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Policy analysis to improve human lives

Exploring Happiness Research

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Overview

The COVID-19 pandemic has shone a spotlight on how governments formulate their policies and has led to a widespread discussion about the social contract and what really matters. There has also been greater emphasis placed towards mental health and wellbeing, as a consequence of the policies put in place to reduce the spread of the virus. Going forward, both public and private institutions are likely to place greater value on their resilience, which means they will look to put more resources into preparing for low probability events with large consequences. There remain open questions about how the nature of policymaking will change as a result of the pandemic.

This research article aims to summarise the current debate on this issue by outlining the approaches to policy analysis that are currently on the table (Section 1), before examining the methodological challenges of these approaches (Section 2) and then finishing by giving our view (Section 3).

Section 1: Approaches to policy analysis

We split this section in two halves. First, we discuss the approach that is currently taken by most governments, which is to evaluate policies in monetary units. Second, we outline the approaches that are currently being proposed by social scientists, which places wellbeing at the centre of the analysis.

Monetary approaches to policy analysis

Where it is possible to do so, the preferred current approach of policymakers is to use cost-benefit analysis (CBA). Put simply, this is the process of measuring the benefits of a policy relative to its costs. This includes costs and benefits that are measured directly in monetary units, as well as less tangible costs and benefits, such as natural capital or health, which are then converted into monetary units where possible. If there are a number of policy options on the table, then policymakers will choose the policy with the best benefits to costs ratio. However, if there is just one policy on the table, then the threshold is typically that benefits need to exceed costs in order to proceed.

In some cases, measuring the benefits of a policy in monetary units proves particularly challenging and instead cost effectiveness analysis is used. This simply means assessing the range of policy options based on how cost effective they are and essentially assumes that the benefits are equal across each of the policies. In addition, when assessing a singular policy where the benefits are difficult to estimate an option available is to use a breakeven analysis method. This involves producing estimates of the costs and then making an informed judgement (without formalised estimates) as to whether the benefits will exceed the costs.

Finally, where both the costs and benefits are difficult to estimate in monetary terms, public officials may suggest that the policy is unquantifiable. This is a judgement that would require a good amount of explanation. In these cases, a judgement-based decision as to whether to proceed with the policy would need to be made.

Wellbeing approaches to policy analysis

Recently, there have been a number of proposals for policy analysis to be centered around wellbeing instead of financial indicators. The calls for this approach are not necessarily all that new, however they are getting louder and proposed approaches are becoming more refined.

The basic premise involves shifting the focus away from using financial metrics as a means of weighing up costs and benefits and turning towards trying to measure the net welfare impact of a policy. The new unit being proposed for these analyses are wellbeing adjusted life years, otherwise known as WALY's or WELLBY's. The formulation of these measures includes assessments of subjective wellbeing (SWB). This may refer to either evaluative measures (e.g. overall, how satisfied are you with your life nowadays?) or experienced based measures (e.g. how happy were you yesterday?). These measures would form the basis of a new style of cost benefit analysis, with wellbeing at the centre.

Increasingly, governments are already using SWB indicators in policy analysis. In New Zealand, the Treasury has recently put in place a Living Standards Framework, which can be used to evaluate new government policy in terms of its ability to improve citizens lives. In the UK, the Treasury Green Book now supplements policy decisions with SWB measures. Whilst this is viewed as a step in the right direction, the recent policy proposals are about moving SWB away from being a supplementary indicator and towards playing a central role in the analysis.

Section 2: Challenges

A full policy appraisal requires capturing and quantifying all of the short and long-term effects of a policy intervention and not simply the immediate and obvious trade-offs. This presents many challenges and opens up pitfalls which we will go through in this section.

The value of statistical lives

Policy changes affect human lives and will often involve life and death decisions. This means that it becomes necessary, when weighing up the costs and benefits of a policy, to put a value on life. In traditional cases this is done in monetary terms and it is also possible to convert wellbeing adjusted life years into monetary units.

There are two main ways that this is currently determined. The first includes identifying people's behaviour (revealed preference). This method typically constitutes looking at the relationship between risky jobs and their wages. The idea is that workers are paid a premium where a job involves a higher risk of death. The challenges with a method such as this are that firstly, there are likely to be a number of other inputs that go into the wage decision and controlling for all of these perfectly is very difficult. Second, it is unlikely that the worker will be able to mentally calculate the exact risk of death and how this should translate across to a fair wage premium in an accurate way.

The second approach involves asking people how much would they be willing to pay for a reduced probability of death (stated preference). The positive of this approach is that it addresses the question of valuation directly. However, unfortunately it is subject to numerous challenges which weaken its validity. The framing of the question can lead to a wide variation in the responses. For example, if the question is altered to ask

how much individuals would need to be paid to give up the same probability of death, then this can yield surprisingly different results. This is because people tend to be loss averse - meaning they dislike losses more than they like gains.

In addition, there are other biases that may affect willingness to pay questions. These include availability biases, where people put too much weight towards events that are relatable to their own experiences. For example, if a close friend has diabetes you will be more likely to overestimate the likelihood of having this condition. Present bias matters too, which is where people put too much value on today relative to tomorrow. There are also informational and distributional concerns with this approach. Some individuals may answer these survey questions quite differently with additional information. Other individuals will be willing to pay less due to having less income which raises fairness issues.

There is more than one method to convert one wellbeing adjusted life year (hereafter 'wellbeing unit') into monetary units, but we will briefly explain the approach outlined in the recent World Happiness Report. The starting point is to define one wellbeing unit equal to the average across advanced societies, so 7.5/10. Next, in order to get the value of money in wellbeing units we need to determine the impact of an extra dollar of annual income on wellbeing and then divide the output of that calculation by annual income. The coefficient chosen for income and wellbeing is 0.3, which is an upper bound from the evidence on the relationship between income and life satisfaction. Then, for ease of computation it is assumed that the average annual income is $30k, which means the loss of $1 is equivalent to the loss of 1/100,000 wellbeing units. Since an extra year of life delivers 7.5 wellbeing units, we should be willing to pay up to $750,000 to save one wellbeing unit.

This produces a figure that is notably higher than in traditional approaches ($150k-$250k). The interesting point to note here is that the revealed value of life, as a result of the policies that have been put in place to prevent the spread of COVID-19, have proved much closer to the estimate in the wellbeing approach than in the traditional approach.

Lastly, some producers of cost-benefit analyses will estimate the statistical value of lives, as opposed to life years. These can lead to wide variations in outputs where a policy has a substantially different impact for different age cohorts. It has been argued by some during the pandemic that using a life-year approach would have been more appropriate and that this approach would have made the case for lockdowns weaker. We do not intend to comment on this debate in this article, however we do comment on which approach we prefer in the following section.

Distributions

Policies will not have equal impacts on all sections of society and therefore a significant challenge for any policy analysis is to how to capture all these heterogenous effects. These need to be captured across a number of dimensions too. The most obvious is of course income or wealth, but policymakers will also need to consider effects to different generations, races and regions, as well as the potential for differing outcomes to those with less education or job security. This also opens up difficult questions, such as whether to proceed with a policy with larger costs than benefits, but these benefits are significantly focussed towards marginalised sections of society? In this way, should greater weight be placed towards these groups in the analysis? And if yes, how much weight? We will have more to say on this in the following section.

Discounting

Discounting in policy analysis allows for costs and benefits with different time spans to be compared on a common 'present value' basis. The public sector discount rate adjusts for social time preference. In traditional frameworks, the Social Time Preference Rate (STPR) is made up of two components. First is 'time preference' - this captures the preference for value now rather than later. And second is the 'wealth effect', this reflects expected growth in per capita consumption over time, where future consumption will be higher than current consumption and is

expected to have a lower utility. Plausible estimates from prior analysis of the discount rate using this approach are equal to 3.5%, with 1.5% being attributable to time preference and 2% for the wealth effect. This means that proposals for the discount rate when policy analysis is completed using wellbeing units are equal to 1.5%. The wealth effect is excluded since the diminishing marginal utility associated with higher incomes doesn't apply, as the welfare associated with additional years of life will not decline as real incomes rise.

It is not a simple process to determine how intergenerational effects should be considered across the time horizon. This has notable consequences when considering environmental policies. For example, a policy may reduce wellbeing today in order to preserve the wellbeing of future generations. There isn't a clear solution to this issue but we give our view in the following section.

Isolating impacts

A full policy appraisal requires identifying all of the possible welfare effects, both direct and indirect. This means identifying several components that influence wellbeing from the policy change is likely. For example, a policy that generates employment will increase an individuals financial security, as well as their sense of purpose. There are also likely to be tangible health benefits too. However, isolating these effects and ensuring that we avoid double counting is a difficult challenge since many of these changes will be inter-related (i.e. the health benefits may be partly due to being more active and partly due to less financial stress, which would crossover with the income effect). Ideally, randomised control trials would test the overall wellbeing effect of a specific policy. But of course, this will not always be possible to do quickly and if the policy has a long time horizon this would only capture the short-term wellbeing impact. Otherwise, regression analysis will need to carefully consider the best approach in order to isolate each of the individual effects.

Uncertainty in real-time analysis and unintended consequences

The benefit of hindsight makes everyone an expert. However, policymakers do not have the luxury of this benefit and they often need to weigh up the costs and benefits of policy action in limited time and with highly uncertain outcomes. A good example of this is from a discussion paper written in April 2020, which utilises a wellbeing framework for analysing the costs and benefits of when to release from lockdown in the UK. The authors acknowledge that their estimates are subject to major uncertainties - both in terms of the forecasts of outcomes and their corresponding impacts on wellbeing. The analysis requires big assumptions to be made, which if they turn out to be significantly off the mark, then this could make dramatic changes to the final policy proposal. However, the authors contend that judgement is matter of balancing one effect against another and this becomes easier once attempts are made to assign magnitudes to various effects. If this model was refined, with upper and lower bounds of estimates being produced using the appropriate level of confidence, then this would form a framework that would be very useful for forming policy proposals.

Finally, unintended consequences of a chosen policy action are largely unavoidable up to a point, as a result of uncertainty. This means continuous evaluation of a policy decision, ideally in real-time, is highly important. This means that tweaks can be made to the policy to correct for the unintended consequences. It is important therefore when first considering the policy proposal the extent to which decisions can easily be reversed. In some cases it may be beneficial not to go ahead with a policy even if the benefits outweigh the costs but because in the event a low probability risk crystallising, the consequences would be large and irreversible. For example, this analysis on genetically modified foods in the US shows that the scientific evidence is that the health and environmental risks of these products are likely negligible but some form of regulation may still be beneficial on the grounds of uncertainty and irreversibility. This would be viewed as taking a risk averse approach to policymaking.

Section 3: Looking ahead

The fact that this debate is taking place more frequently, and the calls for the use of wellbeing metrics in policy analysis are getting louder, is a sign that progress is being made. Our view is that we don't yet have a large enough body of evidence to be able to apply wellbeing analysis to all policy issues. However, in cases where there is good evidence, we think that wellbeing should be used as the main unit of measurement, instead of the traditional monetary approaches. In this section we outline how we think this should be structured and give our views on how best to face the methodological challenges raised in the previous section.

A new policy framework for improving lives

We believe that the public policy strategy should be data driven, values focussed and transparent. Policy analysis should start from defining key priorities, which requires assessing macroeconomic and social trends, in order to identify where public resources would be of best use. This should be led by a dashboard of economic and social indicators. All of the measures used should be managed and published by the national statistical office and the government should be transparent about how it is using this data to form its policy strategy. This strategy could be updated periodically as a result of changing trends in the data. The question of which data should be included in this dashboard will be answered in subsequent a quarterly research article published this year.

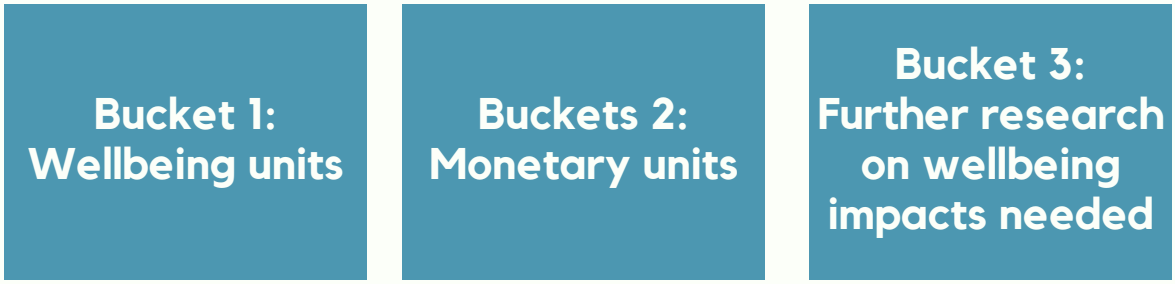
Then, in terms of policy analysis, our view is that policy proposals in wellbeing units should be considered as the gold standard approach. These measures should shift from being on the periphery and towards the centre of policy analysis. This is primarily because of the fact that traditional

approaches use monetary units as a proxy for measuring welfare and there is evidence to show that monetary net benefits are not always consistent with social welfare net benefits. If instead, we are able to measure welfare directly, then why do we need to use a proxy?

We think that it's important to be flexible with the approaches used however. Often, without a big enough body of evidence at the moment, it will prove very difficult to apply wellbeing measures to real world issues. In cases where monetary measures have been used in the past and the judgement is that this approach captures the costs and benefits of the policy decision, then we believe continuing to use this approach would be appropriate. This judgement would need to be justified, ideally being supported by empirical evidence.

A recent paper by a group of academics has proposed that the UK government should create a wellbeing impacts agency, in order to build on the body of evidence related to wellbeing and highlight where the most important gaps are, thus informing priority areas for future research. We concur with this approach and think that in particular, this should be applied where it is expected that the monetary approach is unlikely to be a good proxy for welfare. In this way it would be necessary to design a framework which would sort policies into three buckets. First, those that can be analysed by directly measuring the wellbeing effects. Second, those that continue to be analysed in monetary units. And third, those that cannot be measured easily using either approaches and therefore flagged as a future area for wellbeing research. The benefits of this approach are that it would be flexible and allows for a transition towards wellbeing being at the centre of policy.

A filtration process for sorting policies (in order of preference)



Creating an environment for progress in policy

By creating a dashboard of economic and social indicators that form the policy strategy, this will force the government to be more transparent about its objectives. It will also mean that the government will more easily held to account as to whether it has been able to achieve its objectives. Trust in government has been shown to be a good predictor of how countries performed in managing the pandemic. Greater transparency will elicit greater trust from citizens. This is relevant in the policy appraisal stage too. Our view is that the government should be transparent about the indicators and method that it is using when making policy decisions. Effective transparency matters in a world of increasing information. This means layered information for different audiences and being clear about where the uncertainties lie. In addition, unless there is a notable time limitation to doing so, the policy process should produce a discussion paper where experts are able to comment on a policy action before it is put into place. This will reduce the likelihood of unintended consequences and refine the quality of the proposal.

As outlined in the previous section, there are many distributional considerations that policy analysis needs to capture. We also explained how biases can affect survey responses to willingness to pay questions. To combat these issues, the group of people who produce policy proposals should be as representative of the population they are producing these proposals for as possible. Greater diversity of thought, background and experiences will help to create more sophisticated, balanced and fair policy proposals.

Facing methodological challenges

Below we briefly comment on each of the methodological challenges raised in section 2 of the paper to offer a view of what we think are the most sensible ways to approach these challenges.

Starting with the statistical value of lives, currently none of the

approaches are ideal. The stated and revealed preference approaches are subject to a number of biases, while the wellbeing approach outlined from the World Happiness Report is relatively approximate and relies on a number of assumptions. However, this approach could be refined to be more accurate and unique for each country without much effort. Our view is that using life-years, as opposed to lives, in the estimation is a more proportionate and fairer approach. This will mean that the policies will more adequately capture the demographics of the population, resulting in a more precise analysis of the benefits and costs of a policy. This argument also receives widespread public support.

Regarding distributional concerns, it is our view that these should be included within the empirical framework of the policy analysis where it is possible to do so. There are already suggestions on how this could be done and the only added challenge that this adds is the choice of the weight applied to the redistributive term in the calculation. Potentially in countries where happiness inequality is higher, the redistributive term could be larger and adjusted downwards as progress on inequality is made. In cases where heterogenous effects could not be captured empirically, it is important that these remain considered qualitatively within the analysis. For example, in a case where a policy only has a small net social welfare benefit but is likely to negatively effect a marginalised group in society, this qualitative analysis could shift the policy to be rejected.

The topic of the size of the discount rate to be used in policy analysis is a contentious issue. Our view is that estimates used in the analysis should be shifted depending on the policy being considered. This is how policies are currently assessed in the UK. Those policies that are assessing long run risks, where the benefits are large to investing today (i.e. climate change) should have a near-zero discount rate being applied in the analysis. While shorter term policies, which are likely to have limited impact on future generations, a larger discount rate should be applied. The estimates used in the analysis using wellbeing units should not need to be altered much through time. This is less true for discounting using the monetary approach to policy analysis, since the wealth effect component

may need to be re-estimated depending on the performance of the economy.

In terms of isolating effects, improvements in modelling approaches, alongside a new wellbeing agency to bolster the body of evidence, will help to reduce the impact of this challenge. More randomised control trials over longer time periods will have the largest effect on solving this issue, as modelling adjustments can only go so far. Higher frequency experienced-based data will help to identify causal relationships. As models for completing this analysis improve and the body of evidence becomes larger, the amount of assumptions that are needed to be made in the analysis will become smaller. This will help to solve uncertainty issues. In addition, feedback from industry experts will help to reduce unintended consequences directly (by influencing that individual policy) and indirectly (by helping to refine modelling approaches to capture this feedback where possible and avoid these mistakes being repeated in the future).

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