



Notability of Substantive Elements of Economics: The Groundwork for Evolution of Economic Thought

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Abstract

The present study is an attempt to investigate the resurging evolution of economic thought, which is closely in direction with the eminence of substantive elements of economics. It presupposes that the substantive elements of economics produce a package which 1. Includes some epistemic doctrines, including rationality, efficiency, and equilibrium; 2. Has dynamic characteristics of economic theories; 3. Establishes an obvious interdisciplinary framework and systematic relationships with other social sciences; 4. Is compatible with mildness and moderation; 5. Entails institutional, social and ethical potentiality; 6. Has a pluralistic nature and potential for methodological reforms; and 7. Creates an outstanding analytical power through the application of the package in question. Considering the pluralistic nature of conventional economics, it constitutes mainstream and non-mainstream, and neoclassical and non-neoclassical paradigms. The Moreover, neoclassic paradigm includes both orthodox and non-orthodox approaches. The present study examines the efficacy of moderate and non-orthodox paradigms of conventional economics.

1. Introduction

Evolution of Economic Thought (EET) can be full of messages, lessons, and experiences. Taking a serious look at EET can improve the analytical ability and, in some cases, can enlarge economists' toolkit. An accurate investigation of can offer efficient guidelines for tackling economic problems in the 21st century. The domain of EET covers ancient times, medieval ages, the renaissance, enlightenment ages and the contemporary era. Therefore, EET is concerned with the ideas of ancient Greek philosophers, classical and neoclassical schools, socialism, Keynesianism, institutionalism, and behavioral approaches. A close study of EET can help economists gain a deeper insight into the nature of their science because examining the history of ideas can show us how we think the way we do. The current gap between EET and economics, however, is not in its desirable status. About 38 years ago, Heilbroner (1980), a famous economist,

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concluded that modern economics has discovered many problems but no overarching problems. For instance, although it seems to have scientific rigor, it does not deal with the fundamental social issues, which typify economic thoughts of the past. The conclusion in question is relevant right now. It seems that bridging the gap between mainstream economics and EET, which has enlarged since 38 years ago, is in direction with Paretian improvement, and thus does provide economic justification.

EET ties the actual life to the old cultural and institutional environment. It is based on the belief that economic issues do not follow a simple linear path; rather, they indicate a complicated one. EET studies can assist researchers in evaluating theories through different approaches. It assumes that economics is an investigation of society and is a social science with important historical dimensions. Some researchers think that EET provides a democratic way of training, too (Hodgson, 2001; Kula, 1958; Lindsey and Teles, 2017). EET could be construed as a systematic- dynamic package of ideas, observations, theories, and policies. Thus, EET can be a fruitful field for practicing by economists to grasp major economic implications. Economics emerged from the conjunction of morality and engineering in the ancient Greek. Economy was a “good” issue and “good” was considered as what is compatible with nature. An ethical commitment was involved, too. The application of these ideas can boost the integrity of economics as well. Economics in framework offered by EET is a science of society (Lowry, 1979; Sen, 1997). It can increase the robustness of political economy, too (Coleman, 2005). It is believed that educating students on EET could equip them with an efficient language, which facilitates their deeper understanding of economics.

Economics is a specific branch of social sciences, which benefits from a long history of philosophical development. Social, philosophical and ethical aspects of economics supplement its technical one. It has been stated that disregarding *substantive elements of economics* (SEE) may convert economics in to “a low-class branch of business”. Economics, however, has originally been at the center of ethical and political literature (Boehm et al., 2002). Elaborating on EET can help us challenge the way we see the world and organize our practices (Backhouse and Fontain, 2010; Caldwell, 2013, 2014). Due to the dominance of a mechanical paradigm of economics, that paradigm has been deprived of some systematic characteristics (Leijonhufvud, 1973). Almost all founding fathers of economics, including Smith, Malthus, Hume, Bentham, and Mill have been expert in philosophy as well. Realizing the key role of philosophy in economics can help us figure out the significance of relationship between it and EET (Robinson, 1964; Rorty, 1984). Economic theories do not suffice for tackling economic problems of complex era of the 21st century and a collection of legal, social, political and philosophical considerations needs to be taken into account as well. Accordingly, a master economist must be a mathematician, a historian, a political leader, and a philosopher as well (Keynes,

1939). This requires a profound study of EET along with economics and this paper is a feasibility in this regard.

2. Some Methodological and Conceptual Considerations

SEE is concerned with long-run robustness of economics too. Robustness is relied on low vulnerability, compatibility of theories with actual performance, and capability of correcting possible hardships in the mid run (Strawson, 2012; Krause and Arenhart, 2016). Regarding the present article, the following package is coinciding on SEE: 1. rationality, efficiency and equilibrium; 2. dynamic characteristics; 3. systematic relationships between economics and other disciplines; 4. mildness or moderation; 5. institutional and ethical compatibility; 6. pluralistic nature; and 7. an outstanding analytical power as the payoff of the package. The package in question, which has been easily released through a deep review of EET, can also be considered as an axiomatic framework in the present article. Economic theories, unsuccessful experiences of *orthodox neoclassical paradigm* (ONP), and evolutionary data have been used as supporting evidence in this regard. Then, EET has been reviewed based on the elements of the aforementioned package. For economics to keep substantive elements, it should be robust and insightful and should have compatible theories and invulnerable structure (Finley and Stewart, 1982; Rodrik, 2014 and 2016; Schwab, 1964; Shulman, 1987). Based on theories of robustness, there is a systematic relationship between social and non-social aspects of life. Some studies have shown that even environmental sustainability depends largely on a viable social system (Dadgar and Nazari, 2016; Medema and Samuels, 2013; Nilanjan, 2014; Sachs, 2015; Soderbaum, 2000). To the following parts, provide the readers with a partial explanation and brief analysis of SEE.

Rationality, efficiency, optimization and equilibrium

SEE is the unique combination of the four doctrines of economics, namely rationality, efficiency, optimization and equilibrium for analyzing economic and non-economic issues. Rationality is a behavioral assumption, based on prudential capability, for selecting the optimal options. Rationality is pluralistic in principle. Therefore, one can talk about general rationality, instrumental rationality, and so forth. General rationality is a behavior, which is after both self- and social interests. Instrumental rationality is concerned with increasing self-interest behaviors. Economic efficiency is a process, which involves the most possible returns and the least costs in trying to satisfy all the related agents. Finally, equilibrium is a balanced status of economic forces. The ultimate payoff of rational behavior, efficiency and equilibrium will guarantee a desirable status of economic systems. Assuming perfect competition, absolute rationality, and zero transaction cost, Arrow-Debreu (1954) suggested a general equilibrium framework for the whole economy. The assumption in question, however, were very strong and in some cases unrealistic. Thus, the researchers finally had to

relax some assumptions, and rely on the second best solutions. Moderate economic paradigms can potentially achieve their desired targets through accepting assumptions that are more realistic. By moderate paradigms, it is meant that all economic approaches try to take into account the following methodological considerations: 1. relying on bounded rationality, 2. searching for accessible and not perfect information, 3. assuming uncertain circumstances in economic decision and economic analysis, 4. considering the role of different institutions and their socio-political correlations, and 5. welcoming pluralistic methods in economic analysis, and finally, moderate economic paradigm does have critical content in nature.

Dynamic and systematic framework

SEE is also concerned with the potentiality for dynamic trends and systematic framework. Economics has been labeled as the “queen of social sciences” due to its coordination in solving general problems in a systematic and dynamic framework (Lerner, 1972). Some studies have indicated that: there is a close correlation between social values and economic values (Kenter and Obrien, 2015; Novonty and Gibbons, 2001). Such a relationship has been observed in economic, sociological and experimental studies as well (Alvaredo et al, 2018; Dyachenko, 2014; Jimenez-Buedo and Miller, 2010; Pardi, 2014; Rizza, 2006). Furthermore, not only is the dynamic- systematic framework working in theoretical and methodological contexts, but also it has great impacts on actual economies. We live in an uncertain and ever-changing world, which is continually evolving in a novel way.

In order to understand economic-political and social changes, economists need to make some generalizations about the way economics operate over time (North, 2005 and 2006). Not only have production technologies changed, but economic actors, institutions, markets, belief systems and cognitive findings have also changed. The bestowal of the 2017 Nobel Prize on a behavioral economist can be considered as a significant event in this regard. Even, the application of some basic principles has changed over time. For instance, competition may still work but it is not held between small firms, rather it takes place among huge multinational companies. Not only are these companies able to influence prices, but they can also redefine technologies and manipulate consumer tastes (Chang, 2014). In other word, during perfect competition converts into different kinds of imperfect competition. These include monopolistic, duopolistic, and oligopolistic market structures. Not surprisingly, in such a case, one may label the new outcome as monopoly and no longer as competition. Therefore, the new term, "dilemma of competition", which distinguished between the two kinds of competition, entered economic literature. Neglecting this reality may question some dimensions of competition in

principle¹. In order to have a better understanding of SEE, therefore, we need to know how economic schools and economic systems evolve. This can show the necessity for systematic examination of EET, because it ties tightly with historical evolutions (Hutchins and Hazlehurst, 1992; North, 2005). For instance, Keynes emphasized human psychology and Von Newman emphasized subjective and expected utility. Maurice Allais demonstrated the gap between real world and axiomatic utility, based on which Simon developed the idea of bounded rationality. Eventually and relying on all of these findings, Thaler (2017) modeled behavioral economics and received the Nobel Prize for it. These processes can effectively depict the central dimensions of SEE.

Moderation, institutional and ethical concerns

Methodologically speaking, one may confuse mainstream economics with conventional economics, or even wrongly use them interchangeably. Mainstream economics, however, is a neoclassical-Keynesian synthesis and conventional economics is a general term and includes a broad spectrum from extreme right wing to extreme left wing. According to EET, conventional economics includes diverse paradigms. Consequently, it encompasses orthodox, radical, and moderate schools of thoughts. As a result, new institutionalist, new Keynesian, new Marxist, and even feminist economists enumerate their school as the mainstream one.

Understanding the role of moderation, institutional and ethical frameworks can be helpful in decision-making. For instance, ONP relies on perfect market, perfect certainty, perfect information and perfect rationality. Actual life, however, is concerned with so many imperfections. Consequently, institutional and ethical elements of moderate economics can support economists and even be helpful in reforming ONP to tackle imperfections in question (World Bank Group, 2017). As Sen (1997) correctly stipulates, economics is an inseparable combination of engineering and ethics, and ignoring each element can destroy the discipline altogether.

Infrastructural substantive groundwork underpinning methodological considerations:

Firstly, SEE is based on multidimensional nature of economics (Munda and Saisana, 2011). Secondly, it is concerned with the “ends-means debate”. Economic methodologists warn against confusing means with ends in economic analysis. For instance, using mathematics as an instrument can be fruitful in economic analysis. Applying mathematics as an end might be, however problematic. According to Marshal (1986), a famous economist and

¹ Perfect competition, is an ideal, axiomatic, and rather actual expression. It refers to a competition between numerous firms selling homogeneous products. In this case, each firm does handle a negligible amount of total demand in such a way that market price is not affected. Imperfect competition, on the other hand, includes various forms, namely monopoly, duopoly, oligopoly, and monopolistic competition.

mathematician, we can use mathematics as a language rather than as an engine of enquiring. Rosenberg stresses that: “economics more as a science of human behavior than a branch of mathematics” (Dadgar, 2013). Accordingly, scientific techniques, including mathematics, and econometric models are welcome as instruments for discovering the reality and not as an end in themselves (Brue, 1993).

Thirdly, based on moderate economics, science, in general, and economics, in particular, particularly are concerned with methods and approaches, and thus they are not sacred issues. According to logical positivism, which underlies theories of ONP, however, science is indeed a sacred phenomenon. Thus, any statement, which is scientific, is good and sacred, nonscientific statements, however, are meaningless (Copleston, 2003). North (1990) believes that a big price has been paid for the unquestionable acceptance of [orthodox] neoclassical theory.

Fourthly, reliance on moderate economics and enough attention to pluralistic methodology can lead to a peaceful and democratic relationship with alternative paradigms. Moderate paradigms help reduce vulnerability of economic theories as well (Ekelund and Hebert, 2013; Jhingan, 2014; Lawson, 2015; Roth, 2015; Wolf and Resnick, 2012). Efficient economics does not suffer from vulnerability. Vulnerability of economics can be considered as the ratio of the number of failed predicted models to all the designed models in a specific period. According to EET, only moderate paradigms of economics can persist in economic crisis. Most models of ONP failed to predict accurately the 2007-2012 crises (Krugman, 2009). Surprisingly, ONP did not change their models after their failure in making a correct prediction (Cassidy, 2010; Fama, 1965; Vague, 2014). Since ONP assumptions are rarely, if ever, realistic, representing a more realistic picture of economics can be of great importance (Leeson and Subrik, 2006).

EET survey literature indicates that an infrastructural groundwork is accessible for highlighting SEE. This includes relative rationality of economic agents, comprehensive role of theory, attention to social and ethical structures, price signaling devices, and methodological flexibilities. The author prefers to label the package in question as the *infrastructural substantive groundwork* (ISG) that can be shown as a schematic figure (Figure 1). As it can be seen from Figure 1, relative rationality is used to replace instrumental rationality, the case of ONP. Relative rationality implies both self- and social interests. ISG relies on the comprehensive role of theory and not exclusively on its predictive role. Moderate theory is concerned with prediction, explanation, problem solving and imperative roles.

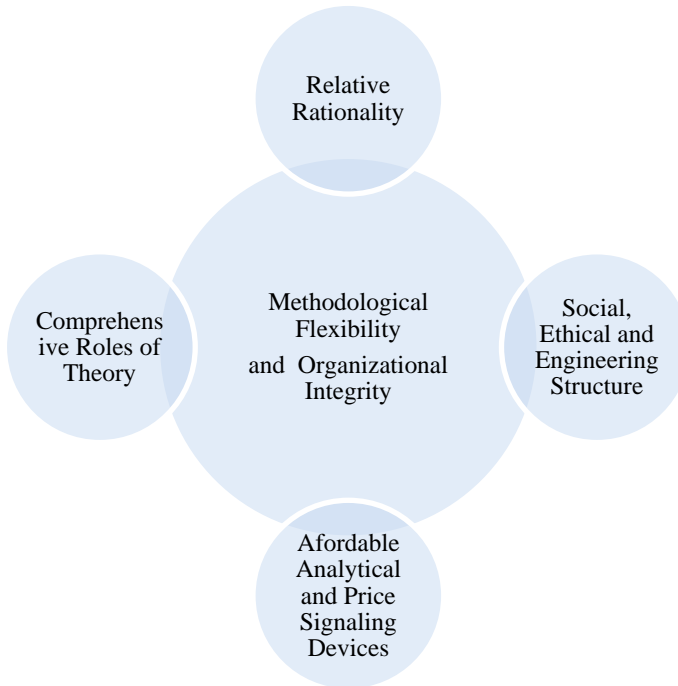


Figure 1. Infrastructural substantive groundwork (ISG)

ISG could be used for different economic paradigms with different hard cores. ONP, for instance, stresses on instrumental rationality and price signaling information. Likewise, Keynesian paradigms emphasizes the roles of government, institutional economists on the institutions, and so on (Arnsperger, 2008; Boland, 2005; Davis and Hands, 2012; Hands, 1993).

3. Along with EET

3.1 Adjustability with the 21st Century

The majority of economists agree that the 21st century is the era of rapid and comprehensive changes. Technological advancement, globalization, and emerging pluralistic ideas can be construed as issues behind the changes in question. Due to the accelerating changes of 1970s, some scholars have labeled the period as “Chrono-centrism” (Fowles, 1974), which shows centrality of time. The formations of two prominent phenomena in economics, namely path dependency and new institutionalism have been the byproducts of the aforementioned changes. The role of institutions is now beyond the scope defined by Coase (1990), North (1994), Powell and DiMaggio (2012), Simmie (2014), Arthur (1994), and Yunus (2017). Non-economic changes, including

genetic variation can also significantly affect economics in the 21st century (Boggs, 2015; Cooper and Isendahl, 2014; Mohi, 2014; Marx, 2014; Wimmer and Kossler, 2006). Everything is changing from one equilibrium to another. Therefore, an examination of dynamic trends in economics is the missing part of this discipline. Dynamic changes occur under the effects of globalization, knowledge-based economy, and climate change. Consequently, transformation of economics is affected by the domain of change, trend of change, direction of change, and speed of change. Institutional economists ascribe these changes to an institutional environment; cognitive experts connect them to learning, etc. (Acemoglu et al., 2012; Icon group, 2017; Kahneman, 2013; North, 2006; Park, 2015; Teyssiere and Kirman, 2007). Therefore, ONP, due to its static and timeless representation, is incapable of tackling the problems in the 21st century.

Typical prototype of comparing schools of thought

A semi-hypothesis of the present article is that resurgence of EET is in direction with sustainability of SEE. To receive helpful messages from EET, different schools of thought can be compared based on the following elements: 1. incentives and institutions; 2. unit of analysis; 3. main economic activities; 4. belief in certainty or uncertainty; 5. factors of progress; 6. allocative mechanisms; and 7. Possible lessons. In addition to personal perspective, evaluation of some EET works has assisted author to derive the following framework (Backhouse, 1994; Boland, 2014; Chang, 2014; Hands, 1993; Maki, 2013; Samuels et al., 2009). Figure 2 depicts the above elements in an EET comparing framework.

This prototype can be used by depicting the situation of typical schools. For instance, in the classical school, incentives and institutions are organized rationally; however, rationality is in a classically- oriented format. Incentives for neoclassical schools are selfish and on an instrumental rationality base. Key unit of analysis is classes of people for classical school, individuals for neoclassical school, and individuals and institutions for Institutional school. The Main economic activity for classical school is production and it is exchange for neoclassical school. The influential factor of progress is investment for classical school, individual choices for neoclassical school, and interaction between institutions and individuals for institutional school. Necessary coordination in classical school is done in class-oriented framework, through price system in neoclassical school, and through government- market in Institutional school (Hunt and Lautzenheiser, 2011; Klein, 1997; Roncaglia, 2005).

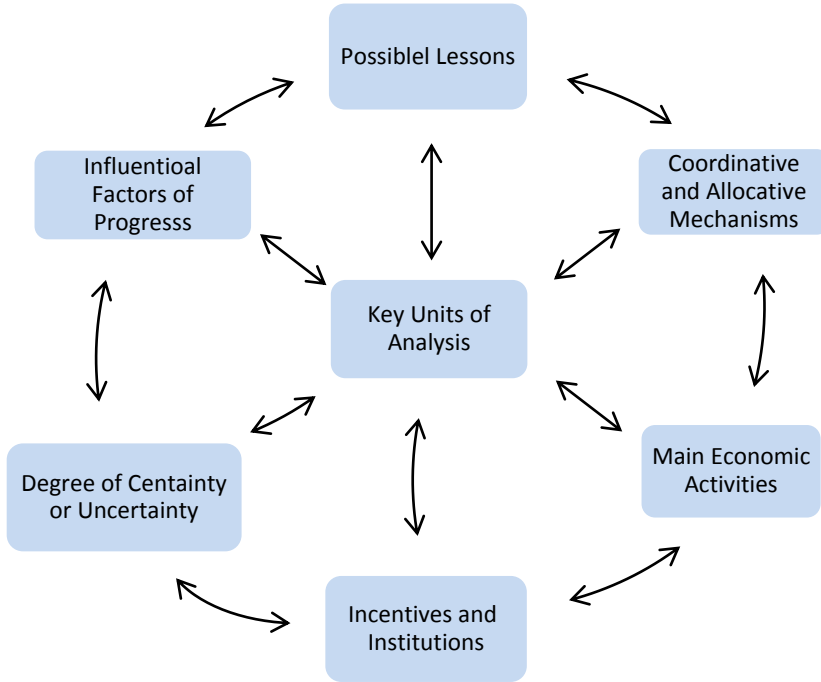


Figure 2. EET comparing framework

Considering possible lessons, classical school emphasizes fair-based and stable economy in the long- run, neoclassic school puts emphasis on happiness in the short run, and institutional school emphasizes institutions seriously. The great Message of Hicks (1941) can be considered as a serious lesson for economists of the 21st century: “A man who is a mathematician and nothing but mathematician does not do any harm. An economist who is nothing but an economist is a danger for his neighbors. Economics is not a thing in itself; it is the study of one aspect of man's life in society”. This message can in turn, be a good starting point for delving research in EET.

3.2 Typical Ideas and Experiences

Economists' ideas, regardless of their empirical truth, are more powerful than what is generally understood (Keynes, 1936). Past performances have provided incredible guidelines for today's activities (Campbell, 1998). A remarkable number of studies have emphasized the relationship between economic change and socio-political institutions (Abramovitz, 1986.; Denzau and North 1994; Martens, 2004; Zamagni, 2010; Zweynert, 2007). The next step is to link these findings to EET. EET can be divided into two sub-categories: pre- classic and afterwards. Pre-classical time includes economic thought of ancient Greek, medieval period, mercantilism and physiocracy. Before the 16th

century, there were some economic ideas, but there was neither a specific school of thought, nor a well-defined economic science. During the early 16th century, mercantilism emerged as the first school of thought.

Before Christ through mediaeval ages

Hesiod (800 BC) has referred to the positive impacts of rule of law on economic development (Mises, 1998). Democritus, a Greek thinker (460 BC) has pointed to the role of time preference in political economy. Plato and Aristotle were concerned about economic coordination. Greek philosophers placed stress on natural law, household management, private property, and justice. Natural law is both a theory and a method of reasoning. It is a moral and at the same time a legal theory. Based on some previous studies, Greek philosophers provided the first fragment of systematic economic theory (Aristotle, 2012; Barry, 1975; Rothbard, 1995; Spengler, 1955). Therefore, as far as the substantive package of the present study is concerned, there is a significant relationship between EET in ancient Greece and the package in question.

In the middle Ages, EET was based on property rights and just prices. The doctrines of EET from the ancient time to the 16th century can be summarized as follows: 1. Economics was a social and ethical science. 2. Justice was considered as a condition for ensuring robustness of political economy. 3. Market process was relatively developed and contract law was enforced (Kaye, 1998; Samuels et al., 2003; Spengler, 1964; Udovitch, 1970). 4. The impact of philosophy, law, and religion on economics was influential. 5. The pluralistic framework of economics was easily comprehensible. Some economic thinkers focused on rational ideas, some on natural law, some on religious ideas, and some on a pragmatic view. Some economic thinkers, claimed to produce universal laws, some other concentrated on regional and local laws.

EET, Mercantilism and physiocracy

Accumulation of gold (as economic wealth), promoting nationalism, and active government intervention are the main principles of mercantilism (1500 - 1776). In reaction to mercantilism, physiocrat school appeared in the middle of the 18th century (Roughly, 1756). It puts emphasis on natural order, laissez-fair, and agriculture as the doctrines of physiocracy. Relying on laissez-fair, physiocrats believed in free market economy. Quesnay, the founding father of physiocracy, also believed in just prices. Just prices for him were set by natural market systems and not by government (Blaug, 1980 and 1990; Rubin and Colliot- Thelene, 2015; Vaggi, 1987). Despite some of their static ideas, physiocrats considered economics as a social science and built their models on a holistic philosophy and not on a mechanical-individualistic one.

The shortcomings of mercantilism and physiocracy along with the scientific and industrial revolution on the eve of 1776 can be inferred as key grounds in the advent of classical school. According to the findings of scientific

revolution, experimental and mathematical evidence is necessary for justifying knowledge. Advocates of classical school believed that laissez-faire would be an efficient theory of public management, natural law would manage economic systems, and individuals would seek to maximize their self-interest through free market systems (Allen, 2009; Graphics, 2008; Medema and Samuels, 2013). In contrast to both mercantilism and physiocracy, classical school emphasized productivity of all factors of production. Adam Smith, as an incredible classical thinker, believed that people can exist in a social framework, and thus they need each other to conduct their affairs properly. He relied on individual selfish behavior, but believed that moral faculties can constrain selfishness of human being (Frey, 1992; Phillipson, 2012; Smith, 1976). The extension of economic theory to income distribution was among major contributions of Ricardo (Dobb, 1975; Ricardo, 2013). Stuart Mill, another prominent classical economist, proposed dynamic economic theory.

Marxism advanced in reaction to some difficulties associated with classical school, difficulties such as unjust income distribution and worker dissatisfaction. Marx believed that classical school and capitalism suffer from internal contradictions and will eventually demise (Holander, 2015; Hu, 2014; King, 1990; Marx, 1993; Piketty, 2014; Wolfson, 1979). Another critic of classical school was German historical school. It was the outcome of the dominance of German nationalism in the late 19th century. German economists believed that although classical doctrines were compatible with UK circumstances, they were not consistent with conditions in Germany. Therefore, they funded a school of thought, arguably consistent with German economy and its socio-political status. The doctrines of German school included active government and inductive approach. German economists believed that society is changing; therefore, classical doctrines are consistent with a specific period of time and place. They had a dynamic and evolutionary view. Instead of individualistic ideas, they had nationalistic and socially oriented ideas. Economy was organically related to the other parts of socio-political and cultural systems. They criticized unhistorical, static and deductive approaches to economic schools. Except for general theories of development, they rejected the universality of economic laws or theories (Balabkins, 2006; Dorfman, 1955; Lessnoff, 1994; Shionoya, 2000; Tawney, 1926).

Unsolved problems under classical and socialist thoughts provided some grounds for the advance of Marginalism. Marginalists and their followers, neoclassical economists, stressed instrumental rationality, deductive method, and pure competitive equilibrium. They developed a number of new and powerful analytical instruments and used huge quantity of mathematical models. Alfred Marshal, an influential economist in developing neoclassical school, believed in the usefulness of mathematics as an instrument for analyzing economics. His orthodox followers, however, were accused of using mathematics as an end (Landreth and Colander, 2001; Marshal, 2012; Viner, 1941). The traditional version of neoclassicism, ONP, was based on strong

assumptions, whose affordability could be questioned. Perfect competition, complete market efficiency, and absolute rationality of economic agents were among assumptions in question. Considering these unrealistic assumptions, some studies have indicated the fragility of the paradigm in question (Backhouse, 2010 and 2012; Dopfer, 2005; Dugger, 1995; Rutherford, 1996; Weeks, 2014).

The appearances of some signs of failure of traditional neoclassicism could be inferred as the initial ground for the advent of Institutionalism. Actual performances of economic systems did not reflect the optimistic trend suggested by the neoclassic models. Economies suffered from high unemployment, poverty, monopoly, and so on. Different approaches were used to exit from the status in question. The solution suggested by the radical approach was to abolish capitalism and to move in the socialist direction. Institutional solution was to undertake some social and institutional reforms. Adherence to institutions, holistic attitudes, evolutionary approaches, democratic reforms were among the main doctrines of traditional institutionalism. New institutionalists referred to the crucial role of property rights, and paid attention to the relationship between law and economics (Alasuutari, 2015; Lecourse, 2005; Samuels, 1989).

Keynesian schools emphasized the important roles of macroeconomic variables and active government in boosting economic growth and in resolving unemployment problem. Hansen, Hicks, Samuelson and some other prominent economists advocated Keynesian schools based on Keynes' ideas. Sraffa, Kaldor, Robinson, and some other scholars advocated post-Keynesian school. Through emphasizing micro foundation of macro-economics, some economists suggested the new Keynesian approach (Gali, 2008; Rotheim, 2014). The new classical or Chicago school along with Keynesian approach built another pillar part of mainstream economics. Stigler, Friedman, Becker, and Lucas had key roles in dominating Chicago school over conventional economics. Optimization of behavior, rational expectation theory, and least government intervention were amongst the doctrines of Chicago school. Witness to high role of this school in improving economic literature, it in turn, faces with some serious critiques. Some major objections were raised against Chicago school. For instance, it was argued that Chicago school is based on unrealistic assumptions, has a very optimistic view regarding market mechanism, and disregards social and ethical aspects of economics (Banerjee and Warier, 2018; Becker, 1976; Friedman, 1962; Lucas, 1981; Nik-Khan, 2014; Reder, 1982; Wilfred and McMaster, 2007). Other economic schools includes Neo-Austrian (roughly 1900- present), moderate and neo-socialism (1930- present), neo-institutionalism (late 19th and the early the 20th centuries- present), and behavioral economics (1960- present). Behavioral economics, as a new and fast growing paradigm, was concerned with investigating the effects of psychological, sociological and cognitive factors on the behavior of economic agents. By relying on a number of realistic assumptions, this paradigm could fill some methodological gaps of mainstream economics (Thaler, 2016, 2017).

3.3 Analyzing the Findings

1. The study of EET can be considered as an in-depth review of conventional economics. EET is full of messages, lessons, theories, and experiences. The messages and lessons of EET can be used as guidelines for planning economic future. According to [John Hicks \(1969\)](#) and [SCED Symposium \(2010\)](#), there is a special relationship between economic performance and EET.

2. Based on the lessons drawn from EET, economics can be considered as a dynamic discipline ([Stigler, 1949](#)).

3. The study of EET is a precondition for the robustness and sustainability of economics. In other word, an in-depth review of EET can provide a new perspective on SEE because it indicates that moderate economic schools of thought are productive and extreme cases are questionable.

4. By concentrating on socio-institutional and ethical elements, some schools have assisted the moderation and Robustness of economics.

5. Exaggeration the role of mathematics by some paradigms (ONP, for instance), and de-mathematizing by some others (such as Austrian school) have impeded knowledge-based progress. The Findings of EET prove that the moderate economic paradigm has helped improvement of the discipline.

6. According to EET, over time, economic performance is fundamentally influenced by the way institutions evolve. Institutions can reduce uncertainty and affect economic performance. Consideration of EET along with institutions can: a) increase the efficiency of EET itself, b) assist policy makers in proper coordination of economy, and c) increase social stability of economics in actual life ([North, 1990](#)).

7. Different dimensions of economics are changing and their speed of change is changing too ([Backhouse and Fontaine, 2010](#)). Adherence to such economic changes requires an essential change in our conventional thinking ([North, 2005](#)).

8. Research has provided a quantitative account of practices in economics for the last 130 years. As the findings have revealed, the number of economic articles which include words and which denote other disciplines (such as history, psychology, and sociology) has sharply increased in 1920s, have dropped in 1970s and 1980, and have rapidly increased in 1990s and in the 21st century. The above research has used articles published in almost 95% of economic journals ([Aromic, 2013](#)).

9. Considering the SEE package used in the present study, the significant relationships between economics and other subsystems can be an indicator of invulnerability in economics itself ([Wisner et al., 2004](#); [Zakour and Gillespie, 2013](#)).

10. Historically speaking, the relationship between economics and ethical institutions is structural and continuous. Almost all schools of thought do have their own justification for establishing a relationship between ethics and

economics. For Aristotle (2012), economics was characteristically ethical. Adam Smith was an expert in moral philosophy. Economists, such as Mill, List, Weber, Veblen, Keynes, Marshal, Knight, Buchanan, Arrow, Simon, and Sen concentrated on moral philosophy and the relationship between economics and ethics. Some economists have referred to economics as a moral science (Boulding, 1969; Crespo, 2013). According to Robbins (1935), economics is the science of ends, and thus it is potentially a moral discipline. Sen (1997) maintains that the gap between economics and ethics has led to major deficiencies in conventional economics. Economics has had its origin in ethics and engineering. In the actual trend; however, the dominance of engineering has marginalized the role of ethics in economics (Baldwin, 1959; Magnusson, 1994; Polanyi, 1971 and 1983; Sen, 2002; Vardi, 2012; Viner, 1978). Keynes was eager to create a kind of economic system, which can lead to a moral society (Brenkert, 1983; Hutchison, 2001; Skidelsky, 2010). This is an open list in continuation of the 21st century (Dadgar, 2015, 2016; Rodrik, 2015, 2016).

4. Concluding Remarks

The main findings of this paper are:

1. An in-depth review of the EET would illustrate SEE as well. It warns about the rapid change in economics and entails a rethink to tackle its caveats. Based on the new theoretical findings of the present study, orthodox economists encounter decreasing marginal returns. EET demonstrates that the rules, which economists employ in their practice, change over time. A deep understanding of EET can indicate the trend for economic progress or economic regress. Thus, SEE out of EET, emphasizes on the efficacy of dynamic paradigms in economics.
2. EET can release a fundamental SEE through putting emphasis on economics as a social, moral and technical science and maintaining a relationship with other disciplines. Another economic message of EET is to consider ethics seriously. Ignoring professional ethics can lead to economic crisis.
3. EET reminds us that although the ethical orientation of economics in medieval era was helpful, imposing ideological aspects on it was problematic.
4. Based on EET, the two reasons behind unsustainability of mercantilism were a static view of wealth and exaggeration about the role of government in economy. Similarly, inflexibility of natural law, in physiocrats' opinion, did have a major role in downgrading that school of thought.
5. Based on EET, after the entrance of Newtonian calculus into economics, ONP neglected the complex aspects of real economics and reduced it into a mechanistic science.
6. Methodological considerations of EET and SEE will guide economic researchers, model builders, etc. to set realistic assumptions about economic agents' behavior.

7. An in-depth understanding of EET can help economists figure out the limits of economics. EET reminds us of the fact that social reality is different from natural reality. Social reality varies constantly, but natural reality is relatively fixed. Consequently, new realities require new models. EET mentions that although real circumstances have changed, ONP models have not, and that not all economic rules are universal. Based on EET, institutional settings of orthodox paradigms are poor; therefore, these paradigms require either reshaping of models or restructuring of institutional environments.

8. If it is claimed cognitive, historical and institutional aspects of economic models should be improved in order to reduce their vulnerabilities. The ONP models are mechanistic, non-cognitive, ahistorical, and have non-institutional framework. The findings of the present study can help economists in reforming ONP itself.

9. Taking lessons from EET will help economists establish a much more democratic, efficient, and sustainable discipline.

10. Knowledge of EET can help economists master a specific language used for analyzing other sciences as well.

11. Ignoring lessons and messages of EET will possibly lead to a) inability of economic models to predict properly the future; b) formation of a specific kind of vicious circle (Figure 3), and reaction of crisis; and c) creation of extreme and radical viewpoints.

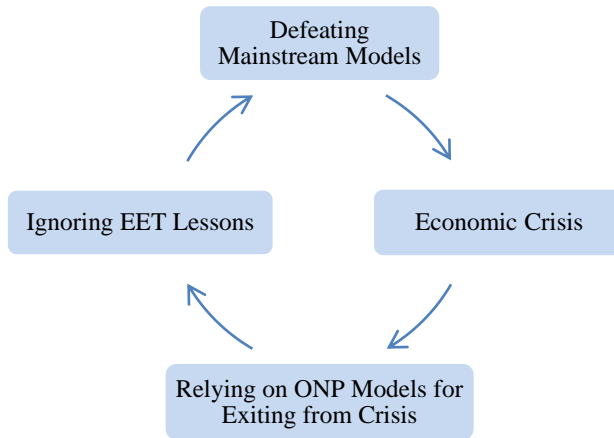


Figure 3. ONP Vicious Circle

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