

# The degrowth of work time: A concept with an ordoliberal orientation?

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## Abstract

Degrowth is a multi-faceted concept which creates confusion rather than clarity in debates on the future of society. This is why this paper concentrates on one of its subcategories - work-time degrowth. First, we review different proposals of work time reduction (WTR) and assess existing empirical studies on its effects. Second, we critically analyse whether WTR is a feasible proposal, particularly regarding its effectiveness as a strategy to reach environmental goals. Third, to broaden our analysis, we assume an ordoliberal view on degrowth and evaluate what ordoliberalism could add to the growth versus degrowth debate. Our analysis shows that there is a number of gaps in the degrowth literature concerning the feasibility as well as the measurement of the effects of work time degrowth. The considered empirical studies reveal difficulties in composing a model that reflects real-world complexities. Institutional change and the involved actors are insufficiently discussed but are crucial from an ordoliberal perspective.

*Keywords:* Work time degrowth, feasibility, ordoliberalism, institutional change

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# 1 Introduction

Degrowth is an ambiguous term. That is because diverse definitions co-exist within the degrowth literature, depicting it as a “current of thought”, “movement”, “philosophy” or “interpretative frame” (De Perthuis and Jouvet 2015). Also, there is a wide array of alternative concepts of growth in ecological economics or new economics, among them being “sustainable de-growth” (Jackson 2009; Martinez-Alier et al. 2010), but also “green growth”, “selective growth”, “agrowth” (Van den Bergh 2011), or “post-growth” (Goodwin 2010; speth2008bridge). We define degrowth as a “process whose end goal is steady state economy...a voluntary transition towards a just, participatory, and ecologically sustainable society” (Degrowth 2010).

Van den Bergh (2011) categorises degrowth ideas into five main types: GDP degrowth, consumption degrowth, radical degrowth, physical degrowth and work-time degrowth. While GDP degrowth is the most commonly associated and discussed concept, this paper assesses the feasibility of work-time degrowth. We believe that work-time degrowth is interesting to analyse because it is a concrete policy proposal which focuses on one concrete key figure: work time.

Work time reduction (WTR) has been discussed in other contexts, such as health and happiness (Kivimäki et al. 2015; Böheim and Taylor 2004; Alesina, Glaeser, and Sacerdote 2005) or macroeconomic effects on unemployment (Antal 2014; Balleer et al. 2016; Raposo and Ours 2010). A small but growing body of degrowth literature investigates whether a decrease in income leads to a decrease in carbon dioxide emissions (Kallis et al. 2013; Rosnick 2013; Devetter and Rousseau 2011; Pullinger 2014; Victor 2012; King and Bergh 2017; Shao and Shen 2017).

We contribute to this literature with a review of five proposals of work-time degrowth

and their implications for consumption and the environment. Beyond that, we contrast ordoliberalism and degrowth to show that their different ontological assumptions translate into their proposals on how change takes place in societies.

The remainder is structured as follows. In the next section, we present concepts of work-time degrowth. We discuss their effects on the environment, especially the time and income effect, and critically evaluate this literature. Section three considers degrowth from an ordoliberal perspective and, to our knowledge, for the first time examines what ordoliberalism could add to the debate on growth versus degrowth. Section four concludes.

## 2 Concepts for reducing work time

### *2.1 Five scenarios of work time degrowth*

King and Bergh (2017) present five WTR scenarios and apply them to the case of the UK. They propose a four-day workweek and a three-day weekend with a free Friday, a free Wednesday or a flexible free day through minimising office space, or less daily hours or increased holiday entitlement. Every scenario reduces work time by 20%.<sup>1</sup> They focus on how different policy designs lead to different energy and time usage. A central assumption is that the reduction in work time is more rapid than productivity increases and thus leads to a decrease in income. Otherwise, the effect of WTR on the environment might be reversed (King and Bergh 2017, 127).

Each scenario has a different impact on leisure time activities, GDP and the environment. King and Bergh (2017) analyse various effects and sub-effects. Concerning the employees, they consider time effects and income effects. The first shows the impact of WTR on lifestyle patterns, i.e. how more free time

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1. In the UK, this is an effective reduction by 17,5% because they only consider full-time employees (King and Bergh 2017, 127). With part-time and self-employed individuals remaining the same, the effective WTR depends on the proportion of full-time workers in a country.

translates into activities like leisure and retail travel, commuting, expenditure and domestic energy use. The latter displays how consumption changes due to a change in income. On the business side, they consider effects on business transport, private and public energy use, office space and output.

First, the scenario of a four-day workweek with a three-day weekend is the reference scenario against which the other proposals are compared. They propose that all businesses are closed on Fridays, but some sectors like the catering-, hotel-, retail- and leisure-industry are presumed to remain open. Employees of these industries could be compensated through an extra free day during the week (King and Bergh 2017, 126). The total effect of this scenario on metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>) per year is, on the whole, a decrease of 14.21 MTCO<sub>2e</sub> (King and Bergh 2017, 134). For comparison, 10 MTCO<sub>2e</sub> are equivalent to the CO<sub>2</sub>-emissions of 23.2 barrels of oil (Agency], September 2017).

In comparison to the first scenario, the second proposal with a free Wednesday minimises travelling - an effect of the three-day weekend. This diminishes the effect of leisure and retail travel on MTCO<sub>2e</sub>. Another effect of the free-Wednesday scenario is an increase in domestic energy use, which results from the increased time spent at home (King and Bergh 2017, 129). Due to this, the overall saving is 12.91 MTCO<sub>2e</sub> (King and Bergh 2017, 134).

Third, King and Bergh (2017) suggest that employers could flexibly manage their staff with 20% fewer employees working at the same time. One option to reorganise workforce would be to allocate individual employees across a four-day workweek, while the opening hours of businesses and society's five-day workweek remain the same. This may also minimise the company's office space and operational costs (King and Bergh 2017, 126). The change in MTCO<sub>2e</sub> is a minimisation by 11.7 (King and Bergh 2017, 134). Like in the two previous scenarios, this is a strong effect of

WTR on emissions due to the absence of the fifth day of commuting. Contrary to the free-Friday and free-Wednesday scenario, however, the company still needs to maintain the working space for five and not four days. Therefore, industrial sector energy consumption does not decline as much as in the other two scenarios.

The fourth WTR scenario is a workday reduction. In OECD countries, the mean work time per day is eight hours. A reduction in working hours by 20% would lead to a 6.4-hour working day on average. In this scenario, businesses remain open five days a week, but opening hours may decrease (King and Bergh 2017, 126). The effect of this scenario on MTCO<sub>2e</sub> is minus 1.18 per year (King and Bergh 2017, 134). This is because commuting, as well as leisure and retail travel, do not decrease in use as the number of working days remains the same. Beyond that, because more time is spent at home, there is an increase in domestic energy use.

Fifth, we should consider an increase in holiday entitlement. In order to minimise work time by 20%, personal holiday entitlement needs to rise by 70 calendar days.<sup>2</sup> The total effect on MTCO<sub>2e</sub> in this scenario is a yearly decrease by 2.14 (King and Bergh 2017, 134). According to Gerold and Nocker (2018), this is the most attractive, yet least environmentally effective WTR proposals. The energy use of the service and the industrial sector declines but compared to the other scenarios only a little. It remains open whether this results from the fact that companies cannot minimise office space and thus the reduction of energy use is insignificant.

## ***2.2 Further Empirical Results on the Environmental Effectiveness of WTR<sup>3</sup>***

Using a survey on family budget in France from 2001, Devetter and Rousseau (2011) analyse the relationship between work-time and the likelihood of households consuming goods with

2. Again, this figure is based on the UK case-study.

3. Shao and Rodriguez-Labajos (2016, 221) summarise additional studies on environmental effectiveness.

a strong negative impact on the environment.

The findings of this study show that long working hours increase the likelihood of polluting consumption patterns and an unsustainable lifestyle. Long working hours induce consumption behaviour that is time-saving, which, in many cases, is more polluting (Devetter and Rousseau 2011, 346f).

In contrast to that, Shao and Shen (2017) find a different relationship between work time, GDP/capita, carbon emissions and energy consumption using a threshold panel approach, with data for the EU-15 countries from 1970 to 2010.<sup>4</sup> They report a negative correlation between carbon emissions and high-level working time (above 7.7 hours per day) and a positive correlation for low- and mid-level working time (below 7.5 hours per day and between 7.5 and 7.7 hours per day). Decreasing mid-level working time by 1% decreases carbon-emissions by 3.49%. The elasticity of low- and high-level work time is insignificant (Shao and Shen 2017, 326).

Regarding work time and energy consumption, Shao and Shen show that both, high-level working hours (above 7.6 hours per day) and low-level working hours (below 7.3 hours per day) are negatively correlated with energy consumption whereas there is a positive correlation between mid-level working hours (between 7.3 and 7.6 hours per day) and energy consumption. Increased leisure time does not guarantee that the pressure on the environment is relieved (Shao and Shen 2017, 326).

### *2.3 Critique*

There are several critical aspects in the concept of work time reduction and the assumptions underlying the empirical analyses of its effects.

First, there is little insight into how we should coordinate WTR and a lack of discussions of political feasibility. The main conclusion in King and Bergh (2017) is that policy design matters, while the proposals themselves

remain simple and shallow. For example, they do not properly justify or illustrate why work time should be reduced by 20% and not any other amount. The argument that working hours in the UK are on average 20% higher than in Germany or the Netherlands, which shall underline the realizability of the proposed WTR, is hardly convincing (King and Bergh 2017, 125). Arguably, a reduction by 10%, 30% or by an absolute number may have different effects than the ones discussed (Shao and Shen 2017; Nässen, Larsson, and Holmberg 2009; Victor 2012).

King and Bergh (2017) also explain that since they only consider full-time employees, the effective reduction amounts to 17.5%. Hence, we must note that the whole analysis of the effects of changes in time use on the environment is very selective and can only lend itself as an informative study on what effects WTR has in the UK. With varying ratios of self-employment and part-time employment, the effects may be completely different when comparing the UK to Germany or France. Hence, the conclusion that a four-day workweek with a three-day weekend is the most environmentally-effective is only applicable to this specific analysis, under the assumptions made and to the particular case.

As mentioned above, Shao and Shen (2017) note that there are observable differences between minimised high-, mid- and low-level working hours and their effect on carbon emissions and energy consumption. Decreasing mid-level working hours has the strongest environmental effectiveness. The highest elasticity (coeff=3.49) of working time reduction on carbon emissions minimisation is for the range between 7.6 and 7.7 hours per day. The highest elasticity (coeff=2.396) of working time reduction on decreased energy consumption is for the range between 7.3 and 7.6 hours per day.

As a side note, King and Bergh (2017) propose to gradually diminish working hours to gain societal acceptance more easily. Starting with one extra free day per month, the num-

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4. Members of the EU-15 are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

ber of free days would gradually increase to one free extra day per week. What remains open, however, is at what pace or within what time frame the increase in leisure time should be coordinated and how a change would be initialised, by whom. Another aspect which is not covered is how and when free time is implemented across different sectors, especially regarding leisure good sectors. The practical instruments for implementing a four-day working week require elaboration.

Deriving fulfilment, satisfaction and self-realisation through work by may be one of the practical hindering aspects and a reason why society may not support WTR-policies making it difficult to centrally impose work time degrowth (Van den Bergh 2011, 3). Moreover, businesses and business-oriented interest groups may object to the idea of radically restructuring companies. The case of France illustrates the consequences of central governmental implementation of WTR from 39 to 35 weekly hours in 1998 - employees started looking for another part-time job (Estevão and Sa 2006). This secondary effect is not integrated into the considered model.

Reduced workdays and increased holiday entitlement may be easier to impose. Gerold and Nocker (2018) elucidate that there is a crucial conflict between freedom and lowering pressure on the environment. Their analysis shows that a majority of the subjects who prefer more days off over more income choose increased holiday entitlement, sabbaticals or early retirement as an implementation of the extra leisure time (Gerold and Nocker 2018, 33).

This connects to the so-called green life course approach, Pullinger (2014) proposes. The idea is to use existing work time-limiting instruments like time rights (maternity, paternity leave), financial facilities and other services to minimise working hours. Financial instruments facilitate borrowing and saving money for periods of career breaks or shorter working hours (Groot and Breedval, 2004 in

Pullinger 2014). The advantage of the life course plan is that it individualises work-time at the employee level. However, considering the small effects of scenario five on emissions, this approach would not lead to a significant change in pressure on the environment.

Moreover, the five scenarios analysis assumes away that WTR may have a stimulating effect on the employee's productivity and thus on the economy (Rosnick and Weisbrot 2007, 7). It is beyond the scope of this paper, but in this case, the effects of WTR on the environment would be reversed unless employees are taxed more or other policy instruments would be implemented which intervene post-work-output. Also, it is worth to briefly mention that even if work time degrowth was effective and may reduce GDP per capita in the global North, global GDP might still reside on the same level because of population growth (Chertow 2000, 15).

Besides the difficulties of reflecting real-world complexities and feasibility considerations (King and Bergh 2017, 132; Nassen and Larsson 2015, 737f), WTR might have rebound effects (Binswanger 2001).

We live in an increasingly digital world with rapid technological development. Imagine WTR in a world where machines may substitute human workers. Although work time would be reduced for humans, with this substitution, value creation might not necessarily diminish because machines could work while humans enjoy their leisure time. Now, this generates a whole new set of questions which are also beyond the scope of what we discuss here, but it is a point that should be considered in future research.

Another possible rebound effect concerns commuting - an essential aspect when considering questions about work and time because may amounts to over 60 minutes a day.<sup>5</sup> With more free time, employees may rethink how they commute to their workplace. King and Bergh give two options. Employees might either change their behaviour and cycle to work

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5. With Belgium (80), Sweden (71), and United Kingdom (73) having one of the highest daily commuting time on average in 2017 see <https://daliaresearch.com/the-countries-with-the-longest-and-shortest-commutes/>.

because they have more time or they move to cheaper suburban areas which would increase commuting distance and pollution. Both possibilities have different effects on the environment, but they are difficult to predict (King and Bergh 2017, 130).

### 3 Discussion from an ordoliberal view

An ordoliberal view on degrowth broadens our previous analysis of work-time degrowth. Ordoliberals examine intersections between politics and economics. Ordoliberalism is relevant to the discussion because it helps analyse the practical implementation as well as the normative foundations of degrowth from the stance of liberal economic thinking and normative individualism. Yet, it is challenging to search for ordoliberal guidance on environmental issues because, in the time of Eucken and Hayek, problems connected to depletable resources were not at the core of the research agenda (Pies and Sass 2010, 275).<sup>6</sup>

Ordoliberalism is often confused with neoliberalism. However, ordoliberals distance themselves from liberalism of a *laissez-faire* kind. We should rather associate them with constitutional or institutional economics (Vanberg 2016). Ordoliberals embed the market in an institutional configuration. The central role of the government is to define and enforce the economic constitution which we understand as the institutional framework in which markets are embedded. Hence, in an ordoliberal view, change is induced in an indirect manner, not by interfering, but by shaping the rules of the game - the institutions (Vanberg 2016, 9).

So, why are rules important? We argue that rules are essential for degrowth questions, but have been overlooked in most of the degrowth literature. A rules-based approach shifts the focus of the analysis to the feasibility

of degrowth proposals and the institutional change that these proposals entail - a major point of criticism we made in the previous section. Since rules have not been thoroughly analysed in theories of degrowth, ordoliberalism offers critical remarks which could advance considerations on the feasibility of work-time degrowth.

Three problems further motivate why we shall consider rules: the incentive problem, the reputation problem and the knowledge problem.<sup>7</sup> According to Hayek (1960, 66), knowledge is limited. That is why we depend on rules: the “reliance on abstract rules is a device we have learned to use because our reason is insufficient to master the full detail of complex reality”. Further, we need rules because humans have an incentive problem. They are tempted to merely take into account the short-run, and not the consequences of decisions on the long-run. Hence, humans would procrastinate on uncomfortable yet necessary duties. Rules “make us do what we should wish to do from a long-term point of view” (Hayek 1960, 66). The reputation problem is salient in cooperation. Only rule-following makes us predictable and allows us to formulate reliable expectations. Also, “policymakers should rather follow rules than discretion” (Kyland and Prescott 1977) so that it is obvious when policymakers deviate from a policy.

Surprisingly similar to ordoliberal positions, Klitgaard and Krall (2012) claim that if degrowth’s aim is an enduring and sustainable economic system, its starting point should be a change in the rules of the game. However, as Klitgaard and Krall (2012, 252) and Pullinger (2014, 11) also emphasise, the political and economic mechanisms for change and the conditions for implementing degrowth policies remain vague. They should become a main point on the research agenda of degrowth, especially the question to what extent a degrowth

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6. Pies and Sass (2010) claim that ordoliberal concept lacks orientation towards growth politics. However, we believe that this is not a very nuanced judgement. Eucken evaluates economic orders according to the optimal allocation of goods and explicitly states that we do not live in a saturated economy (Eucken [1952] 2004).

7. For a brief definition of these three problems, see Vanberg (2016). A good overview of the Freiburg School, Walter Eucken and ordoliberalism can be found in Vanberg (2004).

economy should be a market economy (Klitgaard and Krall 2012, 251). The feasibility of degrowth proposals depends on the assumptions for how institutions change and who or what induces change.

At this stage, we can assert two important points. Rules are vital, but there is a gap in the existing degrowth literature on the rules framing a degrowth society as well as the mechanisms for change. Going further, we analyse and show that ordoliberalism and degrowth start from opposite ontological assumptions.

Degrowth considers the level of collectives and structures. Ordoliberalism puts the individual agent in the centre of the analysis. This difference is further manifested because of the highly fragmented degrowth literature on whether change should be incremental, radical, voluntary or planned. If at all, degrowth presents contradictory views on the role of the state, whereas ordoliberals stress that the state should only guard the rules (Vanberg 2016, 10). We argue that ordoliberalism can point to important aspects that might be fruitful to consider in gradual degrowth.

### ***3.1 Radical institutional change towards a degrowth utopia***

Degrowth conceptualises an ideal state as an alternative to the existing order. It has a different vision of prosperity, based on less material abundance and consumption. The claim is that environmental goals require unprecedented degrowth, a fundamental restructuring of the state and a reconfiguration of work (Kallis, Kerschner, and Martinez-Alier 2012, 174).

Our call for degrowth is a hopeful, even a utopian discourse. Should we prefer a business-as-usual without possible future or work towards a degrowth “utopia”? We must at least separate possible from impossible futures and look for an alternative to an optimistic “business-as-usual”. (Schneider, Kallis, and Martinez-Alier 2010, 517)

Kallis, Kerschner, and Martinez-Alier (2012, 175) recognise that a degrowth society requires different institutions. They identify a set of policies and rules prevalent in the literature, among them, resource and CO<sub>2</sub> caps, extraction limits, reduced work hours, basic income, new forms of money and ethical banking or cooperative property and cooperative firms (see also Jackson 2009; Speth 2012; Latouche 2009).

Nevertheless, degrowth neglects questions about the transition from status quo for the construction of an ideal world. In Harold Demsetz’s words, we claim that degrowth is trapped in a “nirvana fallacy” (Demsetz 1969, 1). The majority of citizens would need to develop new preference structures, especially the consumers. Not only would behaviour need to change (within incentive systems and rules), but also the overall attitude to life, the personal identity and the moral factors which determine decisions towards a new life in a degrowth economy (Hamilton 2010, Jesche 2015, 273).

Along these lines, one strand of the literature argues that degrowth requires a fundamental change in institutional setup because it contradicts the current system. Proponents of radical institutional change think that implementing voluntary degrowth in capitalist economies is impossible (Blauwhof 2012; Klitgaard and Krall 2012; Smith 2010; Foster, Clark, and York 2010, van2012bona). The current system of globalisation, speculative finance and unsustainable energies is incompatible with a degrowth society (Klitgaard and Krall 2012, 248). Knight, Rosa, and Schor (2013, 693) argue that to avoid extreme social disruption, we need planning and a systematic implementation of degrowth. For Klitgaard and Krall (2012, 251) that implies that the governments need to be in charge of, e.g., fostering energy transition because they neglect profitable future investments or expansion. However, as Klitgaard and Krall (2012) also stress, in the present political and economic configuration, governments would not answer to degrowth demands. Moreover, there is a danger of eco-authoritarianism, i.e. that experts that

claim to foster degrowth and monitor the limits to growth would step up (Schneider, Kallis, and Martinez-Alier 2010, 514). Last, when considering work time degrowth, we have to expect diminishing tax returns, unless taxes are increased. Consequently, the government would also have a smaller budget, which has implications for its capacity to reallocate resources and plan degrowth top-down (King and Bergh 2017, 132).

In contrast to that, Alexander (2012, 364) argues that grassroots movements can mobilise and induce degrowth. Individuals are so confronted with consumerism every day that the voluntary emergence of degrowth is too contradictory to the status quo. Further, through experience in “nowtopias”, individuals acquire greater knowledge and change and will want to defend their new lifestyle which motivates them to step up for change. There are a number of examples for communities that experiment with degrowth models, informed by voluntary simplicity in co-housing projects (Lietaert 2010) or ecological communes (Cattaneo and Gavalda 2010). However, it is naive to extrapolate from them to the rest of the economy and thereby justify such a radical political project. It is doubtful that local experimentation is up to the scale and urgency of global environmental challenges.

### ***3.2 Gradual degrowth from status quo to increase the feasibility***

There are ecological economists who recognise that the present systems are the starting point for change because of the lack of time and knowledge to create new institutions. Therefore, they argue for a more conservative transformation and gradual reshaping of institutions (Daly and Farley 2004, 362). This approach may allow a synthesis between ordoliberal thought and degrowth. Ordoliberalism supports the adaptation of the framework of rules and gradual change of the status quo, based on the adaptability and flexibility of orders which preserve the freedom of individuals (Jesche 2015).

It is important to remark that also King and Bergh (2017) comment on changing work time incrementally. In general, they omit considering the concrete political implementation and only mention critical points such as employee preferences or the resistance of businesses. However, they briefly admit that an incremental change would increase the feasibility of the considered scenarios instead of introducing an immediate shock by 20%. (King and Bergh 2017, 132).

In this, the preferences of individual citizens serve as the reference criteria for legitimising change (Feld and Köhler 2011, 2). Political decisions within democratic institutions need to be evaluated against whether they take into account the de-facto interests of the citizens (Vanberg 2008, 118).

In spite of the radical transformation ideas and the aspects of centralised planning, the degrowth movement explicitly defines degrowth as a social choice and not an external imperative for environmental goals (Schneider, Kallis, and Martinez-Alier 2010, 513). Ideally, it is a process of democratisation and a collective choice for a better life (Cattaneo and Gavalda 2010).

On the one hand, however, there are several obstacles to the feasibility of work time reduction based on citizens’ preferences, such as the resistance of businesses, practical problems (see the cases of France and Portugal with dual jobs and mortgages), employee preferences, or demography. On the other hand, empirical data shows that there is evidence of a mismatch between work time preferences and actual working hours (Knight, Rosa, and Schor 2013, 694). The general support for more leisure time might enhance public acceptance of these policy proposals. A constitutional politics or ordoliberal approach to work time reduction has to be judged against whether it appeals to the interests of the citizens. Ultimately, there is theoretical uncertainty on whether the proposals match the preferences of all involved individuals and what effects an implementation has in the long run (King and Bergh 2017, 132).

Lawn (2011) suggests a strategy for the implementation of degrowth which is compatible with capitalism and markets but also involves the government. First, the government determines the social and environmental limits, e.g. a through-put cap and a guaranteed job. In a second step, markets allocate resources through accurate price signalling in competition. Since resources are capped, the firms with the highest potential of innovation adapt the best and make profits. There is an incentive to shift to less resource-intensive production.

Four points of criticism have been associated with this proposal. First, its starting point is a strong state where the government defines the limits. However, we would argue that this does not have to be a planning state, but rather a guardian state in the ordoliberal sense. The government could be constrained by a political constitution that prevents it from becoming the target of special interest groups. This directly connects to the second point of criticism. There may be a danger of rent-seeking, private interests that influence policy-making to receive exclusive treatment. This is central problem for Eucken and the Freiburg School. It is the reason why we need strong rules and a strong constitutive frame so that no-one receives privilege. Third, also Lawn (2011) does not make explicit, who would initiate the proposed reform. He does not conceptualize specific social or political actors that start the change. Hence, there might be a collective action problem, who would have the incentive to collectively organize to demand changes which might reduce growth and thus lead to less income? Well, here ordoliberalism might argue that that is the reason for incentive rules. Otherwise, humans keep postponing necessary tasks. Rules incentivise them to confront inevitable tasks. However, the question remains open who would initially establish the constitutive or incentivising rules.

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8. For a contextualisation of the criticism on technological optimism, see De Perthuis and Jouvét (2015, 28).

9. For Eucken's notion of progress, see Goldschmidt (2012).

10. In contrast to Schumpeter who believed that technological innovation leads to monopolistic markets (Schumpeter [1942] 2013, 59-107).

### 3.3 Market-oriented proposals in between growth and degrowth

We propose that ordoliberalism can contribute to the degrowth versus growth debate with suggestions to move beyond the dispute and consider progress. Several degrowth proponents also note that we need to move beyond the dichotomy and find a measure of progress (Van den Bergh 2011; Drews and Antal 2016; O'Neill 2012). Critics may claim that progress is merely a synonym for growth and that it is naive to believe that progress will solve environmental problems.<sup>8</sup>

Progress is hard to predict, plan or quantify.<sup>9</sup> Eucken's aim was to show that technological progress intensifies competition and is thus better for the consumers since they can follow their own preferences (Eucken [1952] 2004, 226).<sup>10</sup>

There are two ordoliberal proposals that are worth mentioning. First, the internalization of external effects. Negative externalities justify ordoliberal regulation because they lead to market failure (Eucken 1952, 1990; Pies and Sass 2010, 301-303). Eucken ([1952] 2004, 254-255) stresses the importance of prices. In a competitive market order, economic activities are coordinated by prices which signal the scarcity of goods and are the basis of decision-making.

A market-oriented strategy for dealing with CO<sub>2</sub> emissions requires a more uniform price for CO<sub>2</sub> which equally applies across sectors (energy, transport, etc.) and regions (ideally global, but at least nation-wide). Either a set CO<sub>2</sub>-tax or a cap on emissions in emission certificate trading would establish such a price (see also SVR 2017).

Second, Pies and Sass (2010, 278) recommend that we should think more about establishing the rules of the game for innovative investments. Institutional arrangements and incentive effects could foster limited liability as

well as innovation and thus support sustainable growth (Pies and Sass 2010, 261). Dynamic externalities which arise from innovative investments are highly relevant for growth and should not be limited, but rather freed from constraints and further facilitated. Hence, we need to consider incentives and the institutional management of dilemma structures (Pies and Sass 2010, 275). Work time degrowth, however, may have a diminishing effect on innovation and technology due to reduced tax revenues. Governments would have less capacity to set incentives for environmental investments, research and innovation. If WTR hinders or decelerates technological progress, this may have a dangerous impact on the environment because consumption and production remain pollutive.

## 4 Conclusion

This paper contributes to the existing literature on degrowth by assessing selected concepts of work time reduction. We critically analysed their estimated effects on time use and hence energy consumption and environmental effectiveness. Second, we evaluated the normative foundation and practical implementation of degrowth by assuming an ordoliberal perspective.

In conclusion, the literature has a number of gaps concerning the feasibility as well as the measurement of the effects of work time degrowth. The considered empirical studies reveal difficulties in composing a model that reflects real-world complexities. Institutional change and the involved actors are insufficiently discussed. Our critique, as well as the ordoliberal discussion, have revealed that for a feasible implementation with the preservation of individual freedom, a more status quo oriented strategy means not to halt growth, but to change it. The degrowth approach raises important questions and provides ground for debate, but lacks answers. The risk is that degrowth debates lose themselves in a utopia without delineating a path towards it, fuelling false choices, such as either the environment

or growth; either growth or degrowth, either autonomy or sustainability.

## References

- Agency], [United States Environmental Protection. September 2017. *Greenhouse Gas Equivalencies Calculator*. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.
- Alesina, Alberto, Edward L Glaeser, and Bruce Sacerdote. 2005. "Work and Leisure in the US and Europe: Why so Different." *NBER Macroeconomic Annual*.
- Alexander, Samuel. 2012. "Planned Economic Contraction: The Emerging Case for Degrowth." *Environmental Politics* 21 (3): 349–368.
- Antal, Miklos. 2014. "Green goals and full employment: Are they compatible?" *Ecological Economics* 107:276–286.
- Balleer, Almut, Britta Gehrke, Wolfgang Lechthaler, and Christian Merkl. 2016. "Does short-time work save jobs? A business cycle analysis." *European Economic Review* 84:99–122.
- Binswanger, Mathias. 2001. "Technological Progress and Sustainable Development: What About the Rebound Effect?" *Ecological Economics* 36 (1): 119–132.
- Blauwhof, Frederik Berend. 2012. "Overcoming accumulation: Is a capitalist steady-state economy possible?" *Ecological Economics* 84:254–261.
- Böheim, Rene, and Mark P Taylor. 2004. "Actual and preferred working hours." *British Journal of Industrial Relations* 42 (1): 149–166.
- Cattaneo, Claudio, and Marc Gavalda. 2010. "The experience of rurban squats in Collserola, Barcelona: what kind of degrowth?" *Journal of Cleaner Production* 18 (6): 581–589.

- Chertow, Marian R. 2000. "The IPAT equation and its variants." *Journal of industrial ecology* 4 (4): 13–29.
- Daly, H, and Joshua Farley. 2004. "Ecological Economics: Principles and Practice." *Island, Washington, DC, USA*.
- De Perthuis, Christian, and Pierre-Andre Jouvet. 2015. "Degrowth: Good Questions, Bad Answers." Chap. 3 in *Green Capital: A New Perspective on Growth*, 26–35. Columbia University Press.
- Degrowth, Research &. 2010. "Degrowth Declaration of the Paris 2008 Conference." *Journal of Cleaner Production* 18 (6): 523–524.
- Demsetz, Harold. 1969. "Information and Efficiency: Another Viewpoint." *The Journal of Law and Economics* 12 (1): 1–22.
- Devetter, François-Xavier, and Sandrine Rousseau. 2011. "Working Hours and Sustainable Development." *Review of Social Economy* 69 (3): 333–355.
- Drews, Stefan, and Miklós Antal. 2016. "Degrowth: A "missile word" that backfires?" *Ecological Economics* 126:182–187.
- Estevão, Mr Marcello M, and Filipa Sa. 2006. *Are the French Happy with the 35-hour Workweek?*, 6-251. International Monetary Fund.
- Eucken, Walter. (1952) 2004. *Grundsätze der Wirtschaftspolitik*. Tübingen: Mohr Siebeck.
- Feld, Lars P, and Ekkehard A Köhler. 2011. "Zur Zukunft der Ordnungsökonomik." *Freiburger Diskussionspapiere zur Ordnungsökonomik*.
- Foster, John Bellamy, Brett Clark, and Richard York. 2010. "Capitalism and the Curse of Energy Efficiency: The Return of the Jevons Paradox." *Monthly Review* 62 (6): 1.
- Gerold, Stefanie, and Matthias Nocker. 2018. "More Leisure or Higher Pay? A Mixed-methods Study on Reducing Working Time in Austria." *Ecological Economics* 143:27–36.
- Goldschmidt, Nils. 2012. "Gibt es eine ordoliberalen Entwicklungsidee? Walter Euczens Analyse des gesellschaftlichen und wirtschaftlichen Wandels." *Freiburger Diskussionspapiere zur Ordnungsökonomik*.
- Hamilton, Clive. 2010. "Consumerism, self-creation and prospects for a new ecological consciousness." *Journal of cleaner production* 18 (6): 571–575.
- Hayek, Friedrich A. 1960. *The Constitution of Liberty*. Chicago: University of Chicago Press.
- Jackson, Tim. 2009. *Prosperity without Growth? Economics for a Finite Planet*. London and New York: Earthscan.
- Jesche, Daniel. 2015. "Endlichkeit und Freiheit - Die ökologische Wachstumskritik aus wirtschaftsliberaler Perspektive." PhD diss., Christian-Albrechts-University Kiel.
- Kallis, Giorgos, Michael Kalush, Hugh O'Flynn, Jack Rossiter, and Nicholas Ashford. 2013. "'Friday off': Reducing Working Hours in Europe." *Sustainability* 5 (4): 1545–1567.
- Kallis, Giorgos, Christian Kerschner, and Joan Martinez-Alier. 2012. "The Economics of Degrowth." *Ecological Economics* 84:172–180.
- King, Lewis, and Jeroen van den Bergh. 2017. "Worktime Reduction as a Solution to Climate Change: Five Scenarios Compared for the UK." *Ecological Economics* 132:124–134.

- Kivimäki, Mika, Markus Jokela, Solja T Nyberg, Archana Singh-Manoux, Eleonor I Fransson, Lars Alfredsson, Jakob B Bjorner, Marianne Borritz, Hermann Burr, Annalisa Casini, et al. 2015. "Long working hours and risk of coronary heart disease and stroke: a systematic review and meta-analysis of published and unpublished data for 603 838 individuals." *The Lancet* 386 (10005): 1739–1746.
- Klitgaard, Kent A, and Lisi Krall. 2012. "Ecological Economics, Degrowth, and Institutional Change." *Ecological Economics* 84:247–253.
- Knight, Kyle W, Eugene A Rosa, and Juliet B Schor. 2013. "Could Working Less Reduce Pressures on the Environment? A Cross-National Panel Analysis of OECD Countries, 1970–2007." *Global Environmental Change* 23 (4): 691–700.
- Kydland, Finn E, and Edward C Prescott. 1977. "Rules rather than discretion: The inconsistency of optimal plans." *Journal of political economy* 85 (3): 473–491.
- Latouche, Serge. 2009. *Farewell to Growth*. Cambridge: Polity Press.
- Lawn, Philip. 2011. "Is steady-state capitalism viable?" *Annals of the New York Academy of Sciences* 1219 (1): 1–25.
- Lietaert, Matthieu. 2010. "Cohousing's relevance to degrowth theories." *Journal of Cleaner Production* 18 (6): 576–580.
- Martinez-Alier, Joan, Unai Pascual, Franck-Dominique Vivien, and Edwin Zaccai. 2010. "Sustainable De-growth: Mapping the Context, Criticisms and Future Prospects of an Emergent Paradigm." *Ecological Economics* 69 (9): 1741–1747.
- Nässen, J., J. Larsson, and J. Holmberg. 2009. "The Effect of Work Hours on Energy Use: a Micro-analysis of Time and Income Effects." ECEEE Secretariat, Stockholm.
- Nassen, Jonas, and Joergen Larsson. 2015. "Would shorter working time reduce greenhouse gas emissions? An analysis of time use and consumption in Swedish households." *Environment and Planning C: Government and Policy* 33 (4): 726–745.
- O'Neill, Daniel W. 2012. "Measuring Progress in the Degrowth Transition to a Steady State Economy." *Ecological Economics* 84:221–231.
- Pies, Ingo, and Peter Sass. 2010. "Haftung und Innovation - Ordonomische Überlegungen zur Aktualisierung der ordnungspolitischen Konzeption." *List Forum für Wirtschafts- und Finanzpolitik* 36 (4): 261–280.
- Pullinger, Martin. 2014. "Working Time Reduction Policy in a Sustainable Economy: Criteria and Options for its Design." *Ecological Economics* 103:11–19.
- Raposo, Pedro S, and Jan C van Ours. 2010. "How working time reduction affects jobs and wages." *Economics Letters* 106 (1): 61–63.
- Rosnick, David. 2013. "Reduced work hours as a means of slowing climate change." *Real World Economics Review* 63 (25): 124–133.
- Rosnick, David, and Mark Weisbrot. 2007. "Are Shorter Work Hours Good For The Environment? A Comparison of U.S. and European Energy Consumption." *International Journal of Health Services* 37:405–417.
- Schneider, Francois, Giorgos Kallis, and Joan Martinez-Alier. 2010. "Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue." *Journal of Cleaner Production* 18 (6): 511–518.
- Schumpeter, Joseph. (1942) 2013. *Capitalism, Socialism and Democracy*. London: Routledge.

- Shao, Qing-long, and Beatriz Rodriguez-Labajos. 2016. “Does Decreasing Working Time Reduce Environmental Pressures? New Evidence Based on Dynamic Panel Approach.” *Journal of Cleaner Production* 125:227–235.
- Shao, Qinglong, and Shiran Shen. 2017. “When reduced working time harms the environment: A panel threshold analysis for EU-15, 1970–2010.” *Journal of Cleaner Production* 147:319–329.
- Smith, Richard. 2010. “Beyond Growth or Beyond Capitalism.” *Real World Economics Review* 53:28–36.
- Speth, James Gustave. 2012. “American Passage: Towards a New Economy and a New Politics.” *Ecological Economics* 84:181–186.
- SVR. 2017. *Für eine zukunftsorientierte Wirtschaftspolitik. Jahresgutachten des Sachverständigenrats zur Begutachtung der gesamtwirtschaftlichen Entwicklung.* [Peter Bofinger, Lars P. Feld, Christoph M. Schmidt, Isabel Schnabel and Volker Wieland].
- Van den Bergh, Jeroen. 2011. “Environment versus growth - A criticism of ”degrowth” and a plea for ”a-growth”.” *Ecological Economics* 70 (5): 881–890.
- Vanberg, Viktor J. 2004. “The Freiburg School: Walter Eucken and Ordoliberalism.” *Freiburg Discussion Papers on Constitutional Economics* 04/11.
- . 2008. *Bürgersouveränität und wettbewerblicher Föderalismus: das Beispiel der EU*, 117–151. Tübingen: Mohr Siebeck.
- . 2016. *Ordoliberalism and Ordnungspolitik: A Brief Explanation.* Freiburg: Aktionskreis Freiburger Schule.
- Victor, Peter A. 2012. “Growth, degrowth and climate change: A scenario analysis.” *Ecological Economics* 84:206–212.