



Center for
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Vouchers for higher education?

A survey of the literature

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1 Introduction

1.1 Funding of higher education in a network society

In the modern theory of economic growth, the accumulation of human capital is considered as one of the basic engines of economic growth. Therefore, governments will be very concerned about raising the level of education of their countries' population and strengthening the individual decisions on investment in education and training. Especially so in cases where the market for education is considered to be **imperfect**. Markets allocate efficiently only if the standard assumptions hold – that is, perfect information, perfect competition, and no market failures such as external effects. If these assumptions do not hold there may be good reasons for government intervention in order to ensure a more adequate match of supply and demand for educational services. So why does the market for education (including the post-secondary education market) fail?

First of all, consumers of education (pupils, students) do not have perfect **information** about the nature of the product (the educational service delivered), about the price (in relation to the quality of the education) and about their capabilities (will they manage to complete the studies successfully?). It is very likely that imperfect information will lead to under-consumption, particularly by the lowest socio-economic groups.

Secondly, **competition** among educational providers is often far from perfect, because some providers have a local monopoly due to the fact that they are unique (e.g. there may only be one medical school in the country) or simply the only provider in the region (especially in rural areas).

Thirdly, the education market is imperfect due to the **externalities** that education produces. Education and training produce positive effects, not just for the individuals that receive an education or get a degree, but also for people working, living, or communicating with educated people. In short, the benefits of education accrue to society in general and, apart from economic benefits, include broader benefits, such as shared values, social coherence, and cultural benefits.

Government intervention in education can also be justified because the **capital market** does not operate perfectly either. Students, or their parents, are in general unable to secure funding for their (or their children's) education, because they are unable to provide collateral security for loans. Banks simply believe it is too risky to supply loans to (mostly young) individuals that may have problems in getting a degree and, subsequently, repaying their debts.

Thus, efficiency and equity (i.e. social justice) considerations provide governments with arguments to intervene in the market for (higher) education. If left to its own devices, the market for education services would fail. The form that state intervention should take is not so easy to prescribe, however. Some would argue for the state to set minimum standards and give financial support to poorer families but otherwise to allow education to be privately provided. Others argue that the benefits of a less regulated system of education will be more than offset by the loss of some important externalities.

In short, there are four ways (Barr, 1998) in which the state can intervene:

- (1) regulation
- (2) finance
- (3) public production

(4) income transfers.

This paper will mainly be concerned with the instrument of *finance*, as it discusses an alternative way of funding higher education. However, we cannot avoid paying some attention to the other items on the list, because government intervention usually is a mix of finance (e.g. subsidies to producers), regulation (e.g. of quality), public provision (e.g. through state schools), and income transfers (e.g. student grants). Instruments (1) through (3) all involve direct interference in the market mechanism, while (4) only works in an indirect way. Clearly, the choice of intervention mechanism will not just be a matter of economic theory, but also a matter of social and political arguments.

All of this is the standard textbook stuff. So where does this all lead us? The answer is: the present-day models of government intervention and higher education funding seem to be challenged by the trends manifesting themselves in today's society and are increasingly put into question. A large part of higher education still is centrally planned and publicly funded and some argue that this produces too few incentives for better performance. In other words, government intervention may lead to non-optimal results; there are **government failures** as well. Especially so, as our society is evolving from an industrial society into a so-called **network society** (Castells, 1998). This network society is characterised by a large degree of individualisation – partly as a result of growing individual wealth and technological advancements in, especially, the field of information and communication technology (ICT). In this society, private individuals will try to distinguish themselves from other individuals and will seek to realise their potential. All of this leads to a growing heterogeneity and unpredictability, manifesting itself in the markets for consumer goods, financial products and, also, educational services. This social phenomenon is sometimes described as *mass-individualisation* or agility. It implies that higher education providers will be confronted with a growing diversity in terms of individual client demands. It is not just the number of students seeking a higher education that has increased rapidly over the years, but also the demands they express. Students are increasingly believed to require flexible training packages. Flexible in terms of content and in terms of the mode of delivery. They are increasingly seeking forms of education in which the hours dedicated to training and learning can be combined with hours spent on jobs, families and leisure activities. It is believed that, thanks to the possibilities of the modern ICT, higher education providers will be able to cater for this demand. ICT enables mass-customisation, allowing providers to accommodate the students' individual preferences in terms of mode, pace, place, and time of study.

The need for flexibility in training and education is strengthened by demands from firms and other organisations. Today's knowledge economy requires firms to have employees with the relevant and up-to-date skills and knowledge. It's the capability to apply knowledge to knowledge itself that is essential to economic success. Firms that wish to compete in the global informational economy will have to possess the organisational abilities (i.e. knowledge!) that enable them to maintain or increase their competitive advantage in a turbulent market environment. Firms, therefore, need to have and/or train a flexible and versatile workforce. They will express a continuous demand for courses in which their employees are retrained and 're-tooled'. In other words, **lifelong learning** will become an absolute necessity.

The developments towards mass-individualisation, the knowledge-society and lifelong learning place new demands on higher education – on the organisation of the sector as a whole as well as on the individual higher education institutions. This will have consequences for the way in which the sector is managed, funded, and regulated by public authorities. Funding by the government will have to be in line with the trends sketched here. Governments will have to shape the conditions within which students, firms and society in general can realise their potential.

However, due to the heterogeneity and unpredictability in markets, public authorities will no longer be able to centrally plan the higher education sector. **Self-regulation** by students and higher education institutions themselves will have to be the leading principle. Choices made by students and other demands placed upon higher education institutions will increasingly have to drive the system.

For the funding of the higher education sector this would imply a large degree of *demand-side financing*. From literature (e.g. Levin, 1983) it is well known that **vouchers** are often propagated as a very powerful means of demand-side financing. Students (or prospective students) would receive a bundle of vouchers (or entitlements) to buy educational services from higher education institutions (HEIs). The government is supplying the vouchers and HEIs would no longer receive direct government funding (subsidies) as the funding is supplied through the students. To secure their funding, HEIs therefore will have to compete for students and consequently are believed to shift their focus from satisfying government bureaucrats towards the needs of their customers. Thus, a voucher scheme contains incentives to strengthen student choice. In a voucher scheme, the providers of higher education are forced to be responsive to the needs and preferences of their customers (i.e. students, business). Vouchers, therefore, constitute a market-oriented type of funding of higher education. In light of the developments towards mass individualisation and lifelong learning, vouchers may be a promising system for the funding of post-secondary education.

To clarify the voucher idea and to distinguish voucher-schemes from other systems of funding higher education, we will present a **classification** of funding schemes in section 1.2. The scheme will include more traditional, supply-driven types of funding and also pay attention to another important government goal, that is the goal of stressing performance in the higher education sector.

1.2 *Resource allocation mechanisms for higher education*

When looking at funding arrangements, two criteria are important: (a) ‘what is funded by the government’ and (b) ‘how is it funded’? Question (a) concerns the *funding base* for the government allocations to HEIs. Are the funds tied to educational outputs and performance, or rather to inputs? Question (b) relates to the issue of the *degree of market orientation* in the funding arrangements. Whose decisions actually underlie the observed flow of government funds to HEIs, or: “what drives the system?” The answer to this question may be found by paying attention to issues such as: to what extent are funded numbers or funded (research) programs regulated (or planned) by central authorities? And: do HEIs compete for funds (i.e. students, research programmes)? Do they have the right to determine the level of tuition fees by themselves?

a. the degree of output orientation

When financial means are made available to institutions to cover distinct costs, such as staff salaries, material means, building maintenance costs, investment, or so-called "costs to continue", this is called *input funding*. If the budgets are driven by measures of activity such as the number of students enrolled in an institution, we also speak of input funding, because student numbers will largely determine the level of inputs spent in the instruction process. In contrast, in funding arrangements where institutional budgets are tied to specific teaching and research outcomes of the institutions' activities we speak of *output funding*. Funding on the basis of output is believed to contain more incentives for efficient behaviour than input funding. If budgets depend on performance measures, there is reason to believe that those who receive the budgets will pay increased attention to their performance.

Crucial – and often controversial – in output funding systems is the indicator of output that is selected as a proxy of measuring instructional or research output. Examples of output-indicators may be found in the number of students graduating, the number of degrees that fall in a certain class, the number of research papers, the number of publications in learned journals, or variables which have more of a qualitative character, such as the score on some scale reflecting the quality of teaching or the quality of research (established through peer judgement), success in attracting competitive research grants and contracts, or the relative position on some scale of efficiency that takes into account the average cost per student enrolled in the institution.¹

In practice, funding arrangements are characterised by a mix of input elements and output elements. Whether the emphasis lies on output or on input depends on the magnitudes of the parameters (funding rates) included in the conditions (formulae) that determine the budget. A (qualitative) judgement of the degree of output-orientation can be expressed by means of a continuum running from the extreme case of input orientation to the other extreme case of output orientation. This continuum is shown as the horizontal axis in diagram I below.

b. the degree of market orientation

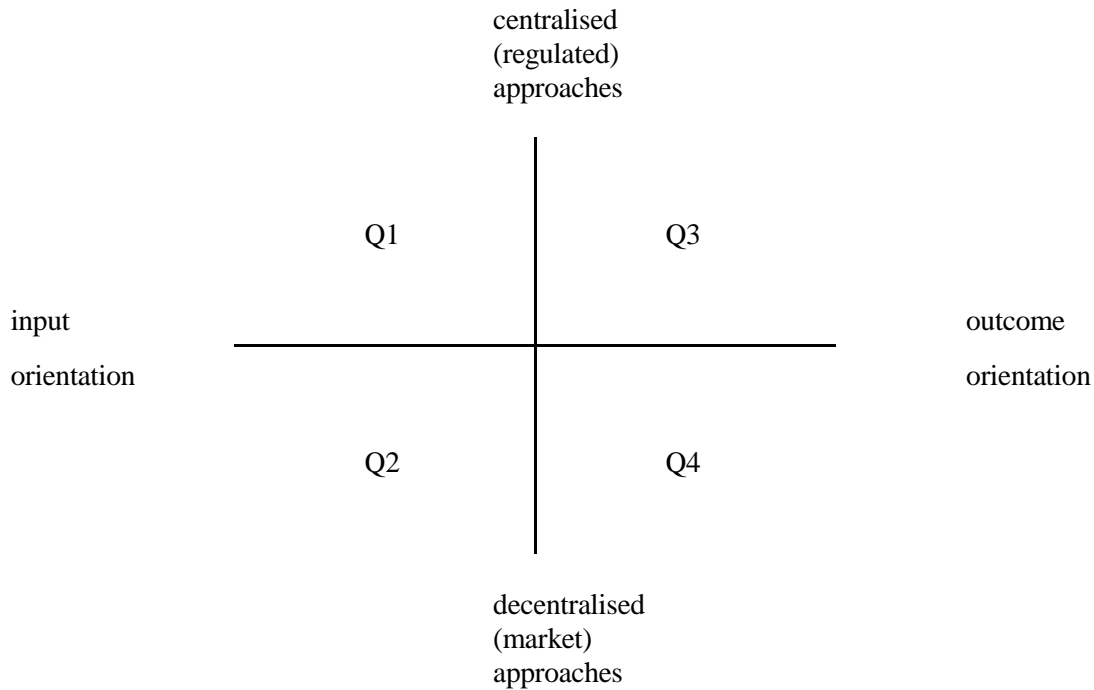
The second dimension used to classify a funding system relates to the issue of *market orientation* in the funding arrangements. One of the characteristics of market orientation is the degree of competition implied by the funding decisions. Or stated differently: "to what extent are funded student numbers or funded (research) programmes regulated (or planned) by central authorities or are the funding flows driven by the decisions of the clients (students, private firms, research councils/foundations) themselves?" The answer to this question may be translated into a measure for the degree of centralisation, from a highly regulated situation in which the government determines the funding centrally (for instance by prescribing the exact numbers of students for different programmes) to a situation in which consumer sovereignty (individual client decisions) drives the system. In practical situations, the degree of centralisation (or market orientation) will lie somewhere in between the two extremes. In diagram I, a vertical scale can be used for depicting the degree of (de-) centralisation.

¹ In the case of the latter, student enrolment is not (simply) regarded as an indicator of the level of activity (i.e. as an input-indicator), as in the case of systems of input funding. It (also) acts as an output indicator, because when the number of students rises, the average cost per student goes down (*ceteris paribus*) and this may be regarded as a rise in efficiency.

Combining the dimensions

When the two dimensions distinguished above are combined, diagram I below results. A classification of funding systems may be carried out by means of this diagram. We can distinguish four quadrants (Q1, Q2, Q3, Q4) in the diagram and give some examples of different funding arrangements.

Diagram I: Classification scheme for funding systems



We will now give a number of examples that relate to the four types of funding.

Q1: planned, input-based funding through providers

This represents a centralised system of funding, where *contracts* are signed up between the funding agency and HEIs, with HEIs agreeing to deliver graduates for targeted labour market needs. When entering into a contract, the funding agency will make sure it obtains the services it wants (usually with an eye on labour market requirements) for a reasonable price. In this way the cost-effectiveness of the delivery is stressed. In the contract, both parties express that they will obey certain criteria. Only if these criteria are fulfilled, the HEI will receive core funding. The criteria may concern the types and qualifications of students admitted to the HEI, the (maximum) level of tuition fees (if any) charged by the institution, and the commitment made by the HEI towards its students in the instruction and teaching processes.

Q2: demand-driven, input-based funding through clients

This funding system makes use of *vouchers*. The core funds of HEIs are supplied through the clients of HEIs. Students obtain vouchers which can be traded for educational services (i.e. educational consumption) at the HEI of their own choice. For the HEI the vouchers represent a

certain value - they can be cashed at the Ministry of Education. Each (prospective) student is given a limited number of vouchers, representing a value which can be used up in a flexible way (during a certain period of time and for programmes supplied by a given number of accredited education providers). In this funding system it is the consumer that drives the system - the system is demand-driven. The client (student) decides what institution to attend and what programmes to enrol in. The HEIs have to take care of the quality of their teaching and their supply of courses, because unattractive programmes will not receive sufficient funding. The voucher system can be combined - like many other funding variants - with a system of differentiated course *fees*. The HEIs then will charge the students a certain percentage of the course costs. Tuition fees may be regulated to some extent by the government. Charging fees will make students pay attention to the quality of the service they get from the HEI. So, combining vouchers and fees may result in a system which is responsive to individual students' participation wants.

Q3: performance-based funding of providers

In this example of a performance-based funding system a formula is used that generates funds for institutions that are successful in terms of their students passing exams. Depending on the number of credits (i.e. weighted number of passed courses) accumulated by their students and the subject categories concerned a budget is flowing to the HEI. This type of model is operating in Denmark (*taximeter* model), while in Sweden a mix of enrolment numbers and credits determines the funds allocated to HEIs. In the Netherlands, a mix of the number of first-year students ('freshmen') and the number of Master's degrees conferred determines the funds allocated to the universities.

Q4: purpose-specific purchasing from providers

In this example of a market-oriented funding system HEIs are invited to submit *tenders* for a given supply of graduates. The tenders which are selected by the funding agency are the ones that are the most price-competitive. In this tendering process, HEIs are encouraged to compete with one another to provide education and training to meet national needs.

Looking at the classification scheme presented here, it is good to note that vouchers are a way of funding education that can be described as input-oriented and at the same time demand-oriented. This implies that the goal of stressing performance receives less explicit attention compared to a scheme such as Q3.

1.3 *Research question and outline of this paper*

The taxonomy of funding schemes presented in section 1.2 automatically brings us to the question "what funding scheme would be best equipped to achieve the aims of strengthening student choice and efficiency in the market for higher education?" For this paper, we will mainly be concerned with the pros and cons of voucher schemes. Therefore, the central research question of this paper is:

What are the advantages and limitations of **vouchers** as a way of demand-side financing in higher education? What information on this issue can be found in international literature and are there any practical experiences with vouchers in higher education?

In order to answer this question, section 2.1 first gives a more precise definition of the voucher concept. Section 2.2 lists some of the theoretical arguments in favour of vouchers, as well as some of the drawbacks. For basic (i.e. compulsory) education, several voucher schemes have

been put forward in the literature (see section 2.3). For higher education (section 2.4), voucher schemes are more rare. The schemes that have been proposed in theory differ in terms of the amount of regulation, the provision of information and the issue of whether vouchers are targeted especially at disadvantaged groups. Practical experiences with vouchers are very rare. Section 3 first presents some examples from compulsory education (section 3.1), and then continues with higher education (section 3.2). In section 4, we return to the basic research question: are vouchers any good? What conditions and arguments do we have to take into consideration when planning to introduce vouchers and are there any alternatives to vouchers? We will try to answer these questions keeping in mind the trends outlined in section 1.1. It will become clear that the answer to these questions depends largely on the characteristics of the voucher scheme considered, such as who receives the vouchers, where can they be cashed, what is the investment students will have to make themselves, how long do vouchers retain their value, et cetera. The type of voucher scheme will largely determine its potential (or expected) effects.

2 Education vouchers

2.1 What are education vouchers?

In section 1.2 we observed that a voucher scheme represents a specific way of funding (higher) education. Instead of the government allocating subsidies directly to the providers of education, the government is channelling the subsidies through the consumers. The former – object subsidies – represents the most common way of allocating public money to education. The latter represents a way of subsidising the producers (schools, universities), while the financial resources are channelled through the subjects (parents, students) who can only spend the money on education. A voucher, in fact, is an *object-subject subsidy*, because unlike in the case of unrestricted money transfers made to individuals, the receivers of the vouchers do not experience an increase of their free disposable income.

In a voucher scheme the consumer receives a coupon (*voucher*) which represents a certain amount of money to be spent on education. The voucher is a kind of “coupon with a prescribed purchasing power, over a specified service” (Blaug, 1967). The value of the voucher is related to some notion of the average per capita costs of (a specified amount of) education. When a student chooses for a specific institution of higher education (HEI), the HEI redeems the value of the voucher(s) from the Ministry of Science and Education. The effect of vouchers is that HEIs are forced to acquire means by attracting vouchers from students. Providers are forced to compete and students (or pupils) are encouraged to seek the provider that best satisfies their demands. In doing so they can choose from a range of providers.

Some authors, like West (1996), use a much broader definition of vouchers. In their definition one can speak of a voucher system whenever “funds follow the child (or student)”. This includes all arrangements in which governments make either direct or indirect payments to an educational institution whenever a student (or pupil) enrolls in that institution. However, in our definition we exclude the direct payments and restrict ourselves only to the indirect payments. Thus, an essential element of a voucher scheme is that individual students are receiving government subsidies – either in terms of real money, or in terms of entitlements to a given amount of education – to be spent at the educational institution of their choice. Vouchers thus are a form of *demand side* funding. Student choice drives the funding. According to the broad definition of West a system of funding educational institutions on the basis of a formula where the number of students (or pupils) is the central parameter (i.e. the funding base) would also be a form of voucher funding. In our view, however, this would be regarded as a form of *supply side* funding. Following the voucher definition of West, voucher systems might be said to exist in quite a lot of higher education systems, e.g. in Chile, the Netherlands, or Sweden (see Carnoy, 1998; Parry, 1996 and 1997). However, in our less broad definition, these are examples of countries where in fact the *supply side* receives the government subsidies.

The crucial aspect of the voucher idea is *freedom to choose* and this, according to Barr (1998), would require that education is not just provided by public institutions but also – or at least in part – by *private* institutions. So, students would be allowed to cash their vouchers also at private institutions that – just like the public ones – comply with minimum quality standards.

2.2 *Pros and cons of vouchers*

There is no ideal method of funding education. Every system of funding arrangements has its advantages and shortcomings, partly related to the set of goals the government is pursuing. Moreover, the balance of argument changes over time. Dissatisfaction with the existing systems of (public) funding - e.g. no freedom of school choice in compulsory education with respect to public schools - has led, especially in the United States, to a number of suggestions for change, and perhaps the most prevalent of these has been suggesting the provision of vouchers for education (see section 3).

Vouchers for education is not a new idea. West (1967) traces its origin back to Tom Paine's *Right of Man* (1790), although recent interest in the idea dates from the 1960s. In fact, there are many different voucher schemes, even though the differences are sometimes small. The modern development of the idea is usually attributed to Friedman (1962), an economist strongly committed to market forces as a means of allocating resources (see section 2.3). The most influential of other voucher versions usually is associated with the name of Jencks (1970).

Especially in the United States, and to a much lesser extent in the United Kingdom, a sometimes heated discussion has been pursued between proponents and antagonists of education vouchers. Both sides, however, agree that the effects of a voucher system would depend on the precise details of any scheme that might be introduced. In Mason's (1975) words: "It is impossible to generalise from a particular voucher plan as the outcomes are a function of the very specific arrangements inherent in any particular plan".

Even though the majority of articles about vouchers address vouchers in primary and secondary education and literature on vouchers in higher education is very rare, we will address some of the pros and cons of vouchers. Some of the arguments may perhaps be less relevant for post-compulsory education (including higher education), but it is good to take notice of them when addressing the relevance of vouchers for higher education.

advantages of vouchers

The most important argument put forward in favour of vouchers is that they would increase freedom of choice. There is a widespread belief among economists, even those who do not necessarily support vouchers, that education is producer dominated in the sense that decisions as to curriculum, for example, are taken largely by teachers or professors, and that parents or students can do little but respond to an existing situation. It is argued that just as a market system provides the kinds of goods the consumers demand, its extension to education would also force the providers of education to respond to the wishes of parents or students. Under a voucher scheme, the suppliers of (higher) education would be more responsive to the needs and preferences of their customers. This would help to create a wider variety and flexibility in the provision of education. Education institutions would have to provide more information to parents and students on the quality of their services, thus strengthening the choices made by their clients and increasing the effectiveness of schooling.

The educational institutions which provide the kind of education that people want, will attract relatively more clients (pupils; students) and hence have more money to secure their existence. Successful providers² would be able to raise the quality of their services (e.g. by spending on equipment or the teachers' salaries), or perhaps to be able to make a profit. Vouchers would

² Below, we will discuss the consequences of a situation in which some providers are over-subscribed in terms of applicants and forced to make a selection.

enforce the discipline of the market on the providers of education, just as it does on the producers of automatic coffee makers. The introduction of market forces leads to competition and competition will strengthen efficiency, because only the most cost-effective providers will be able to survive.

Protagonists of education vouchers often mention another advantage, namely that a voucher system will allow more money to be spent on education, even in times of financial stringency. If parents are allowed to “top up” the value of the voucher provided from public funds, then the total amount spent on education will increase, because many parents would be prepared to supplement vouchers out of their own private income.

Some proponents of a voucher system also claim that vouchers would encourage greater quality of opportunity. The reason for this is that inequality of opportunity is caused by the inability of the lower income family to buy itself out of a bad school and into a good one. Greater quality of opportunity would at the same time lead to racial integration. Open-administration policies (with over-subscribed schools allocated by lottery) and minimum minority enrolments in participating schools have been proposed to avoid racial pitfalls. The schools would be more responsive to the educational needs of minority groups (Davis, 1983).

disadvantages of vouchers

On the other hand, opponents of education vouchers have numerous arguments against the introduction of vouchers. The first argument, regarding the issue of choice, is that parents are not competent to choose schools and to assess the quality of education provided, either because they are likely to be seduced by flashy marketing or because issues such as the curriculum are a matter for professionals.

Another argument against vouchers is that choice in education is limited by geographical factors in many areas. In rural areas there is often one school within reasonable travelling distance. Puckett (1983) notices that, curiously, the major voucher models under discussion have nothing to say about rural school participation in either a state-wide or nation-wide voucher program. Most voucher proponents have a metropolitan situation where diversity is possible (at least in theory) in mind. According to Puckett, in the U.S. voucher-type programmes have actually been in place for decades in rural areas (e.g., in Vermont). Such programmes have been implemented without the “fanfare” surrounding the Friedman and Jencks proposals (see section 2.3). In these rural areas a school district that only can afford one elementary public school, for example, allows parents to choose a school in neighbouring districts and then pays their expenses.

There are two additional arguments against the statement that a voucher system would increase freedom of choice. Firstly, according to Wagner (1974), choice is limited. He argues that all a voucher will do is to allow parents to state their preferences. If particular schools are over-subscribed then the actual decision will be made by someone else. In his opinion, increased parental choice, if required, can be provided for administratively without the need for a complicated system of vouchers. Wagner notes that the fundamental lesson about parental choice is that effective choice depends on resources. If there are sufficient resources to allow spare places in popular schools, then choice can be ensured without any need for vouchers. If no spare places are available, then a system of vouchers will not create them.

Secondly, preferences may be incompatible. Allowing choice to one parent may deny it for another. For example, parent A wants co-education and parent B chooses single education. This may be impossible, because two small schools can be hopelessly uneconomic.

Another argument against vouchers has been formulated by Hough (1987). He argues that the longer-term effects of the introduction of education vouchers would be that the popular schools would need to expand, contract more buildings, appoint more staff, whilst the unpopular (public) schools would decline in number or even have to close. This will result in an inevitable waste and additional expenses with places available in half empty schools. In general, vouchers would confront schools with massive fluctuations in funding and enrolment, meaning that teachers would suffer from non-professional interference and job insecurity.

Also it is suggested that elementary school teachers would be tempted to re-orient their teaching in order to produce those results seen as desirable to those middle-class parents who are most likely to exercise influence and choice at the expense, for example, of giving extra attention to disadvantaged or slow learning pupils.

Even some proponents of voucher schemes, like Levin (1998) come to the conclusion that the costs of an overall voucher system appear to exceed those of the present system. Levin concludes that “the shift from the existing system to a voucher system with a well-functioning school market place in which adequate transportation and information is provided will demand considerable additional resources for education beyond those allocated for educational vouchers and instructional services”. Levin and Driver (1997) estimate that the public costs of a voucher scheme in a representative US context could raise public educational costs by 25% or more.

Most voucher models claim to ameliorate social disjunction. Opponents of voucher schemes, however, claim that the opposite will be the case. Vouchers would increase segregation, because all major voucher models contain mechanisms of economic and racial segregation. Society, from a moral and political view, can decide that choice on the basis of racial grounds is unacceptable, but choice on the basis of curricula, religious and moral values, or intellectual ability will lead to outcomes that strengthen segregation. Families that are better-off will be more likely to take advantage of school choice, leaving the worse-off behind (Puckett, 1983; Waring, 1996).

A final argument against a voucher scheme is that it would be accompanied by practical difficulties, especially because of additional administrative efforts. Vouchers imply a large effort in terms of keeping track of individual training careers.

final remarks

From the short overview of pros and cons to vouchers it is difficult to formulate a conclusion on the relevance of vouchers in general. Even more so, because the effects generated by the voucher scheme will very much depend on the exact characteristics of the scheme (Oosterbeek, 1998). A large variety of voucher schemes can be identified. Johnes (1993), starting from a list of twelve basic questions that relate to the lay-out of the voucher scheme, argues that, depending on the answers given to these questions, over 4000 different voucher schemes can be identified. All of the questions relate to *government regulation* issues. Some of the most important regulation issues are: (a) the issue whether the voucher covers the full cost or only part of the cost of the programme or the educational institution, (b) whether there is some form of preferential treatment for disadvantaged families, (c) the selection mechanism used to allocate student places in schools that are over-subscribed, (d) whether all parents can re-choose schools each year, (e) whether both public and private providers are included in the system, (f) the range of programmes that is covered by the system, (g) whether educational providers are allowed to charge fees on top of the voucher; et cetera.

Clearly all of these – and a lot of other – issues are important and would require detailed consideration if a voucher system were to be introduced. The next section describes a few of the voucher systems that were put forward in literature.

2.3 *Voucher models*

Especially for compulsory education, several different voucher proposals have been put forward in literature. Below we will discuss three well-known voucher models for financing compulsory education. For higher education, voucher schemes are rare. The most elaborated and consistent plan seems to be the model proposed by Levin (1983). This model, containing five key elements, will be presented in the next section.

Two schools of thought

Ever since Milton Friedman published his ideas, the voucher concept has received a lot of attention from contemporary economists. Friedman was the first economist credited with the idea of educational vouchers as a means of restoring market competition in education, while still having the government supply financial support. Following Friedman, several other economists, especially from the U.S. and the U.K., have further analysed the voucher concept. In fact, two schools of thought corresponding to two dominant final objectives of the voucher, namely the *liberal market approach* and the *social policy approach*, can be distinguished, represented by Friedman and, respectively, Jencks. The liberal market approach has dominated the discussions in both the U.K. and Australia. In the U.S. both approaches coexist.

An important similarity between the approaches of Friedman and – on the other hand – Jencks is that both are aware of the fact that the lack of competition in the public sector has an ossifying effect. Uneasiness exists about the constraining influence of bureaucratised education on individual parental decision-making. The only way for schools to perform better is – according to both Friedman and Jencks – a subjection of schools to more competitive pressure. Levin (1968) puts it in the following way: “The fact that the new left (Jencks) and the old right (Friedman) can occur on the same educational palliative is reason enough to consider the market approach as a serious alternative to the present system”.

The market model of Friedman

Friedman (1962) distinguishes between three kinds of education: compulsory education, higher education and vocational training. With regard to compulsory education he argues that this has to be funded by “giving parents vouchers redeemable for a specified maximum sum per child per year if spent on ‘approved’ educational services”. Regarding higher education, Friedman presents a similar proposal. Furthermore, he advocates freedom of price fixing (i.e. the setting of fees) by the institutions. In Friedman’s version the value of the voucher is the same for each child, and it can be spent in any school that has been approved to take part in the system. This would include both private and publicly owned institutions. The schools are allowed to charge supplementary fees on top of the value of the voucher and have complete freedom in their choice of pupils and organisation of waiting lists (entry requirements, selection mechanism). According to Friedman the advantage of his voucher scheme is an increase of more effective competition between schools, resulting in an efficiency improvement, less claims of private schools on governmental financial assistance, and better opportunities to control governmental expenditure for education.

With respect to vocational training, Friedman argues that there are no ‘neighbourhood effects’ (i.e. external effects) which would call for government funding. He claims that vocational training is an investment in human capital, analogous to investments in physical capital. Therefore, he

advocates the establishment of a fund (a loan facility, or individual learning account) on which students have a drawing right. Repayment of the borrowed money should be related to the additional income that graduates earn as a result of the vocational training they received.

This concise description of Friedman's ideas about vouchers and the funding of education shows that he proceeds from a strict neo-classical framework. He pays a great deal of attention to efficiency issues and less to issues of equity, such as access to (higher) education. In Friedman's voucher scheme, schools (or universities) are allowed to charge additional fees. This may lead to the effect that lower income groups can not afford to send their children to high-tuition schools. This 'shortcoming' has led others to propose amendments to the Friedman voucher scheme.

The income-linked market model of Peacock and Wiseman

A well-known amendment of Friedman's scheme is the voucher model of Peacock and Wiseman (1964). Although in their model freedom of choice for consumers of education is also a central issue, at the same time they are aware of the importance of access to education. Accessibility may become an issue if consumers, as a consequence of the right of schools to set their own tuition fees, have to pay higher fees than the value of their vouchers. Access to education then may become income-linked. In order to avoid such 'unfair' effects, Peacock and Wiseman propose to consider a voucher as a part of the taxable income "... so that under a progressive income tax system the rich would not retain its full money". Of course, the most important question remains whether an income-linked voucher scheme does justice to the differences between income groups with respect to the ability to pay.

The principal element in this model is that the value of the voucher is higher for children from low-income families by making the voucher value subject to income taxation. However, although Peacock and Wiseman acknowledge the equality of opportunity as an important social objective, they explicitly opt for a liberal market approach.

In practice it is unlikely that the difference between the voucher issued to low- and higher-income families would represent the difference in purchasing power between low- and higher-income families. Jencks (1970) notes in this context that "legislatures may provide poor parents with slightly larger vouchers than rich parents, but (...) the difference is not likely to compensate the poor for their inability to spend private funds on education".

The compensatory market model of Jencks

Jencks is the most articulate representative of the social policy approach, that emphasises the equality of educational opportunity as a policy objective. In Jencks' opinion vouchers would offer an alternative for the failing public schools and would favour the relatively poor parents. The model he proposed has three main characteristics:

1. It favours the market and competition among suppliers, but market competition ought to be regulated to become effective.
2. It introduces a compensatory element in order to avoid economic, religious and racial barriers and to promote social mobility between classes.
3. Schools where demand exceeds supply must allocate at least half of their places by ballot.

The compensatory model is characterised by the fact that schools may not charge tuition beyond the value of the voucher. This implicates that schools accepting children from better-off families would not have greater income than schools with a preponderance of children from poor families. The opposite would be the case, because children from poor families receive a second, compensatory voucher that is inversely related to income. In Jencks' scheme schools with pupils from low income-families receive additional funding.

The total amount of funding the schools receive depends on the number of students they are able to enrol. As mentioned above, schools are not allowed to ask or accept fees for education in excess of the voucher value. This holds true even in cases parents where are willing to supplement ('top-up') the voucher value. Due to this principle Jencks' voucher scheme aims at prevention of social and economic segregation, i.e. children cannot be excluded because of the inability of their parents to pay. Disadvantaged pupils receive on top of the basic voucher a second, compensatory voucher.

The compensatory model of Jencks introduces the market mechanism to eliminate the prevailing monopolistic privileges of schools (in the U.S.). However, the market mechanism is regulated at the same time (fixed prices, compensatory vouchers) to avoid the negative effects of a completely free education market.

Concluding remarks

Above has been dealt with the essence of three voucher models. However, many other voucher schemes could be proposed (see e.g. Johnes, 1993). In voucher schemes there always will be a trade-off between individual freedom of choice (efficiency) and equality of educational opportunity (equity). Complete individual freedom of choice results in inequality of educational opportunity. Van Gendt (1990) formulated this dilemma in the following way: "Because of the situation that one instrument is supposed to be instrumental to two objectives that are not obviously compatible, one has to make concessions to the effectiveness of the instrument for one of these objectives or for two separate objectives."

The Jencks scheme has more of an equalising effect on expenditure. Both exponents of the liberal market approach (e.g. Friedman) and the social policy approach (e.g. Jencks) are concerned with consumer sovereignty and efficiency, but proponents of the social policy approach, like Jencks, place more emphasis on distributional goals.

In section 2.2 it has been argued that voucher schemes, in the view of its proponents, will increase efficiency and enhance consumer sovereignty. Parents choose their child's school and education is (partly) privately produced and competitive. Schools are forced to be responsive to parental demand. To opponents of voucher schemes, however, the efficiency advantages are debatable and

the equity effects almost certainly undesirable. The efficiency issue is strongly related to the answer to the question whether parents are sufficiently well informed about the standards of their child's school and, if not, whether a publicly organised inspectorate will be more effective judging the standards of public and private schools. With regard to equity, opponents of voucher funding argue that voucher schemes will increase inequalities in the distribution of education (both quantity and quality) by social class, though less so in the case of a Jencks type of scheme than under a liberal market approach such as the Friedman model. As Barr (1998) notes, vouchers might well have advantages for middle-class families, but only at the expense of less-well informed choices by lower socio-economic groups. The equity issue therefore can be resolved to the question what relative weight should be given to the claims of these two groups.

Regarding voucher schemes, from our point of view two questions are of great importance:

- A. What empirical evidence is available about voucher schemes?
- B. Could the purposes that are underlying the idea of a voucher system also be pursued in alternative ways?

Question A will be dealt with in section 3. Subsequently, in section 4, attention will be paid to question B. First, however, we will discuss in section 2.4 the concept of vouchers in higher education and other forms of post-compulsory education.

2.4 Vouchers in higher education

Most of the voucher schemes proposed in academic literature concern compulsory education. Regarding higher education and other forms of post-compulsory education, voucher schemes are rare. The most elaborated and consistent plan seems to be the voucher model of Levin (1983). The Levin model contains five key elements (Oosterbeek, 1998):

1. Students receive vouchers (entitlements). Through their enrolment pattern they directly determine the amount of funding that higher education institutions (HEIs) will become. If a student spends a voucher to attend a specific programme at a HEI of his/her choice, the government is obliged to pay a pre-determined amount of money to the institution that offers the programme.
2. A prerequisite for a HEI to be eligible for governmental funding is that it must be accredited. Not only regular institutions, however, are considered for accreditation. In principle, every supplier of higher education courses that meets specific quality standards can qualify for accreditation. This means that new suppliers get a possibility to enter the market. Furthermore, by not restricting accreditation and governmental funding to the traditional suppliers of higher education, Levin's voucher scheme can also include on-the-job training programmes.
3. The voucher is not necessarily a grant, but may also consist of a mixture of grant and loan. The composition of the voucher, in this respect, may vary with the type of programme and student characteristics. For example, for studies that generate relative large externalities (see section 1), the vouchers contain a large grant component. Moreover, based on equity considerations, it could be considered to give vouchers with a larger grant-component to students from low-income families. Another policy option could be to endow students with lower initial ability with more vouchers than the other students. Finally, it is important to note that the possibility of a loans component in the voucher scheme creates the option to combine a voucher scheme with a loan scheme (e.g. where repayments on loans are based on the income earned by the borrower).

4. Vouchers retain their real value during the entire lifetime of the owner. This makes it possible to combine a voucher scheme with the policy goal of lifelong learning, which is becoming more and more important in a knowledge-based economy.
5. Information plays an important role in a market system, such as a voucher scheme. Therefore, Levin is aware of the need to provide accurate information to demanders and providers of higher education and proposes to establish a special agency to collect and disseminate information about institutions and courses in the higher education system. Potential students should have quick access to relevant and accurate information about programmes, course contents, costs, quality of teachers, labour-market position of graduates, et cetera. At the same time, suppliers of higher education programmes should be well-informed about enrolment patterns and new labour-market requirements. The same agency could play the role of administrator, bookkeeper, controller and collector of the vouchers.

According to Barr (1998), two questions are central for a discussion about vouchers in higher education. The first question is: are students capable of making informed choices? Barr comes to the conclusion that in higher education consumer tastes are diverse, degrees are becoming more diverse, and change is increasingly rapid. The most important reason for these developments is the increasing complexity of our post-industrial society. In Barr's opinion students are more capable than central planners of making choices on what they want to study and where they want to study. In his view, the goal of (increasing) consumer sovereignty can be regarded as more relevant for higher education than for compulsory education.

The second question is: how useful is competition? Barr concludes that it is a huge mistake to think that a simple-minded voucher model (HEIs compete for students; those who attract large numbers flourish, those who fail to attract enough students will not survive) is the only approach to competition. He argues that "vouchers should be thought of as a continuum, from 0 per cent constrained ('law of the jungle') to 100 per cent constrained ('pure central planning') or anywhere in between." Policy-makers should consider a variety of constraints in choosing their position on this continuum:

- Protecting *subjects*. Some courses (e.g. classics) need special protection, others need less protection. This can be arranged by tying some vouchers to specific subjects.
- Protecting *institutions*. For reasons of regional balance it could be necessary to tie vouchers to universities in particular parts of the country.
- Protecting *individuals*. There are good reasons to offer larger vouchers to students from low-income families.
- Protecting *quality*. One of the best arguments in favour of competition is that competition creates a strong incentive for HEIs to offer quality to their students. Nevertheless, at the same time it is important to protect standards, for example by monitoring quality and publishing the results.

All in all, Barr concludes that vouchers allow governmental intervention to foster both educational and distributional objectives. The degree of competition is a political matter with different possible policy answers. We would like to add to Barr's conclusion that vouchers are not the only approach to competition. We will work out this statement in section 4.

3 Empirical evidence

3.1 Compulsory education

Whilst there has been considerable argument about vouchers, there has been very little empirical testing of the ideas. With respect to higher education there is almost no practical evidence at all as we shall see in section 3.2. Initiatives towards the practical application of educational vouchers in compulsory education have been proposed in countries with legal impediments to choice. In the public educational system of countries like this, parents are not free to select the school of their choice. They are obliged to send their children to the public school in the immediate region in which they happen to live. If they do not want to move to another area they are allowed – as an alternative – send their children to private schools. However, this option is not open to everybody, as it is only available for those who can afford it. Therefore, many parents have no freedom of choice. They have to send their children to the local neighbourhood school.

It is pretty obvious that in countries which are characterised by educational zoning, like the U.S., the U.K. and Australia, the voucher idea will receive quite a lot of interest. Nevertheless, one should keep in mind that a lack of choice also may be explained by geographical rather than by legal impediments. This in particular is the case in vast countries with sparsely populated areas like the U.S. and Australia. It is quite clear that in such cases vouchers hardly can be regarded as an instrument to increase the number of options. The range of available options rather is a matter of resources.

With regard to actual or proposed applications of vouchers, again the liberal market approach and the social policy approach can be distinguished (see section 2.3). Examples of the liberal market approach are New Hampshire and East Hartford (Connecticut) in the U.S., Kent Country Council in the U.K., and the proposals suggested by the Federal Liberal Party in Australia. Despite the fact that the liberal market approach has dominated the analytical discussions on vouchers, the only actual application of educational vouchers that was carefully prepared and tested for a period of five years derived from the social policy approach. This experiment took place in the U.S., namely in Alum Rock (California).³

The Alum Rock voucher experiment

In the late 1960s the American Office of Economic Opportunity developed an interest in vouchers and sought to initiate tests. They experienced considerable difficulty, because the idea met with opposition wherever it was suggested. One school district agreed to a trial, namely Alum Rock in the eastern section of San Jose, California. It would be hard to find a less representative area to test such a controversial idea. Approximately half of the school children in Alum Rock are Mexican-American, 40 per cent are Anglo Americans and 10 per cent are black. Furthermore, most children are from lower class families, and the population is highly transient with a 30 per cent annual residential turnover.

The basic model used was that of Jencks, with an extra compensatory voucher for poor children. There was to be a lottery system of admission to schools whose applications exceeded openings

³ Another example of an application of the social policy approach is the Milwaukee scheme. This project, however, was a very small one and started in 1990. The numbers of participants were limited to no more than 1 per cent of Milwaukee public school enrolment. Qualifying low-income pupils received a \$2,500 voucher (by 1995-96 the amount had risen to \$4,375) to attend non-religious private schools (see Carnoy, 1997 and Levin, 1998). For other examples of small (quasi-) voucher experiments in the US: see Waring (1996) and West (1997).

and free transportation for children enrolled at schools distant from their homes. Teachers' job tenure was guaranteed and each participating school would offer two or more distinct programme options, called 'mini-schools', to ensure a wide variety of parental choice.

The experiment was extensively investigated by the Rand Corporation. One of the claims made for vouchers was that it would increase variety in schools. Therefore, in Alum Rock great efforts were made to inform parents about the different programmes offered. However, despite the use of mini-schools, voucher schools turned out to be very similar to non-voucher schools. Researchers of the Rand Corporation (Barker *et al.*, 1981) reported: "... the voucher system has not generated educational alternatives that are truly divers ... the voucher classrooms are strikingly similar to the non-voucher classrooms".

Another claim for vouchers was that a voucher system would transfer decision power from the producers to the consumers, i.e. the parents. However, at Alum Rock the effects of the experiment were limited, because teacher tenure was protected. As the demonstration progressed the teachers changed the market aspects of the voucher scheme to suit their purposes, for example by making it impossible for schools to expand indefinitely to meet enrolment pressures. There was an increase in parent initiative – during the second year about 10% chose non-neighbourhood schools and after that the proportion rose to 18%. Cohen and Farrar (1977) conclude that "the voucher demonstration appreciably increased parental choice among educational alternatives, but most parents failed to become more autonomous, powerful or involved".

Teachers experienced both gains and losses. Previously, the curriculum had been set up by central office staff, but as the scheme progressed there was an increase in the independence of teachers so that they had more control over the curriculum. The price they paid for this was a lot more work without additional payment.

In their analysis of the children's study achievements the Rand researchers were rather cautious. Nevertheless, they suggest that the introduction of voucher schools seemed to make little difference to standards. For example, they found no appreciable or consistent differences in students' reading achievement between regular and alternative schools. They also found that parental choice was unrelated to student achievement and concluded that "The justification for implementing alternative education programs probably should not be based on the promise of enhanced student outcomes".

Any conclusions derived from Alum Rock must be tentative, partly because one cannot generalise from one experiment, partly because that experiment was in such an untypical area. On the positive side, parents were more satisfied and had more choice of (only public) schools. Nevertheless, the large majority of Alum Rock parents sent their children to the neighbourhood school. On the negative side no evidence was presented for an increase of parental influence. On the contrary, the professionals gained in this respect. The range and nature of the alternative programs in the mini-schools were devised predominantly by the teachers themselves.

On the whole the results of the experiment do not support either the great hopes or fears expressed in the arguments about vouchers.

At the end of the fourth year of the experiment the Education Voucher Advisory Council (EVAC) in Alum Rock recommended to end the voucher project. The provision for adjusting programs to parental demand had been diminished considerably. The inability to adjust physical and personal resources to parental demand implied that even relatively unpopular schools were guaranteed a substantial enrolment. This, in combination with the fact that private schools did not participate in

the voucher experiment, and the fact that due to financial stringency a substantial number of teachers had to be laid off, contributed to the decision to stop the project. Furthermore, it is important to note that parents, teachers and administrators were not interested in making the experiment more voucher-like. Finally, the Alum Rock experiment lacked sufficient federal support. Cohen and Farrar (1977) put this as follows: “The situation in Washington did not help. Vouchers were new and controversial, and lacked a real constituency within the government”.

Vouchers in the UK

Voucher enthusiasts in the U.K. have not had the opportunity to initiate an experiment. They did, however, undertake a feasibility study. This took place in the Ashford division of Kent, an area with 52 maintained schools. The study made use of questionnaires and interviews. Responses from over 1,200 parents were overwhelmingly in favour of having more information about schools and greater parental choice. If parents were to have a voucher, about 13% would be choosing a different school. However, the great majority of the teachers surveyed were against the proposals.

The investigation concluded: “The general impression that emerges from responses to this inquiry is that choice of schools is seen as vital by parents, but that vouchers would not necessarily be the only or the most satisfactory means of achieving it. Freedom of choice, the full information about schools necessary for such choice, the right of transfer between schools and subsidised transport where necessary to the chosen schools – these are the critical elements. The decisive factor in making them possible, with or without vouchers, would be the availability of surplus capacity in the schools” (Kent County Council Education Department, 1978).

In 1981, the Assisted Places Scheme, a limited quasi-voucher scheme, was established in the U.K. with the purpose of giving better opportunities to able but poor students. Low-income parents may obtain assistance with independent school tuition fees if the school has been approved by the Department of Education and Science. By 1992 there were about 27,000 students receiving these “selective vouchers” which were being “spent” at 295 independent schools. About 5,000 new pupils enter the scheme every year, mainly at the ages of 11-13 (West, 1996).

3.2 Higher education and other forms of non-compulsory education

Australia

Harman (1999) gives an overview of how Australia recently reviewed higher education funding. The Review was conducted by a Ministerial appointed committee chaired by Roderick West, a retired private school headmaster. The West Committee in many respects was Australia’s equivalent of the Dearing Committee in the United Kingdom. The West Committee presented its Final Report in April 1998 under the title “Learning for Life”.

The Committee recommended a funding and policy framework with:

- A student-centred funding system, with public funding for tuition costs being driven by student choice for both undergraduates and research students, and with HEIs being able to set their own fee levels.
- More emphasis on priority setting and national co-ordination in research.
- A more competitive and entrepreneurial higher education system, better able to compete internationally and with capacity to make the necessary investments in information technology and infrastructure.

Under the student-centred funding system, public funding for tuition would be tied much more closely to demand. All school leavers and adults accessing post-secondary education for the first time would have a lifelong learning entitlement that could be used at an existing (private or public) university or vocational educational training (VET) provider. Institutions would be allowed to set their own tuition fees and a loan system with repayment contingent on future income would be available to all students to allow deferment of payment of any tuition fees not covered by the government entitlement.

The West Committee had deliberately decided not to use the term “voucher”, because much of the community discussion about vouchers “had been irrelevant to the key policy issue, which concerns the extent to which student choice should determine the amount of funding that a higher education institution receives” (West Committee, 1998).⁴

Harman (1999) makes clear that, to a large extent, public reaction on *Learning for life* was negative, but also predictable. Especially, the proposed student-centred funding model was criticised. For many this idea was viewed as a right wing ideological-driven proposal. Moreover, except for a few letters published in leading newspapers, there was little real community involvement in serious discussion. All in all, the key recommendations of the West Committee have been largely ignored, particularly because of opposition from influential stakeholders and unwillingness by both the government and the opposition Labour Party to make any commitment to a voucher scheme prior to approaching federal elections.⁵

While the West Committee tried to make clear that it was not especially recommending a voucher scheme, most of the public discussion assumed that the West Committee’s student-centred funding scheme was, in fact, a voucher scheme. Most of the arguments used in favour or against voucher or entitlement schemes corresponded closely to those to be found in the international literature (see section 2). As Harman (1999) points out, by its proponents vouchers were seen to give more choice to students, and likely to produce greater efficiencies and increased budget discretion for institutions, encourage institutions to provide better student services, and encourage diversity and more flexible staffing arrangements. The opponents of a voucher scheme in Australia stated that possible difficulties could be experienced by many students in making rational choices of courses and institutions. They also had doubts about the value of student choice driving the higher education system and feared a marked decrease in the central co-ordination system and the possibility of much weaker mechanisms for adjusting enrolment patterns to national, social and economic properties. Finally, in their opinion a voucher scheme could implicate the growth of some universities at the expense of others and less financial stability for universities from year to year.

A new element in the recent debate in Australia, however, was the emphasis given by some voucher proponents that a voucher system was likely to give universities increased protection from government bureaucratic control, and the possibility that a voucher scheme could be a more attractive and sensible way of using a fixed quantum of government subsidy in a situation where institutions are suffering steadily declining income.

⁴ Since the early 1990s, there had been considerable discussion in Australia of voucher-type funding schemes.

⁵ According to Harman (1999) an important reason for this is that in the 1993 Federal general elections, which the conservative parties lost, a voucher system for higher education funding figured largely in the conservative education platform. There is a strong belief amongst politicians, especially in the Labor Party, that the proposal for vouchers of the conservatives was an important contributing factor to their loss of the 1993 election.

A central argument in Harman's overview of the voucher discussion in Australia is that "while it is highly unlikely that student-centred funding will be implemented in Australia in the short term, the idea of a voucher or student entitlement scheme is likely to reappear on the policy agenda before too long, since fundamental difficulties remain in the current funding arrangements for higher education".

Finland

Ahonen (1996) reports about the findings of a report commissioned by the Finnish Ministry of Education about how vouchers could be applied in higher education. The aim of the report was to explore various applications of vouchers and their effects in Finnish HEIs. Special attention was given to increasing the efficiency of HEIs and a new funding system in which students would be awarded a stronger position.

In the report the four main problems of higher education in Finland were identified:

- The multiple, simultaneous registration of students in more than one university which makes admission for newcomers harder.
- The narrow funding base of HEIs which is limited mainly to governmental sources.
- A limited freedom of choice for students.
- A weak connection between demand and supply.

One of the main issues in Finland is whether society in the near future will still be able to offer its students unlimited study possibilities (for free) at various universities. Or should the governmental funding for higher education be limited? In this context a voucher-based funding model could be a policy option.

Vouchers are not seen in the more traditional way as a slip of paper having a certain monetary value, but are defined in terms of time. The question of (eventually) introducing vouchers in Finnish higher education is looked upon from the perspective of life-time education opportunities for individuals and new channels of funding for universities. The basic idea of vouchers, i.e. channelling the public support via the students, would strengthen the position of students in making choices and, at the same time, (possibly) improve the quality of teaching, because universities would have to face increasing competition. Competition could even be intensified by including the non-university sector of higher education and foreign universities in the same funding mechanism.

Five different voucher (-like) models were discussed in the ministerial report. According to the first model the universities would receive all their governmental funding through vouchers. In practice this would implicate that students get a voucher account that will be registered by a central agency (e.g. a central voucher company). For every student at the central agency there would be an initial voucher deposit in study time, each voucher covering one month's study at any university in a person's lifetime. Thus, vouchers are related to time, or possibly to credit points. Universities would receive an authorisation to charge the students account for the number of months studied (or the number of credit points). In exchange for the vouchers collected, universities receive governmental funding, varying per field of study.

In the second model a smaller part of governmental funding, for example 30 per cent, would be allocated through vouchers. The rest of the funding of the Ministry of Education could be allocated on the basis of performance indicators (e.g. number of degrees).

In the third model the funding follows the student only when he/she is studying a major block of courses at another university than his/her “home university”. The aim is to encourage co-operation and mobility between universities by guaranteeing a clear remuneration for the work done by the university arranging and offering the courses.

The fourth alternative is a “model of gradual development” in which the aim would be to develop the existing system gradually into the direction of a voucher-like system that would contain incentives for both students and universities to support mobility between universities.

Whereas the four models are (mostly) confined to the university sector, the fifth model aims at the whole higher education sector. Every Finn would get at his/her birthday a certain amount of higher education vouchers which can be used during his/her lifetime at any education institute qualified to be part of the system. This system would be funded by the government and by local communities. Once the vouchers are used up, the student (or the employee) has to pay for his/her further education.

Stakeholders were asked to comment on the ministerial report. Some institutions, especially student unions, argued that a voucher system does not fit in the Finnish system of education. Most universities were of the opinion that the effects of a voucher system should be more thoroughly analysed before any decision would be taken. It was also stressed that problems related to the transfer period needed much more attention. The proposal that a special budget could be reserved for courses at another university than the own university was widely supported. There was already a move in this direction in the 1996 budget. The implementation, however, was not very hopeful, because the funds were allocated directly to the universities, instead of to the students.

The Netherlands

In the Netherlands in 1987 a discussion was initiated about funding the universities by means of education vouchers. This idea, however, was not accepted by the Dutch Parliament.⁶ Nevertheless the proponents of the voucher concept kept on advocating the implementation of an entitlement model in Dutch higher education.

In 1993, the Ministry of Education presented its report *Blijvend Leren* (‘Keep on Learning’). Although this report primarily focuses on adult education it provides at the same time a broad view of the educational system. It analyses the interrelations between the different education sectors, public and private education institutions and institutions offering schooling and training for employed workers and the unemployed. This is all seen from the perspective of lifelong learning.

The report initiated a lively debate and generated interesting initiatives to restructure learning and working. In 1995, both the Advisory Council on Education (ARO) and a Committee advising the Minister of Education on pathways through the education system (Commissie Leerwegen) presented reports in which enhancing lifelong learning and the implementation of a voucher scheme were proposed.

Of the several Dutch authors that from time to time write about vouchers, we mention Jan van Ravens. His voucher scheme, which he names the ‘franchise model’ (Van Ravens, 1998), is aimed at two goals: to stimulate lifelong learning and to stimulate private investment in learning. In particular, less formal forms of accredited learning environments apart from the higher education institutions are stressed, in the belief that post-secondary education is to be regarded as

⁶ See for more information and discussion about the ministerial voucher plan Florax and Koelman (1987).

an open system with a flexible school-to-work transition. Private financing of higher education is the leading idea – the government only provides the means (the franchise) for the co-financing of education. The franchise is a lump sum payment made to every qualified person and can be regarded as an account from which students draw money to pay for the costs of educational services and, if necessary, living expenses. The value of the franchise could amount to something like 50% of the cost of training (e.g. € 25,000). The franchise would consist of five ‘layers’ of say € 5,000 each. In the beginning of the post-secondary school period the student is allowed to claim 100% of the first layer, and with increasing age is required to contribute a rising proportion of private funds. The extent to which a certain amount of the layer is allowed to cover the costs decreases with the amount already spent. For instance, the first layer of €10,000 can be used for educational services worth €5,000. The second layer of €5,000, however, covers only 90% of the actual costs. Hence this part of the subsidy is used for an amount of education worth €5,555. The difference of € 555 must be paid from other sources. Parents are allowed to pay the difference, but the individual will preferably receive a contribution from his/her employer or pay the difference from his/her labour income. In that case there is a combination of learning and working. The percentage of the costs covered by the subsidy then decreases in steps from 75% to 50%, down to 25%. This implies that, in order to obtain the last layer, the individual has to find € 15,000 from other sources. Hence, with increasing age, people have to rely more and more on other funding sources and, in Van Ravens view, this will stimulate people to combine learning and working. When students are still young, the percentage is 100%, because at that stage students are still uncertain about their capacities (e.g. to complete one’s studies or to reap the benefits from one’s education) and employers cannot be motivated to contribute at this stage when there is no basis for a concrete work relation. So, access to private finance will be difficult at that stage – the capital market does not function properly (see section 1). The proposals by Van Ravens, however, have not been implemented and were discussed mainly in academic circles.

Recently, a new initiative for voucher funding was undertaken by the Board for Higher Vocational Education (*HBO-Raad*), together with the Association of Small and Medium Sized Enterprises (*MKB-Nederland*). The Ministry of Education adopted a number of elements of the proposal of these organisations and decided that in the higher vocational sector two experiments with vouchers should be started. In September 2000, a small experiment with voucher funding will be started in the higher vocational education sector; a sector offering courses with a nominal duration of 4 years. About 10 institutions will participate in the experiment. After having completed two years of study students can choose to finish their study at the higher vocational institution or to start work in a small or medium-sized firm. If the student chooses the second option, the education institution, the student and the firm will together develop an education and training plan that matches the specific needs of the job that the student occupies. For example, in this plan can be stated that the student will follow certain courses at different higher vocational institutions. The student will finish his/her study after five years (or a longer period) and pays the institutions by means of vouchers. The student will fulfil the normal requirements of the in-school (4 year) curriculum and will be awarded the usual degree. The experiment will end in September 2003 and will extensively be evaluated.

In 2001, the Ministry of Education intends to start a second, much larger experiment with voucher funding. Up to now it is not quite clear what the content of the experiment will be. It may be expected that the first results of the small experiment will affect the plans for the larger experiment. Also it may be expected that the second experiment will be extended to other education sectors (e.g. non-compulsory vocational courses outside the higher vocational sector or some university studies).

The U.K.

Since the early nineties vocational education and training (VET) in the U.K. knows the Training (or Youth) Credits initiative, which is a voucher-driven programme of work-based training for school leavers. The assumption underlying the Training Credits initiative was that if each young person took responsibility for his/her own education and training and were given a voucher, or Youth Credit, to buy education or training of their own choice, their individual purchases would drive the market in training provision. Market provision in turn would ensure the most efficient use of training resources and force training providers to raise the quality of their courses in order to attract customers for their services.

In 1991 the decision was made that Youth Credits should cover the whole of England, Scotland and Wales by 1996 and should provide education and training for young people older than 16. Funding for any form of post-16 education or training will be based on two market reinforcing principles. In the first place, funding follows recruitment, so that the amount of funding earned by a provider depends on the number of students or trainees recruited. Secondly, a significant proportion of the funding is only awarded once the course has been successfully completed and the qualification awarded. The most important reason for this form of output funding is that education institutions only recruit those suited to the courses and that training has to be of high quality, so that the qualification can be given.

Hodkinson and Sparkes (1995) report on a research investigation into one of the early Training Credit pilot schemes. They conclude that “this superficially attractive individualist market model is based on untenable assumptions and oversimplifications (...) the model is based on a misunderstanding of how young people make decisions and how training is planned and provided on the ground. Furthermore, our research suggests that any attempt to control and enhance the quality of training through a qualifications-driven market is as likely to result in a decline in training as to raise standards”. One of their central points is that young people make their choices in a pragmatic way instead of in a rational way. Rational choice analysis is in Hodkinson’s and Sparkes’s view irrelevant as a guide to VET policy and practice.

The UK has recently introduced *Individual Learning Accounts*. The government will pay £150 into the account after an adult pays in £25. They will be open to everyone in work, but not in full-time education. The funds can be used for any course the adult wants. It is expected that many of the account holders will spend their funds at the newly founded University for Industry (Ufi) which will co-ordinate a network of learning centres in traditional education settings but also in some non-traditional centres like football clubs and churches.

The U.S.

In section 2.4 attention was paid to Levin’s voucher model for post-compulsory education. Implementation of his model will affect both the supply side and the demand side of the schooling market. On the supply side it may be expected that new courses will be offered which are aimed at those persons who currently do not enrol in post-compulsory schooling. These potential students possess vouchers which represent purchasing power and which education institutions would like to collect. Oosterbeek (1998) notes that such a new supply will indeed be offered, as is shown by experience in the U.S. known as the so-called *GI Bill*. This law constitutes an experiment with vouchers. The GI Bill utilises a voucher system in promoting advanced education for U.S. veterans of war (GIs). The GI Bill has granted entitlement and freedom of choice for those veterans who wish to pursue a higher education. They are entitled to attend up to 45 months of education during a 10-year period after their active duty (O’Neill, 1977).

The veterans are entitled to receive an allowance if they attend an accredited schooling or training programme. The allowance may be used either to meet the direct costs of education or to cover the costs of living. A lower tuition fee does not affect the allowance. Many newly established courses have been developed as a consequence of the GI Bill. Many of them were specially geared towards low-ability veterans and – measured in terms of their earnings effect – most of the offered courses have been a success. Many individuals who would otherwise not have attended any post-compulsory education are now well-prepared for the labour market. According to Oosterbeek (1998), this is in contrast with the objection of antagonists of voucher schemes that a voucher mechanism would lead to a supply of inferior quality courses. The success of the program is primarily attributed to an elaborate system of state-approving agencies that closely and continually have monitored and controlled the program and its participants (Davis, 1983).

4 Conclusions

Many governments are putting increasing pressure on the providers of post-secondary education to become more efficient and more responsive to client demands. One of the ways in which the government can try to achieve this is to introduce a more market-oriented type of funding mechanism in which providers would have to compete for public funds and would have to respond more strongly to the demands of their customers. The introduction of vouchers has been suggested, both in the research literature as well as in the policy field, as a promising alternative to the traditional supplier-oriented system of allocating government directly to the providers of education. Although we have identified some differences in opinion on what actually constitutes a voucher, we have described the voucher mechanism as a way of funding education *through the demand side*. This means that clients (students, pupils) actually receive a voucher, i.e. a coupon that represents a specified value in terms of consumption of education, that can be used up in a flexible way for 'buying education' from a range of education providers that meet specific quality standards. The holder of the voucher him-/herself would have to make an assessment of where he/she receives the best education in exchange of the voucher, while the provider would feel an incentive to look after students.

Based on the extensive academic literature on vouchers, Table 1 gives an overview of the main arguments that have been put forward in the literature. We have listed the potential advantages and the potential risks of vouchers. We note that most of the arguments derive from the US and refer especially to the compulsory education sector.

Table 1: Pros and cons of vouchers

pros	cons
<ul style="list-style-type: none"> • strengthening student choice • strengthening responsiveness to customers • increase in diversity of educational services (both in delivery methods and range of programmes) • strengthening flexibility in learning routes • increase in efficiency of provision • increase in quality of provision • increase in private contribution to cost of education ('topping up' the voucher) • greater opportunities for lower income families and minorities 	<ul style="list-style-type: none"> • inability of clients to assess information on the quality of education • geographical factors will limit choice • over-subscription will require rationing (selection) and favour high-income families • high administrative complexity (and costs) • need for government regulations to protect subjects, individuals, quality and equity • large variations in enrolment and funding may lead to under-utilisation of capital and insecure jobs for teachers • programmes with high cultural value but with small enrolments will be forced to close • if used to the full, vouchers lead to additional government expenditures

compulsory education

From our literature survey it has become clear that the discussion of vouchers in education has been restricted primarily to compulsory education. What's more, the discussion is heavily dominated by the American (US) case, where vouchers are propagated as means of strengthening *freedom of choice*. In voucher funding, parents, in seeking the best school for their children, would be free to choose the school that offers the best deal and, therefore, would be the ones that decide on where the government funds will go. Disregarding the possibility that transport costs will make some choices unrealistic for parents, the ultimate objective of vouchers is to expose the providers of

education more to the demand side. However, the same result can be achieved by a funding arrangement in which schools are funded directly by the government on the basis of enrolments. So, the main challenge would be for the government to remove the regulation that parents may send their children only to a limited range of (public) schools in their immediate environment.

Overlooking the small number of limited experiments that have been carried out with vouchers in *primary education*, we have to conclude that they do not lead to very firm conclusions. In the US, the distribution of vouchers for *public* (sic) schools in the Alum Rock area did not lead to strong positive effects. Relatively few parents chose to alter their choice of school. Strengthening choice, it was felt, could have been obtained without vouchers. Moreover, one has to be aware that a large number of different voucher models can be constructed where the models differ in terms of the amount of government regulation, the provision of information, and whether they are geared to compensate disadvantaged groups. Underlying each of the models is a specific trade-off between efficiency and equity. The effects of each of the voucher models will strongly depend on the exact lay-out of the model.

post-secondary education

When considering vouchers as a means of financing *post-secondary education*, one has to be aware that different arguments apply to post-secondary education compared to compulsory education. In post-secondary education, the all-important goal is not so much increasing the freedom of choice – it already exists. The challenge is to facilitate and increase the possibilities for students to design and plan their own, custom-made programme. This would be much less relevant in primary education, where programmes are much more pre-structured and the possibility to switch schools is less acceptable for pupils. Especially in today's knowledge-based economy, higher education no longer is the last stage in a period of schooling, as specialised knowledge quickly becomes outdated. There is a growing need for lifelong learning and differentiation in education and training. Therefore, custom-built training programmes, flexible learning routes, and part-time (or co-operative) training will have to be facilitated. Due to the different character of post-secondary education compared to compulsory education, more possibilities exist to let students put together their programmes in a kind of 'shopping mall' fashion. The policy goal of strengthening choice and consumer sovereignty therefore can be regarded as more relevant for post-compulsory education than for compulsory education.

Indeed, vouchers potentially would be a worthwhile way of financing post-secondary education, because they would enable students to make their own choices with respect to educational provider, programme, and mode of study. However, again, there is hardly any practical evidence of vouchers being used in post-secondary education, the exceptions being the GI Bill in the US and a facility existing in the UK for vocational education and training. So, one has to rely on theoretical arguments when proposing to introduce vouchers. Once again, we can refer to table 1 that lists some of the potential effects of vouchers. What's more, as is the case in compulsory (or primary) education, it is good to clearly state the goals one has in mind when suggesting changes to the funding system. Since the goals are chosen by the government, one has to realise that they may be subject to change over time. If the aim is to have institutions compete for students, one has to bear in mind that vouchers are not the only approach to competition and – because different voucher models exist – would come with different degrees of government regulation.

alternatives to vouchers

If policy-makers feel that a more market-oriented education system should emerge, with competition between providers and student choice driving the system, they may also want to consider some alternatives to vouchers. As we argued in the case of compulsory education, there is, in fact very little fundamental difference between a voucher system and a system in which the

government allocates a (formula-based) grant on the basis of the institution's enrolment- even in the case of students studying during irregular periods during their lifetime. So why introduce vouchers? There can only be one argument: to make students realise that the choices they make imply that the government is investing on behalf of them and – in return for that – the educational institution is supposed to deliver a service. However, making students realise this by giving them a voucher is somewhat artificial, since the voucher does not represent 'real money' in the sense of being part of the student's free disposable income. Therefore, the encouragement of well-informed behaviour among students may benefit even more by having them make a contribution to the cost of their education themselves.⁷ Since the benefits of higher education and other forms of post-secondary education to a large extent will accrue to the individual that receives the education, there is a strong case for charging a fee to the student. However, in order to (also) have tuition fees play a role in informing students on the range of choices they can make in post-secondary education, the fees will have to have some relation to the quality – and therefore the costs – of the services delivered to the student. This implies that a market-oriented way of funding post-secondary education requires a deregulation of tuition fees; the providers of education and training would have to be free to set the level of the fees they charge to their students. Fees would not have to cover the full cost but should be higher for more expensive programmes. Institutions then would charge differential prices to reflect their differential costs.⁸ The only exception to this general rule would be that programmes that produce relatively large external effects would receive a larger government subsidy, thus enabling a smaller fee to be charged. Such a deregulation of fees could easily take place without an introduction of vouchers. Public funds still could be allocated to the (public) providers of education on the basis of the number of students enrolled and the programmes they take. Funds then, follow the student in two ways: through market-driven fees as well as through enrolment-based grants.⁹

To protect access to post-secondary education in a system with deregulated fees, one may think of setting up a system of *individual learning accounts* (ILAs) through which individual students take out a loan to cover living costs and fees for the years (months) spent in taking courses (NCIHE, 1997). Once an individual starts earning an income, he/she starts making repayments to the bank (either a public or a private one) that runs the system of ILAs. To protect the borrower and to encourage access, the repayments are *income contingent*, meaning that they are tailored to a person's income, month by month, and respecting a specific income threshold. An interest rate may apply (students may receive an interest subsidy or tax exemptions) and other options may be included in the system, such as targeted government subsidies to specific groups, or allowing for families to deposit (tax-advantaged) savings into the account, or employers to make payments into the accounts of their employees. In short, the idea of ILAs is to introduce more responsibilities for individual students into the system of financing post-secondary education. As is the case for a voucher system, this would encourage well-informed decision-making by students.

final conclusion

Based on the observations above on vouchers as a way of funding higher education (or rather: post-compulsory education), we come to our conclusion:

Given the goals of increasing competition between providers, strengthening student choice, and facilitating flexible, lifelong learning routes, a system of vouchers seems like an attractive way of funding post-compulsory education. However, the same goals may be realised by using other

⁷ Another way of strengthening well-informed behaviour is to monitor quality and publish the results. Monitoring can be done by inspectorates, accreditation bodies, newspapers, et cetera.

⁸ A model like this is currently in use in New Zealand.

⁹ Instead of basing grants on enrolments alone, they may be based on a combination of enrolments and student performance (e.g. the number of credits accumulated by students), or student performance alone (see, e.g., the Danish model of funding higher education).

instruments, while reducing the degree of central planning in the system. This would have the benefit of keeping a large part of the traditional schemes of allocating grants intact while avoiding the negative effects of vouchers, such as the large administrative workload, the need for government regulation (especially with respect to income redistribution) as well as the risk that the vouchers lead to additional claims on the public purse.

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Appendix to the report *Vouchers for higher education?*

(added to the report in response to a number of questions by the Hong Kong UGC)

About the attention paid to compulsory basic education:

We felt we had to do this, as a lot of proponents of vouchers argue that vouchers is a good instrument for funding higher education because it was successful in compulsory education. However, as we state on page 29 (in the Conclusions section): what's (perhaps) right for compulsory education is not necessarily right for post-compulsory education (PCE). In compulsory education, freedom of choice is the main goal, whereas in PCE, facilitating lifelong learning and allowing flexibility to students in taking courses would be the main goal.

The big problem we have with people giving practical evidence of vouchers is that they use a much too broad definition of vouchers. For instance, in the Netherlands we do not have vouchers in education. What we have is a system of funding institutions on the basis of the number of students they actually enrol. While this may in fact look like demand-side financing in some respects (it certainly is very close to it), it is funding the institutions by means of capitation grants. Students do not receive any clear signal whatsoever that the government is investing tax money in their own personal training. The money does not pass through their hands, while it would if they had some sort of learning account from which they had to pay tuition fees and other costs related to their training. That's why we stress using differentiated tuition fees when the goal is to strengthen consumer sovereignty. Because it builds a real link between student and institution. Only vouchers in the strict sense of the definition make clear what students actually have consumed (invested?) in their training and what the government has contributed in terms of public resources.

On Chile

So Chile, in fact, is a case of a country where there are no vouchers - in our definition. While a lot of reforms indeed were carried out in Chile - all of them aimed at decentralisation, introducing choice and competition, it remained a case of money following student (or rather: pupil). From an article by K.V. Nagarajan, we have learned that in 1980 - on the advice of Milton Friedman - a voucher program was introduced. But, again, this was no voucher program in the sense of a voucher that covers the cost of the training of the student. And again, it was a capitation grant. In fact, the government issued education vouchers to the top 20,000 students (i.e. the top 20,000 graduates from the 30,000 that graduated from a secondary education). The value of the voucher issued to engineering students was set higher than for liberal arts students on the grounds that engineering education requiring equipment was more costly than liberal arts education. Nagarajan continues by saying that there was, indeed, vigorous competition for these students with vouchers. The competition was so heated that many liberal arts courses re-emerged as engineering courses after clever name changes and imaginative curricular dressing-up. Enrolment in these engineering institutions went up and those institutions that remained liberal arts lost out.

Nagarajan mentions that in 1983 the voucher program was reviewed and the voucher differential for engineering was removed and all vouchers were set at equal value. This change turned out to be a disaster for those institutions that had revamped their policies to accommodate to the original voucher scheme, since engineering enrolment dropped, after the necessary expensive equipment had been purchased.

(source, Nagarajan, K.V. (1983), The disaster in Chile, *Contemporary Education*, Vol. 55, No. 1, p. 48.)

From a report by Dave Guerin, commissioned and funded by the New Zealand Treasury we learn the following about Chile:

In 1980, Chile enacted laws that allowed private degree-offering universities and professional institutes to be established, and changed the funding system. In 1981, a new science and technology research fund was established, and tuition funding was split into:

- direct contributions set at the 1980 base level and declining to 50% of that figure by 1985;
- indirect contributions (entitlements), which were tied to enrolments of the top 20,000 scorers (out of 30,000 who passed) in the college entry examination. These contributions increased by 400% over the period, roughly equalling the decrease in direct grants. These grants differed by subject, with a 1 multiplier for law and 2.5 for medicine;
- university credits changed inversely with the direct contributions, reaching a maximum of 50% of the 1980 base by 1985. These credits were available to students who needed them to pay their tuition, and had to be repaid in ten annual instalments. The instalments started two years after graduation, and had a real annual interest rate of 1%.

The new funding design aimed to introduce competition into the higher education sector, and steer institutions towards academic excellence and maximisation of available resources. The reduction in direct grants would reduce institutions' assured revenue, sharpen the incentives upon the managers, and reduce the state institutions' competitive advantage. The aim of the student driven-funding was to encourage institutions to enrol academically successful students, while still providing financial opportunities for capable students.

Results

Theoretically, funding was open to public, quasi-public and new private institutions. Due to fiscal constraints and a ban on establishing new universities (after three more had been established), no funding was directed towards new private institutions until the late 1980's.

The funding system did unleash an entrepreneurial boom in the public sector, but the system's poor incentives meant that the boom did little to improve higher education in the country. The crude system for differentiating subject costs encouraged large enrolment increases in very cheap courses (such as teaching) in the low funding categories, and moderately expensive courses in the top funding categories. As an example, engineering enrolments doubled from 1981 to 1985. The average dropout rate for engineering was 72% in 1984, as institutions spread their resources too thinly to support students effectively. Albrecht and Ziderman (1992) note that '(r)ather than reacting to labour market signals, the system reacted to government pricing incentives.' (p. 48) The widespread availability of university credit meant that course costs tended to spiral up towards the limit of the credit, rather than the cost of a particular course. Thus, there were few improvements in efficiency within the institutions. Additionally, the large surpluses in the 1981 to 1983 period resulted in institutions investing in the capital markets rather than improving facilities and services.

In the late 1980's some corrective actions were taken. The administration and ownership of university credit funds was passed down to the institutions. Direct grants were partially allocated upon performance, indirect grants were available to all institutions, and new universities could be established again.

Review

The entitlement based reforms were hampered by poor policy design, including an inappropriate number of funding windows, poor institutional incentives, market entry barriers, and few available sanctions for poor financial performance.

The corrections to the initial system appear to have improved the competitiveness of the higher education system. A large private higher education sector has developed, with 60 universities, 80 professional institutes, and 156 technical formation centres.

Only 20 universities, and 2 institutes receive direct funding. The rest of the institutions receive most of their income from student tuition, with some indirect funding. This second group of institutions now enrolls more students than the state system and represents 99% of the growth in higher education enrolments from 1980 to 1990.

At the same time, the public institutions have adapted to the new system and are now operating within an appropriate incentive structure. This example shows the problems that can arise with an entitlement scheme when there is a weak or ineffective government. Entitlement systems generally require strong and effective governments to operate successfully.

(source: Guerin, D. (1997), *Entitlements in education: empowering student demand*, <http://www.ed.co.nz/papers/entitlements.htm>)

On Sweden:

The new funding system that has been in operation since 1993, is based on an “Educational task contract” negotiated between the Ministry and each state university and university college. In these contracts, the three-year objectives of the institutions are stated and more elaborated into detail for the next fiscal year. The contracts for 1998 contain the following objectives:

- the minimum number of degrees
- the minimum total number of FTE students
- the fields of study in which the number of students is to increase or decrease
- the programmes in which the share of women or men is to increase
- the follow-up to be made in the Annual Report
- special assignments

Based on the targets formulated in the contracts, the preliminary allocation of teaching funds is based on the results achieved at each institution on the first two of the items listed above:

- A. the number of credits accumulated by students during the academic year;
- B. the number of students.

It is important to know that the Swedish educational programmes are offered in the form of a series of single subject courses, out of which students can build up their own programme. Final qualifications may require different amounts of credit points, which are prescribed in examination regulations. Depending on the effort to be undertaken, each subject course, if passed successfully, leads to a specific number of credit points. The number of students is expressed in full-time equivalents. Roughly, one week’s work leads to one credit point and, as the Swedish academic year consists of 40 weeks, in one successful year a student can accumulate 40 credit points. Consequently, in calculating students, one FTE student is a student who during one year has been registered for courses adding up to 40 credit points. One FTE study result has been achieved if the student has earned 40 credit points during the year. A student who has earned only 30 credit points has achieved a 0.75 FTE study result.

Both regarding the number of students enrolled and the number of credits accumulated, the targets are mentioned in the educational task contracts, based on which the institutions get their preliminary budgets.

In addition to this funding base, the number of students and credits accumulated is rewarded at different rates. The different rates originate from differences in the costs of study per cluster of disciplines. The tariffs consist of an overhead tariff and an activity (i.e. direct teaching costs) tariff. The different tariffs can be found in the table below.

Tariff (in Swedish Crowns) per student (fte) and for student performance (year-load, i.e. 40 credits), academic year 1995/96 and fiscal year 1998

area	1995/96		1998	
	student tariff	performance tariff	student tariff	performance tariff
Humanities, theology, Law, social sciences	14024	14242	13343	13968
Science, engineering, Pharmacy, health stud.	37858	33600	36037	32953
Dentistry c.s.	34589	41724	32724	40921
Medicine	46597	58874	44025	57740
Education *	27263	33299	25781	32658
Miscellaneous	31806	26579	30274	26067

* Excluding the practical part of teacher training

Source: Högskoleverket (1997); Eriksson and Fritzell (1998).

The tariffs were determined on the basis of a special investigation into the cost of the basic higher education. This investigation determined the cost of teaching, services and overhead in the cluster of law and humanities as well as in some social science subjects. This was used as a basis to which weights were applied for determining the tariffs of other subjects. For both funding bases five tariff categories plus a 'miscellaneous' category are distinguished. Taken together, the student tariff and the performance tariff generate the yearly per capita allocation for a full time undergraduate student (in each of six categories) that has succeeded in collecting 40 credit points.

(source: Vossensteyn, J.J, Jongbloed, B.W.A. and Koelman, J.B.J. (1998), *University Funding Mechanisms and related issues*, (study carried out for the Italian National University Evaluation Council), CHEPS, Enschede.)

On the eligibility issue and other design issues:

One cannot give a single answer to the question who is receiving the vouchers, what value they should have and how long they will remain valid. These are all questions that depend on the specific policy goals the governments wants to pursue. One can think of compensatory vouchers allocated to low-income families and/or to otherwise disadvantaged groups, but one has to realise that current income of those receiving vouchers should actually not be the decisive argument. Students, once they have graduate tend to belong to the relatively advantaged groups in society, so future income should be more relevant. That's why some have proposed to have the voucher consist partly of a loan (see our report). In short, one is running into issues of equity and student finance – these are issues not so much related to the financing of education per se. Related issues are: whether private individuals (or parents) are allowed to top-up the value of the voucher, and whether schools are allowed to offer scholarships to students from low-income families. And: whether the voucher (or the individual learning account) collects any interest or – on the contrary – is subject to income tax. These are all questions related to the design of the voucher system. Vouchers can be a very sophisticated instrument of funding higher education. The voucher instrument can be used to

achieve many goals. Therefore, it is impossible to give an answer to all kinds of design issues as long as one does not know what the intended effects are supposed to be.

On the cost-quality relationship:

I agree with your statement that quality is not necessarily related to costs. I know about Bill Massy's views on this issue. (Quality depends on the process of teaching and learning and the use of technology in this process. This process is variable, so costs depend on process requirements, which are variable as processes change or mature) What I merely wanted to state is that fees will have to depend on the quality of the services offered by the institutions to the students. If some programme offers a great deal more in terms of learning, the question is not so much what it costs, but whether payers (students) will show a demand for it and will be prepared to support new costs (if any). So, it's the client-provider relationship – the interaction of demand and supply – that determines the fee. Fees therefore will also depend on the condition on the market. So, I agree with you. Should have stated that fees depend on market forces, in other words: demand and supply (including cost) conditions.

Finally

I don't see any problem in restating that there are hardly any experiences of the successful use of vouchers in higher education. There are some examples of vouchers in vocational education and compulsory education. However, once we broaden the concept of vouchers to include individual learning accounts and other personalised schemes through which students and other contributors (private as well as public) meet the cost of their training, we do see quite a bright future for voucher-like schemes. We should be aware, however, that it will remain a system where still quite some degree of government regulation will exist and even quite some degree of direct funding of institutions will remain.