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Economic theories relevant to public service provision

A PRACTICAL GUIDE

About the Collaborative

The Mental Health Economics Collaborative (MHEC) is an exciting partnership between the NHS Confederation Mental Health Network, Centre for Mental Health and the London School of Economics Personal Social Services Research Unit. This is the first of a series of briefings and reports that will be published as part of the collaborative.

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This is Part 1 of a two-part series. Part 2 will develop the economic theories described in this report and relate them to the funding, commissioning and provision of mental health support in and around the NHS. This will include the incentives created by contracts, the practicalities of turning health savings into cash and understanding the data needed to drive an economically informed health service.

Author's note

Emerging from our dusty studies following decades of isolation, economists have recently experienced popularity. One reason for this is that a decade of austerity means that money is on everyone's mind.

For government, it has meant that public service spending decisions are now a high-risk pursuit, with stark consequences for poor choices. It has become much more important to have evidence to support decisions about what is purchased because the days of spending largesse are over and there are limited resources left. Economics is seen as the solution to rationing.

'Let's get an economic case on this' is now a common refrain, causing meeting rooms of executives to turn and point sagely at an exhausted economist holding a calculator.

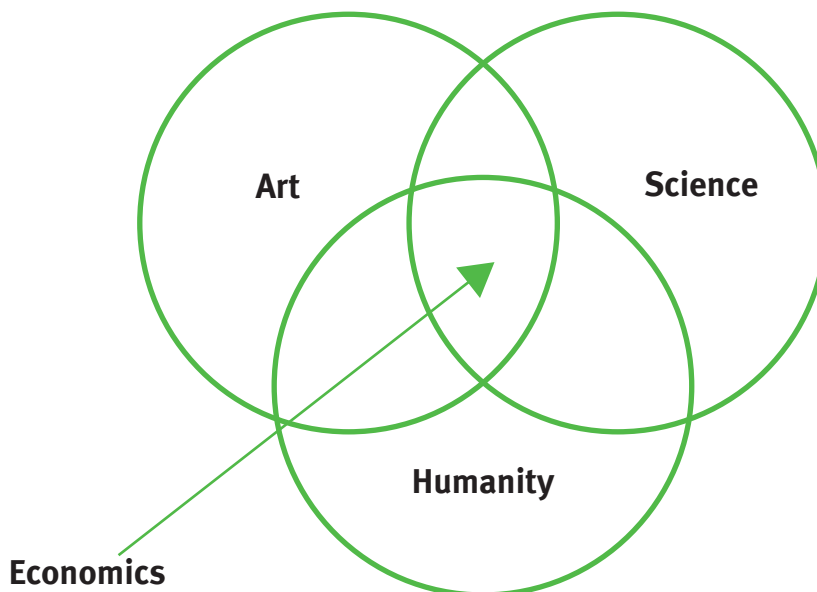
That's great; economists love increasing demand. But sometimes, I wonder if we are all in agreement about why economics is important, what economics actually is (figure 1) and what it can really explain.

This short document is a crash-course in some of the main economic theories that are used in public service commissioning and reform, outlining the basic models behind 'an economic case'. It's designed to be easy-to-read and uses experiences from everyday life to communicate some complex ideas. The intended audience is anyone who is involved with (or interested in) the sensible reform and evolution of public services. That is, where change is based on evidence.

The first three sections are about micro-economics – theories that relate to local areas. The second three are macro-economics – theories that relate to national policy and provision.

It is designed to be read on the train, in a coffee-shop or as an alternative to getting lost in the blue light of your smart phone. I hope you find it useful.

Figure 1



1. What is a cash saving?

Demonstrating that an initiative or service saves money is a powerful tool in any investment case. However, there are different types of savings and some are more helpful than others. The deciding factor is the Immediate Principle Outcome (IPO) of each saving – what happens to my bank balance?

Cash savings

This is, literally, the gold standard. Here, a direct saving is made that quickly translates into cold, hard currency that can be spent on something else, or simply banked. An everyday example is changing supermarkets to one that sells the same tin of beans for a lower price. You save money.

Public service examples are rare. Prescription costs are one – reduce the numbers of prescriptions dispensed and there is a cash saving.

Many examples are hidden in the back streets of procurement; reducing the price of plasters, substituting cleaning chemicals or buying in bulk to reduce unit prices. They are not glamorous, but they save money and the Immediate Principle Outcome is that you have more cash.

Redistributive savings

This is also known as queue shortening savings. This is where a demand for a service is reduced, but the IPO is that either someone else new uses the service instead, or that the waiting

time/queue just shortens a bit. No cash saving is made. Ambulances are an example. The IPO of reducing demand for ambulances is likely to be that they will attend other episodes faster, and those who may not have been sent an ambulance when they rang 999 before will now see blue lights outside their door.

Block-scale savings

This is where savings are made of a significant enough magnitude to decommission a service and extract the funding. If you stop 50 people from going to prison, you still need to pay for the same prison. Reduce prison numbers by 2,000, you can decommission a prison and use the money elsewhere. These savings require large-scale changes in service use and this takes time. They are a hallmark of a successful long-term plan, where savings are made on a big scale, enabling resources to be diverted toward better services. Consequently, the Immediate Principle Outcome is an ‘on-paper’ saving.

Sedentary savings

Keynes famously said, ‘In the long run, we are all dead’. Here, in the long run, all spending and all savings can be turned into cash – eventually. Sedentary savings are where that process takes many years and would only happen following a process of radical public sector reform on the scale of shutting all hospitals and replacing them with homecare, for example. Sedentary savings are long-haul.

Case study

- Mental health care in a primary care setting is a useful example of complex economics.
- Interventions are often designed to offer additional care to people who use GP surgeries frequently for unexplained symptoms or for mental health conditions which a GP can't solve in their surgery, but are not severe enough to qualify for secondary care services.
- On the surface, if the intervention is successful and people use the GP less, then the savings are initially redistributive. More appointments are available, therefore waiting lists will fall and patients who might have been dissuaded by the wait will now attend.
- However, there is an important cash benefit too. If the average number of appointments per patient falls as a result of the intervention, GPs can take on more patients. Surgeries are paid per patient and therefore the practice income will increase.
- This example reflects the reality of life – it's a mixed bag. When assessing an investment case, it is important to understand the type of savings being made, because some will have an immediate impact on budgets, but others will not.

2. Competition Theory

Since the 1980s, a significant proportion of public service reform has been based on the theory that government should replace monopolies (water board, gas board, etc) with competitive markets. This is because of a belief that:

- I. Markets create profits.
- II. Profits attract new suppliers which generate competition.
- III. Competition drives up standards.

The final, and most important part of this process is often forgotten. That is:

- IV. Competition continues to a point where profits are minimised because the open market is full.

Understanding markets, competition and profit-making is absolutely crucial to comprehending why the privatisation of public services and utilities has been so poorly executed in Great Britain and beyond.

This chapter explains why. It is lengthy. It is technical. But it is important.

Perfect competition

When we think about private companies and markets, many of us think about the profits they make and the money they have. However, increasing competition in markets does not maximise profits, it minimises them to what are known as 'normal' profits.

Take an old-fashioned fruit market, for example. Here you have 1,000 traders all selling pretty much the same thing in a confined space. A customer is able to quickly assess the market and see which stall has the best produce for the lowest price. Anyone raising their prices unnecessarily will find that customers rapidly go elsewhere, incentivising them to reduce their prices back. Profits are minimised to the point where it is just enough financial reward for the seller to remain in the market.

Now place yourself in a supermarket after work. It's late, you're tired and the best they have is three apples for £2. In the absence of alternative, you pay over the odds and the supermarket makes a supernormal profit. If there were more immediate competition for your custom, your apples would be cheaper.

Perfect competition – which is the ultimate, competitive market – is an economic theory which shows that when a market functions to perfection, there are no ‘supernormal’ profits being made. If any extra profits arise, new traders are incentivised to enter the market and compete, undercutting prices until only a normal profit remains.

Within this theory, increasing competition is therefore seen as a good way to eliminate profiteering (see figure 2 below).

Imperfect Markets

But there are two relevant exceptions relating to public service provision.

1. Oligopoly

This is where a small number of sellers dominate a market and are able to make abnormal profits by operating similar pricing structures. An oligopoly is where this happens by monitoring competitor pricing; a cartel is where sellers conspire to raise prices. (See figure 3 below.)

Figure 2: Perfect competition

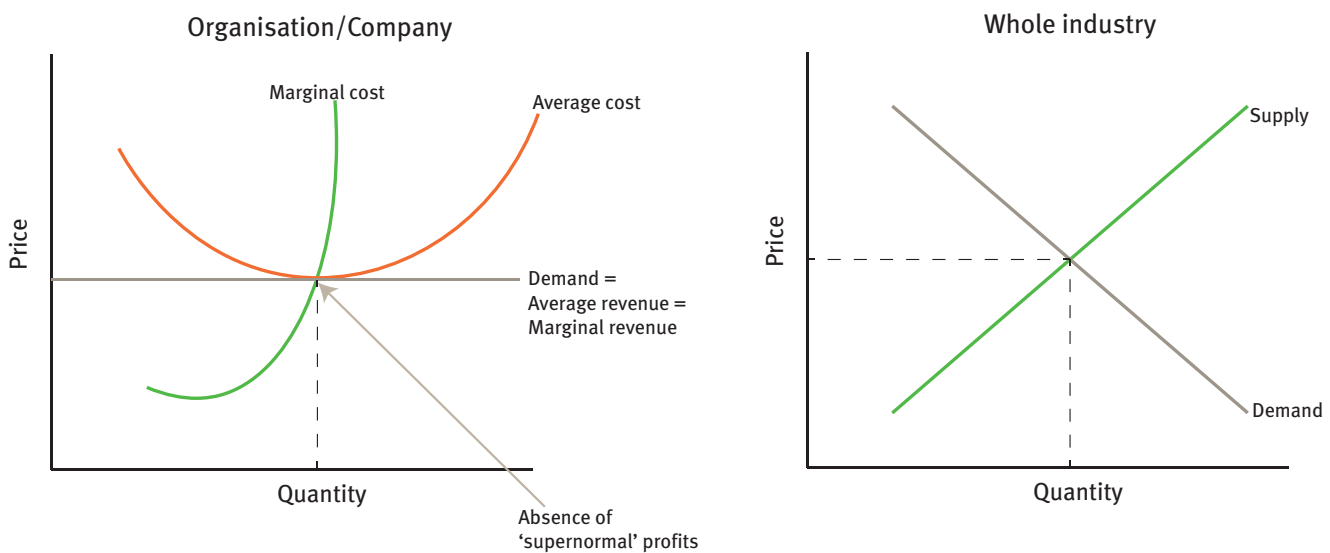
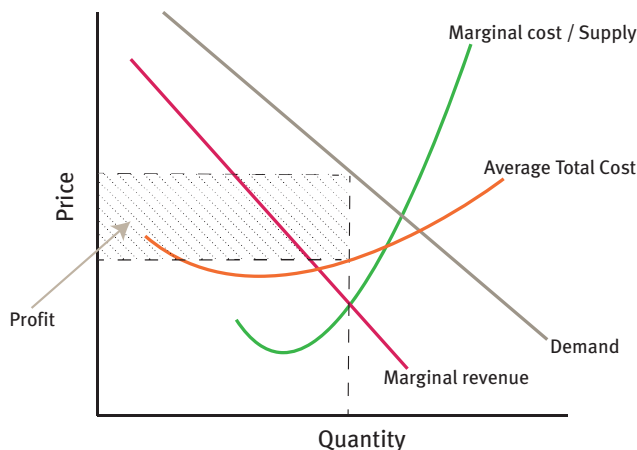


Figure 3: Oligopolies maximising profit



Inadvertently, public bodies such as local authorities and health trusts create their own oligopoly markets by having a preferred provider list of three organisations. This immediately blocks new (and cheaper) competition from the market, meaning preferred providers can charge above market rates presuming that the other two will do the same. A chief example is where the costs of building maintenance rocket because the authority can only get three quotes from the same three firms.

2. Profiteering

Where the price a consumer is willing to pay is vastly higher than the cost of production, there is the potential for profiteering. Health care is the prime example. The NHS bases its service provision on costs and rationing structures, not the price a patient is willing to pay. A benefit of this is that we are not asked to pay what our health is worth to us.

Bluntly, if health was a pure market and you needed a lifesaving kidney transplant for your child, you would likely sell all you have to pay for that vital operation. Even if that operation only cost the provider £5,000, you'd pay over the odds if that was the only option available.

As a customer in that market, you just want the positive outcome – your child is priceless and so is their health. In the hands of the wrong people, that model can be exploited across health care provision to artificially inflate prices.

In a health care market based on what something is worth to you, not what it costs, the ability to make significant profits are immense. The ultimate loser in this case is the patient. This is one of the real dangers of a privatised health care system and why the NHS is the envy of the world.

Summary: When it comes to health care provision, there are significant dangers from creating 'imperfect' competitive markets. The scope for profiteering, for oligopolies and even cartels is wide. The economic theory of competition and the improvements it can bring is just that – a theory. The benefits are only seen where all four tenets of the theory are fulfilled, the last and most important being open markets.

In health care, where regulation is correctly needed to ensure stringent standards, it is also adept at restricting competition and creating the imperfect markets described above. Consequently, any attempt to create markets within the British health care economy should be treated with extreme caution.

3. Attribution: cause versus correlation

'They all leave you in the end, Nick, and the only common denominator is you.'

When someone said this to me one memorable afternoon, I did what any good economist would do. I opened up my text books and looked up the definition of attribution. Specifically, I re-examined the difference between cause and correlation. The distinction between the two is important.

- **Cause** is where there is demonstrable proof that A has occurred as a result of B. For example, Sharon is the reason why her past boyfriends have ended relationships.

'It's not you, it's me'.

- **Correlation** is where there is a mutual relationship between A and B, and perhaps a belief that B causes A. However, there is no proof. Here, Sharon may have had an unlucky run of boyfriends, but the reason they leave her is down to other factors, not Sharon.

'It's not me, it's all of you. Or something else entirely.'

When making a financial case, it's crucial to know if a service causes an outcome, or is simply correlated to good results. The consequence of not knowing is to risk funding the wrong service.

In an ideal world, a large-scale randomised controlled trial (RCT) would be able to determine attribution. In medical trials, for example, groups with similar characteristics are randomly assigned to test groups, given medication or a placebo and the comparative results examined. What RCTs try to do is create conditions where the only difference is the medication taken in order to isolate its attributable impact. Similarly, regression techniques use large amounts of data to untangle which variables correlate and which cause – but only to a given level of probability.

Despite appearances, life is not a randomised controlled trial. In the realm of human improvement and life chances, all sorts of variables influence results in ways which are tricky to detect. RCTs are expensive and they require a level of scale and control that is impractical or unethical for many projects. Similarly, regression data needs large samples and concrete data on variables. So, when looking at the case for attributable benefits from a scheme which may be small and local, here are some questions to ask.

Question	Key factors to note
How many people does the scheme work with?	10,000 is brilliant, 100 is indicative, 30 is a minimum. Anything less than 30 people is exploratory.
Does everyone get the same intervention?	Crucial – it’s only one sample if everyone gets the same service. If there are large variations, then it’s a collection of sub-samples. This means that the sample is smaller (see row above).
How many contact points (meetings, sessions, interventions) are there?	If the service offers one session, it is unlikely to be life-changing and so ‘cause’ will be difficult to attribute. Cause is far easier to show where a service offers a persistent, comprehensive and long-term intervention.
How many other services also help those in the sample group?	If people are receiving multiple services, it is difficult to demonstrate that only one intervention has the defining impact.
Who is the control group?	This is a group in a study who do not receive the intervention, and who are then used as a benchmark to compare against the group who did. They are key to answering the question ‘would they have got better anyway?’
What does the end user say?	The customer is always right. Some of the best evidence for the effectiveness of an intervention is what the end-user thought. Anonymous survey data, collected by a peer-led, independent evaluator is a great way to get robust, neutral data.
Who collected the data?	Qualitative data (thoughts and opinions) should not be gathered by those who deliver the service to avoid risk of bias.

The overall aim here is to determine what is proof and what is belief. It is common for services to evaluate their intervention as if it were the pivotal change in someone’s life. But it is important to realise that there are many factors at work in everyone’s life and your service is just a part of that.

Asking the questions above, and being satisfied with the answers, will help you determine whether a service has genuinely *caused* a change, or if it is *correlated* to improvements.

4. Government should measure consumption patterns

How people consume goods and services – and in what combination – is crucial information for organisations as it helps them understand what is in demand and, therefore, what to supply. It drove the development of supermarket loyalty cards (which track your purchases and then offer you tailored discounts to increase your consumption) and is a key data metric for cookies used for online shopping. Business has to understand its customers in order to meet their needs.

Understanding consumption patterns requires **identifying** consumption patterns. Driving consumption – making sure that people are using the right services for their needs – requires data on who is using what, when and how.

Government does this very well for income. The UK taxation scheme enables government to calculate how much tax everyone owes and how much they have paid. It's up-to-date information and it's largely accurate. Each citizen's financial contribution to the state is measured.

Conversely, the financial cost of each person to the state remains a mystery.

An individual's costs for NHS treatment, schooling, social care and benefit receipt are not summated and presented to the citizen as an itemised receipt. There are many reasons for not doing that (including ethical concerns), but a practical barrier is simply that services do not collate their information to determine who uses what and the patterns of consumption within. So government, local authorities and public organisations rarely have an understanding of which citizens are using which services and in what combination.

For the provision of public services, this is a major problem. For example, we think that when GP surgeries reduce appointment availability, A&E use increases, but as a nation, we don't *know*. Given that A&E is three times the price of a GP appointment, we ought to have this basic level of evidence so that we can understand the consequences of changing service delivery.

Similarly, it is widely accepted that there are people who use high amounts of services, costing more than £200,000 per annum in hospitals, housing and benefits, but whose lives are not improving despite the resources deployed. Knowing more about this group would enable services to evaluate the outcomes achieved by this spending and to see if other options could have a better impact.

Currently, bringing together information about service use across one type of provision is impossible – or at least, very expensive. Although this is changing, there is still no way to conclusively track which hospitals, GPs, A&E rooms, outpatient departments and ambulances people have used, despite each citizen having a unique NHS number given at birth. Trying to merge this information with data from social services, fire services, education and housing adds a further level of complexity which renders this currently impossible.

The rewards of doing so would be immense. But to do it there would need to be significant assurances about the safe and appropriate use of such information to avoid disadvantaging the very people that public services most need to help more effectively.

5. The theory of utility and why commissioning services is hard

Economists refer to the joy that comes from a product or good as ‘utility’. It is the basis of social value measurement and seeks to quantify how happy, or sad, consumption makes us. This chapter explains the theory of preference and its measurement to illustrate how hidden preferences make the provision of public services so complex.

Key facts about utility:

- It is specific to each person – chocolate might bring me more joy than it does to you.
- It is entirely subjective – I don’t know how your measurement of joy compares to mine. What is a unit of joy, anyway?
- It is usually diminishing – the second chocolate bar is rarely as rewarding as the first.
- It can change over time – a chocolate bar may make me happy in the moment, but regretful later.

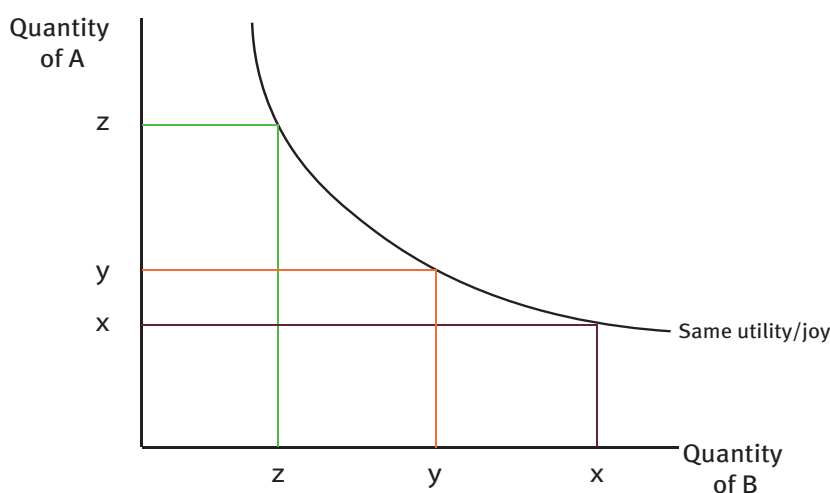
Utility is usually portrayed as a curve, showing how consuming different combinations of two goods leads to the same joy. This is because we mainly want variety. A range of chocolate bars is preferable to endless amounts of the same one. If I had 100 Kit-Kats, I’d probably sacrifice 10 in order to get one Galaxy Ripple, and vice-versa. This is shown in figure 4.

Utility is a key driver of markets and innovation. This is because markets are great at pricing joy – and if you can price joy, then that means you can buy it. For example, people who sign up to online dating sites pay a monthly fee in return for the chance to find love. They don’t receive a defined product – a parcel of love doesn’t land on the doorstep on the first of each month – but they are buying the opportunity to meet someone special. And so we have functioning markets where people agree to purchase chance and improved odds, because it brings them joy. They are purchasing pure social value – the joy that comes from purchasing chance.

This is relevant here to public service provision because it has very few mechanisms to determine the utility derived from the goods on offer. Patients do not tip their doctors for good service (although perhaps they should) or issue a fine for poor bedside manner (again, perhaps they should). When it comes to public services, it is very difficult for consumers to indicate which services they prize. As a commissioner, this makes it difficult to make supply equate to demand – as you are doing that remotely, without access to information on preferences.

Figure 4: Utility curves

Each point on the black line shows combinations of goods that generate the same joy



What this theory means for public service commissioners and providers is:

- There are few or no signals of consumer preferences, so commissioning and procurement is difficult/guesswork.
- Understanding their preferences (through peer engagement, surveys, involving community leaders, codesign with service users) will improve commissioning decisions.
- Personal budgets are a useful way for patients to show their service preferences and collective spending should be analysed more closely to provide market information.

Figure 5.1: A person who prefers choice

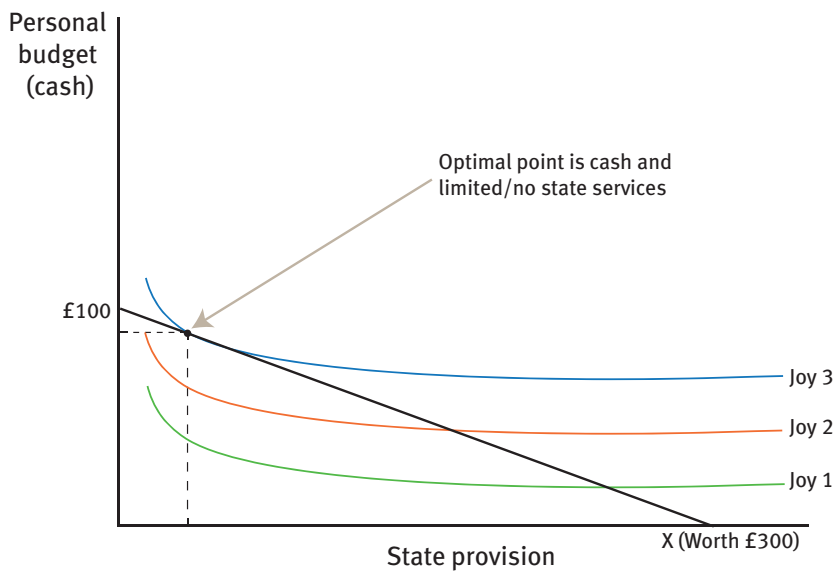
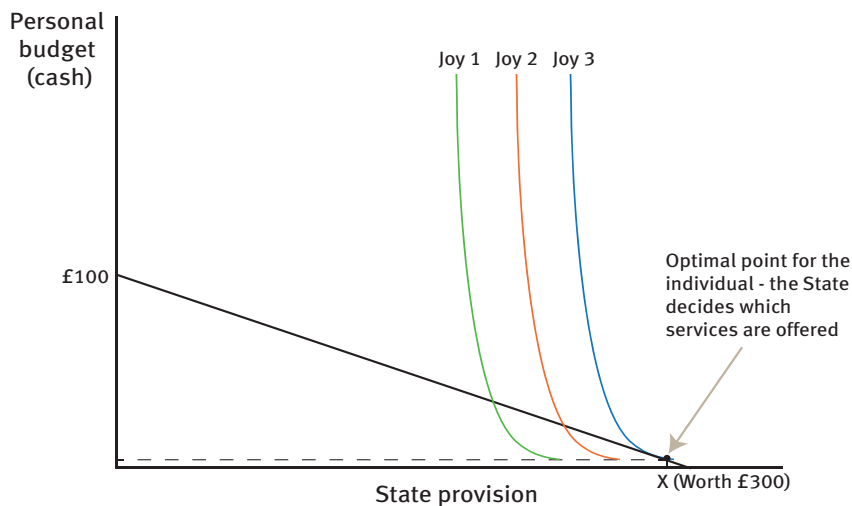


Figure 5.2: A person who prefers the state to determine their service



6. Rationing services funnels people toward expensive alternatives

Public services have different costs. Frequently, the higher the need being treated, the greater the cost.

Quite rightly, the NHS offers health care free at the point of contact. However, services are inevitably rationed. For example:

- GPs limit appointments
- A&Es ration by queues
- Community Mental Health Teams require assessment thresholds to be met
- Ambulances triage calls.

How we ration services has two consequences:

1. Waiting list rationing methods are infrequently linked to the cost of provision, so expensive services can be quicker to access than cheaper ones. For example, the typical cost of a GP appointment is £38. The typical cost of the same treatment at A&E is £160. However, go to A&E and you should be seen within four hours. The waiting list for my GP surgery is currently a fortnight. Given the comparative expense of A&E treatment you would ideally want it to be a lot easier to see the GP so that health care is provided at the lowest cost. A system-

wide approach to rationing is required so that patients and customers are not needlessly directed toward costly services.

2. Needs-based rationing methods can also be unrelated to cost of provision. For example, Community Mental Health Teams have notoriously tough assessment thresholds, whereas a police officer, the fire brigade and A&E do not. The costs of emergency services, per hour, are far greater than a CMHT, but when someone is unwell, they will need treatment from somewhere. Patients will look at the market and seek substitute services. Unfortunately for the Treasury, they are really expensive (see table 1 below).

In the absence of a system-wide understanding of how rationing of individual services causes increased demand elsewhere, the system actively funnels people toward costly services. The irony here is that where austerity has hit all services, it has been comparatively cheaper services that can turn people away that have been most severely cut, leaving expensive emergency services to shoulder the load.

Table 1: Costs of health care

Item	Unit Cost
GP appointment	£38 per 9.22min appointment [Curtis and Burns, 2017]
CMHT	£275 unit cost [NHS Improvement, 2018]
A+E	£160 per attendance episode [NHS Improvement, 2018]
Ambulance	£240 per see, treat and convey [NHS Improvement, 2018]

Conclusion

This document sets out the primary economic theories which underpin sound public service provision – where investment is based on evidence and proof of effectiveness. Each chapter explains a different economic theory and links them to where they are used in the real world to determine spending decisions.

The main lessons are:

- Savings come in many forms, and pinpointing the moment where those savings are transformed into cash is key to any investment case.
- Competition theory has four parts, not three, and health care markets face significant risks of profiteering and oligopoly if government tries to replace a monopoly (NHS) with the creation of a market for service provision.
- Attribution is easy to claim but hard to prove.
- Nationwide measurement of consumption patterns – and the link between the use of different services – would unlock government understanding of macro-demand and supply, which could lead to better service provision.
- Similarly, understanding and measuring the preferences of patients would improve health care commissioning.

- It would be sensible, from an economic perspective, to link how services are rationed to how much they cost. With emergency services, this is impossible/immoral, therefore greater thought should be given to the impact of rationing other services and the sharp increase in total costs that this is likely to cause.

The primary objective of this document is to show that whilst economics is a popular and useful tool to drive decision making, the theoretical framework that underpins it has to be understood in order to gauge both its power and its limitations. Economics can reveal some truth, but not all. It is at the intersection of science, art and humanity. And for that reason, it can offer important insights and new perspectives, but like any other discipline it doesn't have all the answers.

Queen Elizabeth II wisely asked economists about the 2008 global crash, 'Why didn't you see it coming?'. That question deftly articulates the strengths and weaknesses of my profession.

Economics is great; but when using it for governing and investment decisions, handle with care.

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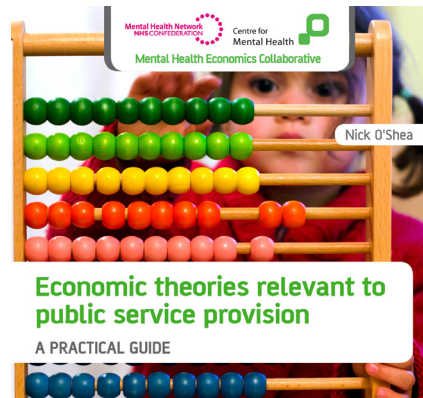
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