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**Teaching economics at Aalborg University
using the PBL approach**

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Abstract: For decades now, in general, teaching in economics has been characterized by uniformity: not only do most economics departments focus exclusively on the mainstream economic understanding; at the same time, there is, in general, little room for addressing phenomena or problems of real life in a thorough manner. However, due to the financial crisis and the severe international economic crisis that followed after the extensive financial turbulence of 2008 and onwards, many economists have become critical of the modern mainstream macroeconomic understanding. Did economics departments teach economics the right way? Surprisingly enough, the way we teach economics does not seem to have changed significantly in any way in recent years. Economics is, in general, still dominated by the mainstream economic understanding. However, some universities have given way to progressive teaching methods in economics. As a case study, we try to highlight some aspects of the way we teach economics at Aalborg University, Denmark. Economics is taught in a pluralistic way, allowing for the incorporation of both the orthodox, and a range of heterodox approaches to addressing issues in economics. Especially, we have tried to give economics a post Keynesian flavour. In addition, the way we teach economics is based on the approach of *Problem Based Learning*.

Keywords: Post Keynesianism, macroeconomics & Problem Based Learning

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1: Introduction

Due to the financial crisis and the severe international economic crisis that followed from the huge financial turbulence from 2008 and onwards, many economists began to focus critically on especially the modern macroeconomic mainstream understanding. Had macroeconomic theory totally lost touch with reality?¹ Most mainstream dominated economic departments did not foresee the coming of the crisis that was as severe as this one some years later became known as The Great Recession. Was *The New Neoclassical Synthesis*, (NNS), the right way to teach young students of economics about the functioning of macroeconomics? Likewise, is there really much room for a representative agent in macroeconomic theory as you try to unfold the dynamic processes of macroeconomics the right way?² In addition, how much could you rely on economic analyses made within the framework of *Dynamic Stochastic General Equilibrium Models (the DSGE approach)*?

Within this kind of macroeconomic understanding, the world can be modelled as new Keynesian in the short run, making room for imperfections of various kinds, which can temporarily push the economy away from its long run equilibrium trend path. Whereas, in the longer run, the economy is viewed as more New Classically designed, ensuring that the effectiveness of the market mechanism would, with certainty, bring back the economy back to a harmonious long run equilibrium trend position.

So do economics departments in general teach economics the right way? Probably not. Surprisingly enough, the way we teach economics does not seem to have changed significantly in any way in recent years. Economics is, in general, still only a story about the mainstream economic understanding. As explained by Colander (2015:229-30), most mainstreamers do not see the lack of significant change in macroeconomics as a problem; rather “they see it as reflecting the soundness of the current model; they argue that critics want the impossible: a model that will predict crises”.

From such a perspective, it is hardly surprising that economic textbooks have still not changed in the wake of the financial crisis and what followed later, as documented by Madsen (2013). The financial crisis may have been addressed descriptively in various ways in recent literature, but in

¹ Already in 1997 Mark Blaug had questioned the status of the discipline of economics in general as he stated: “Modern economics is sick. Economics has increasingly become an intellectual game played for its own sake and not for its practical consequences for understanding the economic world. Economists have converted the subject into a sort of social mathematics in which analytical rigour is everything and practical relevance is nothing ... much of modern microeconomics might be fairly described as a kind of geography that consists entirely of images of cities but providing no maps of how to reach a city either from any other city or from the countryside ... in recent years even macroeconomics has fallen prey to empty formalism”; Blaug (1997:3, 4 & 5).

² Early on, the usefulness of the representative agent was questioned by Alan Kirman: “the representative agent approach is fatally flawed because it attempts to impose order on the economy through the concepts of an omniscient individual. In reality, individuals operate in very small subsets of the economy and interact with those with whom they have dealings ... well-behaved individuals need not produce a well-behaved representative agent; that the reaction of a representative agent to change need not reflect how the individuals of the economy would respond to change; that the preferences of a representative agent over choices may be diametrically opposed to those of society as a whole – it is clear that the representative agent should have no future”; Kirman (1992:132&134).

general not by use of a theoretical model. That is, mainstreamers still have a problem explaining endogenous disturbances and crises. In real life, the macroeconomic system is one of openness, as the economy should be seen as a complex system that evolves as time goes by. The economy should not be made to look like “a model of a mechanistic, stable system. You don’t see discussions of that in the texts, so, in macro theory, mainstream economics has failed society”; Colander (2015:230).

To argue along these lines is quite familiar to post Keynesian inspired economists. They have persistently argued, often with a methodological eye to the content of critical realism – see e.g. Jespersen (2009) –, that the economy is an open, social and changeable system that is path-dependent. As such, in Section 2, we present a post Keynesian perspective on economics highlighting some of the main arguments behind such an understanding of economics.

However, some universities have given way to a different kind of teaching of economics. As a case study, in Section 3, we try to highlight some aspects of the way we teach economics at Aalborg University, Denmark, where students are presented a more pluralistic way of teaching economics. This makes room for both the mainstream economic understanding as well as a more heterodox way of addressing issues in economics. Especially, we have tried to give economics a post Keynesian flavour. In addition, the way we teach at Aalborg University is based on the approach of *Problem Based Learning (PBL)*.

Finally, the article is closed with some concluding remarks in Section 4.

2: The Post Keynesian perspective

One way to try to define what the core elements of post Keynesian macroeconomic theory could take inspiration from Thirwall (1993)³. In this paper, he addressed six main characteristics of the theory.

First, the focus of the analysis is often on a lack of effective demand causing involuntary unemployment, which does not depend on rigidity and inflexibility of money wages and prices. Even with perfectly flexible wages and prices, involuntary unemployment can be present for long periods. That is, unemployment is not all voluntary.

Second, the level of employment is determined in the goods market by the level of effective demand, and not in the labour market as a function of the real wage. Rather the level of the real wage is determined by the level of total employment.

³ A classical reference in this respect is Eichner & Kregel (1975) defining post Keynesianism as a new paradigm in economics which has to do with “the depiction of an economic system expanding over time in the context of history”; op. cit. p. 1296.

Third, money is never neutral concerning real economic activity. Money does matter in a number of ways in a modern economy. As such, interdependencies between an economy's real and financial sectors are an important fact of real life. In an economic environment dominated by uncertainty about future events, households and firms have the ability to hold liquid money balances, causing the level of effective demand to decline.

Fourth, to save a given amount does not automatically lead to an equivalent level of investment. That is, Say's Law is invalid. In modern economies, you have to remember that saving and investment decisions are done by different agents that have different motives for acting as they do.

Fifth, in general, inflation has nothing to do with the quantity theory of money. Rather inflation has to do with demand-pull and cost-push effects. It is the activity in goods market and in the labour market that determines how prices and money wages changes.

Lastly, what drives a modern capitalist economy is basically hinged on the will and capacity of firms to invest. As such, economic fluctuations – both above and below the level of full employment – are highly depended on what Keynes called 'animal spirits'.

A slightly different approach to define post Keynesianism – although not in conflict with the above-mentioned six elements – is presented by Davidson. Throughout almost all of his writings, he has argued that Keynes broke away from the mainstream of his time as he rejected three fundamental classical axioms.

As did Thirwall, Davidson put emphasis on pointing out that money is never neutral. Money actually does affect real economic variables in the short run as well as in the longer run. Acting economically, both households and firms have to consider financial aspects when they decide what to do in an economic environment where a fundamental kind of uncertainty is present. As such, the existence of money represents a kind of link between the present and the truly unknown future, which is of immense importance.

Secondly, according to Davidson, Keynes rejected the axiom of gross substitution as Davidson terms it. In contrast to the classical mainstream, in general, no change in relative prices is capable in itself of moving the economy back into a position of full employment. As a rule, markets are thus not going to clear simultaneously. Many things, other than just changes in relative prices, determine the economic behaviour of individual households and firms and the way the processes of economic adjustment unfold themselves within the economy⁴.

Thirdly, Davidson argues that Keynes understood the macroeconomic system as a system that functioned in a non-ergodic manner. That is, the economy does not behave as a simple deterministic

⁴ With Davidson (1984:567 & 568-69): "a basic axiom of Keynes's logical framework is that nonproducible assets that can be used to store savings are not gross substitutes for producible assets in savers' portfolios ... Consequently, relative price changes via a flexible pricing mechanism will not be the cure-all 'snake-oil' medicine usually recommended by many neoclassical doctors for the unfortunate economic maladies that are occurring in the real world".

functioning system. Rather than being a closed and a stationary system, the macro economy should be understood as an open, changeable and a path dependent social system. The macroeconomic system then often undergoes a significant change when the economy moves from “an irrevocable past to an unpredictable future” as Davidson has often expressed it himself⁵. This means that the future is in some way truly unknown in any statistical sense. Because of this fact, it becomes very important to understand the crucial role played by contracts for money in the economy. It is by agreeing upon such contracts that individuals try to hedge themselves against the potentially negative effects of future economic events.

Or as Arestis (1996:114) points out, post Keynesians in general agree that:

“The economy operates subject to a *historical* process in an uncertain world, where *expectations* inevitably have significant effects on economic outcomes. Social, conventional, political and other *institutions* shape economic events, and their evolution is studied carefully”

That is, in sum, post Keynesianism fundamentally has to do with the concepts of ‘time, money and uncertainty’ and ‘path dependency’.

3: The Aalborg Model

As stated by Chick (1995), to gain relevance, economic theory should somehow always depict phenomena of real life. As such, economic theory concerns the actions of households and firms conducted in (historical) calendar time. That is, history should matter to economists. Moreover, as context matters, one must acknowledge that the macroeconomic outcome is generally not one of optimality and harmony. Economies are often hit hard by recessions. In other situations, economies are also sometimes characterized by boom-like situations. This much we know with certainty from history. As time changes so should the content of economic theory develop – there is no perpetual *one model*, with which one can analyse all macroeconomic outcomes and problems of all times.

To a post Keynesian, the modern macroeconomic mainstream of the *NNS (New Neoclassical Synthesis)* is too permeated with an exclusive focus on equilibrium analysis. To a post Keynesian it makes sense also to focus on ‘Economics without Equilibrium’ – a book title by Kaldor from 1985 – because, as Kirman (2011:62) points out, the major failure of modern macroeconomics is that: “It does not address the serious problems that we face when we get out of equilibrium. And we are out of equilibrium most of the time”.

⁵ As pointed out by Robinson (1972:3): “the main point of the *General Theory* was to break out of the cocoon of equilibrium and consider the nature of life lived in time – the difference between yesterday and tomorrow. Here and now, the past is irrevocable and the future is unknown”.

Seen from a post Keynesian perspective, students of economics need to learn more about macroeconomics than just the story told by the *NNS* followers. Likewise, students must also learn about economic theories and address economic analyses with a critical eye – as such, the relative strengths or weaknesses of a particular theory should always be open to discussion, as should the relevance of that theory for a particular application in practice. The aim of which is to develop reflective students with an awareness of their methods, methodologies and the economic environment within which they act as practitioners.

And this is exactly how we try to teach economics to students at Aalborg University. In fact, we include courses on macroeconomics in all three years of our BA, and the first year of our MA in economics, covering a variety of key macroeconomic elements. In the first year of our BA, we teach a combined course on micro- and macroeconomics of a mainstream sort. In the second year, we have a combined course on macroeconomics and history of economic thought, including Classical economics, Keynesian economics, Monetarism and New Classical-New Keynesian economics. In the third year, we provide a course on economic growth, covering aspects of old growth theory, endogenous growth elements and an introduction to Post Keynesian growth theories. Finally, in the first year of our MA, we introduce a combined course on methodology, Post Keynesians, the *NNS* and the *DSGE approach*, the *SFC approach* and Post Keynesian growth theories. The second year of our MA in economics is separated by a semester term, which allows our students to decide for themselves if they would like to take an internship outside the university – we have had students conduct research at think-tank's, at the OECD, at banks and at various ministerial departments, just to mention a few – alternatively, some have worked as a research trainee on a given research project. The second term of the second year of the MA is allocated to students, for them to write their master thesis.

As such, we do not only teach macroeconomics of a mainstream nature. Rather, we would like our students to understand that there exist different perspectives on macroeconomics, both in terms of the theoretical interpretation of the world and in the practical application of methods towards the development of knowledge. We also use a different teaching method than that used by more mainstream-type economics departments. We use the *PBL* approach.

Aalborg University was founded in 1974 and has since then put a lot of emphasis on the methods teaching, in particular, it is practiced as *problem-based learning*. That is *the* basic teaching principle at the university. The key-elements of such an approach are⁶:

- Problem orientation: Problem-oriented education is based on working with unsolved, relevant and current problems of modern society. By analyzing the problems in depth the students learn and use the disciplines and theories which are considered to be necessary to solve the problems posed, i.e. the problem defines the subjects and not the reverse.

⁶ For references to the *PBL* approach in use at Aalborg University, see for instance Dahl & Kolmos (2015), Davies et al. (2011), Qvist (2009), Kolmos et al. (2006) and Graaff & Kolmos (2003).

- **Project organization:** Organizing problem-oriented education as project work allows groups of students to choose problems and work with them, learning from each other. It is a team-based approach that ensures a great variety of approaches and perspectives, which results in a sound and thoroughly prepared project. During group work the students will quickly realize that they might have different opinions about how to solve a given problem. Group work means that students have to make compromises during the process. As such, they learn a lot about how to cooperate in practice. This also means that the students will be able to solve larger and more complex problems than if they were studying on an individual basis.
- **Integration of theory and practice:** Students are able to see how different theories and empirical/practical knowledge interrelate - an aptitude which many European students strive towards, see for instance Collander (2009:31). This is facilitated by a thematic framework, a given curriculum and with the use of supervisors.
- **Participant direction:** The Aalborg Model is a learning system which has collaborative democratic elements built into the model. Participant direction means, that it is the participant that directs their own learning. This takes place within a framework; is directed by a given curriculum, which is determined by a study board. All tertiary educations in economics in Denmark are governed by the same decree, but the study boards of the individual universities have a certain degree of autonomy when they decide on the contents of the various programs that will be implemented in practice. That the decree provides some autonomy is particularly favourable for the implementation of, and opportunity to practice the *PBL* approach.

As such, in their daily study work, project groups themselves have to agree on and choose to analyse a given problem within the subject area and decide how to organize their work. Besides this, the idea is that students should use their supervisors as a resource together with other resources, such as libraries, internet, courses, and so on. In principle, the students are responsible for their own process of learning and must negotiate with one other to identify what to learn and how to solve problems that might arise during the process of work.

In this way, the Aalborg approach to the *PBL* approach is primarily a combination of a problem-based and a project-organized approach. The following is a description of how this is handled in our economics education.

In problem-based projects, it is very important that the students themselves generate new knowledge in the process of joint cooperation. This manifests itself in the distribution of ECTS respectively between courses and group work. Within a typical five year master's program, courses generally contribute up to 63% of the total 300 ECTS points. However, 17% of these ECTS points may be acquired through the attendance of another university or from an internship in a company, an institution or at various ministerial departments. Project work (which is predominantly group work) typically accounts for as much as 37% of the total ECTS requirement.

The courses represent an introduction to the key elements of macroeconomics (for more details see above), micro-economics, mathematics, econometrics, and more. It should be emphasized that elective subjects comprise 20% of the total available working time, which allows students the opportunity to develop cross-disciplinary knowledge and skills if they desire to. The supply of these electives is partially determined through discussions with the students, where students can request a class with a particular focus⁷. Some of this working time can also consist of additional project work.

Basically, there is freedom of choice when it comes to choosing project topics, which of course places extra demands on teachers as supervisors. Overall, this means that the students have extensive influence over the actual content of their education – in a way, Humboldtian at its best.

This also means that students in the course of the total study can, to a large degree, tailor their study strategy towards specific themes that culminate in a final thesis (BA as well as MA theses) as shown by way of three examples in the appendix (all MA theses from 2016). That might be Post-Keynesian growth and distribution theory, or calculation work using stock-flow consistent models or studies of Austrian theory, modern mainstream macroeconomics, inflation targeting, Taylor rules, and much more. In general, the project work is both written and oral, and, in principle for each semester, there will be a handed in written project report, as well as an oral evaluation.

The project work has its strength in that students are jointly problem-oriented and thus formulate relatively precise problem statements. It is very important that students recognize that a problem formulation is a dynamic entity. A problem formulation can be changed and tightened each time it is confronted with theory or empirical results. This does not necessarily proceed from a narrow paradigmatic starting point, but may as well be determined from paradoxes recognized in reality.

This also involves the question of inter-disciplinarity. The university's *PBL* approach has developed a separate cross-disciplinary approach. Interdisciplinarity occurs because many problems from reality can best be captured by an inter-disciplinary approach, e.g. matters of economic policy. Therefore, a number of subjects and courses are presented as vital tools and as possible bids towards solving problems. In parallel, this can be supplemented by a doctrine focused historical presentation of basic theories.

It is indisputable that project work has laid much emphasis on the integration of theory and empirical work. Problem orientation is the key that gives rise to this reunification. Furthermore, problem-orientation ensures that students contextualise various theories within current reality. This ensures that students are critically aware when covering existing theories, and that they are focused on problems that exist in reality.

A discussion of methods and science is important for the students, and the learning process is far more extensive since students learn much from one another. This is because students engaged in

⁷ Students can also influence the construction of courses indirectly through a lack of interest, as elective courses will not continue in the absence of active student participation.

PBL training have to be able to discuss, evaluate and select theories and methods relevant to their research question. Theories are important, or even indispensable, but theories and methods are tools for problem solving and thus the means to achieve a goal which is to make a complete analysis of a given issue.

Put differently, problems do not respect any boundaries. Traditional teaching is primarily tailored to the learning of a broad scope of knowledge in one or more subject areas. Project work differs in that it is rather characterized by a more in-depth and detailed knowledge of a specific problem area, along with an understanding or insight into the underlying contexts of problems. As said earlier this allows a generalization to other problem areas across disciplines and divisions of disciplines.

A basic principle here is the exemplary principle. By this we mean that a project's problem combines both objective and subjective elements. In other words, it is important to be aware that the question to be examined must be of relevance for society, but must also be linked to the student's experience. It is also a principle that could involve overloading, and over commitment, as content selection will contain massive quantities of knowledge. The ability to develop the arts of delimitation and distillation is thus just as important as the ability to perform problem formulation.

Among the Danish universities, Aalborg University performs the best in terms of the proportion of students to successfully complete their degrees within the stipulated time frames. This can directly be attributed to the extremely effective study method of the *PBL* approach.

From studies on graduates of economics from 2012, we also know that the most useful skills are 1) to understand complex contexts – and thus to be quick to learn about new complex substance 2) cooperation with others, including project management (cooperativeness) - including collaboration across an organization, within which there can be wide variations in approaches, and 3) the ability to provide a structured presentation of complex relationships both in writing and orally.

Although Aalborg University has a relatively short history and regional anchoring, it has a rather high ranking among universities. It is likely that this has a lot to do with the university's use of the *PBL* approach. It is the university in Denmark with the largest influx of students from other regions, including 10% of foreign students. This also means that it is a net exporter of graduates, including graduates in economics. These young economists have historically been distributed fairly evenly between private and public enterprises, and very few have been unable to find employment.

4: Concluding remarks

For decades now, in general, teaching of economics has been characterized by uniformity: not only do most economics departments focus exclusively on the mainstream economic understanding; but, there is simultaneously very little room for addressing phenomena or problems of real life in a thorough manner. As such, most mainstreamers do not see the need for a fundamental change of the

core elements of mainstream orthodox theory, as pointed out by Lavoie (2015)⁸. To them, *NNS* and *DSGE* modelling is the right way of doing macroeconomics – ‘there is no other game in town’. Seen from the perspective of Lavoie (2015:224), and others, this is an unlucky situation, as he finds that the content of mainstream theory has “an extraordinary number of totally unrealistic assumptions, which are claimed to be simplifications or abstractions, when actually they apply to a totally imaginary world – a fantasy world – which has no relationship whatsoever with the world in which we live”.

Furthermore, as pointed out by e.g. Chick (2013) and Dow (2013) the standard way to do economics is to tell stories about closed systems, although the real world of economics is one of openness. As such, to give an example, in macroeconomics it is a sign of poor contact with historical facts to rely heavily on the *NNS* framework, together with the assumption that we will automatically achieve a macroeconomic outcome of full employment in the long run. Rather we should, as stated by Harris (2015:240), design macroeconomics in a way that allows us to take up the issues of “instability, stagnation, inequality, and environmental crisis” in a relevant, analytical way, where the processes of macroeconomics are handled in a dynamic setting that is not “trapped in a ‘self-equilibrating’ classical economic world.”

In economics, we have to acknowledge the importance of ‘time’, ‘money’ and ‘uncertainty’. Therefore, in such a setting, there are intellectually sound reasons for making active economic policy changes; economic policies do make a difference concerning real economic variables even in the longer run. Or as explained by Colander (2015:234), “Once one starts thinking of the economy as a complex evolving system, one starts thinking about economic policy differently. Current models lead us to think of economic policy narrowly. Thinking of the economy as a complex evolving system leads to policy being thought of in a much broader context”. However, as discussed in Morgan (2015), although the mainstream understanding is in need of change in gaining more realism⁹ – theoretically as well as empirically – the mainstream do in general not seem to be responding to non-mainstream critique. Actually, there is hardly any communication between mainstreamers and non-mainstreamers. Perhaps this is partly due to the fact, that the *NNS* understanding and for instance that of the Post Keynesians are two kinds of thought that, at least to some degree, is incommensurable as stated by McCombie & Negru (2014).

⁸ In this respect Romer (2016) represents an exception. In his article a devastating critique is given to the *DSGE*-modelling. As such, he claims that macroeconomics has gone backwards theoretically for decades of years as theory is out of sync with real life phenomena. Therefore, Romer names the modern macroeconomic mainstream as ‘post real’-macroeconomics. Even more harshly, Romer (2016:20) concludes: “In the distribution of commentary about the state of macroeconomics, my pessimistic assessment of regression into pseudoscience lies in the extreme lower tail”.

⁹ As pointed out by Morgan (2015:521,522&523): “Critique has claimed that the restricted nature of what it means to be empirical, and the restricted sense of what is legitimate as theory, limits the realism of economics and undermines its capacity to be *constructively* pluralistic and *genuinely* interdisciplinary ... The global financial crisis was very real and the absence of realism in economics played a significant role in that crisis and its aftermath ... the models and tools economists have mainly depended on for shaping, intervening and anticipating the movements of economies did not prevent the emergence of fundamental uncertainty; quite the opposite, they proved conducive to the creation of a false sense of security, and over-confidence in the explanatory power and predictive potential of the models and tools”.

The above understanding of economics, as primarily a qualitative science where households and firms act on expectations – which most often are based on an imperfect knowledge about the future due to the existence of a fundamental or ontological kind of uncertainty – calls for a heterodox way of learning economics. Therefore, we have tried to do so at Aalborg University, where we teach economics in a pluralistic manner, making room for both the mainstream economic understanding as well as a more heterodox way of addressing issues in economics. Especially we have tried to give economics a post Keynesian flavour. Likewise, we try to teach in such a way that allows us to address phenomena and problems of real life. We do lectures, exercises and tutorials based on the approach of *PBL*.

In summary, we try to teach in such a way that makes our students become young economists who are able to do relevant economic analyses of real life problems, often with an eye on the necessity for an interdisciplinary approach. At the same time, we always encourage students to reflect critically on the results of their economic analyses – this is also included as a ‘must’ in the *PBL* approach. Fortunately, our graduates generally have no problem in finding a job when they leave the university – it seems as though the demand for hiring well-educated, critically minded young economists is presently adequate in real life.

Appendix

Box 1: Problem and conclusion

Existence of EMU in the Delors report is strongly dependent on the degree of convergence of Member States' economic parameters - yet there are differences on these after 24 years. What can be the problem?

A problem formulation as this opens up several approaches, including the traditional OCA-approach, but this project mainly focuses on the empirical part, on the basis of the Delors report, the Stability and Growth Pact and elements from the Fiscal Compact, combined with the evolution of the parameters of the 11 original member countries.

Based on this projects theoretical and empirical analysis, the conclusion provides reasons for the lack of convergence at present, and especially in connection with the financial crisis that is current in the Eurozone currency area. The conclusion is based on the OCA theory and the facts that follow the Maastricht criteria and the Stability and Growth Pact, which is necessary for the existence of convergence in the area.

One of the main results is that opting out of OCA theory as the focal point for economic and monetary union, is caused by an awareness among the founders that a currency area like the euro zone, which must be partly considered as a political decision, required a unique approach, that does not already exist either theoretically or empirically. By extension, added to fiscal discipline a vital role whose primary purpose is to ensure low and stable development in inflation, thus resulting in a convergence in the countries' long-term interest rates. Subsequently, the divergence in interest rates conditional on the members fails to comply with this fiscal restriction.

Pedersen & Carlsen (2016)

Box 2: Problem and conclusion

The thesis has two main purposes: (i) examining how effects of employment in result of changes to the rate of replacement varies within the elasticity of economics incentives and (ii) furthermore discuss the elasticity used in the Danish Ministry of Finance calculation methods with a critical approach.

To examine the first purpose of the thesis, a Stock Flow Consistent model is used to perform sensitivity experiments on relevant behavioural parameters, to check the robustness of the Danish Ministry of Finances results regarding the effects of former and oncoming labour market reforms on the employment. The results of these simulation experiments show that a marginal reduction in the link between the replacement rate and worker's wage, led to a fall instead of a rise in the short run employment as well as in the long run employment. This indicates that the Danish Ministry of Finance unambiguous use of a positive causal link between reduction in unemployment insurance and an increase in the long run level of employment is misleading.

The discussion in the second part of the thesis shows that the assumption of the link between the replacement rate and worker's wage demand used in the Danish Ministry of Finance feasibility studies of labour market reforms is simplistic and overestimated in the current socio-economic context. Thus based on the findings there is no unambiguous link either theoretically or empirically between the replacement rate and employment as assumed in the feasibility studies conducted by the Danish Ministry of Finance.

Hoffmann (2016)

Box 3: Problem and conclusion

The thesis attempts to shed light on the coordination between both the psychiatry and labour market to establish whether initiatives' reach their full potential effect.

The main results of the analysis are that several well-functioning efforts and initiatives exist with respect to treating patients with psychiatric illnesses as well as for establishing contact to the labour market for patients with psychiatric illnesses. However, several signs have been found that points towards the existence of a lack of coordinated efforts between sectors such that the full individual and societal benefits of the sector-specific efforts may not be reached.

The thesis further includes a case that exemplifies how the implementation of psychiatrics in somatics may contribute to creating a coordinated effort that provides psychiatric patients with a relation to the labour market.

Knudsen, Marianne & Sobitha Theiventhiran (2016)

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