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TOWARDS A MACRO THEORY: RETHINKING METHODOLOGY IN WELFARE ECONOMICS

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TOWARDS A MACRO THEORY: RETHINKING METHODOLOGY IN WELFARE ECONOMICS

ABSTRACT

This dissertation is a theoretical exploration of whether economic methodology should shift from reductionism in traditional economic thinking on welfare to a "**macro**" approach, i.e. one that is based on aggregate outcomes which cannot be fully explained through reductionist perspectives of individual behaviours.

Welfare economics is dominated by mainstream thinking based on reductionist perspectives of individual behaviours. Such perspectives form the basis of fundamental concepts in welfare economics yet have substantial limitations and deviate from what is measured and applied in the real world. Economics has consequences for real people, and a business-as-usual approach should not continue. Other theories beyond fundamental concepts, such as those on achieving efficiency in a world where distortions exist, social contexts affecting economic outcomes, alternate ways of evaluating economic policy, and debates on equity, highlight important elements not adequately addressed by traditional thinking in welfare economics. An alternative methodology is desired. A macro approach, i.e. one that is based on aggregated outcomes rather than reductionism, is advocated. Macro concepts can be informed by theories on complex systems, human agency and alternate ontological frameworks. This is an exciting area for the future of economic thinking.

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INTRODUCTION

Welfare economics, for good or for bad, has heavily influenced public policy discussion and decision making for the best part of recent decades. Traditional theoretical concepts based on reductionist perspectives of individual behaviours dominate mainstream thinking. However, what is measured and applied in the real-world deviates from artificial concepts, and there are significant limitations with current approaches. Mainstream economic thinking has been criticised for failing to adequately reflect a comprehensive understanding of human behaviour, social contexts, elements important to human life and normative values among other aspects. Addressing these limitations is important because economics has consequences: it influences the lives of people across broad spectrums of society.

This dissertation is an exploration of whether economic methodology should shift from reductionism in traditional economic thinking on welfare to a "**macro**" approach, i.e. one that is based on aggregate outcomes which cannot be fully explained through reductionist perspectives of individual behaviours. This paper is a theoretical review, research and re-evaluation of economic methodology that explores the fundamentals of economic thinking on welfare, extended concepts beyond the fundamentals and theories that can inform a macro approach.

The dissertation is divided into three chapters. Chapter 1 revisits the theoretical fundamentals in welfare economics. It evaluates key limitations to mainstream thinking and asks whether a business-as-usual approach should continue. Chapter 2 considers three unique angles which extend discussions from Chapter 1, including: (i) additional perspectives that are more reflective of reality and challenge traditional concepts in welfare, (ii) alternative ways of evaluating economic approaches, and (iii) normative debates that underscore policy direction. Chapter 2 explores if the above elements are sufficiently addressed in current economic thinking, and whether there is a case for an alternative methodological approach. Chapter 3 considers whether a macro approach is better suited to address issues raised. Methodological individualism is revisited, and other concepts that can inform a macro theory are explored, including theories on complex systems, human agency and alternate ontological frameworks concerning the nature and outcomes of human behaviour, factors and interactions. The conclusion links all three chapters together and discusses the argument that methodological approaches in welfare economics should move towards a macro theory.

CHAPTER 1: BUSINESS AS USUAL? REVISITING THE FUNDAMENTALS

Chapter 1 revisits fundamental concepts used in welfare economics. The chapter explores (i) theories on rational choice and preferences, (ii) mainstream thinking in welfare economics and (iii) positivist versus normative approaches. The discussions will highlight limitations of traditional thinking built on individualist perspectives. This chapter considers whether such approach is adequate to address important questions in welfare economics and whether a business-as-usual approach should continue.

PART A. RATIONAL CHOICE AND PREFERENCES

A.1. Introducing Agency and Rational Choice Theory

A.1.1. What motivates humans?

"It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest" (Smith, 1776, bks 1, chapter 2).

This popular quote by Adam Smith is often interpreted to be the notion that people are motivated to act due to their own self-interest. This interpretation is used in the concept that the consequence of individuals pursuing their own self-interest will, through an "*invisible hand*" of market forces, maximise interests of society (Bishop, 1995). That the "*invisible hand*" (still the subject of significant debate hundreds of years later (Blaug, 2007)) of the free market would guide individual self-interest to society's general utility and welfare is often relied on as an argument to defend pursuits of individual self-interest and economic theories that follow (Bishop, 1995). However, counter to popular views, Smith did not actually claim that humans are driven by pure self-interest (Smith and Wilson, 2019). Smith's reference to individuals' "*own interest*" does not equate to pure self-interest or selfishly putting one's own interest over another's (Smith and Wilson, 2019). Acting in one own's interest can include commitments to the equality and dignity of all people, and there are moral rules governing the conduct of people in markets (Smith and Wilson, 2019). In fact, Smith asserted:

"How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it" (Smith, 1759, p. 1).

"*Pleasure*" does not imply utility in the economic sense, nor does concern for the "*fortune of others*" imply altruism; rather, "*pleasure*" is a concept of "*mutual empathy*", or being able to comprehend what it is like in another person's circumstance (Smith and Wilson, 2019). Such empathy guides humans in learning rules of conduct and morals that allow people to live harmoniously with others (Smith and Wilson, 2019). Similar ideas will be explored further in Chapter 3, but the contrast between notions of pure self-interest and more nuanced interpretations is highlighted here because much economic thinking is premised on individualist notions of maximising self-interest. However, this approach ignores important human elements with consequences towards theories in welfare economics as will be discussed in this Chapter.

A.1.2 Agency

"**Agency**" is a key theme in this paper and is a concept that is subject to much academic debate. For the purposes of Chapter 1 which discusses how traditional economic theory conceptualises human behaviour, "Agency" relates to *how* individuals behave. "**Human Agency**", a concept explored in Chapter 3, is a more nuanced construct and refers to intentionality in behaviour which has gone through a cognitive process leading to such intentionality.

Traditional economic frameworks are based on **methodological individualism**, which attempts to explain social phenomena by analysing individual consumers and firms as the primary unit (Blume and Easley, 2008); this concept will also be explored in Chapter 3. Theories of individual agency and how consumers and firms behave are used to formulate ideas of how market and other systems work (Blume and Easley, 2008). **Rational choice theory** in economics sets out theories for human action. Under the **principle of rationality**, **individuals act in their self-interest** (Blume and Easley, 2008). This principle provides a theory for human motivations and action in orthodox economic thinking, which in turn is used as the basis for further economic concepts covered in Chapter 1 (Blume and Easley, 2008). However, even at this basic starting point, limitations already arise.

A.2. Observations in Experimental Economics

Experimental economics demonstrate that people's actual behaviours are inconsistent with rational choice theory on maximising self-interest. Two examples of experimental games are discussed.

A.2.1. The Ultimatum Game

The "**Ultimatum Game**" entails two players, one who is a proposer and the other who is a responder, playing one round (Guth, Schmittberger and Schwarze, 1982). The proposer is provided with a specific amount of resources and proposes to split the amount with the responder. If the responder accepts the proposal, the proposed amount is split between both players and if the responder rejects then both parties receive nothing (Guth, Schmittberger and Schwarze, 1982). **Figure 1** is an example of this game.

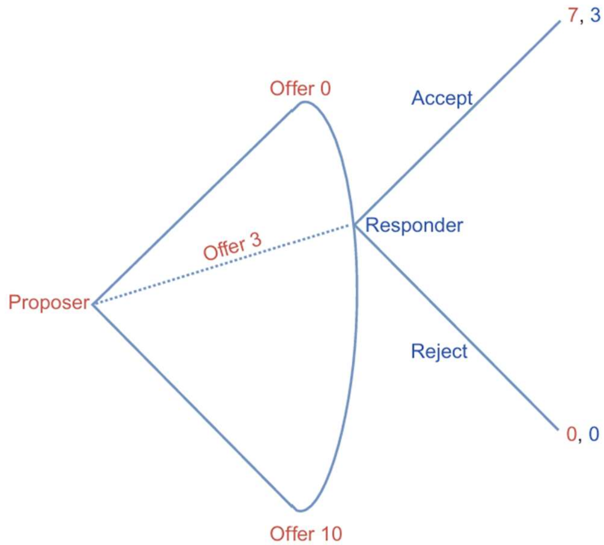

Figure 1: *Example of an ultimatum game (Fehr and Krajbich, 2014, p. 194).*

Repeated experiments show that if offers are too low, responders are likely to reject them, and in reality, many proposers tend to offer 40-50% of the endowed amount (Houser and McCabe, 2014). This is despite theories premised on self-interest predicting that respondents would accept all offers above zero and proposers would propose the smallest possible amount (Houser and McCabe, 2014). Such actions are often simplistically labelled as "*irrational behavior*" (Nowak, Page and Sigmund, 2000), but actually show that, in humans, traditional notions of self-interest do not always prevail.

A.2.2. The Stag Hunt

The "**Stag Hunt**"[1] game describes two hunters choosing to either hunt stag or hare, but without knowledge of each other's decision (Rousseau, 1984). Hunting stag yields more rewards than hunting hare. Both hunters know that hunting stag requires each other to cooperate, but one hunter can defect to hunt hare alone with more certainty but with less reward. The story illustrates a tension between risk and mutual benefit – i.e. the stag yields higher mutual benefit and requires a degree of trust that the other hunter will cooperate, but hunting hare is less risky because if one hunter chooses to defect the other hunter will come home empty-handed (Skyrms, 2003).

[1] The Stag Hunt should be distinguished from "**Prisoner's Dilemma**" games, where the dominant strategy (and the sole Nash equilibria) for both players is defection, even though cooperation leads to a better outcome for both. While the Prisoner's Dilemma shows a conflict where self-seeking behaviour actually produces sub-optimal outcomes, the Stag Hunt is argued to more accurately represent dynamics of social cooperation (Skyrms, 2003).

The Stag Hunt game leads to two **Nash equilibria**, or situations where a person cannot make a gain by changing their own strategy (see **Figure 2** for an illustration of the stag hunt game); i.e. if the other hunter hunts stag then it is optimal to hunt stag, and if the other hunter hunts hare it is optimal to hunt hare (Skyrms, 2003). One Nash equilibrium is a risk-dominant equilibrium (hunting hare, which is less risky) while the other is a pay-off dominant equilibrium (hunting stag, which yields more results, but is more risky) (Skyrms, 2003).

		Hunter 2	
		S	H
Hunter 1	S	9, 9	0, 6
	H	0, 6	6, 6

Figure 2: *Example of a stag hunt game (S representing hunting stag and H representing hunting hare) (Author, 2024). (S, S) and (H, H) are Nash equilibria.*

In the stag hunt and other variations of the game, experiments show that players can and do choose pay-off dominant strategies even though under standard rational choice assumptions players do not have a reason to do so (Gold and Colman, 2020). This is interesting because where there are Nash equilibria outcomes which are not pay-off dominant, game theory rationale does not have an explanation as to why a pay-off dominant strategy would be selected, i.e. it is logical for a hunter to hunt stag only if there is a reason for him to ***expect*** the other hunter to do so as well (Gold and Colman, 2020). However, because the game is perfectly symmetric there is no reason for one hunter to expect the other hunter to hunt stag (Gold and Colman, 2020).

The stag hunt game has been analysed from an evolutionary perspective on cooperation and social structures. Brian Skyrms argues that cooperation can form and noncooperative equilibriums (e.g. hunting hares) can be destabilised under certain conditions. Broadly, these include (i) locality and local interactions influencing dynamics to allow cooperative strategies to exist, (ii) communication systems arising from learning dynamics and destabilising existing equilibria, and (iii) association and dynamics of social interaction creating positive and negative reinforcement cycles where non-cooperators are increasingly rejected and cooperative behaviour reinforced (Skyrms, 2003). Such conditions can upend outcomes expected by rational choice-based game theory, and in a lot of cases cooperators prosper despite traditional risk-dominated predictions.

Experimental outcomes show that self-interest does not always prevail as traditionally conceived. Human, social and evolutionary elements, including factors such as interaction, notions of fairness and cooperation, go beyond what can be explained by standard economic decision-making theory. To be more attuned to these human realities, theoretical frameworks should address these concepts.

A.3. Preference Theory

"traditional theory has too little structure. A person is given one preference ordering, and … this is supposed to reflect his interests, represent his welfare… and describe his actual choices and behaviors. Can one preference ordering do all these things?... The purely economic man is indeed close to being a social moron." (Sen, 1977, pp. 335–336)

Orthodox views on human behaviour in economics ties behaviour to choice, which is revealed through the concept of "**preferences**" (Smith and Wilson, 2019). Preferences are "*the values we assign to the various options available to us when making decisions*" (Mallard, 2017, p. 27) and are used as a basis for constructing economic theories. Preferences are subject to parsimonious treatment in economics so that coherent models based on a theory of human behaviour can be formed. Under rational choice theory, individuals have a set of preferences according to which their choices are made. "**Revealed preference**" theory is a strong representation of this. Revealed preferences defines preferences by choices (not via a process of thought), and preferences defined according to this theory are determined by behaviour (Blume and Easley, 2008). For example, preferences can be revealed by the goods and services that are bought by an agent (Hirschman, 1984). However, there are important critiques to note.

First, fundamental axioms of the theory do not always hold. There are two fundamental axioms (among others axioms)[2]: (i) **completeness**, i.e. agents are able to rank any pair of options, and (ii) **transitivity**, i.e. rankings of options are transitively ordered (Mandler, 2001). Orthodox concepts of utility (which also use preferences as a basis) summarise an agent's ordinal ranking of commodity bundles, and utility maximisation means that all pairs of options are ranked and transitively ordered (Mandler, 2001). Most normative theories in economics aimed at better social-decision making make judgments about individual well-being based on individual preference rankings assumed as complete and transitive (Mandler, 2001). However, preferences may not always provide a sufficient basis to make social policy decisions because (i) completeness and transitivity can be violated in certain situations, and (ii) agents may have ill-defined preferences, so preference theory does not always allow views on normative questions to be properly formed (Mandler, 2001).

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[2] Other axioms are continuity and independence which is not a focus here.

Secondly, there are strong arguments against parsimony. Amartya Sen argues that assuming humans to be uncompromising in their pursuit of self-interest is too narrow a conception of humans in economic models (Sen, 1977). Preferences presume too little because there can be relevant information which are non-choice in nature, and also presume too much because choices may represent compromises among different factors (Sen, 1977). Preferences attempt to summarise too much of a person's interests, welfare, and choices and behaviours, but a simple preference ordering cannot achieve this since it fails to distinguish between different behavioural concepts (Sen, 1977).

Additionally, Albert Hirschman distinguishes between what he calls first and second order preferences: traditional economics typically deal with first order preferences, or those that are revealed by an agent's purchase of goods or services, while second order preferences, or "metapreferences", are those that may differ from their initial preferences (Hirschman, 1984). Broadly speaking, metapreferences can reflect a change in a person's values (Hirschman, 1984). These autonomous and reflective changes can capture many complex human elements missing in traditional notions of preferences[3] (Hirschman, 1984). The possibility that changes in values can lead to changes in preferences is also a key flaw in arguments put forward by those championing parsimony, such as economists Gary Becker and George Stigler who argued that all behavioural changes can be seen through price and income differences (Hirschman, 1984).

Thirdly, concepts of preferences and utility maximisation in traditional economic thinking are too narrow to capture social interactions and norms essential to understanding human behaviour (Smith and Wilson, 2019). Vernon Smith and Bart Wilson analyse Adam Smith's thinking on human behaviour, particularly the notion of "*sentiments*", interpreted as attitudes formed from thinking and feeling, and people's ability to "*sympathize*", or essentially to put themselves in another's shoes to comprehend other people's attitudes and intentions (Smith and Wilson, 2019). "Sentiments" and "sympathy" add another dimension to conceptualising behaviour since the ability to think and feel to understand another person's position challenges traditional theories of behaviour based only on maximising self-interest. Economists sometimes frame other-regarding preferences, i.e. those that expand utility functions to cover not only pay-offs to individuals themselves but pay-offs to other people as well, within a concept of "**social preferences**" and apply the concept to economic models (Smith and Wilson, 2019). However, this cannot capture the full variations of human action nor notions of sentiments and sympathy (Smith and Wilson, 2019). Social interactions can also be guided by moral sentiments, which emerges from human interactions in context-dependent situations (Smith and Wilson, 2019). Given

[3] Hirschman argued there are non-instrumental modes of behaviour and actions that are not represented in economic thinking, such as the "*pursuit of truth, beauty, justice, liberty, community, friendship, love, salvation and so on*" (Hirschman, 1984, p. 91).

these elements, it is inadequate and reductionist to apply a narrow version of preference theory to economics, however this is still the case in mainstream thinking.

One reason parsimonious simplifications are still used is due to the trade-offs between building a coherent model versus behavioural accuracy (Blume and Easley, 2008). Blume and Easley argue there are still no serious alternatives available to current constructs and hence reductionism is still relevant, and while it may be too early for sufficiently sophisticated cognitive models, they hope that cognitive science can further develop this space (Blume and Easley, 2008). However, an important paradox also arises from discussions on parsimony: it appears that only by excluding information related to human factors would one be able to gain economic knowledge (or at least coherence in economic models). Nonetheless, the process of such simplifications discards too many important complex human and social factors which economic models may need to address in the first place.

Despite these issues, preference theory is still used as a basis to formulate utility functions and consumer indifference curves which form the building blocks for theories of demand (Perloff, 2023). These concepts thus remain very influential for key theories in welfare economics, as explored below.

PART B. MAINSTREAM ECONOMIC APPROACHES TO WELFARE

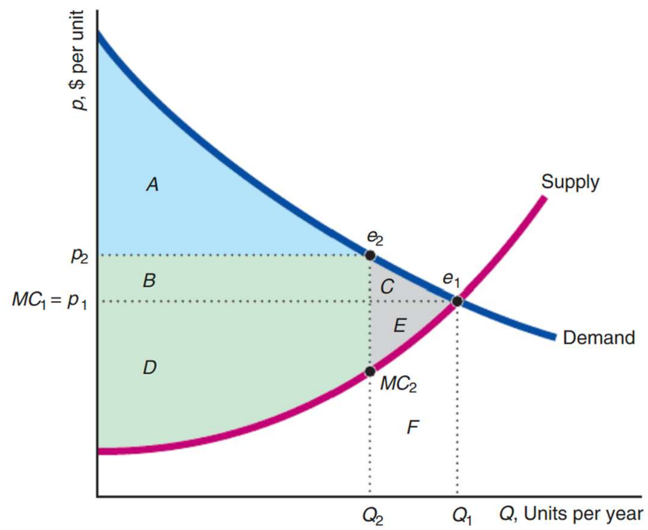
B.1. Introducing Welfare Economics

"*Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses" (Robbins, 1932, p. 15).*

Lionel Robbin's famous definition of economics can be interpreted as narrowing down economic theory to notions linked to rational choice – "*ends*" being interpretive of choice and preferences, and "*scare means which have alternative uses*" as relating to allocation (Backhouse and Medema, 2009). Economic thinking on welfare is concerned about distribution of resources for the welfare of society (Varian, 1975). In modern constructs a "*perfectly competitive market maximises an important measure of economic well-being*" (Perloff, 2023, p. 307). **Welfare** in this context means the well-being of society, with **welfare economics** concerned with analysis of change in various groups' well-being (Perloff, 2023).

Consumer welfare (referred to as consumer surplus, "***CS***"), and producer welfare (referred to as producer surplus, "***PS***"), are measures for which society's welfare ("***W***") is commonly measured, i.e.: **W = CS + PS** (Perloff, 2023). Competitive markets lead to welfare maximisation, and if there is an output other than at the competitive level, welfare is not maximised (see **Figure 3** for an example; competitive equilibrium at e_1 is where allocative efficiency is achieved and consumer surplus as well as producer surplus are maximised) (Perloff, 2023).

Reducing output from the competitive level, Q_1 to Q_2 causes price to increase from p_1 to p_2. Consumers suffer. Consumer surplus is now A, a fall of $\Delta CS = -B - C$. Producers may gain or lose. Producer surplus is now $B + D$, a change of $\Delta PS = B - E$. Overall, welfare falls by $\Delta W = -C - E$, so the deadweight loss (DWL) to society is $C + E$.



	Competitive Output, Q_1 (1)	Smaller Output, Q_2 (2)	Change (2) – (1)
Consumer Surplus, CS	$A + B + C$	A	$-B - C = \Delta CS$
Producer Surplus, PS	$D + E$	$B + D$	$B - E = \Delta PS$
Welfare, $W = CS + PS$	$A + B + C + D + E$	$A + B + D$	$-C - E = \Delta W = -DWL$

Figure 3: *Changes to output level (for example decreasing from Q_1 to Q_2) lead to deadweight loss (represented by C+E) and reductions in overall welfare (Perloff, 2023, p. 308).*

This concept is applicable for partial-equilibrium analysis, or analysis relating to one market or a restricted area taken in isolation (Perloff, 2023). On a wider scale, **general equilibrium** theory concerns the equilibrium of multiple or all markets concurrently (Perloff, 2023), and has been instrumental in the development of fundamental theoretical concepts under welfare economics. The general equilibrium model can show competitive markets have certain properties represented by two fundamental theorems in welfare economics, discussed below (Perloff, 2023).

It is worth prefacing the discussion of the two fundamental theorems with a brief note on general equilibrium. Under the theory of general equilibrium, an economy reaches equilibrium under certain conditions (Arrow and Debreu, 1954). One theoretical construct used to show general equilibrium is the Arrow-Debreu security. An **Arrow-Debreu security**, or **Arrow security**, is a security or contract that pays off only in one state (Maskin, 2019). There is a set of all Arrow securities which can cover all possible states, and hence all possible needs are covered where markets are complete with perfect information, along with other necessary assumptions (Maskin, 2019). Under these conditions, general equilibrium exists.

However, a few broad observations are made. Firstly, these concepts are constructed on assumptions which are extreme, in particular, the assumptions of perfect information and complete markets which are unrealistic. Secondly, the model requires agents to optimise according to theoretical constructs, but a pertinent question is then whether agents in this model have any real form of agency, or whether they are only following mathematical constructs – if they do not have agency, could this really be a representative of way of looking at things when in reality human agency does exist? Thirdly, the model, a mathematical construct, also assumes that everything can be traded, when in reality, a significant part of what matters in people's lives cannot be traded; there are elements which extend beyond traded commodities, for example – while job loss could be monetarily compensated, certain elements, such as social connections or the pride of having a job cannot and would be diminished if traded. These points will be further discussed in the context of other theories covered in Chapter 2.

B.2. Fundamental Theorems of Welfare Economics

The **first fundamental theorem of welfare economics** is that competitive equilibrium results in "**Pareto efficiency**" (Perloff, 2023). Pareto efficiency occurs where no one can be made better off without someone else being made worse off (Perloff, 2023). Another way to restate this is that competitive equilibrium is efficient and results in an optimal allocation of resources (Perloff, 2023). The **second fundamental theorem of welfare economics** is that all Pareto optimal allocations are achievable by competition (Perloff, 2023). In other words, if there is the right initial allocation of goods, all possible Pareto efficient allocations can achieved by competitive exchange (Perloff, 2023). Market mechanisms can be used to achieve Pareto efficient allocations via self-correcting distribution mechanisms once initial endowments are determined (Varian, 1975).

These two fundamental theorems are influential and carry significant implications for thinking on economic policy and philosophy (Blaug, 2007; Foley, 2010). For example, the first welfare theorem, said to be "*one of the most important results in economics*" (Ng, 2015, p. 498), allows the focus on pricing mechanisms and market coordination to achieve allocative efficiency and serves as a benchmark to identify sources of inefficiency and create corrective measures (Ng, 2015). The theory is widely drawn upon by economists who champion free markets and non-intervention by government (Blaug, 2007). As an additional example, the second welfare theorem has been used to promote laissez-faire approaches to market allocations, for example the social market argument that governments only need to be concerned about fair distributions of initial endowments (Varian, 1975).

However, some limitations should be noted. First, the first fundamental theorem of welfare economics relies on certain key assumptions which can be incomplete. For example, one assumption is that perfect competition[4] requires buyers and sellers to be price-takers rather than price-makers, i.e. with no influence on prices (Ng, 2015). Models in the first welfare theorem optimise to given prices, but relevant questions are how are prices set, and who sets them? In real world exchanges, transactions occur at disequilibrium prices – individuals find equilibrium prices by transacting at disequilibrium prices in scenarios that limit opportunities to realise economic surpluses (Foley, 2010). There are transaction costs (as shown in the example in **Figure 4**) in finding mutually advantageous exchanges (and prices) that prevent theoretically possible exchanges from taking place, and actual trades can lead to situations where the preferences and endowments of agents do not determine resource distributions (Foley, 2010). This poses limitations to the first welfare theorem as well as the cogency of the second theorem, and also raises implications towards how government interventions are informed (Foley, 2010). The second theorem has also been widely criticised as being impractical since the notion of lump-sum taxes required to adjust initial endowments are a practical impossibility in the real world (Blaug, 2007).

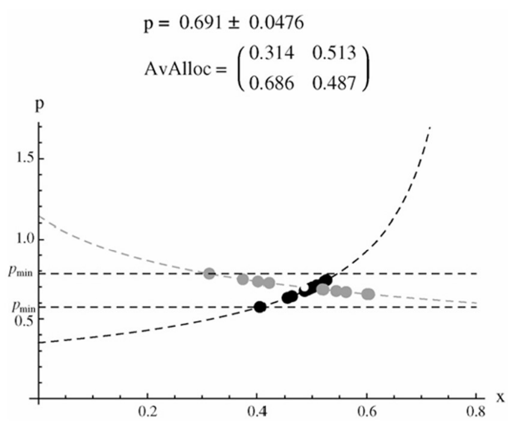


Fig. 8. Supply–demand representation of non-equal treatment equilibrium with transactions costs in a quasi-linear economy. Trading eliminates demand-price/supply price differences larger than the transaction cost $p_{max} - p_{min}$. In this equilibrium the suppliers and demanders are distributed on their supply and demand schedules between these limits. The averaged market equilibrium is the black dot with the white center.

Figure 4: *representing an example impact of transaction costs; individual agents exchange at non-equilibrium prices leading to demanders and suppliers scattered throughout a region (Foley, 2010, p. 129).*

Second, Pareto optimality does not equate to equity or fairness. For example, an allocation of resources where one individual receives all resources can be Pareto efficient (Varian, 1975). The Pareto principle does not allow allocations to be compared – multiple allocations can be Pareto efficient (Perloff, 2023). A question that also follows is how can fair distribution or allocation be determined? Attempts to

[4] Assuming there is perfect competition does away with issues around interpersonal comparisons of utility, since the first welfare theorem generalises bilateral exchanges – i.e. if everyone has the same level of prices, what is applicable for two individuals is applicable to *n* individuals (Blaug, 2007).

answer this question have been made by theorists using social welfare functions, but debates in this space reveal further issues.

B.3. Social Welfare Functions and Arrow's "Impossibility Theorem"

Social welfare functions are concerned with the ordinal rankings of allocations and forms, roughly, a utility function for society (Perloff, 2023). In theory, these help determine what is optimal for society's welfare. However, Kenneth Arrow remarked that Pareto efficiency is only preliminary because achieving social maximums involve questions of redistributions, and that society must have a criteria to choose among multiple redistributions as well as principles to determine a social indifference map (Arrow, 1950). Choosing between two Pareto optimal allocations requires value judgments to assess interpersonal comparisons and social welfare functions have been used for this purpose (Perloff, 2023). Individuals could express their rankings through voting (Perloff, 2023). However, Arrow's work has demonstrated critical deficiencies in interpersonal comparison of preferences.

In analysing voting as a method to determine social choices derived from individual preferences, Arrow notes "*by aggregating individual preference patterns which satisfies certain natural conditions, it is possible to find individual preference patterns which give rise to a social choice pattern which is not a linear ordering*" (Arrow, 1950, p. 330). Further, he observes: "*if it turns out to be impossible to construct a social welfare function which will define a social ordering of three alternatives, it will be a fortiori be impossible to define one which will order more alternatives*" (Arrow, 1950, p. 336). In other words, ranking aggregated individual preferences leads to inconclusive rankings.

Arrow's "Impossibility Theorem" proves precisely that (Arrow, 1951). A simplified explanation of Arrow's theorem is as follows:

Imagine there are three individuals and three options *x*, *y* and *z*:

> Person 1 prefers ***x*** to ***y*** and ***y*** to ***z***
> Person 2 prefers ***y*** to ***z*** and ***z*** to ***x***
> Person 3 prefers ***z*** to ***x*** and ***x*** to ***y***

Under a voting analysis: (i) ***x*** would have a majority over ***y***, (ii) ***y*** would have a majority over ***z***, and (iii) ***z*** would have a majority over ***x***. In such situation, the majority voting rule leads to inconsistencies because where there is more than one individual it will not be possible to rank aggregated preferences (Arrow, 1951). Accordingly, decisions relying on the same voting mechanisms lead to inconsistencies unless a dictatorial approach is imposed to create a dominant ranking in preference (Sen, 1999).

Arrow's Impossibility Theorem has led to a huge volume of debate. Some economists dramatically declared Arrow's theorem as a main cause for the "*death of welfare economics*" since it challenged the primacy of social welfare functions traditionally used to determine social optimums (Igersheim, 2019). Some economists argued that even if there is no perfect answer achieved through voting, imperfect answers produced will still not be significantly worse than if the paradoxes raised did not exist (Tullock, 1967). Other economists attempted to make technical distinctions from Arrow's theorem and salvage what remains (Samuelson, 1977; Fleurbaey and Mongin, 2005; Igersheim, 2019). These distinctions are beyond the scope of this paper, but the point is to show that approaches to achieve social maximums are often elusive under traditional theoretical thinking.

The problems in determining what is socially maximal raises additional questions on current predominant economic approaches to welfare. What notions and principles do we use to determine what is the best way to allocate resources? Related to this question is a discussion of positive and normative approaches in economics.

PART C. POSITIVE AND NORMATIVE ECONOMICS

"There has always been a purist streak in economics that wants everything to follow neatly from greed, rationality, and equilibrium, with no ifs, ands, or buts. Most of us have felt that tug... The theory is neat, learnable, not terribly difficult, but just technical enough to feel like "science"". (Solow, 2008, p. 245)

Robert Solow's observation of the "*tug*" of positivist approaches on orthodox economic thinking highlights the allure of a neat and sufficiently technical "*science*" which dominate current economic thinking. This is despite discussions above showing that traditional approaches have significant limitations, especially when considering the weaknesses of assumptions as well as real world applicability[5]. Why is there such a draw in this approach? The attraction of treating economic theory as a "*science*" is related to the appeal of positive economics and the debates on methodology that have spanned many decades.

C.1. Freidman and Samuelson on Positive Methodology

One of the influential proponents of positive methodology was Milton Friedman, who built on John Neville Keynes' assertion that **positive economics** is about "*what is*" while **normative economics** is about "*what ought to be*" (Friedman, 1953). In other words, the positive is concerned with an approach that is "*ethically neutral or value-free*" (Weston, 1994, p. 2) while normative economics is concerned about value judgments and ethics (Weston, 1994). For Friedman, positive economics "*is, or can*

[5] Blaug notes the "*schizophrenic attitude of mainstream economists to the fundamental [welfare] theorems*" (Blaug, 2007, p. 198); economists are devoted to teaching welfare concepts as instrumental theories despite their inapplicability to the real world, and others like Baumol have even described concepts like the second theorem as a "fairy tale" (Blaug, 2007).

be, an "objective" science" (Friedman, 1953, p. 4) and its "*task is to provide a system of generalizations that can be used to make correct predictions about the consequences of any change in circumstances*" (Friedman, 1953, p. 4) independent of ethics or value judgments (Friedman, 1953). Friedman argued that criticisms that orthodox economic theories are unrealistic or that assumptions do not hold in the real world are irrelevant; in other words, if theories can yield accurate predictions then false statements in theory are not problematic (Wong, 1973).

This argument has been critiqued. One famous criticism was by Paul Samuelson. Samuelson's critique broadly covers that: "*1) It is a contradiction to maintain that all consequences can be valid and the theory and the assumptions not valid. 2) It is absurd to maintain, in the case where only some of the consequences are valid, that the theory and the assumptions are important though invalid*" (Wong, 1973, p. 314); in other words, the validity of assumptions matter. Stanley Wong notes that Friedman took an *instrumentalist* position (focused on predictions) while Samuelson took *descriptive* one (focused on descriptions), and argues for a third position where theories should be explanatory and informative, going beyond pure instrumentalism and descriptivism to answers more pertinent questions of the "*why*" (Wong, 1973). In essence, in considering economic methodology it is important to ask what the point of the theory is and how helpful it can be in improving an understanding of questions that are trying to be answered, rather than trying to purely achieve technical instrumentalist or descriptivist coherence.

C.2. Between the Positive and the Normative

In addition to technical arguments, there are broader conceptual implications. Lewis E. Hill argues that the focus on distinctions between positive and normative economics essentially turns economics "*into a completely abstract science without practical application*" (Hill, 1968, p. 263). It is not possible to separate the two – that while positive economics can make value judgments on economic means, it is not possible to simply outsource the task of determining economic ends to others (Hill, 1968). As an example, the concept of equilibrium itself is said to imply normative significance – with such a focus on achieving competitive equilibrium, there is an implication doing so is a good thing, and hence theories treating competitive equilibrium as standard are normative theories (Hill, 1968). Given there are implied value judgments in positive approaches, Hill argues that economists should take responsibility for normative judgments and denying the existence of that is "*questionable intellectual honesty*" (Hill, 1968).

Samuel Weston also asserts that economics cannot be value free. One line of argument is that, put simply: "*Economics has consequences*" (Weston, 1994, p. 7). Policies derived by economists will likely have costs on someone (Weston also remarks that economists are unlikely to bear the brunt of consequences if they misunderstand a situation, and aren't likely to subject to liability either, for example in the legal sense) (Weston, 1994). Values are inherent in professional norms and economic terminology (for example, the term "*productivity*" is value-laden), and giving policy advice is unavoidably concerned with value judgments (Weston, 1994). Weston argues positive economics should still have a role in economics, including: to clarify subjects being discussed, provide an environment to question reason without moral implications towards the questioner's character, and to support a norm of objectivity (Weston, 1994). However, Weston clarifies his position is not a defence of a "*business as usual*" approach, where positive economics is a "*wall behind which economists can pretend to avoid ethical issues*" (Weston, 1994, p. 14).

C.3. Business As Usual?

Weston's allusion to an attitude of "*business as usual*" in economics is a pertinent way to view how many economic questions are approached. As Solow noted, there is a real allure of economics as a neat and technical science. However, as discussed in Part B above, certain key elements end up being stripped out during parsimonious simplifications for the coherence of models and risk undermining what economics should be considering. Abba Lerner illuminates this idea with an example on the nature of some economic thinking: "*the solution is essentially the transformation of the conflict from a political problem to an economic transaction. An economic transaction is a solved political problem. Economics has gained the title of queen of the social sciences by choosing solved political problems as its domain*" (Lerner, 1972, p. 259) – in short, much thinking in economics may end up framing issues in ways that they end up avoiding that which really should be addressed. This is a problem because we live in a world where economics has consequences for real people. Why is it desirable to continue with mainstream thinking given the significant limitations noted?

PART D. CONCLUDING REMARKS FOR CHAPTER 1

Chapter 1 has highlighted theoretical limitations in mainstream thinking in welfare economics, from the fundamental building blocks of current theories to broader conceptual frameworks. Modern thinking in economics should do more to address these gaps because economics has consequences. Business as usual should not continue.

CHAPTER 2: BEYOND THE FUNDAMENTALS; A CASE FOR ANOTHER APPROACH?

Chapter 2 extends the discussion beyond fundamental concepts in Chapter 1 by exploring three unique angles: (i) theoretical examples showing further limitations to traditional thinking in welfare economics, namely the general theorem of the second best and a discussion on the impact of social factors on minimum wage (ii) the "Capabilities Approach" as an alternative way to evaluate economic policy and (iii) discussions on equity that underpin normative approaches to policy. These angles are chosen because they represent distinct types of thinking outside of orthodox frameworks. Chapter 2 seeks to answer the question of whether thinking in welfare economics should address many more important factors raised, and whether a different methodological approach is more suitable to cover these elements.

PART A. ADDITIONAL CONCEPTS ON MAINSTREAM THINKING

Part A discusses additional theoretical arguments highlighting further issues for standard concepts in welfare economics. Two examples are considered: (i) implications of the general theorem of the second best and (ii) using minimum wage as an example to show that social contexts, notions of fairness and power imbalances can affect market outcomes in ways not predicted under traditional models.

A.1. The General Theorem of The Second Best

Chapter 1 noted that models of efficiency and Pareto optimality (notions important to the fundamental theorems of welfare economics) are premised on certain conditions[6]. However, in reality, market distortions and market failures often lead to situations where such conditions cannot be fulfilled. The notion of achieving optimal situations where conditions for Pareto efficiency cannot be attained was considered by R.G. Lipsey and Kelvin Lancaster under the "**general theorem of the second best**", described as follows: "*if there is introduced into a general equilibrium system a constraint which prevents the attainment of one of the Paretian conditions, the other Paretian conditions, although still attainable, are, in general, no longer desirable*" (Lipsey and Lancaster, 1956, p. 11).

William Baumol summarises this concept as follows: "*on the basis of a mathematical argument, that in a concrete situation characterized by any deviation from "perfect" optimality, partial policy measures which eliminate only some of the departures from the optimal arrangement may well result in a net decrease in social welfare*" (Baumol, 1965, p. 138). In simpler terms, if there is a problem (distortions or market failures) in getting to the best position (in this case, Pareto optimality, or a "first best" situation (Leach, 2003)), and if it is not possible to fix all problems (all distortions or market

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[6] For example, in a perfectly competitive market, price equals marginal cost.

failures), then fixing only some problems may not make things (e.g. welfare) better. Applying welfare "piecemeal" is insufficient and can actually reduce welfare (Lipsey and Lancaster, 1956).

This idea appears counter-intuitive to a seeming logical view that fixing some distortions should at least make things better overall, and has implications for a broad range of matters affecting welfare, including government interventions, taxation and monopolies when market failures occur (Leach, 2003). Where it is not possible to reach the "*first best*" allocation, the best available alternative position, or "*second best*", is not easily achieved. It could be reached only if all consequences of proposed policies are considered, and this might be achievable through creating more market distortions or even refraining from removing a distortion, but fundamentally *"[t]here are no simple rules*" (Leach, 2003, p. 287). Hence, where there are distortions that cannot all be removed "*all bets are off*" (Leach, 2003, p. 272).

A hypothetical example discussed by Gregory Besharov (Besharov, 2024) is as follows: suppose there is a market for a good where a monopolist produces a negative consumption externality. Output is restricted to increase profits, and inefficiency arises because some people value the good more than the costs of production but cannot consume it. Production subsidies could be introduced to address the market failure but would lead to too much market activity because people who valued the good less than its social costs are able to consume it. A tax equivalent to the externality could be introduced, offsetting the other market failure, showing that intervening to counter one market failure on its own would have an unclear effect on welfare (Besharov, 2024). **Figure 5** illustrates this and shows that deadweight loss, B, would arise because of a subsidy to correct a distortion, and hence "*solutions that would improve welfare in the first-best world… would reduce it in this particular second-best world with multiple market failures*" (Besharov, 2024).

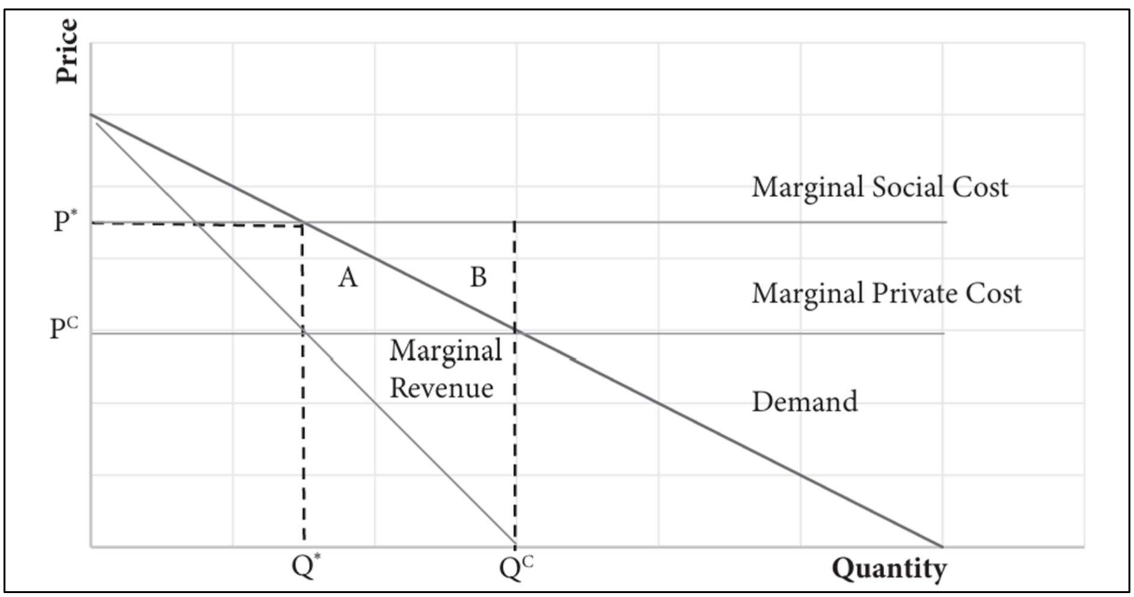

***Figure 5**: "example where the monopolist's overpricing precisely offsets the negative externality to maximize surplus given the externality. That is, the price of the market P* equals the marginal social cost. If a subsidy were to offset the monopolist's inefficient restriction of output, the market price would be P^c and the output would be Q^c. This would be inefficient because people who value the good less than its cost would be consuming it. Over the region from Q* to Q^c, the marginal social cost is greater than the marginal benefit as given by the demand curve, so there would be a deadweight loss of B that would occur. Separately the imposition of the Pigouvian tax would also reduce surplus because the monopolist would further restrict output" (Besharov, 2024, pp. 139–140).*

In the real world, there are multiple distortions and market failures (and the example above only relates to one market, when in reality different markets could affect each other, each with their own distortions), and trying to see if achieving Pareto efficient outcome is possible requires not only models describing distortions or optimal allocations, but also a different kind of judgment on (i) what distortions cannot be changed and (ii) which policies to use that reflect market values and what is viewed as appropriate (Besharov, 2024). In other words, the theorem of the second best shows that notions of welfare premised on achieving Pareto optimality can run into serious real-world limitations, where solutions end up being a matter of value judgments or normative evaluations requiring other types of analysis. Such evaluations lie beyond traditional theoretical analysis for achieving a first-best hypothetical.

A.2. Social Contexts and Market Outcomes

Social contexts, notions of fairness and balances of power are factors that can affect market outcomes, but these are not fully addressed by traditional theories. An example of this is minimum wage discussed by Anthony Atkinson, an economist who favoured minimum wage reforms and other redistribution proposals in favour of the less advantaged.

Atkinson asks a basic question of whether minimum wage causes unemployment if it is above the market wage (Atkinson, 2015). A simple response from basic economics principles would be to draw a downward sloping demand curve – with the Y axis for wages and the X axis for the number of employed workers, and an upwards sloping supply curve, with a single intersection, which marks the point after which there would be unemployment if demand falls short of supply (Atkinson, 2015). However, more comprehensive models can show different answers, as illustrated by **Figure 6**. Atkinson asserts there could be supply curves that bend backwards, due to other factors like the length of a workers working life, i.e. working life may be longer at low wages as people need money and work longer, or shorter (bending back supply) if wages rise to certain levels allowing workers to shorten working lives) (Atkinson, 2015). At a point, supply bends back again if wages become so attractive leading people to work longer, leading to more supply (Atkinson, 2015). In reality, there can be more than one market outcome and this opens the door for other egalitarian proposals to be considered (Atkinson, 2015).

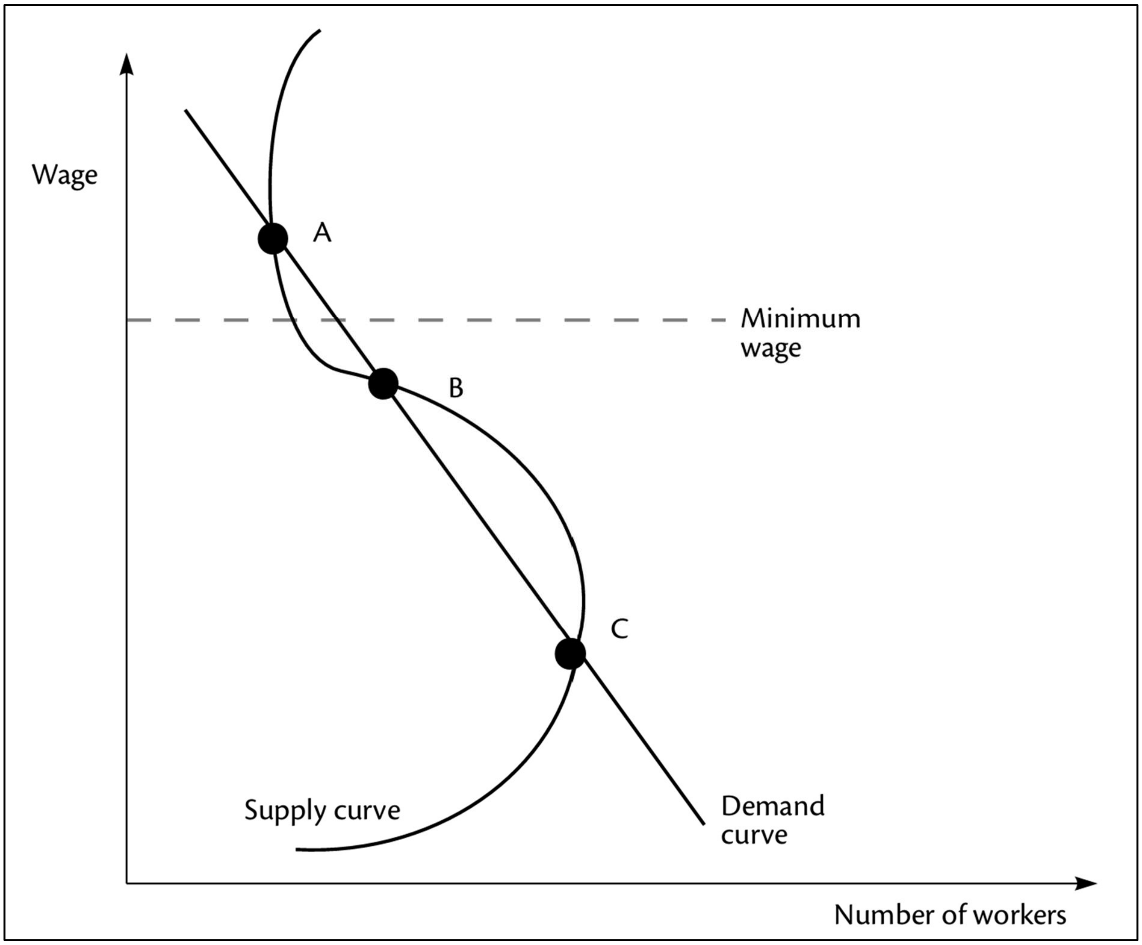

Figure 6: *"An alternative view of the impact of a minimum wage" (Atkinson, 2015, p. 250).*

Building on the example above where there can be multiple market outcomes, Atkinson argues there are additional elements that should also factor into economic analysis. For example, (i) social context and ideas of fairness can be determinative of wage, and (ii) there are other actions such as a rebalancing of firm power which can affect outcomes. First, markets operate within social contexts, which influence distributions of income, and therefore wages cannot be determined simply by their contributions to output alone (Atkinson, 2015). Supply and demand functions only helps sets boundaries for wage range, while social bargaining practices play determinative roles (Atkinson, 2015). Here, normative and social elements are influential: ideas of fairness and social norms (which can be subject to change) can influence wage determinations. For example, some employers integrate principles of fairness in respect of wages to attract the right employees (Atkinson, 2015).

Second, assumptions that firms and economic actors are perfectly competitive and take prices is not realistic as was discussed in Chapter 1, and ideas from this can be extended. Some firms hold significant market power and can set their own pricing strategies (Atkinson, 2015). Trade unions can limit firms' exploitation of market power in pricing products and affecting wages (Atkinson, 2015). Atkinson argues that interconnections between labour, capital and product markets affecting the general equilibrium of the economy should be explored when looking at the economy as a whole, and the power of actors and their position in the market are affective of outcomes (Atkinson, 2015). Atkinson's normative stance is that the current power balance is skewed towards firms against workers and consumers, and he argues for shifting such imbalances as well as for firms to take into account greater social responsibilities (Atkinson, 2015). He also argues that ethical codes can also lead to fairer distributional results (Atkinson, 2015).

The theorem of the second best and the minimum wage example highlights there are other issues when perspectives closer to the real world are applied to standard thinking in welfare. In addition to these limitations, standard approaches may also fail to capture other important human elements, as discussed below.

PART B. ALTERNATIVE WAYS OF EVALUATING ECONOMIC POLICY

Part B discusses how alternate ways of evaluating economic policy can identify elements important to welfare, such as human capabilities, freedoms, and dignity – factors not adequately addressed by mainstream approaches.

B.1. Evaluating Economic Approaches

Amartya Sen developed the "**Capabilities Approach**", an influential concept in development economics. His rationale for the capabilities approach is explored as it gives different perspectives on orthodox economic thinking.

Sen's capabilities approach is an evaluative approach focusing on the concept of people's capabilities and freedoms (Sen, 1999). Freedoms[7] are used to evaluate the success of society and also influences a person's ability to help themselves and develop "agency" (Sen, 1999). Sen's concept of agency relates to people who "*acts and brings about change, and whose achievements can be judged in terms of her own values and objectives*" (Sen, 1999, p. 19); this version of agency relates to treating people as active social, political and economic participants who have freedoms to do what matters to them, not as merely passive recipients of policy. This is different to the rational choice theory view of agency as well as human agency discussed in Chapter

[7] Sen noted five "instrumental" freedoms (covering (i) political, (ii) economic, (iii) social, (iv) transparency and (v) protective security) that influence people's general capabilities and are interlinked with one another (Sen, 1999).

3. Sen's concept provides another way for economics to evaluate policy by shifting perspectives on how human beings are viewed.

To assess different approaches in economics, Sen focuses on looking at what he calls "**information bases**", or the information required for making a judgment as well as information excluded under the approach in question (Sen, 1999). Looking at the information base shows the thrust of various approaches in economics. Sen applies this analysis to three approaches in traditional economic thinking on welfare: (i) utilitarianism (ii) a narrow focus on income and wealth and (iii) libertarian rights-based approaches. Sen argues the information bases for each approach are insufficient. These critiques are discussed below.

B.1.1. Utilitarianism

Maximising the utility of society and has been a dominant ethical theory of justice for traditional welfare economics. Modern interpretations of utility link the concept to the fulfilment of desire and people's observable choices, where every choice is judged by aggregated sum of utilities generated by those choices (Sen, 1999). However, utilitarianism's information base focuses only on the total utility of everyone (Sen, 1999). Three of Sen's critiques of utilitarianism are noted. First, under utilitarianism there are no sensitivities to distribution, and its narrow information base leads to significant ethical limitations since inequalities are ignored (Sen, 1999). Utilitarian approaches also do not allow for important interpersonal comparisons (Sen, 1999), and this will also be discussed in respect of income below. Secondly, utilitarian approaches also ignore key freedoms (Sen, 1999). Aspects of quality of life or normative evaluations have no influence on determinations under utilitarian theory (Sen, 1999). Thirdly, utility can be significantly inequitable to those constantly deprived because mental conditioning and adaptive attitudes force people to adapt to poor conditions, conditioning and limiting their desires and expectations which skew utility assessments (Sen, 1999). People need to have the right conditions to be able to judge the lives they want to live, and this requires a wider information base than utilities (Sen, 1999). The above thus reiterates that maximising utility in traditional welfare economics does not always lead to the best outcomes.

B.1.2. Income and Wealth

There is also a substantial focus on income and wealth in welfare economics. Sen asserts traditional economic thinking is often too narrowly focused on these aspects (Sen, 1999). Approaching income from a utility perspective is also particularly problematic since "*[h]uman diversity is among the difficulties that limit the usefulness of real-income comparisons for judging different persons' respective advantages*" (Sen, 1999, p. 69). Utilitarianism presumes everyone has the same choice behaviour and theoretical demand functions have severe limitations because in reality people have different demand functions (Sen, 1999). The utilitarian treatment of income fails to allow for interpersonal comparisons of utilities, and two different people may have different opportunities or well-being even with identical commodity bundles (Sen, 1999). Separately, Sen notes there is a gap between concentration of economic wealth and concern for the kind of lives people can live (Sen, 1999). For Sen, while wealth is important and is useful, it is only one factor affecting substantive freedoms; it is not enough to just maximise income or wealth and economic growth cannot be an ends itself – policy should focus on its impact on the lives of people and their freedoms (Sen, 1999). The above is hence a reminder that welfare thinking focused purely on wealth and income leads to a narrow view of human life – economics is not just about income and wealth and the capabilities approach discussed below addresses this.

B.1.3. Rights and the Priority of Liberty

Libertarianism has been used to champion free market theories, and the idea of rights is also a core tenant in libertarian views of justice in welfare economics. Sen discusses theoretical notions of libertarianism, where some types of rights have nearly complete priority over social goals (Sen, 1999). Under this concept, the information base consists entirely of liberties and rights (Sen, 1999). Procedures are designed to ensure such rights are to be accepted regardless of outcomes, and there is an absolute priority of rights as opposed to a view of comparative importance (Sen, 1999). Sen is critical of this approach because it is possible to have situations were rights are not violated, yet there can be serious deprivations of freedoms (Sen, 1999). For example, serious famines can occur in situations where rights are not being violated; people may starve because their entitlements do not lead to circumstances where they have enough food or resources (Sen, 1999). The in-consequentialist approach of libertarianism thus also needs to broaden its information base to cover key freedoms (Sen, 1999). Part C will expand on libertarian theories which have influenced thinking in welfare, but it is noted that a heavy focus on rights is not always the best approach either.

B.2. The Capabilities Approach

In the context of the critiques above, Sen offers an alternative way to evaluate economic policy. Broadly, Sen's Capabilities Approach is about improving the "**capabilities**" and "**functionings**" of people. In short, capabilities are what a person can do, and functionings are essentially what a person does (Sen, 1999). A person's capabilities set are the mixture of functionings feasible for that person to realise, while combinations of functionings are reflective of a person's actual achievements (Sen, 1999). The approach looks at what people are able to do, be and achieve in the context of their lives.

Sen's capability approach is an evaluative approach, is pluralistic rather than prescriptive (i.e. it does not have a specific or clear scale), and can be used in many ways (Sen, 1999). How functionings are ranked is ultimately a social exercise for citizens to determine (and Sen champions determination through democracy) (Sen, 1999). The evaluative nature of the approach allows for comparisons of capabilities to be made, which can then be applied to help sensitise economic or social policies in various contexts (Sen, 1999). As discussed below, it is possible to also extend certain discussions from Chapter 1 with Sen's rationales for the capabilities approach.

B.2.1. Extending discussions in Chapter 1 with Sen's rationales

Sen's also analysed Arrow's Impossibility Theorem, discussed in Chapter 1, from the lens of his capabilities approach. Sen asserts that the theorem "*does not in fact show what the popular interpretation frequently takes it to show. It establishes, in effect, not the impossibility of rational social choice, but the impossibility that arises when we try to base social choice on a limited class of information*" (Sen, 1999, p. 250). Arrow's Impossibility Theorem has an information base which consists only of preference rankings of persons (individual orders of relevant alternatives) and this is inadequate for making judgments about economic welfare problems (Sen, 1999). Sen argues having a logical framework for a reasoned social assessment is not possible because there is a heterogeneity of preferences and values, and ideas need to go beyond narrow conceptions of self-interest because of the wide range of human behaviours and values (Sen, 1999). Sen notes that rules for economic decision making do not consider a variety of other information, and he argues that his capabilities approach allows for a better way of social and economic assessment (Sen, 1999).

Chapter 1 also discussed Sen's views on preference theory alongside Hirschman's. In addition, Sen refutes notions that humans are uncompromisingly self-interested. While self-interest is an important motive, people's actions can also reflect values with clear social components beyond purely selfish behaviour, and social norms can emerge from reasoning and evolutionary selection of behaviours (Sen, 1999). These values play important roles in different types of social organisations, including market mechanics, politics, and the provision of basic public goods (Sen, 1999). Sen notes "*rational choice*" is typically used with simplicity, based on personal advantage, but he disagrees that rationality should be narrowly defined (Sen, 1999). It is possible to have different interpretations consisting of sympathy and commitment, concepts going beyond self-interest: sympathy, broadly, in the sense that there is a concern for others, commitment in the sense people may make sacrifices for other ideals like welfare (Sen, 1999). In addressing issues like distribution and equity, broader motivations of humans, such as humanity, generosity and public spirit emphasised by Smith should be considered (Sen, 1999). For Sen, people exist socially and have a responsibility to the problems around them and in society (Sen, 1999).

A key point Sen has made in his capabilities approach and the rationale for it is that for human beings, there's much more that economics should focus on beyond the traditional ways of thinking. It's not just about maximising utility, nor income and wealth, nor rights, and ways of deciding what is best for society using traditional concepts of rational choice is not enough. An approach which encompasses how humans behave as well as what matters to them is needed. Sen's comments about needed to account for a wide range of human behaviours (beyond self-interest), the emergence of socially determined norms and the importance of values are important themes in Chapter 3.

B.2.2 Nussbaum's Prescriptive Approach

Sen's version of the capabilities approach is intentionally not prescriptive. This is viewed as limitation by some. Martha Nussbaum developed the approach with Sen, but asserts the approach should set specific criteria (Nussbaum, 2011). While Sen views capabilities as zones of freedoms, Nussbaum argues for the idea of capabilities as fundamental political entitlements (Nussbaum, 2011). She sets out ten necessary capabilities as a minimum threshold applicable universally to every person (Nussbaum, 2011). Nussbaum does not directly suggest redistributive or balancing approaches to address welfare issues like inequalities (although some may be indirectly involved to achieve the minimum level of capabilities), rather she says that provided people are above the threshold certain degrees of elements like inequalities could be accepted (Nussbaum, 2011). However, Nussbaum's approach, while more prescriptive is still just "*a partial theory of social justice: it does not purport to solve all distributional problems; it just specifies a rather ample social minimum*" (Nussbaum, 2011, p. 40). Thus, while the capabilities approach raises relevant perspectives on what economics should consider, it still (intentionally) does not provide a specific approach to policy, and importantly the question of how economic thinking should encapsulate concerns raised by the evaluative approach still remain.

Nussbaum also argues for a key element connected to the capabilities approach: **dignity**. She acknowledges that the concept of dignity is vague and is more of an intuitive notion related to ideas of respect (Nussbaum, 2011). In the context of the capabilities approach, it is used to emphasize that policy and thinking needs to treat people as an *end*, one that is focused on protecting their agency (the term "agency" is used broadly by Nussbaum but is related to Sen's version), rather than treating people as passive receivers of policy decisions (Nussbaum, 2011). This "*approach to social justice asks, What does a life worth of dignity require*?" (Nussbaum, 2011, p. 34). Hence, social and economic policies must consider the impact on human dignity, and this is what her minimum threshold seeks to achieve (Nussbaum, 1999). This discussion also raises an interesting perspective – do current economic models and thinking lead to people having lives worthy of dignity?

Discussion on the capabilities approach express a wider concern for other aspects of human life. Rationales for the approach extends discussions of limitations highlighted in Chapter 1. Other ideas, such as the role that society plays in determining functionings as well as the view of human beings as ends, with each human worthy of dignity, are also concepts beyond orthodox thinking. However, the question of what should be done with standard approaches in economics still remains since the capabilities approach does not provide an answer to this. Chapter 3 will consider whether a macro approach can move thinking on methodology towards a direction that also covers these concerns.

PART C. NORMATIVE DEBATES ON EQUITY

C.1. Theories of Equity

Part C is a deliberate and temporary shift in the focus of the Chapter to a broader philosophical perspective: debates on equity. This discussion is relevant because normative views are fundamental to policy, and how it is framed in economics can be re-evaluated in the context of this paper's discussions. Normative values influence human behaviour, affecting economic outcomes. Real-world economic policies reflect normative stances even though the space for normative debates is wide. Importantly, traditional thinking in economics may not cover these concepts adequately. Discussions on equity can also highlight limitations of existing approaches in economics that should be considered for a macro theory.

Part C will cover main debates on justice with a degree of description to form a rounded (rather than cursory) understanding of theories of equity, since this will help the reader grasp the complexity of these issues and more clearly understand why the treatment of normative and moral values have vital roles to play in economic thinking. In "*Justice: What's the Right Thing to Do?*", American political philosopher Michael Sandel analyses the main traditional philosophical arguments on justice and equity which can be split broadly into three streams: (i) maximising utility/welfare, (ii) respecting freedoms, and (iii) promoting virtue (Sandel, 2010).

C.1.1. Maximising Utility

Justice can be seen as an approach of maximising utility or welfare for society; as mentioned, this idea has had significant influence on thinking in welfare economics. For example, Chapter 1 noted one of the limitations of the first fundamental theorem of welfare economics was that Pareto efficient distributions are not necessarily equitable, since distribution is not considered under this approach (e.g. it can still be Pareto efficient where one person has all resources and others have none). Sen's critiques of utilitarianism were also explored in Part B.1.1, so only a brief mention of Sandel's arguments will be noted here for completeness. First, justice under utilitarianism is not a matter of principle but of blunt calculation (Sandel, 2010). It fails to respect individual rights and has potential to lead to cruel outcomes for individual people in ways that violate decency and respect (Sandel, 2010). Second, it does not allow for qualitative differences or interpersonal comparisons, and all values are set on a single scale (Sandel, 2010).

C.1.2. Respecting Freedom

The second main approach is to see justice as respecting freedom of choices. While Sen criticised libertarianism for its absolute focus on priority of rights, Sandel critiques this approach normatively. He asserts that while the approach addresses the first criticism of utilitarianism (that utilitarianism could lead to individual rights being grossly violated), it still fails to address the second critique, i.e. that the approach fails to account for qualitative differences between certain types of freedoms (Sandel, 2010). While there can be agreement that certain rights are fundamental, beyond identifying these, Sandel argues that this approach still treats people's preferences as they were without questioning them, its comprehensiveness and other key elements (Sandel, 2010). Sandel's rationale is worth exploring further because these views of justice are reflected in many normative discussions in welfare economics. Broadly speaking, there are two schools of thought under this notion of equity (i) the laissez-faire school and (ii) the fairness camp (Sandel, 2010).

C.1.2.1. Laissez-faire and Free Market Libertarians

To some free market libertarians like Milton Friedman, life is unfair and this is something that people should learn to live with and even benefit from (Sandel, 2010). Free market libertarians under the laissez-faire camp, argue for unfettered markets, minimal government regulation, and for people to be able to conduct free market exchanges in ways that respects their freedom (Sandel, 2010). Individual liberties are violated by laws restricting free market (Sandel, 2010). People have fundamental rights to do what they choose provided other people's rights are respected (Sandel, 2010). Economic inequality is not unfair if it does not manifest through force or fraud, and individual freedoms are fundamental (Sandel, 2010). Philosopher Robert Nozick also took a similar stance, advocating for people's ability to make choices in the free market (Sandel, 2010). On taxation, Nozick argued that the state is not entitled to take (e.g. for redistribution) what people have or earned without their consent and provided their initial holdings were obtained in a just manner and properly transferred (Sandel, 2010). Friedman also disagreed with a minimum wage, arguing that governments should not stop employers paying wages people were willing to agree to (Sandel, 2010).

Sandel critiques free market libertarians because the "*free*" market is actually not that free. For people with few options, circumstances may mean that people act out of necessity, not freedom (Sandel, 2010). Additionally, Sandel argues that if certain goods and social practices were sold for money, such goods and practices would be degraded (Sandel, 2010). There are three observations out of the above discussion, related to discussions on general equilibrium theory from Chapter 1. First, what are the implications to human agency if the free market as theorised is not really that free? As Sandel notes, people may act out of necessity, not freedom – in this case, do we see a theoretical ignorance of agency? Do free market models simply expect people to optimise to equilibrium states when in reality people cannot act consistently with theory out of practical necessity? If this is the case, are such models desirable and what kind of agency is being exercised? Second, some things cannot be traded, and this is related to Sandel's argument that trading certain goods and services degrade them. For example, what matters in people's lives cannot be traded on the market – the dignity of not having work or a job loss cannot simply be compensated through economic terms – there are certainly other aspects that matter like dignity. One can keep in mind Nussbaum's point when considering proposed approaches – what does a life worthy of dignity require? Third, there are also concerns related to discussions on the theorem of the second best – how effective are free market models based on Pareto efficiency in a real world where there exists multiple distortions and market failures? If there is more than one distortion (which is likely in reality), how helpful is it to champion these models when, in such case, "all bets are off"? Should these notions and models be used in setting policy goals, or are these models oversimplified views of the real world with unobtainable efficiency goals? These questions show that while free-market theories are interesting constructs, this approach, representing some laissez-faire views of equity, would run into significant real-world problems.

C.1.2.2. Fairness and Egalitarians

Those in the fairness camp are concerned about egalitarian principles, requiring policies to address social and economic disadvantages (Sandel, 2010). Among prominent contemporary thinkers is John Rawls, who was a significant influence on many modern economists (Sen, 1999; Sandel, 2010; Atkinson, 2015). Rawls based his theory of justice on the notion of hypothetical consent, where laws are just if the public as a whole would agree to them (Sandel, 2010). He applies a "*veil of ignorance*", or a theoretical situation that assumes individuals do not have any knowledge about who they are, in order to determine what is equitable. The agreement or position reached in this situation would be an original position of equality, because people, as self-interested and rational individuals[8] would choose such position in such context (Sandel, 2010). Utilitarianism would not be chosen, because, under the veil of ignorance, people would think they could end up as part of an oppressed minority (Sandel, 2010).

Hypothetical positions allow for the two following principles: (i) equal fundamental rights for everyone, with priority over general welfare and social utility, and (ii) socio-economic equality, where equal distribution of wealth is not required, and social and economic inequalities are allowed as long as they operate in favour of the least well-off in society, this latter concept being called Rawls "***difference principle***" (Sandel,

[8] Rawls assumption of people as self-interested and rational individuals appears strikingly similar to the principles in rational choice theory on self-interest. It's therefore possible that his perspective of human behaviour could be expanded to account for more nuanced views of behaviour.

2010). Hence, huge inequalities, such as significant wealth by few individuals, may be justified if such wealth, taken on balance, works in favour of the least advantaged. Inequalities could be acceptable under the difference principle, if it is subject to appropriate progressive tax systems which taxes the rich for society's welfare and where the poor benefit more than they would under other constructs of equality (Sandel, 2010). The Rawlsian difference principle provides a theoretical solution which corrects for unequal distributions, with a focus on the least advantaged (Sandel, 2010). In contrast to free market libertarians who say that life is unfair and this is something that people should learn to live with and even benefit from, "*Rawls states a familiar truth that we often forget: The way things are does not determine the way they ought to be*" (Sandel, 2010, p. 165) – to Rawls, natural distributions are simply natural facts and is neither fair nor unfair, but it is a matter of fairness how institutions deal with these facts (Sandel, 2010).

The above highlights another important view of equity. However, a number of questions can be raised. How well does this rationale justify huge concentrations of wealth with the few in society today, and how properly applied or fair are current progressive tax systems? Under what kind of economic theories and methodologies are these concepts applied? How do egalitarians define their policy goals within current economic thinking? Is there a better way to implement these ideas in the real world, if they end up using traditional economic frameworks to frame their solutions (perhaps due to a lack of better alternative models)? If so, how much are they better off in achieving their objectives than free market libertarians, or are they still afflicted with the same limitations this paper has raised?

C1.3. Virtue and Sandel's version of justice

Sandel notes that Rawls has put forward one of the strongest philosophical arguments for a more equal society, but he also criticises it because the freedom to choose, even under fair contexts, is not sufficient for a truly fair society from a moral perspective (Sandel, 2010). "*Liberal justice requires we respect people's rights ... not that we advance their good*" (Sandel, 2010, p. 224). Rawls veil of ignorance essentially is a morally neutral stance on what constitutes a good life (Sandel, 2010). For Sandel, determining rights and duties requires articulating moral positions, and this determination requires social and human input (Sandel, 2010). Such determination is signalled by a promotion of virtues, but this too has problems.

The third main approach is where promoting virtue and conceptualisations of the common good leads to justice. Traditionally, this approach is linked with concepts of what is virtuous, what is a good life, and what are appropriate morals and ideals (Sandel, 2010). The perspective is often identified with cultural conservatives and religious movements, and Sandel criticises this approach for essentially suggesting that morality be legislated against rights of citizens in a liberal society, and could be a potential form of coercion and intolerance (Sandel, 2010). Hence, from the above discussions, there are already three different views of equity, each which could be criticised. Thus, the question of what "*ought to be*" does not always have a clear answer.

Sandel's idea of justice, in brief, is a version championing virtues, but is a different political philosophy which is not entirely prescriptive and is still under development (Sandel, 2010). At a high level, his version of "**communitarianism**" favours a form of politics of the common good, a form of political discourse aimed at reconstruction of the civic life, discourse on civic consequences of inequality, distributive justice and a common good which can help find new angles and arguments which traditional politics and arguments may not (Sandel, 2010). Essentially, what is good needs to be properly determined by society based on new forms of political discourse.

Sandel's position that moral and normative positions should be determined by social and human input is consistent with the discussions in Chapter 1 and 2, from references from Adam Smith and Vernon Smith's interpretations on human moral values and formation of moral codes of conduct, Atkinson's comments on social and normative elements influencing economic outcomes and Sen's norms and functionings being a matter to be socially determined. But how well are notions of normative values being socially determined reflected in economic thinking? The mainstream frameworks, built on certain theoretical constructs such as rational choice and preference theory, does not support this – the scope is simply too narrowly focused on reductionist theories of behaviour to be capable of capturing these elements. Also, as noted in Chapter 1's discussion, positivist economic approaches detach from the normative, but this is not sufficient because views of equity and how they are applied do matter – economic thinking on such normative debates is consequential to people's lives in the real world.

C.2. Part C Discussion

The discussion in Part C show how varied and contested notions of equity can be. Versions of justice are a contested space even among economists, for example between free market libertarians and those focused on egalitarian distributions based on Rawlsian principles. There are going to be various debates on what story of equity is best, and this is one more important reason why limitations to traditional economic thinking need to be addressed.

If one relies only on mainstream economic approaches, which as discussed can be limited by parsimonious over-simplifications, problematic assumptions, and fundamental inadequacies in capturing human and social elements, the harder it would be to achieve goals for equity in a world with many distortions, where complex human elements play big a part, and where notions of equity are contested yet insufficiently addressed by mainstream models. In other words, trying to apply normative stances on equity, which at times are contested notions, to economic thinking while using approaches with significant deficiencies would likely lead to unsatisfactory normative results. Another approach is desired. Normative and moral values, which can include the different debates on equity above, will also be discussed in the context of human agency and a macro approach in Chapter 3.

PART D. CONCLUDING REMARKS FOR CHAPTER 2

Chapter 2 extended discussions of ideas beyond the fundamentals noted in Chapter 1. Part A's discussion on the theorem of the second best and minimum wage show limitations to orthodox approaches to welfare from perspectives closer to the real world. Part B highlights that alternative approaches to evaluate economic policies suggest there are much wider and important human elements, such as capabilities, freedoms and dignity, that standard economic analysis does not address. Part C's coverage of the main debates on equity and fairness argue that traditional economic frameworks can lead to unsatisfactory normative outcomes. All three parts highlight existing gaps that require another approach that can encompass these points. Chapter 3 considers if notions discussed are better served under a macro approach to economic thinking.

CHAPTER 3: TOWARDS A MACRO THEORY

Chapters 1 and 2 form an argument that a different approach in economic thinking is desired. Chapter 3 explores whether a macro perspective is a suitable approach to address the points raised. A **macro** approach refers to one that is based on aggregate outcomes which cannot be fully explained through reductionist views of individual behaviours. This Chapter considers how a macro approach can cover concerns raised and lays the groundwork for future thinking by exploring the following: (i) critiques of methodological individualism, (ii) theories on complex systems, and (iii) conceptualisations of and ontological frameworks for understanding human agency in a broader aggregated perspective.

PART A. REVISITING METHODOLOGY

Chapter 1 discussed that traditional economic frameworks are based on methodological individualism, which attempts to explain social phenomena by analysing individual consumers and firms as the primary unit (Blume and Easley, 2008). Reinhard Neck noted that in economics, social phenomena has typically been understood through two competing notions: individualism and holism (Neck, 2021). Under **individualism**, the individual is the key component, and groups and society are characterised by the behaviours and characteristics of individuals (Neck, 2021). This contrasts with **holism** or collectivism, which looks at the group or the collective, and considers individuals as determined by the group (Neck, 2021). Methodological holism was criticised by J.W.N. Watkins on the basis that a social system as an organic whole is unable to derive the behaviour of its components, and Watkins' ideas that social phenomena are not able to explain the motivations and actions of the individuals contributed to the prominence of microeconomic foundations in macroeconomic theory (Neck, 2021).

Neck argues there are two strands of individualism: a "*strong*" or strict definition, where explanations are framed from the perspective of individuals in isolation, and a "*weak*" or mild definition, which considers the individual primarily but also includes influential social interactions (Neck, 2021). Neck notes that methodological individualism has been critiqued by multiple economists because individuals' decisions are made in contexts influenced by social ideas and hence reducing explanations to individualist concepts do not work (Neck, 2021).

Neck argues that ultimately, while strict or "*strong*" individualism has typically been rejected, there is a strong case to use a model of "*weak*" individualism, since this notion can still capture how behaviours and interactions of individuals and their associations in various groupings can be analysed through defined categorisations (Neck, 2021). Such approach allows for individual interests of agents to be analysed in relation to specified types of group choices within certain defined groupings (Neck, 2021). Neck asserts that his model can be applied to game theories on cooperation and conflicts as well as internal relations within organisations (Neck, 2021).

While Neck may be attempting to explain broader behaviours using a type of individualism with specified interpretations of groupings and group choices, Neck's model is too narrow in categorising individuals to limited types of interactions and by identifying limited types of groupings. In reality, society is much more complex. Neck's notion also discounts the possible complexity of interactions between agents, as well as emergent outcomes and properties that can arise through various forms of interaction and influences between various structural levels, factors which cannot be fully understood from individualist perspectives. Hence, even modified versions of weak individualism are still insufficient.

Discussions in Chapter 1 and 2 have also shown that mainstream economic notions based on reductionist individual perspectives and a narrow view of agency have failed to address important elements, such as (i) qualities of fairness and cooperation seen in experimental economics, (ii) the range of elements related to human behaviours as discussed by Sen and Hirschman on preferences and changing values, as well as Vernon Smith's exploration of sympathy, a concept that extends awareness and cognition to others' perspectives, (iii) social contexts that can affect market outcomes as argued by Atkinson (iv) the capabilities, freedom and notions of dignity raised by Sen and Nussbaum that are ideas for a more nuanced evaluative and socially focused approach, and (v) the broader debates on equity which Sandel argues are to ultimately involve social determination. These are complex human elements and methodological individualism is too simplistic a perspective to address these factors. Economic thinking in welfare based on these notions are also limited. For example, the fundamental theorems of welfare economics, while appearing holistic in the sense that it tries to put forward a model for the welfare of society broadly, is based on individualistic and traditional notions of preferences. Limitations discussed indicate that economic methodology should have a more comprehensive view which can capture important elements from a truly aggregated perspective, and theories of complex systems and human agency can inform this macro view.

PART B. COMPLEX SYSTEMS

The macro approach that this paper conceptualises is based on aggregate outcomes, which involve an understanding that social systems as a whole are complex systems shaped by interactions and emergent properties of its elements at various levels (and in particular, the whole is not just a sum of its parts). Understanding outcomes from an aggregated perspective allows the whole to be better understood, and this is a view that can guide economic thinking in welfare to be more attuned to reality.

In the context of complex systems, methodological individualism has a critical flaw: it is not possible to extrapolate the macro from the micro. Philip W. Anderson show that, from the scientific world (such as in physics and chemistry), reductionist views are inadequate to explain dynamics and systems of the whole: "*The behavior of large and complex aggregates of elementary particles, it turns out, is not to be understood in* *terms of a simple extrapolation of the properties of a few particles. Instead, at each level of complexity entirely new properties appear*" (Anderson, 1972, p. 393). Using the example of molecular physics, Anderson explains: "*the whole becomes not only more than but very different from the sum of its parts*" (Anderson, 1972, p. 395). New dynamics emerge when systems have different levels of complexity, and such dynamics cannot be fully understood by looking at laws and dynamics and lower levels (Stumpf, 2022). In **Figure 7** below, Michael Stumpf illustrates an example of Anderson's increasing complexity in science among various system levels, from quantum electrodynamics all the way up to society and human culture.

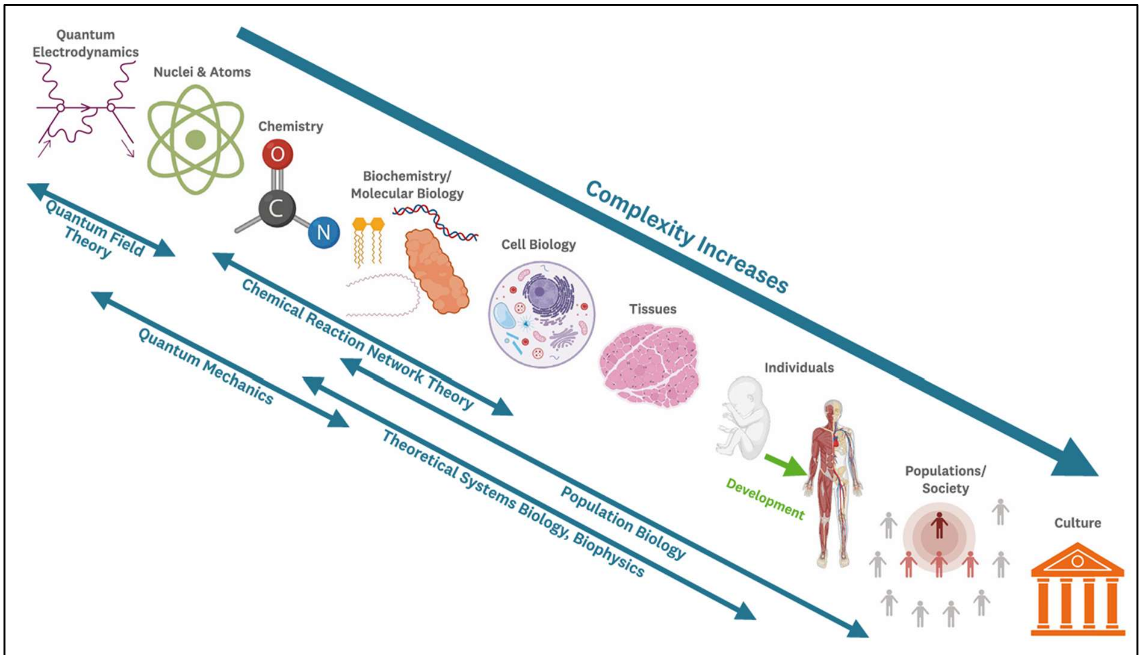

Figure 2. Illustration of levels of complexity in science (many more could be added to this figure)
Each level depends on the previous, lower-complexity levels, but typically we cannot understand the behavior at one level solely in terms of the underlying dynamics. As a result there is no single universally appropriate theoretical/modeling framework that applies across all levels. For many levels we do have different modeling frameworks that may help us to capture—and hopefully to understand—their dynamics and behavior.

Figure 7: *Increasing levels of complexity cannot be understood by previous levels alone (Stumpf, 2022, p. 596).*

Is it possible to understand society and human culture by only understanding the properties and rules applicable at the level of quantum electrodynamics only? The answer is clearly no, yet this is the type of thinking consistent with reductionism. Theories based on individualism in economics are subject to similar limitations. Economics involves complex human systems interacting at multiple levels, and so properties at micro levels cannot be used to explain the whole which are aggregate outcomes. Theories also need to reflect the complexity of humans and human interaction at multiple structural levels rather than only applying abstract individualist concepts with scoped assumptions extrapolated to models purporting to represent the broader world. A macro view is desired. Such view sees human beings, human elements, interactions and social systems as part of a broader complex system. Understanding the aggregated outcomes arising not just from the sum of all parts but through various interactions of its elements and emergent properties can better inform welfare theories in economics. One vital element to building this approach are theories of human agency and ontological frameworks.

PART C. HUMAN AGENCY, ONTOLOGICAL FRAMEWORKS AND THE AGGREGATE PERSPECTIVE

This Part argues that more comprehensive concepts of human agency and alternative ontological frameworks can provide a better basis to understand aggregate outcomes for a macro theory.

Understanding human agency helps contextualise discussions in Part B so that the aggregate perspective can see human agency as having a key role in a view where human social systems are complex systems influenced by interactions. In this Part, "**Human Agency**" refers to intentionality in behaviour which has gone through a cognitive process leading to such intentionality. It is helpful to understand how this definition is derived by looking at the evolution of agency in humans. Part C will also discuss how human agency is conceptualised within the broader notion of a collective form of agency, as well has how this fits in with wider ontological frameworks.

C.1. The Evolution of Agency

Humans are unique to other living organisms because how cognitive abilities, social interaction and social structures evolved to create distinct factors affecting agency. Michael Tomasello explored the notion of agency from an evolutionary perspective, and analysed how living entities *direct* and *control* their actions (Tomasello, 2022). Tomasello looked at various types of animals, from lizards, employing only forms of reactive control, to different types of mammals (Tomasello, 2022). Mammals engage in what he calls proactive "*first order executive tier control*", which means engaging in value based choices and planning and executing actions while reacting to obstacles, reflecting intentional action (Tomasello, 2022). Mammals also live in social groupings and compete with others, which leads to more complex cognitive skills (Tomasello, 2022). Great apes have a "*second order executive tier*" of functioning, whereby individuals monitor and evaluate their own first order executive control, and are subject to structures of social worlds (Tomasello, 2022). They also plan for future goals, make logical inferences based on a comprehension of causal and intentional relations, are critical of their decision making processes and analyse issues and act to solve them (Tomasello, 2022).

Humans are more advanced than great apes because they are able to forgo pursuing individual goals to align, communicate cooperatively and coordinate toward common goals with a partner, or cultural groupings with more advanced social coordination and social motivation; this involves coordinating joint agencies and joint goals for common benefit (Tomasello, 2022). This leads to "*cooperative rationality*", or acting in a "*context* *of their collaboratively structured agency*" (Tomasello, 2022, p. 103). Social cooperation required new socio-moral attitudes and emotions, involving notions of respect, fair treatment and legitimate rebukes for uncooperative behaviour, hence there are normative standards in human social relationships (Tomasello, 2022). Modern human cultural groups also lead to collective agencies, where goals and decisions were made as a single unit, through discussion and reaching consensus (Tomasello, 2022). Individuals thus developed group-minded concern for the culture's goals and welfare, with mechanisms for group level social selection that excluded non-cooperative members in a form of collective self-regulation (Tomasello, 2022).

Modern humans thus became "*fully normative agents operating with a normative rationality of obligation*" (Tomasello, 2022, p. 113), with three modes of agency (i) "*I*" – pursuing self-interest, (ii) "*we*" – operating via group's collective practices and norms, and (iii) "*me*" – in the role of an agent doing duties the cultural group requires (Tomasello, 2022). "*Normative rationality thus means adapting one's individual agency to "objective" facts and values as they inhere in collective cultural experiences*" (Tomasello, 2022, p. 115). Such objective normative standards for individuals means they operate under a "*new form of socially perspectivised consciousness*" (Tomasello, 2022, p. 117).

The above discussion leads to two key points when considering economic thinking on human behaviour. First, a crucial point is that traditional notions of agency should be reconsidered. Tomasello's analysis shows a much more nuanced version of human cognition beyond purely maximising self-interest, and importantly his version of human agency covers a type of "collaborative rationality" that forms a form of "collaboratively structured agency". Tomasello argued there is not one but three modes of agency covering not only self-interest but also types of agency facilitating group practices involving awareness of others, group objectives and of one's role in society. This construct provides room to explain elements that this paper argued was missing in methodological individualism and a restrictive view of agency discussed in Chapter 1. For example, theories of fairness and cooperation, the ability to sympathise or understand another's perspective, the determination of and adherence to social values and normative standards, i.e. such factors that lead to a broader and more collective "*socially perspectivised consciousness*" encompassing key human, social and moral elements discussed. This kind of thinking allows future economic concepts to be based on a more comprehensive version of agency that is attuned to human behaviour and closer to reality. It also reflects a more collective form of agency which macro theories can build on in understanding aggregated outcomes from human behaviours, society and interactions.

A second ancillary point is that moral values, normative elements and debates on equity discussed in Chapter 2, should not be seen as necessarily separate from conceptualisations of human behaviour and humans in economic thinking. Moral values and notions of equity are part of what makes us human, and it is part our evolutionary history to consider the normative and apply equitable values and rules of conduct. Societal rules and culture can affect what drives humans to consider another's perspective or to act with awareness of others' perspectives, something which individualist views fail to explain. Normative evaluations form part of human culture which ultimately influences "collaborative rationality" and aggregated outcomes of a broader social system. Sometimes this develops implicitly through cultural rules and normative behaviours, and sometimes this is done explicitly by deliberate and express policy decisions derived and agreed through political consensus as Sen or Sandel suggest. In this context, if one revisits the discussion between positive and normative economics from Chapter 1, it is possible to argue that the distinction can be reframed. Discussions in economics about "*what is*" versus "*what ought to be*" can suggest the normative is an external element separate from economic models based a narrow conceptualisation of humans, when in fact, it may by virtue of us being moral-setting humans with collective forms of human agency, be part of our broader "*socially perspectivised consciousness*". Notions of equity thus may be much closer to us than we and many economists may have traditionally thought, and macro methodologies may better incorporate these aspects than orthodox approaches.

There are also other key factors to incorporate in a macro theory, because human behaviour and economic activity exist in social contexts with complex interactions and properties. Part C.2. explores how viewing human interaction and emergent outcomes under alternative ontological frameworks can be part of the thinking in a macro approach.

C.2. Ontological Frameworks

Theories on interaction and emergent outcomes should also factor into a macro approach. Elder-Vass proposed an ontological framework for social structures and human agency that can contextualise the concept of emergence and add to an understanding of how aggregate outcomes are derived. As a starting point, Elder-Vass noted that the concept of agency in sociology is "*a problematic concept*" (Elder-Vass, 2010, p. 2) and that typically there is a debate between *voluntarist* views, where agency is about human reflexivity and conscious decision making, versus *determinist* views, where human behaviour is a product of dispositions acquired from social contexts (Elder-Vass, 2010). Elder-Vass argues *both* structural and agential causal power, which includes human agency, influence social events (Elder-Vass, 2010). Elder-Vass thus takes a broader view of agency, which is also suggested for a macro approach.

C.2.1. Emergence

One key concept in Elder-Vass' framework is "**emergence**", where something can have "**emergent properties**" or "*properties or capabilities that are not possessed by its part*" (Elder-Vass, 2010, p. 4). Emergent properties have a "*causal impact that is* *not just the sum of the impacts its parts would have if they were not organised into this kind of whole*" (Elder-Vass, 2010, p. 5). Using the example of water to conceptualise this, Elder-Vass notes water has properties that can extinguish a fire, but its components, oxygen and hydrogen, react differently to fire (Elder-Vass, 2010). The relationship between emergent properties and social structures and its parts are crucial elements in Elder-Vass' concept of human agency, since he argues that humans have "*causal powers of their own and implement causal powers that belong properly to higher social entities*" (Elder-Vass, 2010, p. 28).

Elder-Vass explores the links between cause and emergence. In the natural sciences, certain regularities can be produced in experiments, but only in closed systems which exclude causal influences (Elder-Vass, 2010). These observations fall away in open systems, which is the case in the real world. Causal powers may be linked to multiple interactions, and may emerge at different levels (Elder-Vass, 2010). Social structures are important, influencing inter-related structural elements, emergent properties and how various processes for those properties and its causal powers operate (Elder-Vass, 2010).

Elder-Vass argues humans have individual causal powers, which are emergent properties, and his theory of human agency is "*based on the emergent properties of human individuals, as part of a hierarchy of entities with emergent powers, including both the biological parts of human beings and the social entities composed (at least in part) of human beings*" (Elder-Vass, 2010, p. 88). Emergent properties of humans include their mental states which have causal effects, particularly on behaviour, and also include human reasons, dispositions and beliefs (Elder-Vass, 2010).

C.2.2. Elder-Vass' Framework

To illustrate the depth of Elder-Vass' framework, a high-level summary of his ontological framework is briefly described. Social structures are causal powers of social arrangements and lead to normative practices, or "*social institutions*", which are patterns of behaviours (Elder-Vass, 2010). Normative social institutions arise from normative circles (groups enacting normative practices by members holding normative dispositions) and are emergent properties (Elder-Vass, 2010). Normative circles have causal influences on behaviours of individuals, which are also affected by each person's interpretation of their normative contexts, where there are intersections with various social influences (Elder-Vass, 2010). Organisations, viewed as "*structured social groups with emergent casual powers*" (Elder-Vass, 2010, p. 144) influence social events and can set social roles and norms as well as have complex inter-relationships with normative institutions and norm circles (Elder-Vass, 2010). It should be noted that Elder-Vass' concept of emergence appears to suggest that emergence occurs upwards, i.e. from lower levels to higher structural constructs, rather than from top levels down. This is possibly due to how he tries to logically set out a clear and understandable framework from the bottom up. However, and for completeness, it is noted that emergence can occur both ways, i.e. it can also happen from top-down types of interaction as well.

C.3. Part C Discussion

Elder-Vass' ontological framework shows that to fully understand aggregated outcomes, complex systems need to include an understanding of interactions and emergence. Humans and many human elements, from the biological to the social, form parts, but the whole is not just the sum of its parts and needs to be understood from an aggregated perspective that accounts for all interactions, emergent properties, mechanisms, elements and qualities. Elder-Vass' framework provides context into how inter-linked social structures, human agency and the hierarchies of multiple levels of inter-relationships and interactions have roles to play and thus can inform the aggregated perspective of a macro approach.

Given this context, it is simply not possible for just an individualist perspective in traditional economic thinking to explain the complexities of elements discussed. In fact, this paper has shown that there is so much more that is not covered under current approaches. The discussions above make it is abundantly clear that traditional notions of human behaviour in orthodox economic thinking are significantly lacking, and consequentially theories in welfare economics premised on such thinking suffer the same problems. A macro approach using alternative frameworks like Elder-Vass' is thus more helpful to understanding economic phenomena in the real world and can help better calibrate policies in welfare.

The exact design of macro approaches in economics is an area for further thinking, research and debate. The argument in this paper is that methodology should shift from one based on reductionist views of individual behaviours to one that is based on aggregate outcomes incorporating these perspectives. Understanding and defining the scope of what constitutes aggregate outcomes and how this is derived under a macro perspective would help economists discuss issues of welfare in a more realistic and constructive light. This would require new types of theory that challenge mainstream approaches.

CONCLUSION

Chapter 1 revisited the fundamentals of economic theory forming the bases for welfare economics. The chapter covered important limitations of such theories, starting from basic building blocks to broader frameworks in welfare economics, and the discussions should serve as a cautionary reminder of key limits to a business-as-usual approach.

Chapter 2 looked beyond the fundamentals, extending discussions from three unique perspectives: (i) arguments on traditional concepts through the theorem of the second best and ideas of social contexts affecting economic outcomes in a minimum wage example, (ii) alternative ways of evaluating economic policy which focuses on what also matters for human life, such as capabilities, functionings and human dignity, and (iii) the broad range of debates on equity, which while a contested space with no clear answers, is consequential as it underpins the directions of economic policy. Chapter 2 also highlights that many crucial elements are not adequately addressed in traditional frameworks. Combined, Chapters 1 and 2 build a case that an alternate methodological approach to economic thinking on welfare is desired.

Chapter 3 argues that a macro approach, one focused on aggregate outcomes, rather than one based on reductionist views of individualist behaviours, can better address key elements identified in discussions. Methodological individualism is lacking, and broader perspectives of the macro is needed. The whole is more than just the sum of its parts, and the macro cannot be extrapolated from the micro. Macro theories should incorporate thinking from ideas on complex systems, a comprehensive notion of human agency and alternate ontological frameworks showing that complex systems involve interactions and emergent outcomes which inform an aggregated view. The theory should build upon distinctly human elements discussed in this paper. This kind of understanding for a macro approach will allow economic thinking on welfare to be more attuned to reality and help improve policy design.

All chapters combined lay further ideas for future theories built on a macro approach. This is an incredibly exciting area for the future of economic theory. Already, there are different streams of thinking and research exploring concepts that can be used in macro approaches. For example, innovative thinking on agent-based modelling (Epstein, 2014), ideas in neuroeconomics challenging existing economic methodology (Gul and Pesendorfer, 2008), and network theory applied to aggregate behaviours of the economy (Chakrabarti, Pichl and Kaizoji, 2019). There is plenty more to research and conceptualise.

While all this is promising, it is also helpful to remind oneself that approaches in welfare economics are still dominated by traditional thinking based on reductionism, so the path forward to change this will be a challenging one. This paper thus hopes to contribute to this effort by serving as a humble waypoint in any reader's journey towards a macro theory, ultimately for the betterment of the welfare of society.

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