysis of the respective education systems illustrates that the four comparator countries approach the problem of education in contrasting manners. This is of interest because it implies that each structure has a different impact on household finances in terms of the magnitude of the costs and the timing of the expenses. The four systems can be characterised as follows.

Denmark

Danish students face little (or no) education expenses at all stages of the education system. The Danish state believes that heavy investment in education will produce a highly skilled and productive workforce and therefore subsidises or fully funds education from pre-school through to adult learning.

New Zealand

New Zealand fully subsidises its primary and secondary education, but private contributions are required for tertiary education. The tuition costs of tertiary education borne by students rose rapidly during the 1990s but remain low when compared to the other countries in the sample.

USA

The USA spends the highest proportion of its GDP on education (6%), although roughly a quarter of this figure is financed via the private sector. Most of the private contributions occur at the tertiary level, where fees can be as high as £21,000 per year and thus impose a significant cost on students and their families.

Japan

The Japanese system is unique in that parents are asked to contribute to the tuition costs of upper secondary schooling. This does not occur in any of the other comparator countries, where all primary and secondary education is provided free of charge, unless an individual chooses to enrol their child in a private school. The cost of tuition at high school (including after-school and preparatory courses) and university is significant, and typically amounts to over 20% of average familial income in Japan.

Section 3 Theories, determinants and evidence of household savings

This section introduces our discussion of savings. We begin by outlining the accepted economic theory surrounding household savings behaviour, before listing the main determinants of savings and explaining how each of these determinants relates to the theory. We follow this with a discussion of the trends in household savings in each of the comparator countries, before concluding with a brief explanation as to why cross-country differences in household savings rates may arise.

Economists have two main theories for describing savings behaviour. These are the:

- life-cycle hypothesis, where savings are thought to be motivated by a desire to smooth consumption over one's lifetime, to meet anticipated and predictable expenditures that arise at various stages of life (eg children, purchasing a house, retirement, etc)
- precautionary savings hypothesis, where savings are thought to be motivated by the uncertainty of future income and expenditure.

The life-cycle hypothesis – which was first put forward by Modigliani, Ando and Brumberg in the 1950s (see Modigliani and Brumberg 1954; Modigliani and Ando 1963) – suggests that the income of people varies in a known way over people's lives and that individuals use savings to move from high-income periods to low-income periods without affecting their consumption. That is, individuals use savings to smooth out their consumption over time so that it is equal (or near equal) at all points.

The life-cycle hypothesis goes a long way to explaining savings behaviour. However, the theory is reliant on the individual being able to predict an expense in the future that he or she can proactively save for ahead of time. But it is not always the case that individuals receive prior warning of increasing expenditures. For this reason, the precautionary savings hypothesis was put forward, suggesting that in addition to the life-cycle hypothesis individuals save due to the inherent uncertainty of the future. As we shall see in Section 4, precautionary savings are of particular importance to Japan.

Bequests and altruism

While these theories explain most savings behaviour rather well, there has been some debate in the literature as to their ability to describe intergenerational savings, particularly bequests. Two other models have attempted to describe this behaviour better – the altruism model and the dynasty model – by arguing that bequests are the result of deliberate behaviour.

The altruism model expands the life-cycle model by assuming that parents harbour strong intergenerational altruism or benevolence towards their own children. Individuals save, it is thought, not only for their own life-cycle motives but also in order to leave a bequest to their children and grandchildren. The dynasty model, by contrast, assumes that individuals wish to perpetuate their family line or business. For this reason parents are thought to change their saving and consumption patterns depending on whether they think their bequest will improve the social mobility of their children. Such bequests are likely to be unequal depending on the characteristics of the children. For example, parents may leave their entire bequest to their first born, to the only boy, to the child who will continue the family business or to the child that is considered the most capable. The bequests are made for purely dynastic purposes and divided to benefit the family as a dynastic whole, rather than individuals.

The altruism and dynastic models of saving offer additional perspectives on the reasons why individuals may choose to save. However, they have not survived the rigours of empirical tests. Several studies have shown that rather than being a deliberate act bequests arise because individuals have imperfect information regarding their time of death. In many cases savings are often 'left over' and, hence, unintentionally bequeathed to the next generation. Empirical tests have shown that the life-cycle theory, together with the precautionary hypothesis, is sufficient to explain a great proportion of savings behaviour.

3.2 Main determinants of household savings and their relationship to economic theory

This section explores the determinants of household savings and the manner in which these factors relate to the life-cycle and precautionary models laid out above.

Individual saving represents a choice not to consume and there are four major motives that lead to such a decision. The first three are covered by the life-cycle hypothesis, and the fourth by the precautionary savings hypothesis.

1 Saving for retirement

Individuals often wish to build up their assets to finance consumption after retirement when current earned income is reduced or even becomes zero. In many countries, such as the UK and the USA, this is the foremost reason why individuals choose to save.

2 Saving for the purchase of 'lumpy' assets

Some purchases (eg residential property) are too big to be financed out of ordinary expenditure or consumption and require an accumulation of necessary funds in advance of the purchase.

3 Intergenerational aspects of saving

In some cultures (most notably Japan) there is a portion of saving that is motivated by the knowledge and expectation of various expenses relating to one's children. Saving for a child's future education would fall firmly within this category.

4 Precautionary saving

This is seen as a way of allowing for uncertainty about future developments. A household may wish to hold assets to meet possible emergencies, such as unemployment or sickness.

These motives are not mutually exclusive and saving decisions will generally be influenced by more than one of them. Rational saving decisions will be based on optimising behaviour through which the levels and composition of saving are chosen so as to equalise the marginal benefits of alternative uses of income.

3.3 Savings rates of comparator countries

As can be seen in Figure 6, over the past decade there has been a general downward trend in household savings across the five nations. Japan has declined from around 16% in 1988 to 11% in 2001, while the US savings rate fell from 8% to almost zero over the same period. Denmark followed a similar pattern, while New Zealand witnessed a dramatic and consistent decline from 1988 to negative levels by 1999.

Figure 6
Household savings rate 1988–2001

Source:
Datastream 2001

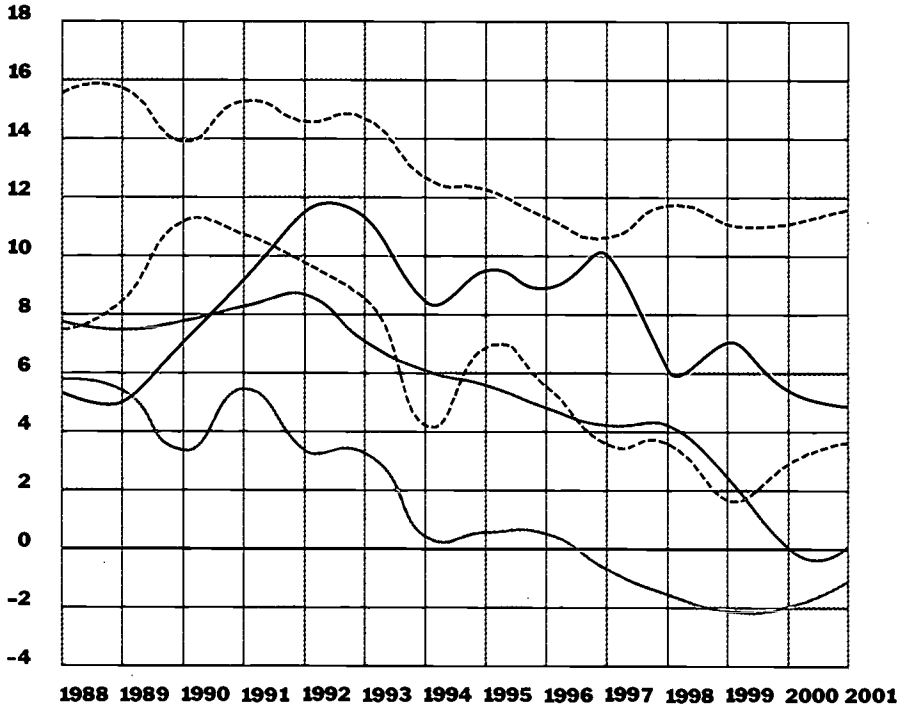
Japan

Denmark

New Zealand

US

UK



3.4 Differences in household savings rates

Household savings rates differ between the comparator countries due to genuinely disparate patterns of consumption. However, they may also vary as a result of differences in:

- social security arrangements, most notably pensions
- increases in the value of financial assets
- demographics
- measurement disparities.

The following sections provide detail on each of these items.

Pensions and social security schemes

As discussed above, saving for retirement is the foremost reason to save for citizens in the UK and the USA. For this reason, discrepancies in the way that pension savings are included in the savings rate measure can lead to significant differences in overall household savings figures. Savings in private pension schemes are included in the measurement but government-run social security schemes are not. The relative importance of social security versus private schemes varies significantly across countries. Treating private pension schemes as public schemes, and excluding them from the measure, leads to particularly large adjustments for the UK and the USA, where private pension and life insurance schemes represent a large share of the total retirement provision.

In a similar manner the level of welfare provision for health, education and income support offered by the state may affect the household savings rate. In particular, it could be argued that New Zealand's savings rate has declined so dramatically as a result of the reduction in government expenditure (including government transfers to households) that has occurred since the late 1980s. Those who support this theory would argue that as government spending has fallen, private spending has by necessity risen to meet the shortfall. Indeed the 'user pays' philosophy of the New Zealand government in the late 1980s set out to shift some of the responsibility for health and education expenses from the state to the individual. However, the trade-off between public and private expenditure is not clear-cut. Indeed, at the same time as reducing government expenditure, the New Zealand government also lowered tax rates, which would have been expected to have a countervailing effect on savings rates. Furthermore, it is not clear that a £1 reduction in government expenditure equates to a £1 increase in private spending. While there are inefficiencies in many government-run operations, these may be offset by gains from the economies of scale that can be achieved through a national health or education service. There is not, therefore, a straightforward relationship between the level of government welfare provision and the resulting household savings rate, although it is likely that in the short term – as we have seen in New Zealand – the two may move in the same direction.

Value of financial assets

There are significant cross-country differences in the savings instruments chosen by individuals. In the USA, for example, the economy is highly liberalised and a wide range of sophisticated financial assets are available. Most individuals operate a diversified portfolio that includes assets deposited at banks, and as shares and property (see Figure 7 for a comparison of asset holdings between the USA and Japan). Over the 1990s the value of mutual funds, in particular, has grown tremendously. The UK is likewise a liberalised economy and while some of its wealth is invested in equity markets, much of it is tied up in residential property. In the UK 68% of residential property is owner-occupied,[10] which is slightly higher than in the USA (66.2%),[11] and significantly higher than in Japan (59.8%).[12] As with financial assets in the USA, the value of residential property has grown significantly (if erratically) over the last 20 years; from 1990 to 1999 the average house in England increased in value by 14.7% (see www.dltr.gov.uk). The changes in value of both mutual funds and residential property are significant because these increases are not included in the savings measurement, yet the two are linked.

10 European Housing Statistics (1999).

11 US Census Statistics (1990).

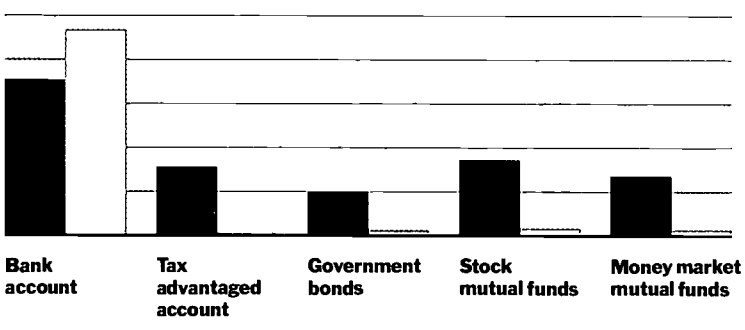
12 Japan Information Network (1993).

Empirical research has generally argued for a strong inverse relationship between wealth and savings. Bovenberg (1988) notes that statistical findings have generally suggested that greater wealth due to the rising values of the stock market and housing has been a major factor behind the declining trend in private saving.

Figure 7 shows the substantial difference in the types of savings accounts employed in Japan and the USA. Very few of the Japanese respondents chose to invest in anything other than a traditional bank account, while most Americans held one other type of investment.

Figure 7
Holdings of financial assets in Japan and the USA

Source:
American Express 1999



These findings are underlined by Figure 8, which shows the substantial increase in the amount of financial assets held as a percentage of disposable income in the USA. It can be seen that this increase seems to precipitate an equally pronounced fall in household savings. In Japan, on the other hand – as Figure 9 demonstrates – the rate of increase is much slower and the impact on savings is therefore less dramatic.

Thus the holding of financial assets may lead to variation in household savings rates. For some countries, most notably the USA but also the UK and New Zealand (which also have liberalised financial markets), increases in the holdings and value of financial assets may at least partly explain their poor savings performance.

Figure 8
US financial assets and savings rates

Source:
Datastream 2001

■ US financial assets

□ US savings rate

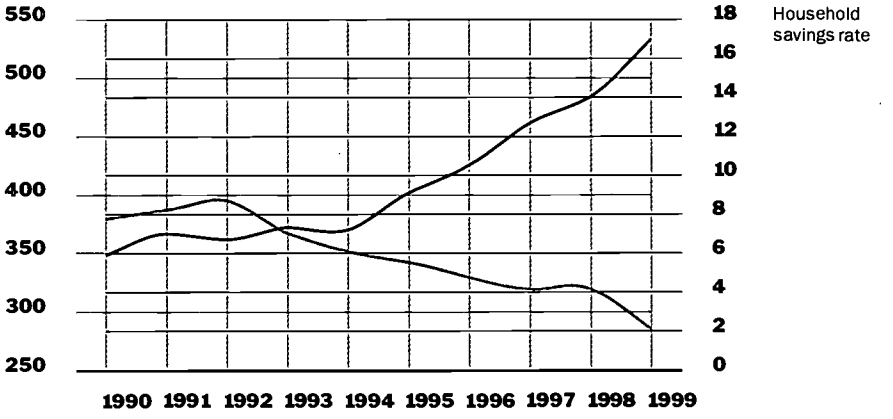
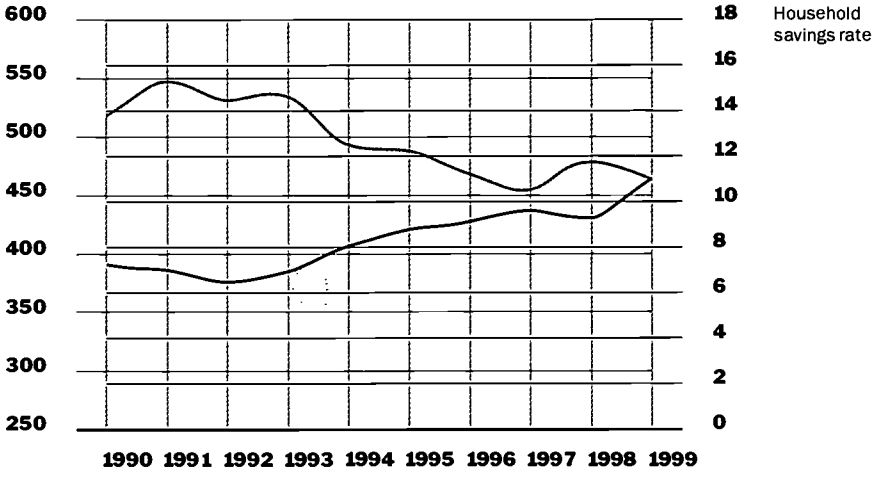


Figure 9
Japan financial assets and savings rates

Source:
Datastream 2001

■ Japan financial assets

□ Japan savings rate



Demographic variables

There are also many demographic variables that may influence household savings.

- Life expectancy: an increase in life expectancy will generally increase the household savings ratio because each person requires more wealth to finance a longer retirement span.
- Retirement age: a decline in retirement age will increase the household savings ratio as again more wealth is required to finance consumption.
- Age distribution: savings rates vary with age distribution. If a population begins to age, for example, this might be expected to affect the savings rate negatively, as people tend to dis-save once they reach retirement age.
- Family size: as family sizes vary over the life cycle (and over time), this affects the pattern of consumption due to the additional costs associated with rearing children, which in turn affects the overall savings rate.

Measurement issues

There are two main issues with the measurement of household savings rates that make international comparisons difficult.

Inclusion of unincorporated enterprises

In the Standardised National Accounts (SNA) small firms, such as farms or local businesses, are included in the household sector, but their relative importance varies widely from country to country – as does the way they are treated in National Account statistics.

Consumer durables

In the SNA these are treated as final consumption expenditure. Since these goods provide services for a long period of time, they might also be considered as capital goods and thus as an investment. This is a very significant aspect for the USA but less central to Japan.

Section 4 Saving for learning

This section focuses on saving for learning and the different ways in which people might save for education. The section begins by identifying the various methods that are available to finance education expenses, before turning to a discussion of each of the countries in turn and their experience of saving for learning.

4.1 Forms of saving for education

Saving for learning can take many forms. For example:

- targeted saving for learning in a bank account or education-specific financial product
- dis-saving through borrowing (which is equivalent to saving later to repay)
- dis-saving by drawing down assets – financial or property (which is equivalent to saving to rebuild assets later)
- saving through the tax system.

For the purposes of this project our definition of saving includes only targeted saving for learning in a bank account or education-specific product. Moreover, as the most expensive forms of education occur before an individual reaches maturity, evidence of saving for learning is likely to be discernible only when parents save for their children, thus narrowing the definition even further.

However, the evidence on saving for learning that we have accumulated thus far suggests that at least two of our comparator countries are choosing not to save through targeted products, but rather through the tax system (Denmark) and with the use of loans (New Zealand). The following describes the situation in each country in more detail.

4.2 Denmark: saving via the tax system

As discussed, the Danish education system receives the most public finance of any of the comparator countries. At the same time the country has the highest tax burden in the OECD, at 43% of gross wages (OECD 1999b), with the largest tax burden imposed on incomes.[13] This is significant because high taxes – specifically high income taxes – are known to lower household savings rates.

13 Income tax contributes almost half of all tax revenues in Denmark. Source: Danish Ministry of Taxation.

IMF research (Tanzi and Zee 1998) indicates that the ratios of total tax revenue, income tax revenue and consumption revenue to GDP all bear a statistically significant and negative relationship to the household savings rate. More specifically, the estimated negative coefficients of the tax variables tend to be particularly high for income taxes and much lower for consumption taxes. Intuitively this result makes sense given that government expenditure on areas such as health, retirement and education remove the need for individuals to provide for these costs through their own savings.

For these reasons it is not surprising that we do not find any evidence of targeted saving for learning in Denmark. As noted in Section 2, the individual bears very little education expense while he or she is studying in Denmark, and thus has little or no need to make any savings provision for this learning. The cost of education is met almost entirely through government expenditure, implying that Danish citizens are funding (or saving) for their education via the tax system.

4.3 New Zealand: dis-saving via the loans system

The New Zealand tertiary education system has been subject to significant changes in funding arrangements over the last 15 years. As outlined briefly in Section 2, the New Zealand post-secondary system prior to 1990 was predominantly state-financed: all students received a grant and were asked to contribute only nominally to the costs of tuition. With a sharp increase in student numbers in the late 1980s – together with a change in policy towards encouraging greater private investment in education – it was argued that large public subsidies were no longer affordable or advisable.

The result was the introduction of substantial tuition fees for the first time in 1990. At that time charges were set at a flat rate of NZ$1250 (£400) per university student per year (Maani 1997), but they rose rapidly once institutions were given the flexibility to set their own fees in 1992. By 2000 the comparable fee had reached NZ$4047[14] (£1200), a 224% increase over the 1990 level.[15]

The upfront costs to students of both higher and further education thus increased significantly and rapidly in the early 1990s and it was anticipated that this would have negative impacts on participation in tertiary education. In an attempt to avoid a drop in student numbers, a student loan scheme was introduced in 1991 to enable students to defer the cost of their education until after graduation. Students were, and are, able to borrow the full cost of their tuition fees, NZ$1000 (£333) towards course costs and NZ$150 (£50) per week of their course for maintenance expenses. The loans were, therefore, aimed at providing sufficient funds to cover all education-related expenses for a potential student.

Student loans have now become the preferred source of finance for students to cover their tertiary education expenses. It is estimated that approximately 40% of the total private cost – including tuition, course costs and maintenance expenditure – are met through the use of student loans.[16]

14 Education New Zealand: *Profile and trends*, 2000.

15 The equivalent figures for polytechnics are average tuition fees of NZ$1200 (£400) per annum in 1990 rising to NZ$3324 (£997) per annum in 2000.

16 CRA estimate, see Appendix 3 for a detailed discussion of this estimated calculation.

The loans system as the preferred source of funding

From the start, it was intended that student borrowers would meet the costs of financing the New Zealand Student Loan Scheme. As a result the servicing conditions on loans are somewhat more stringent than comparable schemes elsewhere.[17] In spite of this, the number of students borrowing from the scheme has continued to increase strongly.[18] As seen in Figure 10, in its first year of operation the Student Loan Scheme attracted 44,202 borrowers, or 33% of equivalent full-time students (EFTS). By 2000 this had increased to 128,158 students (72% of EFTS). The reliance on loans to finance tertiary education has thus increased significantly over time and shows no signs of abating.

The average amount borrowed per student across the tertiary education sector has also increased. In 1992 loan clients borrowed on average NZ$3628 (£1125) each. By 2000 this had increased to $6222 (£1867) per student per year. Over the same period the total level of student debt outstanding has increased from NZ$92.9m (£28.8m) in 1991 to NZ$3.5bn (£1.1bn) by the year 2000.

17 For example, the interest rate is set at a 'market rate' of interest that is calculated to recover the government costs of borrowing for the scheme. Since 2000 this rate has been frozen at 7% per annum. Further characteristics of the New Zealand Student Loan Scheme can be found in Appendix 2.

18 In 1999 the growth in student loans dipped due to the introduction of new policies aimed at curbing unnecessary borrowing.

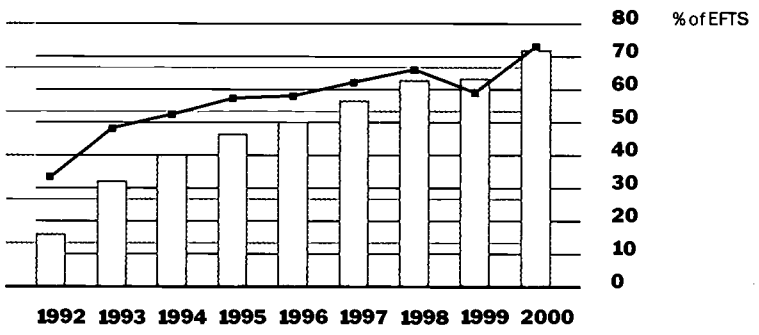


Figure 10
Number of New Zealand student loan borrowers (1992–2000)

Source: New Zealand Student Loan Scheme Annual Report 1999 and 2000

Dis-saving and forgoing current consumption, but little ex-ante saving

The statistics above clearly illustrate that a significant (and growing) proportion of tertiary education expense in New Zealand is met through dis-saving via the Student Loan Scheme. However, estimates by CRA show that the level of borrowing per year equates to approximately 40% (see Table 3) of the total education expenditure of students enrolled in tertiary education in 2000. Does this imply that the remaining 60% is met through savings?

There has been no specific research on saving for education in New Zealand as yet (although an upcoming Household Savings Survey to be released by Statistics New Zealand in mid-2002 may provide some general comment on the subject). Neither are there specific tax-preferred savings products for education that could be quantified to provide an estimate of the total level of targeted savings. For these reasons it is not possible to state definitively whether or not the remaining education expenses are met via savings.

Nevertheless, it is CRA's opinion that most of the finance required to meet tertiary education expenses – once loans are accounted for – is sourced from government grants or current consumption (see below): although loans comprise only 40% of all tertiary education expenses, the remainder is predominantly met through students (and/or their families) forgoing current consumption rather than through targeted savings. Table 3 shows estimates of the breakdown of funding for tertiary education expenses in New Zealand.

The remainder of the total cost that is unaccounted for once loans, grants and earnings are deducted (£199m) equates to an average of NZ$3700 (£1110) per EFTS. It is probable that most of this cost is met out of current consumption via ongoing parental contribution to maintenance expenditure, particularly given that a significant percentage of New Zealand students continue to live at home while they are studying. CRA estimates show that the parental contribution for maintenance could be as high as NZ$600m (£200m) – based on estimates of the maintenance costs of children – leaving only approximately NZ$64m (£19.2m) to be met via targeted savings – approximately NZ$360 (£120) per EFTS.

These calculations suggest that on average ex-ante targeted savings are likely to comprise less than 3% of the total cost of a tertiary education in New Zealand. This is in stark contrast to the situation in the USA and Japan, as explained in Sections 4.5 and 4.6.

The above can only be an approximation of the breakdown in funding, due to the large variations in both tuition fees and living costs among different institutions and different geographical regions. Nevertheless, the results show that almost all tertiary education expenses are met via loans, grants or current consumption. This is consistent with the negative savings rates shown in Section 3 for New Zealand at this time.

Table 3
Breakdown of total tertiary education costs in New Zealand by funding arrangements (2000)
Source: CRA

* At an exchange rate of 0.3 NZ$/£; see Appendix 3 for a detailed discussion of the calculation of these costs

Description	NZ$m*	£m*
Total tertiary education costs to be met by private participants in education (an aggregation of all tuition fees, course costs and maintenance expenditures)	2254	676
Amount paid via loans	873	262
Amount paid via government grants or scholarships	384	115
Amount paid via student earnings	332	100
Remainder	**665**	**199**

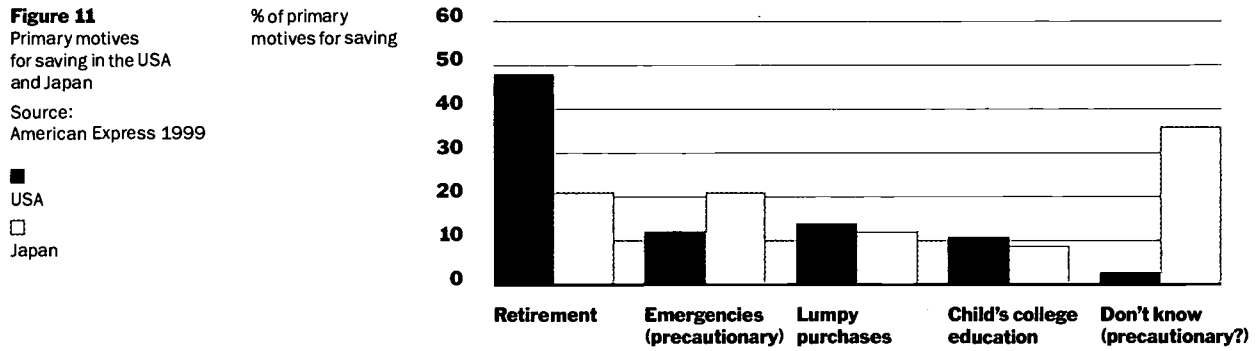
4.4 Evidence for targeted saving for learning in the USA and Japan

As discussed above, Denmark and New Zealand appear to be saving for learning via the tax system and loans respectively. By direct contrast, there is growing evidence of specific saving for learning occurring in both Japan and the USA. Figure 11 shows the findings of an American Express survey which demonstrate that saving for learning is amongst the top five most important motives for saving in these countries.

This finding is strengthened by research that demonstrates evidence of further saving for learning in each of these countries.

Figure 11
Primary motives for saving in the USA and Japan

Source:
American Express 1999



Saving for learning in the USA

Although the last 10 years have brought declining average household savings rates in the USA, saving for education has become an increasingly important issue and trend. The focus is almost exclusively on saving for tertiary education, which is not surprising given that the costs of elementary and high-school tuition pale in comparison to the considerable and mounting costs of college education. In fact, college tuition fees have been rising faster than the rate of inflation over the past 10 years, to the point where the average total cost of a 4-year course at a private institution is estimated to be around $150,000–200,000 (£103,500–138,000). A number of polls have highlighted increasing unease over rising tuition fees, which has provided an added impetus for individuals to save in anticipation of this expense.

The importance of saving for learning is driven not only by rising costs, but also by consistently high valuations of the returns to college education. The Teachers' Insurance and Annuity Association College Retirement Equities Fund (TIAA–CREF) survey showed that some 90% of parents regarded college education as indispensable to the future financial well-being of their child, and additional research suggests that this belief is not misplaced as it calculates that every dollar invested in education adds approximately $40 (£28) to a salary over a lifetime. College learning is thus seen and portrayed as a safe and profitable investment decision.

Rising costs and high valuations of the returns to college education are driving the development of a saving for learning culture in the USA, with most people ranking the need to save for education as the fourth most important motive to save. Somewhat surprisingly, however, this saving is not undertaken solely by parents, rather it is shared (albeit unequally) by the individual, his/her parents and the grandparents, as discussed below.

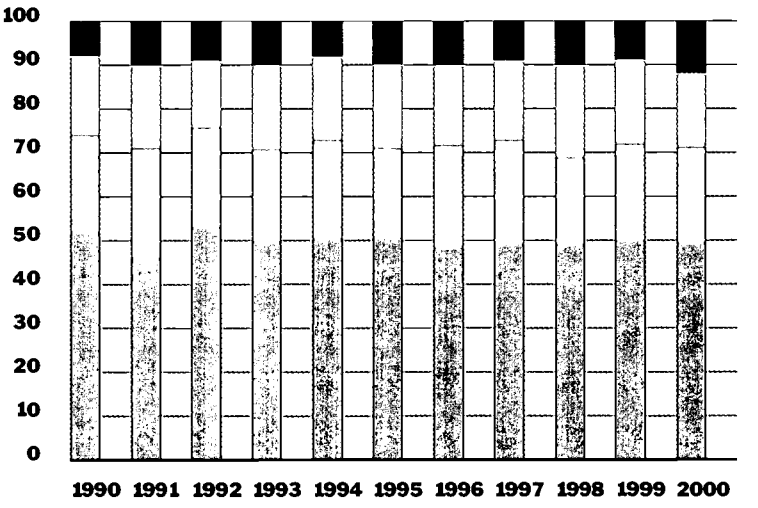
Variations in saving for learning at different stages of the life cycle

College students

In a survey conducted by the American Savings Education Council (ASEC), college students were asked why they were saving and what they intended to use the savings for. The primary reason given by the students was that they were saving in order to meet some of the costs of their own education expenses. The ASEC survey thus demonstrates the significance of saving for learning among students, a finding that is strengthened by a University of Michigan report, the results of which are shown in Figure 12. Although many students are shown to save nothing for their schooling, about half save at least something, and about 20% save over 60% of their earnings to put towards their education costs.

Figure 12
Percentage of student earnings saved for future education espenses in the USA

Source:
University of Michigan, Survey Research Centre



Parents of young children (under 5)

Parents are shown to begin saving early for their children's college education expenses. Approximately 9% of parents with young children currently hold an education IRA (a tax-exempt education trust fund). While already high, this figure probably underestimates the total level of saving for learning that occurs within this age group, as most parents intend to use a range of products in which to invest for their children's education. In fact, less than 1% of respondents to a TIAA–CREF survey planned to use just one source of funds to pay for college, with many parents planning to utilise an average of seven different assets. For this reason the level of education IRAs, while underlining the existence of saving for learning, may be only one element of an overall educational saving strategy.

Table 4 shows how the proportion of parents with education IRAs rises as they age.

Table 4
Ownership of assets across age (as a percentage of households in the USA)

Source: Lusardi Cossa and Krupka 2001

	Below 35	35–39	40–45
Checking accounts	56.2	68.8	72.4
Bonds	9.1	15.6	24.0
Stocks	7.8	15.6	21.9
Education IRAs	3.7	8.4	12.5
Retirement savings	37.4	55.7	62.7
Housing	50.6	68.1	77.7

Parents of older and college-aged children

As their children get older parents continue (and some enhance) their efforts to save for the child's college education. In fact, a study by the University of Missouri found that throughout their 40s and 50s most parents actually increased their level of contributions to the educational needs of their children (Huston 1995, pp51–6).

Another way to identify whether or not saving for education occurs is to investigate the consumption patterns of families with one or more children in college education. Nicholas Souleles, an academic at Wharton University in the USA, empirically tested this through examining effects of college costs on household expenditure. His results indicate that family consumption remains smooth over the period of study, indicating that saving for these costs had occurred in advance (Souleles 2000).

Grandparents

There is also evidence that many grandparents save to help their grandchildren afford college education. In fact this support is often anticipated and/or expected by parents. Around 37% of parents expect some funds from grandparents to help pay for education, while around 5% expect grandparents to provide most of the funds. The study by the University of Missouri also supports these findings by demonstrating that investment in education continues at a consistent and high level up to around the age of 67 (Huston 1995, p54).

Saving for learning is therefore apparent at nearly every adult stage of life. Indeed the study by the University of Missouri shows that education plays a continuing and important role in household savings and investment decisions with only two brief declines:

- the period between college and parenthood
- the very late stages of retirement.

Thus, throughout the American life cycle, saving for education remains a prominent concern in household saving decisions. Yet although the actual saving trends and their importance are established, there is little data on the specifics of how much is saved for education and the assets employed. This is not surprising as there is a wide variety of assets available, unlike in economies such as Japan. This allows parents flexibility in their saving decisions. The need for adaptability arises from uncertainty about the projected costs of education. Almost 60% of parents are uncertain whether their children will attend public or private colleges; most estimate a $40,000 (£27,600) mean difference between the two.[19] Uncertainty of cost leads to uncertainty in saving plans – some 20% of parents are undecided about what proportion of costs they plan to cover and a similar number are unsure exactly how much they have accumulated for these anticipated costs.[20]

19 TIAA–CREF Parents Poll on College Savings, 2000.

20 TIAA–CREF Parents Poll on College Savings, 2000.

Tax benefits for saving for learning in the USA

There are four main types of tax-exempt saving assets available in the USA for educational purposes. These are:

- Section 529 plans
- savings bonds
- education IRAs
- classic IRAs.

Savings bonds and education IRAs have long been a part of the savings environment, offering local and federal income-tax exemption, while the Section 529 plans have only recently been introduced. These plans differ from state to state – particularly in the maximum lifetime contribution level – but all allow funds within the plan to grow tax-free if withdrawn for specific educational purposes (early withdrawals and withdrawals for purposes other than education costs are penalised and most of the tax benefits lost). Withdrawals are allowed, however, for a wide variety of educational institutions: for example, private colleges and public schools as well as most graduate and technical colleges. Appendix 4 describes the wide variety of savings options available and the different impact that such products can have on taxes and financial aid.

Yet despite the range of specific tax-exempt education products available, many parents tend to use more conventional sources to save for learning. Some 62% had opened savings accounts purely to help save for education, 34% had purchased savings bonds and another 12% planned to do so. Another popular option was mutual funds – 32% reported buying these assets specifically to meet education costs – while 27% had purchased individual stocks to help pay these expenses.[21]

21 TIAA-CREF survey 2001.

The low use of tax-exempt educational savings assets is due to two main factors:

- a lack of information
- fears over financial aid.

Awareness of assets such as Section 529 plans and education IRAs is limited. Only 44% of parents are aware of state prepaid tuition plans, while barely half (49%) had heard or read about the long-standing education IRAs.[22] This limits the success of specific educational savings assets and is compounded by concerns and confusion over financial aid. Most parents – 81% in the American Express survey – plan to apply for financial aid, although only 29% profess themselves to be well informed about the process. Most importantly, parents are uncertain about the impact that education-specific savings might have on their eligibility for financial aid, and thus hold their wealth in assets that can also be used for retirement provision.

22 TIAA-CREF survey 2001.

Summary of saving for learning in the USA

Saving for learning is an important element of US household saving decisions. It is one of the four main motives that individuals cite as the reason for savings, along with retirement, lumpy purchases and precautionary savings.

Saving occurs over the life cycle of individuals, with students at high school and university saving for their own education expenses, young parents making provision early for their children, older parents intensifying their contributions to education-related savings as their children approach their college years, and finally grandparents passing down funds to provide for their grandchildren.

This saving takes place through a variety of products. Specific education-related savings products, even with tax exemptions, are not widely taken up, as most consumers are content to rely on conventional products. The low utilisation of these education-specific products does not imply a lack of specific saving for learning but may simply be the result of a combination of uncertainty over costs, a lack of awareness about the existence of these products, and concern over how these assets might affect financial aid.

There is strong evidence from Japan that saving for learning is an integral element of household saving behaviour and, at certain stages of the life cycle, it is the most important motivation for saving. This section presents that evidence and demonstrates how the scale and pattern of saving for education changes over an individual's life cycle.

Evidence of saving for learning in Japan

As shown in Section 2, Japanese parents are required to contribute significantly to their children's education costs because free schooling ends at the early age of 15, and the costs of a university education cannot be met via loans or grants. This parental expenditure is financed by strong savings habits that begin early in the child's life.

Empirical research has identified that saving for learning has long been a strong savings motive for Japanese families. In 1985 43% of respondents to the Public Opinion Survey on Saving regarded saving for their children's education as one of their three most important motivations for saving, while almost 15% considered it the most important motive. The importance of education has not diminished over time and more recent surveys have continued to show that saving for education is central to household priorities (eg Horioka and Watanabe 1997, p540).

Life-cycle stage and the level of saving

As in the USA, the amount of saving for learning by households in Japan varies according to the stage of the individuals' life cycle. More specifically, household savings decisions are intimately related to the educational level of the children.

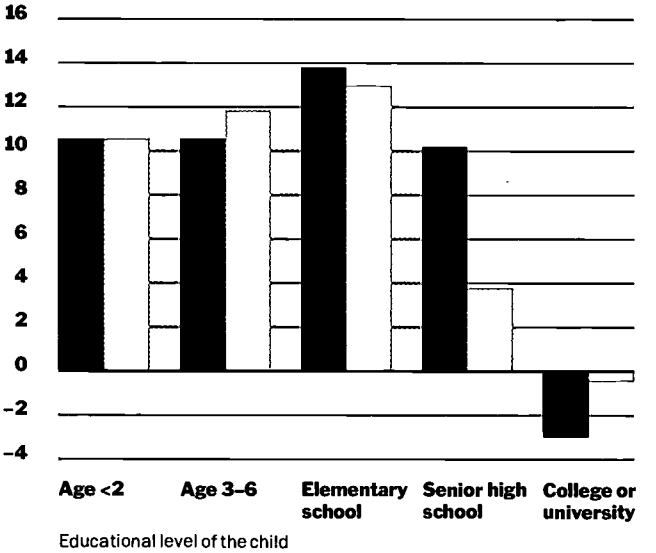


Figure 13 Average household savings rate by educational level of the child (Japan)

Source: C Horioka The Importance of Saving for Education in Japan *Kyoto University Economic Review* 1985

■ Married couple with two children

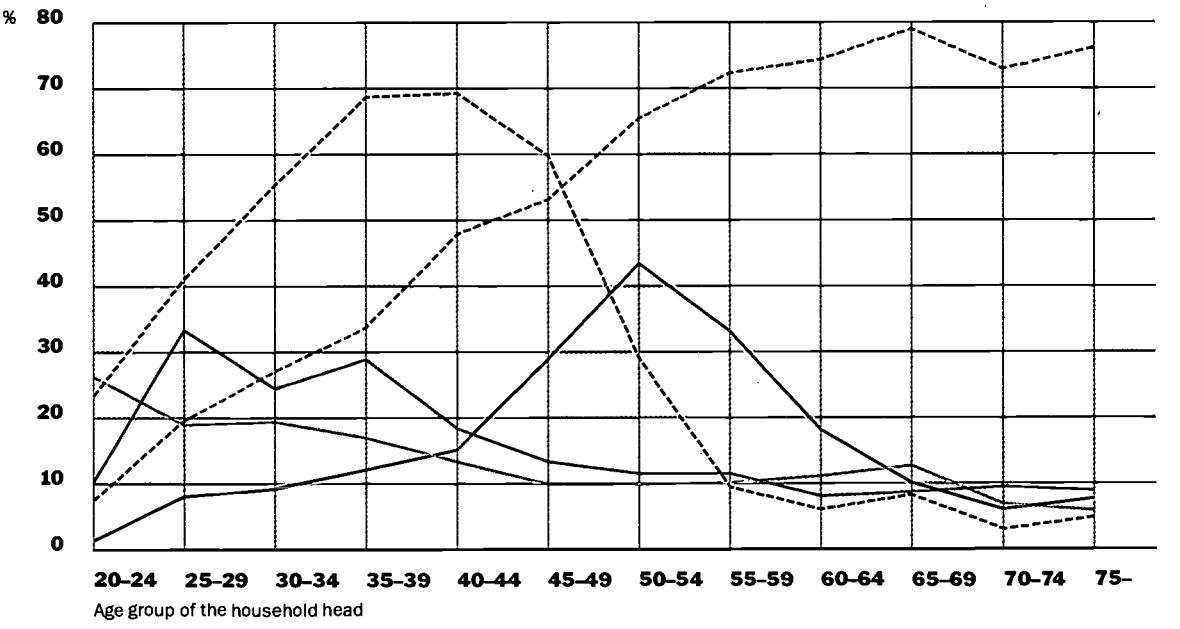
□ Married couple with one child

Figure 13 shows how the household savings rate increases as the child approaches high school (the eldest child in the case of a two-child family). Savings peak when the child is in elementary school and then begin to decline through high school as the costs of tuition are imposed and the need for private after-school tuition or preparatory schools arises. The decline in savings is greater for one-child families as their need for continued saving is less than that of families who still have to support another child through the education system. When the child enters university the average household savings rate is shown to be negative, indicating that savings are being drawn down.

The results in Figure 13 also concur with another Japanese survey of the motivations for saving at different stages of life. Figure 14 shows that between the ages of 25 and 45 education is the main reason households give when asked why they save. Past that point its importance declines dramatically: it is the least important concern by the time the household head is aged 55. This emphasises how education is seen as a predominantly parental concern, rather than an issue for the extended family, as it is in the USA. In Japan saving for learning begins in early parenthood and falls steeply once children reach college education.

Although a combination of income, savings and debt is used to finance education, most households rely mainly on savings. In fact only 0.5% of households dis-saved for education through newly incurred debt. Horioka *et al.* (2000, p28) estimate that saving for learning accounts for approximately 9% of all net saving, which – given that saving for education occurs over a relatively small section of the life cycle – indicates saving for education is highly significant during this period.

Figure 14
Savings motivations by age (Japan)
Source: Horioka and Watanabe 1997



Financial products used for saving for education

Unlike the USA, there are no specific, tax-exempt savings products for education expenses. The absence of these products can be explained by two factors:

- Japanese families make sufficient provision for their education expenses and therefore do not require increased incentives to do so
- were the government to introduce them, it is not certain that consumers would purchase such products, given their revealed preference for conservative and easy-to-understand savings instruments.

Summary of saving for learning in Japan

The features of the Japanese system produce a distinctive pattern of household saving for learning. The concept of education as an investment (an idea shared by the USA), which has recently been stimulated by the prolonged recession, drives competition for places at the most prestigious universities. Because of the level of study required to pass the entrance exams to university, this system precludes students from combining work and study and places the burden of additional education expense on parents.

The prohibitive cost of education cannot be financed through the use of loans and this fact effectively forces Japanese families to save. In contrast to the USA, this saving is primarily undertaken by the parents and is shown to decline quickly once the child reaches upper secondary school and university.

Section 5 Conclusions

In conclusion, our analysis of the respective educational structures has highlighted the fact that although the four systems produce similar results in terms of participation rates and the length of education, they impose different impacts on household finances.These are outlined below.

- In Denmark fees are rare and education at all levels is highly subsidised by the state.
- In New Zealand primary and secondary education is fully subsidised by the state, but post-secondary education requires private contributions towards the tuition costs of the course. For most students this is financed by an income-contingent loan.
- In the USA compulsory schooling is again subsidised, and private investment is required for post-secondary education. The cost of tertiary education is high when compared internationally and the availability of loans is somewhat more restricted.
- In Japan the familial burden of education costs is large and usually last from children turning 15 until they graduate from university at 22.

Thus four different systems create four varying patterns of costs and impacts.

It is also clear that our comparator countries have significantly different household savings rates, ranging from Japan at 11.1% to New Zealand at -2%. These savings rates are due to differences in consumption behaviour as well as to a number of structural differences in each country, such as retirement provision, demographics and the holding of financial assets.

The evidence of saving for learning that has been located thus far is consistent with the institutional background of each country described above. For Denmark, where there are no tuition fees and savings rates are low, we conclude that saving for learning occurs via the tax system. In New Zealand, where tuition fees at a tertiary level have been growing rapidly and savings rates are negative, we conclude that dis-saving permitted by the student loan system is the predominant method of saving for learning.

Japan and the USA provide convincing evidence of specific and targeted saving for learning. Evidence suggests that saving for education is one of the top five reasons why people save in each country and the rank depends on the respondents' stage of life. For both Japan and the USA we find that the level of saving for learning changes over the life cycle, though the shape of this curve varies between the two. In Japan, saving occurs early in parenthood but declines once the child has entered university. By contrast, in the USA savings are smoothed over the life cycle and the savings of grandparents are an important element of saving for learning.

Our results show that a number of components combine to determine whether saving for learning occurs and the level of that saving.

1 There is a strong correlation between the level of education expense anticipated by individuals and the incidence of saving for learning. For example, in Denmark, where saving is not shown to occur, individuals bear very little of the cost of their education. By contrast, in Japan, where private individuals are asked to invest significant sums in education, the savings rate and the proportion of that saving allocated to education are much higher.

2 Government policy on funding education must remain constant for a significant period of time, as savings behaviour is slow to adjust. In both Japan and the USA the state has always played a lesser role in the financing of tertiary education at private institutions. Thus over successive generations the costs of these institutions have become internalised and well understood, so that likely expenditure can be anticipated. By contrast, the New Zealand experience shows that households have not yet adjusted to the change in policy. Since 1990, government policy on the level of tuition fees has changed at least three times, hindering individuals' ability to anticipate the costs of upcoming education expenses.

3 The availability of other sources of finance – such as student loans and grants – is shown to dampen the level of saving for learning. We have identified a stark contrast between the ex-post behaviour of New Zealand (and to a lesser extent US) students in Japan, who have relatively unrestricted access to loans, and students in Japan, where loans are not freely available. This may suggest that the availability of loans engenders a dis-saving culture among students and their families that hinders or renders unnecessary targeted saving for learning. We must remember, however, that the use of a loan scheme does not lower the investment of the individual in their education. Rather it shifts the burden of financing that education from the parent to the child, and from ex-ante to ex-post.

4 Tax breaks for education-related financial products are utilised by individuals in the USA (the only comparator country that offered such products), but not to the exclusion of other products. This is partly due to the rules regarding the access to student aid, but may indicate that it is not necessary to offer tax-preferred products in order to obtain targeted saving for learning. Indeed, there are no such products offered in Japan and yet approximately 9% of all saving is saving for learning.

5.2 Implications for the UK

The results of this research show that the most important determinant of saving for learning is simply the cost of the education. In both Japan and the USA the cost of university tuition is prohibitively high so that it cannot be financed out of current consumption. In the absence of student loans these costs effectively force households to save. We would anticipate, therefore, that if the costs of education were to rise in the UK we would – over a period of time – experience a related rise in the value of ex-ante saving for education, although student loans may shift this saving from ex-ante to ex-post. Finally, our results show that tax breaks to encourage saving for learning in the UK are unlikely to alter savings patterns materially. Our analysis finds that when saving for education is required, individuals – motivated primarily by the cost of the education – tend to save regardless of whether a tax incentive is in place or not.

Appendix 1 Summary tables of educational structures in each comparator country

Costs in all the tables of this appendix are given in US$ for comparison.

Table 5
Overview of the Danish education system

Education type	Institution	Age/length of course	Tuition costs	Maintenance costs
Pre-school	Local *folkeskole*	age 6	Fully state funded	Parental support
Primary and compulsory secondary	Local *folkeskole*	age 7–16	Fully state funded except for 10% who choose to attend private schools and pay some tuition fees at around $950 per year	Parental support
Post-compulsory secondary	*Gymnasium* or technical *gymnasium*	age 16–18 or 16–19	Fully state-funded except for 12% who choose to attend private schools and pay some tuition fees at around $950 per year	Parental support
Tertiary	University or technical college	2–5 years (average length of undergraduate course)	Fully state funded (no tuition fees)	Grants and non-taxable loans available up to $8500 Parental and individual support
Adult learning	Adult local schools or market training centres	Designed to allow maximum flexibility in pace and length	Nominal charge but heavily subsidised	Government pays the employee the equivalent of unemployment benefit while studying Typically employers top this up so that the employee receives the same income as if he/she were in work

Table 6
Overview of the Japanese education system

Education type	Institution	Age/length of course	Tuition costs	Maintenance costs
Pre-school	Public nursery schools and kindergartens	age 3–6	Parents pay tuition fees	Parental support
Primary and compulsory secondary	Primary school and lower secondary school	age 6–15	Fully state funded	Parental support
Post-compulsory secondary	Upper secondary school	age 15–19	All schools charge some tuition fees from age 15	Parental support
Tertiary	University or technical college	4 years (average length of undergraduate course)	Parents pay tuition fees	Some loans are available for expenses up to $4400 per year
Adult learning	Most adult learning is provided by the employer	Short courses designed to interact with the labour market	Paid by the employer	Employee's own income

Table 7
Overview of the New Zealand education system

Education type	Institution	Age/length of course	Tuition costs	Maintenance costs
Pre-school	State-licensed providers including: kindergartens, play centres and Maori immersion pre-schools	age 3–5	State pays subsidies but some institutions do charge fees	Parental support
Primary and compulsory secondary	Primary school, intermediate school and college	age 5–17 (compulsory from age 6)	Fully state funded	Parental support
Post-compulsory secondary	College	age 17–18	Fully state funded	Parental support
Tertiary	University, polytechnic, teacher training college, Wananga, Private Training Establishment	3 years (average length of undergraduate course)	Tuition fees for a portion of the course cost	Means-tested grants and income-contingent loans to a maximum of $2017 a year for maintenance costs plus full fee and course costs

Table 8
Overview of the US education system

Education type	Institution	Age/length of course	Tuition costs	Maintenance costs
Pre-school	Kindergarten	age 4–6	Fully state funded	Parental support
Primary and compulsory secondary	Elementary school Middle school Junior high school	age 6–10 age 10–14 age 14–16	Fully state funded	Parental support
Post-compulsory secondary	Senior high school	age 16–18	Fully state funded	Parental support
Tertiary	University or technical college	3–6 years (average length of undergraduate course)	Tuition fees. Costs vary greatly between the public and the private sector	Student loans and grants available. Approximately 1 in 2 students receive aid
Adult learning	Wide array of institutions	Wide range of courses available, lengths ranging from day classes to 3-year programmes	Tuition fees	

Appendix 2

Summary of the New Zealand Student Loan Scheme

Loan characteristics	Key features of the Student Loan Scheme
Start of programme	1992
Amount borrowed	Loan can cover all tuition fees + NZ$2000 (£580) course costs + (for full-time students) NZ$150 (£43.50) per week living expenses (less any entitlement to student allowances)
Means testing	The loan is not means tested. However, students whose parental income is below NZ$50,750 (£14,718) may be eligible for part or all of the maintenance allowance of NZ$150 per week to be paid in the form of a grant
Eligibility	Students are eligible if they are: ■ citizens or permanent residents of New Zealand ■ studying full-time for not less than 12 weeks (or part-time for a full year) ■ studying at a registered tertiary education provider
Loan restrictions by type of qualification	The loan is available to all students who meet the conditions above. That is, students enrolled on courses at an equivalent grade to Levels 1–3 in the UK have access to income-contingent loan financing, as do students studying for a traditional higher-education qualification at Levels 4 or 5
Number of loans allowed	There is no restriction on the number of loans that an individual can withdraw. That is, an individual can undertake a second degree, or a postgraduate degree, and continue to be eligible for loan financing
Grace period	None, but interest is not accumulated while studying and there is a base interest write-off for those whose repayments fail to meet the cost of the base interest charge in a given year
Income threshold	Net income greater than NZ$15,132 (£4388)
Repayment amount	10 cents in every NZ$ earned over the repayment threshold and 15 cents in every NZ$ earned over NZ$50,000 (£14,500)
Interest rate	Base rate + inflation rate + 0.8% administration charge (the interest rate is 7% for 2001/02)
Collection method	Collection of the loan is the responsibility of the Inland Revenue and repayment is made through the tax system
Frequency of payment	Salary intervals (ie weekly or monthly). Self-employed borrowers are required to make payments in three instalments, and non-resident borrowers in quarterly instalments
Cancellation rules	The loan is cancelled upon death or bankruptcy

Appendix 3 — Funding breakdown of tertiary education expenses in New Zealand

The following note provides the background calculation to each of the figures listed in Table 3: Breakdown of total tertiary education costs in New Zealand by funding arrangements (2000). The figures that we explain are:

- the calculation of the total education cost
- the amount paid via student earnings
- the amount of parental contribution.

Estimates of the amount paid via loans and grants are taken from the Student Loan Scheme Annual Report and Education New Zealand: Profile and trends (2000) respectively.

Table 9
Estimation of the total tertiary education cost (New Zealand)

*As per Education New Zealand: Profile and trends 2000

	Number of equivalent full-time students	Average fee by institution (NZ$)*	Average course costs (NZ$)	Average living expenses (NZ$)	Total education cost for 2000 (NZ$)
University	97,545	4047	1000	7800	1,253,160,615
Polytechnics	51,953	3324	1000	7800	629,878,172
PTEs	16,395	5123	1000	7800	228,267,585
Wananga	3581	4082	1000	7800	46,130,442
College of education	8373	2745	1000	7800	96,666,285
Total number of students	177,847				2,254,103,099

Table 10
Estimation of the value of student earnings (New Zealand)

Number of hours worked[1]	620
Average wage per hour[2]	NZ$8.1
Total number of EFTS	177,847
Percentage of full-time students engaged in part-time employment[3]	37.2%
Number of students engaged in part-time employment	66,159
Total earnings of full-time students in part-time employment	332,250,919

1 Estimated at 10 hours per term week and 40 hours for additional 8-week summer holiday employment
2 From the Student Job Search website
3 From Statistics NZ

Table 11
Estimation of the value of parental contribution to maintenance (New Zealand)

Additional average weekly expenditure for one extra child[1]	NZ$114.048
Weeks of parental support required:[2]	
Percentage of students who live away from home: 20 weeks	70%
Percentage of students who live at home: 52 weeks	30%
Total maintenance costs for 'away' students	NZ$283,963,325
Total maintenance costs for 'home' students	NZ$316,416,276
	NZ$600,379,601

1 From household expenditure survey
2 CRA assumption

Appendix 4 Financial products used for savings for education in the USA

	Section 529 plans	Savings bonds	Education IRAs	Classic IRAs
Tax benefits	Federal and income tax deferred on earnings and taxed at the beneficiary rate upon withdrawal, if used for higher education expenses	Earnings exempt from state and local income tax, federal tax deferred. For qualified taxpayers, earnings may be fully or partially excluded from federal income tax, if used for qualified higher education expenses	Earnings exempt from federal income tax, if used for qualified higher education expenses	Classic IRA may be tax-deductible and entire proceeds taxed at the owner's rate. Earnings on Roth IRA tax-exempt if taken out after the owner turns 59
How much can be invested	Varies by state. Currently, the highest lifetime account balance limit is $246,000	Up to $30,000	Up to $500 per year	Up to $2000 per year
Qualified expenses	Tuition, fees, books, supplies, room and board, and equipment	Tuition and fees only	As for 529 plans	As for 529 plans
Financial aid treatment	Savings plans: parents' assets, prepaid plans may reduce aid dollar for dollar	Parents' assets if education expenses are for a child. Student's assets if education expenses are for oneself	Student's assets	Not considered in financial aid calculations
Who makes the investment decision	State sponsor with input from programme manager	Guaranteed returns	Owner	Owner
Flexibility	Earnings on non-qualified withdrawals taxed at owner's rate plus a minimum of 10% penalty in the form of additional tax	Can be redeemed after 6 months. A 3-month earnings penalty applies to redemption within 5 years of issuance	Earnings on non-qualified withdrawals taxed at owner's rate; 10% penalty on earnings	No penalty on early withdrawal if used for higher education purposes. For Roth IRAs, earnings of early withdrawals taxed at owner's rate

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US Department of Education
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Glossary (derived from OECD definitions)

Adult education

Adult training and education refers to all kinds of general and job-related education and training organised, financed or sponsored by authorities, provided by employers or self-financed. Job-related education and training refers to all organised, systematic education and training activities in which people take part in order to obtain knowledge and/or learn new skills for a current or a future job, to increase earnings and/or career opportunities in current or other fields.

Bonds

Bonds usually take the form of fixed-interest securities issued by governments, local authorities or companies. Fixed-interest payments are usually made twice a year but may alternatively be credited at the end of the agreement (typically 5–10 years). The borrower repays a specific sum of money plus the face value (PAR) of the bond. Most bonds are unsecured and do not grant shares in an organisation.

Dis-saving

Negative saving. Dis-saving is financed either by the running down of assets or by borrowing, and results in a reduction in net worth.

Mutual fund (often termed Unit Trusts in the UK)

Mutual funds are pools of money that are managed by an investment company. Professional managers put the money into stocks (stock mutual funds, for example), bonds and other investments. Some funds seek to generate income on a regular basis, while others try to preserve capital. A management fee is charged for these services, typically 1 or 2% a year. Funds also levy other fees and charge a sales commission (or load) if purchased from a financial adviser. Funds are either open-end or closed-end.

Pre-school education

Defined as all forms of organised and sustained centre-based activities designed to foster learning and social development in children aged 2–6.

Primary education

The first 4–6 years of basic formal education for children that requires no previous formal training of any kind.

Private contributions to education

Refers to expenditure funded by private sources – households and other private entities. Households are defined as students and their families. Other private entities include private business firms and non-profit organisations, such as religious organisations, and business and labour associations. Private expenditure comprises school fees, materials such as textbooks and teaching equipment, transport to school (if organised by the school), meals (if provided by the school) and boarding fees.

Private funding

This definition refers to the data used in Figure 5 and Table 1 to describe the levels of private funding in various international education systems. This data was taken from the OECD publication *Education at a glance: education indicators* (2001) and describes two indicators.

1 The relative proportions of public and private funds for educational institutions by level of education. The distinction by source of funds is based on the initial source of funds and does not reflect subsequent public-to-private or private-to-public transfers. Therefore subsidies to households and other entities, such as subsidies for tuition fees and other payments to educational institutions, are included in public expenditure. Payments from households and other private entities to educational institutions include tuition and other fees, net of offsetting public subsidies.

2 The level of public subsidies to the private sector. This definition of public subsidies to households includes the following categories:

- grants/scholarships
- public student loans
- family or cash allowances contingent on student status
- public subsidies for housing, transportation, books and supplies and other education-related purposes
- interest-related subsidies for private loans.

The value of tax reductions or credits to households and students is not included.

Public contributions to education

Refers to the spending of public authorities at all levels. Expenditure that is not directly related to education (eg culture, sports, youth activities) is not included.

Public subsidies to households

Public subsidies to households include grants/scholarships, public student loans, family or child allowances contingent on student status, public subsidies for all education-related expenses such as transport, housing or health, and interest-related subsidies for private loans.

Secondary education (compulsory)

A period of funded or non-funded compulsory education generally continuing the basic programme of the primary level but with some form of previous formal education required for participation.

Secondary education (post-compulsory)

A period of funded or non-funded higher secondary education, generally either preparatory (preparing students for the tertiary stage) or terminal (preparing students for direct entry into working life) – and requiring completion of two periods of formal education.

Tertiary education

Either largely theory-based programmes, for which some form of higher secondary learning has been completed, involving a minimum cumulative theoretical duration of 3 years in a faculty with advanced research credentials, or shorter programmes focusing on practical, technical or occupational skills for direct entry into the labour market and involving a minimum duration of 2 years full-time or the equivalent.

Total governmental expenditure on education

Includes expenditure on instructional educational institutions as well as expenditure on non-instructional institutions.

- Instructional educational institutions are educational institutions which directly provide instructional programmes in an organised setting. Business enterprises or other institutions providing short-term courses of training or instruction to individuals on a 'one-to-one' basis are not included.
- Non-instructional educational institutions provide administrative, advisory or professional services to other educational institutions – for example national, state or provincial ministries or departments of education.

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