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Market failure vs. system failure as a rationale for EU regional policy? A critique from an evolutionary economic perspective

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Abstract

This paper reconsiders the economic explanation of EU regional policy from an evolutionary perspective. It contrasts the neoclassical equilibrium notions of market and government failure with the prevalent evolutionary neo-Schumpeterian and Austrian-Hayekian perceptions. Based on this comparison the paper criticises that neoclassical failure reasoning still prevails in non-equilibrium evolutionary economics when regional policy issues are examined. This is more than surprising since proponents of evolutionary economics usually view their approach as incompatible with its neoclassical counterpart. In addition, it is shown that this “fallacy of failure thinking” even finds its continuation in the alternative concept of “system failure” with which some evolutionary economists try to explain and legitimate regional policy interventions in local, regional or national innovation systems. The paper argues that in order to prevent the fruitful and more realistic evolutionary approach from undermining its own criticism of neoclassical economics and to create a consistent as well as objective evolutionary policy framework it is necessary to eliminate the equilibrium spirit from it. Finally, the paper delivers an alternative evolutionary explanation of EU regional policy which is able to overcome the theory-immanent contradiction of the hitherto evolutionary view on this subject. Building on the preceding remarks, policy implications for EU regional policy from a “proper” evolutionary perspective are deduced.

JEL-Classification: B52, E62, H53, I38, O20, R58

Keywords: market failure, system failure, EU regional policy, EU structural funds, evolutionary economics, non-equilibrium economics

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1 Introduction

The living and working conditions of the citizens of the European Union (EU) differ tremendously. This is well-known not only since the beginning of the current European financial crisis in 2009. Yet, with the economic and financial problems of southern European countries like Greece it becomes ever more apparent. Since its foundation by the Treaty of Rome in 1957 the EU conducts a regional policy which is supposed to improve and harmonise the living and working conditions of its citizens.¹ The EU defines regional policy as its “main investment policy [which, P.S.] targets all regions and cities in the European Union in order to support job creation, business competitiveness, economic growth, sustainable development, and improve citizens’ quality of life” (European Commission 2015). The main instruments to execute this policy are the so-called structural funds. In the current planning period 2014-2020, these include the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the European Cohesion Fund (ECF).²

The task of economics as a science with regard to EU regional policy is usually seen as a threefold (see Witt 2003). First, it should provide a positive explanation of EU regional policy. Second, this positive knowledge should be used for practical policy purposes, i.e. economists should formulate policy instruments with the help of which given regional policy goals could be achieved. This is the so-called prescriptive or instrumental dimension of economics. Third, the normative dimension of economics determines the policy goals which EU regional policymakers should pursue and delivers a legitimisation for EU regional policy. Whether economists should do normative economics, however, is disputed because it requires subjective value judgements. The latter are not objectively and intersubjectively comprehensible which is why anti-normativistic some economists regard these approaches as unscientific. Hence, the lowest common denominator among economists is

¹ Aptly named, it was not the EU but the European Economic Community (EEC) that was founded by the Treaty of Rome in 1957. Together with the European Coal and Steel Community (ECSC) established by the Treaty of Paris in 1951, however, the EEC and the European Atomic Energy Community (EURATOM) constituted the European Communities (ECs) since the Brussels Treaty of 1967. With the Treaty of Maastricht entering into force in 1993 the ECs were renamed to European Community (EC), which was incorporated into the EU by the Treaty of Lisbon in 2009 as one of its three pillars (besides the “Common Foreign and Security Policy” and the “Police and Judicial Co-operation in Criminal Matters”).

² The original structural funds are the ERDF and the ESF. The ECF is a separate fund aiming at fostering European cohesion (European Parliament and the Council of the European Union 2013, p. 337). Since this clear-cut distinction is barely found in the literature all three of them are allotted to the term “structural funds” in this paper.

Figure 1: Rationales for and against regional policy in neoclassical and evolutionary economics

	positive role of government because of	negative role of government because of
neoclassical economics	market failures	government failures
evolutionary economics	Neo-Schumpeterian: <i>market failures and system failures or system failures only</i>	Austrian-Hayekian: <i>"Impossibility Theorem"</i>

to sharply distinguish positive from normative economics and to explicitly reveal value judgements in economic theories. As depicted in figure 1, EU regional policy is positively and normatively explained in different ways in neoclassical equilibrium and evolutionary non-equilibrium economics. This usually includes the prescription of policy instruments. In the neoclassical strand EU regional policy is generally explained by resorting to allocative and distributive market failures in the European single market (see, e.g., Holtzmann 1997, pp. 37-85; Krieger-Boden 2002, pp. 3-5; Molle 2007, pp. 104-105; Vanhove 1999, pp. 1-63). In different static trade, growth and regional economic theories such market failures are identified. Those should be tackled by public interventions in order to improve and harmonise the living and working conditions of EU citizens. Depending on the belief in the government’s ability to efficiently correct market failures, more state-oriented neoclassical economists opt for EU regional policy interventions in the European single market. More market-oriented neoclassical economists believe in government failure and the EU’s inability to do so. Such economists consequently disapprove EU regional policy.

In contrast to that, figure 1 shows that a (neo-)Schumpeterian and an Austrian-Hayekian strand of non-equilibrium evolutionary economics can be distinguished. Both hold opposing views on economic policy (Wegner and Pelikan 2003, p. 3). Hayekians disapprove state interventions altogether due to the “Impossibility Theorem”, a term coined by Wegner (1997, p. 485), according to which the state is not “better informed than private agents on the optimal nature of market outcomes” (Moreau 2004, p. 872). Neo-Schumpeterians opt

for an active role of the state and can be further divided into two different camps (Bleda and del Río 2013). They either explicitly accept the market failure notion of neoclassical economics and extend it by a system failure rationale for EU regional policy or the market failure rationale is rejected and substituted by the system failure justification.

Evaluating these evolutionary explanations of EU regional policy, especially the former neo-Schumpeterian view appears to be surprising and contradictory. It explicitly accepts the neoclassical notion of market failure although evolutionary economists generally see their approach as incompatible with and separate from this strand of economics.³ Contrastingly, the latter neo-Schumpeterian view, at least at first glance, seems to be consistent when market failures are seen as part of the rejected equilibrium economics. However, as this paper argues, neither of these two rationales is compatible with a truly evolutionary perspective on EU regional policy. Both rationales, the one accepting the market failure concept and the one rejecting it, still represent the spirit of neoclassical (optimal) equilibrium economics that evolutionary economists reject. This critique also applies to the recent attempt of Bleda and del Río (2013) who integrate the two neo-Schumpeterian explanations in an evolutionary “functional technological innovation systems (TIS) approach”. Thus, the prevalent evolutionary regional policy rationales are barely able to provide better and more realistic insights than their neoclassical counterparts in terms of a positive as well as prescriptive and normative explanation of EU regional policy.

To substantiate this point of view, the second section of the paper analyses the origins of failure thinking in neoclassical economics. It also elaborates why the evolutionary concept of system failure extends but is still rooted in the neoclassical notion of market or government failure, respectively. Beyond that, it is outlined that the Austrian-Hayekian standpoint on evolutionary economic policy is also too narrow a view, when “unsatisfactory courses of economic development ... [are seen as, P.S.] the unavoidable price of market evolution or the consequence of detrimental economic policy” (Wegner and Pelikan 2003, p. 3). This negative attitude towards public policy neglects that regional policy, just like phenomena termed as market, government and system failure, is not exogenous to modern market economies but inherent to them. Hence, from a proper evolutionary

³ A good example for this discrepancy can be found in Boschma (2009, pp. 14-16) who, as an evolutionary economist, does not claim market failures to be irrelevant but to be complemented by system failures. At the same time, in another publication together with Ron Martin (2010, p. 31, note 2), they claim the combination of neoclassical and evolutionary economics undertaken by Jovanović (2009) to be “a rather forced and - incompatible - marriage of perspectives.”

angle it cannot be blamed as futile or harmful a priori.

Section three is devoted to show why all the prevalent evolutionary regional policy rationales just mentioned are not in line with truly evolutionary economic thinking. It argues that the “fallacy of failure thinking” is a problem of internal consistency for this fruitful strand of economics which needs to be eliminated from it. This would not only make the evolutionary approach unambiguous and explicitly sets it apart from its unrealistic neoclassical counterpart. It also strengthens its scientific character and its usefulness for a realistic explanation of EU regional policy. This in turn allows to provide objective and practically applicable evolutionary policy implications to EU regional policymakers which the prevalent approaches do not yet provide.

Section four provides an alternative positive explanation of EU regional policy from an evolutionary point of view. The fifth section of the paper analyses what proper evolutionary economics brings to the policy table. Finally, the paper draws the conclusion.

2 The origins of neoclassical failure thinking and its application in evolutionary economics

To understand why the prevalent evolutionary rationales behind EU regional policy are rooted in neoclassical economic thinking it is necessary to understand how the latter approach conceives the modern market economy.

The neoclassical approach is based on the ahistorical idea of a “natural order” of economic interactions in markets in which “consumption is the sole end and purpose of all production” (Smith 1776, Vol. II, Book IV, Chapter VIII, p. 179). Accordingly, the natural aim of every citizen is to maximise the satisfaction of its needs. Thus, neoclassical economics assumes that also the social economic goal and the goal of public policy is to maximise welfare of all members of society. To put it differently, pleonexia as a social principle is the ideological basis of (neo)classical economic theory (Kramm 1975, p. 97). As Gunnar Myrdal (1953) has shown, this normative postulate emanated from the theory of natural law and was influenced by utilitarian thinking in political economics in the 18th and 19th century.

In the standard neoclassical general equilibrium model of perfect competition, which can be traced back to “Smith through Ricardo, Walras, Marshall, right up to Debreu and the most sophisticated of present-day Americans” (Kaldor 1972, p. 1241), a decentralised

market economy is led by an invisible hand. Without central planning by a public authority the price mechanism automatically aligns demand and supply in the market. It brings the various opposing plans of rational utility and profit maximising market participants to congruence and harmony. In this model the market is understood as the first-best mechanism to solve the alleged “economic problem” of scarce resources on the one hand and infinite human needs on the other. It not only allocates the factors of production (capital, labour, land) to the most efficient utilisation with respect to social wants. It also distributes the output generated with those factors in a Pareto-optimal and just way according to marginal factor productivity.

It is clear that in this optimal neoclassical world economic policy is only legitimate when the price mechanism fails to allocate capital, land as well as labour to production efficiently or fails to distribute the generated incomes in a socially just or politically wanted way. Depending on their view some neoclassical economists approve and others disapprove regional policy interventions in the internal European market. Based on insights from Public Choice theory the latter usually argue that government failures regularly occur and that EU regional policymakers are not able to manage market failures with the taxpayer’s money efficiently. Hence, no regional policy ought to be conducted by the EU. The former believe that the EU is “able to correct market failures efficiently and to lead the economic system to a Pareto-optimal equilibrium” (Moreau 2004, p. 850). In a nutshell, in neoclassical economics EU regional policy is discussed against the background of an unsolvable a priori “state versus market debate” (Sälter 1989, p. 18).⁴

Examining the prevalent evolutionary rationales for EU regional policy it turns out that they seem to assume the same optimal “maschine model” (Koch 1996, p. 16) like neoclassical economics. Both neo-Schumpeterian regional policy rationales, i.e. the one accepting as well as the one rejecting the concept of market failure, simply augment the neoclassical market failure idea by a concept of system failure. The latter “builds on the notion that innovation processes are social learning processes that take place in a context of networks and institutions ... [which, P.S.] implies that public intervention is legitimate and needed if the complex interactions that take place among the different organisations and institutions involved in innovation do not function effectively” (Asheim et al. 2013,

⁴ To put it with Dahlman’s (1979, p. 156) words: “You cannot show analytically that the government, in principle and in all cases, handles externalities better than the market; nor can you prove the opposite: it all depends on what point of reference you choose. And that is not a question of positive economics. By choosing the appropriate point of reference, the “conclusion” is reached that government intervention (or no government intervention) is optimal.”

p. 7).⁵

Similar to neoclassical economics the concept of system failure presumes a normative yardstick against which it can be assessed whether a local, regional or national system of innovation works effectively. In evolutionary economics such a benchmark does not only have to be the effective or optimal maintenance of evolution itself. It could also be the encouragement of innovation, the generation of new variety and technological diversity, experimentation, new knowledge, the extension of the division of labour, the promotion of learning, maximum social welfare like in the traditional neoclassical approach or even a mixture of these normative goals (van den Bergh and Kallis 2013, pp. 285-287). Hence, both neo-Schumpeterian versions of the system failure rationale for EU regional policy emanate from the same notion like the neoclassical market and government failure justifications. Again, the idea prevails that the modern market economy works as if an optimal societal plan exists under which production and distribution of material and immaterial wealth should be subsumed (Sälter 1989, p. 70). Thus, the prevalent evolutionary normative policy goals like new variety, new knowledge, the promotion of learning, etc. are not ends in themselves. They eventually reflect the (neoclassical) idea that the end of all economic activity are the optimal living and working conditions of EU citizens. This time, however, not only the market but also the organisations and institutions in which the market is embedded fail to bring about the optimal amount of experimentation, new variety, learning, new knowledge and so on. Clearly, the market failure concept is extended by an institutional or systems component. This definitely is a very important amendment to explain phenomena like EU regional policy from an economic perspective and should not be criticised here. What yet remains to be criticised is that the neo-Schumpeterian evolutionary rationales for EU regional policy remain deeply rooted in neoclassical optimality thinking.

Neoclassical optimality thinking can also be discovered in the Austrian-Hayekian Impossibility Theorem. Just like state-oriented neoclassical economists neo-Schumpeterians seem to believe in the possibility to attain a conceived optimum. Similar to the neoclassical idea of government failure the “model Platonic” (Albert, Arnold and Maier-Rigaud 2012; Kapeller 2013, pp. 208-212) analogue to this view in the prevalent evolutionary approach is the Austrian-Hayekian rejection of government intervention. The Hayekian

⁵ Tödting and Trippel (2005) suggest to distinguish three different types of system failures such as “organisational thinness”, “lock-in” and “fragmentation”. For a more detailed explanation of these three and further types of system failures see, e.g., Boschma (2009, pp. 15-16) and Asheim et al. (2013, p. 6).

Impossibility Theorem assumes that the state is not able to bring about a better economic result than the market. Just like in neoclassical economics the state is seen as an interventionist evil that exists outside the economic reality.⁶ In case a regional policy measure fails to achieve its goals the government is judged against a more or less optimal market.⁷

To sum up, in the dominant evolutionary approach to economics and regional policy one is left with the same unsolvable a priori state vs. market debate like in traditional economics. Regional policy or no regional policy is optimal. This is more than surprising since neoclassical economic thinking is usually rejected by evolutionary economists who grasp their strand of economics as unique and separate from it.

3 Why the “fallacy of failure thinking” needs to be eliminated from evolutionary economics

The fact that the prevalent evolutionary regional policy rationales a priori emanate from a normative postulate like their neoclassical counterparts is not sufficient to refuse them as a proper explanation of EU regional policy. Therefore, this section examines why neoclassical failure thinking is a logical caveat for this strand of economics which needs to be eliminated from it. Two arguments to substantiate this view are put forward in this section. First, an examination of the origins of evolutionary economics leaves no other option than to get rid of the fallacy of failure thinking. Second, in order to prevent the evolutionary economics explanation of EU regional policy from being a pseudo-objective theory without any practical content for EU policymakers in the real world an elimination of the fallacy of failure thinking is inevitable.

To begin with the first argument, following Chandra (2004), Kaldor (1972, pp. 1240-1242) and Richardson (1975, p. 351) the source of the distinction between neoclassical and evolutionary economics can be localised in the first seven chapters of Vol. I, Book I of Adam Smith’s (1776) *Wealth of Nations*. This is where Smith develops a theory of economic equilibrium and a dis- or non-equilibrium theory of economic evolution.⁸

⁶ As Gallas (2015) argues this reasoning might be due to Hayeks anti-socialist eclecticism stemming from contradicting moral philosophy approaches, namely evolutionism, utilitarianism and deontology, which characterise the normative dimension of his work.

⁷ More or less optimal because “Hayekians interpret unsatisfactory courses of economic development to be either the unavoidable price of market evolution or the consequence of detrimental economic policy” (Wegner and Pelikan 2003, p. 3).

⁸ It might be better to speak of a non-equilibrium instead of a disequilibrium theory in this context.

The equilibrium part has developed to the strand of traditional neoclassical economics while the non-equilibrium part differentiated into different heterodox economic theories. The latter include, e.g., theories of circular and cumulative causation, Post Keynesian Economics, Austrian Economics, Institutional and Evolutionary Economics or Complexity Economics (see Berger 2009, pp. 2-3 and Tieben 2009, p. 422).

The most important and fundamental difference between the equilibrium and non-equilibrium theories is the understanding of the economy as either a static or a dynamic system. This in turn mainly depends on how these two strands grasp the role of increasing returns to scale for the economy (see also Metcalfe 2003; 2005). In neoclassical economics increasing returns to scale are mainly a technical, static and partial concept (Toner 1999, pp. 8-11 and 29-38). Since Alfred Marshall's (1890) *Principles of Economics* increasing returns to scale are examined via the concepts of internal and external economies to scale, i.e. declining unit costs on the level of the individual firm or the industry to which this firm belongs. This is due to the fact that only these two conceptions of increasing returns to scale are compatible with a static concept of economic competition. According to the invisible hand theorem only the latter implies an efficient allocation of production factors as well as a just and harmonic distribution of incomes in accordance with marginal factor productivity.

With Allyn Young's (1928) influential paper, though, the Smithian idea was revisited that increasing returns are an economy-wide phenomenon not only occurring within firms and industries but also between industries. The latter especially comprises the idea that the technological environment, which is exogenously given in the constrained optimisation problems in neoclassical economics, is constantly changing over time. Hence, modern market economies will never attain a static equilibrium situation which neoclassical economists have in mind and in which the plans of all economic agents do necessarily coincide. Moreover, in Young's world of circular and cumulative causation increasing returns to scale are not at all a problem for the maintenance of economic competition. It is rather competition which is the constant and main driver for the exploitation of economies of scale and specialisation by firms in the production process (Richardson 1975, p. 354).

Constantly changing economic conditions and the non-existence of an equilibrium in the neoclassical sense imply that something like an optimal allocation of the factors of

There are also neoclassical economists who are interested in disequilibrium situations but who share the idea of the existence of an equilibrium. Evolutionary and institutional economists, however, usually reject the notion of an equilibrium altogether since they view the economy as a dynamic and constantly changing system (see also Tieben 2009, pp. 421-535).

production and a just distribution of incomes according to marginal factor productivity does not exist (Schubert 2012, pp. 592-593). The normative point of reference against which phenomena like market and government failures are assessed in neoclassical economics falls apart. The same holds true, of course, for the concept of system failure. An optimal system with optimal organisations and institutions which are subsumed under a societal plan is a fiction not existing in an evolutionary world. These institutions and organisations in which the internal European market is embedded do constantly change as well. The latter holds also true for the values and norms of EU citizens. A social objective function does not exist. What remains is the need to switch perspective on market, government and system failures away from deviations from an optimal equilibrium case to inherent and systematic patterns of capitalism.⁹ The alleged failures are rather the movens of modern market economies, without them no economic development and progress would exist. Hence, failure thinking is intrinsically incompatible with a proper evolutionary economics point of view.

The second argument for the necessity to eliminate the fallacy of failure thinking from the evolutionary approach to economics is linked to the first argument. The normative yardstick is not only indeterminable in an evolutionary world. Its a priori introduction to explain EU regional policy has no epistemological value at all.¹⁰ Following the research programme of Keynes (1904) a theory derived in such a way is unscientific, pseudo-objective and has no relevance for practical public policy.

As far as the positive explanation of EU regional policy is concerned the “failure approaches” are unscientific because they do not emanate from the observable facts. They rather a priori presume an optimal world and compare the economic reality of the European internal market with it. Whenever the reality deviates from that optimal world this is not an objection against the theory but against the suboptimal reality (Sälter 1989, pp. 7-8). Accordingly, the regional policy of the EU is explained as an instrument to approach the optimal state of the market or the system, i.e. as a means to correct market and system failures. Such a theory can neither be verified nor falsified. It is impossible to empirically show that EU regional policy was used by EU policymakers to correct market and system failures in the internal European market. These failures are concepts bounded to what Demsetz (1969) terms a “nirvana theory”. The theory is thus immunised against

⁹ See also Sälter (1989) who explains this view at length for the case of market failures.

¹⁰ This does not imply, though, that a normative evolutionary theory (of EU regional policy) is redundant. See, e.g., Schubert (2012, pp. 594-596) who presents convincing arguments for the usefulness of such a theory.

experience (Albert, Arnold and Maier-Rigaud 2012). It is sometimes objected against this argument that the failure approaches are normative theories which do not claim to explain how EU regional policy factually is. In the literature, however, these normative theories are continuously used to positively explain EU regional policy (see, e.g., Holtzmann 1997, pp. 41-42, who frankly admits this for the neoclassical market failure approach). This is probably due to the fact that the theories combine positive, prescriptive and normative elements such that the boundaries between these three dimensions of a theory are blurred.¹¹

The lack of epistemological value also applies to the justification of EU regional policy and thus to the practical application of the aprioristic failure approaches to EU regional policy purposes. The policy recommendations for EU regional policymakers derived from such theories are pseudo-objective and inapplicable in the real world. As Mantzavinos (2005, p. 212, own translation) puts it, they have “a crypto-normative character, since the .. value judgements [presumed to their deduction, P.S.] are most often not explicitly reconstructed.”

Albert (1958, p. 35) points out that the normative postulate implicitly underlying in the failure approaches must be designed as an empty formula in order to seemingly keep up the scientific character of the theory. The problem with such an empty formula is that it is open to every arbitrary and subjective interpretation. No one can objectively and scientifically determine what exactly the optimal amount of evolution, innovation, learning, new knowledge, new variety or maximum social welfare is that policymakers should try to approach. Any attempt to do so depends on the point of reference. In other words, a value judgement must be rendered by EU regional policymakers before the policy instruments derived from these theories can be applied in practice. Hence, the neoclassical as well as the prevalent evolutionary regional policy rationales face a dilemma when they want to provide practical policy implications to EU regional policymakers (Albert 1958, p. 35). They either have to obviously sacrifice their scientific objectivity by explicitly introducing their presumed value judgements or they formulate normative principles without any practical content for EU regional policymakers in the real world.

To circumvent this dilemma economists usually fall back on the instrumental dimension of economics. All value judgements are put into the normative policy goal and allegedly

¹¹The following quote of Zerbe and McCurdy (1999, p. 560) with regard to neoclassical market failure theory again confirms the above statement: “What began as a simple attempt to provide a normative explanation for the existence of government expenditures has developed into a quasi-scientific full-scale diagnostic test with the prescription of cures.”

value-free policy instruments with which these goals could be achieved are formulated. However, as Myrdal (1933, 1953) and Streeten (1954) have shown, such an attempt can easily become a “teleological fallacy”. As soon as the prescriptive dimension of the theory is left and the policy instruments are justified or recommended with the help of the normative policy goal, they are value-laden and therefore pseudo-objective and unscientific. Witt (2003, pp. 87-89) rightly argues that on the prescriptive level the dichotomy between factual means and normative ends per se can be maintained. It can be objectively analysed whether a statement about the means-ends relation is true or false. Thus, economists can derive policy implications from normative policy goals and show alternative opportunities for regional policy action to EU regional policymakers. Yet, to recommend a certain policy measure to EU regional policymakers or to justify it with a normative policy goal is scientifically inadmissible. This already forestalls the subjective value judgement which is required for every application of science to practical policy problems (Albert 1958, p. 36). To put it with Dahlman (1979, p. 156): “this is not science; it is metaphysics”.¹²

Since the evolutionary failure approaches justify EU regional policy with market and/or system failures and do not stick to the instrumental level of economics they end up with the same dilemma that was just mentioned above.¹³ The policy instruments derived in such a way must either be based on an explicit value judgement or they must be designed as empty formulas with no practical value for EU regional policymakers at all. To give an example for the latter case, Bleda and del Río (2013, pp. 1049-1051) recommend that evolutionary policymakers should “assure an adequate education system”, that they should “encourage creativity, exploration, experimentation and failure” or that they should “intervene at the level of constitutional rules in order to provide the adequate underlying structure of regulations, financial institutions, and public infrastructure”.¹⁴ All

¹²On the prescriptive level, value judgements cannot be the subject of a scientific analysis. They simply lack the opportunity of an ultimate justification. Any attempt to justify a value judgement necessarily leads to the so-called “Münchhausen Trilemma” which leaves three options for allegedly providing a proof of the value judgement: dogmatism, a circular argument or an infinite regress (Albert and Rorty 2014, pp. 16-20). The market and system failure approaches use dogmatism for the justification of their policy recommendations because the normative postulate presumed (innovation, new variety, maximum social welfare, etc.) is presented as a quasi-natural and self-evident goal (see also Mantzavinos 2005, p. 214).

¹³So the appraisal of Schubert (2012, p. 593) “that most evolutionary economists, when examining policy-related issues, have tried to remain safely on instrumental ground” cannot be shared here.

¹⁴These are typical policy recommendations by evolutionary economists who recommend or justify policies on the basis of a normative postulate. They are not only given by Bleda and del Río (2013). One can also find them, e.g., in (Asheim et al. 2013), Boschma (2009), Dodgson et al. (2011), Lambooy and Boschma (2001), (Metcalfe 2003; 2005) and (Tödting and Tripl 2005). The only difference between

these policy recommendations have in common that their practical content is not specified. How exactly should EU regional policymakers encourage creativity? What in detail is an adequate education system and what are adequate financial institutions or public infrastructure? To use these policy recommendations for practical policy purposes EU regional policymakers must make a subjective value judgement to specify in detail what to do in practice.

It follows from the foregoing considerations that evolutionary economists must take the origins of their own theory more serious if they really want to provide a consistent and scientific alternative to neoclassical economics. This is especially true when it comes to the development of an evolutionary policy framework. As was shown above, optimal economic situations in a neoclassical sense simply do not exist if one comprehends the economy as a complex evolutionary system. In that sense the “optimum optimorum” in an evolutionary world is always the path-dependent current economic situation. Phenomena termed as market, government and system failure in neoclassical economics belong to that current situation. They are not an economic evil which needs to be tackled by government interventions. Thus, the state or in that case the EU is not a counterforce to the market. The EU internal market is rather embedded in the European political institutions and organisations. These are endogenously managed and guided by EU citizens, usually termed as EU policymakers and bureaucrats, who significantly influence the conditions under which economic competition in the internal European market takes place. One way they did and still do this is by conducting a regional policy, as will be explained in the next chapter.

When the prevalent evolutionary regional policy rationales draw on notions of market, government and system failure or the Impossibility Theorem they fall back into neoclassical reasoning. As this section has shown, the latter is rightfully rejected by evolutionary economists because neither fruitful positive nor practically applicable and scientific instrumental insights on EU regional policy can be gained in this way. This must be reason enough for a proper evolutionary approach to get rid of the fallacy of failure thinking. An analysis of the origins of evolutionary thinking and the general logic of the sciences actually permit no other option. This would clearly make the evolutionary approach to economic policy consistent and separates it from its neoclassical counterpart. Beyond that, it offers a real alternative to deliver a better, scientific as well as realistic expla-

these papers is the varying degree of policy instruments designed as empty formulas and the justification of certain policy instruments on the basis of a subjective value judgement.

nation of EU regional policy and to provide objective policy implications with practical content for EU regional policymakers.

4 EU regional policy explained from a “proper” evolutionary perspective

If the market, government and system failure rationales for EU regional policy must be abandoned from a proper evolutionary perspective it needs to be clarified why then a regional policy is conducted by the EU.

In contrast to a neoclassical and Public Choice explanation of EU regional policy, a proper evolutionary economics point of view on that issue offers different advantages. Evolutionary economics recognises that economic decisions taken in the internal European market are not reversible like in traditional neoclassical models. The irreversibility implies that current economic situations are path-dependent and that the neoclassical concept of logical time needs to be replaced by the concept of real or historical time. As Witt (2003, p. 79) argues this “allows the consequences of changing knowledge constraints to be accounted for.” This leads to another important evolutionary aspect which is that EU citizens and policymakers do not have exogenously given or perfect information. They have to cope with true uncertainty and their cognitive capacities are bounded, i.e. households, entrepreneurs and policymakers merely have bounded rationality. This also includes that future economic developments and outcomes cannot be predicted in advance. They cannot be deduced from the given data in a constrained optimisation problem like in neoclassical economics. Economic development is rather non-deterministic. Moreover, evolutionary economics is not tied to solve constrained optimisation problems and is thus able to incorporate explanations from different scientific disciplines. Besides economic factors also political, geographical, cultural, biological, institutional as well as sociological factors can be considered when complex socio-economic activities in the European single market are explained. In neoclassical economics such factors are most often either left out of account due to the reason that they are not mathematically tractable or they are exogenously given and constant (Martin 1999, p. 75). Thus, the evolutionary approach to economics offers a much more realistic and a richer multi-causal approach to explain complex economic phenomena in the internal European market. It does not necessarily have to operate in a social, political, institutional or geographical vacuum.

The elements of an evolutionary theory just mentioned can be used to provide a positive explanation of EU regional policy. It is now possible to resort to the historical development of EU regional policy in order to explain it. EU regional policymakers which have bounded rationality and which are confronted with true uncertainty can no longer be seen as neoclassical optimisers. They rather adapt to the constantly changing regional policy environment (Metcalf 1995, pp. 30-31). Moreover, when EU regional policy must be grasped as inherent to the European market economy from an evolutionary point of view the point of departure for its explanation become the economic interests of EU member states.¹⁵ These economic interests can be different and diverse but in modern market economies they are nevertheless subsumed to the fact that “countries compete economically because they compete politically to gain regional and worldwide power and influence” (Dunn 1994, p. 305). Despite this political and economic competition among the member states of the EU they already agreed to conduct a common regional policy in the internal European market with the foundation of the EU by the Treaty of Rome in 1957.

The motives behind this political cooperation are particularly twofold. On the one hand, the foundation as well as the subsequent deepening and enlargement of the EU aimed at the establishment of an internationally influential economic and currency area mainly vis-à-vis the USA and the US dollar (Thirlwall 2000, p. 9). On the other hand, European economic integration should enlarge the market and thus the profit opportunities of European companies situated in the different member states. This in turn enhances the economic potential and political power of these states. A common market and currency, however, increase internal European economic competition. Barriers to trade as well as transaction costs arising from exchange rate risks are reduced. The policymakers of the different member countries were well aware that European economic and monetary integration would generate economically losing member countries and regions in the EU. Due to true uncertainty, imperfect information and the bounded cognitive capacities of the policymakers it was and is unclear which countries and regions will lose and which will win. Hence, to introduce, maintain and extend the European project in the different rounds of the deepening and enlargement of the EU it was always necessary to compen-

¹⁵To emphasise it again, this does not mean that a neo-institutionalist or new political economy perspective should be proposed to explain EU regional policy. These approaches criticise some important aspects missing in traditional economics like institutions and self-interest of policymakers but nevertheless they use genuine neoclassical techniques to do this. As outlined above proper evolutionary thinking is incompatible with neoclassical economics (for a similar view see, e.g., Witt 2003, pp. 79-83).

sate the current and prospective losing countries and regions by installing a mechanism which supports them in difficult economic situations. As a consequence, EU regional policy can only be explained as a cumulative politico-economic policy process in which the current and prospective member states of the EU used the structural funds as a means of negotiation in the different rounds of the deepening and enlargement of the EU (for a similar view see Heinelt et al. 2005 and Rolle (2000)).¹⁶

Looking into the history of EU regional policy confirms the political bartering hypothesis about the structural funds of the EU. When Belgium, Germany, Italy, Belgium, Luxembourg, France and the Netherlands signed the Treaty of Rome in 1957 the European Investment Bank (EIB) and the ESF as the first regional policy instruments have been founded.¹⁷ The ESF and the EIB were concessions to Italy which requested a financial reward for its economically weak Mezzogiorno region to sign the Treaty of Rome (Dedman 2010, p. 93). The introduction of the ERDF in 1975 was a concession to the United Kingdom (UK) which joined the EU together with Ireland and Denmark in 1973. Supported by Italy and Ireland the UK demanded financial compensation for its accession to the EU (Rolle 2000, pp. 136-137). The ERDF should compensate the UK for its relatively large net payment to the EU budget. It was also a domestic political means to overcome the opposition of UK regions likely to loose from increased internal European competition. In 1993 the Maastricht Treaty entered into force and at the same time the ECF was established. The main goal of the Maastricht Treaty was the introduction of a common European economic and monetary union (EMU). The ECF was a concession to Ireland, Greece, Spain and Portugal. These countries threatened to vote against the introduction of the EMU (Rolle 2000, pp. 141-143). The ECF supports member states with less than 90% of the average per capita income of the EU so that these four countries were the only beneficiaries at that time.

Without going further into the historical details of EU regional policy, the literature substantiates that it emerged in a cumulative policy process as a means of negotiation in the different phases of the deepening and enlargement of the EU. Over the course of time it

¹⁶Ironically, some authors who use a neoclassical perspective to explain EU regional policy even refer to the "political bargaining hypothesis" when the historical development of EU regional policy does not fit to the explanation of the structural funds as a means to correct allocative and distributive market failures in the single European market (see, e.g., Holtzmann 1997, pp. 97-101 and Schindler 2005, pp. 35-37).

¹⁷Until the Single European Act (SEA) was introduced in 1987 the ESF was designed to support an active labour market policy. Only after the SEA the ESF was aligned to the interventionist and discretionary type of EU regional policy which is still existent today.

changed from a passive and regulative kind of policy to a discretionary and interventionist policy. Depending on the politico-economic circumstances during European integration, it was organised by European policymakers in a variety of ways, pursued different policy objectives, encompassed several funds and comprised different, mostly increasing, financial amounts.¹⁸ Until today, it developed to one of the largest policies conducted by the EU with an available budget of €352 billion for the current planning period 2014-2020 (European Commission 2015).

To sum up, an explanation of EU regional policy like the one just given is only possible from a proper evolutionary economics perspective. The different elements of an evolutionary economic theory, mentioned in the beginning of this section, are necessary prerequisites to explain and understand EU regional policy as an endogenous and path-dependent politico-economic policy process taking place in real calendar time. The prevalent evolutionary approach, which remains rooted in neoclassical failure thinking, can hardly deliver such a politico-economic explanation of EU regional policy. From its basic approach, to start the explanation of EU regional policy with the ideological prejudice of an optimal system, it is like neoclassical economics rather doomed to empirically show when and where EU regional policy was used by EU policymakers to correct market and system failures in the internal European market. Of course, it must also fail to fulfil this task because the optimal world which it presumes to explain EU regional policy as a means to attain it is an ideological fiction. Such a theory was shown to be unscientific and pseudo-objective. It is without any epistemological value and can hardly be an explanation for anything. In contrast to that, a proper evolutionary economic perspective grasps the alleged failures as inherent to the economic system. It is based on historical time, imperfect information, true uncertainty, boundedly rational economic agents and is able to incorporate explanatory factors from different scientific disciplines. It is thus able to deliver a scientific and realistic explanation of why the EU structural funds have been introduced and how they have evolved over time.

¹⁸For a more detailed discussion of the historical development of EU regional policy see, e.g., (Axt 2000, 51-122), (Holtzmann 1997, pp. 86-130), (Rolle 2000, pp. 27-66 and 134-147), (Schindler 2005, pp. 39-89) and (Wellenhofer 1997, pp. 30-174).

5 Evolutionary policy implications for EU policymakers

In light of the preceding sections the question remains which policy implications for EU regional policymakers can be derived from a proper evolutionary economics perspective?

First of all it became evident that in an evolutionary world it is indeterminate whether the state or the market is the better “mechanism” to achieve a political goal. The aprioristic state vs. market debate of the failure approaches is irrelevant. In market economies it is in the nature of the process of economic competition to discover the most effective and efficient investments. This is independent of the fact that they have been privately or publicly undertaken.

The second insight is that in an evolutionary world it is simply impossible to predict the success or failure of a policy measure *ex ante*. It is only feasible to identify *ex post* and at a certain point in time whether a regional policy measure was effective and efficient in accomplishing a certain policy objective. In a constantly changing world with technological improvements the effectiveness and efficiency of a policy measure is time specific, i.e. it can also change over the course of time. A structural fund investment might not immediately deliver the expected economic returns within a region of the EU but in the future it might be a strategic and important economic asset which shapes the economic development of a whole region. Contrariwise, a policy measure that is effective and efficient today might become the worst regional investment in the future. Hence, EU regional policymaking is not a static true or false decision. It is rather a dynamic process in which EU regional policymakers must constantly react to changes in the evolutionary policy environment.

A third implication is that it is impossible to objectively recommend or justify certain regional policy instruments to EU regional policymakers *a priori*. As was shown in section three, any attempt to use economic theory in practice requires a subjective value judgement. On the one hand, these value judgements themselves are subject to constant change in an evolutionary world. So it is impossible to deduce once and for all policy implications to EU regional policymakers from them. On the other hand, objective and scientific policy advice is only possible when the evolutionary economist remains safely on instrumental ground. In an evolutionary world where firms, labourers, capital, regions and nation states compete for the scarce material and immaterial wealth proper evolutionary economic theory can therefore only show alternative opportunities for regional

policy action. This implies that regional policy instruments are no longer tried to be ultimately justified with the help of a normative policy goal. The instruments must rather be deduced in a context, time and region specific way against the background of available knowledge and experience with other policy measures in the past. These instruments must be subject to ongoing critical discussion and improvement in light of newly occurring regional economic problems that need to be solved. Thus, the policy instruments derived in such a way always have to be seen as fallible. Only in that sense EU regional policymakers must be seen as adaptors and not as optimisers. They do not adapt to an optimal system or state of the economy but adapt to constantly changing regional economic situations. Conducting EU regional policy is a trial and error process in which EU policymakers can learn and can gather new experience for future policymaking. Hence, proper evolutionary economists do not have to answer the questions “what ought to be done” and “how a rational economic system can be achieved”. They rather have to cope with regional economic problems in a rational way which implies that the question has to be answered “what can be done if a specific regional economic problem needs to be solved” Mantzavinos (2005, pp. 215-216).

If this idea is transferred to the definition of EU regional policy presented in the introduction of this paper, evolutionary economists must deduce policy instruments which can support job creation, business competitiveness, economic growth, sustainable development, and can improve citizens’ quality of life. This must be done in a context, region and time specific way. It also includes an analysis of the side-effects of the derived policy instruments on these different normative policy goals. Yet, the value judgements necessary to decide which of the policy instruments should be applied in practice must be gained in a democratic policy process in the EU.¹⁹ The democratic decisions taken by EU citizens might turn out to be economically good or bad for a region or a city in the future. But this depends on the prospective economic situation and circumstances. The latter are unknown to the policymakers as well as the economist at the time the decision for or against the policy has to be taken.

The issues just mentioned do not mean that the typical evolutionary regional policy implications given by distinguished evolutionary economists like, e.g., Asheim et al. (2013), Bleda and del R  o (2013), Boschma (2009) and Lambooy and Boschma (2001) are wrong.

It is true that in an evolutionary world the success or failure of a regional policy measure is highly context, time and region specific. It does not make sense, for example, to invest

¹⁹See also Wohlgemuth (2003) who discusses “democracy an evolutionary method” in more detail.

structural funds money into hydroelectric power plants in regions without any access to water, i.e. where the geographic circumstances will never allow a profitable usage of this investment. The most important task for EU regional policymakers becomes to increase the probability of economic success of a regional policy measure although they are faced with true uncertainty. To increase the probability of success of a regional policy measure policymakers can rely on past experience with other policy projects, on policy monitoring and policy evaluations. To take into account the regional, temporal and contextual specificity policymakers can also conduct feasibility studies before they implement a certain regional policy. An evolutionary view on the economy also implies that policy measures can be undertaken bottom up as well as top down, i.e. there exists no need for a one size fits all policy.

To stimulate innovation and the international competitiveness of the internal European market EU regional policymakers can support R&D activities and all kinds of networking activities between firms, universities and research institutes. The latter can be especially important in order to foster knowledge spillovers which feed back into the innovation process. In order to create new variety in the production process, in products and services and to develop and strengthen creativity EU regional policymakers can also invest in education at all possible levels. This is not only tied to higher level education or education of adults, it can already be done in the kindergarten. Another important aspect necessary to cope with the dynamic aspects of an economy is infrastructure. EU regional policymakers can invest the structural funds into railways, highways, airports, urban and regional planning and different forms of energy transportation facilities. High speed communication is another important field where EU regional policymakers can invest to support economic growth and to reduce income disparities in the internal European market.

This list of alternative evolutionary possibilities for regional policy action can surely be further extended. It could also encompass regulative regional policy actions like, e.g., labour mobility, land and capital regulations. In a truly evolutionary world there are always different regional policy opportunities to achieve certain policy goals. However, a hierarchy, a specific form and financial amount these policy measures should encompass cannot be recommended or justified by evolutionary economists in an objective and context-independent way. This would require a subjective value judgement and the economist would sacrifice his scientific objectivity. Moreover, no economist can predict the future economic development and is therefore able to know in advance which of the manifold regional policy measures should be chosen in order to effectively and efficiently

achieve a certain policy goal.

The prevalent evolutionary EU regional policy rationales, however, pretend to be able to predict the future when specific policy implications are deduced from a normative postulate. At the same time the theory and its policy implications are immunised against any critical revision with the help of empty formulas or subjective value judgements. The policy measures can either be interpreted as successful in achieving the pursued policy goal or as insufficiently implemented. Both depends on the point of reference that is chosen. The practical value of such policy recommendations approaches to zero. In contrast to that, a proper evolutionary point of view on EU regional policy does not neglect the fact that the future economic development cannot be predicted. This includes that neither simple and once and for all policy recommendations can be given nor that success and failure of a certain policy measure can be predicted *ex ante*. The latter is always time, context as well as region specific and depends on whether the process of creative destruction discovers the policy measure as profitable and successful or not.

6 Conclusion

This paper attempted to show that the prevalent evolutionary neo-Schumpeterian and Austrian-Hayekian rationales behind EU regional policy do not offer an alternative explanation of it in comparison to the dominant neoclassical market and government failure approach. This is more than surprising since evolutionary economists usually see their approach as incompatible with neoclassical economics.

All evolutionary approaches to explain EU regional policy remain deeply rooted in neoclassical economic thinking. They likewise start the explanation and justification of EU regional policy by introducing a normative principle against which it is assessed whether the internal market of the EU and its local, regional or national systems of innovation work effectively or not. In case the market or the system does not work effectively EU regional policymakers should intervene into the internal European market in order to correct these market and system failures. This, however, presumes that the EU can deliver better economic results in terms of the normative policy goal than the market or system. Evolutionary economists who do not share this assumption and argue that the EU does even worse consequently disapprove regional policy interventions in the internal European market. Hence, in the prevalent evolutionary approach to EU regional policy one is left with the same unsolvable *a priori* state versus market debate like in

neoclassical economics.

That is why the paper argued that the “fallacy of failure thinking” must be removed from evolutionary economics for two reasons. First, a revision of the origins of the evolutionary approach to economics reveals that neoclassical failure thinking is incompatible with a truly evolutionary perspective on economics. In a constantly changing evolutionary world a normative principle under which production and distribution are subsumed does not exist. Market, government and system failures are inherent characteristics of modern market economies which are embedded in the constantly changing European system of organisations and institutions. The latter are endogenously shaped by EU regional policymakers. They significantly determine the content and the tempo of economic competition in the internal European market. Hence, EU regional policy can no longer be seen as an intervention into this system and its market which has to correct market and system failures. Second, the fallacy of failure thinking must be removed from evolutionary economics because a theory which presumes a normative principle to the explanation of an economic phenomenon is pseudo-objective and unscientific. In addition to that, policy recommendations derived from such a theory are without any practical content for EU regional policymakers. They can either be arbitrarily interpreted or they are unscientific policy recommendations based on value judgements which are not intersubjectively comprehensible.

Since it was shown that the prevalent evolutionary rationales behind EU regional policy are incompatible with a proper evolutionary perspective on EU regional policy an alternative explanation as well as alternative policy implications were offered in the paper. According to the former, EU regional policy emerged in a cumulative policy process as a means of negotiation in the different rounds of the deepening and enlargement of the EU. It was shown that such a politico-economic explanation, which is congruent with the historical development of EU regional policy, can only be given within a proper evolutionary policy framework. The discussion of alternative policy implications revealed that it is impossible to objectively recommend certain policy measures to EU regional policymakers a priori. Any attempt to do this necessarily includes a value judgement. That is why objective evolutionary economists can only offer different opportunities for policy action to EU regional policymakers. The decision for or against a certain regional policy can thus only be solved with the help of a democratic process. This does not, however, ensure that a policy measure chosen in this way will definitely be successful in delivering the expected economic return since no one is able to predict the future. The process of

economic competition will eventually discover whether the regional policy decision taken at a certain point in time will turn out as the right or the wrong one in the future.

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References

- ALBERT, H. (1958): “Das Ende der Wohlfahrtsökonomik”, *Gewerkschaftliche Monatshefte*, 9(1), pp. 33–36.
- ALBERT, H., D. ARNOLD, AND F. MAIER-RIGAUD (2012): “Model Platonism: Neoclassical economic thought in critical light”, *Journal of Institutional Economics*, 8(03), pp. 295–323.
- ALBERT, H., AND M. RORTY (2014): “*Treatise on Critical Reason*”, Princeton Legacy Library, Princeton University Press.
- ASHEIM, B., M. M. BUGGE, L. COENEN, AND S. HERSTAD (2013): “What does Evolutionary Economic Geography bring to the policy table? Reconceptualising regional innovation systems”, CIRCLE Electronic Working Papers 2013/5, Lund University, CIRCLE - Center for Innovation, Research and Competences in the Learning Economy.
- AXT, H.-J. (2000): “*EU-Strukturpolitik: Einführung in die Politik des wirtschaftlichen und sozialen Zusammenhaltes*”, Analysen: 69, Springer Fachmedien, Wiesbaden.
- BERGER, S. (2009): “*The Foundations of Non-Equilibrium Economics: The Principle of Circular and Cumulative Causation*”, Routledge Advances in Heterodox Economics Series, Routledge, New York.
- BLEDA, M., AND P. DEL RÍO (2013): “The market failure and the systemic failure rationales in technological innovation systems”, *Research Policy*, 42(5), pp. 1039–1052.
- BOSCHMA, R. (2009): “Evolutionary economic geography and its implications for regional innovation policy”, *Papers in Evolutionary Economic Geography*, 9.
- BOSCHMA, R., AND R. MARTIN (2010): “The aims and scope of evolutionary economic geography”, in: *The Handbook of Evolutionary Economic Geography*, ed. by R. Boschma, and R. Martin, Edward Elgar Publishing Limited, Cheltenham, pp. 3–39.
- CHANDRA, R. (2004): “Adam Smith and competitive equilibrium”, *Evolutionary and Institutional Economics Review*, 1(1), pp. 57–83.
- DAHLMAN, C. J. (1979): “The problem of externality”, *Journal of law and economics*, pp. pp. 141–162.
- DEDMAN, M. J. (2010): “*The Origins and Development of the European Union 1945-2008: A History of European Integration*”, The Origins and Development of the European Union 1945-2008: A History of European Integration, Routledge, New York.
- DEMSETZ, H. (1969): “Information and efficiency: another viewpoint”, *Journal of Law and Economics*, 12(1), pp. 1–22.
- DODGSON, M., A. HUGHES, J. FOSTER, AND J. S. METCALFE (2011): “Systems thinking, market failure, and the development of innovation policy: The case of Australia”, *Research Policy*, 40(9), pp. 1145–1156.
- DUNN, M. H. (1994): “Do nations compete economically?”, *Intereconomics*, 29(6), pp. 303–308.
- EUROPEAN COMMISSION (2015): “Regional Policy Inforegio - What is Regional Policy?”, http://ec.europa.eu/regional_policy/index.cfm/en/policy/what/investment-policy/, accessed 12.08.2015.
- EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION (2013): “REGULATION (EU) No 1303/2013”, *Official Journal of the European Union*, L 347, pp. 320–469.
- GALLAS, A. (2015): “The Three Sources of Anti-Socialism: A Critical Inquiry into the Normative Foundations of F.A. Hayek’s Politics”, *Zeitschrift für kritische Sozialtheorie und Philosophie*, 2(1), pp. 182–199.
- HEINELT, H., T. KOPP-MALEK, J. LANG, AND B. REISSERT (2005): “*Die Entwicklung der EU-Strukturfonds als kumulativer Politikprozess*”, Vol. 8 of *Regieren in Europa*, Nomos, Baden-Baden.
- HOLTZMANN, H.-D. (1997): “*Regionalpolitik der Europäischen Union*”, Abhandlungen zur Nationalökonomie No. 7, Duncker & Humblot, Berlin.
- JOVANOVIĆ, M. N. (2009): “*Evolutionary Economic Geography: Location of Production and the European Union*”, No. 42, in: Routledge Studies in Global Competition, Taylor & Francis, London.
- KALDOR, N. (1972): “The irrelevance of equilibrium economics”, *The Economic Journal*, 82(328), pp. 1237–1255.

- KAPELLER, J. (2013): “‘Model-Platonism’ in economics : on a classical epistemological critique”, *Journal of Institutional Economics*, 9(2), pp. 199–221.
- KEYNES, J. N. (1904): “*The scope and method of political economy*”, Macmillan, London.
- KOCH, L. T. (1996): “*Evolutorische Wirtschaftspolitik: eine elementare Analyse mit entwicklungspolitischen Beispielen*”, Wirtschaftswissenschaftliche und wirtschaftsrechtliche Untersuchungen, J.C.B. Mohr, Tübingen.
- KRAMM, L. (1975): “*Die politische Wissenschaft der bürgerlichen Gesellschaft*”, No. 24, in: Beiträge zur politischen Wissenschaft, Duncker & Humblot, Berlin.
- KRIEGER-BODEN, C. (2002): “European integration and the case for compensatory regional policy”, Kiel Working Papers No. 1135, Kiel Institute for the World Economy.
- LAMBOOY, J. G., AND R. A. BOSCHMA (2001): “Evolutionary economics and regional policy”, *The Annals of Regional Science*, 35(1), pp. 113–131.
- MANTZAVINOS, C. (2005): “Das institutionenökonomisch-evolutionäre Wettbewerbsleitbild/Competition Policy from an Institutional-Evolutionary Perspective”, *Jahrbücher für Nationalökonomie und Statistik*, 225(2), pp. 205–224.
- MARSHALL, A. (1890): “*Principles of Economics*”, Macmillan, London.
- MARTIN, R. (1999): “The new ‘Geographical Turn’ in economics: some critical reflections”, *Cambridge Journal of Economics*, 23(1), pp. 65–91.
- METCALFE, J. S. (1995): “Technology systems and technology policy in an evolutionary framework”, *Cambridge Journal of Economics*, 19(1), pp. 25–46.
- (2003): “Equilibrium and Evolutionary Foundations of Competition and Technology Policy: New Perspectives on the Division of Labour and the Innovation Process”, in: *The Evolutionary Analysis of Economic Policy*, ed. by P. Pelikán, and G. Wegner, Edward Elgar Publishing, Cheltenham.
- (2005): “Systems Failure and the Case for Innovation Policy”, in: *Innovation Policy in a Knowledge-Based Economy*, ed. by P. Llerena, and M. Matt, Springer, Berlin and Heidelberg, pp. 47–74.
- MOLLE, W. (2007): “*European Cohesion Policy*”, Regions and Cities Series, Routledge, New York.
- MOREAU, F. (2004): “The role of the state in evolutionary economics”, *Cambridge Journal of Economics*, 28(6), pp. 847–874.
- MYRDAL, G. (1933): “Das Zweck-Mittel-Denken in der Nationalökonomie”, *Zeitschrift für Nationalökonomie / Journal of Economics*, 4(3), pp. 305–329.
- MYRDAL, G. (1953): “*The Political Element in the Development of Economic Theory*”, International library of sociology and social reconstruction, Routledge and Kegan Paul, London.
- RICHARDSON, G. B. (1975): “Adam Smith on Competition and Increasing Returns”, in: *Essays on Adam Smith*, ed. by A. Skinner, and T. Wilson, Obras series, Clarendon Press, Oxford, pp. 350–360.
- ROLLE, C. (2000): “*Europäische Regionalpolitik zwischen ökonomischer Rationalität und politischer Macht: eine föderalismustheoretische und politökonomische Analyse*”, Beiträge zur Raumplanung und zum Siedlungs- und Wohnungswesen, Institut für Siedlungs- und Wohnungswesen, Münster.
- SCHINDLER, C. P. (2005): “*Die Regionalpolitik der Europäischen Union*”, Untersuchungen zur Wirtschaftspolitik No. 128, Institut für Wirtschaftspolitik, University of Cologne.
- SCHUBERT, C. (2012): “Is novelty always a good thing? Towards an evolutionary welfare economics”, *Journal of Evolutionary Economics*, 22(3), pp. 585–619.
- SÄLTER, P. M. (1989): “*Externe Effekte: ‘Marktversagen’ oder Systemmerkmal?*”, Wirtschaftswissenschaftliche Beiträge 10, Physica-Verlag, Heidelberg, Zugl.: Marburg, Univ., Diss., 1987.
- SMITH, A. (1776): “*An Inquiry Into the Nature and Causes of the Wealth of Nations*”, Edwin Cannan edition of 1976, originally published 1904, University of Chicago Press, Chicago.
- STREETEN, P. (1954): “Programs and prognoses”, *The Quarterly Journal of Economics*, 68(3), pp. 355–376.
- THIRLWALL, A. P. (2000): “*The Euro and ‘Regional’ Divergence in Europe*”, New Europe Research Trust, London.
- TIEBEN, L. A. W. (2009): “*The Concept of Equilibrium in Different Economic Traditions: A Historical*

- Investigation*”, Tinbergen Institute research series, VU University Amsterdam.
- TÖDTLING, F., AND M. TRIPPL (2005): “One size fits all?: Towards a differentiated regional innovation policy approach”, *Research policy*, 34(8), pp. 1203–1219.
- TONER, P. (1999): “*Main Currents in Cumulative Causation: The Dynamics of Growth and Development*”, Palgrave Macmillan, Basingstoke, New York.
- VAN DEN BERGH, J. C. J. M., AND G. KALLIS (2013): “A survey of evolutionary policy: normative and positive dimensions”, *Journal of Bioeconomics*, 15(3), pp. 281–303.
- VANHOVE, N. (1999): “*Regional Policy: A European Approach*”, 3rd edition, Ashgate Publishing, Aldershot.
- WEGNER, G. (1997): “Economic policy from an evolutionary perspective: a new approach”, *Journal of Institutional and Theoretical Economics*, 153(3), pp. 485–509.
- WEGNER, G., AND P. PELIKAN (2003): “Introduction: evolutionary thinking on economic policy”, in: *The analysis of evolutionary economic policy*, ed. by P. Pelikan, and G. Wegner, Edward Elgar Publishing, Cheltenham, pp. 1–14.
- WELLENHOFER, T. (1997): “*Der Beitrag der EG-Regionalpolitik zur Verringerung der Einkommensdisparitäten in der Europäischen Union*”, No. 6, in: *Abhandlungen zur Nationalökonomie*, Duncker & Humblot, Berlin.
- WITT, U. (2003): “Economic policy making in evolutionary perspective”, *Journal of Evolutionary Economics*, 13(2), pp. 77–94.
- WOHLGEMUTH, M. (2003): “Democracy as an Evolutionary Method”, in: *The Evolutionary Analysis of Economic Policy*, ed. by P. Pelikán, and G. Wegner, Edward Elgar Publishing, Cheltenham, pp. 96–127.
- YOUNG, A. A. (1928): “Increasing returns and economic progress”, *The Economic Journal*, 38(152), pp. 527–542.
- ZERBE, R. O., AND H. E. MCCURDY (1999): “The failure of market failure”, *Journal of Policy Analysis and Management*, 18(4), pp. 558–578.