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MASTER
ECONOMICS

Schumpeter on Rationality: Implications for Economic Policy

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M

2026



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FEP FACULDADE DE ECONOMIA
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Dissertation
Master in Economics

Supervised by
Mário Graça Moura

2026

Acknowledgements

I would first like to express my sincere gratitude to my supervisor, Professor Mário Graça Moura, for his time, guidance, and valuable insights throughout this work. His support and thoughtful feedback were essential to the development of this dissertation, and this work would not have been possible without them.

I would also like to thank my family for all their support, especially throughout my university years, and my friends for their constant encouragement along this journey. I am deeply grateful to everyone who shared this path with me.

Lastly, a special thank you to my grandmother for all the smiles, memories, and lessons.

Abstract

Though Joseph A. Schumpeter's reflections on rationality and, relatedly, rationalisation have been scrutinised, their relevance for contemporary economic policy has received less attention. This is the topic that this dissertation explores: to what extent Schumpeter's reflections point to alternative regimes of economic policy and state intervention. More specifically, the argument connects Schumpeter's concepts of rationality and rationalisation, analysing how the latter's features—the routinisation of economic activity in giant bureaucratic enterprises, on one hand, and the expansion of a critical mindset that erodes capitalism's institutional foundations, on the other—impact upon policy regimes. Furthermore, by placing Schumpeter in dialogue with F. A. Hayek's Austrian perspective on dispersed knowledge, market coordination, and planning, the dissertation examines the epistemic and institutional limits of those policy regimes. The Artificial Intelligence context of our times is also briefly scrutinised in this context. Ultimately, then, the argument assesses how Schumpeter's framework contributes to understanding the evolving relationship between capitalism, technological rationalisation, and state governance, taking some features of AI into account.

JEL codes: B25, B41, P16, P51

Keywords: Schumpeter – Rationality – Rationalisation – Hayek – Artificial Intelligence – Economic Policy

Resumo

Embora as reflexões de Joseph A. Schumpeter sobre a racionalidade e, correlativamente, a racionalização tenham sido amplamente escrutinadas, a sua relevância para a política económica contemporânea tem recebido menor atenção. É este o tema que a presente dissertação explora: em que medida as reflexões de Schumpeter apontam para regimes alternativos de política económica e de intervenção estatal. Mais especificamente, o argumento articula os conceitos de racionalidade e de racionalização de Schumpeter, de forma a analisar de que modo as vertentes desta última—a rotinização da atividade económica em grandes empresas burocráticas, por um lado, e a expansão de uma mentalidade crítica que corrói os alicerces institucionais do capitalismo, por outro—influenciam os regimes de política económica. Adicionalmente, ao colocar Schumpeter em diálogo com a perspetiva austríaca de F. A. Hayek sobre o conhecimento disperso, a coordenação de mercado e o planeamento, a dissertação examina os limites epistémicos e institucionais desses regimes. O contexto contemporâneo da Inteligência Artificial é igualmente analisado, ainda que de forma breve, neste âmbito. Em última análise, o argumento avalia de que modo o quadro conceptual de Schumpeter contribui para a compreensão da relação em transformação entre o capitalismo, a racionalização tecnológica e a governação estatal, tendo em conta algumas das características da Inteligência Artificial.

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1. Introduction

Joseph A. Schumpeter occupies a central place in twentieth-century economic thought. He views capitalism as a dynamic, evolutionary process (Schumpeter, 1942, p. 82). His analysis extends far beyond pure economics, portraying capitalism as a transformational socio-economic order shaped by innovation as well as institutional change. Though written long ago, his ideas remain remarkably relevant for our times.

In particular, his analysis of the capitalist process, the entrepreneurial function and its distinctive "energetic" character, and the broader processes of rationalisation generated by capitalism—developed in *Capitalism, Socialism and Democracy* (1942)—provide valuable insights into contemporaneous structural transformations of capitalist economies. The process of rationalisation reveals a core tension in the capitalist process: while giant corporate bureaucracies are argued to efficiently routinise economic activity, even in its innovational dimension, the rise of a critical, rationalist mindset simultaneously undermines capitalism's institutional foundations.

The initial objective of this dissertation is to scrutinise Schumpeter's nuanced—and fragmentary—conceptualisation of rationality. Central to this examination are the tensions in his unpublished paper *The Meaning of Rationality in the Social Sciences*[1] (1940/2018), which distinguishes 'rationality of the observer' from the subjective and objective dimensions of the 'rationality of the observed'. Those tensions are reflected in his substantive works.

Schumpeter's concepts of rationality have been examined in the literature—with scholars scrutinising his methodological views (see, e.g., Arena, 2012; Festré & Garrouste, 2008), as well as the specific behavioural types, such as "hedonistic" and "energetic" rationality, present in his theoretical work (see, e.g., Arena & Gloria-Palermo, 2007), whilst Graça Moura (2017) presents the connection between the concepts of rationality and the process of rationalisation.

Still, the implications of the concepts for the logic of economic coordination and policymaking have received comparatively little attention, especially in contemporary capitalism, where advances in Artificial Intelligence (AI) are often seen as expanding the scope of

[1] The version used in this study is the one published in "Rationality in the Social Sciences" (Springer, 2018), edited by Helmut Staubmann and Victor Lidz.

planning, possibly reshaping the very logic of economic policy.

As will be apparent, the analysis of Schumpeter's conceptualisation of rationality undertaken in this dissertation also leads quite directly to Hayek's (1945) knowledge problem. Hayek explicitly addresses the dispersed and incomplete nature of knowledge in a way that Schumpeter fundamentally abstracts from in much of his theoretical analysis. Yet, if rationality concerns how individuals behave and make decisions, the knowledge available to them is essential for understanding how and why they are able to act in particular ways.

The starting question of this dissertation is, then:

How do Schumpeter's conceptualisations of rationality and the dual path of rationalisation in *Capitalism, Socialism and Democracy* (1942) provide an analytical framework for classifying regimes of economic policy?

The dissertation addresses two dimensions of this research question:

1. How does the dual path of rationalisation—the bureaucratic routinisation of enterprise on one hand, and the critical erosion of institutional foundations on the other—imply distinct modes of technocratic and institutional economic policy?

2. How do Hayek's conceptualisation of knowledge and developments in Artificial Intelligence affect these policy regimes?

From a theoretical perspective, this research contributes both to the literature on economic methodology and on economic policy, by scrutinising Schumpeter's conceptions of rationality in terms of their policy implications. By placing Schumpeter in a direct epistemic dialogue with Hayek, this dissertation further examines the tensions inherent in the processes of rationalisation, connecting a Schumpeterian institutional framework to Austrian critiques of knowledge, market coordination, and centralised planning—an avenue of research explicitly identified by Graça Moura (2017, p. 135) as requiring further development.

From a policy perspective specifically, the dissertation provides a conceptual framework for evaluating the inherent limits of technocratic, rationalistic approaches to economic governance, particularly in an era increasingly governed by Artificial Intelligence. This framework substantiates key insights into how emerging algorithmic technologies, despite expanding the capacities of economic coordination, are constrained by unavoidable epistemic and institutional constraints.

The dissertation is structured as follows. Following this introduction, Chapter 2 examines Schumpeter's conceptualisation of rationality from a methodological perspective, distinguishing the observer's rationality from the objective and subjective dimensions of the observed, and highlighting the internal tensions within his methodological reflections. Chapter 3 investigates how these conceptualisations unfold into the dual path of rationalisation in *Capitalism, Socialism and Democracy*, analysing how bureaucratic routinisation and the cultural erosion of institutional foundations map onto distinct technocratic and institutional policy regimes. Chapter 4 places Schumpeter in dialogue with F. A. Hayek, exploring how the Austrian perspective on dispersed knowledge and the evolutionary nature of institutions sets fundamental epistemic limits to central coordination and planning. Finally, Chapter 5 synthesises the theoretical and policy findings of the dissertation, evaluating the two regimes of economic policy and examining whether contemporary technological advancements—specifically Artificial Intelligence—can overcome those epistemic and institutional boundaries.

2. The Meaning of Rationality in the Social Sciences: a methodological approach

The starting point for this analysis on Schumpeter's concepts of rationality is *The Meaning of Rationality in the Social Sciences* (1940/2018), originally prepared for a Harvard discussion group and published only posthumously (Graça Moura, 2017, p. 118). In this text, Schumpeter offers a systematic and explicitly methodological reflection on rationality. As stated in the Introduction, these concepts of rationality have already been explored in previous articles (see, e.g., Arena, 2012; Festré & Garrouste, 2008; Graça Moura, 2017).

According to Festré and Garrouste (2008, p. 365), Schumpeter develops his conception of rationality in his 1940 paper primarily from the standpoint of abstract methodology rather than concrete economic analysis. Within this view, rationality serves strictly as a property of scientific representation and abstract modelling, rather than a description of actual human behaviour. His notion of rationality is "a difficult notion to grasp since Schumpeter never provided a systematic exposition of his fundamental view" (Festré et al., 2017, p. 16).

Some contributions (Festré & Garrouste, 2008; Graça Moura, 2017) emphasise that Schumpeter's concepts of rationality match or reflect internal tensions in his methodological and substantive work. Indeed, the internal tensions surrounding rationality in Schumpeter's work are deeply rooted in his broader methodological project. As Festré *et al.* (2017) observe, "Schumpeter's conception of rationality is symptomatic of his eclecticism and attempt to synthesize somewhat irreconcilable methodological perspectives (economic theorizing vs economic sociology and history) and economic traditions (Walras's general equilibrium approach vs the German historical school)." (Festré et al., 2017, p. 16).

2.1. Rationality of the Observer

Schumpeter's first notion in *The Meaning of Rationality in the Social Sciences* is what he terms *observer's rationality* (Schumpeter, 1940/2018, p. 29). This form of rationality refers exclusively to the analyst and characterises scientific analysis as such. Schumpeter argues that rationality in the social sciences does not differ, in its logical structure, from rationality in the other non-social sciences (Schumpeter, 1940/2018, p. 29).

A key implication of this view is that rationality is imposed on the object of analysis by the observer (the social scientist, the economist). As Schumpeter explicitly states,

rationality of the observer "has in itself nothing whatever to do with the presence or absence of rationality in the human types or human actions observed" (Schumpeter, 1940/2018, p. 32). The rationality in the social scientist's procedure is independent of whether real agents consciously follow the rules in the models.

Schumpeter gives the example of monopoly pricing to illustrate this point. The marginalist model, with its condition of profit maximisation at the intersection of marginal revenue and marginal cost, remains analytically valid even if the monopolist has no knowledge of these curves and does not consciously engage in optimisation. As Schumpeter notes, "a man's behavior may conform to it and be economically described by it, even if its contents are as foreign to his mind as the law of gravitation is foreign to a stone" (Schumpeter, 1940/2018, p. 34). For Schumpeter, rational models function as interpretative schemata that provide standards against which observed behaviour can be described and assessed, without committing the analyst to any claims about agents' conscious reasoning processes (Schumpeter, 1940/2018, pp. 33-34).

Yet, as Graça Moura (2017) emphasises, the very act of constructing such a model already presupposes an understanding of the ends pursued by economic agents. Because the model establishes a normative standard of behaviour, it necessarily makes an assumption about rationality in the subject matter itself—what Schumpeter calls *rationality in the observed*. Its analytical value therefore depends not on whether agents consciously follow the model, but on whether the behavioural hypothesis embodied in it provides an adequate interpretation of observed reality (Graça Moura, 2017, p. 123).

The next section examines this second conception of rationality. Within this conception, Schumpeter (1940/2018, p. 37) further distinguishes between *objective rationality* and *subjective rationality*.

2.2. Rationality in the Observed

There are two distinct levels of rationality in the observed. As Graça Moura (2017, p. 124) explains when addressing the interpretative difficulties of Schumpeter's 1940 paper, Schumpeter points to different levels of consciousness in human action—conscious (or subjective) rationality and subconscious (or objective) rationality—that will be analysed next. Graça Moura (2017, p. 124) notes that Schumpeter "seems interested in the nature of rationality, and in the limited range of conscious rationality, in human action", even though "these

ontological interests are at odds with his initial positivist commitments".

2.2.1. Objective Rationality

Objective rationality is a complex concept in the 1940 article. On the one hand, it refers to the applicability of a rational schema to observed behaviour (Schumpeter, 1940/2018, p. 37). In this sense, it is not an ontological notion describing the actual workings of agents' minds; rather, it functions as an epistemological tool that allows the social scientist to interpret behaviour through rational models. A classic illustration of this distinction is the monopolistic pricing model explained before (Schumpeter, 1940/2018, pp. 33-34).

In this context, the model provides epistemological grounds (*Erkenntnisgründe*) for understanding behaviour without clarifying its actual causal grounds (*Realgründe*) (Graça Moura, 2017, p. 126).

On the other hand, as Graça Moura (2017) highlights, Schumpeter also displays a clear concern with the actual cognitive and psychological drivers of human action—an inherently ontological inquiry:

> What is interesting, however—and what renders Schumpeter's article difficult to interpret and, of course, to convey—is that his arguments also point to *another* meaning of objective rationality. He clearly sees *subjective* rationality as limited and as part of a wider rationality in the observed, implying that there are different levels of consciousness in human action. In a figure he used in his talks on rationality to the Harvard discussion group (see p. 323), he divides rationality in the observed into two components, which he calls *conscious or subjective rationality* and *subconscious or objective rationality*. (Graça Moura, 2017, p. 124)

As Graça Moura (2017, p. 124) observes, this dual conception of objective rationality creates an underlying tension that renders Schumpeter's text particularly challenging to interpret—a difficulty compounded by its unfinished nature. On the one hand, Schumpeter's positivist stance inclines him to treat objective rationality as a neutral, purely analytical tool (an epistemological issue). On the other hand, his economic sociology and Austrian background compel him to explore the real, subconscious mechanisms governing human behaviour (an ontological issue). From this latter perspective, action is shaped not only by conscious

subjective calculation, but also by subconscious drivers such as habits, routines, and social traditions.

2.2.2. Subjective Rationality

In contrast to objective rationality, subjective rationality concerns the conformity of agents' mental processes to a rational schema, that is, the extent to which behaviour is guided by conscious and explicitly articulable reasoning, their *conscious rationality* (Schumpeter, 1940/2018, p. 37). Schumpeter argues that social scientists have "almost invariably overrated the actual range of consciously rational action" (Schumpeter, 1940/2018, p. 37) and have failed to recognise that many articulated motives are merely *post hoc* rationalisations of deeper impulses (Schumpeter, 1940/2018, p. 37).

Nevertheless, Schumpeter does not dismiss subjective rationality as irrelevant. He explicitly states that, although it may be unnecessary in many instances, there are specific analytical contexts "for which presence or absence of subjective rationality is not a matter of indifference" (Schumpeter, 1940/2018, p. 37). Whilst he insists that many core economic propositions are independent of agents' conscious reasoning, he maintains that subjective rationality can play an important heuristic role (Schumpeter, 1940/2018, pp. 37, 39). In particular, it matters for explanation, diagnosis, and prediction, especially in contexts characterised by novelty, expectations, or rapid change (Schumpeter, 1940/2018, p. 38). As he notes, knowledge of whether behaviour conforms to rational models because of conscious calculation or because of institutional, habitual, or environmental factors "makes a lot of difference for our understanding the past and for our predicting the future" (Schumpeter, 1940/2018, p. 38).

Importantly, subjective rationality also becomes relevant when rational schemata fail to fit observed behaviour. In such cases, deficiencies in subjective rationality may constitute part of the explanation or may help identify the need for an alternative objectively rational model (Schumpeter, 1940/2018, p. 39). When the actual behaviour of individuals fails to fit the rational schema constructed by the social scientist, this mismatch can be caused by the problem of conflicting ends (Festré & Garrouste, 2008, p. 372; Graça Moura, 2017, p. 125).

As Schumpeter remarks, an individual's behaviour might seem irrational when evaluated against a model that embeds only a single end, whereas human action in reality is guided by multiple, conflicting interests (Schumpeter, 1940/2018, pp. 35-36). Whilst the social

scientist often assumes a single, uniform economic objective, the agent's subjective rationality—their conscious motives and reasoning (Schumpeter, 1940/2018, p. 37)—must constantly navigate a complex "bundle of ends" (Festré & Garrouste, 2008, p. 378).

This multiplicity of ends is vividly illustrated by the friction between individual self-interest and collective class-interest (Festré & Garrouste, 2008, p. 372). Schumpeter's economic sociology recognises that individual behaviour cannot be understood in isolation from its historical and institutional context. Individuals belong to families and social classes, performing socially defined functions while remaining active agents of social evolution (Festré & Garrouste, 2008, pp. 374-375). Because actions are motivated by this mixture of individual and collective ends, observed behaviour exhibits a high degree of heterogeneity (Festré & Garrouste, 2008, p. 374). Consequently, actions that appear erratic or irrational under a narrow economic schema are revealed to be rational from a subjective standpoint once the analyst accounts for these broader social motives.

To overcome this mismatch, Schumpeter argues that the social scientist must move beyond rigid, ill-fitting models by ensuring the "rationality of [their] application" (Schumpeter, 1940/2018, p. 35). First, the analyst must practice "Einfühlung" (empathy), actively "putting himself" into temporal, social, and cultural locations far distant from his own to understand the true, diverse ends of the observed actors (Schumpeter, 1940/2018, p. 36). Second, when the model fails to fit actual behaviour, the social scientist should systematically investigate the actors' conscious, subjective rationality (Schumpeter, 1940/2018, p. 39). By analysing these subjective mental processes, the researcher can diagnose the source of the discrepancy and use this information as "scaffolding" to identify and construct the correct, objectively rational model (Schumpeter, 1940/2018, p. 39).

Arena (2012) introduces a critical conceptual distinction between rationality in behaviour and rationality in motives (p. 333). This dualism directly addresses a major tautological "danger" that Schumpeter (1940/2018) identifies, where he observes that defining rationality purely from the observed agent's perspective makes any behaviour—even a lazy manager's refusal to adapt—appear rational because they are simply maximising personal welfare by avoiding effort. As Schumpeter warns:

> If our firm failed to adapt itself to the new environmental conditions from habit, laziness, lethargy, its behavior may, from the standpoint of its manager, yet conform to

> a rational model—he may be maximizing his welfare by not bothering.... we are in cases such as the one of the lazy manager in danger of losing our criterion of rational behavior: all behavior, so it seems, would have to be looked upon as tautologically rational *ex visu* of suitably chosen ends and horizons. (Schumpeter, 1940/2018, p. 40)

Considering this, Arena (2012) adds a separation on how an action is executed from why it is initiated. Rationality in behaviour concerns the structural execution of action, specifically the procedural logic of linking means to ends. While both static (mode of behaviour) followers and dynamic innovators utilise this same logic, their physical and mental execution diverges dramatically; followers rely on passive imitation to conserve energy, whereas innovators actively deploy an excess of energy to shatter routines (Arena, 2012, p. 333). Conversely, rationality in motives targets the underlying psychological drives of the actor. While followers are motivated by standard or hedonistic goals like profit maximisation, entrepreneurs are driven by instinctual, non-hedonistic urges such as the "desire for supremacy, will to conquer, [and] joy of creation" (Arena, 2012, p. 333).

2.3. A fundamental tension in Schumpeter's reflections

As we have seen, Schumpeter's treatment of rationality in the observed is marked by a fundamental tension. Whilst an ontological concern regarding the rationality of agents is apparent, a concern about how they behave, it is ultimately overshadowed by a focus on the observer's perspective (Graça Moura, 2017, p. 124). The term 'objective rationality', in particular, remains dependent on the analyst's construction of norms and models, rather than consistently reflecting a substantive account of how agents actually reason or decide (Graça Moura, 2017, p. 124).

This tension is evident in Schumpeter's repeated insistence that rationality in the social sciences "emanates from the analyst" (Schumpeter, 1940/2018, p. 32), even when dealing with purposive action. As remarked by Graça Moura (2017, p. 124)[2], this limits the scope for an ontologically grounded theory of rational action. Rationality becomes a mere tool for interpretation.

This tension does not preclude various interesting observations, of course. Whilst insisting that rational models remain essential analytical tools, Schumpeter (1940/2018, p.

[2] For a detailed analysis, see Graça Moura (2017, pp. 124–127).

41) remarks that research into subjective rationality renders the "melancholy" service of demonstrating the narrow limits of conscious calculation in real life, rational models remain essential analytical tools. He insists that traditional economics was wrong to historically treat humans as walking calculators (*homo economicus*) but argues that the actual scope of objective and subjective rationality in action is much wider than sceptics acknowledge. He claims that extending the application of rational models beyond literal descriptions of the human mind puts researchers in a better position to analyse "Error in History" or understand how "faulty practice" is systematically eliminated through management systems like Taylorism (Schumpeter, 1940/2018, p. 41). In other words, rational models would remain vital not because humans always think logically, but as tools for measuring and correcting economic behaviour.

Still, Schumpeter cautions that economists' theoretical schemata are "devised for certain special uses" and should be evaluated according to their success in actual application (Schumpeter, 1940/2018, p. 41). To repeat, the analytical usefulness of a rational model for a particular purpose should not, by itself, be taken to imply that the economy or the individuals within it operate according to the same rationality represented by that model. Extending this reasoning to economic policy, a further distinction can be made between the capacity to represent an economic process through a rational schema and the capacity to deliberately coordinate that process according to the same schema.

The central question that it is impossible to overlook in *The Meaning of Rationality in the Social Sciences* has been consistently emphasised in Graça Moura's previous papers on Schumpeter (see, e.g., Graça Moura, 2002, 2003, 2015): why does an author so acutely aware of the evolutionary, historical, and institutional complexity of social life remain so stubbornly attached to pure ('rational') economic models and Walrasian equilibrium?

As Graça Moura (2017) emphasises, Schumpeter's commitment to model-building is essentially methodological, rather than ontologically grounded. As explained before, for Schumpeter, a rational model is ultimately an engine of analysis, a product of the rationality of the observer. However, Schumpeter was certainly aware of the shortcomings of substituting the ontology of human behaviour by a mere construct. This awareness shines through in the ironic conclusion of his 1940 essay. Reflecting on Pareto's attempt to isolate economic rationality as represented by the *homo economicus* from other human dimensions, Schumpeter writes:

> But Pareto accepted him, comforting us with the assurance that another time we would consider the *homo religiosus*, the *homo eroticus*, and so on in turn. This, however, only shows up a very serious limitation. Even if I could—I cannot—visualize the laborious life of a pure *homo eroticus*, any attempt at combination of all those homines would only serve to show, by the absence of any rational rule of combination, that life is ontologically irrational, at least as much as 'nature'. (Schumpeter, 1940/2018, p. 46)

Admitting that human life is "ontologically irrational"—because real motives are impossible to synthesise into a single formal logic—Schumpeter appears to abandon either the quest for an ontologically appropriate 'rational' model of human action or a commitment to ontological relevance. The analyst who is committed to the equilibrium paradigm, as Schumpeter appears to be from the youthful *Wesen* to the posthumous *History of Economic Analysis* (Schumpeter, 1908, as cited in Graça Moura, 2017; Schumpeter, 1954), is forced to rely on 'observer's rationality' to analyse, assess and order economic phenomena.

Inevitably, though, tensions will surface whenever Schumpeter ventures from pure theory into the development to his evolutionary vision of capitalism, which he very often does and which constitute his claim to immortality. These tensions are very apparent in the process of rationalisation in *Capitalism, Socialism and Democracy* (1942).

On the one hand, the historical expansion of the rationalist attitude makes economic life increasingly routinised and predictable, seemingly bringing actual economic practice closer to the mechanics of equilibrium models, "rational models". On the other hand, though, rationality is portrayed as limited and myopic. Schumpeter cautions that rationalisation unleashes the forces that bring about the destruction of the institutional framework that supports the capitalist order. How this contradiction between the adequacy of 'rational models' and their limits unfolds within Schumpeter's thesis on the transformation of capitalism into socialism is the central focus of the following chapter.

3. Rationality and The Process of Rationalisation in Schumpeter

3.1. The Process of Creative Destruction

Understanding Schumpeter's theory of rationalisation requires an examination of his conception of capitalism. In *Capitalism, Socialism and Democracy* (1942), Schumpeter rejects the view of capitalism as a stationary system, instead describing it as an evolutionary process (1942, p. 82). *Creative Destruction* is capitalism's essential feature:

> The opening up of new markets, foreign or domestic, and the organizational development from the craft shop and factory to such concerns as U.S. Steel illustrate the same process of industrial mutation—if I may use that biological term—that incessantly revolutionizes the economic structure *from within*, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism. (Schumpeter, 1942, p. 83)

So, capitalism advances through disruptive innovation that fundamentally transforms markets, production methods, etc.:

> [Competition] from the new commodity, the new technology, the new source of supply, the new type of organization... competition which commands a decisive cost or quality advantage, and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. (Schumpeter, 1942, p. 84)

In the innovational process, Schumpeter attributes a crucial role to the entrepreneur, although a tendency to the obsolescence of the entrepreneurial function emerges in late capitalism (Schumpeter, 1942, pp. 131-134). In *The Theory of Economic Development* (1911/1934), where this tendency is already anticipated, he argues that entrepreneurial action involves initiative, leadership, and the capacity to depart from routinised behaviour. However, capitalism, by its very nature, stimulates *a rationalist attitude* and frame of mind (Schumpeter, 1942, pp. 121-130), which eventually erodes its institutional structure and changes its nature.

3.2. From the Rational Habit to Rationalisation

Let us examine Schumpeter's views on rationality and rationalisation more closely. For him, the "rational attitude" stems from the "economic necessity" (Schumpeter, 1942, p. 122), but spreads beyond the economy, to all spheres of life:

> "Once hammered in, the rational habit spreads under the pedagogic influence of favourable experiences to the other spheres and there also opens eyes for the amazing thing, the Fact." (Schumpeter, 1942, p. 123).

This rational habit becomes a "conquering" force that rationalises man's tools, philosophies, medical practices, and even his "outlook on life" (Schumpeter, 1942, p. 124). The rationalist mindset "precedes the rise of the capitalist order by thousands of years; all that capitalism did was to give a new impulse and a particular bend to the process" (Schumpeter, 1942, p. 147). Capitalism chases away "metaphysical belief, mystic and romance ideas of all sorts", replacing them with calculation and utilitarianism (Schumpeter, 1942, p. 127). Rationalisation changes all spheres of civilization, far beyond technological development and economic organisation. There is "the capitalist art and the capitalist style of life" (Schumpeter, 1942, p. 126).

Graça Moura (2017, p. 131) underscores that, for Schumpeter, the process of rationalisation should not be rashly identified with social advancement or progress. Frequently, it involves an "abuse of reason".

As the habit of rational analysis expands, it turns upon inherited institutions and collective beliefs, subjecting them to critical scrutiny. The rationalist attitude may be accompanied by a faulty "general surgical propensity", leading individuals to attack or dismantle institutions the social functions of which they do not fully understand (Schumpeter, 1942, p. 122).[3]

3.3. The Obsolescence of the Entrepreneurial Function

One of the consequences of the rationalisation process is that it tends to impact upon the role of the entrepreneur (Schumpeter, 1942, pp. 131-134). Schumpeter suggests that, if

[3] For a detailed discussion of Schumpeter's conception of rationalisation and its relation to the rationalist attitude, see Graça Moura (2017).

the production methods were to reach a "state of perfection" which of course they never do, there would be "nothing left for entrepreneurs to do" (Schumpeter, 1942, p. 131):

> "The management of industry and trade would become a matter of current administration, and the personnel would unavoidably acquire the characteristics of a bureaucracy. Socialism of a very sober type would almost automatically come into being." (Schumpeter, 1942, p. 131)

Analogously, though, if there is a tendency for innovation to become increasingly routinised and calculable, economic progress would gradually tend to lose its personal and heroic character. This "mechanisation of progress" would affect "entrepreneurship and capitalist society nearly as much as the cessation of economic progress would" (Schumpeter, 1942, pp. 131-132). In other words, the depersonalisation and routinisation of economic life would eventually replace the individual initiative previously associated with entrepreneurial activity with "bureau and committee work" (Schumpeter, 1942, p. 133).

Crucially, the obsolescence of the entrepreneurial function would have huge consequences for the class structure of capitalism. Schumpeter underscores that the bourgeoisie directly and indirectly depends on the entrepreneur, because the capitalist class is continuously reproduced and renewed through entrepreneurial activity (Schumpeter, 1942, p. 134). In a dynamic economy, entrepreneurial success leads to the social ascent of innovators into the upper strata of society, while the competitive decline of obsolete firms diminishes the social standing of their owners. If innovation is reduced to an automated routine managed by teams of specialists, the capitalist channel of social mobility and class renewal is effectively choked off. The fully bureaucratised corporation

> not only ousts the small or medium-sized firm and 'expropriates' its owners, but in the end, it also ousts the entrepreneur and expropriates the bourgeoisie as a class which in the process stands to lose not only its income but also what is infinitely more important, its function. (Schumpeter, 1942, p. 134)

In other words, the obsolescence of the entrepreneurial function, dismantling the social position of the bourgeoisie, would entail the collapse of capitalism's social order. In the meantime, by substituting "a mere parcel of shares for the walls of and the machines in a

factory", capitalism "takes the life out of the idea of property" (Schumpeter, 1942, p. 142). Ownership becomes an abstract financial claim rather than a personal, physical bond. The loss of this the vital connection matches the declining will of the bourgeoisie to protect and defend capitalism.

3.4. Market Structure and Rationalisation

In *Capitalism, Socialism and Demo*cracy, Schumpeter argues that perfect competition is fundamentally incompatible with the process of creative destruction, which he identifies as the essential fact of capitalism, as remarked before. He argues that "the introduction of new methods of production and new commodities is hardly conceivable with perfect—and perfectly prompt—competition from the start" (Schumpeter, 1942, p. 105).

The market power acquired by successful innovators should not be interpreted as a distortion of the capitalist process. On the contrary, temporary monopolistic positions are often the result of innovation itself and provide firms with the incentives and resources necessary to continue investing in new products, technologies, and production methods. Monopolies, as well as large-scale enterprises, are often beneficial, outcomes of capitalist development. Potential competition tends to discipline enterprises in power positions.

The tendency for industrial concentration becomes stronger as capitalism advances and the process of rationalisation deepens. As discussed in the previous section, Schumpeter argues that innovation progressively ceases to be the result of individual entrepreneurial initiative and increasingly becomes an organised and routinised activity (Schumpeter, 1942, p. 131), undertaken in firms' R&D departments.

This growing importance of organised R&D activities favours large firms, which possess the financial, administrative, and technical resources required to sustain continuous innovative activity. As a result, capitalist competition, through innovation, increasingly takes place between large corporations rather than between individual entrepreneurs.

The result is what Schumpeter describes as the "perfectly bureaucratized giant industrial unit", which, as remarked, "not only ousts the small or medium-sized firm" but ultimately "also ousts the entrepreneur" himself (Schumpeter, 1942, p. 134). The concentration of economic activity within large corporations is therefore not an accidental feature of capitalism but a consequence of its own success and of the process of rationalisation.

3.5. The Two Sides of Rationalisation

Pondering on what has been presented in the previous sections, it becomes apparent that, for Schumpeter, rationalisation has two meanings, or two sides, and points in two different directions regarding the structural transformation of capitalism. On the one hand, there is an expansion of rationality—encompassing *conscious* (or *subjective*) rationality but also *subconscious* (or *objective*) rationality (discussed in Chapter 1). This expansion leads tendentially to the obsolescence of the entrepreneurial function and the routinisation of innovation within corporate R&D departments (Schumpeter, 1942, pp. 131-134).

This technological-administrative trajectory renders socialism—or central economic coordination—theoretically feasible theoretically feasible from an economic viewpoint, at least in a logical sense (Schumpeter, 1942, p. 172); which explains Schumpeter's endorsement of Lange's (1936, 1937) conception of socialism[4]. On the other hand, rationalisation also affects the cultural-institutional sphere, where Schumpeter underscores the limits as well as the arrogance of human rationality. The reliance on reason as a substitute of traditions undermines the foundational pillars of the capitalist order (Schumpeter, 1942, p. 143). Indeed, there is no obvious reason why the limits of human rationality would not impact upon real-world socialism as well.

Crucially, the process of rationalisation operationalises—and complicates—the distinctions established in Section 2.2. Under competitive capitalism, innovation depends on the entrepreneur's intuitive, non-hedonistic, instinctual drive—the "desire for supremacy, will to conquer, [and] joy of creation" (Arena, 2012, p. 333)—a mode of action that Schumpeter explicitly contrasts with calculation, since it had "to be visualized in a flash of genius" (Schumpeter, 1942, p. 132) rather than derived from a rational schema. This entrepreneurial drive therefore sits uneasily within either category of rationality in the observed defined in Section 2.2, it is neither the subconscious, habit-conforming behaviour that Schumpeter, in one of the two senses of the term identified in Subsection 2.2.1, calls objective rationality, nor a case of conscious, calculative deliberation as subjective rationality is defined in Subsection 2.2.2. Following Arena's (2012) distinction, the entrepreneur's action remains rational *in*

[4] Oskar Lange's (1936, 1937) seminal formulation of "market socialism" was designed as a direct counterargument to Ludwig von Mises's impossibility thesis. In Lange's framework, a Central Planning Board replaces the competitive bidding process of financial markets by establishing parametric accounting prices and adjusting them through a Walrasian trial-and-error procedure (*tâtonnement*) in response to observed shortages or surpluses.

behaviour—it still links means to ends—while its *motives* are instinctual and non-hedonistic, escaping the calculative, articulable reasoning that subjective rationality presupposes. As corporate R&D teams and bureaucratic management displace the individual pioneer, however, this instinctual drive is displaced altogether. Rationalisation, then, is not a shift from one already-defined pole to the other, but the absorption of what previously escaped rational classification altogether.

Let us examine this first side of rationalisation in more detail:

> Innovation itself is being reduced to routine. Technological progress is increasingly becoming the business of teams of trained specialists who turn out what is required and make it work in predictable ways. The romance of earlier commercial venture is rapidly dying out, because so many things can be strictly calculated that had of old to be visualized in a flash of genius. (Schumpeter, 1942, p. 132)

As the economic engine becomes automatised and the figure of the entrepreneur loses its vital leadership and energetic imperative—yielding to a bureaucratized capitalism stripped of its traditional heroic ethos[5]—economic calculation increasingly resembles a routine administrative task.

Rational models that are a product of the analyst's mind seem to make sense in this setting, reflecting both subjective and objective rationality. So does Schumpeter's enduring methodological commitment to Walrasian equilibrium (Graça Moura, 2015, p. 1129): if market operations can be reduced to routine data processing, economic planning becomes technically conceivable—even if Schumpeter explicitly distinguishes between the pure logic of a socialist blueprint and its practical feasibility in reality. The capitalist process "not only destroys its own institutional framework but it also creates the conditions for another." (Schumpeter, 1942, p. 162), socialism.

However, the rationalisation process has a second side. Schumpeter highlights the critical limitations of the rationalist mindset, noting its tendency to attack and dismantle institutions it cannot fully comprehend (Schumpeter, 1942, p. 122). The hyper-rationalist orientation cultivated by capitalism does not stop at economic efficiency; it eventually turns its

[5] As Schumpeter (1942, p. 160) observes when analysing the disintegration of bourgeois motivation, rationalisation eliminates "the only sort of romance and heroism that is left in the unromantic and unheroic civilization of capitalism—the heroism of navigare necesse est, vivere non necesse est.".

critical lens against the key institutional foundations of the capitalist system itself, such as private property and traditional authority:

> And we have finally seen that capitalism creates a critical frame of mind which, having destroyed the moral authority of so many other institutions, in the end turns against its own; the bourgeois finds to his amazement that the rationalist attitude does not stop at the credential of kings and popes but goes on to attack private property and the whole scheme of bourgeois values. (Schumpeter, 1942, p. 143)

Here, Schumpeter's Austrian inclinations appear to surface: institutions essential to capitalism are the product of an evolutionary process, not of reasoning guided by utilitarianism. Indeed, capitalist rationality "does not do away with sub- or super-rational impulses," but instead "makes them get out of hand by removing the restraint of sacred or semi-sacred tradition" (Schumpeter, 1942, p. 144).

But this is not how 'intellectuals' reason (Schumpeter, 1942, p. 145), whom capitalism abundantly produces who acts as a catalyst for the rationalist hostility towards capitalism. Their role "consists primarily in stimulating, energizing, verbalizing and organizing" latent discontent, transforming the raw social resentment against capitalism into a rationalised critique to the capitalist institutions and foundations (Schumpeter, 1942, p. 153). Thus, intellectuals do not merely critique capitalism; they help the hyper-critical frame of mind by "work up and organize resentment, to nurse it, to voice it and to lead it." (Schumpeter, 1942, p. 145).

Whilst in the economic sphere rationalisation lends policy coordination a veneer of technical viability, legitimising 'rational models', the cultural dimension of rationalisation dismantles an institutional framework that no human reasoning can reconstruct. Technocratic intervention may align with Walrasian general equilibrium on paper, but by ignoring the epistemic limits of bounded human reason, it risks masking underlying structural instability behind a façade of rational design. This leads to a conclusion that is paradoxical only *prima facie*.

On the one hand, the expansion of rationality—and the heightened power of calculation it enables—suggests that the 'observer's rationality' can effectively mirror the 'rationality in the observed', thereby playing a pivotal role in social analysis and technocratic

policymaking.

On the other hand, given the fundamental limits of human rationality, the explanatory power and practical applicability of such abstract models are, to say the least, dubious.

3.6. From Schumpeter to Hayek

As Graça Moura (2015) notes, there is an enduring tension between two distinct conceptions of order present in Schumpeter's work as a whole. One of them is deeply tied to Schumpeter's admiration for Walras and his notion of general equilibrium. Correspondingly, Schumpeter evaluates the logic of central planning on the basis of a formal system of simultaneous equations. Of course, when economic policy is framed within a closed equilibrium paradigm, choice is strictly confined to policymakers—and only to the extent that they can alter exogenous variables (Graça Moura, 2017, p. 120).

But the Walrasian commitment, attributable to Schumpeter's conception of science, clashes with his partly implicit, evolutionary ontology (Graça Moura, 2017, p. 116).

Simultaneously, Schumpeter does have a procedural and evolutionary conception of order, in which "individuals are represented as acting in a setting structured by tacitly known rules, which facilitate their daily deliberations; and rule-following, or adaptive, responses are contrasted with creative responses, which demand more conscious rationality" (Graça Moura, 2017, p. 128).

In Schumpeter's evolutionary vision, "the main purpose of economic policy is the implementation, preservation, or change of rules that contribute to structuring the environment in which economic choices are made by individuals, rather than pre-determined by a set of conditions" (Graça Moura, 2017, pp. 118-119). In this vision, shifting economic coordination toward technocratic, model-based approaches, is affected by limits stemming from the very limits of human reason. This is the Austrian dimension of Schumpeter's thought.

In this vision, then, a connection between Schumpeter's position and Hayek's views on the limits of knowledge emerges, though Hayek—unlike Schumpeter—rejected equilibrium economics. As he puts it at the start of this journey:

> I have long felt that the concept of equilibrium itself and the methods which we use in pure analysis have a meaning only when confined to the analysis of the action of a

> single person... my criticism of the recent tendencies in economic theory is not so much that it has gone wrong in this respect, as that it has treated the concept of equilibrium as if it applied directly to social processes. (Hayek, 1937, p. 35)

Hayek eventually provides the theory of how markets work that is missing in Schumpeter's work, a theory resting on the dispersed and context-specific character of knowledge. And he connects it to an evolutionary conception of institutions that is not unlike Schumpeter's.

4. Hayek on Institutions and Knowledge

As Section 3.6 has shown, Schumpeter's commitment to the Walrasian equilibrium is not the whole story. A procedural and evolutionary conception of order runs through his work, in which "individuals are represented as acting in a setting structured by tacitly known rules" (Graça Moura, 2017, p. 128). This 'Austrian' side of Schumpeter has some similarities with Hayek. Despite parting ways on the analytical status of equilibrium itself—Hayek rejecting it outright, Schumpeter never quite abandoning it—both authors agree that the essential social institutions are not a product of human reasoning.[6] Let us examine this issue.

4.1. Hayek on Institutions

In *The Constitution of Liberty* (1960/2011), Hayek defines that order is neither the product of deliberate design, nor the work of "a higher, supernatural intelligence," but "the result of adaptive evolution" (Hayek, 1960/2011, p. 115). Institutions, on this view, are accumulated solutions to problems no individual mind ever fully grasped.

This has direct implications for the "general surgical propensity" that Schumpeter warns against in Section 3.2—the tendency of the rationalist attitude to attack institutions they cannot fully comprehend (Schumpeter, 1942, p. 122), as rational capacity of the human mind is limited and myopic. Whereas Schumpeter observes the symptom, Hayek elaborates on the underlying category error, which distinguishes the rationalist from the evolutionary tradition:

> The rationalistic design theories were necessarily based on the assumption of the individual man's propensity for rational action and his natural intelligence and goodness. The evolutionary theory, on the contrary, showed how certain institutional arrangements would induce man to use his intelligence to the best effect and how institutions could be framed so that bad people could do least harm. (Hayek, 1960/2011, p. 120)

Read with Section 3.5, this passage follows Schumpeter idea about the rationalist hostility toward institutions that assume to be arbitrary or irrational just because the rationalist

[6] Perhaps controversially, Arena (2015, pp. 82–84) discusses how Schumpeter and Hayek arrive at this conclusion through distinct conceptual routes—Schumpeter via a Wieserian economic sociology of leaders and imitators, Hayek via a subjectivist account of tacit, dispersed knowledge.

attitude cannot see their purpose.

It is also worth observing that Hayek, in his discussion on institutions, writes on the connection between conscious and subconscious rationality discussed in Section 2.2:

> Though it sounds paradoxical to say that in order to make ourselves act rationally we often find it necessary to be guided by habit rather than reflection, or to say that to prevent ourselves from making the wrong decision we must deliberately reduce the range of choice before us, we all know that this is often necessary in practice if we are to achieve our long- range aims. (Hayek, 1960/2011, p. 128)

That is, subconscious conformity to habit, routine, and tradition (Subsection 2.2.1)—is not necessarily a lesser form of rationality in the observed. It may, in Hayek's terms, be a condition for rationality in the fuller sense: the accumulated discipline that makes reliably rational action possible at all, precisely because no individual could deliberately reconstruct the knowledge embedded in habitual conduct. This suggests that planning (explicit, centrally computable rules replacing habits) rests on a misreading of what habit actually accomplishes.

4.2. Hayek on Knowledge

In his article *The Use of Knowledge in Society* (1945), Hayek opens by questioning: "What is the problem we wish to solve when we try to construct a rational economic order?" (p. 519). Under standard neoclassical assumptions, the answer appears deceptively simple:

> "*If* we possess all the relevant information, *if* we can start out from a given system of preferences and *if* we command complete knowledge of available means, the problem which remains is purely one of logic." (Hayek, 1945, p. 519).

However, Hayek contends that this is fundamentally not the economic problem society faces. Instead, "the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess." (p. 519).

This central insight—that knowledge is inherently dispersed, localised, contextual, and tacit—implies that economic coordination can never be reduced to centralised calculation or

purely technical optimisation. Hayek had already laid the foundations for this argument in *Economics and Knowledge* (1937), where he argued that equilibrium analysis depends fundamentally on how knowledge is acquired, communicated, and coordinated among economic actors. Now he reformulates the central economic problem not as the efficient allocation of known resources, but as the utilization of knowledge "not given to anyone in its totality" (Hayek, 1945, p. 520). Markets, in this view, operate as decentralised discovery systems that coordinate fragmented knowledge through price signals.

This critique, written shortly after the Socialist Calculation Debate[7], emphasises the fatal error in planning:

> To assume all the knowledge to be given to a single mind in the same manner in which we assume it to be given to us as the explaining economists is to assume the problem away and to disregard everything that is important and significant in the real world. (Hayek, 1945, p. 530)

Instead of explaining how dynamic coordination is achieved through human interaction, Schumpeter's enduring equilibrium commitment "systematically leaves out what is our main task to explain" (Hayek, 1945, p. 530)—namely, "the unavoidable imperfection of man's knowledge and the consequent need for a process by which knowledge is constantly communicated and acquired" (Hayek, 1945, p. 530). Consequently, any model of economic governance constructed on the assumption that relevant knowledge can be fully centralised, aggregated, or computationally mastered inevitably falls into a constructivist trap—systematically overlooking the fundamentally dispersed, tacit, and dynamic character of social knowledge itself.

By locking his evolutionary vision into a static Walrasian framework, Schumpeter overlooks the actual working of the price mechanism through which decentralised agents adapt to unpredictable change. His Walrasian commitment leaves him without any satisfactory theory as to how real markets actually work (Graça Moura, 2017, p. 116). Simultaneously, it points to the theoretical possibility of socialism which, however, does not match his insights

[7] The Socialist Calculation Debate was an intellectual dispute between Austrian economists (notably Ludwig von Mises and Friedrich Hayek), who argued that rational economic calculation is impossible without private ownership and market prices for capital goods, and neoclassical "market socialists" (primarily Oskar Lange, Fred Taylor, and Abba Lerner), who maintained that a central planning authority could determine rational accounting prices through trial-and-error rules. For more detail, see Lavoie (1981) and Boettke (1998).

on the nature of institutions.

5. Conclusion: Rationality, Economic Policy, and Artificial Intelligence

This dissertation set out to examine Schumpeter's conceptualisation of rationality and the rationalisation and their implications for economic coordination and policymaking. Two conclusions emerged from this analysis, corresponding to two distinct policy regimes.

On one hand, the rationalisation of economic life—the routinisation of production within giant corporate bureaucracies, together with Schumpeter's own methodological commitment to Walrasian equilibrium (Graça Moura, 2015, p. 1129)—lends a veneer of technical viability to the idea that the economy can be administered as a calculable, formally optimisable, closed system. Because the rational schemata discussed in Chapter 2 are treated as adequate representations of an economy that itself becomes progressively closer to a system of equations, rationalisation appears to open the door to a technocratic policy regime: comprehensive economic planning, or technocratic policymaking similar to the kind of socialism Lange defended and far removed from the market process.

On the other hand, Schumpeter's own procedural and evolutionary conception of order points to a second, quite different regime. Individuals are represented as acting within a setting structured by tacitly known rules that facilitate everyday deliberation, and rule-following is contrasted with the more conscious rationality of creative, entrepreneurial responses (Graça Moura, 2017, p. 128). In this vision, "the main purpose of economic policy is the implementation, preservation, or change of rules that contribute to structuring the environment in which economic choices are made by individuals, rather than pre-determined by a set of conditions" (Graça Moura, 2017, pp. 118-119). This defines an evolutionary policy regime in which policy does not attempt to compute or dictate outcomes, but rather shapes and safeguards the rules—property rights, the independence of the banking system, standards of conduct[8]—within which decentralised, boundedly rational agents act. It is this same rule-based vision that grounds Schumpeter's warning, in his account of rationalisation's second side, against the "general surgical propensity" of the rationalist mindset, which attacks institutions it does not fully understand (Schumpeter, 1942, p. 122)—a propensity that threatens capitalism from within, just as technocratic ambition threatens it from without.

Crucially, this second regime does not fall outside the reach of the observer's rationality discussed in Chapter 2—what changes is the form that this rationality must take. A

[8] These points are discussed in further detail in Graça Moura (2017).

general-equilibrium model, as a rational schema in Schumpeter's sense, describes a closed system[9]: given a set of data, it yields a determinate, predictable, solution. It is precisely this closure that renders a technocratic socialist regime (Section 3.6) feasible. An open system—one continuously transformed from within by entrepreneurial novelty, and coordinated through knowledge that is dispersed rather than centrally given—cannot be rationally grasped in this sense, since no set of equations can represent it. This does not mean, however, that such a system is opaque to reason. It remains rationally comprehensible, but as a system of knowledge and rules of conduct rather than as a system of equations: order of this kind is, in Hayek's words, "the result of adaptive evolution" rather than of deliberate design (Hayek, 1960/2011, p. 115), and its institutions are accumulated solutions to problems no individual mind ever fully grasped (Section 4.1). To understand an open system, in other words, is to identify and articulate its spontaneous rules of behaviour—habits, institutions, structures—not to solve for its equilibrium values. This second mode of comprehension yields an explanation of the *principle* by which coordination tends to occur, not a prediction of its *particulars*:

These two regimes correspond, then, to two different modes of observer's rationality itself—not merely to two different objects of policy. The technocratic regime treats the economy as if it were amenable to the same closed logical form as the analyst's model; the institutional regime accepts that an open, evolving system can only be understood through the rules that structure it, at the cost of forgoing prediction of its concrete outcomes.

Schumpeter's methodological preference for a positivist, physics-like conception of theory—for treating rationality as, ultimately, rationality of the observer—is what explains the coexistence of the technocratic regime with his own economic sociology, even though the former sits uneasily with the partly implicit ontology (Graça Moura, 2017, p. 116).

It is at precisely this point that Hayek is invoked.

First, against the cultural erosion described in Section 3.5: could socialism itself survive the very "abuse of reason" that Schumpeter shows corroding capitalism's own institutional foundations? If the hyper-rationalist mindset destroys the moral authority of private property and traditional bourgeois values, there is no evident reason why it would spare whatever institutions a socialist order would itself require. Schumpeter, too, acknowledges

[9] On the definition and ontological distinction between closed and open systems, see Lawson (1997).

that actual socialism is likely to end in a complete failure (Schumpeter, 1942, p. 118).

Second, and more fundamentally, against the technocratic regime directly: Hayek's knowledge problem shows that the very possibility of centralised calculation, which rationalisation appears to make ever more plausible, rests on a category error. Because economic knowledge is inherently dispersed, tacit, and time-and-place specific, it "never exists in concentrated or integrated form" (Hayek, 1945, p. 519) and therefore cannot be aggregated or centralised. In this context, Schumpeter's brand of observer's rationality "systematically leaves out what is our main task to explain" (Hayek, 1945, p. 530): the constant, decentralised process by which imperfect, partial knowledge is discovered, communicated, and revised. Comprehensive planning, socialist or technocratic, is therefore rendered structurally unfeasible on two independent grounds: an institutional one, present in Schumpeter's own account of rationalisation, and an epistemic one, supplied by Hayek.

Rationalisation, in other words, corrodes the institutional foundations of capitalism from within, exactly as Schumpeter describes; and, through the same expansion of the rationalist, calculative mindset, it invites a technocratic response—whether socialist or otherwise—that Hayek shows to be epistemically self-defeating.

Considering this, and moving the analysis by considering the current context, to ask whether recent developments—Artificial Intelligence and its associated advances in computational and predictive capacity—-alter the terms of this debate, as Lange (1967, p. 158) implied they might, when he suggested that: "Let us put the simultaneous equations on an electronic computer and we shall obtain the solution in less than a second."

Lange's confidence has not disappeared; it has simply changed hardware. What Boettke and Candela (2023) term "technosocialism" is this same argument restated for the present moment: the belief that sufficiently advanced computation can finally supply what the market process alone was once thought necessary to generate. AI has indeed proven able to "do many things in the economy, such as increasing productivity, enhancing innovation, creating new sectors and jobs, and improving living standards" (Davidson, 2024, p. 1). Operating "on the principle of learning from (historical) input data to recognise patterns, make predictions, comprehend linguistic structures, and conduct image recognition tasks" (Davidson, 2024, p. 1), it is, by any measure, a formidable technology. But the question raised throughout this dissertation is narrower than whether AI is useful: it is whether AI *changes the terms* of the two-regime analysis developed above.

Regarding the technocratic regime, AI changes nothing in principle. As Davidson (2024, p. 9) argues, "AIs are backward looking where entrepreneurs are forward looking": AI operates on information—"the stock of the existing known"—while the knowledge that markets require is generated only "because of the context in which actors find themselves acting" (Boettke, 2002, p. 267). No volume of historical data can substitute for the "flash of genius" (Schumpeter, 1942, p. 132) that rationalisation was already shown to displace in Chapter 3.

In this dissertation's vocabulary, AI can be a powerful instrument of *observer's rationality*—it can solve rational schemata with a computational sophistication hitherto unimagined. However, this capacity should not be conflated with genuine economic explanation or dynamic foresight. As Davidson (2024, pp. 8-9, 13) emphasise, AI systems operate essentially on codified, backward-looking datasets and are incapable of making reliable out-of-sample predictions or grasping the contextual, emergent knowledge generated through purposeful human action. Consequently, AI fails to capture the *rationality in the observed*—both in its subjective dimension, because machines lack the intentionality and non-hedonistic motives required for genuine entrepreneurial discovery under uncertainty, and in its objective dimension, because the tacit habits and institutional routines that coordinate real-world agents cannot be centralised. Hayek's epistemic objection to the technocratic regime therefore stands: as Davidson (2024, p. 1) concludes, "AI does not make central planning viable... simply because AI cannot resolve the knowledge problem.".

As for the institutional regime, AI's effect is more indirect but corrosive. Because AI allows ever more of the economy to be modelled with apparent fidelity, it intensifies precisely the "general surgical propensity" (Schumpeter, 1942, p. 122) identified in Section 3.5—the temptation to treat institutions whose function is not fully understood as ripe for redesign. A system that can be simulated looks, to the rationalist mind, like a system that can be administered; AI supplies the simulation without supplying the understanding. The threat this poses to the institutional regime is not computational but attitudinal, and it is the same threat rationalisation's cultural side was already shown to pose to capitalism's own institutions.

Artificial Intelligence, in other words, does not resolve the tension between the two sides of rationalisation traced throughout this dissertation; it sharpens both horns of it at once—reinforcing the technocratic illusion epistemically and the surgical propensity attitudinally—without creating any third alternative.

This dissertation has treated Schumpeter's meanings of rationality and broader process of rationalisation as an analytical lens for classifying economic policy regimes, but two limitations should be acknowledged. First, the treatment of AI above is necessarily preliminary: it establishes that AI does not resolve the Hayekian knowledge problem in principle, but it does not examine specific institutional arrangements—algorithmic pricing, AI assisted regulatory design, or platform governance—where the boundary between assisting and displacing entrepreneurial judgement is empirically contested rather than settled by definition.

Second, the institutional policy regime sketched in this conclusion remains, like Schumpeter's own account of rule-preserving policy, underspecified in practice: showing that policy should protect rules rather than compute outcomes says less about which rules, or how they should be revised, than a fuller account would require. Future research might extend this framework by integrating Hayek account of cultural evolution with Schumpeter's economic sociology, which Graça Moura (2015, p. 1146) and others identify as central for reconstructing a genuinely evolutionary Schumpeterian theory of order.

References

Arena, R. (2012). Economic rationality and the emergence of institutions: a Schumpeterian view. In H. D. K. Hagen M. Kramer & T. Hans-Michael (Eds.), *Macroeconomics and the history of economic thought : Festschrift in honour of Harald Hagemann* (pp. 329-337). Routledge.

Arena, R. (2015). On the intellectual foundations of Hayek's and Schumpeter's economics: an appraisal. *Journal of Evolutionary Economics*, *25*(1), 77-90. https://doi.org/10.1007/s00191-014-0371-7

Arena, R., & Gloria-Palermo, S. (2007). Evolutionary Themes in the Austrian Tradition: Menger, von Wieser and Schumpeter on Institutions and Rationality. In *The Evolution of Economic Institutions*. Edward Elgar Publishing. https://EconPapers.repec.org/RePEc:elg:eechap:12603_11

Boettke, P. J. (1998). Economic Calculation: The Austrian Contribution to Political Economy. *Advances in Austrian Economics*, *5*, 131-158. Available at SSRN: https://ssrn.com/abstract=1531112

Boettke, P. J. (2002). Information and Knowledge: Austrian Economics in Search of its Uniqueness. *The Review of Austrian Economics*, *15*(4), 263-274. https://doi.org/10.1023/A:1021190719156

Boettke, P. J., & Candela, R. A. (2023). On the feasibility of technosocialism. *Journal of Economic Behavior & Organization*, *205*, 44-54. https://doi.org/https://doi.org/10.1016/j.jebo.2022.10.046

Davidson, S. (2024). The economic institutions of artificial intelligence. *Journal of Institutional Economics*, *20*, 1-16. https://doi.org/10.1017/S1744137423000395

Festré, A., & Garrouste, P. (2008). Rationality, behavior, institutional, and economic change in Schumpeter. *Journal of Economic Methodology*, *15*(4), 365-390. https://doi.org/10.1080/13501780802507222

Festré, A., Lakomski-Laguerre, O., & Longuet, S. (2017). Schumpeter and Schumpeterians on economic policy issues: re-reading Schumpeter through the lens of institutional and behavioral economics. An introduction to the special issue. *Journal of Evolutionary Economics*, *27*(1), 3-24. https://doi.org/10.1007/s00191-015-0442-4

Graça Moura, M. (2002). Metatheory as the key to understanding: Schumpeter after Shionoya. *Cambridge Journal of Economics*, *26*(6), 805-821. https://doi.org/10.1093/cje/26.6.805

Graça Moura, M. (2003). Schumpeter on the integration of theory and history. *The European Journal of the History of Economic Thought*, *10*(2), 279-301. https://doi.org/10.1080/0967256032000066909

Graça Moura, M. (2015). Schumpeter's conceptions of process and order [Article]. *Cambridge Journal of Economics*, *39*(4), 1129-1148. https://doi.org/10.1093/cje/beu081

Graça Moura, M. (2017). Schumpeter and the meanings of rationality [Article]. *Journal of Evolutionary Economics*, *27*(1), 115-138. https://doi.org/10.1007/s00191-015-0429-1

Hayek, F. A. (1937). Economics and Knowledge. *Economica*, *4*(13), 33-54. https://doi.org/10.2307/2548786

Hayek, F. A. (1945). The Use of Knowledge in Society. *The American Economic Review*, *35*(4), 519-530. http://www.jstor.org/stable/1809376

Hayek, F. A. (1960/2011). *The Constitution of Liberty* (Definitive Edition ed.). The University of Chicago Press. (1960)

Lange, O. (1936). On the Economic Theory of Socialism. *The Review of Economic Studies*, *4*(1), 53-71. https://doi.org/10.2307/2967660

Lange, O. (1937). On the Economic Theory of Socialism: Part Two. *The Review of Economic Studies*, *4*(2), 123-142. https://doi.org/10.2307/2967609

Lange, O. (1967). The computer and the market. In *Socialism, capitalism and economic growth: Essays presented to Maurice Dobb* (pp. 158-161). Cambridge University Press.

Lavoie, D. (1981). Critique of the Standard Account of the Socialist Calculation Debate. *Journal of Libertarian Studies*, *5*(1), 41-87.

Lawson, T. (1997). *Economics and Reality*. Routledge. https://doi.org/https://doi.org/10.4324/9780203195390

Schumpeter, J. A. (1911/1934). *The theory of economic development: an inquiry into profits, capital, credit, interest, and the business cycle.* (H. U. Press, Ed.). Harvard University Press.

Schumpeter, J. A. (1940/2018). The Meaning of Rationality in the Social Sciences. In H. Staubmann & V. Lidz (Eds.), *Rationality in the Social Sciences: The Schumpeter-Parsons Seminar 1939-40 and Current Perspectives* (pp. 29-46). Springer International Publishing. https://doi.org/10.1007/978-3-319-62377-1_2

Schumpeter, J. A. (1942). *Capitalism, socialism and democracy.* (5 ed.). George Allen & Unwin.

Schumpeter, J. A. (1954). *History of Economic Analysis* (E. B. Schumpeter, Ed.). Allen & Unwin.

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