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Intergenerational Wellbeing and Public Policy

An Integrated Environmental, Social, and Economic Framework

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The truth is the whole. The whole, however, is merely the essential nature reaching its completeness through the process of its own development.

George Wilhelm Friedrich Hegel (1770–1831). Preface, *Phenomenology of Mind*, 81–82.

Girol Karacaoglu would like his contribution to this book to be dedicated to Angela, Melissa, Michael, and Natalia.

Jacek B. Krawczyk dedicates his contribution to Diana, Aniela, Clara and Viktor.

Anita King dedicates her contribution to Richard, Peter, and Christina.

Preface

This book is about the design, implementation, and evaluation of public policy when the objective is to improve and sustain intergenerational wellbeing. Wellbeing is defined in terms of the ability of individuals and communities to live the lives they value. Wellbeing has several dimensions (collectively referred to as "comprehensive consumption") and a number of sources ("comprehensive wealth"). It is argued, and demonstrated, that unless an integrated environmental, social, and economic policy framework is adopted, public policy cannot achieve its objective.

When we introduce radical uncertainty and complexity into the environment, the policy framework changes significantly. *Satisficing*[1] replaces optimising as the *modus operandi* of policy, and building systemic resilience emerges as a primary focus for delivering the policy objective. Then, a wellbeing-focused public policy is no longer about creating and delivering predetermined outcomes. The substantive involvements of communities in the definition of desired outcomes, as well as in the design, implementation, and evaluation of public policies aimed at delivering those outcomes, become critical.

Philosophical and Institutional Foundations

The ultimate purpose of public policy is to improve the lives of individuals and communities, as they choose to live them, now and into the future.

We do not know how each and every individual wishes to live his or her life, nor do we wish to pass judgement on how they should be living their lives—as long as, that is, they do not prevent others from living the lives they value. There are an infinite number of possible lives, shaped by personal circumstances, including capabilities, opportunities, and preferences, as well as cultures, religions, political arrangements, geographical surroundings, and so on.

[1] This neologism was introduced by Simon (1955).

After quoting Thomas Jefferson ("The care of human life and happiness […] is the only legitimate object of good government"), Layard and O'Donnell (2015) go on to write "What should be the goal of public policy? We agree with Thomas Jefferson. What matters is the quality of life, as people themselves experience it. And the best judge of each person's life is that same person. Is she happy with her life; is she satisfied? In a democracy that should be the criterion for good policy" (ibid., p. 77).

We adopt this value judgement and the associated ethical value system as a foundation for good public policy. In doing so, we firmly ground the axiomatic and philosophical underpinnings of this book in the works of Adam Smith (see Smith (1790), Smith (1937)) and Amartya Sen (see Sen (2009), Sen (2017)), who jointly stand "in the tradition of classical political economy, where a separation of ethics and economics was unthinkable" Eiffe (2010) (p. 17).[2] Sen (2017) is a must-read for an understanding of the theoretical underpinnings of the argument that, in a policy context, we cannot develop and provide economic advice in an ethical void.[3]

In this book, we associate an individual's wellbeing with his or her ability to live the kind of life he or she values, on a sustainable basis. Good public policy contributes to individuals' wellbeing by enhancing their capabilities and opportunities (i.e., substantive freedoms) to do so.[4] Whether actual public policy pursues this purpose or not, and whose wellbeing is the focus of public policy, depends on the institutions that exist in a society. These institutions are the outcomes of social decisions, made by humans, chosen for their consequences; they reflect the evolution of the distribution of power in society. The distribution of power in turn is a reflection of the distribution of political and economic resources (see Acemoglu et al. (2005) and Acemoglu and Robinson (2013)).

Clearly, providing the "enablers" (in the form of improved capabilities and opportunities) to achieve a better life is simply a necessary condition; it does not guarantee the achievement of better outcomes. Indeed, "the key idea behind the capabilities approach is that individuals differ in their ability to transform resources into wellbeing or 'flourishing'" (Chakravarty and Lugo (2016), p. 246). If, to take an example, despite best efforts in the formulation and implementation of public policy, youth suicide keeps increasing in various communities around the country, should this be a concern for public policy as well? Our answer is an emphatic, "yes". We pay particular attention to this issue, of adjustments to how policy should

[2] See Markey-Towler (2016) for an attempt to demonstrate mathematically that economic policy cannot be developed in a political and philosophical vacuum.

[3] Needless to say, there are numerous other possible philosophical perspectives and ethical value systems that can serve as a platform for public policy. See Hausman et al. (2016), Sen (2017), and Sen (2009) for detailed discussions of some of these alternatives.

[4] Needless to say, in a democracy, it is unlikely that the electorate will be agnostic about the lives some people may choose to live, if sustaining those lifestyles requires considerable taxpayer support. We wish to thank Bryce Wilkinson for raising this point. We address some of these complexities in Chap. 5. In particular, we suggest there that giving substantive voice to local preferences in the design and implementation of public policy, and providing appropriate funding in support, may be one way of addressing this dilemma.

be designed and implemented to achieve desired outcomes (especially social and environmental outcomes), in Chap. 5. This is precisely why we put so much emphasis on both individual and community wellbeing in the design and implementation of public policy. When, despite best efforts, public policy does not achieve the desired environmental, social, and economic outcomes, it is the communities that bear the brunt of the associated costs. And, as we shall argue in Chap. 5, in a world of complexity and radical uncertainty, communities also emerge as the most effective and efficient instruments of public policy.

Analytical Framework

Suppose we do have the institutions in place to pursue good public policy. How then do we resolve the dilemma presented by our desire to improve people's lives, without knowing, or wanting to pass judgement on, how people wish to live their lives? In other words, how would we know whether we are succeeding in achieving our objective?

To assist with answering this question, we start with a broadly defined "well-being function" as the basis of our analysis, and as a guide to wellbeing-enhancing public policy. In doing so, as a first step, we follow Arrow et al. (2012) and define the object of interest for good public policy as intergenerational wellbeing.

Although we do not know, nor do we wish to pass judgement on, what lives individuals and communities value, we have the benefit of numerous studies, covering a large variety of countries and cultures across time, to help us identify the broader influences on individual and community wellbeing. In other words, based primarily on robust, survey-based, empirical evidence, we have a broad sense of the common elements of what individuals and communities value (see Boarini et al. (2014), Fleche et al. (2012), Smith (2015)). Arrow et al. (2012) refer to these collectively as "comprehensive consumption". They include not only standard marketed consumption goods and leisure, but also others such as health status, environmental quality, personal security, social connections, and so on. These correspond to the components of the OECD's Better Life Index (BLI) (see Durand (2015)). They are the "functionings" (beings and doings) that people have reason to value (see Sen (2009), Alkire (2016)).

The ultimate source of comprehensive consumption is "comprehensive wealth" (see Arrow et al. (2012)). This refers to the stocks of capital assets, broadly defined, that yield income and other sources of wellbeing now and into the future (ibid., p. 320). These assets include economic (or built) capital, human capital, natural capital, and social and cultural capital.

It is by expanding, enhancing, and protecting, these capital assets, as well as ensuring widespread access to them across society and across generations, that good public policy can push out (i.e., expand) our collective "wellbeing frontier", as we will explain in Chap. 1. To repeat, whether good public policy will be pursued

or not will depend on the institutions that prevail. These institutions in turn reflect the evolution of the distribution of power in society.

We can assess whether we are pursuing and achieving good policy objectives through four (complementary) mechanisms. First, by establishing whether more *resources* are being made available to support better lives—say, more funding for housing. Second, by assessing whether these resources are actually being converted into higher capabilities and opportunities for a better life (i.e., *functionings*)—say, better (quantity and quality of) housing. Third, and as a complementary step to the first two, by simply asking people, through various survey-based assessments of *subjective wellbeing*, whether their lives are actually improving or not. As a subset of, and complement to, the third mechanism, we can also specifically target the most disadvantaged people in the population, and ask them whether their lives are improving.[5]

Where intergenerational wellbeing is the objective of public policy, there needs to be a fourth assessment specifically targetted at evaluating whether public policy is creating the platform for sustainable intergenerational wellbeing. To anticipate the discussions of Chaps. 1 and 3, in this latter context, good public policies are those that expand the "wellbeing frontier".

Complex notation we sometimes use is carefully explained when we introduce it. Independently, the Glossary (from page 235) lists the majority of symbols used in the book.

Extensions

The first part of the book, comprising the first four substantive chapters, is essentially based on an expanded version of a standard intertemporal optimisation model. It asks and answers the question, "how far can we stretch this standard model, to serve as an analytical vehicle for a public policy that is focused on enhancing intergenerational wellbeing"? The main "stretch" is in the construction of a stylised model that integrates environmental, social, and economic influences (and, in particular, externalities associated with these influences) on wellbeing.

[5] One may legitimately ask, of course, why we would bother with all these three steps, instead of simply going directly to the third one, and asking people how they are feeling about their lives. One of the several answers to this question is *adaptive preferences*; by way of example, consider an athlete who becomes resigned to the fact that she will never represent her country in the Olympics, but is grateful for any improvement in her performance over time. The contributions in Adler and Fleurbaey (2016), including Dolan and Fujiwara (2016), Clark (2016), and Alkire (2016), provide very useful critical surveys of the literature on both the objective and subjective ways of measuring progress in wellbeing. See Alkire (2016) in particular, which has numerous references to Amartya Sen's foundational work, about the necessity of using all three mechanisms, or steps, listed above in assessing the effectiveness of a policy that has improving wellbeing as its objective. In this broad context, Stiglitz et al. (2010) also provide an extremely useful reference.

Then, in the second part of the book, in Chap. 5, we introduce two critical factors that cannot be ignored: radical uncertainty (see King (2016), Chap. 4) and complexity (see Arthur (2014)). Under radical uncertainty, with the set of possible states of the world and/or their probabilities unknown, optimisation at an individual or policy level becomes impossible. Under complexity, in a social context, actions and outcomes cannot be separated—there is "reflexivity": there are no external (exogenous) social or economic facts that are independent of our actions. Individuals' actions and interactions with others influence the social and economic outcomes that emerge, which in turn lead to reactions, and on it goes (see Soros (2003)).

Such extensions do not alter the objective or domains of public policy—but they do have a major bearing on the primary focus and instruments of policy.[6] The primary focus of policy switches to building resilience to systemic risks. This serves two purposes. First, it attempts to protect the environment, society, and economy from catastrophes. Second, it aims to create a fertile environment that nourishes creativity. There is also a parallel, and complementary, increase in the reliance on local- or community-based solutions and implementation mechanisms in addressing public policy challenges.

Readership

The primary audience for this book are policy analysts and advisers, and academics. The book is also intended to serve as supplementary material, for undergraduate and graduate courses on public policy, wellbeing economics, welfare economics, as well as economic growth and development.

The first (*Introduction and Overview*) and last (*Themes*) chapters of the book are written for general readership; they do not require any particular technical background. The remaining chapters of the book include some technical material. An introductory part, for each section of each chapter, presents the basic material in words and with the help of diagrams. This is followed by a mathematical exposition, which serves two purposes. First, it provides a tool for policy analysis and numerical simulations. Second, it is intended to demonstrate that one does not need to compromise rigour to develop rich, multi-dimensional, policy-informing models.

Readers can skip the technical parts of each chapter without losing the substance of the argument. Readers who wish to read the technical parts of each chapter need to be familiar with calculus, including partial differentiation, as well as intermediate micro- and macroeconomics. Readers who would like to follow all our derivations and apply the proposed mathematical formulae should be familiar with difference and differential equations. For those who need it, we suggest supplementary readings on the technical parts of each chapter.

[6] See Schmidt (2015) for an extremely useful discussion, from an evolutionary perspective, on the implications of complexity and fundamental uncertainty for the justification, design, and implementation of public policy.

Where appropriate and relevant, the substantive chapters include references to the empirical literature in support of the main assumptions that underpin the various analytical models that are used throughout the book. At the end of each substantive chapter, we also offer some challenges for further consideration that build on the material presented in the chapter. These come in two distinct parts. Part one is non-technical, targeted at readers who do not wish to study the mathematical sections of the chapter. Part two contains challenges of a more technical nature, based on the mathematical contents of the chapter. These two types of challenges should help student–readers to extend what they have learned in each chapter. To help with that, we suggest some references for further reading.

Organisation of the Book

The book has seven chapters organised into two parts. A common thread that runs through all the chapters is the specification of intergenerational wellbeing as the primary objective of public policy. A second, and complementary, thread that runs through the book is the absolute imperative of adopting an integrated approach to environmental, social, and economic policies. These common threads are woven together through numerical simulations, examples, and case studies, to demonstrate the interaction between environmental, social, and economic variables towards enhancing intergenerational wellbeing on a sustained basis. This is where the use of formal or mathematical models throughout the book comes in handy. The main purpose of introducing these models is to identify and formalise the key interdependencies between environmental, social, and economic influences on wellbeing. In the absence of such formal models, it is very difficult, if not impossible, to be able to quantify and simulate the influences of alternative policy interventions on wellbeing.

Part one of the book comprises the first four chapters.

Chapter 1, *Introduction and Overview*, is the introductory chapter and provides an overview of the contents of the book.

Chapter 2, *Stylised Model*, introduces stylised mathematical models of several environmental, social, and economic processes, crucial for coordinated policy formulation. Section 2.2 is on *Consumption, Wellbeing, and Wealth*; Sect. 2.3 covers *Production and Wellbeing*; Sect. 2.4 is on *Ideas and Technology*; Sect. 2.5 on *Finance - Money, Credit, and Banking*; Sect. 2.6 on *International Connections*; Sect. 2.7 on *Pulling the Pieces Together - Market Clearing and Equilibrium*; and finally Sect. 2.8 on *Environmental, Social, Economic Externalities*.

Chapter 3, *Wellbeing-Enhancing Public Policy—Stylised Model*, attempts to extract policy guidelines based on the insights gained from the stylised model of Chap. 2. Here we focus more exclusively on the formulation of public policy. We also provide an example of how the model works, through a numerical simulation of the impact of a policy move that is intended to reduce the level of poverty. One

of the main motivations behind this particular example is to demonstrate the interaction of environmental, social, and economic influences on wellbeing.

Chapter 4, *Operational Policy-Simulation Model* introduces, and demonstrates the purpose and uses of, a policy-informing simulation model that can be used to operationalise the public policy insights suggested in Chap. 3. The chapter also discusses ways of interpreting and communicating the results of the simulations performed by such a model. The model is based on the eleven critical influences on wellbeing, which are the components of the OECD Better Life Index (BLI). In order to simulate the outcomes of policy actions, the model has to assume particular linkages among the eleven components of the BLI, as well as between them and the capital assets that provide a critical source for these ingredients. The nature of these linkages (e.g., between health, leisure, productivity, production, and pollution) is informed by, and consistent with, the stylised model of Chap. 2. The primary purpose of these simulations is to demonstrate how a set of policy interventions, informed by the trade-offs and complementarities between environmental, social, and economic influences on wellbeing, can be designed to achieve a sustainable improvement in wellbeing.

Part two comprises the last three chapters of the book.

Chapter 5, *Wellbeing-Enhancing Public Policy - Extensions*, explores the implications of complexity and radical uncertainty for the design and implementation of public policy. The focus of policy shifts from directly influencing wellbeing by manipulating key influences such as health, environmental quality, and housing, to enhancing resilience. Resilience has two key dimensions, the capacity to absorb shocks, and the ability to adapt in the aftermath of shocks.

Chapter 6, *Viability Theory for Policy Formulation*, formalises the concepts introduced in Chap. 5. It introduces and demonstrates the uses of viability theory as an alternative, and promising, modelling device for numerical policy simulations when we do have *satisficing* (rather than optimising) agents, and the focus of public policy is primarily on investing in building resilience. If achieving resilience is defined as a problem of keeping some key indices in a closed set, for example pollution below a certain level, then knowledge of initial states from which the closed set can be attained, given the system's dynamics and the strength of instruments, is a viability theory problem. We demonstrate how various policy instruments can be used to ensure that the whole integrated system remains within sustainable bounds. Allowing for constrained instrument adjustments is an important feature of solutions based on viability theory. For example, in the context of policy making, the speed with which taxation can change may be constrained by an election promise. Varying this speed and/or the bounds for the key economic indices will produce solutions of different levels of resilience. Focus on resilience, as the primary domain of public policy, is the key link between Chaps. 5 and 6.

Chapter 7, *Themes*, summarises the main themes of the book.

Readers will note, as they go through the book, that there are quite a few references to New Zealand in our policy discussions and examples. There are two reasons for this. First, although it is a small country, certainly in terms of its population size of less than five million people, New Zealand is one of the very few

countries in the world that has chosen to adopt a wider wellbeing framework in its design, implementation, and evaluation of public policy. The ongoing intense effort, on the part of the New Zealand public sector, towards operationalising this aspiration—partly in preparation for the Government's 2019 "Wellbeing Budget", may be of interest to a wider international audience. Second, all three of us lived and worked in New Zealand for a considerable period of our lives—in fact two of us (Anita and Girol) still live and work in New Zealand.

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This book uses some results from earlier work, as well as joint research carried out with different co-authors.

In particular, parts of Chaps. 1–3 draw on the work that Girol Karacaoglu started when he was the Chief Economist of the New Zealand Treasury (see Karacaoglu (2015)).

Similarly, Chap. 4 draws on the work that Anita King is currently doing at the New Zealand Treasury (see King (2018)).

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Contents

Part I

Part I of the book, which includes the first four chapters, is based on extensions of the standard dynamic optimisation model.

We demonstrate that the standard model can accommodate a wider wellbeing framework. The dimensions of wellbeing are represented by a broader set of consumables, referred as "comprehensive consumption", which are sourced from a broad set of assets ("comprehensive wealth").

The expanded formal models provide useful tools for identifying the justifications for policy interventions. They also provide guidance on the types of interventions that would be most effective and efficient in enhancing intergenerational wellbeing.

What is critical, especially for a wellbeing-focused public policy, is not only the diversity of consumables and capital assets as sources of wellbeing, but also the interdependencies between them. The design of public policy can exploit the complementarities and substitutabilities between and among these goods and assets towards enhancing intergenerational wellbeing.

We need quantitative models to be able to identify the full set of these interrelationships. We also need such models to quantify the signs and magnitudes of the same. This is critical in designing policy interventions. It is also critical in prioritising investments in the components of "comprehensive wealth" to increase the wellbeing-impact of these interventions most efficiently.

These quantitative models are operationalised by first calibrating the key parameters, and then performing numerical simulations of the effects of policy interventions.

Chapter 1
Introduction and Overview

Abstract This chapter provides an overall introduction to, and overview of, the whole book. It starts by framing the purpose of good public policy as improving the wellbeing of individuals and communities. *Wellbeing* is defined in terms of people's abilities to live the kinds of lives they have reason to value. Public policy can pursue its purpose by focusing on improving the capabilities and opportunities (i.e., substantive freedoms) of individuals and communities to pursue the lives they wish to live. This in turn requires an increase in, accompanied by a broadening access to, "comprehensive wealth". We ask, and answer, the question of why we need public policy at all in this context. Our answer is much wider than the one that is based on the standard "market failure" argument. Following an explanation of the several justifications for public policy, we specify the domains of public policy in terms of the dimensions of a collective "wellbeing frontier". This is then followed by a discussion of appropriate policy instruments, including institutions, that can be used to extend this frontier. The common thread that runs through the chapter, as well as the whole book, demonstrated with the help of examples and numerical simulations, is the interaction between environmental, social, and economic influences on wellbeing. The chapter ends with an overview of the relevant empirical evidence.

Key Points of the Chapter

This chapter shows how to:

- Critically assess the deficiencies of income (or national income at the aggregate level) as a measure of the human condition.
- Define wellbeing at both a conceptual and an operational level - and discuss the sources of wellbeing and how they may be measured.
- Explain and discuss the linkages between "comprehensive consumption", "comprehensive wealth", and wellbeing.
- Evaluate the differences between a public policy that is focused on improving national income versus national wellbeing on a sustained basis.
- Critically discuss the fundamental cases for public policy - why the government should be involved in trying to improve people's lives.
- Differentiate between the indicators and domains of public policy, and how these relate to wellbeing.

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- Appreciate the nature, and significance, of empirical evidence in informing the choices of wellbeing indicators.
- Critically assess the differences between a "welfare state" and a "wellbeing state", and the implications of these differences for the role, domains, and instruments of public policy.

1.1 Introduction

Our broad objective is to make it possible for individuals to live the kinds of lives they value, in the present and into the future - without compromising others' rights to do the same. This is what individual and community wellbeing is all about.

Working with this broad canvas as background and context, this book is organised around, and tries to answer, the following questions:

- Why is there a place for public policy at all in improving individual and community wellbeing?
- If there is a place for it, what is its purpose?
- What are its domains – i.e., what should its focus be?
- What are its instruments?
- How does it operate - what kind of delivery mechanisms are used?
- How do we ensure that policies are time consistent – they evolve with the public's preferences?
- Are the answers to any of the questions above affected by fundamental uncertainty and complexity; if so how?
- How do we know if public policy is working - is it achieving its objective?

We explore, and provide answers to, these questions with the aid of a formal analytical framework and a set of models. The formal models we introduce and use are critical in identifying the interdependencies between various instruments of public policy, in pursuing our main objective of improving wellbeing. We also need these models to operationalise the theoretical framework, and assess the wellbeing-implications of various policy interventions.

1.2 Justification for Public Policy

Why does the government have any role to play at all, towards helping enhance wellbeing on a sustained basis?[1] After all, individuals – partly through voluntary cooperation and exchanges with others – can and do invest in their own economic

[1]Note that, "the government" is the generic term we use to refer to any collective agency through which we may wish to organise the delivery of certain products or services; it does not necessarily refer to the central government.

and human capital, and make all sorts of arrangements to manage associated risks (partly through the purchase of insurance contracts), to sustain their own and their families' wellbeing into the future. They also voluntarily form communities and associations to create the collective goods and services they value.

The standard economics answer to this first question rests on "market failure". As (Gintis 2014, p. 1) points out, in traditional economic analysis based on "market failure", there are two distinct roles for economic policy: regulating market dynamics (e.g., stabilizing business fluctuations and preventing catastrophic breakdowns) and influencing the equilibrium allocation of economic resources (e.g., financing social infrastructure, providing public goods, and regulating industrial effluents). In other words, system-wide, resilience-enhancing roles; and marginal, static, and dynamic allocative, roles. The "market failures" that underpin these roles fall under five categories: increasing returns-to-scale; public goods; externalities; ensuring product quality (information asymmetries); merit goods (ibid., pp. 3–4).

Governments fail too. This happens for all kinds of reasons, which include the fact that they are subject to political forces that lead them to favour special interests rather than the general good. Governments do not have at their disposal all the information required, concerning the people's preferences and the operation of the economy, to be able to design optimal solutions. In any case, "the market economy is a complex, dynamic, and adaptive system more like a natural ecology than a man-made machine. The complex economy cannot be controlled, as the planners would like, but it can be influenced by very carefully formulated and judiciously applied 'rules of the game' that move market dynamics in preferred directions" (ibid., p. 5).

A very recent and useful discussion of the case for public policy in traditional economic analysis is provided by Tirole (2017), especially in chapter six. After reviewing the various categories of market failures, Tirole proceeds to discuss the various types and sources of state (or government) failure as well. He concludes, on the basis of his careful analysis, that "the market and the state are not alternatives but, on the contrary, are mutually dependent. The proper functioning of the market depends on the proper functioning of the state. Conversely, a defective state can neither contribute to the market's efficiency nor offer an alternative to it" (ibid., p. 162). He then proceeds most usefully to outline a process for reforming the state so that it does perform its complementary function, to the most useful services of markets, towards the common good (ibid., pp. 169–173).

The only economic rationale for public policy is not market failure; nor is economic life the exclusive domain of public policy. Mazzucato (2016), for one, emphasises the wider role of public policy in the economic domain (going beyond simply fixing market and/or system failures), by drawing on a vast literature on the subject. She too, just like Tirole, but in a wider context, emphasises the complementary roles of the state and markets. Mazzucato (2015) argues that when governed effectively and efficiently, "the State's visible hand is firm but not heavy, providing the vision and the dynamic push (as well as some 'nudges') to make things happen that other-

wise would not have" (Mazzucato 2015, p. 2).[2] Such actions are meant to increase the courage of private business. This requires understanding the State as neither a 'meddler' nor a simple 'facilitator' of economic growth. It is a key partner of the private sector – and often a more daring one, willing to take the risks that business won't" (ibid., p. 31).

A related and broader role for public policy in the economic domain is grounded in the interface between complexity theory, evolutionary theory, and radical uncertainty (see Antonelli 2016; Colander and Kupers 2014; Roos 2015; Schmidt 2015). As Schmidt (2015) forcefully argues, referring to the "fallacy of failure thinking", the debate about "market failure" versus "government failure", as it relates to the common good, is a logically and empirically unresolvable ideological debate. From this perspective, the search for optimal policies based on an equilibrium framework is a meaningless and futile exercise. In a world of radical uncertainty and complexity, there is no exogenously given "optimum" (equilibrium) benchmark against which we can assess the performance of markets, the government, or any other set of institutions; so "failure" cannot be determined. It is a given that markets, governments, and communities are all "imperfect institutions", whatever that may mean. The key is to acknowledge this,[3] as well as the complementary strengths of all these institutions towards improving overall wellbeing, when they do function reasonably well. We should strive to design public policy in a way that enhances the governance of all these institutions towards improving their collective efficiency and effectiveness in improving individual and community wellbeing.

Indeed, when improving wellbeing, rather than simply economic outcomes, is specified as the objective, the justification for public policy becomes much richer. People's wellbeing is influenced by environmental, social, and economic factors and their interactions. These interactions are the source of a whole range of externalities that provide additional justifications for active public policy.

1.3 Purpose of Good Public Policy

We start with three observations as the foundation of our analysis for the purpose of good public policy, when the broader objective of policy is to enhance individual and community wellbeing on a shared and sustained basis.

First, individuals constantly strive to either preserve or improve their lives, subject to their capabilities and opportunities (i.e., substantive freedoms), and conditioned

[2] "Most of the radical, revolutionary innovations that have fuelled the dynamics of capitalism – from railroads to the internet, to modern-day nanotechnology and pharmaceuticals – trace the most courageous, early and capital-intensive 'entrepreneurial' investments back to the State".

[3] In an approach to policy design based on viability theory, explained in Chap. 6, the evolution of economies is influenced by *viable* policies.

by the incentives that surround them.[4] In doing so, they are substantially influenced by prevailing institutions.

Second, both the choice of lives people value, and how they pursue their valued lives, are conditioned by the social context in which they live. "Rationality" is thus a fundamentally social concept, reflecting the interdependence of individual and community wellbeing. Individuals are rational in an adaptive sense, operating in a social context, and bounded by decision-making costs, and various psychological, computational, and other constraints. As conditions change, if superior alternatives become available, most individuals will adapt their behaviour to exploit these superior alternatives to improve their lives (see Savioli and Patuelli 2016); others will be content to continue living the way they are.

Rationality is not restricted to self-interest and consistent choice. Both prudent and ethical behaviour are key ingredients of rationality, motivated by a human instinct for self-preservation, as well as a human drive to improve own lives. Self- (as distinct from purely selfish) interest is clearly a motivating force, based however on empathy as a foundation for both moral judgement and an instinct for survival. Thus, being rational has to do with reflecting about one's options and the consequences of one's actions, and having good reasons for one's choices (see Eiffe 2010, p. 8 and Sen 2004). As Costanza et al. (2017) express it, "most of the assigned values to goods, services, people or cultural achievements have to do with the survival of the humans as individuals, many with the wellbeing of individuals and social groups, and some with the ethical considerations humans make about other people's and other species' rights to live" (p. 8).

Third, although we do not know, nor do we wish to pass judgement on, how people want to live their lives, we have the benefit of numerous studies, covering a large variety of countries and cultures across time, to help us identify the main influences on individual wellbeing. In other words, based primarily on robust, survey-based, empirical evidence, we have a broad sense of the common elements of what individuals value (see Boarini et al. 2014; Fleche et al. 2012; Smith 2015).

Based on previous works summarised in Atkinson (2015), Sen (2009), Stiglitz et al. (2010), O'Donnell et al. (2014), Braunerhjelm and Henrekson (2016), Feldman et al. (2016), Gough (2015), McCloskey (2014), we specify the purpose of good public policy as enhancing (not necessarily maximising or optimising) the capabilities and opportunities of individuals to pursue the lives they have reason to value (i.e., to increase their wellbeing),[5] helping them remove the obstacles they face in this pursuit and, in doing so, making sure that we do not blunt the incentives of individuals to do the best they can for themselves (see Gleisner et al. 2012).[6]

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[4] This is not to deny the existence of many individuals who, for various reasons, are simply incapable of making such deliberate decisions. Good public policy, through various means, such as institutions for the mentally disabled, can help them.

[5] Or, to use the language of Phelps (2013), to provide opportunities and capabilities for individuals to flourish and prosper, towards creating an inclusive society that will in turn underpin mass flourishing.

[6] Needless to say, limits will have to be imposed on those who want to live their lives in total disregard for the wellbeing of current and/or future generations. Such limits must be ethically based, and able to withstand intense and rigorous public scrutiny. We thank Jonathan Boston for raising this point.

We start with a broadly defined "wellbeing function" as the basis of our analysis, and as a platform for exploring wellbeing-enhancing public policy. In doing so, as a first step, we follow Arrow et al. (2012) and define the object of interest for good public policy as intergenerational wellbeing. "When scholars adopt intergenerational wellbeing as the object of interest, their presumption is that at any given date social wellbeing is not only the wellbeing of the current generation, but also the potential welfare of the generations that are to follow. The point is to ask whether the society under study is functioning sufficiently well to ensure that some measure of intergenerational wellbeing does not decline" (ibid., p. 318).[7]

Arrow et al. (2012) formulate wellbeing as a function of "comprehensive consumption". The components of comprehensive consumption include not only standard marketed consumption goods and leisure, but also others such as health status, environmental quality, personal security, social connections, altruism, and so on. They broadly correspond to the components of the OECD's Better Life Index (BLI) (see Durand 2015). They are the "functionings" (beings and doings) that people have reason to value (see Sen 2009; Alkire 2016).

The OECD's Better Life Index (BLI) (see Durand 2015; Van Zanden et al. 2014) focuses on the main influences on, or spheres of,[8] individual wellbeing presented in Fig. 1.1.

These spheres are classified under *quality of life* (health status, work-life balance, education and skills, social connections, civic engagement and governance, environmental quality, personal security, subjective wellbeing) and *material conditions* (income and wealth, jobs and earnings, housing). The identification of these spheres is based on extensive consultations with the wider public (see Watson et al. 2016) and/or informed by empirical work (see Di Tella and MacCulloch 2008; Au et al. 2015; Benjamin et al. 2014; Ward 2015). It is also very important to note the broad correspondence between the main influences on wellbeing highlighted here and the "universal characteristics of needs satisfiers" (p. 1196), or the 11 categories of "intermediate needs" (p. 1202), that Gough refers to (see Gough 2015). Indeed, as Gough emphasises in referring to the work of Alkire (2005), there are significant overlaps with Alkire's 39 lists of dimensions of human development as well. Thus, although we recognise the significant philosophical differences between "needs based", "preference based", "subjective wellbeing based", and "capabilities based" approaches highlighted by Gough (2015), as well the various contributions to Adler and Fleurbaey (2016), the policy package that is suggested by our integrated

[7]This is very much an extension and adaptation of the standard dynamic optimisation model to the problem at hand. In the second part of this book, especially in Chaps. 5 and 6, we explicitly and deliberately introduce radical uncertainty and complexity into our analysis, and explore their implications for the design and implementation of public policy.

[8]We make reference to "spheres of wellbeing" as a tribute to the great work by Walzer (1983). Walzer emphasises that some of the spheres of justice are incommensurable. We suspect what he really means is that they are not comparable or rankable, irrespective of how much reason we bring to bear on relevant comparative valuations (see Sen 2017, p. 456). Alternatively, we can argue that various spheres of wellbeing are complementary for the purposes of overall wellbeing. We thank Geoff Bertram for bringing Walzer's work to our attention.

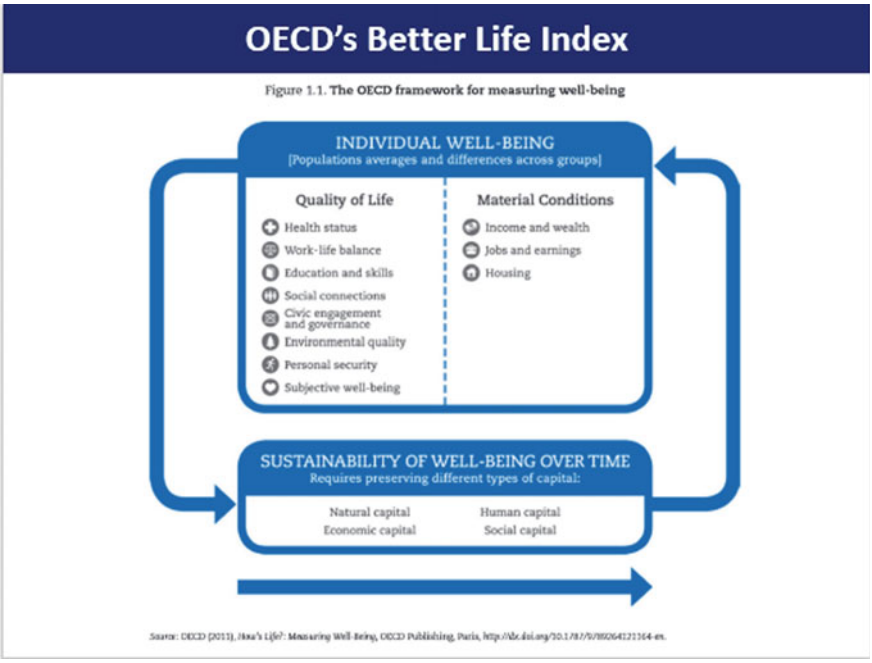

Fig. 1.1 OECD BLI

approach and associated model would be perfectly consistent with all four (see Chap. 3).

If people (or the government as the representative of the people) are able to assign some desirability limits to each sphere of wellbeing, then keeping "comprehensive consumption" inside these limits can be technically interpreted as a viability theory problem, as we explain in Chap. 6.

The ultimate source of comprehensive consumption is "comprehensive wealth" (Arrow et al. 2012). This refers to the stocks of capital assets, broadly defined, that yield income and other sources of wellbeing now and into the future (ibid., p. 320), to be conceptualised as the discounted present value of our overall future stream of wellbeing. These assets include economic (or built) capital, human capital, natural capital, and social and cultural capital. "[...] Because the determinants of intergenerational wellbeing are the multitude of capital assets the economy has inherited from the past, the criterion function for sustainable development reduces to a weighted sum of the stocks of those assets – the weights being the marginal contributions of the stocks to intergenerational wellbeing. The weights are therefore the assets' shadow prices, and the weighted sum is the economy's wealth" (ibid., p. 318). This assumes *weak sustainability*,[9] and an increase in comprehensive wealth is referred

[9]Refer to footnote 15 for a discussion on when and why we may want to differentiate between weak and strong sustainability.