

Applying economics in a hostile environment: the health sector

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Summary

In this paper we state that health economics is now amongst the leaders in a «paradigm shift» in economics that needs to spread as quickly as possible into the rest of the subject. This conclusion is obtained from considering that economics can be applied to topics that do not appear superficially to be economic topics such as what is the best treatment for a national health service to offer to a patient with a particular disease.

Resumen

En este artículo se aportan razones para concluir que la economía de la salud está entre las disciplinas que lideran el «cambio de paradigma» en economía, el cual necesita extenderse cuanto antes al resto de la economía. Esta conclusión se obtiene a partir de considerar cómo la economía puede ser aplicada a temas que a primera vista no parecen económicos, como puede ser intentar responder a cuál es el mejor tratamiento que un sistema nacional de salud debería proporcionar a un paciente con una enfermedad concreta.

Topics and disciplines

Thirty years ago (which looks to me like «since before most of you were born») I decided to dedicate the rest of my professional career to persuading the medical profession and others influential in the running of health care systems that economics was a serious intellectual discipline which could help them with the policy problems they faced, and not just an annoying constraint that stopped them from doing all the good things they wanted to do, both at an individual and at a social level.

By «a serious intellectual discipline» I mean a systematic mode of thinking which has developed certain concepts, and studied certain structural relationships, which lead its practitioners to see the world in a distinctive way, and to ask characteristic questions, and to require certain kinds of data which are then interpreted in a characteristic way. Typical examples of these characteristic questions are:

- What exactly are you trying to maximise?

- What are the constraints?
- What options are available?
- What will the consequences of each be at the margin?
- What will be the timing of these consequences?
- Are the benefits likely to be worth the sacrifices?

And the typical data that is regarded as appropriate for answering these questions will be quantitative rather than qualitative, and in order to make things commensurate, all valuations will be expressed in money terms (which does not necessarily mean that they will be market-generated values).

These characteristics of *economics as a discipline* came from centuries of thinking about economic problems, that is, from *economics as a topic*. Typical economic topics (or problems) are inflation, unemployment, efficiency in the production and distribution of goods and services, the incentive or disincentive effects of taxation, and so on. But each of these *economic topics* could also be analysed from the viewpoint of other disciplines. For instance, inflation could be seen as a moral problem and viewed from an ethical standpoint, or as

a threat to democracy and analysed from the viewpoint of political science, or as a sociological problem because of its consequences for family structures, or as a legal problem in the framing and enforcement of contracts, and so on. The point I want to make is that there need be no one-to-one relationship between a particular discipline and the problems it can be used to tackle. Just as disciplines other than economics can usefully be applied to economic topics, so the discipline of economics can be applied to topics that do not appear superficially to be economic topics at all, such as what is the best treatment for a national health service to offer to a patient with a particular disease! I will come back to that controversial question later.

Positive and normative

But first of all I want to draw an important distinction between two types of economics: positive and normative. *Positive economics* seeks to establish what is actually happening and where that will most likely lead under various assumptions. It focuses on essentially factual matters (though sometimes a rather speculative ones), the conclusions of which can be empirically tested to find out whether or not they are false. There is much unresolved discussion as to whether the best test of a positive analytical apparatus is the realism of its assumptions, and/or the accuracy of its predictions, and/or its generalisability, and/or its intuitive transparency (the avoidance of the «black-box» approach). *Normative economics* seeks to go one step further, and recommend what is the best thing to do (given what we understand from positive economics about underlying relationships between policy instruments and policy targets). The test of a good normative analytical apparatus is a little different from that for a positive one, because we need to check that the assumed maximand and the assumed constraints are indeed those that are appropriate to the policy problem under investigation, and that the policy instruments that are required are in fact available, or could be available if desired. A good predictive theory, on the other hand, need not contain any variable that can be used by policy-makers to change things.

One of the great problems within economics is the way people slide unwittingly from positive to normative modes without even realising it. Consider the fundamental notion of «efficiency». Is it a positive concept or a normative concept? It could be either. But when someone shows that situation A is more «efficient» than situation B, this is almost invariably interpreted as a recommendation to go for A rather than B. But this is only valid if maximising efficiency (in the particular way in which it is defined for purposes of economic analysis)

is actually what policymakers want to do. I will also return to this point later. All I am urging upon you at this point is to examine carefully your own thinking and behaviour whenever you make the judgement that one situation is better than another situation, as opposed to simply observing that they are different in certain respects.

Doctors

So let me get back to my 30-year crusade to get people running health care systems to take economics seriously as an intellectual discipline. *The first major obstacle* I encountered was the dismissive assertion from influential members of the medical profession that it would be immoral for any clinician to take costs into account when deciding what treatment to recommend to a patient, so the intrusion of hard-headed economics into fine humanitarian areas of human endeavour such as medicine was to be strenuously resisted on ethical grounds, and would I kindly get lost! This was not a very encouraging start. So I started unpicking the ethical argument that it is the doctor's duty to do whatever is best for the patient in front of him or her, no matter what the cost. Here, initially, I perpetrated the sin that I just warned you against, namely I confused the positive and the normative. The doctors' ethical argument is a normative assertion, but I tackled it in the first place by operating in the positive realm, observing what doctors actually do, with a view to demonstrating that they don't actually live up to their own ethical code. This was in fact quite easy to do, because doctors have many responsibilities besides treating the patient in front of them at any particular time. For instance, they will have other patients waiting for their skill and attention, whose interests they have to balance against those of the particular patient they are currently attending to. They have to take time out from treating patients to keep up to date with medical science. They may be engaged in research intended to benefit future rather than current patients. They may be involved in the training of new doctors. They have a practice to manage, staff to hire or fire, financial matters to sort out. They also have their personal and family lives to lead. So they are constantly balancing the time and energy spent on each of these activities one against another. In other words they are considering the opportunity costs of each activity in terms of the foregone benefits from the other activities. It is a classic optimisation problem requiring equi-marginal adjustments which will depend on what each individual doctor is trying to maximise. But once there is more than one competing activity, they cannot possibly be ignoring the costs of whatever time they spend with the patient in front of them, and all that economists are sa-

ying is that if it is OK to consider opportunity costs with respect to your own time, it must also be OK to consider the opportunity costs with respect to all the other scarce health care resources too (like hospital beds, drugs, nursing staff, etc). But although showing that doctors don't behave according to their own supposed ethical code raises the suspicion that they don't actually believe in it, it does not address the issue of whether that code was the appropriate ethical code in the first place, and, if not, what ethical code should replace it. That is the trap I initially fell into.

I rescued myself from it by arguing that the reason why it would not be ethical to ignore the opportunity costs of providing whatever is best for the particular patient in front of the doctor at any one time, is because in a resource-constrained system (and all systems are resource-constrained) any resources devoted to one patient are denied to other patients, whose health will suffer as a consequence. So if the primary objective of a health care system is to improve the health of a whole population as much as possible, and if this is an ethical objective (which it clearly is), then again the equi-marginal principle should apply, namely that you should behave in such a way as to ensure that the foregone health gain is the same for any redeployment of any scarce resource, and this foregone health gain will always be positive. This requires constant consideration of the value of these opportunity costs to make sure that they do not exceed the value of the benefits. The ethical position implied by the simple application of the equi-marginal principle is that a given health gain should be regarded as of equal value no matter who gets it, which is a strong egalitarian position about how interpersonal comparisons of welfare should be made in this context. If policy-makers wish to adopt some more complex ethical position about distributional justice, this can also be accommodated, but we shall always face opportunity costs and tradeoffs, and it will never be ethical to ignore such costs and trade-offs. This is the ethical basis of the economists' position, and it turns out to provide an ethical platform to support what most doctors actually do. Nominal adherence to the other code is then best seen as a marketing slogan, designed to enhance the confidence of patients in their doctors. After all, people who ignore the consequences of their actions for innocent third parties are not acting ethically, they are acting fanatically, and fanaticism has no place in a humanitarian activity such as the provision of health care.

So you will appreciate why it was that last year I got a tremendous sense of achievement when the Medical Ethics Committee of the British Medical Association declared¹ that:

«Health professionals have an ethical duty to make the best use of the available resources and this means that hard decisions must be made. Whilst this is a much

broader issue than can be discussed thoroughly in this document, it is clear that doctors are not obliged to comply with patients' requests for treatment when they make inequitable demands on scarce resources».

Notice the key phrase «inequitable demands», which highlights the key role of distributive justice rather than «efficiency» in this line of thinking.

Accountants

But long before emerging with some modest sense of achievement from that battleground, I had run into another minefield, again over the meaning of costs, this time laid by accountants and finance officers in the health care system. This *second, and rather more unexpected, group of opponents*, objected to my assertion that costs were sacrifices which would not necessarily show up in money terms. This they said was simply naive and unrealistic and typical of the kind of head-in-the-clouds propositions for which academics were notorious. They took the view that only money costs were real costs, and that other so-called costs were either ephemeral or irrelevant or both. Doctor's time is a real cost, because the Health Service has to pay for it, but patients' time is not a real cost, because it does not fall on anybody's budget, and since patients willingly give up their time to get treatment it can't be a relevant consideration. They were not impressed by my argument that money is merely an artifice designed to control people's access to real resources, and that we have to look behind the «veil of money» to see what is really happening. They flinched visibly when I pointed out that if it really was a shortage of money that was holding us back, we could easily print some, since paper and ink are both readily available and very cheap. I have so far found this gulf unbridgeable, and the only way forward I can see is to reform the budgetary system in such a way that all «real costs» (in an economists sense) do fall on somebody's budget, so that even accountants begin to see them as «real costs». For instance, one of my favourite proposals for health care reform is to introduce a charge for the use of patients' time. I think it would revolutionise the way in which health care is provided. For most patients there are things they would rather be doing than sitting around waiting to see a doctor, and they have no desire to be in hospital any longer than is absolutely necessary. I once suggested to a finance officer that cost per case could be reduced by shortening length of stay (especially when patients were being kept in over a weekend because the doctor who could authorise their discharge did not work on a Friday and would not be in again until Monday). I was told that it was the extra days at the end of a patient's hospital stay when not much was being done that enabled them to keep the

cost-per-day down, and that if these low-cost days were replaced by the high cost days generated by newly arrived patients, costs-per-day would shoot up and it would be impossible to balance the books. He thought a more efficient change would be to get the primary care sector to provide the drugs required for patients immediately after discharge from hospital, instead of supplying them from the hospital pharmacy, because although this would be more risky for the patients and more costly to the health service as a whole, it would get them off his budget. Accountants' ideas of what is efficient and economists' ideas of what is efficient are clearly poles apart.

Unfortunately, while economists and accountants are well aware of the great divide between us over whether «costs» are real sacrifices or merely money outlays, most members of the medical profession cannot tell the difference between us. They then blame economists for the defects in the financial system which economists have been struggling to rectify. So I gave up dealing with accountants and tackled the next problem, which was to try to disabuse people of the idea that economists are *only* interested in costs. I tried to persuade them instead that we are interested in benefits as well, and especially in how benefits are valued.

Epidemiologists

This generated *hostility from a new quarter, namely the epidemiologists and clinical researchers*, whose professional lives were dedicated to the measurement of so-called «hard endpoints» in health care, like survival, or tumour size, or blood pressure, or some other biomedical indicator of disease deterioration or improvement. I pointed out that, taking as the indicator of success in a clinical trial a commonly used measure such as the two-year survival rate, carried with it the following value-judgements:

- a) To survive for less than 2 years confers no benefit.
- b) Having survived for two years, further survival confers no additional benefit.
- c) It does not matter with what quality of life you survive.
- d) The value of survival is the same for everybody.

Observation of the crudity of most of the conventional benefit measures in health care has led economists to champion a radically different concept, namely the quality-adjusted life year (or QALY). This is based on the simple idea that if we can provide someone with an extra year of health life expectancy, that should count as 1 unit. But if the best we can do is provide someone with

an extra year when they will have difficulty moving about and be in some pain, then that should count as less than 1 unit. How much less than 1 will depend on how bad it is. Suppose we set being dead as equal to zero, then we should find out how people rated different health states on a scale in which being healthy is rated at 1 and being dead is rated at zero (allowing them to rate some states as being worse than dead if they so wished, i.e. to assign negative values to some very bad states). But which people should we ask? The doctors and epidemiologists said that we should ask the patients. But which patients? The patients who are currently in the particular health states, those who might find themselves in the health states, or those who were in them in the past but are now out of them again? On ethical grounds you might argue that everyone who is affected by a decision to provide (or not to provide) a particular treatment for a particular group of patients has the right to have their values considered. But in an interdependent resource-constrained system every such decision potentially affects everybody. And what about the taxpayers who put up the money and made the sacrifices in other aspects of their living standards, do they not have a right to be heard too? Each of us as citizens has mixed motives. As taxpayers, we want a reasonable set of priorities established so that our money is not wasted on treatments with high costs and little or no benefit, but when we are ill we want the best that money will buy (provided it is other people's money, of course). So health economists have advocated eliciting the values of a representative sample of the whole population, and then using the mean or median values of that group of people to generate the «quality-adjustments» in QALYs.

But how would these «socially-valued» QALYs then be used? If the objective of health care were solely to maximise the health of the population at large, then we would measure the incremental cost per QALY for each treatment and go for those that have the best cost-per-QALY ratio. This line of thinking has led to the creation of cost-per-QALY league tables, and the associated recommendation that in the face of budget limitations you should start with the most cost-effective things and work your way down the list until the money runs out. Only in this way will population health be maximised. But if policy-makers think that the health care system also has important equity objectives as well, such as reducing inequalities in people's lifetime experience of health, they will want to give extra weight to benefits that go to people whose expected lifetime QALYs are low (such as the permanently disabled, or those people with relatively short life expectancy compared with the norm for that society). This can be handled by devising equity weights so that a given health gain is no longer regarded as of equal value, no matter who gets it, but if differential value depending on who gets it. Economic analysis is capable of more sophistication than many

people imagine.

But there is strong resistance from the clinical research community to substituting these generic preference-based measures of health for the specific indicators they are accustomed to employing within clinical trials and in the monitoring of treatments and the audit of physicians' competence. They resent the incursion of economists (who they imagine are solely motivated by a desire to cut costs) into benefit measurement and valuation, where they are (rightly) seen as a very dangerous threat to the hitherto unchallenged authority of doctors in that territory. That earlier question («What is hard-headed economics doing in a fine humanitarian areas of human endeavour such as medicine?») is again posed, but this time with increased vehemence. This work on QALY measurement and valuation has got me into more trouble than anything else I have ever done, and the battle still rages fast and furious. But I gain comfort from knowing that I am right and they are wrong!!!

Welfarists

So for some respite from all of this aggravation I sought comfort and support from within economics itself, and this is where I encountered *my fourth and most disheartening obstacle, namely the conventional wisdom of neo-classical welfare economics*. According to this, individuals are to be regarded as the sole judges of their own welfare and nothing is to go into judgements about social welfare except some aggregation of the welfare of individuals. If you add to these two propositions the further assertion that no interpersonal comparisons of welfare are to be permitted (even though everyone but economists makes them every day), then you have the essence of the classical welfare economists mantra, which is that one social situation is better than another if and only if at least one person is better off and no-one is worse off than in the starting position (whatever that happens to be). Since there is virtually no circumstance in which a social change leaves nobody worse off, this rather useless proposition got modified, and instead says that if it were possible for the gainers from any change to compensate the losers fully and still have some gains left, then the move would be a social improvement, even though the compensation is not actually paid. No attention is to be paid to who are the gainers and who are the losers, nor to how unjust the starting position might have been. So if the gainers are the rich old, who might live a few extra years as the result of some policy, and the losers are poor young tearaways who could be bribed into accepting a higher risk of death to make this possible, then even though they end up facing the extra risks without any compensation, this is judged to be a social improvement. If this is in-

deed what economics is all about, then perhaps the doctors were right to reject it as unethical. But fortunately not all economists espouse this ethically unacceptable welfarist philosophy, and very few European health economists do. Indeed most European health economists work within a «non-welfarist» frame of reference within which the *distribution* of welfare within a society is to count, as well as its sum total.

In health economics the two primary objectives of policy are assumed to be to maximise population health and to reduce inequalities in the lifetime experience of health of the individuals who comprise that population. Health should be measured in Quality Adjusted Life Years, of course, and although it is well known that the life expectancy of poor people is much lower than that of rich people, things are much worse when you take *quality-adjusted* life expectancy into account, because the people with the shortest life expectancy are also the people who suffer the most pain and disability during their lives. But if you go down this non-welfarist track you have to face the problem that sometimes «efficiency» (which now means «health maximisation», not Pareto optimality) may have to be sacrificed in the interests of equity, or, to be more specific in the present context, we may have to settle for a reduced level of population health in order to reduce health inequalities within that population.

Such trade-off problems are attractive research topics for economists, and with some Spanish colleagues we recently tested the willingness of a representative sample of the Spanish population to sacrifice efficiency in the interest of equity. You may be interested to know that the median Spaniard out of our sample of about 1200 people is indifferent between the following two si-

	Expected age at death	
	Option A	Option B
Upper class	77	75
Lower class	72	72.5

tuations.

In other words it is worth sacrificing 2 years life expectancy for the better off group even though it increases the life expectancy of the worst off group by only 6 months. At the very least this can be taken as a strong argument for replacing the welfarist paradigm in economics with a non-welfarist one which includes in the social welfare function *both* the distribution of welfare *and* a coefficient expressing the strength of people's collective aversion to different sorts of inequality. Doing so would greatly increase the relevance and acceptability of economic reasoning in a social policy context,

where inequalities are typically a big political issue.

Conclusions

My arrogant conclusion from all of this is that Health Economists are now amongst the leaders in a «paradigm shift» in economics that needs to spread as quickly as possible into the rest of the subject, and especially into macro-economics, where the explicit specification of the relevant social welfare function is conspicuous by its absence, and normative judgements about optimal levels of this and that seem totally untouched by any systematic elicitation of the values of the population affected. Perhaps some of you younger and braver economists would be prepared to dedicate your pro-

fessional lives to making non-welfarism the norm in economics, so that the welfarist position comes to be seen as a historical curiosity. Policy analysis by economists should, as a result, become much more closely attuned to the values of the societies we claim to serve, and the world will be a better place as a result. It is a pity that I won't live to see the day but I'll be watching you all from somewhere out there. Go to it, it's a big and daunting task, but you will need a clear head and a thick skin. It can be a very hostile environment at times!

References

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