

Thinking like an economist?

**A quantitative analysis of economics
bachelor curricula in the Netherlands**

Tieleman, J., De Muijnck, S., Kavelaars, M. & Ostermeijer, F.
Rethinking Economics NL



Thinking like an economist?

Authors

Joris Tieleman is co-founder and the previous Chairman of Rethinking Economics NL. Currently, he is writing a PhD at the Institute for Housing and Urban Development Studies of the Erasmus University Rotterdam on the suburbanization of Ghana.

Sam de Muijnck is the current Chairman of Rethinking Economics NL. Currently he is an undergraduate student in economics at the Radboud University Nijmegen, working on analyses of theoretical developments within economics.

Maarten Kavelaars is the current Secretary of Rethinking Economics NL. He recently finished the master Political Economy at the University of Amsterdam and now works at Triodos Bank.

Francis Ostermeijer is the Motivator in Chief of Rethinking Economics NL. Currently he is writing a PhD at the Free University of Amsterdam, about the spatial economic implications of automated driving.



Acknowledgements

Of course, we have not created this report entirely on our own. Many others contributed, and we owe them our gratitude. Elisa Terragno Bogliaccini for the beautiful lay-out. Lans Bovenberg, Marcel Boumans, Ha-Joon Chang, David Colander, Harry van Dalen, Eric van Damme, Dirk Damsma, John Davis, Simon Dunstan, Joe Earle, Lorenzo Fränkel, Pieter Gautier, Piet Keizer, Jasper Lukkezen, Daniel Mügge, Frank van der Salm, Esther-Mirjam Sent, Esther Somers, Irene van Staveren, Henk Tieleman, and Robert Went for providingd illuminating feedback. Charlotte de Bruijn, Robin van Ee, Lukas Karsten, Annelie Kroese, Nelson Mesker, Joost Sijthoff, and Tijmen de Vos, for double-checking our evaluation of courses at faculties where we did not study ourselves. Finally, we want to thank all those students from the Rethinking Economics movement who helped design, sharpen and finalize this research. Our apologies to those we forgot to mention here; creating this report has been a process of two years and there were surely others along the way who contributed. Any remaining errors are, of course, our own.



Table of Contents

Executive summary.....	p. 7
Foreword	p. 13
1. Introduction.....	p. 17
2. Theoretical framework	p. 19
2.1 Literature review.....	p. 19
2.2 A brief history of economics.....	p. 22
2.3 Recent trends in economics	p. 32
2.4 Current debate.....	p. 37
2.5 Are we training academic or professional economists?	p. 39
2.6 Education for the 97%?	p. 43
3. The four dimensions of a suitable curriculum	p. 45
4. Methodology and data	p. 57
4.1 Research (sub-)questions	p. 57
4.2 Data	p. 65
5. Results	p. 73
5.1 A suitable toolkit of research skills	p. 73
5.2 A diverse theoretical approach to the economy	p. 76
5.3 Real world economics	p. 81
5.4 Critical, open-minded and reflective thinking	p. 83
6. Discussion	p. 87
7. Conclusion	p. 91
8. Social consequences of this curriculum.....	p. 95
9. Recommendations.....	p. 97
Literature.....	p. 101
Appendix 1: Data sources	p. 108
Appendix 2: Full Questionnaire	p. 109
Appendix 3: Classification of Economic Approaches	p. 114
Extra: Results by University	p. 123



Executive summary

This report evaluates to what extent Dutch economics curricula prepare future economists for the leading role they are going to play in society. It is a product of Rethinking Economics NL, the Dutch branch of a worldwide movement of 53 groups in 22 countries, each consisting of economics students and academics that work for a better economics education. The data for this report comes from a detailed analysis of 325 course outlines. That is, all BSc courses currently offered by the nine Dutch economics programmes.

This data allows us to analyse and compare the bachelor programs in Economics from every Dutch university on the following aspects: research methods, theoretical economic approaches, multi- and interdisciplinarity, real world economics, tools for critical thinking and didactic methods. With this research, we aim to provide a solid factual basis, to facilitate the growing discussion regarding the way we teach our future economists.

The report finds that Dutch economics education is dominated by the study of market mechanisms among rational, utility-maximizing actors. These markets are implicitly presumed to make up the entire economic system, as all social organization is assumed to take the form of (imperfect) market mechanisms. This notion stems from the dominance of the neoclassical approach in economics programmes, which takes up 86% of all theory course time. No other approach receives more than 4% of the theoretical teaching time, and they are generally presented as optional extras.

What is more, we as students are trained within a framework that aims to capture objects of study only in terms of numbers, which is profoundly problematic. 97% of the course time spent on methods focuses on quantitative research skills or even pure mathematics. That means that the institutional, social, political and cultural dimensions, which deeply shape economic structures, are systematically overlooked in curricula, since it is often hard, if not impossible, to capture these in quantitative terms. Only 3% of the time is spent on qualitative methods like interviewing, qualitative field research, focus groups or the design of qualitative surveys. Thus, we as students are effectively blinded to all aspects of the economy which cannot be expressed in numbers.

In addition to that, Dutch economics curricula generally teach in a way that makes us prone to see the theory as the real world, rather than as an abstraction of it. Even



though research shows a large consensus among economists that professional economists should have on-the-ground knowledge of economic processes, Dutch curricula do not prepare us for this. 75% of all courses stay completely within the world of abstract theory and methods, spending time neither on economic sectors, nor on economic history, nor on economic problems. This also means we do not learn where the theoretical models deviate from reality. Reality often does not obey theoretical models, and the best way to realize this is to take a look at the real world. But as students, we spend little time learning about the actual economy. Hence, we do not learn what these models omit or misrepresent.

As for the development of a critical mindset, most curricula do pay considerable attention to topics as ethics, economic methodology and philosophy of science. However, such courses teach critical thinking in the abstract. We would argue that the near monopoly of the neoclassical approach undermines the possibility of developing a critical mind, because it doesn't give us as students the opportunity to develop independent judgements about which approaches are most useful in particular circumstances. All in all, the extent to which we, economics students, develop a critical mind, seems insufficient.

If no alternative approach receives serious treatment, it is hard to think outside a framework of neoclassical axioms. In fact, the combination of limited attention for the real world economy and continued exposure to a single analytical approach can lead us as students to see discrepancies between the world and the models as aberrations in the world, not in the model. It threatens to make economics programmes prescriptive, rather than descriptive, in their very core. For example, if we find markets that are not working, we may tend to conclude that we need more perfect markets, rather than looking for approaches that involve alternative forms of social organization. Thus, critical thinking as directly applied to the subject matter is not facilitated; it remains an abstract notion.

The ability to think critically is also shaped by the didactic methods that are used in a program. Increasingly, our exams consist of multiple-choice questions, which are quicker to grade. In teaching materials, textbooks dominate; beautifully constructed crystal palaces of theory, from which every notion of disagreement, doubt or ambiguity has been scrubbed. But an academic education is not just about learning by heart; it is about learning to think, to probe, to argue and to reflect. In fact, it matters very much whether we as students write essays or answer multiple-choice questions. It makes a large difference whether we have to successfully reproduce mathematical equations, or have to defend the position



taken in a debate. Over time, such teaching practices hollow out the academic character of our economics programs.

In short, Dutch economics education is dominated by the study of independent, rational, utility-maximizing actors in contexts of scarcity. We study how actors maximise in contexts of scarcity, which is implicitly presumed to define what economics is about, in quantitative terms only. And since we are taught little about the actual economy, we do not learn when models deviate from reality, nor what these models omit or misrepresent. Finally, we hardly learn to question these teachings through applied critical thinking.

Certainly, the theories and methods that are taught to us are applicable to many parts of the economic system. But they neglect the social and political foundations of markets. They deny any other economic logic or motivation than gain-seeking. They say nothing about the structure of the Dutch economy, about relationships between and within companies, about systemic risks, power, well-being, global value chains, human relations, history, automation, civil society, current institutions, cooperation and the ecological and cultural embeddedness of economy. In short: the near-monopoly of neoclassical theory and quantitative methods imparts on us a fixated framing of what the economy is about.

This is a societal problem. An economics programme that evolves around how agents maximise utility in contexts of scarcity, may be fitting for future academic researchers. But academics are a splinter group: less than 3% of the graduates from economics bachelor programs will go into academia. Around 97% of the economics graduates will go on to play key societal roles as journalists, policy makers, corporate managers or civil servants. This group is expected to understand the complexity, multiplicity and messiness of the real world, and should be able to use a theory only as a means in order to better understand that reality. Yet, our results show that Dutch economics curricula generally fall short at this point. The programs, as they stand, do not serve 97% of their students. Nor do they serve our society, with economists who are ready to face the economic challenges of the 21st century.

Clearly, our economics education needs rethinking. This report, however, merely investigates and compares the existing curricula. It does not propose alternatives. Many others have put forward such suggestions and blueprints, including agencies like the Institute for New Economic Thinking (INET) and the International Confederation of Associations for Pluralism in Economics (ICAPE). On our



forthcoming website¹, we will provide an overview of such proposals, and offer our own suggestions for redesigning economics curricula. Apart from general guiding principles, our website will also suggest books, MOOCs² and other materials which could be used to enrich economics curricula.

Although steps forward from this situation are necessary and urgent, they will not occur automatically. One deeper cause of the theoretical monism in our programs is a historical shift in the discipline of economics. For most of the centuries following Adam Smith's work, economics was a broad science. But sometime after World War II, this started to change. Thinkers who could provide a contrast to the neoclassical worldview were slowly pushed out of the faculties. Some found refuge in neighbouring disciplines, as business studies, sociology, political science or human geography. But we, economics students, hardly get the chance to benefit from their insights, as the economics programs contain little multidisciplinaryity.

This has not happened overnight, and it cannot be remedied overnight. It will take time to bring back pluralism to our faculties. But it is a necessary step. We must either re-create pluralist economics faculties, or ask staff from other disciplines to step in and help teach our future economists.

This history, however, does not fully explain the lack of critical thinking in our programs, or the limited contact with the real economy. Knowing our own teachers, we are sure that these problems are not caused by unwillingness on the part of faculty to teach students broad, critical and real world economic thinking. Instead, problem causes seem to be a lack of allocated time for teaching, a high student/teacher ratio, skewed evaluation systems which undervalue teaching and overvalue journal publications, and a lack of suitable teaching materials for anything outside that narrow mainstream. This means that, with this report, we do not mean to attack our professors.

Still, although not caused by any foul intent, the lapses in our education do present a serious social problem. Clear-sighted economic thinking forms a critical part of our society's infrastructure. Without thoroughly trained yet open-minded economists, whether working as politicians, business leaders, journalists or civil servants, we are collectively unable to identify and remedy the economic roots of so many societal problems. Without them, we are unable to build and maintain the

¹ See www.economicseducation.org and www.economieonderwijs.nl.

² See also www.exploring-economics.org for MOOCs and material of different economic perspectives.



strong and healthy basis of material provisions which our society needs to flourish. Therefore, we ask our professors to stand together with us in confronting these challenges.

Hopefully, other students will be able to use this research to critically assess what we are taught, to read independently, get organized in a local Rethinking Economics group, and discuss with their professors how their programs can be improved. We are happy to help with that.

Hopefully, academic economists will not feel attacked by this report. That is not our intent. We know how hard you work, and we want to work with you to make these programs better. On pages 96-98, we present some further suggestions for action on the part of students, faculty, deans and program directors, and government actors to improve the situation.

Climate change, ageing, inequality, migration; these are the issues that will determine the future of our society. The economy plays in central role in them. This means that thorough, broad economics programs are one of the best ways to invest in the future of our society. Let's build such programs, together.



Foreword

William White

Chairman of the Economic and Development Review Committee, OECD

What does an economist do? He or she first seeks to understand how the economy works. Then, an economist asks how different policies might help it to work better, to improve the well-being of all people in a sustainable way. The current slogan of the OECD sums it up beautifully; "*Better policies for better lives*". Nor should the importance of this endeavour be underestimated. Our economic circumstances play a huge role in influencing social and political developments. Think, for example, of the economic backdrop to the French revolution and to the rise of the National Socialists in Germany.

What does an economist need to know in order to think like an economist? John Maynard Keynes gave us his answer in his obituary essay on Alfred Marshall:

"He must be mathematician, historian, statesman, and philosopher – in some degree (...) He must study the present in light of the past, for the purposes of the future. No part of man's nature or his institutions must lie entirely outside his regard."

This Report fully embraces Keynes' view in asking what kind of academic training might best prepare someone for such a career. It then contrasts what needs to be taught with what is actually taught in the Dutch speaking courses at universities in the Netherlands. Sadly, but convincingly, the Report concludes that the current curricula is totally "unfit for purpose". Still more practically, it then goes on to suggest how different stakeholders in society might contribute to changing this state of affairs.

What needs to be taught? Consistent with Keynes' thoughts, a pluralistic and multidisciplinary approach is needed. Evaluating policy prescriptions requires an understanding of the theory of knowledge – how do you know you know? Making policy trade-offs requires a broader sense of morality and ethical choices. Implementing policy suggestions requires an understanding of political realities – it is easier to go through an open door than a locked one. And above all, there must be an understanding of contemporary problems. What is broken and needs to be fixed?



More specifically, the Report notes that 97 percent of Dutch undergraduate students in economics do not go on to do graduate work. Rather, they go on to do practical tasks in companies, governments, the media and elsewhere. As someone whose long career has been focussed on the practical issue of policy making – at the Bank of Canada, at the Bank for International Settlements and at the OECD – I can personally attest to the usefulness of a pluralistic and multidisciplinary approach. Absent such qualities, your policy advice will simply not be taken seriously by those you are trying to influence.

The Report lays out four criteria for a curriculum suitable for such practical people. First, they must have a suitably diversified “toolkit” of research methods. Quantitative methods have their advantages but also their shortcomings. As Frederick Hayek once pointed out, not everything that is important can be measured. Second, an economist should learn about different schools of economic thought. Each might bring different insights to help solve different problems at different times. Third, the curriculum should focus on “real world” economic problems and how economic history might provide practical insights about how to solve them. And, finally, there should be training in critical thinking. This would not only highlight the need to be open-minded about the pros and cons of other people's work, but would also point out the pervasiveness of one's own personal biases.

What is taught in universities in the Netherlands? This is the core of the Report and its greatest contribution. The authors go beyond anecdotes and general grumbling to a careful and detailed analysis of the undergraduate course content in nine universities. In so doing, the authors develop a credible methodology to allow a quantitative assessment of course content. It confirms that students have much to grumble about. Sadly, a failing grade is awarded according to each of the four suggested criteria.

First, instead of a diverse “toolkit” of research methodologies, mathematics and quantitative methods constitute almost 100 percent of course content. Second, instead of teaching different schools of economic thought, 86 percent is Neoclassical Economics. Third, instead of looking at real world problems, the focus is on model manipulation and the associated suggestion that the model is the real world. Fourth, while some aspects of the course work do contribute to developing a critical mindset, the authors conclude “there is still much room for improvement”.



In effect, what is now defined as "economics" is no longer a discipline to understand how the economy actually works. It has been transformed into an agreed method of inquiry, using models that are based on a whole host of unrealistic assumptions. This Report then constitutes, not only a devastating critique of the course content offered by economic faculties in the Netherlands, but also a critique of the Neoclassical model that is now being taught in universities all around the world. In short, even the small percentage of undergraduates who go on to do a PhD are being ill-served by the present curriculum.

Perhaps the most fundamental shortcoming of this model is that it assumes the economy is both understandable and controllable. Unfortunately, to give the model these attributes demands simplifying it to the point where it has little practical usefulness. Perhaps most important, deviations from full employment are quickly reversed as the model reverts back to "equilibrium". Financial markets, credit, debt and money are all a "veil" and can be safely ignored, as can stocks and cumulative processes. "Representative agents" stand in for the millions of diverse economic agents and institutions in the real world, thus missing all the economic properties that emerge from the interactions between them. Finally, the representative agents are assumed to be all knowing, both about how the economy works and how events will unfold over time.

Models based on these assumptions simply have no place for the global economic crisis and the slow economic growth that have characterized the last decade. In the world of the models, these events are impossible. One might have thought that this fact alone would have triggered a fundamental rethink of the models and the academic curricula associated with them. Do not true sciences advance by confronting theories with facts? Indeed, would it not be better to assume that the economy is a complex, adaptive system often generating highly non-linear outcomes? Since such systems are ubiquitous in both nature and society, it seems inherently odd to assume that the economy has a uniquely different nature. Making such an assumption would also, and importantly, allow economics to benefit from the insights of other disciplines.

While there are some welcome signs of change, we are still far from the "paradigm shift" required to make academic economics a practical discipline again. In large part, this reflects the natural unwillingness of academics to admit that they have been on a bad path for a long time. The efforts of those students supporting the global movement for "Rethinking Economics" thus deserve a big round of applause.



They might well be the catalyst for the change in mindset that is required. More specifically, the authors of this report have made a very welcome contribution to the debate by documenting in such detail the shortcomings of the undergraduate economics curriculum in the Netherlands. It seems unlikely that the situation is any better elsewhere.

Paris, March 2018



1. Introduction

Economists play a central role in contemporary society. They are to be found at key positions in politics, policymaking, journalism and the private sector. The voice of economics carries more weight than that of any other social science discipline (Fourcade, Ollion, & Algan, 2015; Smith, 2016). Some even argue that policy today is primarily based on economic foundations, rather than normative or moral ones (Earle, Moral, & Ward-Perkins, 2016).

At the same time, the context in which economists operate is subject to profound changes. Climate change, rising economic inequality, financial (in)stability, economic migration and ageing populations are all pressing issues that fundamentally challenge the way our society works. These issues are often economic by nature, and threaten our well-being as individuals and as a society.

For societies, it is therefore of vital importance to train and prepare future economists well for their leading role in facing the wide range of challenges. Economists generally recognise this urgency. A survey by Van Dalen, Klamer, and Koedijk (2015) found that 75% of Dutch economists believe that a clear eye on future developments is an important quality of non-academic economists.

In recent years, an intensive debate has emerged about the extent to which economic curricula actually prepare future economists for this role. In the Netherlands too, the quality of economic curricula has been questioned.³ Although there is generally an agreement that elements of the economics curricula need to be revised, the required extent of changes is subject to contestation. Some feel that mild reforms will do the job (Gautier, 2016), while others argue that fundamental changes in the design of Dutch curricula are required to re-create an adequate economics education (Van Staveren, 2016).

³ See for an overview of the international debate Spiegler and Milberg (2013). See for the Dutch debate the publications of Onderstal and Hollanders (2016b), Van Damme (2016), Tieleman, De Muijnck, Kavelaars, and Fränkel (2016) and Gautier (2016) in the KVS Preadviezen 2016 about Economics Education (Bovenberg & Haan, 2016); the articles in the Dutch Economics Journal *TPEdigitaal* by Onderstal and Hollanders (2016a), Vollaard (2016), Hinloopen (2016), Van Staveren (2016), Mierau and Mink (2016), Hollanders (2016), Onderstal (2016) and Bovenberg (2016); the written contributions of Keizer (2015b), Tieleman (2015), Engelen (2015), Tieleman and De Muijnck (2016), Velthuis (2016), Mügge (2016), Bähre (2016), Derksen (2016) and Van Vugt (2016) at discussion platform for Dutch Economists *Me Judice*, and the debate between Tieleman, Fränkel and Gautier in the tv program *Buitenhof* ("Rethinking Economics met Pieter Gautier, Lorenzo Fränkel en Joris Tieleman," 2015).



The debate on the economics education issue has so far mainly been grounded on the personal experiences of people involved (teachers, students) and anecdotal evidence based on these experiences. Systematic research on the Dutch economics curricula is still absent. This hampers the quality of the debate, and hinders any efforts of improving the quality of Dutch economics curricula - irrespective of how that quality is defined.

This research aims to fill this gap, by providing a systematic quantitative investigation into the content of the curricula of the bachelor's degrees in economics of the nine Dutch universities that offer such programs. This enquiry mostly focuses on *what* curricula teach; not *how well* they teach it. By creating this systematic overview of curricula, we hope to improve the quality of the debate on Dutch economics education. At the same time, we hope that our research will inspire and facilitate similar substantive and systematic research on economics curricula in other countries.

This report starts with a fundamental question: what is economics? It then discusses the purpose of an economics education. It does not set out an ideal curriculum, but instead formulates four general areas in which economics curricula are to be evaluated. Subsequently, it presents empirical data on the economics curricula of the nine Dutch universities that offer a BSc in economics. Based on these empirical results, the report evaluates the curricula in relation to these four core areas. Finally, it provides suggestions to various actors on what role they can play in improving the curricula.



2. Theoretical framework

This chapter will set out the theoretical foundations of the report. It starts by briefly describing the field of research on economics education. It then turns to the core question of what economics is, a 'field' or a 'method', tracing the history of that debate into the present. Building on that distinction, it asks what kind of knowledge and skills professional economists need, compared to academic economists. Finally, it explores how this distinction translates to the education system, and sets out the four main dimensions that should be considered when analysing curricula in economics. We argue that in the bachelor programs, learning to understand the economy in a broad sense should take primacy over the narrower goal of mastering the mainstream academic economist's research toolkit. This forms the theoretical framework of our empirical work.

2.1 Literature review

In the 1960s, the Committee on Economic Education of the American Economic Association started to organize annual sessions on economics education, where research findings could be presented and discussed. Rendigs Fels (1969) was one of the first to recognize the study of economics education as a serious scholarly practice. He argued that research on economics education should make use of quantitative methods and sometimes economic theory. In that same year, *the Journal of Economic Literature* initiated the start of a journal dedicated to research on economics education: the *Journal of Economics Education*, which today is published in four editions per year. Clearly, a serious amount of research is done on economics education.

But on what topics does this research focus? A recent literature survey by Allgood, Siegfried, and Walstad (2015) indicates that most efforts within studying economics education are dedicated to the questions how to further develop, stimulate and optimize economics teaching- and student performances within economics curricula. Such research is often based on econometric theoretical foundations, and elaborates on issues as student choices, classroom experiments, peer effects, online instruction, class size, and the benefits and costs of alternative pedagogies.

In sum, substantive scholarly attention is paid to the analysis of economics



education, but this is generally focused on improving results within a fixed curriculum. Very few scholarly resources are in fact devoted to an assessment of the *content* of the teaching materials and textbooks. Fortunately, this appears to be changing in the wake of recent discussions on economics education.

The *Institute for New Economic Thinking* created an Economics Curriculum Committee to identify problems with the current undergraduate curricula in the US and the UK, outline principles of reform, and devise concrete deliverables for reform. The committee surveyed six leading economics departments in the US and concluded that the programs were dominated by orthodox economics and mathematics, often used the same textbooks, and lacked attention to interdisciplinarity and historical perspectives (Neilson, 2010). For the UK, the committee surveyed the structure and content of twelve top ranking undergraduate economics programs. Again, it found that universities all had a similar structure, summarized as follows: "*compulsory micro, macro and quantitative courses in the first two years, and a third year based almost entirely on options; they emphasise the mathematics on the micro side and the policy on the macro side; and they are almost entirely devoid of compulsory qualitative elements.*" (Wigstrom, 2016).

The members of the *PEPS-Economie Students' Association* conducted research into French undergraduate economics curricula by mapping course titles (PEPS-Economie, 2014). Their research found a lack of pluralism and attention to develop a critical understanding of economic phenomena. German student organizations have applied the same framework to all German undergraduate programs (Fauser & Kaskel, 2016), and the *International Student Initiative for Pluralism in Economics (ISIPE)* used this framework to do a comparison between countries (Jatteau, 2016). These studies come to the same conclusion as their French counterpart: neoclassical economics dominates, other theoretical approaches and disciplines get only marginal attention, qualitative research methods are absent, and training in historical awareness and critical reflection is lacking.

In the United Kingdom, Earle et al. (2016) have reviewed and analysed 174 undergraduate economics modules at seven British universities. Based on exam papers and course outlines of the 2014/2015 academic year provided by students from these universities, they concluded that British economics students mainly learn to operate economic modelling in their education rather than studying real world economic problems. Moreover, they find that neoclassical economic thought dominates within the walls of British universities. Hence, Earle et al. (2016) conclude



that undergraduate economics programs in Britain are nothing less than an “indoctrination into the neoclassical way of thinking about the economy” (p. 54).

In France, the Ministry of Education (2014) investigated the content and institutional tenets of curricula of bachelors programs in economics. They concluded that the programs were not sufficiently preparing students for their future roles in society. The report also incorporated a discussion of the required reforms. It argued that curricula should provide students with a multidisciplinary approach to economics. Moreover, the report concluded that systematic attention should be paid to the real economic world, including its institutions. Besides, it urged for reforms when it comes to human resource policies within the economics faculties of French universities.

In the Netherlands, Onderstal and Hollanders (2016b) have evaluated the content of bachelor's curricula by adding up the amount of ECTSs (study credits) that are dedicated to different sub-topics within the nine different Dutch economics curricula. Based on their results, they pointed to a market failure in the provision of economics education; there is too little product differentiation (differences between universities). Moreover, they concluded that the curricula seem to lack attention for related disciplines as sociology, governance studies and philosophy, and do not stimulate students to develop a broad view on the economic system.

All in all, this report is not the first one to investigate the content of economics curricula. However, by going beyond the names of courses, looking at the specifics of every course, and underpinning the empirical findings with a substantive theoretical framework, this research does provide an unprecedented level of empirical detail on the content of the Dutch bachelor's curricula. As far as we know, it is also the first research of its kind internationally, in terms of analysing curricula on such a fine-grained level. With this research, we hope to build on the above publications, and deepen the lines of inquiry they have opened. Any students or researchers wishing to do similar research in their own country are encouraged to contact us. We will gladly discuss the experience we gained doing this research, and share our methods wherever that may be useful.



2.2 A brief history of economics

2.2.1 What is economics?

At the heart of discussions about the economics curriculum lies a rarely asked question: what should the purpose of an academic economic education be? In our view, its core purpose should be to help students understand how the economy works.

To many readers, that may sound like a silly tautology, but there is in fact quite some disagreement about whether this actually should be the goal of economic education. We believe this disagreement partly originates in the fact that university education entails *academic economists* teaching (future) *professional economists*, and that these two groups have very different skill requirements. Another part of the answer can be found in the peculiar historical trajectory the economics discipline has taken over the past century. These two issues centre on the foundational question: "what is economics?"

The setup of an academic education in economics is closely related with the activities of academic economists, who design the curriculum and teach the courses. A key question is therefore: how do academic economists define what they are doing? What is 'economics'? Two main views on this have emerged from the debate. The first view is that economics is about a certain method of inquiry, a way of doing research and a way of looking at the world -- 'thinking like an economist'. The second view is that economics is about a field of study, which could be defined as 'the economy', or 'the economic system'. In order to better understand the two views, the history of the debate between them will be discussed below.



Definitions and explanations of important concepts

As the concepts used to describe economic sciences are open to multiple interpretations and often closely related to each other, it is worthwhile to further define the concepts used in the report. Therefore, this text box will make explicit what we mean by several of these concepts, and how we separate concepts that are closely related to each other.

1. What is the difference between a discipline, an approach, a sub-branch and a model?

Within the social sciences, a discipline is a branch of science that can be separated from other disciplines by (1) the characteristics of the societal system it studies, or (2) the field in society it studies. For example: sociology, economics and political science.

Within a discipline, there are theoretical approaches. These are distinct analytical frameworks consisting of specific concepts, assumptions and reasoning that are used to describe and/or understand various elements of societal systems. Approaches are thus distinguishable from each other in their analytical framework. For example: Austrian economics, feminist economics and neoclassical economics.

Within a theoretical approach, there are sub-branches. We define sub-branches as sets of ideas that are very similar, which thus form specific versions within a more general theoretical approach. The different sub-branches within an approach can thus be in opposition to each other. For example, the sub-branches new classical macroeconomics and new Keynesian economics, both part of neoclassical economics, have since their existence been in debate with each other. Neoclassical economics thus consists of many sub-branches. Others are environmental economics, general equilibrium theory, monetarism, neo-Keynesian economics and new institutional economics.¹

Of course, neoclassical economics is not the only theoretical approach that entails different sub-branches. Post-Keynesian economics, for instance, consists of the sub-branches Cambridge Keynesians, early North American post Keynesians, fundamentalist/financial Keynesians, Kaldorians, Kaleckians, modern monetary theory and Sraffians/neo-Ricardians. Similar lists could be drawn up for each of the approaches we distinguish in this study.

Within a sub-branch, there are models. Models describe particular relationships between concepts and phenomena. Within a theoretical approach, two models can thus give a (slightly) different explanation of the same phenomena, even though the models are based on the same framework. For example, the Solow-Swan and Ramsey-Cass-Koopmans model explain economic growth (slightly) differently, while they are both part of neoclassical growth theory.



2. What are neoclassical economics and mainstream economics?

Neoclassical economics is one of the theoretical economic approaches distinguished in this report. Among its core axioms are methodological individualism, in a world populated by rational and selfish actors (people and companies), whose decisions are solely motivated by expected utility maximization based on their given and stable preferences. Mathematically deduced from these assumptions about individuals, an analysis of markets arises. These markets work mainly through price mechanisms; their efficiency as well as their potential failures are analysed. Appendix 3, tables 13-16 and J. Morgan (2015) contain a more extensive discussion of neoclassical economics.

This report explicitly differentiates between neoclassical economics and mainstream economics. We follow Colander, Holt, and Rosser (2004b, p. 5) in seeing mainstream economics as a sociological category, rather than a coherent body of thought:

"It is in large part a sociologically defined category. Mainstream consists of the ideas that are held by those individuals who are dominant in the leading academic institutions, organizations, and journals at any given time, especially the leading graduate research institutions. Mainstream economics consists of the ideas that the elite in the profession finds acceptable, where by elite we mean the leading economists in the top graduate schools. It is not a term describing a historically determined school, but is instead a term describing the beliefs that are seen by the top schools and institutions in the profession as intellectually sound and worth working on."

Mainstream theory is not necessarily a coherent body of thought; it is whatever ideas are dominant at the time, whether or not these depend on shared axioms. Single approaches like neoclassical theory, on the other hand, are distinguished by their theoretical tenets, not by their current popularity. This means the categories 'mainstream' and 'neoclassical' do not overlap completely. For example, it could be argued that neo-Keynesian economics is no longer part of current mainstream economic research, even though it is a sub-branch of neoclassical economics. Behavioural economics, which does not adhere to the neoclassical axiom of perfect rationality, is part of the mainstream (Davis, 2006).

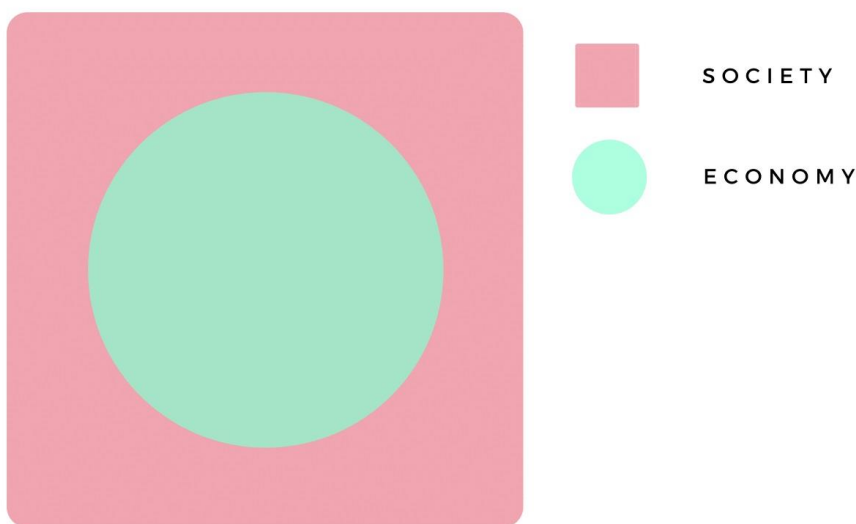
Different theoretical approaches and sub-branches thus flow in and out of the mainstream over time. Currently however, as this report shows, the mainstream in teaching overlaps very much with the theoretical approach known as neoclassical economics.



2.2.2 Historical pluralism in economics

In the two centuries following its inception the discipline of economics, or rather political economy as it was called then, was generally defined by its *object of study*: the economic system. Economists like Smith, Ricardo, Marx, Sombart, Veblen, Keynes and Schumpeter had very different theoretical perspectives; what they shared was the aim to understand this system. However, most of these economists did not only study the economic system. They nearly all embedded it into wider social scientific work, understanding the economy as a sub-system of society, as shown in Figure 1.

Figure 1: the original view of 'economics': the economic system, embedded in broader society.



The view of an economic science limited only in its object of study, without restraints on the methods used, remained the predominant *modus operandi* of economists throughout the 19th century. Since the modern economy is too big, diverse and changing a creature to be caught in any single ontological system, the field was characterized by a rich diversity of methodological and theoretical approaches.

“When economics became professionalized towards the end of the nineteenth century, there was still great variety within the discipline. It encompassed historical economics (especially in Germany), a wide variety of interpretations of marginalism (from the mathematical approach of Walras and



Fisher to the less mathematical and very different approaches of J. B. Clark and the Austrians), Veblen's evolutionary economics, and Commons' law-based institutional economics." (Backhouse, 2002, p. 275)

This spirit of pluralism, enabled by a broad agreement on the *subject matter* of the field, largely remained in place during the first half of the 20th century, until the Second World War.

"During the interwar period, pluralism characterized economics on many levels. Whereas institutionalism and neoclassicism coexisted, they were individually also highly pluralistic. Institutionalism was a nonexclusive, broad movement and neoclassical economics was highly diverse as well. In addition, individual members of these groups adopted a variety of theoretical stances." (Sent, 2006, p. 82)

To get a more concrete taste of how economics was practiced as well as taught in the middle of the 20th century, Bowen (1953) provides an extensive review of graduate economics programs in the United States commissioned by the American Economic Association. Backhouse and Fontaine (2010a, pp. 49-50) summarize its findings as follows:

"The result of extensive consultation, the Bowen Report argued for a 'common core' for graduate work. It should consist 'primarily of economic theory including value, distribution, money, employment. ... No one, it was argued, had claim to an economics PhD without 'rigorous initiation' into these areas as well as economic history, history of economic thought, statistics, and research methods. ... Mathematics was placed alongside Russian, German, and Chinese, in the sense that it was considered important to have some economists to have knowledge of it, but it was not necessary for all to do so."

In short, in the period up to the Second World War, there was a great diversity of theoretical approaches in economics, a large variety of empirical methods, and a strong emphasis on both economic history and history of economic thought (M. Morgan & Rutherford, 1998). This diversity of approaches was thought necessary in order to capture all important aspects of the economic system.

2.2.3 The growing dominance of neoclassical economics

In the midst of this theoretical and methodological diversity, a new theoretical view had come up and was gaining prominence: neoclassical economics. This theoretical approach originated in the 1870s with Léon Walras, Carl Menger and William Stanley Jevons (Biddle et al., 2008; Blaug, 1997). It was further popularized by Alfred Marshall, who was very careful not to stretch its assumptions, applying



the theory while paying a lot of attention to context.

Lionel Robbins was the first one to define neoclassical economics as 'the economic approach' (Backhouse & Medema, 2009; Fine & Milonakis, 2009a). He wrote: *"Economics is the science which studies human behaviour as a relationship between ends and scarce means, which have alternative uses."* (Robbins, 1932, p. 15). Since then, there has been plenty of discussion over what exactly this neoclassical *economic approach* entails, but the core has remained largely centred on Robbins' definition. For the definition used in this report, see Appendix 3, table 13.

In the period following the Second World War, a certain form of the neoclassical approach became dominant in the research of economic faculties throughout the Western world. This tendency towards intellectual monopolization was and remains a unique development within the social sciences, as other disciplines such as psychology and political science have always been characterized by a pluralism of approaches (Backhouse & Fontaine, 2010b). Blaug (2003) calls this era the Formalist Revolution, as it is characterized by axiomatization and mathematization of economic theories⁴.

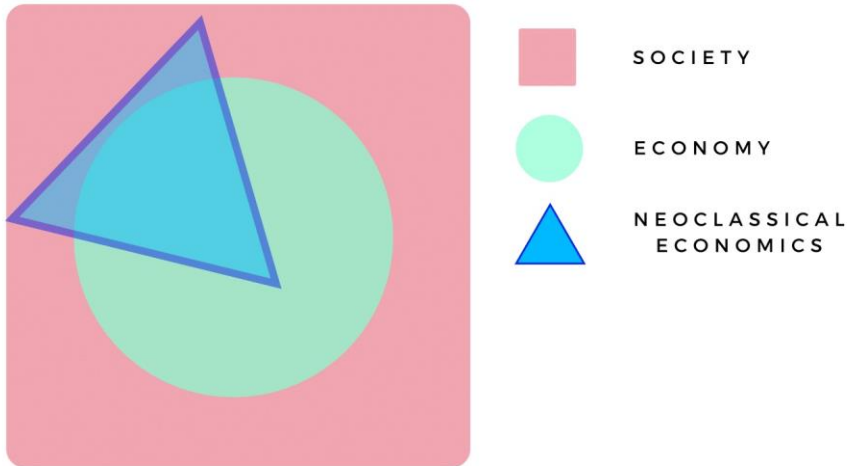
It was from the 1970s that a real narrowing set in, as *"field after field came to be based on rigorous rational-choice foundations"* (Backhouse, 2002, p. 314). As G. Becker (1976, p. 5) put it: *"The combined assumptions of maximizing behaviour, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach as I see it."* The curriculum, with some delay, followed suit.

This increasingly homogenized approach, however, was still used by economists to study only the economic system. In terms of figure 2, only the green circle under the blue triangle was studied by academic economists.

⁴ For an discussion of what formalism in economics is, see Backhouse (1998).



Figure 2: the post-WWII mainstream economics increasingly studies the economic system using exclusively the neoclassical economic perspective.



The part of the economic system studied by neoclassical economists, can however also be studied from different perspectives. Figure 3 shows that parts of the economy can also be explained by other perspectives such as the Austrian School, Radical and Original Institutional Economics.

In sum, the dominance of a single theoretical approach to economics creates blind spots and one-sidedness. First, it creates ontological blind spots, as no single approach can give a good explanation of every aspect of the economic system. For example, power relations, the origins of preferences and global value chains (GVCs) are hardly captured in neoclassical economics. A branch of (non-neoclassical) literature has emerged around the role GVCs play as force behind globalization (see e.g. Baldwin, 2016). The organization of value chains and impact of these chains on different groups across societies can best be understood on the meso-economic level. As the consequence of regional integration of GVCs, international trade does not just affect which country gets what; it rather shapes which groups (meso-level) in society get what within and across countries. As the neoclassical approach is built around a thought-structure in which the behaviour of individual agents aggregates up to the macro-level of a society as a whole (Weintraub, 2007) and considers the existence of societal groups and civil society to be exogenous to economic processes, these meso-level dynamics can better be understood by approaches that actually integrate *groups* (as an ontological category) into the core of analysis, such as Original Institutional Economics and

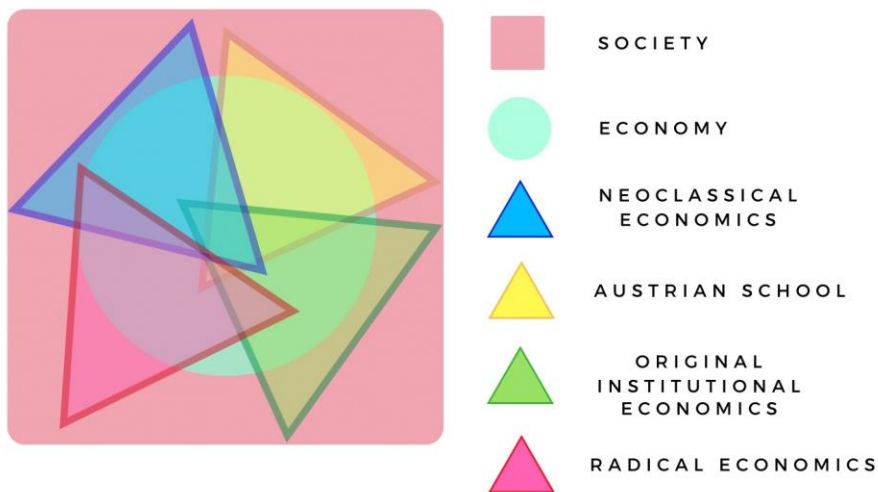


Radical Economics.

Second, in those parts of the economic system that it does explain, it creates epistemological one-sidedness, since a single approach gives only one of the possible explanations of certain parts of the economic system or economic phenomena it studies. For example, the neoclassical approach generally leads one to see the privatization of property as the most efficient solution to the allocation of resources. Other approaches such as the Austrian School (Boettke, 1998; Von Mises, 1949) and Original Institutional Economics (Berle & Gardiner, 1932; Hodgson, 2015) however see institutions (tradition and law in particular), as important factors in explaining the existence and workings of private property, thus shedding a new light on the phenomenon.

On a technical note, to keep the subsequent figures clear and minimalistic, only the neoclassical approach on the economy will be shown; other approaches are left out of those figures.

Figure 3: various theoretical approaches complement each other in two ways: by illuminating various parts of the economic system, and by casting a different light on those areas where they overlap.



But how does all this apply to the Netherlands? Historically, there used to be a quite distinct 'Dutch' approach to economics (Wilts, 1998).

"In the Netherlands, economics used to be a subject for lawyers and 'men of practical affairs'. What mattered for these groups was a general understanding of both human economic behaviour and economic processes and a capability to read statistics. (...) In the period directly preceding and following World War II, economics in the Netherlands was rapidly remodelled according to an ideal of 'scientific knowledge', which resembles the ideal in the natural sciences." (Plasmeijer & Schoorl, 2000)

This implied that neoclassical economics became more and more central after WW2 throughout the Dutch economic faculties as well. Due to the increasing orientation to the Anglo-Saxon way of practicing economics, this has put an increasing strain on the typical 'Dutch' type of academic economics: practical, policy-oriented and knowledgeable about the Dutch economy (Van Dalen & Klamer, 1996). This socially relevant manner of practicing economics has been increasingly marginalized (Van Dalen et al. 2015).

Whig history: Is the current mainstream always the best?

Some economists interpret developments within economics as Whig history (Samuelson, 1987). The term Whig history was first coined by the English historian Herbert Butterfield in 1931 to describe interpretations of history that saw everything as becoming automatically better and specifically saw, the British constitutional settlement as one of the highest achievements in human history (Butterfield, 1981 [1931]).

Applied to the development of economics, this teleological view means that truth accumulates and the science of economics progresses linearly. The only cause of real change within economics is improvement. The 'best' theories will be the most influential and all the 'good' ideas of the past have been incorporated in the mainstream. Mainstream as a category therefore becomes identical to the 'best', anything outside it is by definition irrelevant and the past becomes an imperfect version of the present. From this perspective it is no problem that mainstream economics since the Second World War has been dominated by neoclassical economics, since its dominance can only be a result of its superiority, having incorporated all relevant ideas (Freeman, Chick, & Kayatekin, 2014).



Such a simple view of scientific progress is certainly attractive. However, historians of economic thought and other experts specialized in studying developments within economics generally view Whig history as incorrect. They view it as overly optimistic regarding the internal workings of science and note it ignores all external influences on science. In decades of research, they have identified several of other important factors which influence the development of economics (e.g. Anderson, Ekelund, & Tollison, 1992; Backhouse, 1994; Biddle, Davis, & Samuels, 2008; Blaug, 2001; Cedrini & Fontana, 2015; Colander & Landreth, 2004; Davis, 2006; Dequech, 2017; Fourcade, 2006; Gans & Shepherd, 1994; Heilbroner, 2011; Kuhn, 1962; Lakatos, 1980; Lee, 2009; Leeson, 2000; Maki, 1992; M. Morgan & Rutherford, 1998; Rutherford, 2011; Weintraub, 1999; Yonay, 1998).

The most important among these are the organizational structures within universities and other research institutions, social networks, changes in the economy and cultural and political context. Such institutional factors have prevented many relevant ideas from being incorporated within the current mainstream, and prevented ideas within the mainstream from being scrutinized and discarded. Historians of economic thought thus cast serious doubt on the assumption that the current mainstream is always necessarily better.

In short, it is a problem if the mainstream is dominated by one approach, since it can neither be assumed that this dominant approach is the 'best' approach, nor that it has incorporated all relevant ideas from other approaches.



2.3 Recent trends in economics

Recently, two major trends are visible in the work of economists: a widening of the range of topics studied, and an expansion in terms of approaches used. The following section will briefly discuss these trends, before drawing conclusions regarding their societal impact.

2.3.1 A widening range of topics

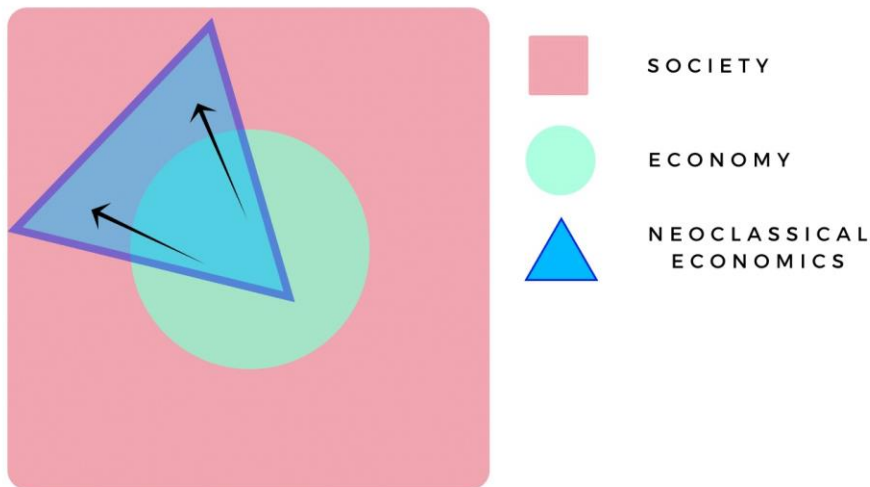
In a response to Robbins's definition of the economic approach, the term *economic imperialism* was coined in 1933 (Fine & Milonakis, 2009a, p. 5). However, up to the 1980s most economists remained sceptical towards the idea, as they thought its theoretical concepts were only of use in market contexts, where a certain form of rationality was dominant. This changed in the last decades of 20th century, when the neoclassical approach gained almost complete dominance over economic faculties and the economic discipline acquired a high status compared to other social sciences (Backhouse & Fontaine, 2010b; Fourcade et al., 2015).

As result, economists started expanding their scope of inquiry, applying their approach increasingly to other topics than the economic system. The most famous proponent of this project was G. Becker (1976), with his landmark publication *The economic approach to human behaviour*. Most other social scientists still view this approach as out of place and sometimes even bizarre, with perhaps the exception of rational choice theorists. Such work should not be interpreted as a multidisciplinary endeavour. While it does engage with the topics of other disciplines, it does not engage with its approaches.

A more common term for the phenomenon is "economics imperialism", since generally, the economic method is applied to subject matter other than the economic system without any engagement with previous study of that subject matter by non-economists; the economists are entering this new territory on their own terms only. Such intellectual imperialism is facilitated by the fact that "the economic method" is often vaguely defined as the "science of scarcity" or "the study of choice". As Coase (1978, p.207) notes: "By defining economics as the 'science of human choice', economics becomes the study of all purposeful human behaviour and its scope is, therefore, coterminous with all of the social sciences."



Figure 4: In recent decades, neoclassical mainstream economists have increasingly used their approach to study topics outside the economic system, such as parenting, cheating at tests, suicide and other social phenomena.



A well-known contemporary of Becker, Jack Hirshleifer (1985), also strongly favoured such 'economic imperialism', as he called it. He wrote that "economics really does constitute the universal grammar of social science". So, what exactly does 'economics' mean in such a context? The definitions often differ slightly, but are never far removed from Becker's: "[the economic approach] is a method of analysis. (...) The analysis assumes that individuals maximize welfare as they conceive it. (...) Their behavior is forward-looking, and it is also assumed to be consistent over time." (1975, p. 1).

How does such 'economic imperialism' work in practice? As Posner (1987) explains:

"There is an open-ended set of concepts (such concepts as perfect competition, utility maximization, equilibrium, marginal cost, consumers' surplus, elasticity of demand, and opportunity cost), most of which are derived from a common set of assumptions about individual behavior and can be used to make predictions about social behavior; and that when used in sufficient density these concepts make a work of scholarship 'economic' regardless of its subject matter or its author's degree. When economics is 'defined' in this way, there is nothing that makes the study of marriage and divorce less suitable a priori for economics than the study of the automobile industry or the inflation rate". (quoted out of Fine & Milonakis, 2009a, p. 6)



This revolution is rarely discussed very publicly, although it is signalled by projects like *Freakonomics* (Levitt & Dubner, 2010). Its authors define economics as 'the study of incentives', which is slightly different from Robbins' and Becker's definitions, but retains their basic assumptions as well as the idea of 'economics as an approach'. In the book, they bring together fascinating research by economists on a variety of topics, ranging from parenting strategies to the Ku Klux Klan to schoolteachers' propensity to cheat on standardized tests. Increasingly, economists are now using their method of inquiry to study things other than the economic system, such as marriages (Grossbard-Shechtman, 1993), suicide (Kimenyi & Shughart, 1986), the game of tennis (Klaassen & Magnus, 2014), discrimination (G. Becker, 2010) and even the cultural socialization of young children (Angrist, Lavy, & Schlosser, 2010).

Since the 1980s new theories originated, which explained political and social structures on the basis of neoclassical economics in combination with new concepts such as imperfect information and transaction costs. Examples of these new theories are *new institutional economics*, *imperfect information economics* and *public choice economics*.⁵

'Economics as an approach' also appears to be the currently dominant view in the Netherlands, in research as well as in teaching. Arnold Heertje called economics "*the science of the wisdom of the eternal shortage*" (2006, p. 35). Gautier (2016) defines contemporary economics as "*a bundle of methods, mainly useful to study human behavior in situations of scarcity*". In the same piece, he suggests that students who wish to study the economic system go to other faculties to do so. At the secondary school level, the current economics curriculum is based on a similar view (Commissie-Teulings, 2002, 2005). The view on what an economics education is about is also reflected in what economics programs themselves argue the curriculum is about. For instance, the front page of the economics program of the University of Amsterdam reads:

"Economists are specialised in analyzing trade-offs. At the heart of this field is the notion of scarcity of means (commodities, time) in relation to unlimited needs. This forces subjects to make choices as to how to use their means" (University of Amsterdam, 2017)

⁵ For an overview of the development of economic(s) imperialism, see Fine and Milonakis (2009a).

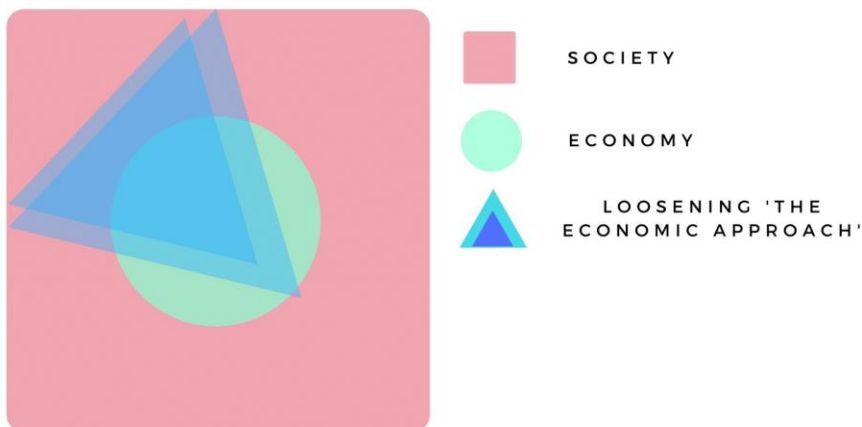


2.3.2 An expansion in terms of approach

Even more recent than the expansion in terms of topics is the second trend: an expansion in terms of approach. Back in the 1950s and 1960s, game theory was posed as a solution to the problems with neoclassical general equilibrium theory, as it focuses upon disequilibrium analyses. It was thus not an approach challenging neoclassical economics, but more an additional tool that was incorporated into neoclassical thought as much as possible. However, this expansion of approach did not change the axiomatic foundations of the mainstream economic theory.

Recently, the initial assumptions of this "economics as an approach" are being loosened, notably those of rationality, equilibrium and non-complexity (Cedrini & Fontana, 2017; Colander, Holt, & Rosser, 2004a; Davis, 2007). This is visualized in figure 5 below. As Van Damme (2016) puts it, the limiting assumption of a homo rationalist "...prevents economists from using the full strength of the economic method". As the empirical section will show, a limited amount of this expansion of approach has made it into mainstream textbooks.

Figure 5: the foundational assumptions of 'the economic approach' are currently being loosened by the advent of behavioural, experimental, complexity and evolutionary economics.



2.3.3 Future directions

Since the 'economics as an approach' has come to dominate (Dutch) economics faculties, scholars studying 'the economy' have become more and more dispersed. There are many who use approaches that fall outside the neoclassical mainstream to study the economy. However, these academics have increasingly been forced



to base themselves in other social science departments, such as human geography, anthropology, sociology and political science, or business departments. At the same time, more and more academics in economics departments study other phenomena than the economic system.

If this trend continues at the present pace, it might become necessary to redefine economics departments as 'scarcity-focused quantitative social science departments' or something similar. Given the fundamental character of this trend, it is surprising how little public scrutiny these multiple revolutions in the definition of 'economics' have received. We were therefore very glad that the KVS (the Royal Netherlands Economics Society) decided to dedicate its yearbook of 2016 to these discussions. That has been a great help in clarifying recent developments and debates. As for the degree to which this recent broadening of 'the economic approach' is reflected in the *teaching* of economics, that is the subject of this research and will be treated later in more detail.

Table 1: periodization of developments within economics

Period	What do economists study?	How do they study that?	Time (roughly)
Broad economic science	Economic system as embedded in society	Large diversity of approaches	1776 - 1945
Neoclassical dominance	Economic system, not embedded in society	Neoclassical economics	1945 - now
Neoclassical scientific imperialism	Economic system and other social phenomena	Neoclassical economics	1976 - now
Loosening of 'the economic approach'	Economic system and other social phenomena	Neoclassical economics + new mainstream approaches ⁶	1990 - now

⁶ Mainly behavioral, complexity, experimental and evolutionary economics.



2.4 Current debate

As is discussed, two camps can be clearly distinguished today: one that defines economics as a topic and one that sees economics as an approach. Both choices of course carry complications: it is hotly debated what exactly 'the economic approach' looks like, and it is equally unclear where the boundaries should be drawn around the object of study we call *the economy*, or *the economic system*. To clarify this, their current positions will briefly be reviewed.

The first camp consists of those who define economics as an object of study, *the economy*, which should be studied by a variety of methods ranging from ethnographic work to mathematical complexity theory, and by a variety of theories ranging from Marxism to the Austrian School. This camp often defines its *object of study* using some version of Karl Polanyi's substantivism. Polanyi (1957, p. 248) writes: "*The substantive concept is based on the empirical economy, defined as an instituted process of interaction between man and his environment, with results in a continuous supply of want-satisfying material means.*" Other definitions are also in use, but most of them focus on the structure of the material (re)production of society.

The second camp contains those who define economics as a specific scientific method of inquiry, *the economic approach*, which can be applied to any topic within the social sciences. As explained above, this camp does not agree completely on the definition of economics, but common elements are rationality, equilibrium, methodological individualism, formalistic methodology and a focus on market and price mechanisms.

To prevent misunderstanding, these two conceptions of economics do not argue totally different things. They rather put the main focus on different things, as their primary goals differ. For the first camp the primary goal is *understanding the economy* and in order to achieve this, they use any scientific means necessary, neoclassical economics included. For the second camp, *thinking like an economist* is the principle goal and being able to explain parts of the economy is an (intended) consequence of this (W. Becker, Walstad, & Watts, 1994).



Not orthodox, not heterodox, not relativist, but pluralist

In this report, we focus on gathering and presenting an accurate picture of the contents and teaching materials of today's economics curricula. We are not trying to promote any particular curriculum. But we do work from certain basic assumptions. At Rethinking Economics, we believe that a good education is pluralist in its approach. To teach people to think independently, they need to get acquainted with a variety of theoretical approaches, a variety of points of view and a variety of starting assumptions or axioms.

In theoretical terms, this means that we believe that no single approach is valid to answer all questions. The neoclassical approach yields a great number of insights about how the world works. It misses out on equally many other important points. Several so-called 'heterodox' approaches shed light on other crucial facets of the economy. But within that group, there is again no single approach which is suitable for every question. Therefore, we believe that a combination of approaches is required to gain anything close to a full understanding of the economy.

Does this mean we are relativists, seeing all approaches as equal because we think of truth as just a matter of opinion? No. We do believe the various approaches have their own strengths and weaknesses. But this does not mean that they all can explain specific phenomena equally well. By comparing how different approaches are able or unable to provide a good explanation of phenomena, it should be decided which approach is superior for a specific case.

We choose not to put our faith entirely in one approach, because we do not assume that one single approach will always explain every case better than all the other approaches. In our view this is far from a radical position, but rather one in the spirit of Rodrik (2015), who defines economics as the art of choosing the right model for the question at hand.

Of course, the fact remains that study programs have a time constraint; hard choices must be made. This report is no platform to present our own preferences in that respect. Besides, we would welcome it if universities each make their own choices and thus differentiate themselves from each other, as this would give us as students a real choice to what kind of economics bachelor program they want to study. But for those who are looking for thought-provoking blueprints, our forthcoming website www.economiceducation.org and www.economieonderwijs.nl will offer suggestions and further links to many inspiring curriculum designs of universities around the world.



2.5 Are we training academic or professional economists?

The above section discussed what academic economists do. This is important to understand the context of economics faculties, which are not just academic research facilities, but also the sites of our education. What skills and knowledge do economists actually need in their professional life? The Van Dalen et al. (2015) survey provides guidance at this point, differentiating between the skills required by academic economists and those required by professional (non-academic) economists.

What are the skills academic economists need to obtain? 64% of the Dutch economists think that it is very important for an academic economist to be good at empirical research. 43% is convinced that an academic needs to know a lot about one specific topic. 41% thinks the academic economist needs to be clever in solving mathematical problems, and 39% feels that it is important for academic economists to excel in mathematics. Besides, non-content characteristics like the ability to earn grants and the competence to network with prominent colleagues are valued as essential. Overall, all these properties are seen as more important for an academic than having broad knowledge of economic literature (32% values this as 'very important' for an academic economist). Close to the bottom of the list is "profound knowledge of the economy itself" (23% values this as essential skill).



Thinking like an Economist?

Table 2: Ranking of qualities of the ideal academic economist (Van Dalen et al., 2015)

	Very important	Somewhat important	Unimportant	Don't know
Being good at empirical research	64%	31%	2%	2%
Ability to attain grants	59%	34%	6%	2%
Competence to network with prominent colleagues	57%	35%	4%	3%
Knowing a lot about one subject	43%	39%	13%	5%
Being good at solving mathematical-economic problems	41%	47%	9%	3%
Being excellent in mathematics	39%	49%	9%	3%
Broad knowledge of economic literature	32%	45%	20%	2%
Profound knowledge of the economy	23%	39%	34%	4%
Appearing regularly in media	12%	36%	48%	5%



A quantitative analysis of economics bachelor curricula in the Netherlands

Table 3: Ranking of qualities of the ideal professional economist (Van Dalen et al., 2015)

	Very important	Somewhat important	Unimportant	Don't know
Vision on future developments	75%	21%	2%	2%
Making economics simple and understandable	70%	24%	4%	2%
Profound knowledge of the Dutch economy	55%	37%	7%	2%
Placing things in historical context	53%	39%	7%	1%
Broad knowledge of economic literature	50%	42%	7%	1%
Mathematical/statistical qualities	45%	49%	4%	1%
Respond to political agenda	40%	45%	13%	2%
Engineering consensus	35%	37%	23%	4%
Knowing a lot about one subject	21%	60%	18%	2%
Having good contacts with media	18%	47%	30%	5%



The profile of skills a professional economist needs to possess is very different. Three out of four Dutch economists think it to be very important for a professional economist to have a vision on future developments. 70% believe it to be an essential skill for a professional to make economics simple and understandable. More than half of the Dutch economists believe that having profound knowledge of the Dutch economy, and being able to place phenomena in their historical context are crucial properties, while half of the surveyed economists highly value professionals having a broad knowledge of economic literature. Dutch economists generally think each of these properties to be more important than having mathematical and statistical skills or being expert on one specific issue.

All in all, it appears that there is no such thing as 'the economist', possessing a clear-cut set of characteristics. Rather, we can distinguish between professional economists and academic economists, very different subspecies. The fault line between the two groups appears to coincide strongly with the one discussed above. According to Dutch academic economists, professional economics could be defined by their subject matter, 'the economy', while academic economists could be defined by economics as an approach, 'thinking like an economist'.



2.6 Education for the 97%?

So, what should the economics bachelor curriculum look like? Should it focus on economics as a field, or economics as an approach? Faced with this choice, future academic economists might prefer economics as an approach, because academic work requires deep training in the mainstream methods of the discipline, rather than a broad overview of the field being studied.⁷

Professional economists would most likely prefer to study economics as a field, as they require a good overview of the economy, its history and its broader dynamics. Which of these two preferences should the curriculum designers focus on?

We are convinced that economics should be studied as a field, rather than as an approach, for two reasons. First, very few of us go into academia. Less than 3% of all students go on to do a PhD, and only a fraction of those go on in the academic world (de Goede, Belder, & De Jonge, 2014). The other 97% are better served by an education that is focused on learning to understand the economy, rather than on learning to 'think like an economist'.

Second, before definitively becoming a member of the academic community, students that wish to pursue an academic career generally receive six more years of specialized training after they have obtained their bachelor's degree (with a two-years master's degree and a four-years PhD). In other words, the 3% of the bachelor's population that wishes to train to become an academic economist has sufficient time after the BSc to obtain a toolkit of advanced academic skills. In fact, future academic economists might be well served with a broader, multidimensional overview of their object of study before diving in at the methodological deep-end.

So is there, in the end, a real trade-off of student interests involved here? We do not think so. A bachelor's curriculum designed around 'understanding the economy' serves all future economists; the small minority that has years of academic specialization ahead, and the great majority that goes into careers as

⁷ This assumes that academic economists do not wish to focus on studying the economy as a field, but rather go with the current trend of economists focusing almost exclusively on neoclassical economics in terms of approaches, applied to any topic at all. As discussed above, this would certainly provide interesting research, but it also leaves big gaps in terms of academically studying the actual economy. As discussed above and in Tieleman et al. (2016), the neoclassical glasses do not see every aspect of the economy clearly - no single approach can.



policy maker, journalist, consultant, manager, or something related.

A curriculum can only do so when it provides bachelor students with the means to make economic dynamics understandable. A good program should help students grasp how and why the economy works the way it does. A good program should enable us to develop a vision on the great challenges of our time: climate change, globalization, financial stability, technological development and migration. These issues have little place in today's textbooks, yet they will shape tomorrow's economy. A good program should make us as students familiar with the broadness of thought the discipline offers. A good program should place the policy challenges of today in their historical contexts.

We therefore recommend that bachelor programs should focus on understanding the economic system. Such programs should not be hemmed in by axiomatic assumptions, or an artificial focus on 'scarcity' as the core mechanism organizing the economic system. We as students want to understand the economic system, that vital system which provides the lifeblood of the society, using any scientific tools necessary. In the section below we set out the four basic tenets that such programs should, in our view, adhere to.



3. The four dimensions of a suitable curriculum

There is more than one way in which a suitable curriculum can be designed, and this report certainly does not aim to provide the reader with an exact blueprint of an optimal economics curriculum. Still, not all curricula are created equal. Some curricula do better than others in preparing students for their societal role. To enable debate, a working definition of the basic tenets of a suitable economics curriculum is required.

To do so, the following section will discuss four general conditions an economics curriculum should meet in order to train economists properly. These four pillars of an economics education are discussed in Dutch in Tieleman et al. (2016).

1. **A suitable toolkit of research methods.** We as students should be equipped with a broad set of research skills, in order to be able to technically grasp the diverse, interdisciplinary and complex nature of contemporary economic affairs. The first empirical question of this research will therefore be: what research skills do we as students actually learn?
2. **A diverse theoretical approach to the economy.** On its own, any single theoretical perspective is limited in its ability to illuminate all sides and aspects of economic phenomena. Every theoretical perspective has its strengths and weaknesses. Economics curricula should benefit from this plurality, by making us as students familiar with a broad set of theoretical approaches. The second empirical section of this report will focus on what different theoretical approaches and disciplines are taught, and in what proportions.
3. **Real world economics.** Nothing is as practical as a good theory. However, theories should never stand in a vacuum. They should be applied, serving as means to understand the real world. As students, we should become familiar with the messiness of the real world, and get an intimate understanding of the relation between theory and reality. The third empirical section will discuss how much attention current curricula pay to this.



4. **Critical, open-minded and reflective thinking.** Finally, we believe that at the time of graduation, students must be able to critically reflect on their own work, that of others, and real-world developments. Developing a critical attitude should therefore be encouraged in curricula. The fourth empirical section will focus on the extent to which this currently happens.

The following section provides a more detailed argumentation of how each of the four sub-questions should be understood.



3.1 A suitable toolkit of research methods

Providing students with the necessary research skills forms the basis for every economics curriculum. This starts with giving us a clear methodological framework. Which types of research methods are there? What are their strengths and weaknesses? In what contexts are they most useful? What hidden assumptions does one have when using certain quantitative or qualitative methods?

These questions form the basis of the research methods part of a curriculum. The main part consists of obtaining specific research skills. For an economist, obtaining quantitative research skills is vital. No other social science has developed such advanced techniques for quantitative analysis. The use of mathematical models is a powerful way to analyse policy measures and test hypotheses (Rodrik, 2015). Moreover, it can provide the reader with a very precise definition of certain assumptions and relationships. We therefore conclude that training in quantitative empirical methods such as various types of regression analysis, game theory, basic econometrics and broader statistical tools is essential.

However, economic life also involves elements that can best be understood through a qualitative research design (Chang, 2014). For example, to understand the dynamics in the banking system that lead to the development of socially dangerous sub-prime mortgage markets, detailed fieldwork and interviews with all sorts of bank employees are an absolute necessity. Likewise, to understand the field of power relations and interests surrounding the companies in the Rotterdam port, it is not enough to have data on flows of goods and investment around this sector. Open interviews, process-tracing and techniques like participatory observations among traders will reveal essential features otherwise left out of the equation.

Starr (2014, pp. 239-240) emphasizes that "*the key distinction between qualitative and quantitative research is not words versus number per se*" but "*open- vs. closed-end approaches to gathering data*".

"In standard quantitative research, a pre-determined set of information items is collected from research subjects (e.g. respondents to surveys) or data-reporting units (e.g. companies filing quarterly financial reports, meteorological stations reporting weather data, etc.), where the only information collected is what has been pre-specified in the research instrument. Research subjects cannot question the questions they are asked, add nuances or caveats, or explain the reasoning behind their response.



Thinking like an Economist?

Instead it is assumed a priori that the researcher knows the specific informational items that played a central role in the subjects' behaviours, perceptions and/or decisions, and can compellingly hypothesize how these items interrelate. In contrast, in qualitative studies, the approach to information gathering assumes that relatively flexible discussions with research subjects are needed for gaining a full and complete set of insights into the phenomenon of interest. ... the strengths of each –namely, depth and complexity on the qualitative side, vs. representativeness and statistical power on the quantitative." (Starr, 2014, pp. 240-241)

Moreover, even if a phenomenon can potentially be understood quantitatively, a qualitative research approach may still fit better. For instance, in economic studies of topics with a small number of cases, it is generally hard to derive solid conclusions from rigorous quantitative analyses. In such situations, qualitative research designs can complement or even substitute quantitative approaches. Additionally, many quantitative research projects would be enriched and deepened by adding a qualitative component, for example to understand the structure of the data, which is ultimately based on qualitative distinctions and categorizations (Mügge, 2016).

The relevance of both quantitative and qualitative skills for an economist means that economics curricula should also enable us to obtain skills in process-tracing, interviewing, fieldwork, case studies, focus groups, the design of qualitative surveys, critical discourse analysis and other ways of gathering qualitative data. Students should be provided with a mix of quantitative and qualitative research methods.

This is not to say that in a suitable curriculum, students must become experts in both qualitative and quantitative methods. Specialization must be supported. But because different methods have different (dis)advantages in different cases and topics, a good curriculum facilitates diversity of method. It enables students to (1) keep an overview of the different methods available, (2) distinguish which methods work in which cases, and (3) choose the right specialization for themselves from a pool of available methods.

In sum, the first sub-question is: what research skills do students learn?



3.2 A diverse theoretical approach to the economy

The economy is a hugely complex system, consisting of many subsystems. Take for instance the market for smartphones. That market does not only consist of dynamics competing suppliers and consumer preferences, but also of issues regarding vertical integration, global value chains, technological innovation, legal structures and rules of the game, intersections with other markets, and the politics of international trade and competition. This goes for many economic phenomena: they are best understood as being composed of different dimensions and elements.

With regard to these different dimensions, every single theoretical approach has its strengths and weaknesses. The neoclassical economics approach is based on the assumption of methodological individualism, focusing on the ways in which markets work and fail (Shaikh, 2016). This approach is particularly strong in making the beneficial workings of the invisible hand visible. Other approaches in turn deal more effectively with other aspects of economic life. The bigger picture has varying elements (competition, organization, politics, legality, et cetera) and each of them requires different approaches and assumption to be understood properly. Hence, the student must be provided with different theoretical ways to study economic phenomena. Students also become more aware of the limitations of theoretical perspectives when they are exposed to different approaches (Marcovitch, 2016).

For instance, institutional and political economists study how economic actors influence the so-called *rules of the game*, with some having more power to shape these than others. How much competition is optimal in certain sectors of the smartphone market? That depends on where you stand. These rules of the game in turn affect how and with what players the economic game is played, of course again with some benefiting more than others. Austrian and Marxist economics provide students with insights on opposing views on the issue of *structure vs. agency* (with the former focusing more on agency and the latter on structure; Dopfer, 2004). Post-Keynesians emphasize the uncertain nature of the economic systems, and relate this specifically with the endogeneity of money in the financial sector (Shaikh, 2016).

In sum, one size does not fit all. Of course, it is true that any individual approach can be stretched quite far. It is certainly possible to study a wide range of economic phenomena with one basic set of assumptions or one theoretical approach. However, that does not promote a student's understanding of these economic



phenomena. It is, in that light, a severe limitation to be bound to one single paradigm. A good curriculum would enable students to make use of different approaches in our analysis, rather than presenting all other theoretical frameworks as outdated fossils, bunched together in a single class 'history of economic thought'.

For a proper understanding of the various dimensions that come together within economic phenomena, it is moreover needed that students of the economy gain familiarity with the relevant aspects of other disciplines, such as political science, psychology and sociology. Sub-disciplines like economic sociology, economic anthropology and international political economy have much to offer to the student of the economy in terms of concepts, theories and methods. These insights, built on different theoretical foundations, are substantive in understanding the economy and its social and institutional foundations. Therefore, at least some material from these sub-disciplines should be integrated within economics bachelor programs. This way, students of the economy will benefit from the best of several worlds of knowledge.

Finally, we should gain a solid introduction in the foundations of our own discipline (Backhouse, 2001; Kerr, 2002; Weintraub, 1999). To understand where the theoretical concepts come from and what axioms are built into them, it is essential that theories are not presented in a vacuum. As Nobel laureate Robert Shiller (2010, p. 403) notes: *"Teachers (...) best serve their students if they refer regularly and respectfully to the history of economic thought, conveying the reasons for the theoretical constructs of other times and the tentativeness of current theories"*.

Again, this does not imply that we should get a full basic training in other disciplines, nor does it imply that we should study dozens of approaches. It does imply that (1) we should learn that different approaches are available, that (2) we should be taught to see what approach to use in what cases, and that (3) we should gain familiarity with the foundations of their own discipline, to better understand the discussion and contestation about economic concepts and theories.

To analyse the extent to which Dutch curricula meet this requirement, the second empirical sub-question is: what different theoretical approaches and other social sciences are taught, and in what proportions?



3.3 Real world economics

It should not be possible to graduate from an economics education without thorough knowledge of the economic reality. Yes, theory and research methods form the core of an academic education, but the walls of the ivory tower should not be too thick. Methods and theories should always remain a means, with understanding the economy as an end. This means that courses or parts of courses should be devoted to aspects of the actual economic system.

There are many ways to do so. Examples include guest lectures, excursions, analyses of sectors, detailed empirical discussions in papers, et cetera. Although this category largely overlaps with empirical research, it is different from empirical research per se, in that the real world has to be central while the treatment of empirical work can also be to demonstrate a theory.

A lack of attention for real world economics increases the risk that we as students will confuse theory with the real world itself (Clower, 1995; M. Morgan, 2012). Metaphorically speaking, the map gets mistaken for the territory. Stepping outside the classroom and getting contact with the real economy helps to keep things fresh and helps to sharpen our minds. Facing the real world also helps us to become critical towards methodological assumptions. People often do not obey theoretical models, and the best way to realize this is look at what people really do. Through real world knowledge, the contingency of theoretical models is put into a sharper focus.

We are not alone in claiming this. The majority of the Dutch economists agrees that for a professional non-academic economist, solid real-world knowledge of the Dutch economy is very important (Van Dalen et al., 2015).

Economic phenomena always occur within a specific historical and institutional context (Hodgson, 2001). This means that properly trained economics students should possess knowledge of the history of the economy. Not only knowledge of the *history of economic thought* is relevant; *economic history* itself must be studied. Examples on the macro-scale are the rise of capitalism and socialism, various waves of globalization, the Great Depression, and the 20th century history of the monetary system. In the realm of meso-economics, one might think of the process of industry restructuring when new technologies are discovered ('creative destruction'). In terms of micro-economics, how advertising has developed throughout history could be an example.



Again, Dutch economists largely agree. The majority of the economists feels that 'the ability to place issues within their historical context' is a very important skill a non-academic economist should have (Van Dalen et al., 2015).

Therefore, the third sub-question is: how much attention is spent on getting the focus outside the university walls, onto the actual economy?



3.4 Critical, open-minded and reflective thinking

Universities are not only training grounds for future scientific researchers. Their original core aim is to create critical and independent minds. Foucault (1980, p. 305) gives a good explanation of what 'critical' and 'independent' can mean:

"It suggests (...) a readiness to find our surroundings strange and singular; a certain relentlessness in ridding ourselves of our familiarities and looking at things otherwise; a passion for seizing what is happening now and what is passing away; a lack of respect for traditional hierarchies of the important and the essential"

We believe that courses on 'critical thinking' generally do not suffice to train students to be critical. Rather, teachers can set an example for us when it comes to developing a critical mindset, whether they are professors, readers or junior lecturers. They have to show what it means to approach a topic critically; they have to confront us as students with their own arguments, to reveal assumptions that are made, to raise alternatives or play devil's advocate to increase the scope and depth of classroom discussions. They have to show that studying and researching is a highly reflective activity. It is subsequently up to us as students to follow the example that is set. Of course, this does require that teachers are allocated sufficient time to prepare and teach courses. Currently, this is often not the case.

This is also reflected in the didactic methods that are used in a program. Didactic methods are generally not seen as something relevant to the knowledge that is taken in. But an academic education is not just about learning by heart. It is about learning to think, to probe, to argue and to reflect. In fact, it matters very much whether we as students write essays or answer multiple-choice questions. It makes a large difference whether we have to successfully reproduce mathematical equations, or have to defend the position they take through a debate. Therefore, this sub-question also takes didactic methods into account.

Additionally, for developing a critical mindset, it will help to make us as students familiar with tools to engage in debates in a critical way. Since the critical attitude is about questioning the assumptions of oneself and the other, courses that specifically provide us with tools to reveal assumptions are important. Insights from philosophy of science encourage critical thinking in an economics degree.



Does a value-free economist exist? The importance of reflection on one's analyses and assumptions.

Does a value-free economist exist? Or does, more broadly, a value-free social science exist? This question has long been a subject of debate among economists, other social scientists and philosophers of science. Indeed, there are theoretical arguments claiming that the form of our knowledge shapes the world we live in, that the way we understand the world can introduce cognitive biases, hindering one from objectively taking a stance on certain issues. On the other hand, effective scientific methods can play a role in separating one's biases and values from one's findings.

Van Dalen, Klamer, and Koedijk (2016) have recently done empirical research on the relation between political ideology and academic economists' positions in economic debates. Their findings show a correlation between the two. Relatively more right-wing than mid-range or left-wing oriented economists for instance believe that minimum wage generally hurts employment, and relatively more left- than right-wing economists believe that migration generally brings more economic benefits than harm.

Because the research identifies correlation rather than causation, it is still somewhat unclear whether one's political values influence one's economic viewpoints, or whether one's stance on economic issues influence one's political orientation. Nonetheless, the research makes it clear that economists do not operate unconstrained from values. This shows why it is important for a proper economist to be able to reflect on his or her own work and that of others. Section 4.1.4 discusses various ways to teach students the necessary reflexivity.

This becomes all the more important since there is a frequent claim that today's mainstream economics is, in fact, a politically biased discipline, and that studying economics changes students' ethical stances (e.g. Carter & Irons, 1991; B. Frank & Schulze, 2000; R. Frank, Gilovich, & Regan, 1993; Marwell & Ames, 1981; Wang, Malhotra, & Murnighan, 2011). As one of our professors said, in the first lecture of our bachelor program: "If you accept everything you hear in this program as a fact, you'll start moving towards the political right automatically."

In sum, no matter how useful a theory is, the fact remains that theories simplify. They show only one side of things. In fact, that is what they are designed to do; it is inherent to theory formation. But the fact that these simplifications are never value-neutral makes it all the more urgent to develop reflexivity towards one's potential biases.



In this section, we argued that a suitable economics curriculum should at least meet four conditions, discussed the importance of each condition, and turned each condition into a sub-question. The next section will elaborate on the methodological considerations that underlie the quantitative part of this research.

The fourth and final sub-question therefore is: to what degree do curricula enable students to develop and maintain a critical attitude?

Note: More details on the operationalization of the four sub-questions are available in Appendix 2.





4. Methodology and data

This chapter describes the operationalization of the research questions and the methods used to gather and analyse data on the bachelor programs. First, it describes in detail how the extent to which the current bachelor programs meet the four dimensions of a suitable curriculum is measured. Second, it explains the choice of curricula included in this study and the general comparative approach. It then turns to the data collection process, providing some descriptives on the included programs and the courses within them. Subsequently, it discusses the variables created and the various scales used in distinguishing between the levels of detail in which courses treat certain topics.

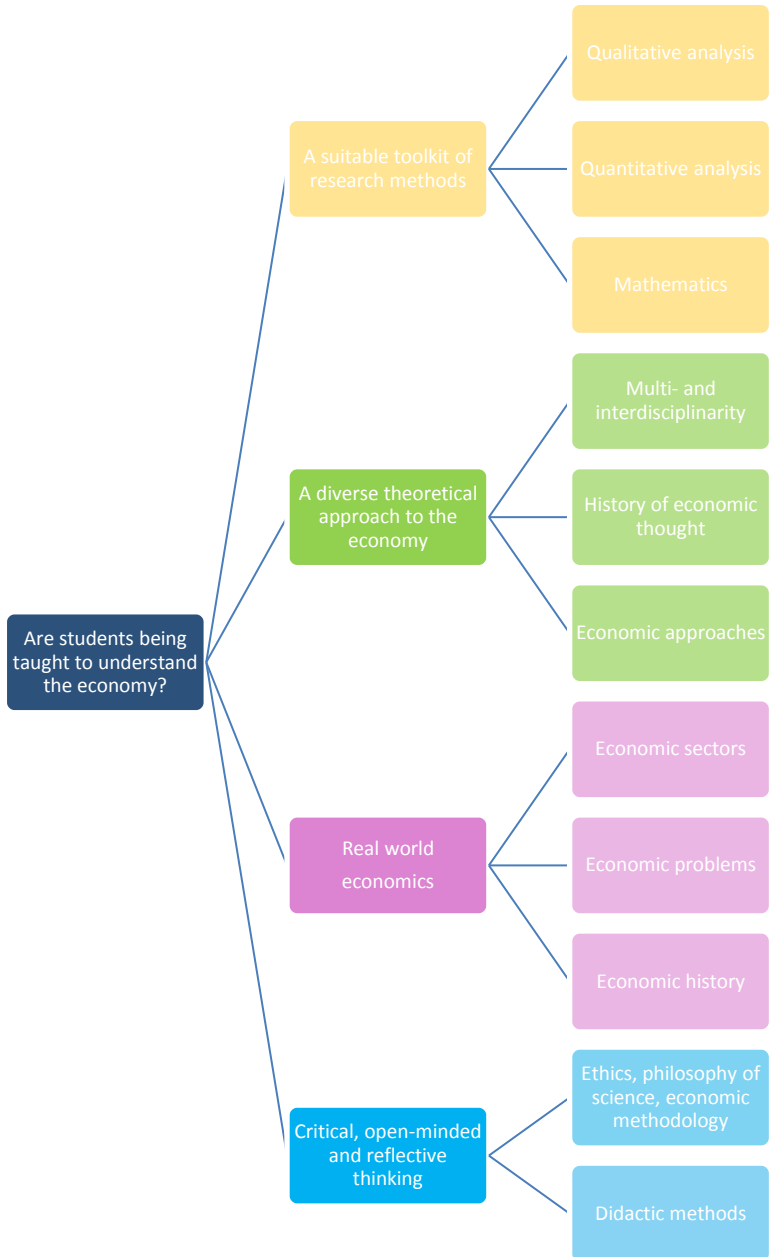
4.1 Research (sub-)questions

As set out in the theoretical framework, this research builds on four identified requirements for a suitable economics education. This section will operationalize the four sub-questions, and will methodologically explain how each of the four sub-questions will be answered.

These four sub-questions are then operationalized into several smaller sections, in order to analyse the programmes, course by course, categorizing each course on a number of variables related to the four dimensions of interest. Figure 6 provides a brief overview of the topics within the four dimensions, which are explained in more detail below. For the full questionnaire used, see Appendix 2.



Figure 6: an overview of the operationalized theoretical framework.



Furthermore, each category is again subdivided into concrete questions. For example, under "quantitative research methods" we ask: "does this course include regression analysis?". However, since courses vary greatly in the extent to which concepts are explained, a binary answer to such a question would be somewhat crude. To stay within the example, some courses spend only a little bit of time on regression analysis, while other courses are completely devoted to the topic. For such questions, where the intensity of application varies, a 4-point Likert scale was used to capture this heterogeneity. This scale is further explained below in section *4.2.4 Course content weighting procedure*.

4.1.1. What research skills are taught?

The question what research methods are taught to us is separated into three broad categories; quantitative methods, qualitative methods and mathematical techniques.

In each of these categories, preliminary research on a sample of course descriptions served to identify the most common subcategories. For example, under quantitative research, this resulted in the subcategories regression analysis, factor analysis, descriptive statistics, survey and questionnaire design, data selection and evaluation, experimental economics, and applied econometrics.

Each of these categories is measured on a four-point Likert scale.

4.1.2 What economic theoretical approaches and other social sciences are taught, and in what proportions?

A second aspect of pluralism is the diversity in theoretical approaches that is taught in a single program. In the empirical work these were captured by scanning the course descriptions for keywords, concepts and names signalling what theoretical approaches are taught in the course. The second main aspect of this sub-question concerns how much other social sciences were treated, both in separate courses and in combination. This provides insight in how multi- and interdisciplinary the programs are.

The basic categorization here consists of the categories history of economic thought (Q2.1), ten theoretical economic approaches (Q2.2) and several forms of



inter- and multidisciplinary with other social sciences (Q2.3).⁸ If a certain approach was treated in a course, the extent to which it was treated was noted on a four-point Likert scale. This enabled us to capture both the diversity and mix of theory, and the theoretical centre of gravity. In other words, this method provided a picture of the approaches treated in a certain course or program, as it creates a percentage-wise breakdown of the time spent on each approach.

The categorization of economic approaches used in this report can be seen in the box below and is further explicated in Appendix 3.

Categorization of the economic approaches

- Austrian school
- Behavioural economics
- Classical political economy
- Complexity economics
- Ecological economics
- Feminist economics / Social economics
- Neoclassical economics
- Original institutional economics
- Post-Keynesian economics
- Radical economics

However, Appendix 3 is a primer, solely to distinguish the various approaches. It does not provide an extensive discussion of each approach. For more extensive discussions of the different approaches see e.g. Biddle et al. (2008); Brue and Grant (2012); Chang (2014); Colander and Landreth (1994); De Benedictis and Di Maio (2016); Fine and Milonakis (2009b); Heilbroner (2011); Keen (2001); Keizer (2015a); Shaikh (2016).

We recognize the internal diversity of the various theoretical approaches, as explained in the textbox on definitions and explanations of important concepts (p. 23). Theoretical approaches contain a lot of different ideas and models, and thus also have internal debates between thinkers who strongly disagree with each

⁸ See textbox *Definitions and explanations of important concepts* on pages 22-23 for information on the demarcation of these categories.



other. Economists of the same theoretical approach do however agree on the fundamental framework underlying their analyses and arguments, even when they are in debate with each other about specific versions of ideas and models. The different ideas contrasted within each approach should therefore be interpreted as contestation within a theoretical approach.

To get a more precise overview of what economic ideas are taught in economics curricula, the different sub-branches of neoclassical economics taught are also measured. To indicate how those sub-branches are categorized, in Appendix 3, in Tables 15 and 16, two theoretical models and three important economists of each sub-branch of neoclassical economics are listed. If other approaches, such as complexity economics, radical economics or the Austrian School, had received serious treatment in any program, we would have distinguished the sub-approaches within them as well (see the textbox on p. 23 for details).

A theoretical note: although every aspect of such an academic taxonomy is debatable, we want to discuss one of our choices, since they attracted a lot of comments from reviewers. First: is new institutional economics a sub-branch of neoclassical economics? After all, new institutional economists are a diverse group which do very different kind of analyses. While some like Oliver Williamson and Douglass North stay within the rational choice framework of neoclassical economics, others like Ronald Coase or Elinor Ostrom go beyond this. Following Lichbach (2003), we argue that the rational choice framework is fundamental to neoclassical economics. Therefore, only institutional economists that use this rational choice approach are evaluated as neoclassical economics. Other institutional work has been grouped under the approach old institutional economics. The insistence on the importance of the rational choice framework also explains why game theory is regarded as part of neoclassical economics, while behavioural economics is not.



Categorization of the sub-branches of neoclassical economics

- Environmental economics
- Game theory
- General equilibrium theory
- Marginalist micro-economics
- Monetarism
- Neoclassical competition theory
- Neoclassical growth theory
- Neoclassical international trade theory
- Neo-Keynesian economics
- New classical macroeconomics
- New institutional economics
- New Keynesian economics
- Public economics / Welfare economics

4.1.3. How much attention is spent on leaving the ivory tower, exploring the real world economy?

The third sub-question deals with the extent to which we as students gain familiarity with real-world economic processes. This sub-question refers to the opposite of what Ronald Coase (2012, p. 19) has called "blackboard economics", which are mainly thought-experiments to support a theoretical argument. This report explores the question from three different angles.

First, it assesses to what extent courses start from the actual economy, casting the theory in a supportive role, focusing on a specific phenomenon rather than a theoretical theme. Examples are the economic consequences of climate change, rising wealth inequality, extreme hunger, a lack of education and development of human capital, gender inequality within economic relationships, or diseases and health problems. Second, it looks at the amount of courses that are built around one specific economic sector or field. This often concerns the structure of companies within specific sectors, the labour market, housing market, financial sector, energy economics, the informal economy, etc. Third, it identifies how many courses devote substantial attention to economic history. Examples include historically differently organized economies, past processes of industrialization and globalization, or past financial crises.



Again, a four-point Likert scale measures the extent to which courses are concerned with real-world economics. The data differentiate between courses that do not pay any attention at all to real-world economics, courses that only pay little attention to it, courses that deal extensively with it, and courses that have an exclusive focus on it.

It is important to note here that the course descriptions may not correspond exactly to the actual contents of the courses. For example, the 'seminar' courses in the Erasmus University BSc program have quite limited course descriptions, yet they dedicate a major focus to real world economic topics, elevating them above a single theoretical framework and studying them as topics in their own right. We have discovered several such cases in the course of this research, especially during the process where we double-checked the initial coding of a course, by students who have followed that course themselves.

On the one hand this points to the fact that course descriptions do not describe everything that happens within the course, a limitation to the empirical method of this report. On the other hand, the fact that the initial coding was corrected on several occasions means that the double-check round did its work effectively. More details on this are available in the section on Approach & Descriptives (p. 66) and the section Discussion (p. 88).

Finally, any potential bias in terms of course descriptions' under-reporting of 'real world economics' may be quite balanced out by the inverse phenomenon. In the experience of the authors, course descriptions more frequently over-report than under-report the extent of 'real world economics' in the course, promising more than is delivered. Indeed, the same phenomenon frequently occurs in the marketing descriptions of entire bachelor programs.

On the whole, we believe this report presents a fairly accurate picture of the degree to which courses deal with real-world economics.

4.1.4. Do curricula stimulate the development of a critical attitude?

The final question is whether the education is an academic one, developing us into critical and creative thinkers, able to look at problems with a fresh and open view, receptive to various types of information and various points of view. This one is the hardest to answer through the selected method of reviewing course outlines, because it depends most strongly on the attitude of the lecturer, and on other



unobservable things like class size and in what way material is being discussed – rather than the mere content of a curriculum.

Fortunately, not everything in this regard is unobservable. Information on the following topics is collected: philosophy of science, ethics and economic methodology. Courses in philosophy of science are considered a contribution to making us as students think critically because the analytical tools obtained in studying philosophy of science (e.g. consciousness of the ontological and epistemological implications inherent to analyses) aid reflection on the degree to which results of research can be considered “the truth”. Attention for ethics helps us in developing a critical mindset, highlighting the dimensions of morality and justice that are endogenous to certain economic processes and outcomes. As for economic methodology, by this we do not mean the applied quantitative or qualitative methodological skills as in sub-question 1; rather than a mean to gather data, ‘economic methodology’ reflects on methodological issues and decisions. Such training increases a student’s awareness of the nature and consequences of methodological choices it makes, and thereby enhances critical thinking.

This sub-question included data on the didactic methods used in economics bachelor programs. The exclusive use of textbooks is generally an indication that students do not learn to compare ideas and authors, whereas the use of original materials and recent research indicates that students became familiar with debates within economics. Similarly, the use of multiple-choice questions with a single correct answer does not stimulate the formation of individual thought and critical reflection. On the other hand, assignments like essays or presentations force the student to formulate his ideas more clearly and to learn to effectively communicate them to others, receiving feedback and engaging in discussion.

Such proxy data on the didactic methods used allow a more detailed picture of the degree to which a course causes us as students to think critically. Unfortunately, these are quite crude proxies, but they are the best that were available from the data. Any suggestions on better measurement techniques for this topic will be highly appreciated.



4.2 Data

4.2.1. Approach & Descriptives

The data of this report consists of all course descriptions of all Dutch bachelor programs in general economics. The following nine universities in the Netherlands have general economics bachelor programs: University of Groningen, Maastricht University, Tilburg University, University of Amsterdam, VU University Amsterdam, Utrecht University, Wageningen University, Erasmus University Rotterdam and Radboud University Nijmegen. There are currently 8144 students in total enrolled in the bachelor programs analysed in this report (Universitaire-bachelors, 2016).

Sometimes these universities provide more than one, slightly different, economics bachelor program. To keep the focus on education in economics, this report deals with the programs at these universities that are most concentrated on general economics. Tilburg for example provides a bachelor "Economics" as well as a bachelor "Economics and Business Economics". We selected the former, because it is more focused on general economics. We also focused upon the "Economics" specialization tracks in the second and third years. In the case that universities offered general economics programs in both English and Dutch, we selected the program which attracted most students. In all cases this was the Dutch option.

As stated, we decided to go beyond observing course names only (Fauser & Kaskel, 2016; Jatteau, 2016; Onderstal & Hollanders, 2016b; PEPS-Economie, 2014), since courses with the same name can be substantially different in content. Instead, we used the online course descriptions, which are available on the various university websites. Appendix 1 provides a list of the programmes analysed and the exact data sources used. To ensure the *continuity* of our measurements and interpretations across programs, we did the empirical work (coding indicators based on the course descriptions) with a team of only three people, frequently cross-checking and comparing each other's work.

A more general limitation of this research is that course guides do not form a perfect description of what happens in courses. The course may include features that are not reflected in the course outline. In other cases, the course outline may promise more than is delivered. To correct for such occasions, to ensure the program-specific *accuracy* of our interpretation of the online course descriptions,



we asked students who followed the specific courses to review and correct our coding.

4.2.2 Course weighting

Comparability between courses and programmes is a key part of this analysis. Therefore, this report uses basic information about course names, year of instruction, number of ECTS and whether a course is obligatory or optional. In particular, it uses weighted ECTS in order to capture the importance of each course in the entire programme, rather than only the number of courses. Each course i gets a weight. For obligatory courses, this weight is equal to 1; for optional courses, the weight is equal to the course's ECTS divided by the total number of elective ECTS (ij) available as options in the same semester/period. In mathematical terms, for obligatory courses:

$$1. \quad w_i = ECTS_i$$

For optional courses:

$$1. \quad w_i = \frac{\sum_{i=1}^n ECTS_i}{\sum_{i=1}^N ECTS_i}$$

...with N the amount of electives available in that specific timeslot and n the amount of electives a student is obliged to choose.

An example may service to clarify the way the courses have been weighted. In the second semester of the third year at Tilburg University, students are allowed to choose 3 courses out of a total of 5 courses (each equalling 6 ECTS). Therefore, to determine the weighted number of ECTS for each course, the sum of ECTS required ($3 \cdot 6 = 18$) is divided by the total sum of ECTS of all possible choices ($5 \cdot 6 = 30$). With this weight ($18/30 = 3/5$) and the number of ECTS (6) the relative importance of each course is $18/5 = 3.6$, referred to as the weighted number of ECTS.

Table 4 provides an overview of the data collected. The average programme has 36 courses, leading to a grand total of 325 courses over the nine bachelor programmes.



Table 4: Number of courses in economics programmes in the Netherlands

University	Obligatory courses	Optional courses	Total Courses
Groningen	28	19	47
Maastricht	19	18	37
Nijmegen	24	5	29
Rotterdam	22	20	42
Tilburg	24	9	33
Utrecht	12	36	48
UvA (Amsterdam)	22	11	33
VU (Amsterdam)	23	3	26
Wageningen	20	10	30
Total	194	131	325

4.2.3. Course types

A major methodological challenge has been to categorise each course under a broader umbrella of course categories. The following section discusses the structure of these categorizations.

The first distinguishing variable is *course type*. This enabled the separation of the courses into several categories, only some of which were relevant to the research. Courses were split into Theory, Methods, Thesis, and Minor/Exchange/Internship with the additional distinction for theory courses between Economic theory, Business theory, and Other theory (see Figure 7). This was done to focus specifically on the economics related courses offered during the bachelor programmes.

'Economic theory'

Generally, 'theory' courses are the most wide-ranging category in this research, running the gamut from *Micro 101* and *Port Economics* to *History of Economics*. It should be noted here that we have decided to categorise theoretical and applied courses under one umbrella, since it is very hard to separate theoretical and applied courses in practice. . This puts the courses which both teach theory *and* immediately teach students to apply it methodologically, in a weird spot. However, this applies to few courses.



It also means that all courses including real world economics are categorized under "economic theory", even those which are 100% about the real economy and include no theory at all. This is a strange but unavoidable consequence of our categorization. In section 5.3, Real world economics, the interested reader can find out how many "economic theory" courses actually *do* contain substantial amounts of information on the real world economy. And in any case, suggestions on a more productive taxonomy of courses would be highly appreciated for the next round of this research.

'Business theory'

Business theory is taken into account in the measurements of multi- and interdisciplinarity. In other measurements, business courses are not included, since this report focuses upon economics education. However, these courses do certainly contribute to the education of economics students, about the economy. A brief summary of their contents is given below.

Most bachelor programs in Economics are combined with business in the first (or first and a half) year. So after this period, students can choose to fully focus on economics or business. This thus means business students often have economics courses in the first year of their bachelor program and economics students have business courses in their first year. The majority of universities have 12 to 27 ECTS of business courses in their program. Exceptions are Wageningen, which has none, and the University of Amsterdam, which has 36 ECTS of business courses. These courses are remarkably similar across universities, typically including accounting, finance, marketing, management and business strategy. Although we acknowledge the importance of business courses, these are not the core focus of this study, since they generally focus on practical skills in terms of running a company, rather than gaining a theoretical and empirical understanding of the economy.

How does the omission of these courses affect the findings of this report, in terms of each of the four sub-questions? In terms of methods and techniques, these courses mostly teach financial and accounting calculation techniques, and sometimes fieldwork within firms. In terms of theory, these courses contain a mixture of perspectives, most of which focus on the strategic considerations of either firms or investors. In terms of real world economics, these courses generally would score slightly higher than the average currently found in the report. In terms of didactic methods and critical thinking, they are comparable to other courses in the programs.



In short, their main contributions are additional theoretical perspectives. Therefore, these courses are included in the measurements of the multi- and interdisciplinarity of a track.

'Methods'

There is a clear line between courses that fall under the umbrella of methods and courses that do not. The courses that fall under this category run the spectrum from participatory observation to linear algebra. As it turns out, there are no methods courses including explicit theory.

'Thesis'

The thesis is of vital importance to an economics degree, since it will provide students with first-hand experience on how to do research. Unfortunately, since this analysis uses course outlines as its data source, it is impossible to analyse the thesis, since its contents depend largely on the ideas and individual choices of the students and supervisors. In follow-up research we hope to go deeper into this topic.

However, setting aside official requirements for a moment, we do note that it is rare for students to suddenly veer in another direction in terms of theory or methods for their thesis. This is understandable, as the preceding three years will have clearly communicated what is considered 'proper economics', and it is quite risky for individual students to deviate from these standards. Thus, it is not unreasonable to assume that in theoretical and methodological terms, the thesis generally remains close to what is taught in the preceding courses.

'Minor/Exchange/Internship'

Most programs have free space in which students can do a minor, internship, exchange or further elective courses. Doing an internship or studying at a foreign university is of great additional value for economics students. Since this is an important indicator of the potential diversity of a program, the ECTS devoted to such options are categorized as 'Minor/Exchange/Internship'. However, just like the thesis, it is impossible to analyse by looking at course outlines what students actually learn from a minor, exchange or internship. There are endless options for which minors, which courses on exchanges and what internships students can do, so an analysis of all these options fall outside the scope of this research.

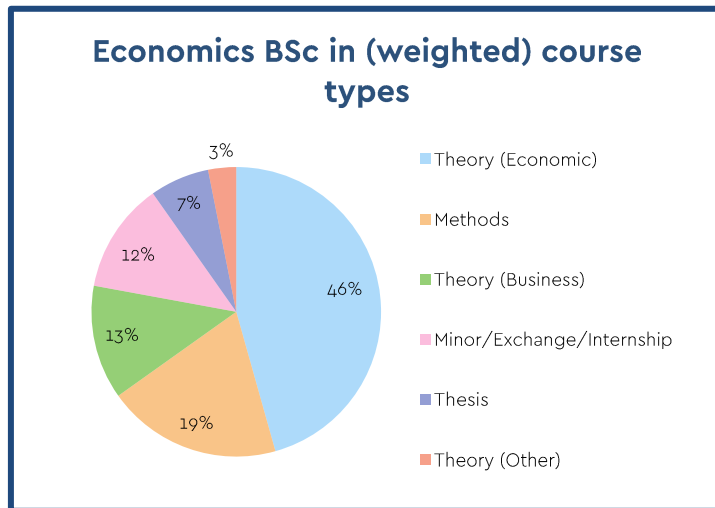
A complication in this regard is that some of this free space is in fact used to study economics within students' own university. In many programs, we are faced with



the choice between several economics electives, a minor at another faculty or an internship or study abroad. Students differ in their preference for such choices, so we have attempted to construct an aggregate value. To this end, we have allocated $\frac{2}{3}$ of the ECTS in such space to "Minor/Exchange/Internship", assuming that the other $\frac{1}{3}$ of the time, students will choose further elective courses of their own university in economics. That estimate was made based solely on our own personal observations among peers, since we have found no reliable information on the actual percentage of what students choose. Information that could help to improve that estimate would be highly appreciated.

The average composition of a BSc in Economics at Dutch universities measured in (weighted) ECTS is shown in Figure 7.

Figure 7: Average distribution of course types in Dutch economics curricula.



4.2.4. Course content weighting procedure

Again, since course and program comparability is a central goal of this research, it was not sufficient to establish what elements every individual course contains. This report also *compares* the degree to which those elements were treated in the entire program. In terms of answer categories, it uses the following categories: *binary* (yes/no), *four-point Likert scale* (0-3) and *open*. The binary and open categories speak for themselves, but the Likert scale may require some explanation.

Questions in the sections Q₁ (methods), Q_{2.2} (theory of economics) and Q_{2.3} (multi- and interdisciplinarity) ask what theory or methods are taught in the course. However, it is not only important to know what theoretical or methodological elements a course contains. Even more important are the proportions. To differentiate, the following categories were used.

0. Not treated. If the theoretical approach or research method was not mentioned or hinted at in the course guide, it is marked as "0".
1. Briefly treated. If the theoretical approach or research method was mentioned only once, and was not described as constituting a major part of the course, it is marked as "1".
2. Extensively treated. If the theoretical approach or research method was mentioned more than once and appeared to play a major role in the course, it is marked as "2".
3. Entire course. If the theoretical approach or research method was described as the main topic of the course, possibly with a few other side elements (which is then marked "1"), it is marked as "3".

Some courses are more differentiated than others, combining several elements within one course. This is accommodated through a weighing system, which distributes the ECTS of the course over the various elements present. Theoretical approaches (or research methods) which were briefly treated (score 1) were assigned a weight of 0.1. Elements which were extensively treated (score 2) were assigned a weight of 0.5. Elements which occupied (almost) the entire course (score 3) were assigned a weight of 1. The ECTS assigned to the entire course are then divided over the various theoretical approaches or methods treated within the course, according to the relative weight of each of these approaches.



To measure the dominance of certain theoretical approaches, it makes sense to simply add up their shares of each course to come to a total for the program. But this does not work as well for many other measures, notably those in sub-question 3 (real-world economics). To measure the amount of courses in the programs that go beyond theory and include knowledge of the real economy, courses that have a little bit of this (score 1) were categorized as 'real world - briefly' and courses that have a lot or the entire course as 'real world - extensively'. This allows for a more fine-grained differentiation than a dummy variable would.

Example

The course *Statistics introduction* is 6 ECTS. Analysis of the course description shows that the course briefly treats regression analysis, extensively deals with factor analysis, briefly goes over descriptive statistics and briefly touches on survey design. So, three topics are treated briefly and one topic is treated extensively. That is $0.1+0.1+0.1+0.5$, a total weight of 0.8. Which results in $6 \text{ ECTS}/0.8 = 7.5 \text{ ECTS per 1 weight}$.

So the total content of this course is:

Regression analysis:	$7.5 * 0.1 = 0.75 \text{ ECTS}$
Descriptive statistics:	$7.5 * 0.1 = 0.75 \text{ ECTS}$
Survey design:	$7.5 * 0.1 = 0.75 \text{ ECTS}$
Factor analysis:	$7.5 * 0.5 = 3.75 \text{ ECTS}$
----- +	
Total:	6 ECTS

Such numbers allow for a relatively precise estimate of the amount of time/ECTS spent on individual theoretical approaches, research methods and the amount of courses in which specific didactic methods are being used. The next chapter, *Results*, shows estimates of the proportions of these various components of economic curricula.

This chapter has set out the methods used in gathering and evaluating course descriptions, on creating a weighted composite of an entire program and on comparing the different programs with one another.⁹ The next chapter will show the main findings of this study.

⁹ Please note again that this research is a first attempt to systematically map the contents of the academic programs in economics in the Netherlands. We have no doubt about the fact that the research design could be much improved. Hence, we strongly welcome feedback on our methodology.



5. Results

This section will provide an overview of the results of this research.

5.1 A suitable toolkit of research methods

Core findings

- In Dutch economics programmes, methods courses are about numbers. They lack attention for how to capture structures, institutions, cultures, and networks;
- The vast majority of weighted ECTSs are to obtain quantitative research (55%) and mathematical (43%) skills;
- Hardly any attention is paid to qualitative research methods; 2% of the weighted ECTS of methods courses are devoted to it.

This section will discuss what sort of research skills we as students obtain in Dutch economics programs.

The results on research methods (see Figure 8) show that economics students in the Netherlands are predominantly being taught quantitative and mathematical research skills, which receive respectively 55% and 43% of the weighted ECTS. This comes at the expense of attention to qualitative research skills, namely 2% of the weighted ECTS. Only 1 of the 9 universities has a course fully devoted to qualitative methods. This means that almost all Dutch universities signal to us as students that qualitative research skills are irrelevant for economists, and do not give us the possibility to learn qualitative research skills at their department.



Figure 8: Distribution of research methods in methods courses.

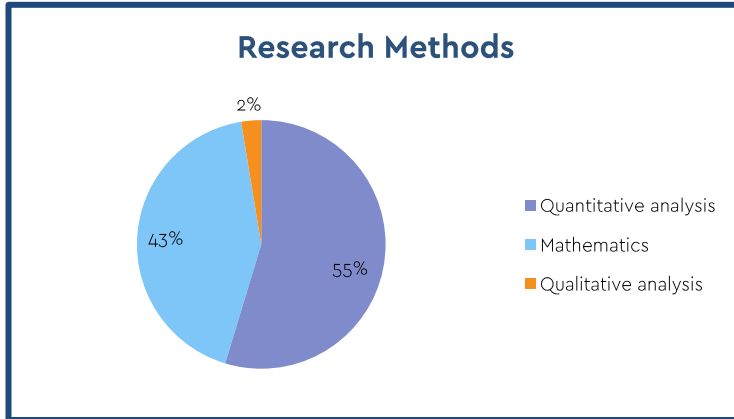


Table 5 provides the extended version of the distribution of research methods. Of the total ECTS spent on research skills, Dutch curricula on average devote 54.7% to quantitative data analysis. Within this segment of the curriculum, most attention is paid to applied econometrics (13.2% of total methods), followed by data selection and evaluation and regression analysis (13.2% and 12.6%). A further 42.7% of the total ECTS invested in research skills are devoted to mathematics. Within this category, there is a dominant focus on calculus and linear algebra (20.1% and 16.6% of total methods). 2.6% of the total ECTS in research skills are dedicated to qualitative analysis. Most attention here is devoted to interview design and technique, namely for 1.2%.



A quantitative analysis of economics bachelor curricula in the Netherlands

Table 5: Distribution of research methods in methods courses.

Research Method	Weighted ECTS
Total quantitative analysis	54.7%
Applied econometrics	14.6%
Data selection and evaluation	13.2%
Regression analysis	12.6%
Descriptive statistics	7.6%
Experimental economics	5.7%
Survey and questionnaire design	0.6%
Factor analysis	0.4%
Other	0.0%
Total mathematics	42.7%
Calculus	20.1%
Linear algebra	16.6%
Basic Econometrics (non-applied)	5.0%
Logic	1.1%
Other	0.0%
Total qualitative analysis	2.6%
Interview design and techniques	1.2%
Qualitative field research	0.2%
Other	1.2%
Total	100.0%

Note: 5 methods courses did not fit into this measurement framework (usually "skills" courses)



5.2 A diverse theoretical approach to the economy

Core findings

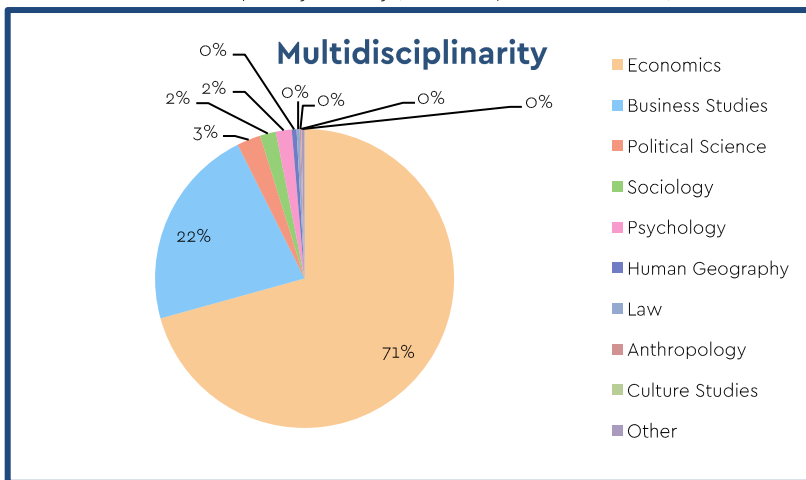
- Dutch economics curricula train students in a mono-theoretical way; 86% of the weighted ECTSs of economics theory courses is devoted to teaching neoclassical economics
- No other approach is seriously treated; each alternative receives less than 4% of the weighted ECTSs.
- Besides economics, business studies is the only discipline that receives substantial attention
- The history of economic thought is an obligatory part in 7 of the 9 programs

The second sub-question is concerned with the extent to which we gain familiarity with different economic theoretical approaches and various academic disciplines in our bachelor's curricula. The results indicate a general lack of diversity in theoretical approaches in the economics curricula, and show that curricula hardly provide us with tools from other disciplines, despite their potential use in understanding economic phenomena.

Figure 9 provides an overview of how much each discipline is treated within Dutch bachelor curricula. Besides the 71% of the weighted ECTSs dedicated to economics, a substantial amount of courses, namely 22%, is devoted to business studies. The reason for the prominent role of business studies is that most Dutch bachelor programs in economics are combined with business studies during the first to year and a half, after which students choose to go for either economics or business economics. All other disciplines receive 0 to 3% of the weighted ECTSs, which adds up to 7% in total.



Figure 9: Distribution of multidisciplinary in theory (economics, business and other) courses



An overview of interdisciplinarity is given in table 6. Interdisciplinarity, in contrast to multidisciplinary, analyses whether courses combine disciplines. This is measured by weighting the number of courses that include more than one discipline (including economics). On average 11.1% of the theory courses treat at least one additional discipline briefly in a course and 5.4% do so extensively. This indicates that most of the courses focus upon one discipline and exclude all others from the discussion.

Table 6: Proportion of interdisciplinary courses in theory (economics, business and other) courses

Measure	Weighted ECTS
Interdisciplinary (>10% of the course)	11.1%
Of which Interdisciplinary (>50% of the course)	5.4%

All universities except one do provide students with one or two courses entirely or largely devoted to the history of economic thought. As Table 7 shows, 4 of the 9 universities have an obligatory course entirely devoted to the history of economic thought and 3 do so extensively. This means that 7 of the 9 universities have an obligatory course devoted extensively or entirely to history of economic thought. And finally 3 of the 9 universities have an optional course in the history of economic thought.

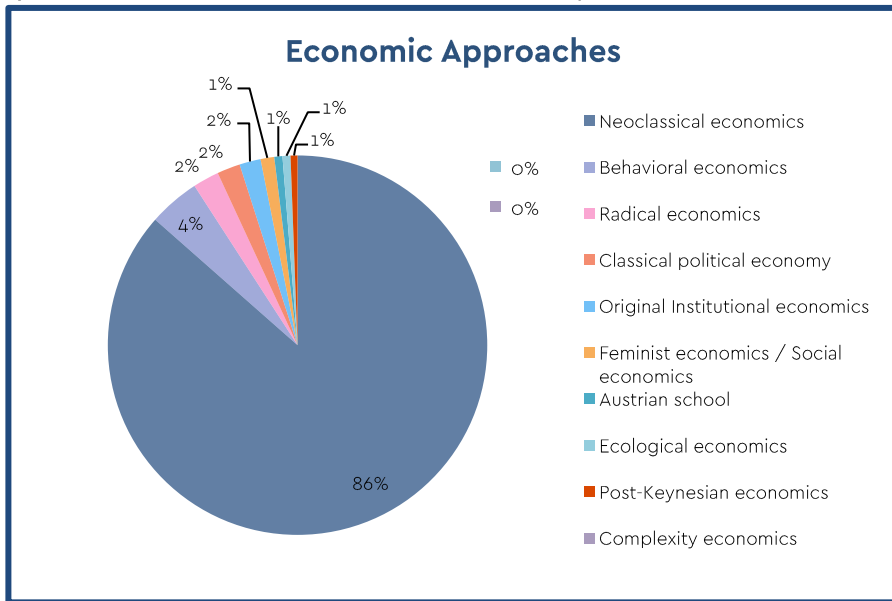


Table 7: Amount of courses devoted to History of Economic Thought

Course on History of Economic Thought	Obligatory	Optional
Entire course	4 of the 9 universities	3 of the 9 universities
Extensively	3 of the 9 universities	0 of the 9 universities

Seen over the period of the entire bachelor's degree, our results show that an average of 86% of the total weighted ECTSs (economic theoretical courses) are devoted to teaching neoclassical economic theory (see Figure 10). Besides a large neoclassical domination, 4% of the total weighted ECTSs on average are spent on behavioural economics. All other theoretical approaches receive 0-2% of the total weighted ECTSs, adding up to 10% in total.

Figure 10: Distribution of economic approaches in economics theory courses



The proportion of the different theoretical approaches students gain familiarity with generally does differ over the years. As Table 8 shows, in the first year, 91.4% of the weighted ECTSs is dedicated to teaching neoclassical economics; in the second and third year, this proportion is respectively 84.8% and 83.9%. Although the extent to which teaching builds on neoclassical insights thus decreases somewhat over the years, neoclassical insights remain highly dominant throughout the program.



A quantitative analysis of economics bachelor curricula in the Netherlands

Table 8: Proportion of neoclassical economics in economics theory courses

Year	Weighted ECTS
Entire bachelor	86.5%
First	91.4%
Second	84.8%
Third	83.9%

An overview of pluralism is given in Table 9. This is measured by weighting the number of courses that include more than one approach (including neoclassical economics). On average 34.3% of the theory courses treat at least one additional approach briefly in a course and 10.3% do so extensively. This indicates that most of the courses focus mainly upon one approach. The approach most often solely focused upon is neoclassical economics. Besides this, the dominance of neoclassical economics in theory courses is clear when it is measured in how many courses it dominates (= the course devotes more time to the neoclassical approach than to any other approach). This shows that nearly all theory courses are dominated by neoclassical economics, namely 97.7%.

Table 9: Proportion of pluralistic courses in economics theory courses

Measure	Weighted ECTS
Pluralism (>10% of the course)	34.3%
Of which Pluralism (>50% of the course)	10.3%
Neoclassical economics dominant within a course	97.7%

The aim of this sub-question is to find out how students learn to think in these programs. With what kind of worldview and what kind of broader analytical framework do we walk away into our working life? That is why our analysis of theoretical approaches here focuses on broader currents of thought, grouped around shared axioms, rather than on individual theories. What do we mean by the "worldview" of an approach?



For instance, all neoclassical sub-branches share methodological individualism, the assumption that all transactions are voluntary, and the rational, selfish and all-knowing *homo economicus*. Radical economics, to take one example, starts from a rather different set of assumptions: methodological collectivism and the involuntary nature of many transactions (especially between capital and labour).¹⁰

However, it is also relevant to distinguish between the many fields within such approaches. To give a detailed overview of the breakdown of what fields within neoclassical theory receive most attention, Table 10 provides an overview of the attention paid to the different sub-branches of neoclassical economics. The three biggest sub-branches are marginalist micro-economics, public economics/welfare economics and neo-Keynesian economics, with respectively 17.1%, 13.7% and 11.6%.

Table 10: Distribution of the sub-branches of neoclassical economics in economics theory courses

Sub-Branches of neoclassical Economics	Weighted ECTS
Marginalist micro-economics	17.1%
Public economics / Welfare economics	13.7%
Neo-Keynesian economics	11.6%
Game theory	7.9%
New institutional economics	7.7%
Neoclassical competition theory	7.4%
New classical macroeconomics	7.1%
Monetarism	6.7%
Neoclassical international trade theory	6.3%
Neoclassical growth theory	4.7%
Environmental economics	4.4%
New Keynesian economics	3.9%
General equilibrium theory	1.6%
Neoclassical economics	100%

¹⁰ We further discuss the distinction between theoretical approaches and sub-branches in the textbox *Definitions and explanations of important concepts*, on pages 22-23.

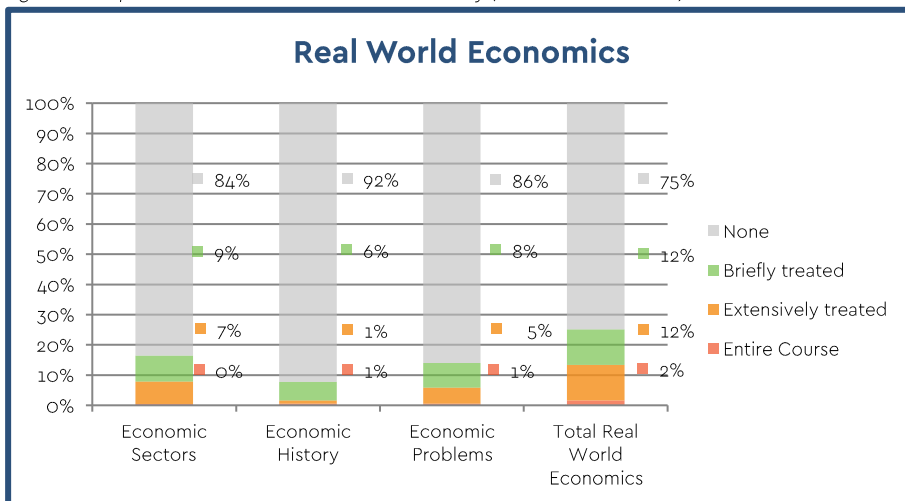


5.3 Real world economics

Core findings

- Dutch bachelor courses rarely *focus on* teaching material relating to the actual economy;
- 75% of the courses lack any attention for real world economics;
- Only 14% of the courses devote serious attention to economic history, sectors, and/or problems.

Figure 11: Proportion of Real World Economics in theory (economics and other) and methods courses



The third sub-question asks to what extent curricula go beyond theory and pay attention to the structure and features of the actually existing economy. To this end, several indicators are constructed, measuring the attention spent on economic sectors, history and problems.



The data show that Dutch economics curricula lack attention for real-world economic phenomena on a structural level. Although it is possible that the theoretical insights offered give students some insights in dynamics behind actual economic processes, a link between idealized theoretical insights and the rather more complicated and messy real world is often absent.

First, the amount of courses paying attention to specific economic sectors, such as the health sector, the housing market or the energy sector, is measured. On average 9% of the courses pay some degree of attention to real world economic sectors. In 7% of the courses, economic sectors played a substantial role. We found no courses entirely focused upon real world knowledge of economic sectors.

Second, when looking at the percentage of ECTSs devoted to economic history throughout theory and methods courses, it is found that 6% of the courses spend at least some time on economic history, while only 2% of the courses spend a larger amount of time or even the entire course on economic history.

Third, the amount of courses that centre on one or more real world economic problem(s), as opposed to staying purely within the realm of theory, is quite low. On average 8% of the courses do so at least to a limited extent. 5% of the courses spend larger amounts of time on dealing with problems occurring in the actual economy, and only 1% of the courses are entirely devoted to this.

Finally, the three indicators just discussed are integrated by taking into account the percentage of total courses that pay attention to economic history, real world economic problems and/or economic sectors. The data show that 75% of the courses in Dutch economics curricula do not pay any significant attention to describing the economy as it exists outside the walls of the ivory tower. That is, three quarters of the courses stay completely within the world of abstract theory and methods, spending time neither on economic history, nor on economic problems, nor on economic sectors.



5.4 Critical, open-minded and reflective thinking

Core findings

- Substantial differences exist in the extent to which different programmes support students in developing critical mindsets;
- Most universities have at least one course which provides tools for critical thinking;
- Textbooks account for more than half of the teaching materials; hence, we are taught to uncritically reproduce analytical techniques.

Six quantified indicators are used to evaluate the extent to which economics students develop a critical mindset in their program. The findings show that on average, programs do pay attention to topics that help students to develop a critical mindset, but also that there is still much room for improvement.

Table 11: Amount of courses devoted extensively or entirely to Ethics, Philosophy of Science and Economic Methodology

Course(s) on	Obligatory	Optional
<i>Ethics</i>	5 of the 9 universities	2 of the 9 universities
<i>Philosophy of Science</i>	6 of the 9 universities	0 of the 9 universities
<i>Economic Methodology</i>	5 of the 9 universities	3 of the 9 universities

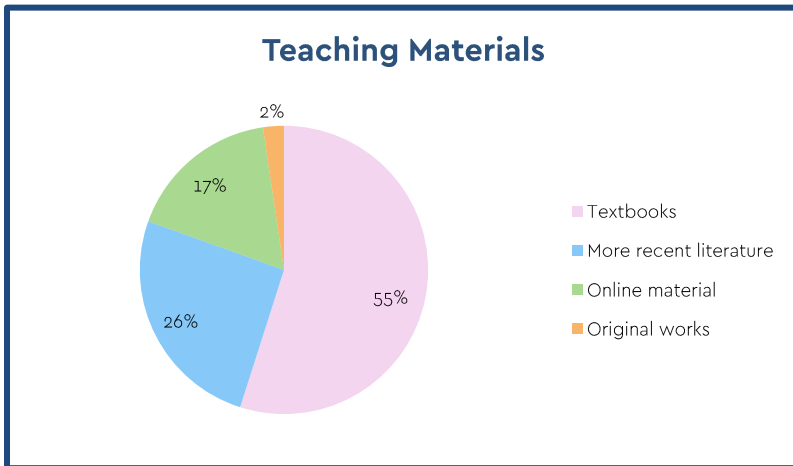
Table 11 provides an overview of the attention paid to ethics, philosophy of science and economic methodology. Firstly, five out of nine universities have at least one obligatory course in ethics and two universities have at least one optional course in ethics. Since one university has both obligatory and optional courses in ethics, a total of six out of nine universities give their students the possibility of following a course in ethics. Secondly, six out of nine universities have at least one obligatory course in philosophy of science yet no optional courses for the same content exist. Thirdly, six out of nine universities have minimally one obligatory course in economic methodology; three other universities have this as an optional course. Two universities have both obligatory and optional courses in economic methodology, so just like ethics and philosophy of science, six out of nine universities provide their students the chance to follow a course in economic methodology. This means that one third of the Dutch universities do not give their



students the opportunity to develop a critical mindset by following courses in ethics, philosophy of science or economic methodology.

Fourth, the teaching materials used in courses are analysed. Universities on average use textbooks for 55% of the weighted ECTSs, recent literature for 26%, online material for 17% and original works for 2%. In 9% of the cases, no information was available on the course materials.

Figure 12: Distribution of teaching materials in theory (economics and other) and methods courses



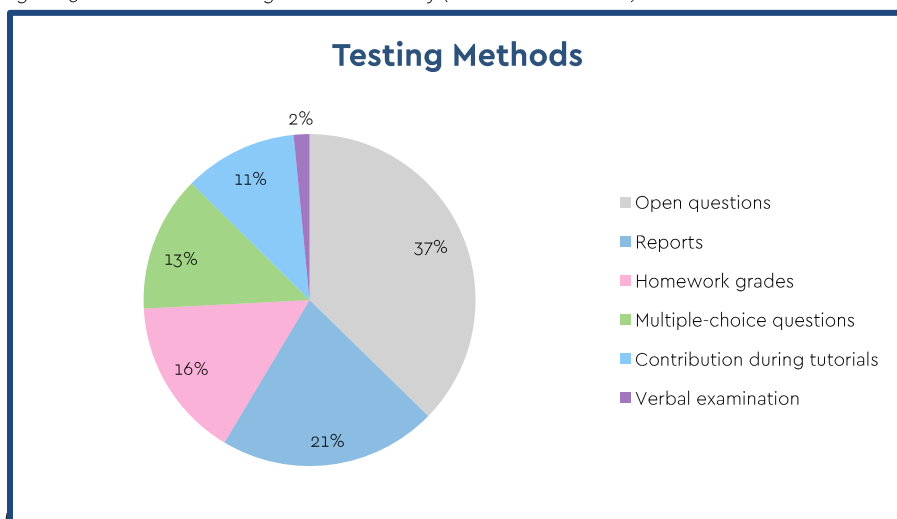
Note: On 9% of the courses there was no information available.

Economics degrees use textbooks relatively often, when compared to other social science degrees. Most bachelor programmes in the other social sciences hardly rely on textbooks. Moreover, in every sub-branch of economics, one to three economics textbooks are dominating. This provides economists with a shared language, unique among the social sciences and very practical in day-to-day communication. However, it also stimulates groupthink, precludes independent thought and drowns out dissenting voices, which is certainly not the purpose of an academic education.



Fifth, the way in which courses test the knowledge of students is analysed. We are mostly tested through open questions, followed by reports. Other frequently used testing methods are homework grades, multiple-choice questions and contributions during tutorials. Verbal examination is hardly ever used. For 4% of the weighted ECTSs, the information was not available.

Figure 13: Distribution of testing methods in theory (economics and other) and methods courses

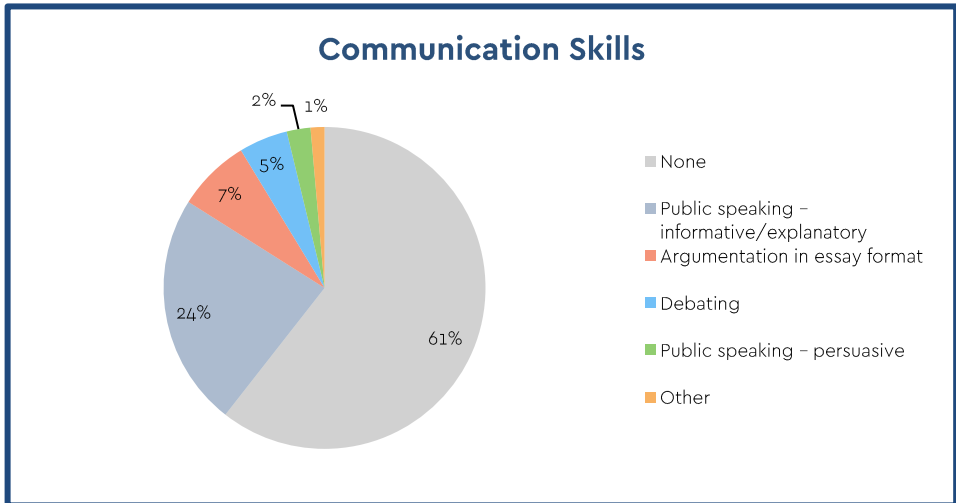


For 4% of the courses there was no information available.



Finally, the extent to which courses practice certain communication skills is taken into account. 61% of the course descriptions did not mention any assignments including communication skills. In 24% of the courses students have to publicly present in an informative or explanatory way. To other kinds of communication skills, such as argumentation within an essay format or debating, considerable less attention is paid.

Figure 14: Distribution of communication skills in theory (economics and other) and methods courses



6. Discussion

This research has provided a considerably more detailed comparative picture of the economics education programs available in the Netherlands than has existed before. However, the specific research method used – a quantitative analysis of course outlines – still comes with certain limitations.

The main limitation of this research is that course outlines are often not very explicit about the material treated (e.g. clear data on which theoretical approaches are discussed is frequently missing). To improve the robustness of the results on this point, the empirical work looked beyond the text of the course description, at authors, literature, theoretical terms and the names of models, to see what is exactly taught.

As for teaching materials, in a handful of cases it was impossible to determine the materials used in a course. These courses were excluded from the analysis on the materials used. This was a somewhat more serious problem in the didactic part of the analysis. A total of 9% of the course descriptions did not mention which teaching materials were used. A further 4% did not describe their testing methods.

In further research, the internal validity of this work might further be improved by using other research methods, such as interviews, questionnaires, systematic observations, and focus groups. Researching the same questions by other means enables triangulation of research findings. In practical terms, we would advise that such qualitative research focus on the content of economics degrees at specific universities, as comparability between programs requires unfeasible amounts of work and triangulation of validity should be the main aim of such research. Qualitative research could also look at other aspects of economics education, for example how different theoretical approaches are presented or in what way critical thinking is stimulated, since such questions are most difficult to analyse quantitatively.

A more general limitation of this research is that course guides do not form a perfect description of what happens in courses. On the one hand, this could mean that some results are biased downwards, when the course includes features that are not reflected in the course outline. Although this is certainly the case for some courses, from our personal experiences as economics students we think that the opposite, an overestimation, occurs more frequently. These personal observations align with the expectations one would have, as course outlines often serve to



represent the course as ideally as possible, in the perspective of accreditation commissions, deans, executive boards, other faculty members and (potential) students.

In order to minimize this problem, we asked students from each bachelor program to check how their courses were scored on each indicator. This also helped improve the reliability of the distinctions between "briefly treated", "extensively treated" and "entire course", as this was sometimes difficult to see because of the lack of description within course outlines. A related issue is the weighing of the categories in the Likert scale, in which it is difficult to do justice to detailed degrees of difference between courses. However, we see no reason to expect this to bias the results in any specific direction.

Another important limitation is that the weighting method does not capture the *amount* of choices students have. Let's say university A offers ten electives, two of which contain a lot of different theoretical approaches. University B offers only three electives, two of which contain (again) a lot of different approaches. In this case university B would show as a lot more pluralistic than university A in the results, belying the diversity of choice we as students have. We would be very happy to find a methodology that avoids this problem.

In determining the weight of the various electives, two main choices had to be made. First, we faced the choice between weighing alternatives equally or trying to weigh electives based on the numbers of students that choose them. We did the former, most importantly because it does more justice to the intentions of the program designers, who can influence the variety of choices we, students *have*, but who have no control over the choices we as students *make*. But also, in practical terms, it was beyond our means in terms of time investment to gather data on enrolment numbers for all investigated courses.

In further research, information on how many students choose each elective could be collected and used in the weighting so that the results reflect not what kind of options we as students have, but rather what we actually choose.



The above discussed limitations might influence the internal validity of the results. However, we do not expect it to impact the results in a significant manner, for two reasons. First, we believe that the fundamental tenets and aims -- the core content -- of a specific course are represented in its course outline. Second, we see no reason to expect the minor course elements which this method does not capture to be substantially different from the core content of the course. Hence, despite the limitations discussed above, we are confident that the results obtained in this research provide us with the ability to validly evaluate and contrast the nine Dutch economics curricula.



7. Conclusion

This research has evaluated the extent to which Dutch economics curricula prepares us, future economists, for the leading role we are going to play in society.

The results show that there is a clear lack of diversity in the methodological skills we obtain. We do generally acquire an extensive toolkit of quantitative skills. But the fact that the majority of the programs do not have a single course devoted to qualitative research skills is exemplary for the general lack of attention to qualitative skills in Dutch economics education.

The blind spot that curricula generally have for qualitative aspects of the economy is part of a greater lack of diversity. This shows in a general lack of attention to different theoretical and disciplinary approaches to the economy. The only other discipline economics we as students gain serious familiarity with is business studies, as all the other disciplines are treated in less than 2.6% of the theory courses.

Within the discipline of economics, one particular approach, namely neoclassical economics, enjoys a near-monopoly (86% of weighted ECTSs). Especially in the first year, which critically shapes the thought of economics students, and aims to teach business students about 'the economy', neoclassical economics is dominant (91% of weighted ECTSs).

In addition to that, Dutch economics curricula generally teach us in a way that risks causing us to see the theory as the real world, rather than an *abstraction* of it. Even though there is large consensus among economists that professional economists should have on-the-ground knowledge of economic processes, Dutch curricula in general lack attention to the actual economy, both in its present and historical forms. 75% of the courses spend no attention at all on gaining knowledge of the actual economy.

When it comes to helping us to develop a critical mind, the aggregate picture shows a somewhat more positive image than the first three elements discussed. Curricula on average pay considerable attention to topics as ethics, economic methodology and philosophy of science, tools that help students to develop a critical mindset. This should be valued positively. However, such courses teach critical thinking in the abstract. We would argue that the near monopoly of the neoclassical approach undermines the possibility of developing a critical mind,



because it doesn't give us as students the opportunity to develop independent judgements about which approaches are most useful in particular circumstances (Mearman, Wakeley, Shoib, & Webber, 2011). Thus, critical thinking as directly applied to the subject matter is not facilitated; it remains an abstract notion.

Moreover, the teaching materials are often not suitable for the development of a critical mindset. More than half of the teaching materials used are textbooks, which generally present theory in the form of a canon, separated from any surrounding discussion or reflection. Testing is increasingly done through multiple-choice. Such didactic techniques tend to crowd out discussion, argumentation and development of critical thought, replacing them with the spoon-feeding of ideas and right/wrong testing methods. This is a consequence of the ever-higher time pressure on academics, caused by growing student numbers and publication demands. But it does not make for critical, independent student minds.

In short, Dutch economics education is dominated by the study of market mechanisms between atomistic, rational, utility-maximizing actors. We study these markets, which are implicitly presumed to make up the entire economic system, in quantitative terms only. And since we learn little about the real economy, we do not learn where the models deviate from reality, we do not learn what they omit or misrepresent. Finally, we hardly learn to question these teachings through applied critical thinking.

This confluence of purely quantitative, neoclassical-dominated, highly abstract and homogeneous teachings is not a random combination. The ontology of neoclassical theory is composed of quantifiable entities only, so students are taught quantitative methods only because they are taught neoclassical theory only. Similarly, being limited almost completely to a single theoretical approach, it is hard to stimulate them to think critically about that approach.

If no alternative approach receives serious treatment, it is hard to think outside the neoclassical axioms. In fact, the combination of limited attention for the real world economy and continued exposure to a single theoretical framework can lead students to see discrepancies between the world and the models as aberrations in the world, not in the model. For example, if we find markets that are not working, we tend to conclude that we need more perfect markets, rather than looking for different approaches.



Unfortunately, this homogeneity of thought is firmly entrenched by the fact that almost all available textbooks cover exactly the same ground, and that most of today's economists have been trained using those same textbooks. Educators have precious few alternatives available to them, both in terms of their own knowledge base and in terms of teaching materials.



8. Social consequences of this curriculum

On average, we as economics students are trained within a framework that aims to capture objects of study only in terms of numbers, which is profoundly problematic. The institutional, social, political and cultural dimensions which deeply shape economic dynamics are structurally overlooked in curricula, since it is often hard if not impossible to capture these in quantitative terms.

Certainly, neoclassical theory accommodates a large variety of ideas and points of view. However, it does contain certain axiomatic assumptions about the role of agency within market structures, the establishment of the rules of the economic game, and the relationship between markets and governments. These are all assumptions that provide us as students with fundamental ideas about how society functions or *should* function (Heath, 1994; Watts, 1994; Zuidhof, 2014). The current economics education for example changes students' attitudes towards greed and corporation (R. Frank et al., 1993; Wang et al., 2011). Other approaches and disciplines, having completely different ontologies and axioms, could challenge these if they were taught.

This is deeply problematic, because roughly 97% of the graduated economists will not become academics. As journalists, policy makers, political or corporate managers, economists play key societal roles outside of academia. We are expected to understand the complexity, multiplicity and messiness of the real world, and to use a theory only as a means in order to better understand that reality. Academic theories should give us a grip on what is going on in the real world, rather than to stand as an island on their own. Robinson Crusoe economics is simply not good enough for the 21st century. Yet our results generally show that Dutch economics curricula fall short at this point.

Finally, the abstract, quantitative, monistic thinking with which we are imbued with is seldom countered by an invitation to criticize, to question and to look for alternative ideas. In most programs, we do get a course on the philosophy of science, or on economic methodology. But the questions and criticisms provoked by such courses are all too rarely addressed or even acknowledged in the rest of our classes.



Thinking like an Economist?

In short, the near-monopoly of neoclassical theory and quantitative methods leaves us with a fixated framing of what the economy is about.

Dutch economics curricula overall do not prepare students well for the leading role we are going to play in society. Thorough reforms are needed. Not only is this in the interest of the students; society as a whole has an urgent need for properly trained economists.



9. Recommendations

Although there are certainly differences between the various programmes and universities, the general conclusion is that Dutch economics curricula do not prepare students well for taking up a leading role in coping with the fundamental challenges today's society faces.

Therefore, we collectively have to rethink how we train the economist of today and tomorrow. And to be clear, Rethinking Economics is not meant to be a closed organization of some critical students and academics. Rather, it should be a process, a collective dialogue between students, teachers and professors, curriculum designers, and the stakeholders throughout society. We do not want to dictate how things should be done. Rather, as our logo reflects, we want different ideas to come together, to advance through dialogue and cooperation.

So how can economics curricula be reformed or even redesigned in a way that they will meet the four dimensions set out in this research? To do this, a critical look at the structure of the curricula is needed – the outlook that lies at their foundation. We will need to ask ourselves the fundamental question: what are we preparing these young people for? In this section, we will discuss the changes that we deem vital, and sketch out first steps towards them. We will first set out a few specific ideas targeted at the four pillars of a good economics curriculum, and end with recommendations targeted specifically at students, faculty, deans, and government.

1. Training in research methods that would equip us well for work as a professional economist would include training in qualitative research methods, e.g. interview techniques and qualitative field research, and would include a broader and more open approach to research design.
2. To effectively use theory, we as students require systematic exposure to a variety of theoretical approaches. The size of any individual's intellectual toolbox is subject to constraints, but we feel that it should also contain a catalogue: students need to get an overview of what other approaches are out there. Nor should theories be taught in isolation; we need to learn to compare and contrast various theoretical approaches, to learn their areas of strength and their blind spots. Key insights into the economy from neighbouring disciplines also form a necessary part of the education of any student of the economy.



3. A real-world perspective on economics requires that we regularly leave the theoretical neatness of the classroom and step outside 'into the real economy'. We, students, should consider real economic phenomena in depth, not just as examples to illustrate theory.
4. To become critical, open-minded and reflective thinkers, we, students should not learn to blindly reproduce. Rather, we should learn to question ideas and assumptions, to contrast theories with one another, and to make and counter compelling arguments.

So what can each of us do, to bring our economics education to a higher plane?

Students, be critical of what you are learning. Do not just ask: "is this part of our exam?" Ask: "does this reflect the real world?", "What are we missing in this approach?". Is your professor trotting out a one-sided and outmoded tunnel vision story about "how economists think"? Talk to him and his colleagues about it, and address it through the programme committee. Organize a reading group or an event. If you want, you can get affiliated with the Rethinking Economics network and benefit from the experience, contacts and resources of a large network of similar-minded student groups worldwide.

Teachers, please realise why your students are in that lecture room. 97% of us are not there to become academic economists. We are there to better understand the economy, *by any means necessary*. So bring the reality into your classroom! Start lectures with today's newspaper, ask guest speakers from the field. Stimulate open and associative thinking, bring in literature and guest speakers from other disciplines, and do not be afraid to point out the weaknesses of the theory you are teaching. Make sure that you are not just pushing through a textbook; be proud of your role as a teacher and use it. Kick-start discussions, play devil's advocate. Open those minds.

Through education you reach far more people than through most academic papers. Yet today, teaching is underappreciated and under-rewarded. Often, the time allocated for teaching is not nearly enough (Ter Horst, 2013). Please speak out about this. Challenge that status quo, with the students as your allies.



Deans and program directors, make sure that your faculty are free to spend enough time on teaching rather than research. If this is hard to do, fight for your teachers and students, and make them aware of the pressures you're facing, to enlist their support. Moreover, pay attention to economic education publicly; organize a seminar or conference on what economics students should learn to fulfil their crucial social roles later on. And please ask yourself this: how is our program built? Was it created through a negotiation process about whose sub-discipline is more important? Or is it carefully designed, based on the realization that most students are not there to become academics, but to learn to think about the economy? Finally, do not hesitate to be different from other universities. For instance, the economics program at Wageningen University emphasizes real world economics, whereas Utrecht University's program focuses on multidisciplinary. Variety in the focus of bachelor programs makes Dutch economics education stronger, not weaker.

Government, look at the distribution structure of research money. Does this encourage broad and interdisciplinary thinking, or scoring on the square millimetre? Because this also has an effect on the teaching academics do. And look at how you finance education. Are universities stimulated to offer their faculty *career options* focused on education? That is an effective way to take care of passionate teachers, who are not pre-occupied with the competitive struggle to publish in narrow sub-fields, but who can fully devote their efforts to educating the broad-thinking economists of the future. We suggest following the example of the French government, and conducting an in-depth review of the questions raised in this report: is society well served by the way academic education in economics is currently set up, and if not, what policy measures could be taken to produce more robust and relevant programs?

Climate change, ageing, inequality, migration; these are the questions that will determine the future of our society. Economics plays a central role in them. This means that thorough, broad economics programs are one of the best ways to invest in the future of our society. Let's build such programs, together.



References

- Allgood, S., Siegfried, J., & Walstad, W. (2015). Research on teaching economics to undergraduates. *Journal of Economic Literature*, 53(2), 285-325.
- Anderson, G., Ekelund, R., & Tollison, R. (1992). Methodenstreit: The economics of competing interests. *European Journal of Political Economy*, 8(3), 401-418.
- Angrist, J., Lavy, V., & Schlosser, A. (2010). Multiple experiments for the causal link between the quantity and quality of children. *Journal of Labor Economics*, 28(4), 773-824.
- Backhouse, R. (1994). *Economists and the economy: the evolution of economic ideas*: Transaction Publishers.
- Backhouse, R. (1998). If mathematics is informal, then perhaps we should accept that economics must be informal too. *The Economic Journal*, 108(451), 1848-1858.
- Backhouse, R. (2001). How and why should we write the history of twentieth-century economics? *Journal of the History of Economic Thought*, 23(2), 243-251.
- Backhouse, R. (2002). *The Penguin history of economics*: Penguin UK.
- Backhouse, R., & Fontaine, P. (2010a). *The history of the social sciences since 1945*: Cambridge University Press.
- Backhouse, R., & Fontaine, P. (2010b). *The unsocial social science?: economics and neighboring disciplines since 1945*: Duke University Press.
- Backhouse, R., & Medema, S. (2009). Robbins's Essay and the Axiomatization of Economics.
- Bähre, E. (2016). De buitenwacht: Naar een heterodoxe economie en de reflexieve economie. *Me Judice*.
- Baldwin, R. (2016). *The Great Convergence*: Harvard University Press.
- Becker, G. (1975). *Human Capital: a theoretical and empirical analysis, with special reference to education*.
- Becker, G. (1976). *The economic approach to human behavior*: University of Chicago Press.
- Becker, G. (2010). *The economics of discrimination*: University of Chicago press.
- Becker, W., Walstad, W., & Watts, M. (1994). A comparison of the views of economists, economic educators, teachers and journalists on economic issues. *An international perspective on economic education*, 65-87.
- Berle, A., & Gardiner, C. (1932). *The Modern Corporation and Private Property* (Vol. 45). New York: Macmillan.
- Biddle, J., Davis, J., & Samuels, W. (2008). *A companion to the history of economic thought*: John Wiley & Sons.
- Blaug, M. (1997). *Economic theory in retrospect* (5th ed.): Cambridge University Press.
- Blaug, M. (2001). No history of ideas, please, we're economists. *The Journal of Economic Perspectives*, 15(1), 145-164.
- Blaug, M. (2003). The formalist revolution of the 1950s. *Journal of the History of*



- Economic Thought*, 25(2), 145-156.
- Boettke, P. (1998). Economic calculation: The Austrian contribution to political economy.
- Bovenberg, L. (2016). Economieonderwijs in balans: kiezen en samenwerken. *TPEdigitaal*.
- Bovenberg, L., & Haan, F. (2016). Preadviezen van de Koninklijke Vereniging voor de Staathuishoudkunde 2016: Economieonderwijs.
- Bowen, H. (1953). Graduate education in economics. *The American Economic Review*, 43(4), iv-223.
- Brue, S., & Grant, R. (2012). *The evolution of economic thought*. Cengage Learning.
- Butterfield, H. (1981 [1931]). *The Whig Interpretation of History*. WW Norton & Company.
- Carter, J., & Irons, M. (1991). Are economists different, and if so, why? *The Journal of Economic Perspectives*, 5(2), 171-177.
- Cedrini, M., & Fontana, M. (2015). *Mainstreaming. Reflections on the Origins and Fate of Mainstream Pluralism*.
- Cedrini, M., & Fontana, M. (2017). Just another niche in the wall? How specialization is changing the face of mainstream economics. *Cambridge Journal of Economics*, 427-451.
- Chang, H.-J. (2014). *Economics: the user's guide*. Bloomsbury Publishing USA.
- Clower, R. (1995). Axiomatics in economics. *Southern Economic Journal*, 307-319.
- Coase, R. (2012). *The firm, the market, and the law*. University of Chicago press.
- Colander, D., Holt, R., & Rosser, B. (2004a). *The changing face of economics: conversations with cutting edge economists*. University of Michigan Press.
- Colander, D., Holt, R., & Rosser, B. (2004b). The changing face of mainstream economics. *Review of Political Economy*, 16(4), 485-499.
- Colander, D., & Landreth, H. (1994). *History of Economic Thought*. Boston, MA, itd: Houghton Mifflin.
- Colander, D., & Landreth, H. (2004). Pluralism, Formalism and American Economics. *Middlebury College Economics Discussion Paper No. 04, 9*.
- Commissie-Teulings. (2002). *Economie moet je doen; herziening programma economie voor de tweede fase*. Retrieved from
- Commissie-Teulings. (2005). *The wealth of education; herziening programma economie voor de tweede fase*. Retrieved from
- Davis, J. (2006). The turn in economics: neoclassical dominance to mainstream pluralism? *Journal of institutional economics*, 2(01), 1-20.
- Davis, J. (2007). The turn in recent economics and return of orthodoxy. *Cambridge Journal of Economics*, 32(3), 349-366.
- De Benedictis, L., & Di Maio, M. (2016). Schools of Thought and Economists' Opinions on Economic Policy. *Eastern Economic Journal*, 42(3), 464-482.
- de Goede, M., Belder, R., & De Jonge, J. (2014). *Promoveren in Nederland: Motivatie en loopbaanverwachtingen van promovendi*. Rathenau Instituut.
- Dequech, D. (2017). Some institutions (social norms and conventions) of contemporary mainstream economics, macroeconomics and financial economics. *Cambridge Journal of Economics*, 41(6), 1627-1652.



- Derksen, W. (2016). De buitenwacht: economen en de valkuil van het normatieve denken. *Me Judice*.
- Dopfer, K. (2004). The economic agent as rule maker and rule user: Homo Sapiens Oeconomicus. *Journal of Evolutionary Economics*, 14(2), 177-195.
- Earle, J., Moral, C., & Ward-Perkins, Z. (2016). *The Econocracy: The Perils of Leaving Economics to the Experts*: Oxford University Press.
- Engelen, E. (2015). Komt een topeconoom op tv.... *Me Judice*.
- Fausser, H., & Kaskel, M. (2016). Pluralism in economics teaching in Germany: evidence from a new dataset.
- Fels, R. (1969). Hard research on a soft subject: Hypothesis-testing in economic education. *Southern Economic Journal*, 1-9.
- Fine, B., & Milonakis, D. (2009a). *From economics imperialism to freakonomics: The shifting boundaries between economics and other social sciences*: Routledge.
- Fine, B., & Milonakis, D. (2009b). *From political economy to economics: Method, the social and the historical in the evolution of economic theory*: Routledge.
- Foucault, M. (1980) *The masked philosopher*. Foucault Live (Interviews, 1961-1984), The MIT Press.
- Fourcade, M. (2006). The construction of a global profession: The transnationalization of economics 1. *American journal of sociology*, 112(1), 145-194.
- Fourcade, M., Ollion, E., & Algan, Y. (2015). The superiority of economists. *Revista de Economía Institucional*, 17(33), 13-43.
- Frank, B., & Schulze, G. (2000). Does economics make citizens corrupt? *Journal of economic behavior & organization*, 43(1), 101-113.
- Frank, R., Gilovich, T., & Regan, D. (1993). Does studying economics inhibit cooperation? *The Journal of Economic Perspectives*, 7(2), 159-171.
- Freeman, A., Chick, V., & Kayatekin, S. (2014). Samuelson's ghosts: Whig history and the reinterpretation of economic theory: CPES.
- Gans, J., & Shepherd, G. (1994). How are the mighty fallen: Rejected classic articles by leading economists. *The Journal of Economic Perspectives*, 8(1), 165-179.
- Gautier, P. (2016). Reactie op: de maatschappelijke econoom. In L. Bovenberg & F. Haan (Eds.), *De Preadviezen 2016 van de Koninklijke Vereniging voor de Staathuishoudkunde: Economieonderwijs* (pp. 140-149). Amsterdam: Economisch Statistische Berichten.
- Government-of-France. (2014). *L'avenir des sciences économiques à l'Université en France*. Retrieved from https://cache.media.enseignementsup-recherche.gouv.fr/file/Formations_et_diplomes/05/1/Rapport_Hautcoeur2014_328051.pdf
- Grossbard-Shechtman, S. (1993). On the economics of marriage: a theory of marriage labor and divorce.
- Heath, W. (1994). Value judgments and the principles of economics textbook. *Southern Economic Journal*, 1060-1064.



- Heertje, A. (2006). *Echte economie: een verhandeling over schaarste en welvaart en over het geloof in leermeesters en leren* (Vol. 8): Valkhof Pers.
- Heilbroner, R. (2011). *The worldly philosophers: The lives, times and ideas of the great economic thinkers*: Simon and Schuster.
- Hinloopen, J. (2016). Experimenteren met klaslokaalexperimenten *TPEdigitaal*.
- Hirshleifer, J. (1985). The expanding domain of economics. *The American Economic Review*, 75(6), 53-68.
- Hodgson, G. (2001). *How Economics Forgot History: The Problem of Historical Specificity in Social Science*: Routledge.
- Hodgson, G. (2015). *Conceptualizing capitalism: Institutions, evolution, future*: University of Chicago Press.
- Hollanders, D. (2016). Buiten-economische kritiek op het academisch arbeidseconomieonderwijs. *TPEdigitaal*.
- Jatteau, A. (2016). *An International Survey of Bachelor of Economics. Methodology, first results and evidence of lack in pluralism*. Paper presented at the First ISPE General Assembly, Paris.
- Keen, S. (2001). *Debunking economics: The naked emperor of the social sciences*: Zed Books.
- Keizer, P. (2015a). *Multidisciplinary Economics: A Methodological Account*: Oxford University Press, USA.
- Keizer, P. (2015b). Zolang economen zichzelf niet begrijpen zullen ze de wereld ook niet begrijpen. *Me Judice*.
- Kerr, I. (2002). The value of the History of Economic Thought. *Journal of Economic and Social Policy*, 6(2), 6.
- Kimenyi, M., & Shughart, W. (1986). Economics of suicide: Rational or irrational choice. *Atlantic Economic Journal*, 14(1), 120-121.
- Klaassen, F., & Magnus, J. (2014). *Analyzing Wimbledon: The power of statistics*: Oxford University Press, USA.
- Kuhn, T. (1962). *The Structure of Scientific Revolutions*: University of Chicago Press.
- Lakatos, I. (1980). *The methodology of scientific research programmes: Volume 1: Philosophical papers* (Vol. 1): Cambridge University Press.
- Lee, F. (2009). A history of heterodox economics. *London and New York: Routledge*.
- Leeson, R. (2000). The Chicago counter-revolution and the sociology of economic knowledge *The Eclipse of Keynesianism* (pp. 45-72): Springer.
- Levitt, S., & Dubner, S. (2010). *Freakonomics* (Vol. 61): Spelling & Kupfer editori.
- Maki, U. (1992). Social conditioning of economics. *Post-Popperian methodology of economics: recovering practice*, 65-110.
- Marcovitch, I. (2016). Does pluralism matter? Examining students' experiences of undergraduate economics curriculum in relation to the mission of the university. *International Journal of Pluralism and Economics Education*, 7(4), 394-412.
- Marwell, G., & Ames, R. (1981). Economists free ride, does anyone else?: Experiments on the provision of public goods, IV. *Journal of public economics*, 15(3), 295-310.



- Mearman, A., Wakeley, T., Shoib, G., & Webber, D. (2011). Does pluralism in economics education make better educated, happier students? A qualitative analysis. *International Review of Economics Education*, 10(2), 50-62.
- Mierau, J., & Mink, M. (2016). Een IS-LM model met een bankensector. *TPEdigitaal*.
- Morgan, J. (2015). *What is Neoclassical Economics?: Debating the Origins, Meaning and Significance*: Routledge.
- Morgan, M. (2012). *The world in the model: How economists work and think*: Cambridge University Press.
- Morgan, M., & Rutherford, M. (1998). *From interwar pluralism to postwar neoclassicism* (Vol. 30): Duke University Press Durham, NC.
- Mügge, D. (2016). De buitenwacht: Weet wat je meet. *Me Judice*.
- Neilson, D. (2010). *U.S. undergraduate economics education*. Retrieved from
- Onderstal, S. (2016). Vijf argumenten voor veel wiskunde in het academische economieonderwijs (en vijf mogelijke tegenwerpingen). *TPEdigitaal*.
- Onderstal, S., & Hollanders, D. (2016a). Inleiding: Academisch economieonderwijs na de crisis. *TPEdigitaal*.
- Onderstal, S., & Hollanders, D. (2016b). Marktfalen in de markt voor academische economieopleidingen. In L. Bovenberg & F. Haan (Eds.), *De Preadviezen 2016 van de Koninklijke Vereniging voor de Staathuishoudkunde: Economieonderwijs* (pp. 150-159). Amsterdam: Economisch Statistische Berichten.
- PEPS-Economie. (2014). The case for pluralism: what French undergraduate economics teaching is all about and how it can be improved. *International Journal of Pluralism and Economics Education*, 5(4), 385-400.
- Plasmeijer, H., & Schoorl, E. (2000). Postwar Dutch Economics: Internationalization and Homogenization. *The Development of Economics in Western Europe since*, 67-93.
- Polanyi, K. (1957). The Economy as Instituted Process in the Sociology of Economic Life. *Granovetter, M., and R. Swedberg. Trade and Market in Early Empire*.
- Posner, R. (1987). The law and economics movement. *The American Economic Review*, 77(2), 1-13.
- . Rethinking Economics met Pieter Gautier, Lorenzo Fränkel en Joris Tieleman. (2015). In VPRO (Producer), *Buitenhof*.
- Robbins, L. (1932). *An Essay on the Nature and Significance of Economic Science* (NY: MacMillan).
- Rodrik, D. (2015). *Economics rules: the rights and wrongs of the dismal science*: WW Norton & Company.
- Rutherford, M. (2011). *The institutionalist movement in American economics, 1918-1947: Science and social control*: Cambridge University Press.
- Samuelson, P. (1987). Out of the Closet: A Program For the Whig History of Economic Science: Keynote Address at History of Economics Society Boston Meeting, June 20, 1987. *History of Economics Society Bulletin*, 9(01), 51-60.
- Sent, E.-M. (2006). Pluralisms in economics. In S. Kellert, H. Longino, & K. Waters



- (Eds.), *Scientific Pluralism* (pp. 80–101). Minnesota: Citeseer.
- Shaikh, A. (2016). *Capitalism: Competition, conflict, crises*: Oxford University Press.
- Shiller, R. (2010). How should the financial crisis change how we teach economics? *The Journal of Economic Education*, 41(4), 403–409.
- Smith, N. (2016). Calling All Sociologists: America Needs You. Retrieved from <https://www.bloomberg.com/view/articles/2016-08-31/calling-all-sociologists-america-needs-you>
- Spiegler, P., & Milberg, W. (2013). Methodenstreit 2013? Historical perspective on the contemporary debate over how to reform economics. *Forum for Social Economics*, 42(4), 311–345.
- Starr, M. (2014). Qualitative and mixed-methods research in economics: surprising growth, promising future. *Journal of Economic Surveys*, 28(2), 238–264.
- Ter Horst, M. (2013). De harde waarheid: er zijn veel en veel te veel studenten. *De Volkskrant*.
- Tieleman, J. (2015). Pluriform onderwijs is probaat middel tegen tunnelvisie economen. *Me Judice*.
- Tieleman, J., & De Muijnck, S. (2016). Universitair economieonderwijs kan nog zoveel meer zijn. *Me Judice*.
- Tieleman, J., De Muijnck, S., Kavelaars, M., & Fränkel, L. (2016). De maatschappelijke economie. In L. Bovenberg & F. Haan (Eds.), *De Preadviezen 2016 van de Koninklijke Vereniging voor de Staathuishoudkunde: Economieonderwijs* (pp. 127–139). Amsterdam: Economisch Statistische Berichten.
- Universitaire-bachelors. (2016). Aantal ingeschreven studenten. Retrieved from <https://universitaire.bachelors.nl/aantal-studenten/economie/>
- Van Dalen, H., & Klamer, A. (1996). *Telgen van Tinbergen: het verhaal van de Nederlandse economen: Balans*.
- Van Dalen, H., Klamer, A., & Koedijk, K. (2015). De ideale econoom staat onder druk. *Me Judice*.
- Van Dalen, H., Klamer, A., & Koedijk, K. (2016). De waarde vrije economie bestaat niet. *Me Judice*.
- Van Damme, E. (2016). Waarom doceren wij ouderswetse economie? In L. Bovenberg & F. Haan (Eds.), *De Preadviezen 2016 van de Koninklijke Vereniging voor de Staathuishoudkunde: Economieonderwijs* (pp. 160–172). Amsterdam: Economisch Statistische Berichten.
- Van Staveren, I. (2016). Pluralisme voor studenten ontwikkelingseconomie. *TPEdigitaal*.
- Van Vugt, M. (2016). De buitenwacht: Waarom de onzichtbare hand van Darwin beter werkt in de economie. *Me Judice*.
- Velthuis, O. (2016). De buitenwacht: De maatschappelijke inbedding van de markt. *Me Judice*.
- Vollaard, B. (2016). Paternalisme als reden voor overheidsingrijpen in een cursus welvaartseconomie. *TPEdigitaal*.
- Von Mises, L. (1949). *Human action*.
- Wang, L., Malhotra, D., & Murnighan, J. (2011). Economics education and greed. *Academy of Management Learning & Education*, 10(4), 643–660.



- Watts, M. (1994). Economists' ideological conflicts and consensus on economic issues, and their implications for economic education *An international perspective on economic education* (pp. 47-64): Springer.
- Weintraub, E. (1999). How should we write the history of twentieth-century economics? *Oxford Review of Economic Policy*, 15(4), 139-152.
- Weintraub, E. (2007). Neoclassical Economics. *The Concise Encyclopedia Of Economics*. Retrieved September 26, 2010.
- Wigstrom, C. (2016). *A survey of undergraduate economics programmes in the UK*. Retrieved from
- Wilts, A. (1998). Changes in Dutch economics in the 1930s *Historical Perspectives on Macroeconomics: Sixty Years after the General Theory* (pp. 105-132): Routledge.
- Yonay, Y. (1998). *The struggle over the soul of economics: Institutional and neoclassical economists in America between the wars*: Princeton University Press.
- Zuidhof, P.-W. (2014). Thinking like an economist: The neoliberal politics of the economics textbook. *Review of Social Economy*, 72(2), 157-185.



Appendix 1: Data sources

Table 12: Overview of the data sources for the course outlines 2016/2017

Program	University	Name of data source	Link
BSc Economie & Bedrijfskunde	University of Amsterdam	Online Course Catalogue	http://studiegids.uva.nl/
BSc Economics & Business Economics	University of Maastricht	Courses and Curriculum	https://www.maastrichtuniversity.nl/education/bachelor/bachelor-economics-and-business-economics/courses-curriculum
BSc Economie & Bedrijfseconomie	Vrije Universiteit Amsterdam	Studiegids	http://www.feweb.vu.nl/nl/studiegids/index.aspx
BSc Economie & Bedrijfseconomie	Radboud University	Online Prospectus	http://www.ru.nl/studiegids/
BSc Economics & Business Economics	Utrecht University	OSIRIS Course Catalogue	https://www.osiris.universiteitutrecht.nl/
BSc Economie & Bedrijfseconomie	Groningen University	Ocasys Course Catalogue	http://www.rug.nl/ocasys/feb/
BSc Economics	Tilburg University	Electronic Guide	https://mystudy.uvt.nl/
BSc Economie & Bedrijfseconomie	Erasmus University Rotterdam	Course guide	https://courses.eur.nl/#/
BSc Economie en Beleid	Wageningen University	Handbook	https://ssc.wur.nl/Handbook/Bachelor



Appendix 2: Full Questionnaire

This Appendix contains the full questionnaire we used, including answer categories.

Section Q1: Research skills

- 1) Quantitative. Are students educated in...*[Not treated / Briefly treated / Extensively treated / Entire course]*
 - a) Applied econometrics (how to work with data/software, e.g. Matlab, R, Stata, SPSS)
 - b) Data selection and evaluation
 - c) Descriptive statistics
 - d) Experimental economics
 - e) Factor analysis
 - f) Regression analysis
 - g) Survey and questionnaire design
 - h)(other)
- 2) Qualitative. Are students educated in... *[Not treated / Briefly treated / Extensively treated / Entire course]*
 - a) Interview design and techniques
 - b) Qualitative field research
 - c)(other)
- 3) Mathematical skills. Are students educated in...*[Not treated / Briefly treated / Extensively treated / Entire course]*
 - a) Basic Econometrics (non-applied)
 - b) Calculus
 - c) Linear algebra
 - d) Logic
 - e) ...(other)



Section Q2.1: History of economic thought

- 1) History of economic thought [*Not treated / Briefly treated / Extensively treated / Entire course*]

Section Q2.2: Theory of economics

- 1) Diversity in current theory. Which theoretical approaches are taught in this course, and how much of the course is spent on them? [*Not treated / Briefly treated / Extensively treated / Entire course*]
- a) Austrian school
 - b) Behavioural economics
 - c) Classical political economy
 - d) Complexity economics
 - e) Ecological economics
 - f) Feminist economics / Social economics
 - g) Neoclassical economics
 - i) Environmental economics
 - ii) Game theory
 - iii) General equilibrium theory
 - iv) Marginalist micro-economics
 - v) Monetarism
 - vi) Neoclassical competition theory
 - vii) Neoclassical growth theory
 - viii) Neoclassical international trade theory
 - ix) Neo-Keynesian economics
 - x) New classical macroeconomics
 - xi) New institutional economics
 - xii) New Keynesian economics
 - xiii) Public economics / Welfare economics
 - h) Original Institutional economics



- i) Post-Keynesian economics
- j) Radical economics
- k) other¹¹

Section Q2.3: Multi- and Interdisciplinarity

- 1) Are lecturers from other disciplines invited to teach guest lectures? *[yes/no, with text box for elaboration]*
- 2) Does this course involve literature from other academic disciplines? *[yes/no, with text box for elaboration]*
- 3) Does this course work on interdisciplinarity in any other ways? *[yes/no, with text box for elaboration]*
- 4) Which other disciplines are taught? *[Not treated / Briefly treated / Extensively treated / Entire course]*
 - a) Anthropology
 - b) Business Studies
 - c) Culture Studies
 - d) Human Geography
 - e) Political Science
 - f) Psychology
 - g) Sociology
 - h) Other... *[open textbox]*

Section Q3: Real world economics

- 1) Are the problems of the real economy taken as starting points, rather than as mere illustrations of theoretical ideas? (Examples, drawing on the Millennium Development Goals: extreme poverty and hunger, climate change, financial crises, social-economic inequality, gender inequality, diseases and health problems, lack of education ...) *[Not treated / Briefly treated / Extensively treated]*

¹¹ A theoretical approach and economist not included are evolutionary economics and Joseph Schumpeter, because it is often unclear in what way this is presented, as an independent approach or as a sub-approach of neoclassical economics.



treated / Entire course]

- 2) Are sectors of the real economy described in this course, without directly being related to only a single theory? (Examples: company structure of specific sectors, institutions in the housing market, actors labour relations, Dutch policy organisations, informal economy, international organizations...) [*Not treated / Briefly treated / Extensively treated / Entire course]*
- 3) Does this course include economic history? [*Not treated / Briefly treated / Extensively treated / Entire course, with textbox for elaboration]*

Section Q4.1: Philosophy of science / Ethics / Methodology

- 1) Does this course teach elements of the philosophy of science? [*Not treated / Briefly treated / Extensively treated / Entire course]*
- 2) Does this course teach elements of ethical philosophy? [*Not treated / Briefly treated / Extensively treated / Entire course]*
- 3) Does this course teach elements of economic methodology? [*Not treated / Briefly treated / Extensively treated / Entire course]*

Section Q4.2: Didactic methods

- 1) Study material. Which of the following kinds of study materials are used for this course? [*yes/no]*
 - a) Textbooks [*yes/no, if yes, which one(s)?]*
 - b) Original works [*yes/no]*
 - c) More recent literature [*yes/no]*
 - d) Online material [*yes/no]*
 - e) Information not available [*yes/no]*
- 2) Testing. Which of the following methods are used in the testing for this course? [*yes/no]*
 - a) No information available / unclear [*yes/no]*
 - b) Open/Essay questions [*yes/no]*
 - c) Multiple-choice questions [*yes/no]*
 - d) Reports/essays [*yes/no]*



- e) Verbal examination [yes/no]
 - f) Contribution during tutorials [yes/no]
 - g) Homework grades [yes/no]
 - h) Other methods of examination [yes/no]
- 3) Skills of expression. Does this course contain practice in the following skills?
- a) Speaking/presenting [yes/no]
 - b) Argumentation in essay format [yes/no]
 - c) Debating [yes/no]
 - d) Assignment with other forms which train skills of (public) expression [yes/no]
 - e) Other [yes/no]



Appendix 3: Classification of Economic Approaches

Table 13: Short Descriptions of theoretical approaches

Approach	Short Description
<i>Austrian school</i>	Came into existence at the end of the 19 th century in Austria in order to explain economic reality by deducing it from certain universal principles such as subjective value, spontaneous order and opportunity costs. The School became more distinctly organized as such after the Second World War when neoclassical Economics went through its formalistic revolution and thus moved further away from the Austrian School; at first the two were very similar. Because the world is complex and even unknowable to a large extent, unconstrained markets are viewed as the best institution as they convey crucial information through price mechanisms.
<i>Behavioural economics</i>	Uses certain insights from psychology to explain how, when and why humans may behave in ways that are different from neoclassical theory, which leads to the conclusion that human rationality is bounded. So rather than processing information like a computer as neoclassical economics assumes, people rely on heuristics that allow them to make rough judgements and are influenced by framing in doing so. Decision making within markets is however not random, hence irrationality can be predictable. This approach is widely used in policy and interaction design, a practice known as 'paternalistic libertarianism' or 'nudging'.
<i>Classical political economy</i>	Developed at the end of the 18th century to give a systematic explanation of the economy by looking at the tendency of markets to move towards equilibrium and the interaction between landowners, capitalists and workers. Based on the labour or cost theory of value, most classical political economists argued for free trade and free markets.
<i>Complexity economics</i>	Recently arisen out the application of methods from mathematics, physics and biology to economic problems. Humans are rule followers, as they emulate others and are adaptive to changes in their



Thinking like an Economist?

	environment. Not everyone follows the same 'rules', and 'rules' are not constant over time. Hence, the system is always subject to change.
<i>Ecological economics</i>	Economies are open and complex systems which are embedded within societal (eco)systems, most importantly the biosphere. They need to be looked at from a holistic approach. The approach questions unlimited pursuit of material wealth and utilitarian perspectives of well-being.
<i>Feminist economics / Social economics</i>	Economic life is socially and morally embedded; developments in consumption, production and distribution are also explained by reference to social and moral moorings. Human beings are products of social interactions, engaging in conflict, competition as well as cooperation with each other at different moments in time. Instead of focusing on the 'economic man' who has only market transactions, they engage with the entire fabric of provisioning, investigating the ways people organize themselves to make a living as interdependent social processes. Unpaid work, such as housework and care work; informal and subsistence economies are thus also included in the analyses.
<i>Neoclassical economics</i>	Human beings are rational and selfish, as their decisions are solely motivated by expected utility maximization based on their given and stable preferences. Mathematically deduced from these assumptions about individuals, an analysis of markets arises. These markets work mainly through price mechanisms; their efficiency as well as their potential failures are analysed.
<i>Original Institutional economics</i>	Arose largely out of the desire to make economics an empirical science. Individuals, markets and the economy are seen as a whole. They are not analysed as independent phenomena, but as embedded in institutions. People derive habits and value-orientations from the environment, which they in turn influence through their interactions with other people.
<i>Post-Keynesian economics</i>	The starting point is a situation in which actors are uncertain about the future, while knowing what happened in the past. Effective demand, consumption and investment, depends for a large extent on animal spirits. The normal economic situation is one of enduring involuntary unemployment and less than full use of production



A quantitative analysis of economics bachelor curricula in the Netherlands

	capacity. Capitalism exists on an inherently unstable foundation and regularly requires anti-cyclical fiscal policy interventions to achieve prosperity.
<i>Radical economics</i>	Focuses on conflict and exploitation within economic systems. Humans are creative beings who realize their ideas through their work. Within the capitalist system, the struggle between workers and capitalists is dominant. The drive for private profit also leads to continuous technological advances and accompanying instability.

Table 14: Three important economists for each approach

Approach	Important economists		
<i>Austrian school</i>	Carl Menger	Friedrich Hayek	Ludwig von Mises
<i>Behavioural economics</i>	Herbert Simon	Daniel Kahneman	Amos Tversky
<i>Classical political economy</i>	Adam Smith	David Ricardo	John Stuart Mill
<i>Complexity economics</i>	William Brian Arthur	John Barkley Rosser	Eve Mitleton-Kelly
<i>Ecological economics</i>	Karl William Kapp	Herman Daly	Robert Costanza
<i>Feminist economics / Social economics</i>	Marilyn Waring	Amartya Sen	Ester Boserup
<i>Neoclassical economics</i>	Léon Walras	Alfred Marshall	Paul Samuelson
<i>Original Institutional economics</i>	Thorstein Veblen	John Kenneth Galbraith	Geoffrey Hodgson



Thinking like an Economist?

<i>Post-Keynesian economics</i>	Piero Sraffa	Nicholas Kaldor	Hyman Minsky
<i>Radical economics</i>	Karl Marx	Paul Sweezy	Richard Wolff

Table 15: Two theoretical mathematical models for each sub-branch of neoclassical economics

Neoclassical sub-branch	Theoretical mathematical models	
<i>Environmental economics</i>	Optimal resource depletion model	Renewable resource harvesting model
<i>Game theory</i>	Nash equilibrium	Prisoner's dilemma
<i>General equilibrium theory</i>	Arrow–Debreu model	Walrasian Competitive Equilibrium model
<i>Marginalist micro-economics</i>	Perfect Competition model of Consumption Markets	Neoclassical microeconomic model of Labour Markets
<i>Monetarism</i>	Friedman's Quantity Theory of Money	Permanent income model
<i>Neoclassical competition theory</i>	Bertrand–Edgeworth model	Monopsony model
<i>Neoclassical growth theory</i>	Solow–Swan model	Ramsey–Cass–Koopmans model
<i>Neoclassical international trade theory</i>	Ricardian Trade model	Heckscher–Ohlin model



A quantitative analysis of economics bachelor curricula in the Netherlands

<i>Neo-Keynesian economics</i>	IS-LM model	Phillips curve
<i>New classical macroeconomics</i>	Real Business Cycle model	Lucas Islands model
<i>New institutional economics</i>	Williamson's model of managerial discretion	Williamson trade-off model
<i>New Keynesian economics</i>	Calvo model of Staggered Prices	Taylor model of Sticky Wages
<i>Public economics / Welfare economics</i>	Pareto efficiency	Budget-maximizing model

Table 16: Three Important Economists for each sub-branch of neoclassical economics

Neoclassical sub-branches	Important Economists		
<i>Environmental economics</i>	Martin Weitzman	Robert Stavins	Richard Tol
<i>Game theory</i>	John von Neumann	Thomas Schelling	Jean Tirole
<i>General equilibrium theory</i>	Léon Walras	Kenneth Arrow	Gérard Debreu
<i>Marginalist micro-economics</i>	William Stanley Jevons	Alfred Marshall	Lionel Robbins
<i>Monetarism</i>	Milton Friedman	Clark Warburton	David Laidler



Thinking like an Economist?

<i>Neoclassical competition theory</i>	Edward Chamberlin	Orris Herfindahl	Heinrich Freiherr von Stackelberg
<i>Neoclassical growth theory</i>	Robert Solow	Trevor Swan	Tjalling Koopmans
<i>Neoclassical international trade theory</i>	Eli Heckscher	Paul Samuelson	Bertil Ohlin
<i>Neo-Keynesian economics</i>	John Hicks	Alvin Hansen	Franco Modigliani
<i>New classical macroeconomics</i>	Robert Lucas	Edward Prescott	Thomas Sargent
<i>New institutional economics</i>	Oliver Williamson	Douglass North	Daron Acemoğlu
<i>New Keynesian economics</i>	Paul Krugman	Greg Mankiw	George Akerlof
<i>Public economics / Welfare economics</i>	Vilfredo Pareto	Arthur Cecil Pigou	James Buchanan



The background features a complex, abstract pattern of overlapping, semi-transparent circles and lines in various colors including purple, green, yellow, and red. The lines and circles create a dense, geometric web of shapes across the entire page.

Results by University

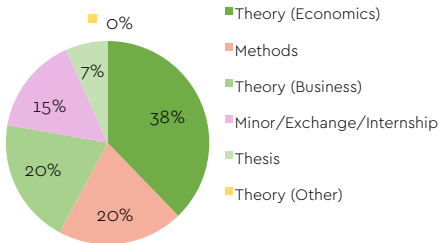
University of Amsterdam

Economics Courses (33)

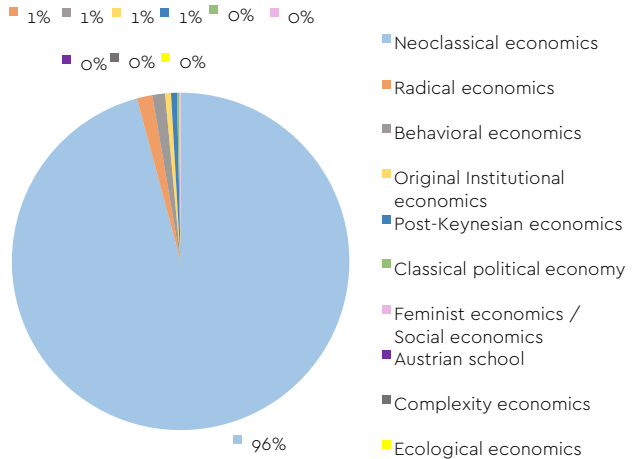
Mandatory (22)

Optional (11)

Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	95,8%
First year	100%
Second year	100%
Third year	81,6%

Pluralistic* courses

11,3%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

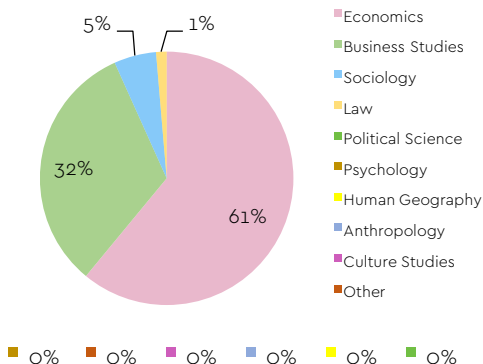
8,8%

* courses which include theory from more than one discipline

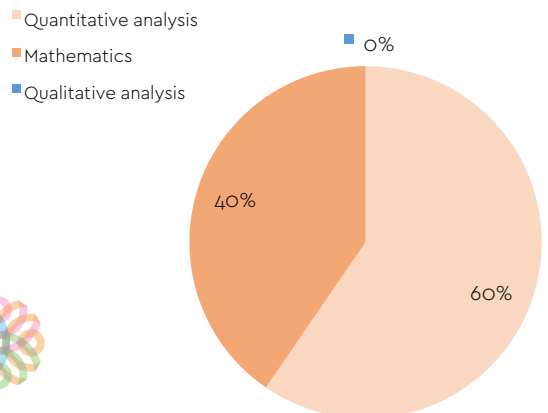
History of Economic Thought

	Obligatory	Optional
Entire course	0 courses	1 course
Part of the course	0 courses	0 courses

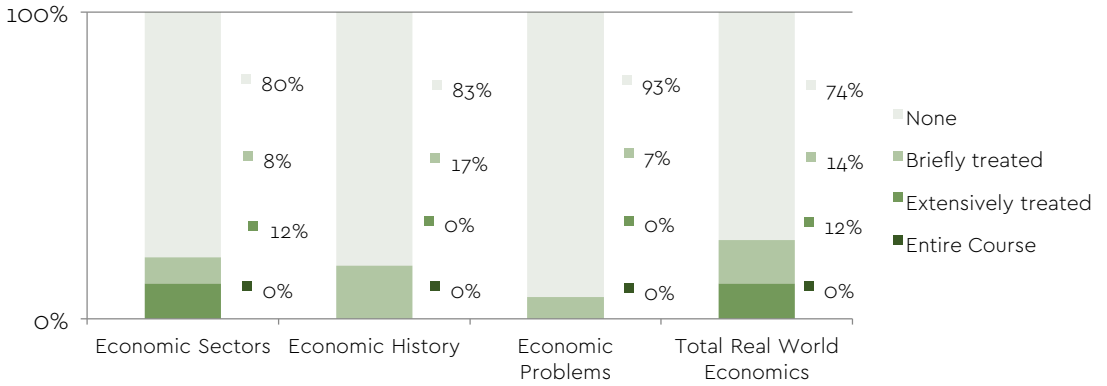
Multidisciplinary



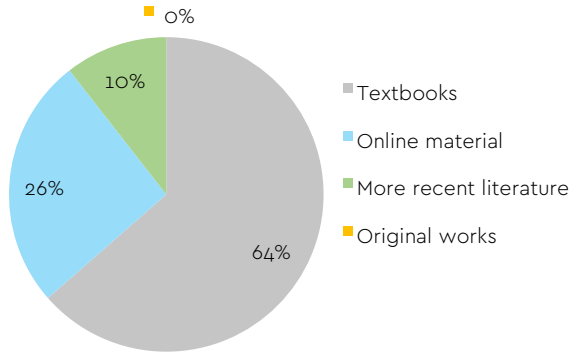
Research Methods



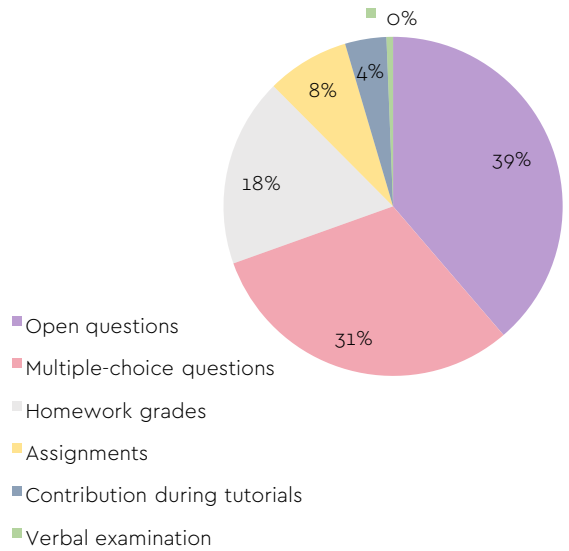
Real World Economics



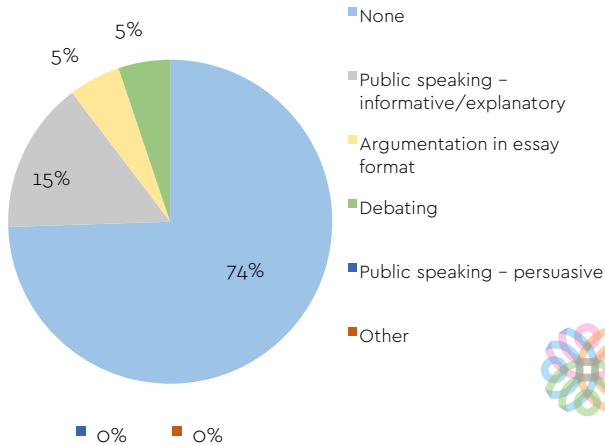
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	0 courses	0 courses
Philosophy of Science	1 course	0 courses
Economic Methodology	1 course	1 course



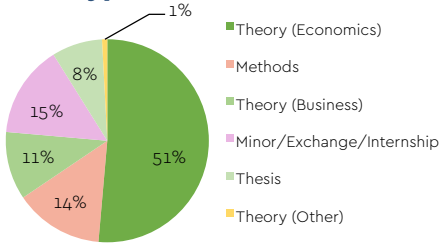
Maastricht University

Economics Courses (37)

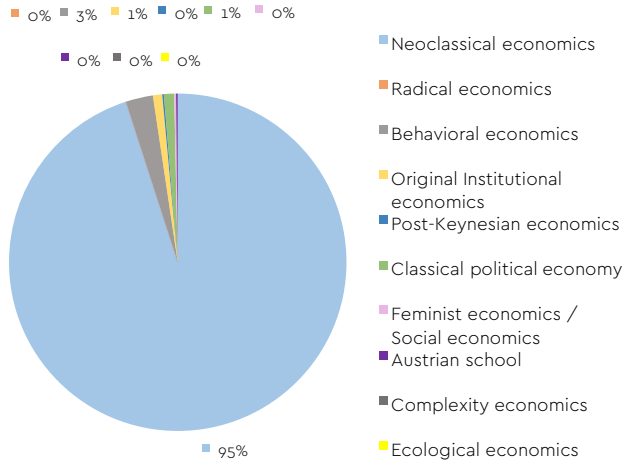
Mandatory (19)

Optional (18)

Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	95,0%
First year	100%
Second year	94,8%
Third year	88,6%

Pluralistic* courses

20,1%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

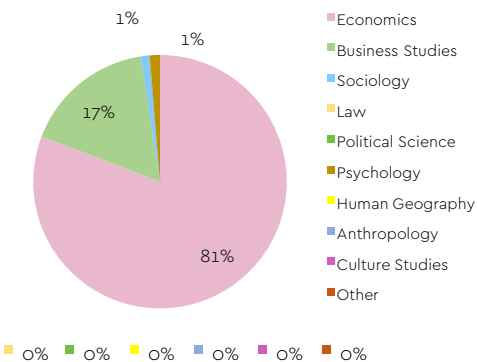
4,8%

* courses which include theory from more than one discipline

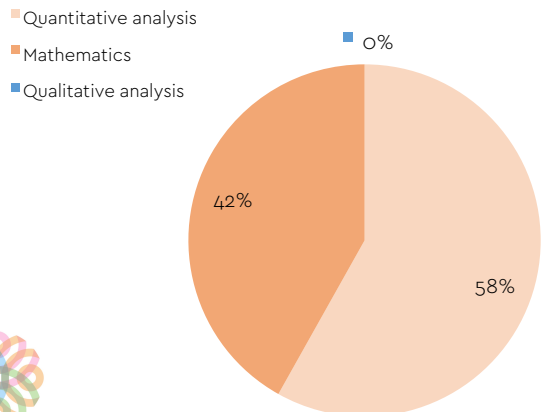
History of Economic Thought

	Obligatory	Optional
Entire course	0 courses	1 course
Part of the course	0 courses	0 courses

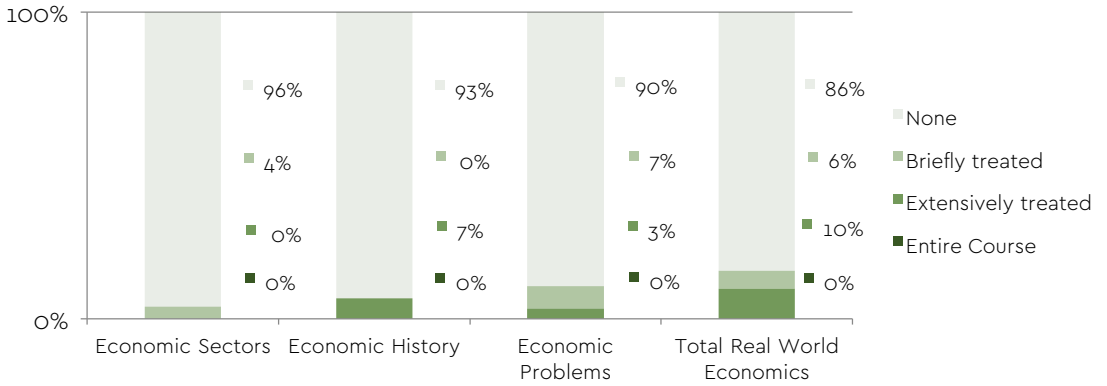
Multidisciplinarity



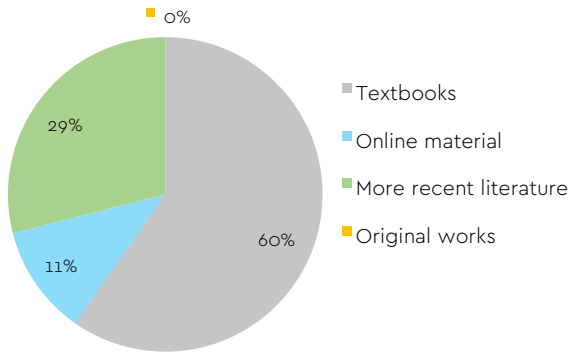
Research Methods



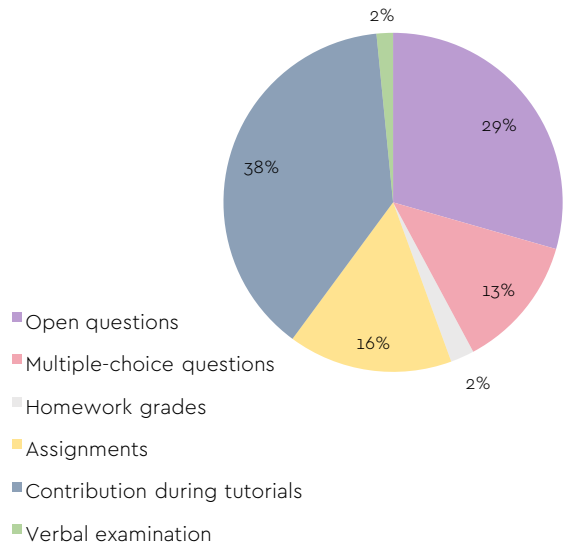
Real World Economics



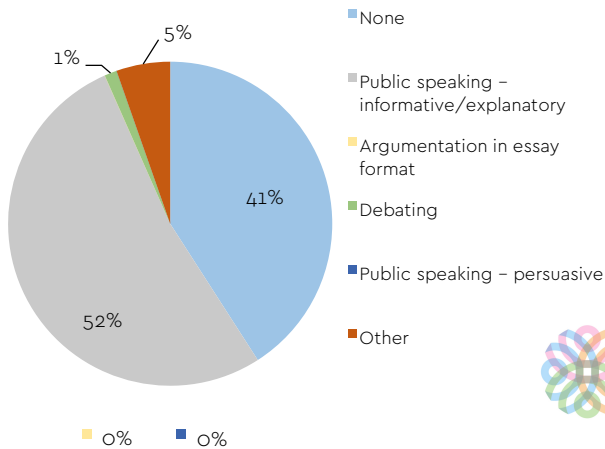
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	0 courses	0 courses
Philosophy of Science	0 courses	0 courses
Economic Methodology	0 courses	0 courses



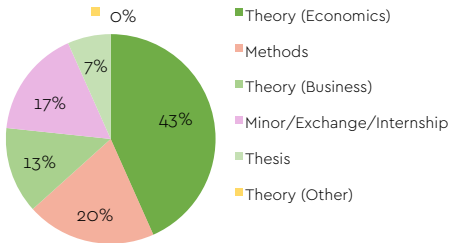
Free University (Amsterdam)

Economics
Courses (26)

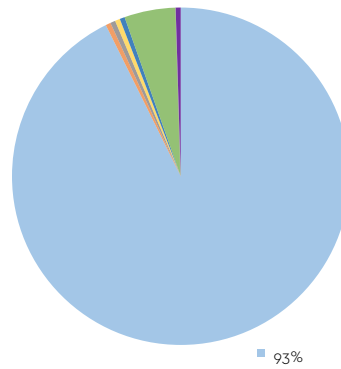
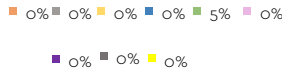
Mandatory
(23)

Optional
(3)

Course Types



Economic Approaches



- Neoclassical economics
- Radical economics
- Behavioral economics
- Original Institutional economics
- Post-Keynesian economics
- Classical political economy
- Feminist economics / Social economics
- Austrian school
- Complexity economics
- Ecological economics

Neoclassical economics in economics theory courses

Entire bachelor	92,7%
First year	94,4%
Second year	90,2%
Third year	100%

Pluralistic* courses

30,8%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

7,7%

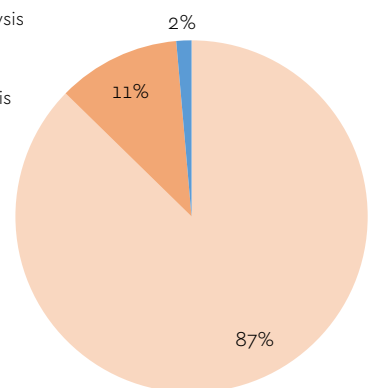
* courses which include theory from more than one discipline

History of Economic Thought

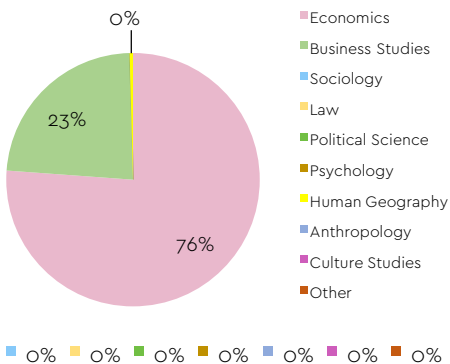
	Obligatory	Optional
Entire course	0 courses	0 courses
Part of the course	1 course	0 courses

Research Methods

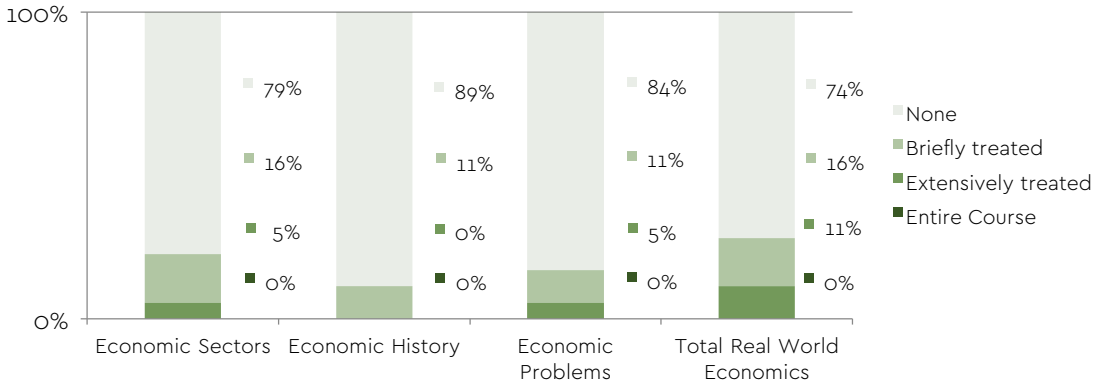
- Quantitative analysis
- Mathematics
- Qualitative analysis



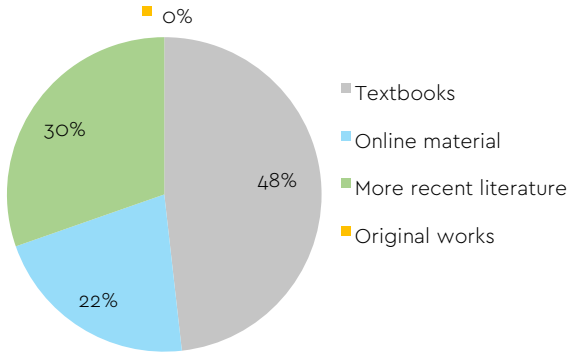
Multidisciplinary



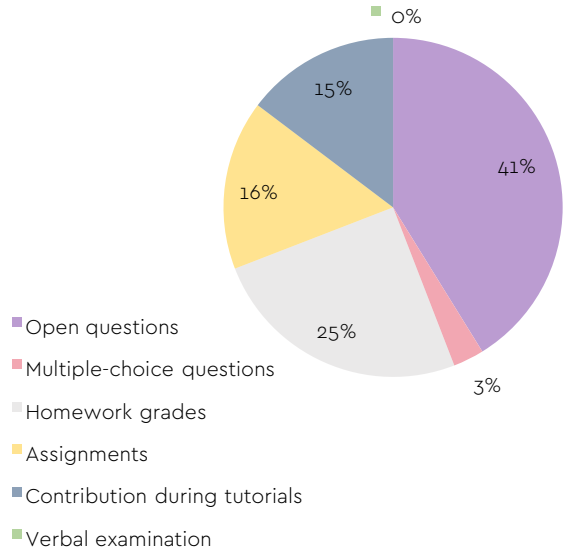
Real World Economics



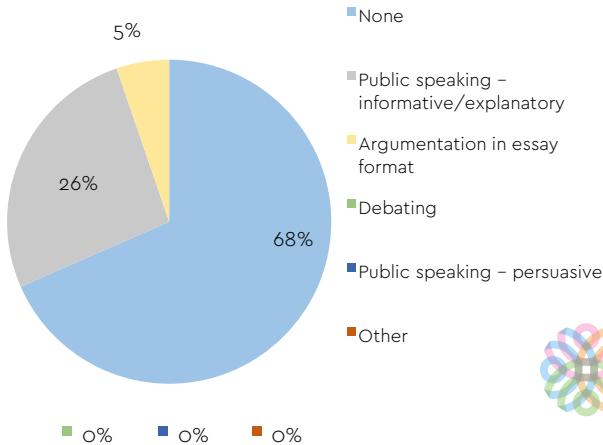
Teaching Materials



Testing Methods



Communication Skills

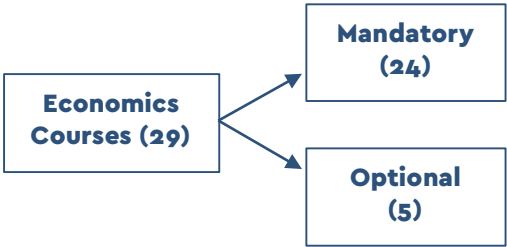


Critical Thinking

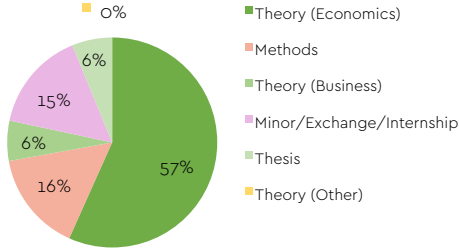
	Obligatory	Optional
Ethics	1 course	0 courses
Philosophy of Science	1 course	0 courses
Economic Methodology	0 courses	0 courses



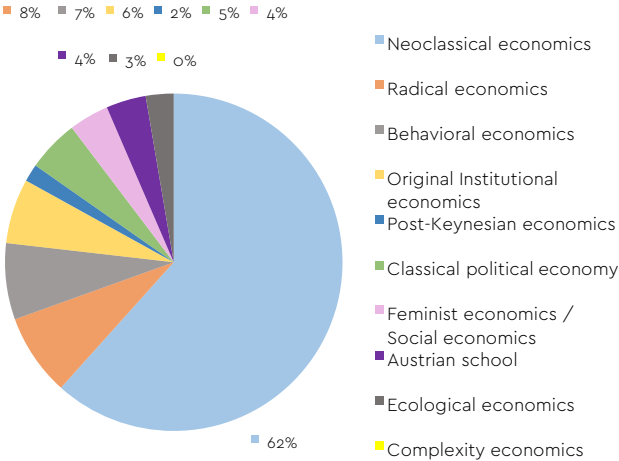
Radboud University (Nijmegen)



Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	61,7%
First year	80,0%
Second year	45,9%
Third year	65,5%

Pluralistic* courses

61,0%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

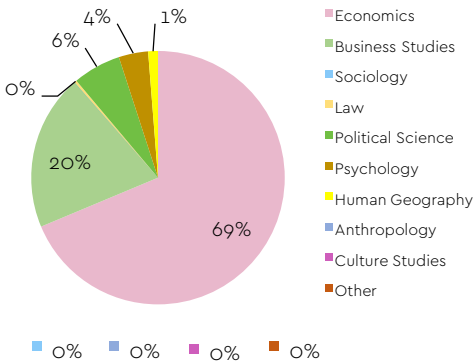
21,8%

* courses which include theory from more than one discipline

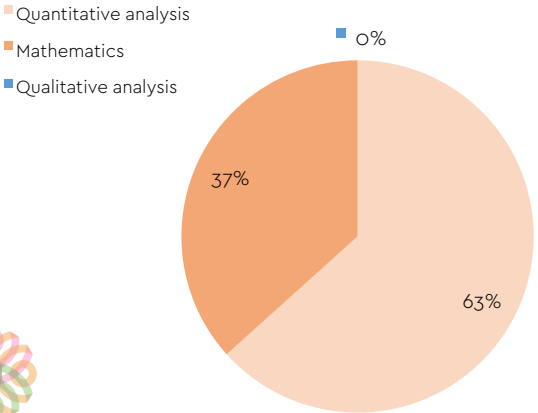
History of Economic Thought

	Obligatory	Optional
Entire course	1 course	0 courses
Part of the course	0 courses	0 courses

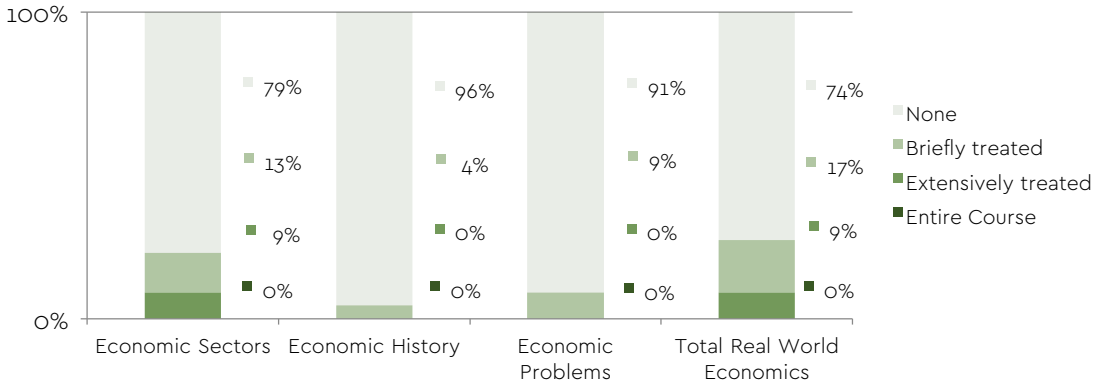
Multidisciplinary



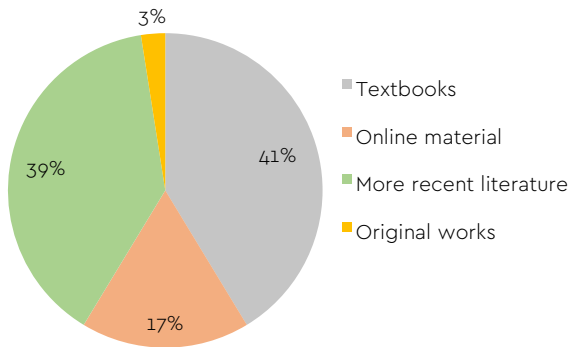
Research Methods



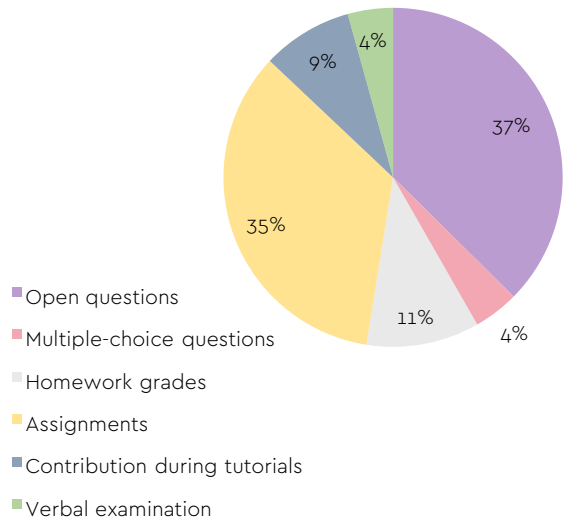
Real World Economics



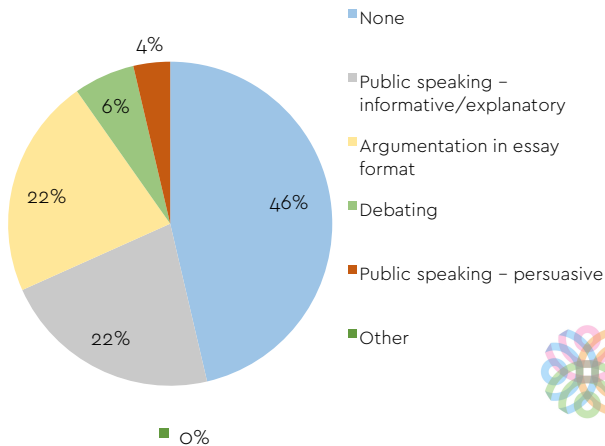
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	2 courses	1 course
Philosophy of Science	2 courses	0 courses
Economic Methodology	3 courses	0 courses



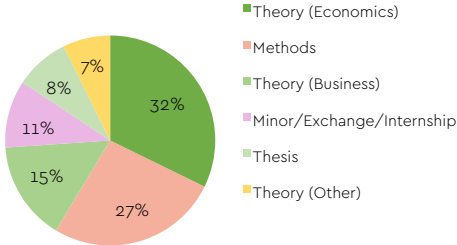
Utrecht University

Economics Courses (48)

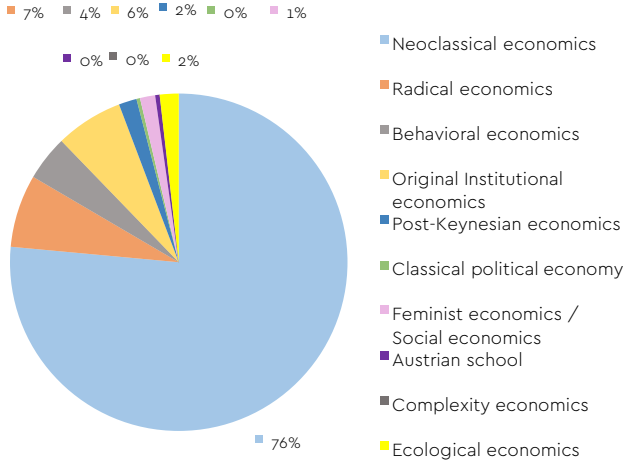
Mandatory (12)

Optional (36)

Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	76,5%
First year	65,4%
Second year	89,5%
Third year	76,8%

Pluralistic* courses

47,1%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

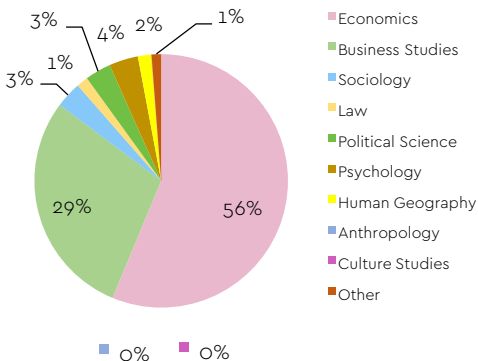
20,5%

* courses which include theory from more than one discipline

History of Economic Thought

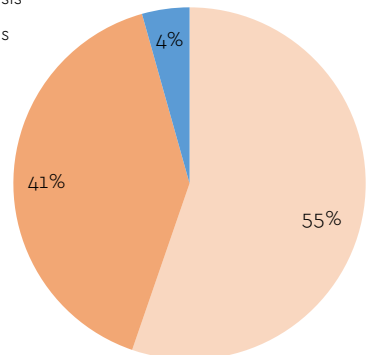
	Obligatory	Optional
Entire course	0 courses	1 course
Part of the course	1 course	0 courses

Multidisciplinary

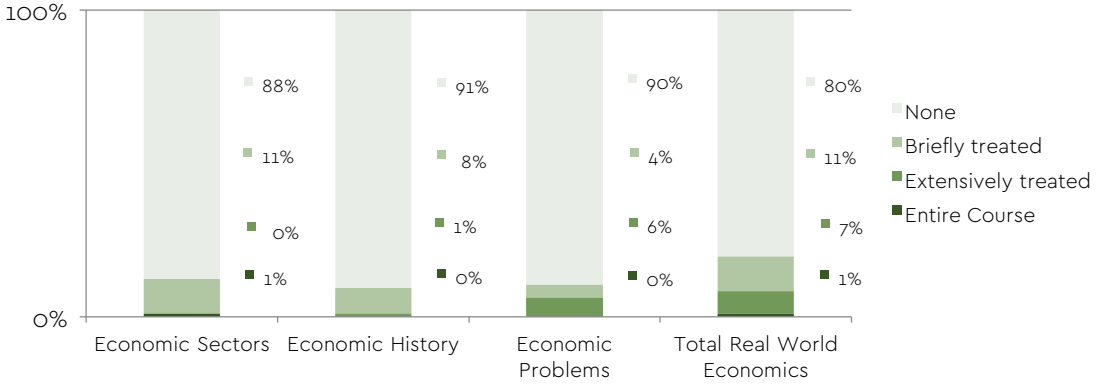


- Mathematics
- Quantitative analysis
- Qualitative analysis

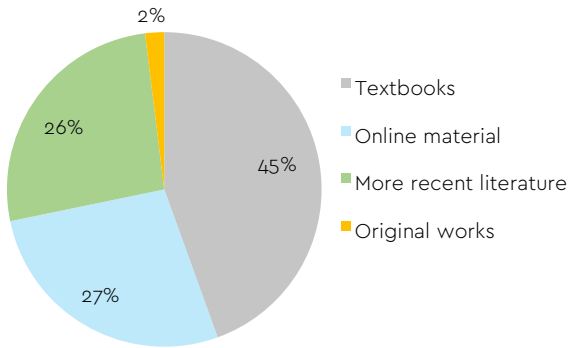
Research Methods



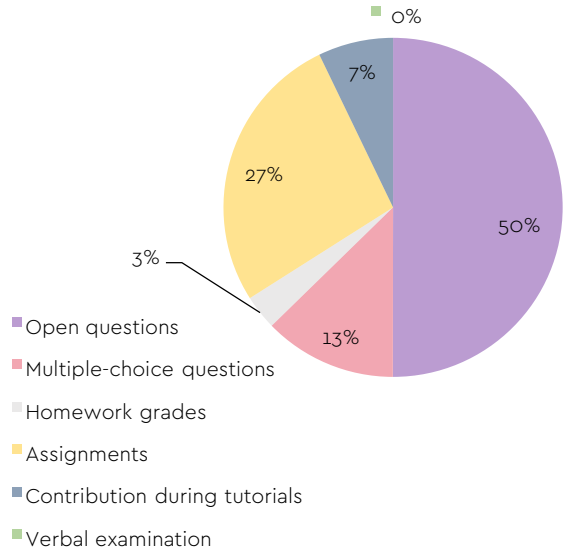
Real World Economics



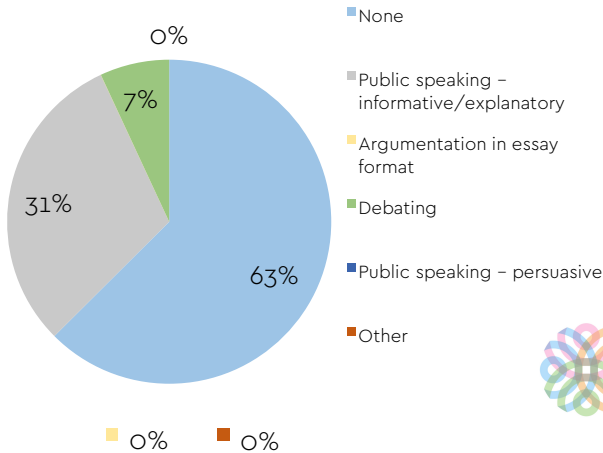
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	0 courses	2 courses
Philosophy of Science	0 courses	0 courses
Economic Methodology	1 course	2 courses



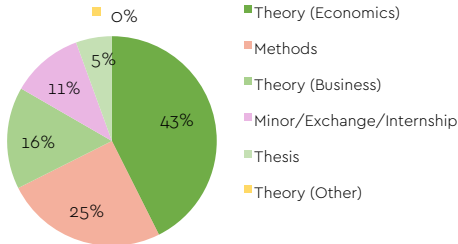
Groningen University

Economics Courses (47)

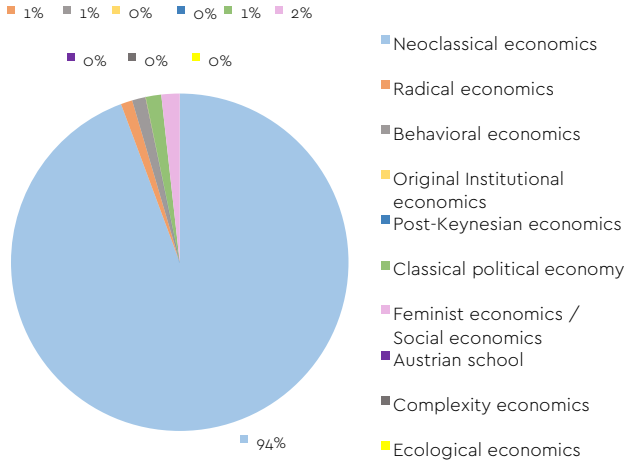
Mandatory (28)

Optional (19)

Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	94,3%
First year	100%
Second year	97,6%
Third year	87,3%

Pluralistic* courses

32,0%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

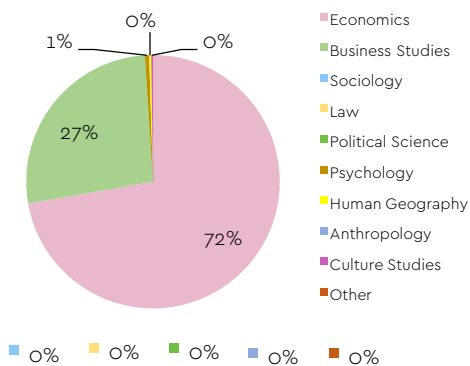
2,2%

* courses which include theory from more than one discipline

History of Economic Thought

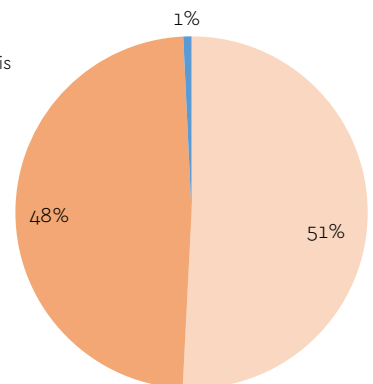
	Obligatory	Optional
Entire course	1 course	0 courses
Part of the course	0 courses	0 courses

Multidisciplinary

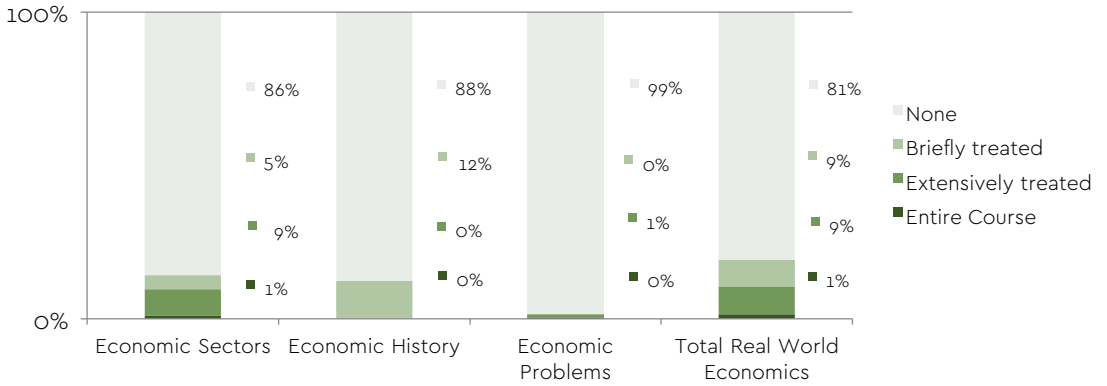


- Quantitative analysis
- Mathematics
- Qualitative analysis

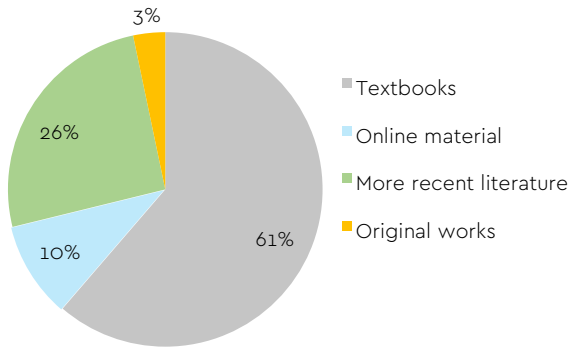
Research Methods



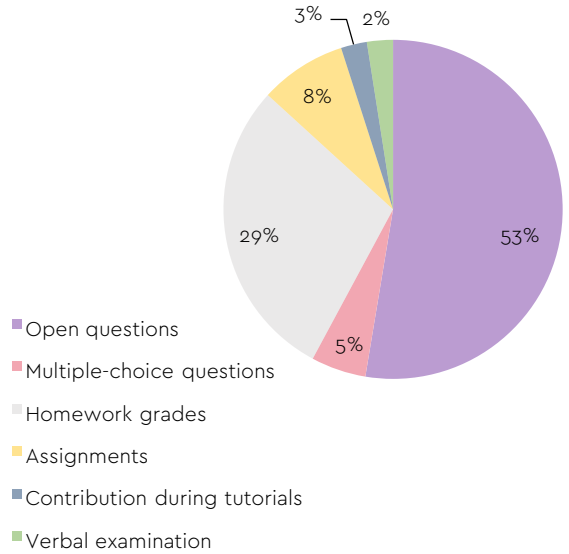
Real World Economics



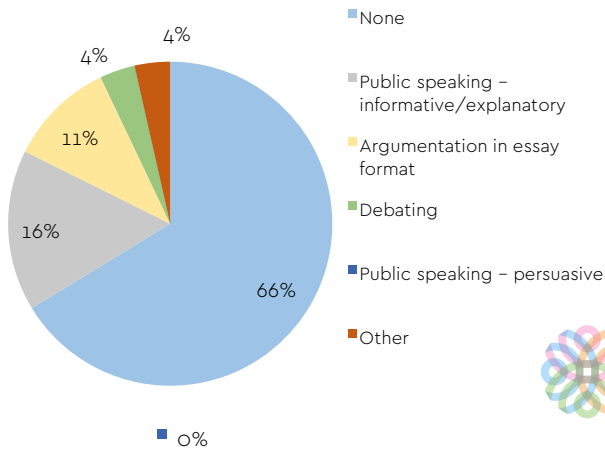
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	0 courses	0 courses
Philosophy of Science	1 course	0 courses
Economic Methodology	0 courses	0 courses



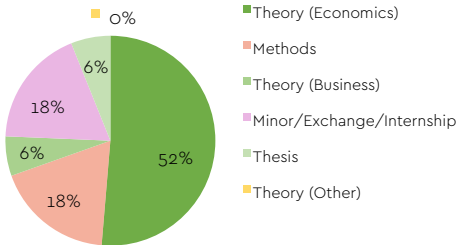
Tilburg University

Economics Courses (33)

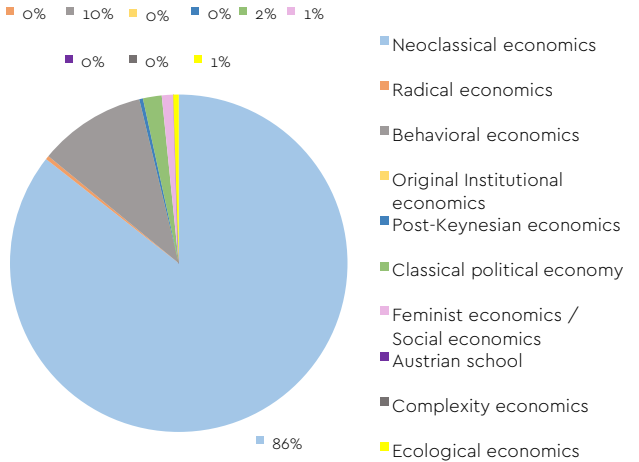
Mandatory (24)

Optional (9)

Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	85,6%
First year	96,9%
Second year	81,4%
Third year	81,6%

Pluralistic* courses

35,3%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

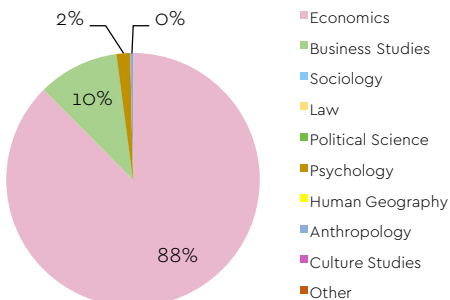
2,4%

* courses which include theory from more than one discipline

History of Economic Thought

	Obligatory	Optional
Entire course	0 courses	1 course
Part of the course	1 course	0 courses

Multidisciplinary

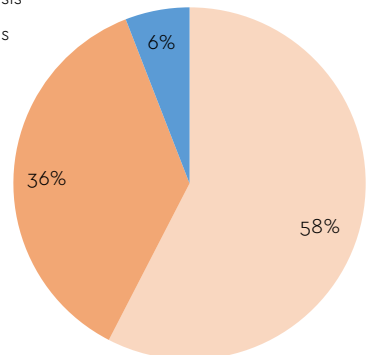


0% 0% 0% 0% 0% 0%

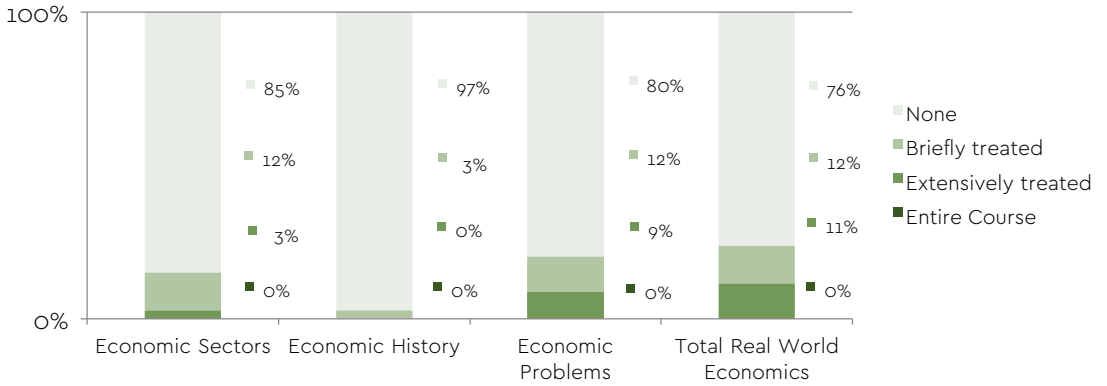
- Mathematics
- Quantitative analysis
- Qualitative analysis



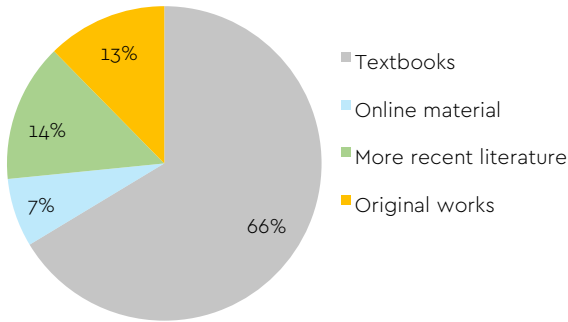
Research Methods



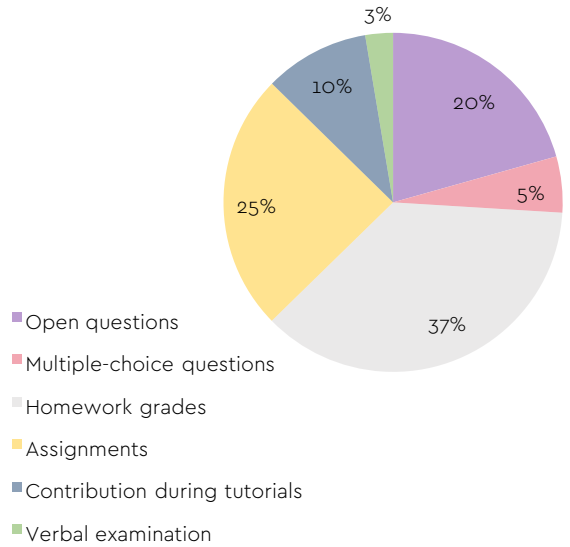
Real World Economics



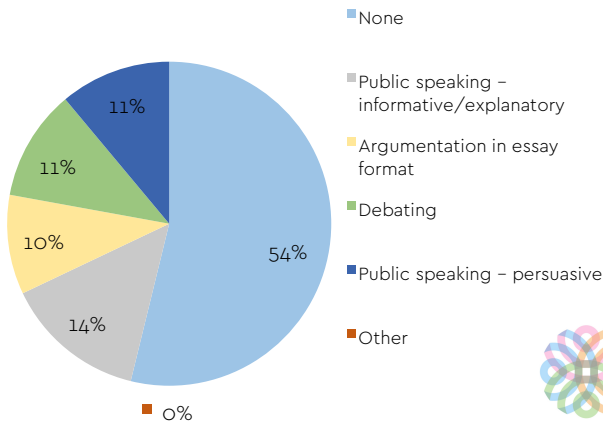
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	2 courses	0 courses
Philosophy of Science	2 courses	0 courses
Economic Methodology	1 course	0 courses



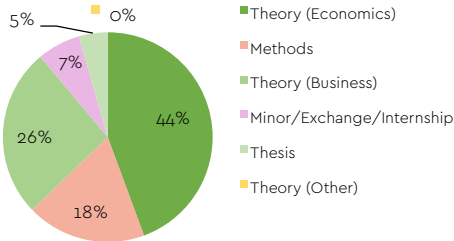
Erasmus University (Rotterdam)

Economics
Courses (42)

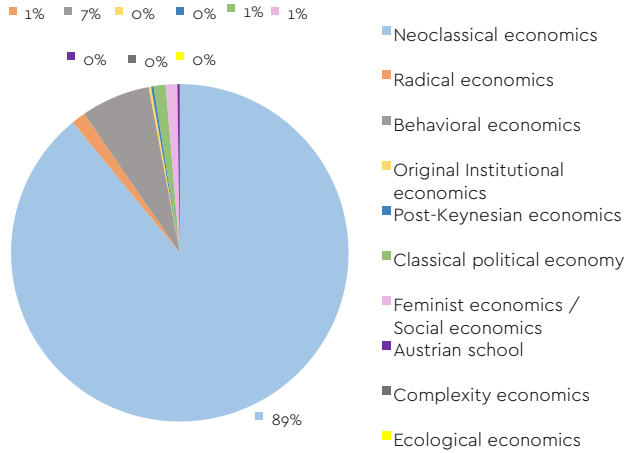
Mandatory
(22)

Optional
(20)

Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	89,1%
First year	97,0%
Second year	74,4%
Third year	94,3%

Pluralistic* courses

29,8%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

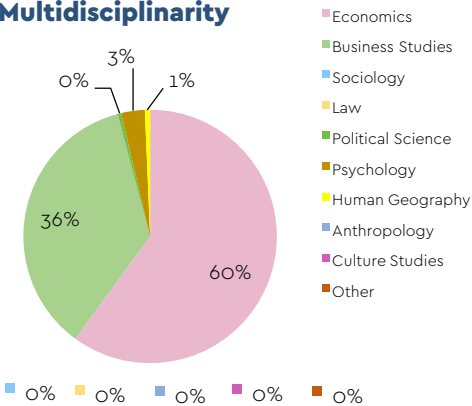
20,8%

* courses which include theory from more than one discipline

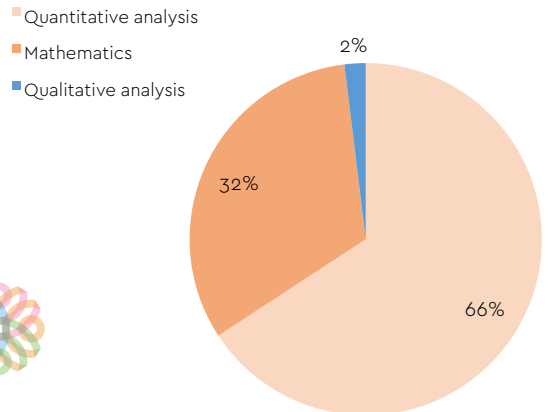
History of Economic Thought

	Obligatory	Optional
Entire course	1 course	0 courses
Part of the course	0 courses	0 courses

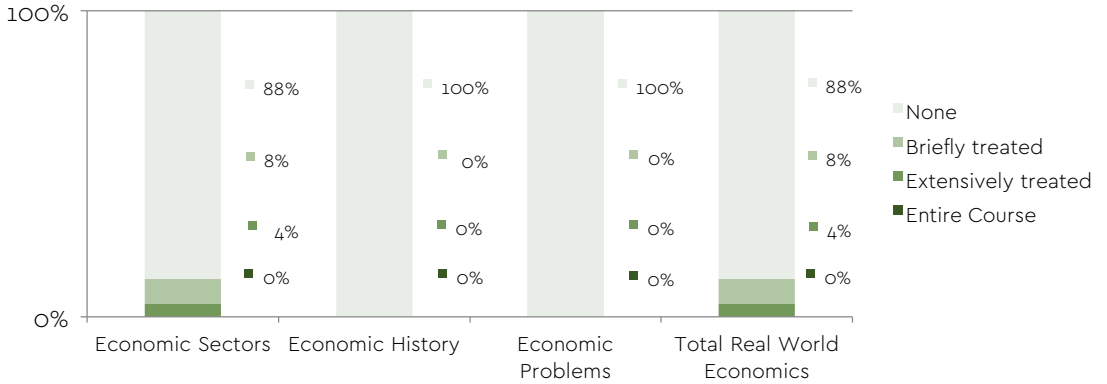
Multidisciplinarity



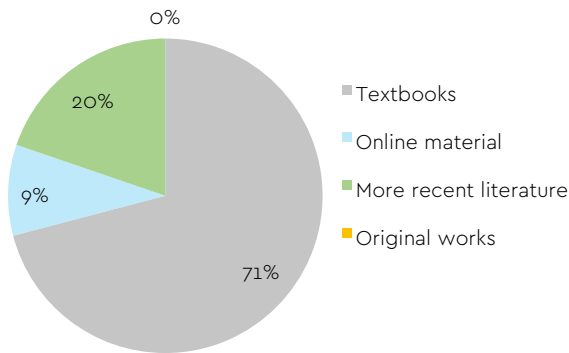
Research Methods



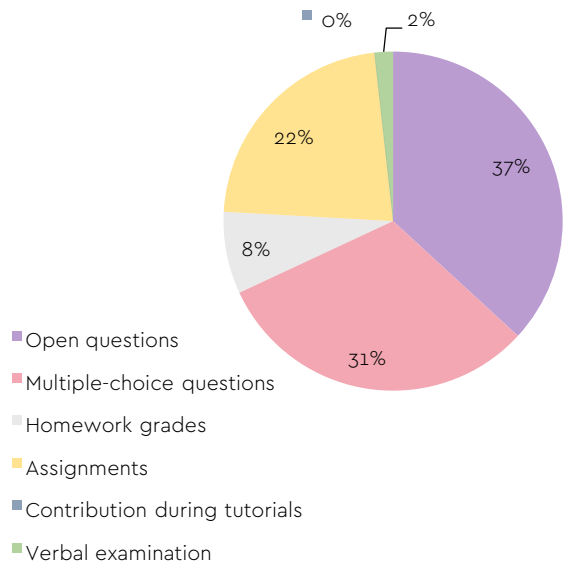
Real World Economics



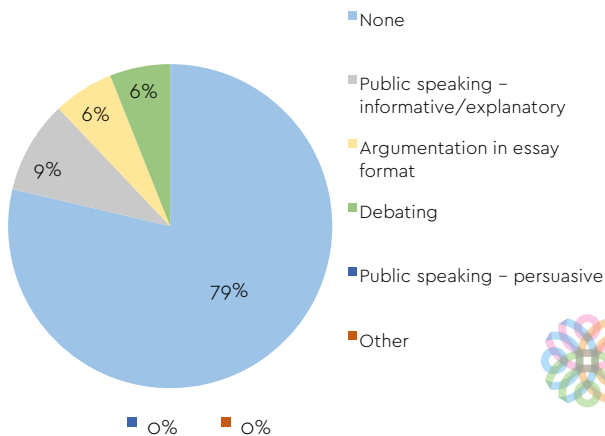
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	1 course	0 courses
Philosophy of Science	1 course	0 courses
Economic Methodology	1 course	0 courses



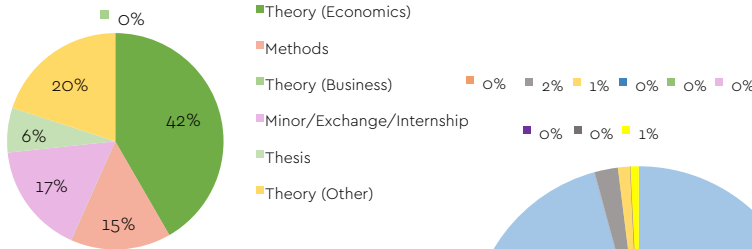
Wageningen University

Economics Courses (30)

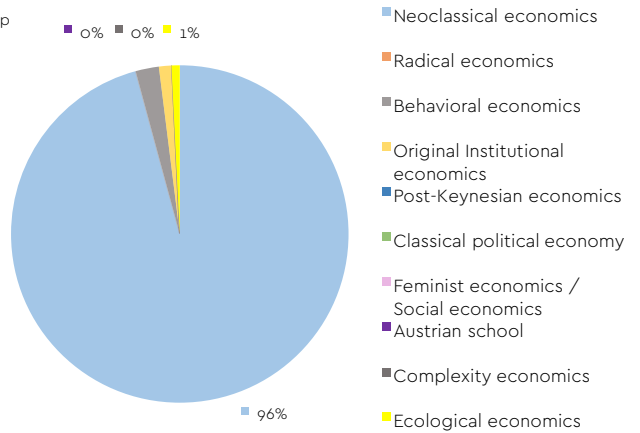
Mandatory (20)

Optional (10)

Course Types



Economic Approaches



Neoclassical economics in economics theory courses

Entire bachelor	95,8%
First year	97,1%
Second year	94,0%
Third year	100%

Pluralistic* courses

33,3%

* courses which include theory from more than one economic approach

Interdisciplinary* courses

10,8%

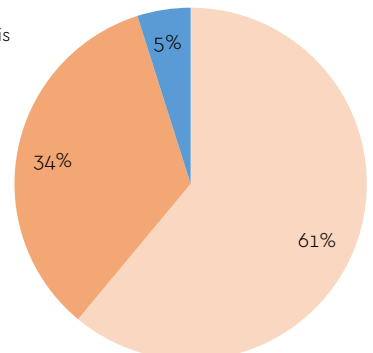
* courses which include theory from more than one discipline

History of Economic Thought

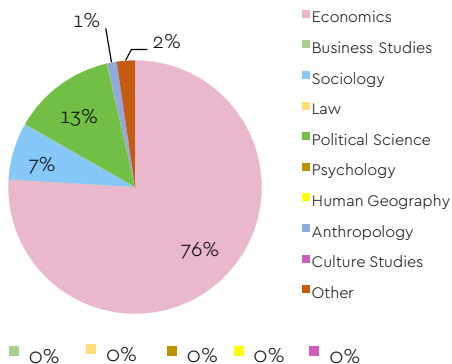
	Obligatory	Optional
Entire course	1 course	0 courses
Part of the course	0 courses	0 courses

Research Methods

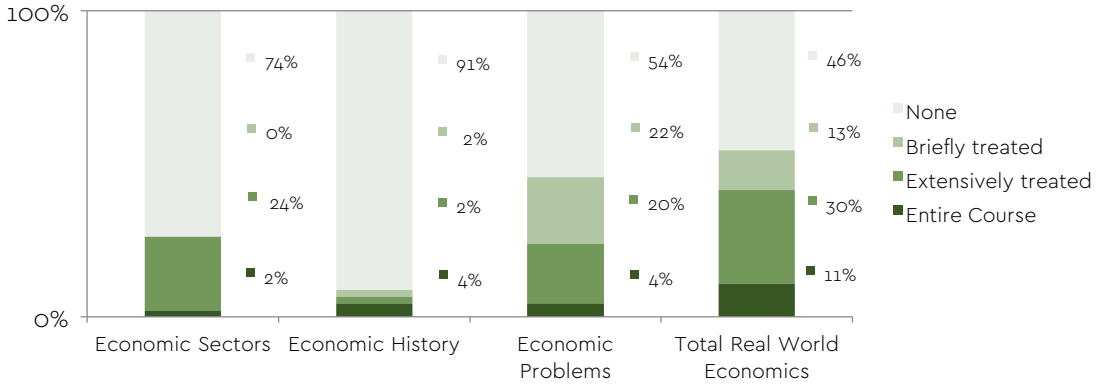
- Quantitative analysis
- Mathematics
- Qualitative analysis



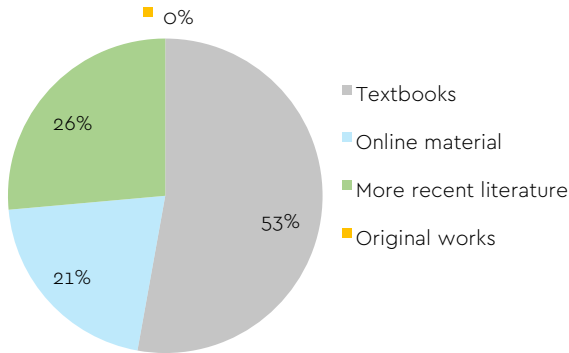
Multidisciplinary



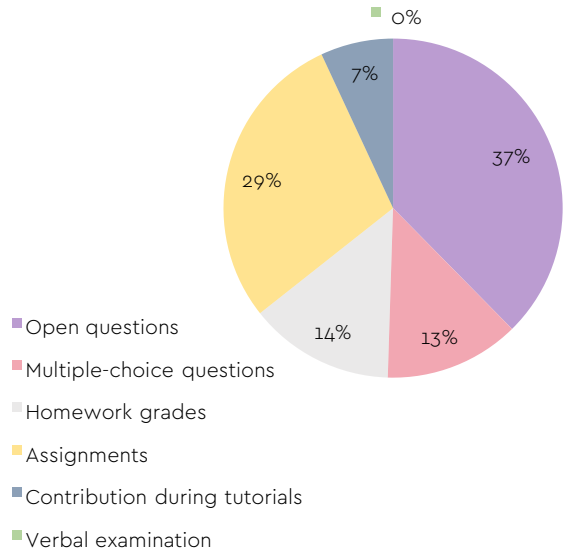
Real World Economics



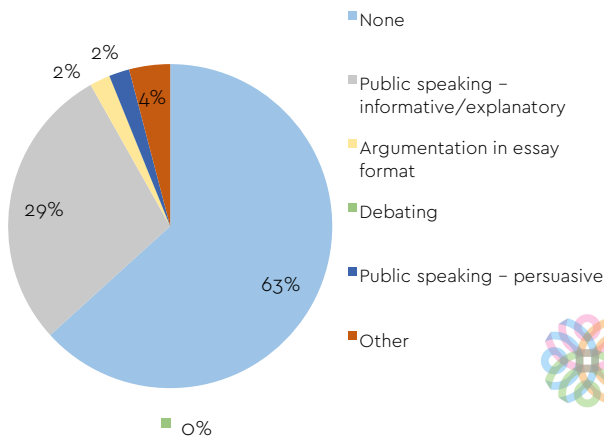
Teaching Materials



Testing Methods



Communication Skills



Critical Thinking

	Obligatory	Optional
Ethics	1 course	0 courses
Philosophy of Science	0 courses	0 courses
Economic Methodology	0 courses	0 courses





