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Growth Imperatives from Private Money Creation

By Femke Schootstra (s1088151)
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Supervisor: Ivan Boldyrev

Abstract

Pursuing continued economic growth risks passing climate- and ecological tipping points and threatens the livelihoods of most of the global population. Degrowth seeks to scale down ecologically destructive and socially less necessary production, in a way that reduces inequality and improves human wellbeing. But growth imperatives contained in the socio-economic system cause a destabilization of society when economic growth is absent, creating the necessity to pursue growth. The monetary system in which money primarily is created privately as interest-bearing debt might compose such a growth imperative. This research conducts a critical review on the monetary growth imperatives literature and opens up the debate towards the problems imposed by private debts. The analysis challenges the dominant conclusion that the monetary system does not contain a growth imperative. The findings suggest that within a growth regime, private money creation as debt expands the scope and strength of the broader growth imperative of accumulation, and net saving. Moreover, it increases and political growth imperatives due to redistribution. These results inform the transformations of the current monetary system to reduce growth imperatives and the envisioning of post-growth monetary systems.

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1 Introduction

1.1 From economic growth to degrowth

GDP, short for Gross Domestic Product, measures the total income within a country.¹ The indicator was invented during WWII to measure the state of the economy and soon became widely used to keep track of the growth of the economy (Schmelzer, 2016). In the decades after, growth of GDP developed into a hegemonic ideology, in which ‘GDP’ has become synonymous with welfare and ‘economic growth’ with progress (Fioramonti, 2013).

Since the start of the 21st century, it has become widely acknowledged that GDP is not suitable as a single measure of welfare. Alternative indicators, like the Human Development Index, started gaining popularity (Constanza et al, 2009; Parrique, 2019). However, commonplace belief remained that economic growth is a *requirement* to ensure welfare and sustainability, exemplified by the inclusion of economic growth in the Sustainable Development Goals, the centrality of growth in the European Green New Deal (European Council, 2025), or the new Dutch Ministry of ‘Climate Policy and Green Growth’. The desirability and need for growth has naturalized and internalized to such an extent that it has become impossible for people to understand progress without it (Fioramonti & Bell, 2014).

In an unravelling climate- and ecological crisis, the question about the possibility of ‘endless growth on a finite planet’ is making its return, just over 50 years after the publication of the Limits to Growth report from the Club of Rome (Meadows et al, 1972). Data analysis of energy usage indicates that continued economic growth is incompatible with biophysical limits (Murphy, 2022). Moreover, empirical substantiation that shows growth can be decoupled from resource use to the extent so that we can stay within the carbon budget and other planetary boundaries when the global economy keeps growing is not found (Hickel & Kallis, 2020). One might say that data from the past does not prove that theoretically we *could* not decouple economic activity from ecological impact in the future. However, to pursue continued growth on this basis is in essence nothing more than a highly optimistic belief or hope, that simultaneously increases the likeliness of passing irreversible climate- and ecological tipping points and threatening the livelihoods of most of the global population (Hickel & Kallis, 2020).

¹ The national income is also approximately equivalent to the total value added and total final consumption.

New discourses have evolved, mostly from ecological economics, aiming to imagine and unfold how a society without growth could be organized, most prominently under the names ‘degrowth’ and ‘post-growth’. Degrowth “*seeks to scale down ecologically destructive and socially less necessary production, (...) designed to bring the economy back into balance with the living world in a way that reduces inequality and improves human well-being.*” (Hickel, 2020b). The literature shows how the system transformation could indeed *improve* rather than worsen people’s lives, e.g. through decreased working times, a healthier environment, more equality and better access to basic needs and public services (e.g. Parrique, 2019; Morgan, 2020; Hickel, 2020a).

1.2 Growth imperatives

A crucial question for post-growth: is the pursuit for economic growth solely driven by its hegemonic ideology and by individual desires for more income, more material wealth, more profit? (Richters & Simoneit, 2019). Could we be ‘growth agnostic’, if only we *wanted* to? Or has the socio-economic system also become *dependent* on growth for its stability, such that policies that enhance growth are inevitable in order to avoid societal and economic breakdown? If continuous growth has disastrous ecological and social consequences, while simultaneously being systemically necessary to avoid societal and economic breakdown, it is absolutely vital that we find ways to transform socio-economic systems in ways such that its stability is not dependent on growth.

An extensive body of literature has emerged to identify growth dependencies and growth imperatives in the current socio-economic system. It mostly finds that growth became internalized to such an extent that a continued absence of growth causes disruptions to, or potentially breakdown of the basic functioning of society (Cahen-Fourot, 2022; see Keyßer et al (2024) for a complete overview of the growth imperative literature). One of the most contested questions in this literature is the existence of a growth imperative from the monetary system where money is created privately as interest-bearing debt (Farley et al, 2013; Ament, 2021; Svartzman et al, 2020; Cahen-Fourot, 2021).

In contrast with the commonplace thought that primarily central banks create money, today the large majority of money is created by private banks as interest-bearing debt (McLeay et al, 2014; Boonstra, 2021). For decades the dominant reasoning within ecological economics has been that interest-bearing debt causes a structural imperative for growth, under the term of a Monetary Growth Imperative (MGI) (Douthwaite, 2000; Binswanger, 2009; Farley et al, 2013), but this

theory has been disproven by Post-Keynesian scholars (Jackson & Victor, 2015; Cahen-Fourot & Lavoie, 2016; Richters & Simoneit, 2017; Cahen-Fourot, 2022). The literature has mostly converged on the idea that the monetary system does not impose a growth imperative. It seems that the attention within degrowth on the monetary system has decreased, possibly for this reason. This might be a premature development. There might be interactive effects that complicate the issue, or other elements of the monetary system could yield a growth imperative, even if interest-bearing debt in and of itself does not. Mostly, I find that the literature makes too little effort to study the arguments within the broader context of a growth-oriented economy and to take seriously the existence of political growth imperatives.

1.3 Research motivation and aims

Within the degrowth discourse, money is a relatively understudied topic (Hornborg, 2017). Participating at the Beyond Growth Conference of 2023 in Brussels, I was surprised that none of the sessions discussed money or debt. Since then I had always felt a wish to contribute to what I saw as a gap in the field.

Money is a fundamental element of economic life, and yet it is highly incomprehensible, mysterious and confusing, within and outside of economics. Especially in the recent decades of financialization of the economy, the monetary system also has grown more intricate and is changing fast. Technical concepts and jargon, combined with contradicting theoretical explanations and academic disagreements, make it hard to make sense of the matter. Diving into the structures and institutions of the monetary system and being able to explain these in a clear and accessible way, has been a motivation for this study on its own.

The starting point of my research is the idea that a systemic transformation as proposed within degrowth is necessary and beneficial for a socially and ecologically liveable and just future. I aim to contribute to this transformation on the questions around money, by building further on the monetary growth imperative literature. In this research I critically analyse the assumptions, arguments, conclusions in the debate on the monetary growth imperative and I open up the debate towards the problem of private debts. I follow a qualitative method of a literature review, complemented with expert interviews. With these insights I aim to inform the transformation of money systems for post-growth economies.

1.4 Structure of the thesis

The thesis is structured as follows. This chapter serves as an introduction. The second chapter sets out the methods, including the ontology and epistemology of the research. Chapter three lays the theoretical basis for the analysis. Chapter four reviews and reflects on the monetary growth imperative literature. From the review, the issue of high private debts emerges as a gap in the literature. Chapter five zooms in on this issue. Subsequently, the possible outlines of a post-growth monetary system are discussed in chapter six, using the findings from the analysis in earlier chapters. Lastly, chapter seven and eight contain the conclusions and suggestions for further research respectively.

2 Methods

In this chapter the research methods are declared. This research follows a qualitative method: the basis of this research is a literature review supplemented by expert interviews. Before describing these methods in more depth, the ontological and epistemological foundation of the research need consideration.

2.1 Ontological foundation of the research

The field of ecological economics and post-growth/degrowth shares the ontology that the economy is *embedded* within the social and the ecological- and biosphere. This means that there is a dependency relation between the economy and ecology and the biosphere, and between the economy and social sphere.

The ‘stability’ of the economy is a central point of analysis in this research. Instability is here defined as the occurrence of positive feedback loops that cause a spiral of increasing debts, devaluing assets and defaults, and eventually the initiation of a recession. Wide-scale loss of access to basic needs is also consider an instability of the economy.

The research focuses on the ‘monetary system’. This is here defined as:

- 1) the social shaping and internalization of the core concepts of ‘money’, ‘debt’, a ‘private bank’, and others;
- 2) the current institutionalization of these concepts;
- 3) the specific regulations and policies.

The level of regulations and policies is most subject to change over time, and shows national and regional differences. The institutionalization of money and social shaping and internalization of the underlying concepts is more constant and general across time and space.

‘Money’ and the ‘monetary system’ are not considered universal realities, existing apart from society and their conceptualization. Rather the monetary system emerges from society, but is in turn also shaped by its conceptualization. This means that the findings of the analysis should be seen in this broader social system of meaning.

2.2 Epistemological foundation of the research

This research abstracts from specific regulations and policies, to focus on the institutions of money, debt, a private bank and economic growth. As the institutions of money are relatively stable on this level, ‘the monetary system’ and ‘money’ can be studied as being a stable entity.

This study focuses specifically on ‘money’ and the ‘monetary system’ as it is understood and institutionalized in the modern day Western societies.

The thesis has an inductive research approach. Insights from literature are reviewed and compared. From this, conclusions are drawn on research topic. To strengthen the analysis, the monetary theory that underlies the literature is discussed.

2.3 Methodology used in the research

The qualitative research comprises of two parts. Firstly, a literature review is carried out. This literature review is complemented with expert interviews. The literature review is supported by a critical analysis of the monetary system, for which additional literature is selected. This analysis is also tested in the expert interviews.

The following texts are found to represent the full range of thoughts in recent literature on the monetary growth imperative, and form the basis of the literature review:

- Ecological economics: Binswanger (2009), Farley et al (2013)
- Post-Keynesian economics: Jackson & Victor (2015), Cahen-Fourot & Lavoie (2016), Richters & Simoneit (2017), Cahen-Fourot (2021), Cahen-Fourot (2022)
- Institutional economics: Svartzman et al (2020)
- Not linked to a school: Arnspenger et al (2021)

The monetary system is researched using two doctoral dissertations: Murau (2017) and Van der Linden (2022). The former has a theoretical, pluralist approach. The latter has a real-world approach interviewing people working in the financial sector. Both dissertations contain an extensive discussion on the history of money and banks, supporting a thorough understanding of the monetary system, and made balance sheet operations of banks central in their analysis, which helps to check if you truly understand a certain monetary operation. Finally, explanations of their own operations by financial institutions were included, since the research heavily focuses on these operations. Information has been used from the Bank of England, (McLeay et al, 2014) and the Rabobank, a Dutch private bank (Boonstra, 2021). To study and set out the dominant explanations of money, two Economics textbook were used, Mishkin (2019) and Mankiw (2022).

Five unstructured expert interviews are conducted. The aim of these interviews was to develop a better understanding of the literature and discuss gaps in the literature. Interviewees were found through the Dutch thinktank Our New Economy, and subsequently a snowball approach. Extra care was taken for selecting interviewees with a diverse expertise. All interviewees reside and work in the Netherlands, with one exception being Belgium. Interviews were conducted with Coen Voormeulen (De Nederlandsche Bank), Martijn Jeroen van der Linden (researcher on monetary economics and ex-banker), Janosch Prinz (researcher in political economy), Klaas van Egmond (researcher monetary economics and engaged with post-growth) Jordi Schröder (researcher at thinktank Positive Money Europe).

3 Theory

In this theoretical chapter of the thesis, the dynamics of growth and the concept of a growth imperative are discussed in more depth. Next, monetary theory on the way private banks and central banks create money and influence the money supply is discussed, where both the mainstream and challenging theory are set out.

3.1 Defining growth imperatives

A ‘growth imperative’ is understood as a structure or development in society that leads to existential threats when there is no economic growth. Threats can be in terms of loss of livelihoods, but also in terms of political destabilization. It is also defined as initiating a further negative growth rate (Janischewski et al, 2024). This would mean ‘uncontrolled’ degrowth, essentially inducing a recession. An undisputed growth imperative for example lies in the core dynamic of capitalism, capital accumulation (Cahen-Fourot, 2022) (which is also a growth driver at the same time, discussed below). A non-growing economy means that the total stock of wealth does not increase. Therefore, if some people accumulate, others have to dis-accumulate by the same amount. This means a constant increase of inequality, which would destabilize society.

Related to growth imperatives are ‘growth dependencies’. Growth dependencies are understood as structures or developments that cause a worsening of societal functions when there is no growth, without endangering the complete continuation of the function, and without causing further negative growth (Janischewski et al, 2024). A growth dependency lies for example in population growth. A growing population means that the bio- and ecological carrying capacity has to be shared between more people, so that the share each person could have decreases. In reality, the concepts of imperatives and dependencies contain much overlap, are hard to distinguish and also sometimes used for the same meaning. In this research I will not make a differentiation, and use the term ‘growth imperative’, which is prevailing in the literature about the monetary system.

A critical note on the growth imperative literature is that the literature only seems to consider something a growth imperative or dependency under the *absence* of a *positive* growth rate. If negative effects only arise under *negative* growth rates, while a stationary state (zero growth) can be stable, it would not be considered a growth imperative or dependency under this definition.

It is not the primary *goal* of degrowth to reduce GDP. But for the Global North some level of economic contraction is likely to be necessary (Hickel, 2020b). Based on this, it seems more sensible to define growth imperatives and dependencies by considering the consequences for a certain rate of *negative* growth. However, this thesis follows the convention of defining a growth imperative as the need for *positive* growth rates, but it might be an important topic for further research.

Growth imperatives and dependencies are to be distinguished from growth drivers. A growth driver is defined as a factor that *causes* economic growth (Parrique, 2019). Technological progress (Solow, 1956) but also institutional progress (Cvetanovic et al, 2019) is dominantly understood as a driver of growth. This form of progress entails an increase in efficiency: with the same input, more output can be realized, which is an *intensification* of the economy (Parrique, 2019). Capital accumulation forms a driver of the economy through increasing efficiency, by economies of scale and innovation. However, this is only one part of the explanation of growth: much of economic growth is caused by the *expansion* of market systems. This can be geographically, but also through the commodification of things that before were allocated through alternative systems of distribution as sharing or reciprocity (Parrique, 2019).

What in turn drives technological and institutional progress, and expansion of the market? Parrique (2019) identifies ‘consumerism’, which means people striving to satisfy their needs and wants through consumption; ‘productivism’, which means firms invest because of competition, and ‘growthmanship’, which entails the state promoting and facilitating growth. Together these drivers comprise the hegemonic ideology that growth entails progress, is necessary and without limits (Schmelzer, 2016).

It is important to note that reducing growth imperatives and dependencies will not cause less growth by itself. Rather, it *allows* for the absence of growth. A degrowth transition requires thus both institutional change to reduce growth imperatives and dependencies, but also political and social will to slow down growth by breaking away from consumerism, productivism and growthmanship.

3.2 Monetary theory

To assess how the monetary system might obstruct the transformation towards a post-growth economy, it is essential to have a good understanding of what money is and how it is created. This is especially important because economics has largely been dominated by an understanding of money that does not recognize that today money is created as credit (Graeber, 2009; Murau, 2017). I first lay out broadly two conflicting understandings of money and introduce the debate around it. Next, I discuss the private money system and the public money system more in depth.

3.2.1 Introduction to monetary theory

“A bank takes in deposits and either uses them to make loans or holds them as reserves.” (Mankiw, 2022, p.137). This quote represents the dominant explanation of the way banks operate. However, as the Bank of England has declared in an influential explainer, after which many other banks followed: *“Rather than banks receiving deposits when households save and then lending them out, bank lending creates deposits.”* (McLeay et al, 2014, p.1). Today, the large majority of money is created in this way by private banks making loans, rather than by the central bank, as is commonly thought (McLeay et al, 2014). This is widely unrecognized due to the lacking theoretical explanations of money. Even many employees of private banks themselves are often not aware that their bank creates money (Boonstra, 2021).

Apparently, precise knowledge about the money creation process is not necessary to operate a bank and thus does not cause immediate problems for banks. However, on the aggregate level a flawed understanding of the fundamental processes of money, creates a lacking overview over the way the banking system operates in its totality. This is likely to make policymaking less effective and increase the chance that bankers and policymakers do not signal problems on the systemic level. Moreover, not describing banks as primary money creating institutes hides the capabilities and power they possess, which is inherently a political issue.

The 2008 financial crisis led to increased attention to the monetary system and monetary theory. Heterodox theories such as Modern Monetary Theory gained attraction and challenged the mainstream ideas about money. In the streets, the functioning and position of private banks and how that would disproportionately benefit the wealthy was protested by the worldwide Occupy movement. Many critical initiatives about the monetary system were founded, like the thinktank Positive Money in the UK and the Sustainable Finance Lab in the Netherlands. These developments

together loudened the critique on the mainstream monetary theory, and led up to the key publication by the Bank of England (McLeay et al, 2014), wherein for the first time a major established financial institute disclosed in detail the process of money creation. This publication led to a cascade of central and private banks sharing information, for example a video from the Dutch Central Bank (DNB)², the informative and reflective document from Rabobank *Hoe werkt geldschepping* (Boonstra, 2021), and the ECB that started to make explainers about the monetary system³. New textbooks appeared that do discuss money creation as credit by private banks, like the renewing CORE Econ textbook and the Post-Keynesian textbook by Mitchell et al (2019). There has thus been a broad shift in the knowledge and transparency on the real money creation process, which has sparked more fruitful debate on the monetary system and how it best serves society.

In spite of that, a lot of work is yet to be done to spread real-world knowledge on the monetary system more widely. Still many widely used textbooks remain teaching only the mainstream monetary theory without critical discussion (e.g. Mishkin, 2019; Mankiw, 2022). Out of the ten Economics studies in Dutch universities, only two cover the way money is created as credit (de Muijnck & Tieleman, 2024). Moreover, also within post-growth debates, a lacking understanding on the monetary system is visible by the proposals that are made (Olk et al, 2023). This underscores the importance of the following theoretical discussion on money.

3.2.2 The functions of money

Money serves three primary functions in society. First of all it is a *unit of account*: money counts and signals the ‘value’ of a good or service. In this way, money does not only define what has value, it also shapes and institutionalizes this conception of value. It is thus not a passive element in society, but has an effect on its own. These relations emphasize the nature of money as an “*evolutionary social construct*” (Svartzman et al, 2020, p.271), and also its inherent political nature. Secondly, money functions as a *medium of exchange*, enabled by the expectation and trust that other people (within a certain group) will accept it. Lastly, it is a *store of value*, enabled by interest that compensates for devaluation of the money and makes it a commodity that can be accumulated indefinitely (Polanyi, [1944] 2001).

² www.youtube.com/watch?v=CuunNjALozo

³ www.ecb.europa.eu/ecb-and-you/explainers/html/all_explainers.en.html.

A widely shared idea within the degrowth discourse is that a diversity of forms of money is necessary (Hornborg, 2017; Olk, 2024), for example to stimulate local trade networks and to embody different incomparable social and ecological values. Another differentiation could be based on separating moneys' function as medium of exchange and as store of value, as will be discussed later in this thesis.

3.2.3 The dominant theory of money

In the dominant theory, the origins of money are located in 'commodity money', which means money that contains the face value of the money from its material. This is thought to have evolved into 'fiat money', where the value of the money is ensured by the government instead (Mishkin, 2019). In this understanding, money pre-exists credit. First there is money, which one can decide to lend out. So in order to lend, you thus first need to have money. Money is described as a neutral medium of exchange, that once evolved from a decentralized social process, and '*reflects the undistorted values derived from individual utilities.*' (Scheider & Miess, 2024, p.2). It is a description that fits the ideology of the free market, and might be seen as a depoliticization of the nature of money.

The quantity of money in the economy would be directly controlled by the central bank, that is also the primary creator of money (Mishkin, 2019; Mankiw, 2022). The central banks creates cash and central bank reserves, that together form the 'money base'. Money is seen as an 'exogenous' variable in the monetary system. An exogenous variable is determined independently from the studied system or model, in contrast to an endogenous variable that is influenced by other variables in the same system or model. Because the quantity of the 'money base' is understood as a decision by the central bank, it therefore theoretically stands apart from the economic system.

Private banks would lend out money to firms and households that others' have deposited. In this view banks act simply as 'intermediaries' that transform savings into loans. To substantiate the legitimacy of these loans, in most countries private banks are required to hold a certain 'minimum reserve requirement' that is decided on by the central bank: the ratio between their outstanding loans and the central bank reserves they hold. If the minimum reserve requirement is 10%, of the money that is deposited the bank would have to hold 10% but can lend out the other 90%. The money of this new loan is also deposited with a bank. Of this new deposit, the bank can again lend out 90% and keep 10% as reserve, and this continues. In this way, the money supply could theoretically be multiplied 10 times. This theory is called the 'money multiplier' (see e.g. Mishkin,

2019). Through the combination of controlling the money base and the minimum reserve requirements, central banks seem to be in full control over the money supply.

3.2.4 Viewing money as created from credit

An opposing view to the dominant theory of money entails that money is created as credit. To understand this view, first the history of the current monetary system is considered.

Today's monetary system has its origins in private banks. Banks started as deposit holders of gold savings, for which depositors received a promissory note saying the gold is returned upon handing in the note (van der Linden, 2022). During the seventeenth century in England, these notes developed from personal agreements to impersonal promissory notes. This meant anyone could go to the bank and exchange the note for gold, such that the notes started circulating as a medium of exchange. Later, the bankers would invent what has been called the 'alchemy of banking': the bank creates more promissory notes to receive gold, and simultaneously create also a debt with the customer. It was the start of money creation as it is still done today: as credit and debt (van der Linden, 2022). This is called the 'mutual acceptance of debt: when creating money, private banks make simultaneously two balance sheet operations, such that both the bank and the household have an asset as well as a liability, as depicted below.

Balance sheet operations of creating money through interest-bearing debt:

Private bank

Asset	Liability
+ Loan	+ Bank deposit
<i>Long-term debt from the household</i>	<i>Short-term debt to the household</i>

Household

Asset	Liability
+ Bank deposit	+ Loan
<i>Short-term debt from the bank</i>	<i>Long-term debt to the bank</i>

The bank deposit is a contractual agreement by the bank to exchange the deposit into cash on demand. This is also called an ‘IOU’, I Owe You: a promise to pay, or: a debt. Another way to describe it, is to say the deposit is a claim on the bank. So, the ‘money’ is nothing more than a promise to the household, and a debt from the bank. And the debt from the household is an IOU to the bank, a claim from the bank on the household.

What differentiates the two debts, is its term, which also translates into the liquidity of the asset. The more illiquid an asset, thus the longer-term the loan and debt, the higher will be its interest rate. The interest rate on a loan is higher than the interest on a bank account. This is called ‘the interest spread’, which is the core business model for a bank (Murau, 2017). The service that banks deliver in return for this interest is turning a future income into current liquidity.

Importantly, banks can only make this operation on demand, when someone wants to take on a loan. And importantly, in line with the ‘mutual acceptance of debt’, when debt is repaid, also the money disappears. Both IOUs are taken off the balance sheet again. The two debts cannot exist without each other. Banks can thus not ‘put the money they created in their own pockets’ after it is paid back. All of this makes clear, that all money actually is, is a mutual indebtedness, mutual promises. This speaks against the common complaint towards private banks that they can create money ‘out of thin air’ (Boonstra, 2021). The idea is not completely accurate, as banks need someone willing to take on the debt. A better way to describe the business of banks, is saying that banks hold the privilege of *‘funding their own indebtedness in view of making money for themselves – the financing of others being a means to this end’* (Sgambati, 2019, p.5).

The conclusion from this explanation is that loans create deposits, rather than deposits creating loans (McLeay et al, 2014). However, loans also still need to be ‘covered’ by deposits, also named the ‘funding’ of a banks’ assets (van der Linden, 2022). Imagine someone gets a loan from the bank to buy a house. The bank makes the double-sided balance sheet operation. The seller of the house might have its account at another bank, such that the deposit is transferred to the other bank. The balance sheet of the bank is now ‘out of balance’. It can be understood as: in order to legitimize the creation of loan, the bank needs to ‘cover’ the loan by making a promise back that it can and will turn the created deposit that the household owns, into cash (which is a ‘higher’ form of money, because it is covered by the central bank). The bank can do two things to bring the balance sheet back in balance: transfer the same amount of central bank reserves (assets), which would lead to a balance sheet contraction, or try to attract a deposit of another household, which is the more

attractive option for a bank. If loans are also dependent on deposits in this way, might it in fact also be appropriate to describe the system on the aggregate level of banking as a circle, rather than saying that that ‘one creates the other’?

If one abstracts from the technical operations of the money creation process, it is possible that it does not matter whether the same deposited money can be transferred to another account as a loan (as the dominant theory prescribes), or whether deposits ‘cover’ loans. It can be argued that both form complementary descriptions of the same system on different levels of abstraction.

Yet, there are good reasons to say the theory of money as created should be preferred: this understanding shows that money is not something that is ‘just there’, an exogenous unit of value that is simply being transmitted and exchanged throughout the economy. Instead, it shows that money is in essence a system of promises and claims, thus of social and power relations (Svartzman et al, 2020; Schneider & Miess, 2024). Merely seeing banks are ‘intermediaries’ that transform savings into loans does not suffice to describe their capabilities as primary creators of money.

3.2.5 Money creation and monetary policy by central banks

Besides private banks, central banks also create money, namely cash and central bank reserves. When one imagines the central bank creating money, immediately the picture of cash being printed comes to mind. The central bank indeed creates cash money, which is the only type of money directly secured by the central bank that non-bank private agents have access to. However, central banks have no tools to bring cash into circulation. Cash only enters the economy on *demand* of private agents. Therefore, cash functions as an extension of the private banking system in practice, instead of as a tool that central banks use to influence the money supply (van der Linden, 2022).

Central bank reserves are the form of payment between the central bank, private banks and the government, and for private banks function similarly as ‘savings’ do for households. Reserves form the tool of central banks to steer the money supply, to carry out their task to control price stability. But rather than creating a certain quantity of reserves, central banks steer the quantity of reserves in the economy through setting the short term interest rate on the reserves. This in turn steers the demand from private banks for holding reserves. The other main tool central banks hold is making interventions in the bonds market, which directly changes the amount of reserves in the economy. This way the central bank can *stimulate* private banks to make more or fewer loans (McLeay et al, 2014). Similarly with cash, it is again the *demand* for the money that ultimately decides the quantity of money in the economy (McLeay et al, 2014). The role of the central bank can better be

understood as *facilitating* and *stabilizing* the private monetary system and conducting monetary policy for price stability by *steering* the money supply, rather than being in direct control over it (Murau, 2017).

The problem with the money multiplier theory as described above is that it depends on the idea that banks lend out deposits, and that in practice reserve requirements are not an important or in some countries even non-existent policy tool to steer the money supply (McLeay et al, 2014). The theory is thus an inaccurate way to describe the dynamics of money.

We saw that both banks and central banks create money primarily on demand. Post-Keynesian theory emphasizes therefore that money is endogenous to the economy: money follows economic activity, rather than restricting it. The money supply is *constantly* changing with credit being created and repaid, such that it adapts itself to the level of economic activity. This challenges the idea that there is a ‘scarcity of money’. The real constraint on the money supply is the *demand* for loans, which the central bank can influence through setting interest rates, contradicting the monetarist belief that central banks directly control the quantity of money.

4 A monetary growth imperative from private money creation as interest-bearing debt

Does money creation as interest-bearing debt impose a growth imperative? In this chapter I critically review and reflect on the assumptions, arguments and conclusions in the debate ^{4 5}.

4.1 The debate on monetary growth imperatives

The idea of a growth imperative from money creation as interest-bearing debt rose to prominence during the beginning of the 21st century in the ecological economics literature (Douthwaite, 2000; Binswanger, 2009; Farley et al, 2013). The argument goes that with debt repayment principal has

⁴ Recommended: For a brief overview of the debate I recommend a video by Joe Ament (Ament, (2021, November 24). Growth Imperative [video, 12:27 – 20:05] Youtube. www.youtube.com/watch?v=RQpDl6SPzfI&pp=ygUabW9uZXRhcnkgZ3Jvd3RoIGltcGVyYXRpdmU%3D.

⁵ Recommended: a seminar from 2020 where Cahen-Fourot and three more researchers share their perspectives on the topic (and discuss money in degrowth more widely) Degrowth Talks (2020, May 20) Transforming money for degrowth [video] Youtube. www.youtube.com/watch?v=xyTLmsOarU&t=2062s.

to be repaid *plus* interest, whereas only the principal was created. The argument is also expressed as $Principal < Principal + interest$. As the money for the interest was not created in the first place, this would require the creation of more money, and therefore debt, to pay the interest. This new debt requires again interest, which requires again debt, etc. According to this logic, interest-bearing debt would by definition cause an exponential function of monetary growth (Farley et al, 2013). Moreover, the money supply and therefore the economy (because of endogenous money creation) must always grow by at least the interest rate (Svartzman, 2020; Ament, 2021). This idea gained a strong hold in ecological economics, under the name of the ‘monetary growth imperative’, or the MGI (Cahen-Fourot & Lavoie, 2016).

The existence of such a ‘structural’ MGI because of interest has been disproven by Post-Keynesian scholars (Jackson & Victor, 2015; Cahen-Fourot & Lavoie, 2016; Richters & Simoneit, 2017; Cahen-Fourot, 2022). Using stock-flow consistent models, they demonstrate that an economy without growth can be stable when money is created as interest-bearing debt, under the condition that interest is not accumulated but instead spent back into circulation, and that the net savings rate is sufficiently low. Cahen-Fourot (2022) writes: ‘*There is no simple accounting and mechanistic link between money as debt bearing interest and GDP growth, contrary to what the ecological and degrowth economists who put the debt-interest MGI argument claimed.*’ (p. 3). The belief stems from a confusion between ‘*stocks and flows*’ (Cahen-Fourot & Lavoie, 2016). What is this confusion that Cahen-Fourot points out?

I will clarify this by discussing a quote from the ecological economics literature that encompasses the reasoning flaw: “*A continuing stream of new loans [to be paid off later] requires that borrowers expect to invest in a project that will grow at a rate greater than the rate of interest.*” (Daly, 2013).

The interest is a cost (a flow), at a rate relative to the debt (a stock). The rate of *return* of a debt for an investment indeed has to exceed the interest rate. The return is an income of the business, a flow. A positive return does not necessarily mean a positive growth rate: instead of reinvesting the income to grow the business, the owner can also decide to pay out the remaining to oneself or raise the wages of its employees, or use it to pay off more of the principal debt. This means that *growth* of the business is not a prerequisite for the ability to repay debt plus interest. Interest and repayment of debt should simply be seen as one of the many costs that householders, businesses and states have, that require *sufficient* income, but not *increasing* income.

How does it work out at the aggregate level? To see why interest-bearing debt does not necessarily create a structural need for more money creation through growth, it is important to realize that whereas the money of the principal is destroyed with repayment, this is not the case for the interest. This means that the earned interest can flow *back* into circulation, and thus become available for someone else to pay interest or other costs, for making a profit or for consumption (Parrique, 2019).

Another central critique of the Post-Keynesian scholars on positioning interest-bearing debt as a growth imperative, is that it would reverse the causal relationship between money creation and economic growth (Svartzman et al, 2020), and that the idea implies that interest-bearing debt is a *driver* of growth (Cahen-Fourot, 2022). Instead, Post-Keynesian theory emphasizes that money is *endogenous* to the economy. This is a central point of their argument: the money supply follows and adjusts to the economy, rather than driving it.

It should be concluded that the growth of a business is not structurally required for the business to be able to pay the debt and interest, and on top for the bank to earn on facilitating the investment through the interest-bearing loan. And, it is not structurally necessary that the economy and money supply grows when money is issued as interest-bearing debt.

Parrique (2019) makes a critical note, emphasizing that whether or not the accounting of stocks and flows works out in the aggregate, does not take away a micro-growth imperative that households, businesses and even states experience to grow their (national) income or profit due to a sense of insecurity when being indebted. *'Indebted individuals or firms do not console themselves in thinking that it all balances out at the macroeconomic level. They seek to work and sell more to increase their earnings.'* (p.652). Though, this is another argument about debt and growth, that is further left aside in this research.

There is one more thing to note here: Cahen-Fourot & Lavoie (2016) differentiate between *simple* and *compounding* interest. Their conclusion that interest-bearing debt is compatible with a zero growth economy applies to simple interest. They pose that instead, compounding interest is not compatible with zero growth and does create a growth imperative. In research from Simoneit & Richters (2017), later work from Cahen-Fourot (2021, 2022) or any other paper to my knowledge, this conclusion is neither repeated nor refuted. Moreover, it is challenging to find data on the share of loans made with compounding and with simple interest. To my knowledge, thus far no definite

conclusion about this point has been reached in the literature, so it seems an important question to explore in further research.

4.2 Capital accumulation

As shortly mentioned, there is one crucial assumption of the Post-Keynesian claim: it is dependent on the condition that the interest is not retained and accumulated by the bank, but instead spent out (Cahen-Fourot & Lavoie, 2016; Simoneit & Richters, 2017). “*Positive interest rates are possible in a non-growing economy, but they require that enough of accumulated wealth is put back into circulation.*” (Cahen-Fourot, 2022). Otherwise the interest would not immediately become available for a next debtor (or for someone making any other kind of payment).

This is in fact a general condition for an economy without growth: net capital accumulation is incompatible with a stationary economy. It is thus important to realize that all forms of income or profit will destabilize the stationary state when net accumulated in the aggregate (Cahen-Fourot, 2021). Namely, a stationary economy is a zero-sum game. If one accumulates, another has to dis-accumulate, which leads to a continuous growth of inequality. On this point, private banks that accumulate interest are thus no different from the growth imperative because of any other business retaining profits for reinvestment and accumulation.

Arnsperger et al (2021) are critical of the condition that interest is not accumulated: *‘In essence, they are claiming [...] that if some of the essential accumulation-generating properties of capitalism were somehow eliminated from capitalism, the latter could remain compatible with debt-money.’* (p.19). It comes down to saying: if banks would not be profit, growth-oriented enterprises that retain and reinvest profits, then money creation as interest-bearing debt would be no problem.

In defence of the argument, Cahen-Fourot (2022) states that the more fundamental issue at hand is the propensity to accumulate and reinvest income for growth, rather than the interest, for the reason that accumulation per se destabilizes a non-growing economy, whereas interest-bearing debt does not. In a similar line, Ament (2021) says: *‘Banks never fully spend back the earned interest into the economy, so the interest does create a growth imperative, but a growth imperative exists because of the hoarding and accumulation nature of capitalism, not necessarily because of the interest rate.’* Any incompatibility between interest and a stationary state would be caused by

‘decisions’ on reinvestment or spending (Richters & Simoneit, 2017), or by ‘culture’ of saving and accumulation (Strunz et al, 2017), rather than the ‘structure’ of the economic system.

The critique on the Post-Keynesian analysis is: can the propensity to save and accumulate be separated from interest? (Arnsperger et al, 2021). The arguments above fail to recognize that the monetary system is an institutionalisation of the conceptions of value and of culture (Svartzman et al, 2020). Svartzman et al (2020) bring in insights from institutional economics into the debate. ‘Hoarding behaviour’ or ‘culture’ should not be seen as separate from, but as fundamental to the monetary system. The authors discuss the historical role of interest in the rise of accumulation regimes: *‘the progressive generalization of interest-bearing debt money, beginning in the Middle Ages, [...] increased the propensities to save and accumulate that are incompatible with a non-growing economy.’* (p. 273). They conclude, *‘Money created as interest-bearing debt [...] is what realigned the social relations of production toward a capitalist goal of perpetual accumulation and growth. This calls into question the assumption in stock-flow consistent models that agents will not accumulate interest – an essential condition to reach a steady state.’* (p.275).

4.3 Net saving

The other condition for the conclusion that an economy without growth can be stable with money creation as interest-bearing debt, is that the net savings rate (an *increase* in the aggregate savings rate) is sufficiently low (Cahen-Fourot, 2016, Simoneit & Richters, 2017). If there is net saving, liquidity is withdrawn from circulation, creating a shortage of liquidity. This requires more money creation in order for others to be able to pay their debt, interest and other costs. The saving of some requires the dissaving of others, or in other words: getting into debt. Whereas interest-bearing debt in itself is no problem for a stationary state, it is important that debt is repaid at the same rate as which new debt is taken on. In other words: in a stationary state, the total stock of debt cannot increase (Cahen-Fourot, 2022). This point is especially relevant in times of growing inequality. On average wealthier households have a higher propensity to save. So if inequality rises, the total net savings rate increases (Fisher et al, 2020).

The link between interest and saving complicates the monetary growth imperative debate, in a similar way as the previous discussion about capital accumulation. Interest is precisely what turns money into a commodity, so that it can be accumulated (Fantacci, 2013), facilitating one of the functions of money: a store of value. Arnsperger et al (2021) use a water cycle metaphor of money

being held in ‘reservoirs’, so that a drought is not the result of a lack of water, but a lack of circulation. They discuss ‘intra-elite’ re-investment, where the wealthy buy and sell assets from each other, creating a self-contained circuit. (p.16,17). To this argument Cahen-Fourot (2021) objects (p.11): this logic assumes that the rich store their wealth in money-form, whereas in reality most wealth is stored in real estate and financial assets. It might seem like money is stored ‘in’ the asset, as if money was turned *into* an asset upon buying. But what actually happened is just a swap of asset and liquidity between two people, so that nothing changed to the amount of liquidity in the system.

However, it is questionable if this debunks the point. While the majority of wealth certainly is not stored in savings accounts, this does not mean that there wouldn’t be significant percentages of the money supply stored in largely untouched savings accounts. And moreover, if the money is spent, it is likely to circulate within money circuits of the wealthy, so that it still does not become available for the rest of society.

Whereas interest is a driver of saving in liquidity, a low interest rate does not keep people from saving. Instead of reducing their savings rate, households will likely shift their savings towards assets, stocks or cryptocurrencies. It is yet unclear what the impact is of households saving in other forms than liquidity.

4.4 Conclusion on a monetary growth imperative

With these insights, I draw conclusions about the existence of a growth imperative contained within the monetary system.

I set out the conclusions by means of reviewing a quote from the ecological economics literature that argues for the existence of a monetary growth imperative from money creation as interest-bearing debt: *“Banks loan only principal, but demand repayment of principal plus interest. Firms want to make a profit on their investment. [...] Households set some income aside as savings. The only way each of these actors can achieve their goals is through the continuous creation of new money. [...] A constantly increasing supply of real money (i.e., of real purchasing power) is only possible in a continually growing economy.”* Farley et al (2013, p. 2808).

- *“Banks loan only principal, but demand repayment of principal plus interest.”* – Not necessarily, as it is the combination with accumulation of the interest that causes a growth imperative, not the existence of interest in itself.

- “*Firms want to make a profit on their investment.*” – Yes, dependent on the assumption that profits are retained and accumulated, net profits on the aggregate level cause a growth imperative.
- “*Households set some income aside as savings.*” – Yes, when the net savings rate increases, new money has to be created.

So far, rather than concluding that interest-bearing debt does not cause a growth imperative, I come to the following conclusion: to the extent that interest increases the net savings rate, it causes a growth imperative. Accumulation of interest widens the scope of the broader growth imperative of accumulation.

- Lastly, “*A constantly increasing supply of real money (i.e., of real purchasing power) is only possible in a continually growing economy.*” – This remains unclear. The formulation in the Post-Keynesian literature of the condition that accumulation of liquidity (because it requires new money creation to make up for the resulting shortage of liquidity) destabilizes the stationary state, seems dependent on this idea. However, this specific part of the argument is not elaborated on in the literature. It seems to me that there is a contradiction here: taking on more debt does not require a profitable investment or growth, but at the same time the total stock of money and debt cannot increase in a stationary economy. I leave this aside for now, and assume that the statement above is accurate.

To the best of my knowledge, after the article of Cahen-Fourot (2022) there have been no more publications on the topic. The dominant conclusion in the literature seems to be that there is no growth imperative in the monetary system. Indeed, the prevalent argument that interest *in and of itself*, accounting wise, creates necessity for growth has been proven false. However, Cahen-Fourot (2022) himself also states that the discussion comes down to reductionist arguments of national accounting, and that it is thus “*important not to overstate the conclusions.*” Parrique (2019), criticizes the literature, saying that the condition of low savings rate and no capital accumulation are ‘*more theoretical than practical*’ (p.652), and that this conclusion cannot be translated directly to the question if the current monetary system forms a growth imperative.

Indeed, when describing the monetary and economic system within a growth-oriented economy, this leads me to a different conclusion than saying there is no growth imperative from the monetary

system. I conclude that through the accumulation of interest by private banks and the saving of liquidity because of interest, the monetary system is *part of* the broader accumulation and savings dynamic that causes a growth imperative. Interest it is yet another stream of income that is accumulated and needs to be redistributed to reach a stationary state. Interest stimulates saving in liquid form, which withdraws liquidity from circulation and causes the need for more money creation. Within a growth regime, money created privately as interest-bearing debt expands the scope and increases the strength of the growth imperative of accumulation and saving.

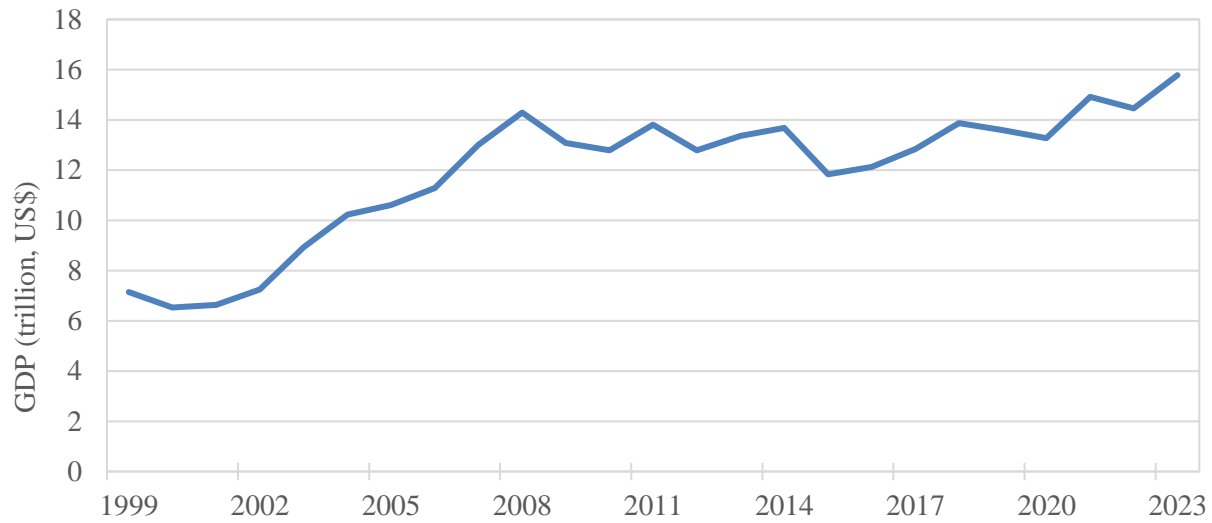
5 A growth imperative from private debts

From the literature review on the monetary growth imperative, a research gap is identified on the issue of high private debts in a degrowth scenario. I now move from the debate on the monetary growth imperative to discuss the issue of high private debts in the current economy in more depth. The issue is first introduced.

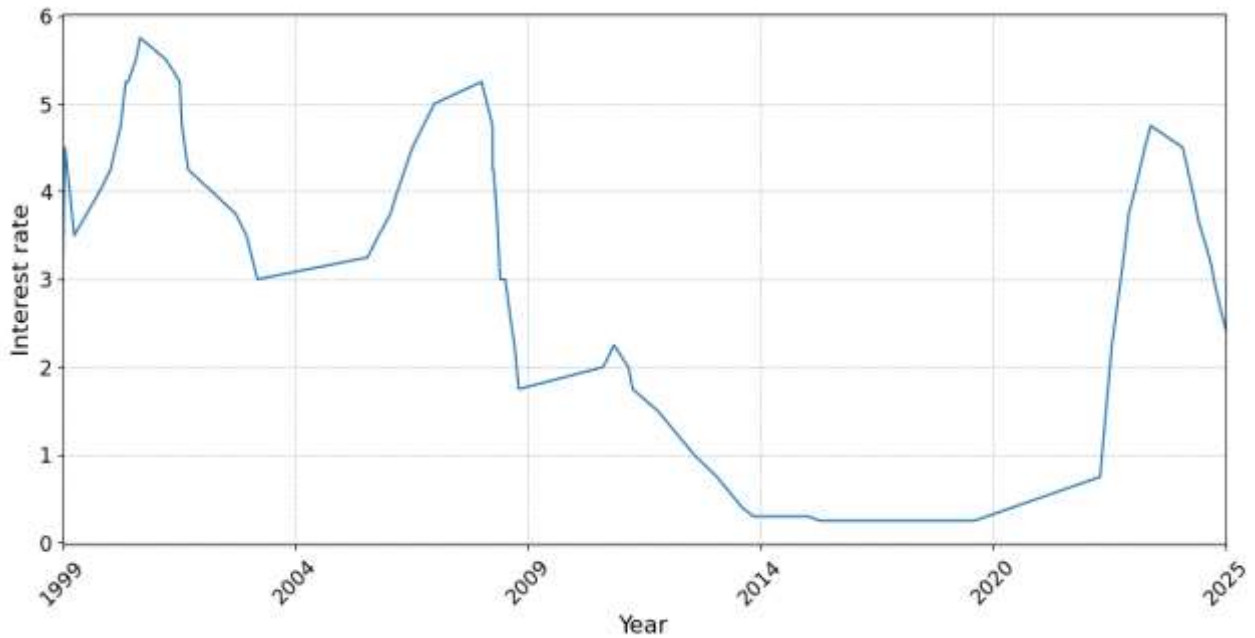
It should be noted that in this analysis the heterogenous effects of an economic crisis are left out. Decreasing incomes' speak to the decrease of aggregate incomes. However, during a crisis, rather a relatively small decrease of everyone's income, the initial effect is mainly higher unemployment: some people lose their job and income, while the income of others likely stays mostly constant, or might even increase. If this heterogeneity affects the general argument would be an important further research question.

5.1 (Low) economic growth and private debts

To situate the analysis of private debts within today's context, some data is discussed along with the analysis, considering the Eurozone for economic growth and interest rate policy, and the Netherlands for private debt levels.



Graph 1: GDP in the Eurozone (trillion, US\$). Source: WorldBank.

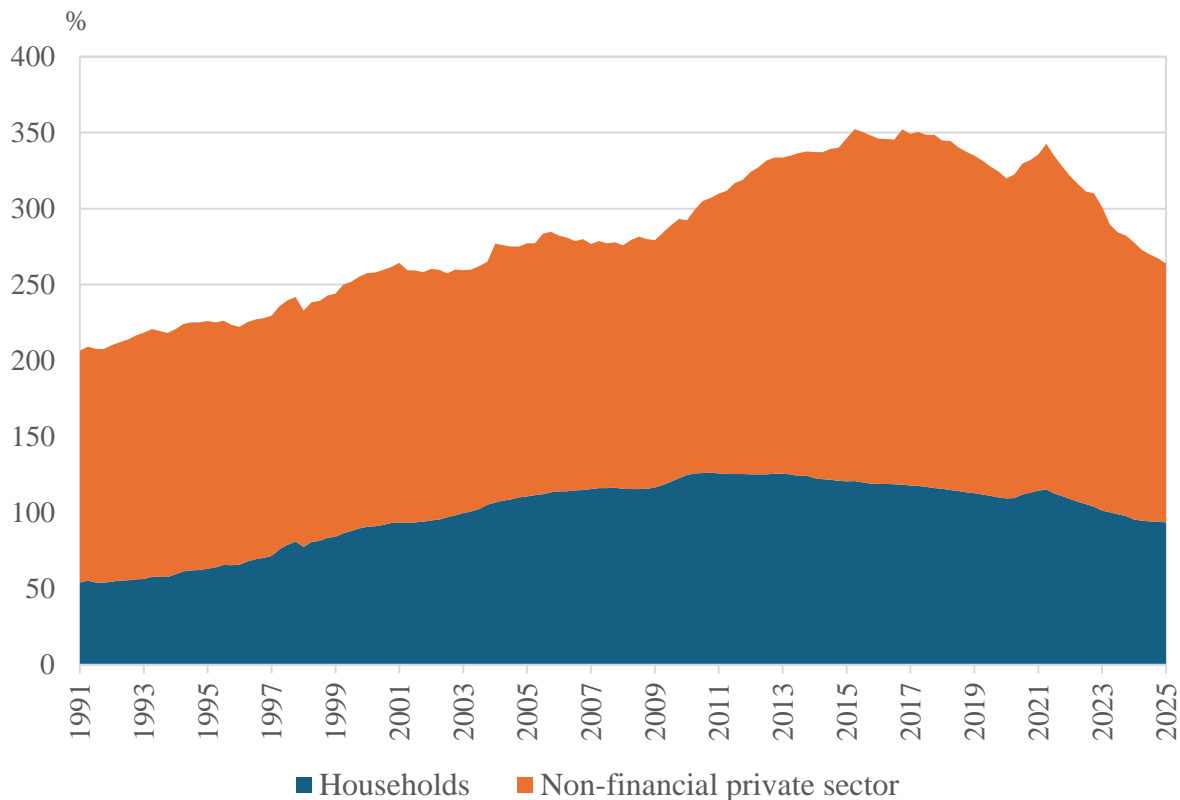


Graph 2: interest rate (marginal lending facility) in the Eurozone. Source: ECB Data Portal.

Under the condition of low, zero or even negative growth, central banks typically lower interest rates, as an attempt to stimulate recovery of GDP growth by lowering the costs of borrowing. To exemplify, graph 1 shows the development of total GDP in the Eurozone and graph 2 the interest rate policy (the marginal lending rate) of the ECB.

The graphs show clearly the response of the ECB, setting (extremely) low interest rates as a response to the 2008 financial crisis and the sustaining low growth rates, which is mend to stimulate investment and increases the amount of liquidity in the economy. The strategy falls under what has been called ‘Privatized Keynesianism’ (Mazzucato, 2018): in the Keynesian policy vision, the government takes on more debt and creates more money to boost the economy through increasing aggregate demand. Instead, in todays’ age of austerity and financialization, the private sector and households are encouraged or pressured to take on more debt, in order to sustain the same production and consumption level, therefore keeping up aggregate demand (Mazzucato, 2018).

Graph 3 shows the developments of private debts as a percentage of GDP in the Netherlands.⁶



Graph 3: private debts relative to the economy. The current total outstanding household debts make up 94% and total debts of non-financial firms 171% of GDP. Source: BIS Data Portal.

⁶ Due to less data availability/accessibility of private debt levels in the Eurozone, the Netherlands was chosen as an alternative. The data that was found on the Eurozone, showed a similar pattern.

It is clear that private debts of both households and firms increased during the neoliberal age of privatization and deregulation. However, contrastingly to what might be expected initially, both debts of non-financial firms and households did not increase during the period of extremely low interest rates, but even clearly decreased. Total household debt started to decrease since approximately 2011, and total debt held by non-financial private 2017. Households and non-financial firms have thus repaid debt at a higher rate than the rate of new debt taken on. This might be said to exemplify the idea of endogenous money: less economic growth means less investment, means less loans taken on.

If low or even negative growth rate remains, with less investment, more unemployment, dropping asset prices, debt defaults, another recession seems unavoidable. This is a scenario of *uncontrolled* degrowth. To save the economy from potential collapse, the government has to step in to take over debts and assets, which increases the growth imperative from public financing of the welfare state (Janischewski et al, 2024). The following analysis applies specifically to private debt.

If the goal is *controlled* instead of *uncontrolled* degrowth, it seems favourable that private debts are repaid, or cancelled, at approximately a similar rate as which the economy degrows, in order to not let debt-to-income ratios explode and eventually result in unpayable debts. Instead of stimulating firms and households to take on debt, there should thus be a stimulus to pay off debt.

To repeat Cahen-Fourot (2022): paying off more debts with a decreasing income is not impossible, it is precisely coherent with an economy with negative growth. *“If income stays constant or even decreases (to the extent that one can still sustain themselves), agents can reduce their final consumption expenditures to pay back their debts instead. This will reduce GDP and the debt stock altogether, consistently with a degrowing economy.”* (p. 8).

Even if on the macro-level debts are released at an ideal rate, undoubtedly many cases of unpayable debts will occur on the micro-level, which will be examined in the next section.

5.2 Unpayable private debts

Hartley & Kallis (2021) have studied historical cases across a wide variety of cultures and time periods, on the sustainability of compounding interest-bearing debt under zero or low growth rates. For seven of the ten cases they found notable presence of unpayable debts due to compounding

interest.⁷ The authors did not include data on the rate of accumulation and saving, and only mention on this point that in none of the cases there was a ban on accumulation of interest or net positive saving.

The historical cases show that all societies had several ways of dealing with the problem of unpayable debts: regular debt jubilees, a ban on interest, a ban on compounding interest or limits on the size and duration of loans. The authors wrap by stating: *‘when interest-bearing loans become widespread, they have tended to be accompanied by unpayable debt, dispossession of debtors, and wider upheaval and revolt. The findings highlight that interest-bearing loans have in general been very problematic in past non- and slow-growing economies.’* (p.10). The findings in other literature about the issue of private debts are similar to the conclusions from Hartley & Kallis (2021): high private debt levels are not sustainable in a degrowth scenario (Svartzman et al, 2020; Arnspenger et al, 2021; Cahen-Fourot, 2025, personal communication). Especially, since debt has become so central in today’s financialized economy (people not only take on debt to buy a house but also to study, or they are offered to buy consumption goods on credit) this is yet more worrisome.

Cahen-Fourot (2022) states in the quote above (*“If incomes stay constant...”*) that paying of more debts by reducing consumption is precisely in line with a degrowing economy. However, there might be a concerning spiral in paying off more private debts: if the starting point is a negative growth rate (which means less consumption) and households pay off more debts by lowering their consumption further⁸ to spend this money on debt repayment instead, this decrease of consumption in turn means a lower GDP, which makes for a positive feedback loop (Positive Money, 2018), and might be called a degrowth crisis spiral. To avoid getting into this spiral, either the government has to step in by getting in debt or creating money, or alternatively: redistribution from creditors to debtors has to take place. Cahen-Fourot says: *‘this would be for sure challenging: many debts would need to be renegotiated, and high levels of redistribution from creditors to debtors may need to occur. (...) This is what the Post-Keynesian literature shows: a full stationary state is possible in the presence of debt and interests if enough wealth circulation happens. It can be either through consumption or taxes.’* (Cahen-Fourot, personal communication, 2025, June 10). This is again consistent with the observations from Hartley & Kallis (2021) on the ways in which previous societies dealt with high debt levels.

⁷ The authors remain ambiguous on the question what happens in case of simple interest.

⁸ Households can also initially make an appeal on their savings, but only temporary or partially.

Another important detail in the quote from Cahen-Fourot (2022) about the payability of private debt from Cahen-Fourot is: *‘[people can reduce their consumption to pay off debt]... to the extent that one can still sustain themselves.’* (above, p.28). Not all households can lower their consumption level. An indebted household that already has a marginal disposable income and difficulty to pay for its basic needs, has little to no capacity to absorb a decreasing income by decreasing its consumption. For these households, redistribution is thus even more necessary in order to avoid complete loss of livelihoods due to unpayable debts.

5.3 Conclusion on a growth imperative from high private debts

Redistribution is a requirement to deal with unpayable private debts during a degrowth scenario. The need for redistribution clearly shows the nature of a degrowth transformation as a class struggle. With acknowledgement of the enormous political challenges this poses, it seems appropriate to call high private debts a *political* growth imperative.

What does such a political growth imperative from private debts mean for a growth imperatives because of private money creation as debt? To answer this question, Cahen-Fourot (2022) imagines a society in which money is created publicly, without private actors taking on debt. He argues that in this economy, accumulation and saving would still create the same shortage of liquidity in the economy. By itself, the *same* debt relations will evolve due to inequality and power differences. He concludes therefore that private money creation is not the source of high private debts, but rather inequality and power structures. This is a crucial point to realize, and shows that another monetary system could likely not solve all debt related issues.

However, it might be considered relevant that there could still likely be a difference in the *scale* of debts, when money is created as credit such that the debt arises from the very start, or when debts only arise as a result of inequality. This would mean there is also a difference in the scale of required redistribution and therefore the scale of the ensuing political growth imperative. From this follows that private money creation as interest-bearing debt and the financialization of the economy increases the scale of this political growth imperative.

6 Proposals for post-growth monetary systems

The conclusions on monetary growth imperatives contained in the monetary system direct the required transformations of the current monetary system for a non-growing economy and informs proposals for new post-growth monetary systems.

Each identified problem from the analysis and possible solutions is discussed individually in this chapter, complementing the findings with insights from other literature at the end.

6.1 Accumulation of interest

There are broadly two ways to avoid the accumulation of interest when money is created as interest-bearing debt: high redistributive taxes on private banks to bring the interest back into circulation, or banks becoming public or being replaced by new public banks.

Notice worthy, scholars that reject the idea of the existence of a growth imperative from the monetary system based around private money creation, do imagine a post-growth monetary system with banks being public (e.g. Cahen-Fourot, 2021). Likely this is for reasons that a public banking system can also have other positive effects, like the possibility to allocation of money according to public needs, rather than individual interests, as discussed in paragraph 6.4.

6.2 Net saving of liquidity

Net saving of liquidity, stimulated by interest, breaks by the circulation of money, which causes a shortage of liquidity in the economy and the need for more money creation. On this point interest is thus seems to be a problem on itself. A solution can be found in idea of ‘demurrage money’. This entails a (pre-determined) negative interest rate, which avoids accumulation of the currency and instead stimulates circulation. This makes money especially suitable to fulfil the function as medium of exchange. Demurrage money is also known as ‘money that rots’, would decommodify money and align it more to the natural world (Godschalk, 2011).

Other forms of money or assets would fulfil moneys’ function of a store of value, so to separate these functions of money. *“It is important not to think about money in this monoculture way, that nation states today tend to work on.”* (Linares in Degrowth Talks, 2020 May 20 at 50:42) This is part of the broader idea of monetary diversity within degrowth (see e.g. Hornborg, 2017; Olk, 2024).

6.3 Redistribution when private debts become unpayable

Rules need to be established how society should deal with high private debts through redistributive measures, especially when they become unpayable. Different measures are suggested in the literature.

Direct debt jubilees of debt held with private financial companies would push the financial companies holding these debts as assets into insolvency, causing wide societal destabilization (Hudson & Goodhart, 2018; Keen, 2021). This is therefore generally not seen as a possible strategy for dealing with current private debt, and searching for alternative methods is necessary (Svartzman et al, 2020). Keen (2021) proposes a ‘modern debt jubilee’, where essentially the government takes over private debts. His proposal is based on the idea within Modern Monetary Theory that government debt is less problematic than private debt, and secondly that redistribution towards less wealthy households who have a higher propensity to consume, such that the circulation of liquidity improves (Fisher et al, 2020).

Cahen-Fourot (personal communication, 2025, June 10) proposes differently: *“Redistribution from creditors to debtors could be achieved either through taxes on wealthier people (who are often creditors), and/or through debt reliefs (equivalent to the state taxing debt assets held by creditors and redistributing the amount back to debtors).* Others propose other redistributive measures to reach private debt relief, for example the state facilitating equity financing of housing, and funding this by taxing land or property (Hudson & Goodhart, 2018).

In terms of new debts taken on: if banks would be public, debt relief would be subject to a more straightforward political decision, without having to take detours as the measures mentioned above to achieve redistribution.

6.4 Insights from other literature

Much of the degrowth literature envisions banks becoming public (Hornborg, 2017; Cahen-Fourot, 2021). Making banks public would require additional changes to make the banking system truly in line with a degrowth transformation. In the seminar Degrowth Talks (2020), Ament emphasizes: *“We can have a super growth-intensive public banking system. It’s really about the goals that we have.”* Just nationalizing banks will thus by no means be sufficient. It has to be combined with a deeper form of democracy (Schneider & Miess, 2024), and with aligning the purposes towards social and ecologically useful goods and services. This a general point about

growth imperatives as mentioned in chapter 3.1: reducing a growth imperative means the socio-economic system can remain stable under absence of economic growth, but this will not automatically lead to lower growth rates or a less growth-oriented society and economy. A degrowth transition requires both institutional change, political and social will, and a stronger democracy to prioritize public needs over individual interests.

A common proposal is to make public banks also local institutes. Cahen-Fourot (2021) writes for example: *“Banks would be locally-oriented: either in a geographical sense as communal or regional banks or in an economic sense as sectoral banks with specific expertise.”* Schneider & Miess (2024) make a proposal about the institutional arrangement to democratize money: *“We propose that community-assembly networks fill this role. These are networks of assemblies across local, regional, and federal levels, composed of residents of the respective locality who are chosen at random through sortition. Community assemblies would inform both public and private processes of money creation and distribution. (...) In order to strike the necessary balance between technical expertise and meaningful public participation in decision-making processes, establishing clear lines of accountability for monetary decisions becomes crucial. Assemblies must work in concert with experts in monetary and economic policy from a range of academic and professional backgrounds.”* (p.12). Besides having a diverse group of experts giving advice, it is important that the people in the assembly-network and preferably also a large part of the wider population, have sufficient, pluralist knowledge themselves on economics and the monetary system. This would avoid a situation where in practice the decisions are still indirectly made by the group of experts, but that instead the assembly can critically review the advices from the expert group.

Questions that might arise are: how can price stability be controlled in a system of local public banks? Would banks be able independently decide over the amount of money they can create, or should this decision stay more centrally with a central bank such that local banks only decide over its allocation? What would be the benefits and disadvantages to create money as interest-bearing debt or instead as “debt-free” money, and how do circumstances affect that? In chapter eight, more recommendations for further research are shared.

7 Conclusions

A critical review of the relevant literature suggests that within a growth regime, private money creation as debt expands the scope and strength of the growth imperative from accumulation, net saving, and the political growth imperatives due to the need for redistribution. This challenges the dominant conclusion that the monetary system does not contain a growth imperative.

I conclude that private money creation as interest-bearing debt is part of the broader accumulation and savings dynamic that causes a growth imperative. Interest is yet another stream of income that is accumulated and needs to be redistributed to reach a stationary state. Interest stimulates saving in liquid form, which withdraws liquidity from circulation and causes the need for more money creation.⁹ Redistribution is necessary to deal with high and unpayable private debts during a degrowth scenario, either by wealth taxes or other redistributive taxes, or by the government taking over unpayable debts. Therefore, unpayable private debts form a political growth imperative. Private money creation as interest-bearing debt and the financialization of the economy increases the scale of this growth imperative.

Based on the analysis, several existing proposals within the degrowth discourse for a monetary transformation are supported: banks being public, local and democratically governed, creating demurrage money to fulfil money's function as a medium of exchange, and the establishment of rules around debt relief in case of unpayable private debts.

These transformations will cause less growth by itself. Rather, it allows for the absence of growth. A degrowth transition requires at the same time institutional change, political and social will and a stronger democracy to prioritize public needs over individual interests.

⁹The literature remains ambiguous on the question if and why more money creation would require more economic growth, since not profitability (and growth) but rather an income that exceeds the interest rate, is required for taking out a loan. I follow here the same assumption that the literature generally seems to make, namely that a net increase of the stock of money and debt is incompatible with a stationary state.

8 Recommendations for further research

For further research, the following questions are suggested.

Regarding the analysis to identify growth imperatives in the monetary system:

- How does the analysis of growth imperatives change when it focuses on the effects of negative growth rates, rather than the absence of positive growth rates?
- Does the requirements of an increase of the money supply (as a result of net saving of liquidity) cause a growth imperative? What are the effects when households saving in different forms than liquidity?
- Does compounding versus simple interest rates make a difference for the conclusions on the existence of a monetary growth imperative? How does the quantity of loans with compounding interest compare to loans with simple interest?
- What happens if households save in other forms than liquidity?
- How does the heterogeneity of the effect on households and firms during a crisis change the argument on the problems with private debts?
- How can the decline of outstanding private debts (for the case of the Netherlands) be explained?

Regarding the exploration for ways to reduce or cope with the identified growth imperatives:

- Is the separation of money as a medium of exchange and store of value through demurrage money a suitable solution to solve the issue of shortage of liquidity?
- How could redistribution needed to deal with unpayable private debts be organized? What political narrative could support such measures?
- What role should interest rates play in a post-growth monetary system? Is debt-free money creation by public banks an appropriate solution?
- On what level should banks operate? Who should be in charge with monetary policy to keep price stability in check?

9 Statement on usage of AI

A generative AI tools (ChatGPT) was used to create a graph for this thesis (graph 2, p.27). No generative AI tools were used for other purposes. By submitting this thesis I declare that I am fully responsible for the accuracy and completeness of its content.

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