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Peter Schmidt

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Economic Geography and Location Research, Philipps-University, Marburg.
For editorial correspondence,
please contact: wp-ecoevo@uni-marburg.de*

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Philipps-University, Marburg
Department of Geography
Economic Geography and Location Research
Deutschhausstraße. 10
35032 Marburg, Germany
Fax: + +49 6421/28-28950

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

Peter Schmidt ^a

^a *University of Potsdam, Chair of Economic Policy and International Economics, August-Bebel-Str. 89, 14482 Potsdam, Germany, Phone: +49 (0)331-977-4463, Fax: +49 (0)331-977-4631, Web: <http://www.uni-potsdam.de/en/intwipo/chair/peter-schmidt>*

(schmidtp@uni-potsdam.de).

Abstract

This paper reconsiders the explanation of economic policy from an evolutionary economics perspective. It contrasts the neoclassical equilibrium notions of market and government failure with the dominant evolutionary neo-Schumpeterian and Austrian-Hayekian perceptions. Based on this comparison, the paper criticises the fact that neoclassical failure reasoning still prevails in non-equilibrium evolutionary economics when economic 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 policy interventions in local, regional or national innovation systems. The paper argues that in order to prevent the otherwise 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. Finally, the paper delivers an alternative evolutionary explanation of economic policy which is able to overcome the theory-immanent contradiction of the hitherto evolutionary view on this subject.

Keywords: market failure, system failure, economic policy, policy advice, evolutionary economics, non-equilibrium economics

JEL classification: A11, B41, B52, H00, H53, O30

1 Introduction

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

As depicted in Figure 1 on the following page, economic 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, economic policy is explained by resorting to allocative and distributive market failures. In different static trade, growth and regional economic theories, such market failures are identified. These should then be tackled through public interventions in order to improve and harmonise citizens' living and working conditions. Depending on their belief in the government's ability to efficiently correct market failures, more state-oriented neoclassical economists opt for economic policy interventions in the market. More market-oriented neoclassical economists believe in government failure as well as the state's inability to make corrections. Such economists consequently take a critical attitude towards economic policy.

In contrast to that, Figure 1 distinguishes between a (neo-)Schumpeterian and an Austrian-Hayekian strand of non-equilibrium evolutionary economics. The two hold opposing views on economic policy (Wegner and Pelikan 2003, p. 3). Hayekians disapprove of state interventions altogether, due to the "Impossibility Theorem", a term coined by Wegner (1997, p. 485). According to this theorem, "the state has no privileged knowledge ... [and is therefore no, P.S.] better informed than private agents on the optimal nature of market outcomes" (Moreau 2004, p. 872). Neo-Schumpeterians opt for an active role of

Figure 1: Rationales for and against economic 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>

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 with a system failure rationale for economic policy, or the market failure rationale is rejected and substituted by the system failure concept.

Evaluating these evolutionary explanations of economic policy, especially the former neo-Schumpeterian view, appears to be a surprising and contradictory undertaking. 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.¹ In contrast, the latter neo-Schumpeterian approach appears, at least at first glance, 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 economic 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 innova-

¹ A good example of 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 rather 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".

tion systems (TIS) approach”. Thus, the widely prevalent evolutionary economic policy rationales provide just slightly better and more realistic insights than their neoclassical counterparts in terms of a positive as well as prescriptive and normative explanation of economic 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 notions of market and government failure, respectively. Beyond that, it argues 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 also emanates from the notion of an optimal state of the economy against which government failure is assessed, although Austrian-Hayekians themselves actually reject this idea. Section three is devoted to showing why all the current evolutionary 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, one which needs to be eliminated. This would not only make the evolutionary approach unambiguous and explicitly set it apart from its unrealistic neoclassical counterpart. It would also strengthen its scientific validity and its usefulness for an explanation of economic policies observable in the real world. This would in turn offer objective and practically applicable evolutionary policy implications to economic policymakers which the prevailing approaches do not provide. Section four discusses the general positive, instrumental and normative consequences that can be drawn from the previous analysis for a proper evolutionary economics explanation of economic policy. Finally, the paper draws its conclusion.

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

To understand why the customary evolutionary explanations of economic 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 eco-

conomic 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 both the social economic goal and the goal of public policy is to maximise the 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 supply and demand in the market. It brings the various opposing plans of rational utility and profit maximising market participants into congruence and harmony. In this model, the market is understood as the first-best mechanism for solving 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 societal desires. It also distributes the output generated by those factors in a Pareto-optimal and fair way according to marginal factor productivity.

It is clear that in this optimal neoclassical world economic policy is conceived as an intervention into the basically harmonious market. It is only legitimate when the price mechanism fails to allocate capital, land and labour to production efficiently or fails to distribute the generated incomes in a socially just or politically desirable way. Depending on their view, neoclassical economists either approve or disapprove of policy interventions in the market. Based on insights from public choice theory, the latter usually argue that government failures regularly occur and that economic policymakers do not manage market failures with taxpayers’ money efficiently. Hence, no economic policy ought to be conducted by the state. The former believe that the government 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, economic policy is discussed against the background of an unsolvable a priori “state versus market debate”

(Sälter 1989, p. 18).²

Examining the prevailing evolutionary rationales for economic policy, it turns out that they seem to assume the same optimal “maschine model” (Koch 1996, p. 16) as neo-classical economics. Both neo-Schumpeterian economic policy rationales, i.e. acceptance and rejection of the concept of market failure, augment the neoclassical market failure idea with 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, p. 7).³

Similar to neoclassical economics, the concept of system failure presumes a normative yardstick against which the effectiveness of a local, regional or national system of innovation can be assessed. In evolutionary economics, such a benchmark does not only have to be the effective or optimal maintenance of innovation itself. It could also be the encouragement of evolution, the generation of new variety and technological diversity, experimentation and 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 economic policy emanate from the same notion as do the neoclassical market and government failure explanations. Again, the idea persists that the modern market economy works as if an optimal societal plan existed under which the production and distribution of material and immaterial wealth are subsumed (Sälter 1989, p. 70). 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 means of an institutional or systems component. This definitely is a very important amendment to explain phenomena such as economic policy and should not be criticised here. What still

² To put it in 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.”

³ Tödtling and Trippel (2005) suggest distinguishing between three different types of system failures, i.e. “organisational thinness”, “lock-in” and “fragmentation”. For a more detailed explanation of these and other types of system failures, see e.g., Boschma (2009, pp. 15-16) and Asheim et al. (2013, p. 6).

remains to be criticised, however, is that the neo-Schumpeterian evolutionary rationales for economic policy remain deeply rooted in neoclassical optimality thinking.

Optimality or failure reasoning can also be discovered in the Austrian-Hayekian Impossibility Theorem. Just like state-oriented neoclassical economists, neo-Schumpeterians seem to believe in the possibility that the economy can 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 current evolutionary approach is the Austrian-Hayekian rejection of government intervention. The Hayekian Impossibility Theorem simply 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 of the optimal economic world.⁴ In case a policy measure fails to achieve its goals, the government is judged against a more or less optimal market.⁵

To sum up, in the dominant evolutionary approach to economics and economic policy, one is left with the same unsolvable a priori state vs. market debate as in traditional economics. Depending on the normative point of reference, economic policy may or may not be optimal. This is more than surprising, since neoclassical economic thinking is rejected by evolutionary economists who conceive their strand of economics as unique and separate from it.

3 The “fallacy of failure thinking” in neoclassical and evolutionary economics

This section examines why neoclassical failure thinking is a logical caveat for the evolutionary strand of economics. It is therefore a problem of internal consistency for this approach and needs to be eliminated. Two arguments substantiating this view are put forward in this section.

To begin with, following Chandra (2004), Kaldor (1972, pp. 1240-1242) and Richardson (1975, p. 351), the source of the distinction between neoclassical and evolutionary eco-

⁴ As Gallas (2015) argues, this reasoning might be due to Hayek’s anti-socialist eclecticism stemming from contradictory moral philosophy approaches, namely evolutionism, utilitarianism and deontology, which characterise the normative dimension of his work.

⁵ 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).

nomics 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.⁶ The equilibrium part has developed into the strand of traditional neoclassical economics, while the non-equilibrium part has differentiated into a variety of rather heterodox economic theories. The latter include, e.g., theories of circular and cumulative causation, Post Keynesian Economics, Austrian Economics, Institutional and Evolutionary Economics and 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 market economy as either a static or dynamic system. This in turn mainly depends on how these two strands understand 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, the Smithian idea was revisited that increasing returns are an economy-wide phenomenon occurring not only within firms and industries but also between industries. The latter in particular 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 the static equilibrium situation which neoclassical economists have in mind and in which the plans of all economic agents necessarily coincide. Moreover, in Young's world of circular and cumulative causation, increasing returns to scale are not a problem for the maintenance of economic competition. It is rather

⁶ It might be better to speak of a non-equilibrium instead of a disequilibrium theory in this context. 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).

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 production and a just distribution of incomes according to marginal factor productivity does not exist (Schubert 2012, pp. 592-593). From an evolutionary perspective, the normative point of reference against which phenomena like market and government failures are assessed in neoclassical economics falls apart. This reveals that both neoclassical types of failures are terms bound to a specific understanding of market economies as static systems mainly concerned with the optimal equilibrium allocation of scarce resources.

The same applies to the concept of system failure and the Austrian-Hayekian Impossibility Theorem. A static, optimal system with optimal organisations and institutions which are subsumed under a societal plan is a fiction not existing in an evolutionary world. The institutions and organisations in which markets are embedded are constantly changing as well. This last point also holds true for citizens' values and norms. A social objective function does not exist. As Arrow's paradox (1950, 1963) shows, even in a static, neoclassical world, individual preferences cannot be consistently aggregated into a social objective function. Therefore, it is even less feasible in a constantly changing evolutionary world. Moreover, the Austrian-Hayekian idea of an optimal state of the economy on which the state should not be better informed than private agents is meaningless. In an evolutionary world, such an optimum cannot be determined. Austrian-Hayekians themselves repeatedly stress this last issue (Moreau 2004, 872). To blame economic policy as detrimental a priori, however, necessarily presumes the idea that the market is the better or optimal mechanism with which to achieve a certain normative goal. Failure or optimality reasoning is thus reintroduced through the back door in the Impossibility Theorem. Yet, from a proper evolutionary angle where such an optimum is not identifiable, neither economic policy nor the market can be blamed as futile or harmful a priori.

What remains is the need to switch the perspective on market, government and system failures away from deviations from an optimal equilibrium case to inherent and systematic patterns of capitalism.⁷ The alleged failures are rather the driving force of modern market economies. Without them, no economic development and progress would exist. Optimality or failure thinking is intrinsically incompatible with a proper evolutionary economics point of view.

⁷ See also Sälter (1989) who explains this view at length for the case of market failures.

The second argument for the necessity of eliminating the fallacy of failure thinking from the evolutionary approach to economics is linked to the remarks just made above. The normative yardstick is not only indeterminable in an evolutionary world. Its a priori introduction in order to explain economic policy has no epistemological value at all. 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 economic policies 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 it with the economic reality. 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, economic policy must be positively explained as an instrument with which 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 be neither verified nor falsified. It is impossible to empirically show that economic policy was used by policymakers to correct market and system failures, because these failures are concepts bound to what Demsetz (1969) terms a “nirvana theory”. The theory is thus immunised against experience (Albert, Arnold and Maier-Rigaud 2012). The same holds true for the notion of government failure and the Impossibility Theorem. It can always be asserted, but neither verified nor falsified, that the state failed to achieve the fictitious optimum. It all depends on the point of reference. No objective positive insights can be gained from such a theory.

One objection to this argument sometimes arises that the failure approaches are normative theories which do not claim to factually explain economic policy. In the literature, however, these normative theories are indeed continuously used to positively explain economic policies (see e.g., Holtzmann 1997, pp. 41-42, who frankly admits this for the application of the neoclassical market failure approach to the explanation of EU regional policy). This is probably due to the fact that the theories combine positive, prescriptive and normative elements, such that the boundaries between these three dimensions are blurred.⁸

The lack of epistemological value also applies to the justification of economic policy and thus to the practical application of the aprioristic failure approaches to economic

⁸ The following quote of Zerbe and McCurdy (1999, p. 560) with regard to neoclassical market failure theory again confirms this 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.”

policy goals. The policy recommendations for economic 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 the deduction of policy recommendations, P.S.] are most often not explicitly reconstructed.”

Albert (1958, p. 35) points out that the implicit, underlying normative postulate in the failure approaches must be designed as an empty formula in order to keep up the scientific appearance 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 the exact optimal amount of evolution, innovation, learning, new knowledge, new variety or maximum social welfare that policymakers should try to approach. Any attempt to do so depends on the point of reference. In other words, an additional value judgement must be rendered by economic policymakers before the policy instruments derived from these theories can be applied in practice. Hence, the neoclassical as well as the prevalent evolutionary economic policy rationales face a dilemma (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 economic policymakers in the real world.

What economists usually do to circumvent this dilemma is to fall back on the instrumental dimension of economics. All value judgements are put into the given normative policy goal, and allegedly value-free policy instruments with which these goals could be achieved are formulated. 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 relationship is true or false. Thus, on the instrumental level, economists can scientifically derive policy implications from normative policy goals and present alternative opportunities for economic policy action to policymakers. However, as Myrdal (1933, 1953) and Streeten (1954) show, such an attempt can easily become a “teleological fallacy”. As soon as the prescriptive dimension of the theory is left behind and the deduced policy instruments are justified or recommended with the help of the normative policy goal, they are value-laden and therefore pseudo-objective. Such a procedure already forestalls the subjective value judgements which are required for every application of science to practical policy problems (Albert 1958, p. 36). To put it as Dahlman (1979, p. 156), “this is not science;

it is metaphysics”.⁹

Since the evolutionary failure approaches recommend and justify policy interventions (or no policy interventions) with market and system failures (or government failures and the Impossibility Theorem) and do not stick to the instrumental level of economics, they end up with the same dilemma that was mentioned above.¹⁰ 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 economic policymakers. To give an example of the latter case, Bleda and del Río (2013, pp. 1049-1051) recommend on the basis of their “TIS approach” that evolutionary policymakers should “assure an adequate education system”, that they should “encourage creativity, exploration, experimentation and failure” and 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”.¹¹ All these policy recommendations have in common the fact that their practical content is not specified. How exactly should policymakers encourage creativity? What is an adequate education system in detail and what are adequate financial institutions or public infrastructure? These policy recommendations have no practical value at all. To use them for practical policy purposes, economic policymakers must render a further value judgement.

It follows from the foregoing considerations that evolutionary economists must take the origins of their own theory more seriously 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 shown above, optimal economic

⁹ When value judgements are used in the way mentioned here, they cannot be the subject of scientific analysis. They lack the opportunity for 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).

¹⁰ Thus, 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.

¹¹ These are typical policy recommendations by evolutionary economists who recommend or justify economic policies on the basis of a normative postulate. They are not only given by Bleda and del Río (2013). They can also be found, e.g., in (Asheim et al. 2013), Boschma (2009), Dodgson et al. (2011), Lambooy and Boschma (2001), (Metcalf 2003; 2005) and (Tödtling and Trippel 2005). The only difference between 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 (mostly implicit) subjective value judgement.

situations in a neoclassical sense do not exist if one conceives 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 identified as market, government and system failures in neoclassical and evolutionary economics appertain to that current situation. They are not an economic evil which needs to be tackled through government or non-government interventions. When the dominant evolutionary economic policy rationales draw on notions of market, government and system failure or the Impossibility Theorem, they fall back into neoclassical reasoning. A failure of the government, the market or the system necessarily presumes a belief in the existence of an optimal end-state of the economy. As this section has shown, the latter is rightfully rejected by proper evolutionary economists when increasing returns are understood as an economy-wide phenomenon. In addition, neither fruitful positive nor practically applicable and scientific instrumental insights on economic policy can be gained with the help of these normative theories. This must be reason enough for the evolutionary approach to economics to get rid of the fallacy of failure thinking. An analysis of the origins of evolutionary thinking and the general logic of the sciences permits 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 an alternative to deliver a better and scientifically positive explanation of economic policies in the real world and to provide objective policy implications with practical content for economic policymakers.

4 A proper evolutionary economics explanation of economic policy

In light of the preceding sections, the question remains as to which consequences have to be drawn in order to provide a proper explanation of economic policy from an evolutionary point of view. The answer is unequivocal. What is required from a proper evolutionary economics standpoint on economic policy is the strict separation of the positive, prescriptive and normative dimensions of an economic theory.

A scientifically positive explanation of economic policies conducted in the real world must depart from the observable facts and not from a normative postulate. To formulate a theory about why a certain policy is undertaken by policymakers in reality, falsifiable and intersubjectively comprehensible hypotheses must be postulated. These hypotheses

can be critically discussed and empirically tested by economists. They must always be seen as fallible, and as long as they have not been falsified, they count as the provisional truth. With regard to a positive explanation of economic policies, the evolutionary approach to economics offers a crucial advantage in comparison to a neoclassical and public choice perspective on economic policy. As Witt (2003, p. 79) argues, it “suggests enhancing realism by adding the dimension of historical time to the picture, a dimension that allows the consequences of changing knowledge constraints to be accounted for”. Evolutionary concepts like bounded rationality, imperfect information and social learning clearly enhance the epistemological opportunities to positively explain factual economic policymaking.

On the instrumental level, it became evident from the above analysis that in an evolutionary world in which an optimal end-state of the economy does not exist, it cannot be determined 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 per se independent of the fact that they have been privately or publicly undertaken.

A second instrumental insight is that, in an evolutionary world with true uncertainty, 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 an economic policy measure was effective and efficient in accomplishing a certain normative policy objective. Moreover, in a constantly changing world with technological improvements and changing institutions, the effectiveness and efficiency of policy measures is time-specific, i.e. it can also change over the course of time. A public policy investment might not immediately deliver the expected economic returns, but in the future it might be a strategic and important economic asset which shapes economic development on the local, regional or national level. Contrariwise, a policy measure that is effective and efficient today might become the worst investment in the future. Hence, economic policymaking is not a static true-or-false decision. Instead, it is a dynamic process in which economic policymakers constantly react to changes in the evolutionary policy environment. The policymakers and economists always have to find new solutions to newly occurring policy problems in light of the already existing knowledge which was gained in an evolutionary process of collective learning.

A third prescriptive implication is that it is impossible to objectively recommend or

justify certain policy instruments to economic 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. Thus, it is impossible to deduce from them once and for all the policy implications for economic policymakers. On the other hand, objective and scientific policy advice is only possible when the evolutionary economist remains safely on instrumental ground. Evolutionary economists can therefore only present alternative opportunities for economic policy action. This implies that policy instruments should no longer be ultimately justified with the help of a normative policy goal. The policy instruments must rather be deduced in a context-, time- and region-specific manner against the background of available knowledge and experience with other policy measures in the past. They must be subject to ongoing critical discussion and improvement in light of newly occurring 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 must economic policymakers be seen as adaptors and not as optimisers. They do not adapt to an optimal system or state of the economy, but to constantly changing economic situations. Conducting economic policy is a trial-and-error process in which policymakers and economists can learn and gather new experiences for future policymaking. Proper evolutionary economists do not have to answer the questions of “what ought to be done” and “how a rational economic system can be achieved”. They must instead cope with economic problems in a rational way. This implies that the question to be answered is “what can be done if a specific economic problem needs to be solved” (Mantzavinos 2005, pp. 215-216, own translations).

The value judgements necessary to decide which of the different alternative policy instruments deduced from different normative policy goals should be applied in practice must be gained in a democratic policy process. As Wohlgemuth (2003, p. 120) rightly argues, “democracy and the competition of political ideas can.. be regarded as a procedure for the generation and critical assessment of political hypotheses ... [which, P.S.] is most useful and effective when political opinions are neither fixed nor ‘given’, but in the process of being formed and open to adapt to new circumstances and experiences”. The democratic decisions made by citizens and political parties might turn out to be economically good or bad in the future. This depends, however, on the prospective economic situation and how the values and norms of citizens themselves change over the course of time. Both are unknown to the policymakers as well as the (instrumental) economist at

the time the decision for or against the policy has to be made.

On the normative level, different policy goals, their advantages and disadvantages, as well as their relationship to each other can be scientifically analysed (see also Schubert 2012, pp. 594-596). Potential synergies and trade-offs between these goals can be described. It can also be examined how normative policy goals change over the course of time. This includes an analysis of the direct and indirect side-effects of the policy instruments derived from a certain normative policy objective on other normative policy goals. As was already outlined in the introduction to this paper, normative economic theories can also be used to justify economic policies. However, economists and policymakers must be aware of the fact that justifications rest on subjective value judgements which cannot be ultimately proven. That is why normative theories are not objective and cannot be used to scientifically recommend or justify specific policy measures. Compared to the positive and prescriptive level of economics, normative discussions can never be objectively solved because they always depend on a subjective point of reference.

5 Conclusion

As this paper has shown, the prevailing evolutionary neo-Schumpeterian and Austrian-Hayekian approaches are as inadequate as the neoclassical notions of market and government failure to provide an explanation of economic policy. They barely offer alternative insights of a positive, instrumental and normative nature. This is due to the fact that all these explanations mix positive, instrumental and normative elements in a scientifically inadmissible way.

As their neoclassical counterparts, the customary evolutionary approaches likewise begin their explanation of economic policy by introducing a normative optimality principle against which the effectiveness of the market, the government and the local, regional or national systems of innovation is assessed. Hence, one is left with the same unsolvable a priori state versus market debate as in neoclassical economics.

That is why the “fallacy of failure thinking” must be removed from evolutionary economics, namely, for two reasons: First, 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 of material and immaterial wealth are subsumed does not exist. Phenomena identified as market, government and system failures are inherent characteristics of modern market economies which are embed-

ded in a constantly changing system of organisations and institutions. Economic policy can no longer be seen as an intervention into the system and its markets which has to correct market and system failures. Beyond that, economic policy itself cannot be judged against a perfect end-state of the economy. The notions of government failure and the Impossibility Theorem are meaningless. Second, a theory which presumes a normative principle in the explanation of an economic phenomenon has no epistemological value. Such a theory is pseudo-objective and unscientific. It can never provide a scientifically positive explanation of economic policies undertaken in the real world. In addition, policy recommendations derived from such theories are unscientific and without any practical content for economic policymakers.

A proper evolutionary policy framework, therefore, needs to sharply distinguish the positive, prescriptive and normative elements of a theory. Only this can provide scientifically positive statements about economic policies conducted in the real world. This also permits the scientific deduction of policy instruments from a given normative policy goal on the instrumental level of an economic theory. Another advantage of the policy instruments derived in such a way is that they are practically applicable. They are value-free and no longer have to be designed as empty formulas. On the normative level, different policy goals and their transformation over time can be scientifically described. Moreover, trade-offs between different policy objectives and the policy instruments deduced from them on the instrumental level can be analysed. This helps to show economic policymakers the potential consequences of their choice for or against the pursuit of a certain normative policy goal and may facilitate decision making in the political arena. In the end, though, the decision for or against a certain economic policy can only be solved with the help of a democratic process. The latter is a competitive discovery process by means of which the necessary value judgements for the practical application of economic policies can be gained. However, this does not ensure that a policy measure chosen in this way will definitely be successful in delivering the expected economic returns. No one is able to predict the future in a truly uncertain evolutionary world. The process of economic competition will eventually reveal whether the policy decisions made at a certain point in time will turn out as the right or wrong ones in terms of the policy goals pursued.

The dominant evolutionary approaches to economic policy which fall back on neoclassical reasoning are a step backwards from the actual findings of evolutionary economics. Therefore, the fallacy of failure thinking needs to be removed from this otherwise fruitful strand of economics in order to provide a scientific, realistic and practically applicable ex-

planation of economic policy. This would explicitly set apart the evolutionary approach to economics from the unrealistic and pseudo-objective neoclassical understanding of economics and economic policy.

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