Financing post-growth?
Green financial products for changed logics of production

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1. Introduction

Current debates on 'green finance' and 'sustainable investments' are shaped by the search for alternative ways of investing large volumes of capital to provide economic returns while abiding by certain social and ecological standards. The large institutional investors pursuing such goals include pension funds, insurance companies and foundations – as well as sovereign wealth funds. At the same time, many of the international financial centres (IFCs) where 'green' financial products are 'produced' are attempting not only to rebrand their core activities, but also to create new conditions for 'green' (and sustainable) investments. These new conditions comprise, e. g., regulations and standards, new trading platforms, new degree programmes at universities and marketing techniques. Despite such dynamic developments there is currently no indication that the financial sector is reassessing or questioning the growth-based principles, mechanisms and motives of a financialised global economy. In contrast, the real economy is increasingly turning to alternative approaches, especially in regional contexts, such as the circular economy and enterprises with a common good orientation, some of which are funded by civil society or are semi-public, e. g. the social and solidarity economy, citizens' cooperatives, etc. Due to their specific focus, orientation and, not least, size, many of these activities are of negligible relevance for the large investors mentioned above. There is an obvious discrepancy in granularity here with large investments primarily targeting large, international climate protection projects; however, there is also a conflict of institutional

logics and motivations. This article attempts to explore this field of tension and illustrates possible post-growth approaches within the financial economy.

Post-growth debates and research have paid intensive and increasingly differentiated attention to topics like production, consumption, models of working hours, land ownership and infrastructure (Weiss/Cattaneo 2017; Demaria/Kallis/Bakker 2019) but has to date displayed little concern with the financial sector. Although work on alternative or parallel currencies, the renaissance of cooperative banks or ethical forms of investment has fairly explicit links to post-growth, more fundamental and critical consideration of the established financial system has only been undertaken on a more general level. This includes, for instance, neo-Marxist critiques of financialisation and civil-society debates about the social and ecological dimensions of the global financial economy (e. g. *Finance Watch*).

When postulating a post-growth reorientation of the economy, two perspectives on the financial sector seem particularly interesting. First, what is the role of finance in the transition to more sustainable economic approaches (for initial findings on the energy transition see, e. g., Zademach/Dichtl 2016)? Second, to what extent do the business models and practices of the financial economy remain entrenched in growth logics or indeed themselves create continued pressure for growth (for instance for corporations and banks) through the prevailing loan and interest system? Socio-economic and socio-ecological transformation is not possible without the credible participation of the financial institutes. However, 'profit-seeking, risk management and regulation' have made a political-moral problem into an economic one where 'the much-maligned capital markets… play a central role', as the news magazine *Der Spiegel* recently commented (translated from German)[1]. The discussion in the article concerned carbon emissions trading, the EU's 'key tool for reducing greenhouse gas emissions cost-effectively'[2] and large infrastructural projects in the energy field. Such projects result from one-off decisions in favour of solar energy or other sustainable energy sources

1 https://www.spiegel.de/wirtschaft/soziales/kann-uns-der-kapitalismus-noch-retten-a-f70ee45b-fab3-4740-9a06-60678b5b1dcf?sara_ecid=soci_upd_wbMbjhOSvViIS-jc8RPU89NcCvtlFcJ (20.01.2020)

2 https://ec.europa.eu/clima/policies/ets_en (09.01.2020)

and then define long-term, transregional or even transnational development paths.

Against this background, it seems particularly important to consider more closely the current dynamic development of a financial sector that increasingly portrays itself as be(com)ing 'green'. This development is driven by the growing pressure for adaptation (climate debate, divestment campaigns, new policies, etc.) faced by the financial industry in light of the new circumstances and requirements of the real economy. Furthermore, the financial industry needs to contain the speculative forces that are currently arising from a horrendous imbalance between too much capital[3] and too few (profitable) investment options. The demands for a more sustainable financial system that were made during the most recent financial crisis in 2008/2009 went largely unheard. Indeed, it is unclear how this restructuring should occur and which direction it should take. A ubiquitous catchphrase that describes one version/vision of the financial system of the future is 'green finance', a term that is not only scintillating but also imprecise (Dörry/Schulz 2018). The emerging decisions that indicate possible directions of development are unfolding on many levels and along diverse fault lines defined by conflicting interests and philosophies. Like in the manufacturing sector, it is possible to make a distinction between advocates of a 'technological fix' and proponents of a more fundamental transformation of the economic system. Those supporting a technological fix focus primarily on tackling symptoms rather than causes. They thus call for a 'business as usual' approach, continuing the growth-oriented economic model of the past (in the sense of 'weak' ecological modernisation; Christoff 1996). This distinguishes them from the proponents of a fundamental restructuring of the economic system.

This dualism is manifested in the financial economy between advocates of the prevalent greening hype and advocates of alternative financial

3 Of relevance here is the significance of speculatively driven financial activities, but discussion of this aspect is beyond the scope of the paper. Further, massive private wealth is a continually growing part of the financial industry largely based on the legal 'coding' of capital (Pistor 2019), which, together with sophisticated tax regulations, ensures the unrestricted protection of private rents. This represents an enormous field of assets which potentially could productively release immense sums of private capital and thus contribute to more social justice and environmentally friendly investments (although this is illusionary in the current circumstances).

approaches. The latter aim to initiate fundamental change and view financial capitalism as inadequate for the challenges lying ahead. Currently, alternative financial approaches tend to be assessed as marginal and barely scalable. They therefore receive comparatively little political attention – this is also the case against the background of the failure of the Madrid climate summit in December 2019. Nonetheless, new ways of thinking of this sort offer opportunities on the regional level (Zademach/Hillebrand 2014). On the global level, increasing equity gaps are evident, i. e. a funding gap of private capital amounting to billions of euros that must be filled by public sponsors and venture capital finance in order to fund transformation, especially in the areas of social and physical infrastructure (energy, mobility, education, etc.). UNCTAD estimates that funding the ambitious Sustainable Development Goals (SDG) in the long term will require about ca. 5-7 billion US dollars annually (UNEP FI 2018: 3).

Strengthening the role of the public sector also provides opportunities for correcting certain trends in the current financial system. In this respect, by 2050 the EU aims to achieve the ambitious objective of reducing greenhouse gas emissions by 80-95 % in comparison to 1990. A gigantic transformation of this sort requires not only long-term funding but also the restructuring of the financial economy and its governance to create a sustainable system. This is, among other things, a significant driver for the recent development of a *green taxonomy*, which was developed under the leadership of the EU Commission and entered into force on 12 July 2020. In a certain sense, it sets high standards for rethinking the European financial sector. There is a link here to the pending reorientation of the national development banks (e. g. KfW) and their European counterparts (EIB and EIF) to focus on promoting innovation and sustainable business practices by European companies. At present however, sustainability in the financial economy is primarily related to the 'green' domain, which focuses particularly on climate finance.

The two superordinate fields – the sustainable and the 'green' financial economy – in turn harbour numerous nuances and ventures, which cannot be comprehensively addressed here. Due to space limitations, we restrict ourselves rather to broad distinctions and speak, for example, of 'green finance' as an important sub-sector of an emerging 'sustainable' financial industry. The article attempts to systemise the broad lines of argument and to provide an overview of the current state of this complex discussion, followed by succinct consideration of whether and where areas of intersection

can be identified and brought together in practice. We believe it is important to include spatial-social dimensions of financial activities (preferably ones that are in transformation) and to outline their effects on regional economies, as these issues are largely ignored by the dominant discourse of the economic mainstream. Hence, this chapter seeks to exploratively outline how and to what extent green financial technologies could contribute to the development of sustainable, post-growth, regional economic cycles. The discussion provides an overview of current scientific approaches and the policy programmes of green finance (Section 2), considers the essential specifics of financing dynamics and logics on different scales (Sections 3 and 4), and concludes by looking ahead and attempting to bring both areas together (Section 5).

2. 'Green finance' – an overview of the current debates and state of research

The research field of green finance is still in the process of emerging. It is also characterised by a somewhat unclear structure, as different disciplines pursue their own research foci and individual institutions bring the interests of strategically important industries and large companies (lignite, automotive industry, etc.) more or less prominently into the discussions. Furthermore, mainstream economists continue to focus on economic growth and, in particular, on elaboration of new rules based on market mechanisms, an uncritical development of financial capitalism that is inherently at odds with sustainable finance. Examples are market-based policy instruments such as emissions trading systems or the attempt to reorder the markets using financial products like green bonds, despite the questionable certification processes related to such bonds (see Section 3 on certification agencies). On the international level, programmes like REDD+ (Reducing Emissions from Deforestation and Forest Degradation) reflect the parallel implementation of economic *and* ecological logics, which – like other programmes – have very different local, subnational and national effects and hinder international harmonisation of green certification for financial products. These individual spatial sensitivities are still hardly considered in the new regulations of the international economic organisations, as we demonstrate in Section 3.

In light of the increase in financial, business and market activities that do not question the growth ideal but are supposed to help solve a multitude of environmental and social problems, it is also important to explore what happens in the transition process when conflicting goals arise from environmental and financial interests. It is necessary to investigate the extent to which an economisation of environmental and development policy leads to processes of rent seeking / rent capture, i. e. to intensified commodification and financialisation – and thus to inequitable access to ubiquities like clean water and clean air, to mention just some examples. The relevance of cross-disciplinary investigation of green finance is thus obvious. But what is meant by 'green finance'? Green finance is part of and not clearly distinct from sustainable finance, which is succinctly defined by the 'Finance Initiative' of the UN Environment Programme (UNEP FI 2018): 'Sustainable finance … seeks alignment with sustainable development targets and policies' (ibid.: 48).

The Sustainable Development Goals (SDGs) are intended to ensure sustainability in economic, social and ecological terms for the foreseeable future. The concept of the Environmental, Social and Governance (ESG) criteria is to set binding standards for sustainable capital, investment and finance, although green finance focuses primarily on environmental investment criteria and climate finance. However, problematic in the long term is that the entire programme of influential international organisations (OECD, UNO, etc.) and multilateral development banks (EIB, ADB, World Bank, etc.) focuses on economic growth, as revealed in the wording of encouragements to private capital investment, for example: '…these could crowd in private investors … as it becomes compellingly clear that the prosperity and well-being of communities is the best way to grow markets and remain competitive' (UNEP FI 2018: 23).

Another issue affecting green finance is insufficient awareness of the importance of context, as reflected in the way in which green finance is assigned different roles in different settings. The investments and financing mainly target the long-term development of non-fossil energy sources and large infrastructure projects (power grids, etc.), which should be accompanied by more social justice and, in particular, long-term returns. In the context of the European and Western industrialised states, green finance is intended to primarily help drive the climate-neutral / climate-friendly transformation of society and the economy. The prevailing line of thought, as seen

in the taxonomies, programmes and guidelines for the coming years, is one of a 'technological fix'. However, the aim for the developing and emerging countries is to develop their economies in a climate-friendly and sustainable fashion from the outset, not least to prevent migration and provide growth options for the saturated markets of the Western world. The challenges and parameters therefore differ. In many countries, the implementation and supervision of projects financed (and certified) as 'green' and included in the portfolios of large institutional investors are non-existent or do not comply with Western standards, which then hinders or even prevents urgently needed investment.

In the Western world, large investors and enterprises, reacting among other things to increasing public pressure (Fridays for Future, etc.), have started to reschedule (and redeploy) their investment portfolios (and supply chains). In this way, they are breaking away from the long-dominant, profits-at-all-costs approach dictated by the shareholder-value paradigm and instead pushing for 'impact investments'. While impact investments aim for wealth creation through economic goals, they also want to make positive, measurable (and thus communicable!) social and ecological contributions. A ground-breaking warning was recently issued by Larry Fink, head of the world's largest asset manager BlackRock[4], in which he stressed the rising capital costs and increasing investment risk that would arise if climate and sustainability risks were not adequately addressed. In addition, Fink expects a 'significant reallocation of capital', which is already beginning to manifest itself despite the failed Madrid climate summit. The necessity of decarbonisation is thus driving a shift in the financial and the real economy towards ESG goals (Green and Sustainable Finance Cluster Germany 2018). However, many corporate and bank balance sheets still rely on carbon-based production, and the conversion of large corporate groups to green(er) supply chains is almost unachievable in the short term. The political field in Germany waited too long to introduce binding requirements. But leading industrial enterprises also tend to underestimate the force of the current transition, as demonstrated by the example of Siemens continuing to build new infrastructure for large Australian coal-fired power plants despite pressure from the general (young) public. While it is necessary to give up 'brown energy',

4 https://www.blackrock.com/ch/individual/en/larry-fink-ceo-letter?switchLocale=Y (20.01.2020)

it is an extremely risky process in financial terms (G20 2016; Hebb/Hawley/Hoepner et al. 2016; TCFD 2017) as investments made today are tied up in the long-term, often for decades. The pressure to take action means that investors and financiers, as well as political players, are exposed to the danger of choosing the 'wrong' technology paths. Large volumes of disinvestment will therefore also have a significant impact on regional and national economies with primarily CO2-based energy supplies. This is unchanged by the fact that in the context of quantitative easing (QE) launched in 2012, the ECB under Christine Lagarde declared 'protecting the environment' to be a new core task, promoting green bonds in particular.

These examples clearly demonstrate how important it is to better understand the spatial dimensions of the financial economy – and particularly new financial instruments and financial technologies, in order to address the 'territorial gap' in research and policy related to the implications of particular financial instruments (ESPON 2019). In this context, the literature on financing economic growth has long pointed to both the enormous importance of 'patient capital' and of effective institutions and governments (Commission on Growth and Development 2008) for the productive use and efficient allocation of long-term investments.

These praiseworthy developments are, however, still countered by a certain presumptuousness in the financial industry – to a certain extent underpinned by a lack of corporate resources and knowledge – concerning how the ESG goals should be incorporated in their own portfolios and corporate strategies. This enormous need for new knowledge is being met by many associations and educational/research institutions but their new and evolving offerings in turn require verification and harmonisation. The international financial centres (IFCs), often associated with renowned financial degree programmes at universities, are important localities where this bundled knowledge circulates. However, there is increasing criticism of such one-sided assertions of knowledge sovereignty about green finance, and ever louder calls for the integrative degree programmes of social and environmental sciences to be incorporated in sustainable financial degree programmes.

In face of the complexity of the transition in the financial industry, in 2018 the European Commission adopted the 'Commission Action Plan on Financing Sustainable Growth', advising on which economic activities are ecologically sustainable. This includes reference to the 'Green Taxonomy'

of the EU on financing sustainable economic activities, which provides a benchmark for green investments and disclosure of the individual fulfilment of ESG targets. Furthermore, new rankings of 'green' IFCs (UNEP 2017) indicate that their financial ecosystems (including regulators, banks/non-banks[5], rating agencies, law and accounting firms, etc.) have recognised the need for sustainable financing measures and a 'greening' process. Critics also comment on the strong tendency for 'green washing' (Technical Expert Group on Sustainable Finance 2019), not least because sustainable (direct and indirect) finance is primarily undertaken by powerful financial corporations whose activities are closely embedded in the existing logics of financial capitalism.

An important focus in the literature on the relationship between finance and economic development is on the significant shift of global finance and investments away from the banks to private lenders and 'non-banks' who use financial innovations (e. g. social bonds and blended finance, as discussed below) to add 'value' to the portfolios of both private and public investors. This provides the financial industry with an increasing range of new options for the sustainable financing of innovative enterprises and infrastructures (Kaminker/Youngman 2015; UNEP 2011; G20 2016). It also entails a need to better tailor the new financial instruments to the individual financing requirements of regions in order to support their individual capacity building and resilience in the face of future challenges. Little of the progress proclaimed in these progressive visions has so far been implemented or, indeed, can be implemented.

While avoiding 'green washing' is important, so too is preventing so-called 'white washing' where financial institutions only react superficially to the financing needs of social enterprises. This requires a re-evaluation of 'social impact investments' and 'ethical investments'. To this end, the EU has established a Social Impact Accelerator, a public-private finance partnership for impact investments and social entrepreneurship throughout Europe (EIF 2017). Among the leading financial instruments for impact investments are social impact bonds (SIBs), a controversial results-oriented form of impact investment in which state interventions intended to solve social problems are financed with capital from private investors who expect a corresponding return on investment. In connection to this, impact investments known as

5 In the jargon of the financial economy, 'non-banks' refers to credit institutions other than banks, e. g. investment funds, venture capital funds and sovereign wealth funds.

development impact bonds (DIBs) and blended finance have emerged, a form of public-private impact investment that is currently important for funding social care and addressing socio-economic inequalities. As with green finance however, taxonomies for 'ethical' and 'social' investments are still in their infancy, have seldom been tested and depend on the development of definitions of a common terminology and on harmonisation with the goals of green (and blue = water-focused) taxonomies.

Furthermore, digitalisation and technologisation provide opportunities to 'disrupt' the established financial system and to promote and accelerate a transition to sustainability. However, few connections have to date been established between sustainable finance and FinTech/digitisation. 'FinTech' is a fairly new term that refers to the convergence of finance and technology, facilitating the creation of digital and online financial products and services. Yet, FinTech also raises questions about systemic risks and appropriate alignment with urban and regional agendas (Dowling 2017; UNEP 2016). The expectation is that in the course of these developments, the IFCs will also have to adapt to shifting roles in the production of sustainable finance. In addition to new growth opportunities, all this also involves new uncertainties about whether existing financial enterprises and industry networks can profit from the new market participants and technologies, for instance when new, alternative forms of finance emerge, such as peer-to-peer lending (crowdfunding) or new kinds of supply chain finance (UNEP 2016; CISL 2017). The 'FinTech Action Plan' (European Commission 2018) aims to promote a more competitive, innovative and stable European financial sector with innovative business models on the EU level; yet again, the action plan is based on growth and has no explicit link to 'sustainable finance' or GreenTech (also see Messner/Schlacke/Fromhold-Eisebith et al. 2019; Technical Expert Group on Sustainable Finance 2019).

3. The logic of green classification systems

New green standards are now used to classify financial products. The following discussion considers the recently developed EU taxonomy for environmentally sustainable economic activities and the role of certification agencies for sustainable financial products and investment strategies, and explains the basic mechanisms of these legitimising green norms. The eco-

system of green standards has already established itself in many financial centres, and this 'engine room' of IFCs is – also for the reasons mentioned above – influenced by powerful interests from industry, politics and society/science.

EU taxonomy[6]

The 'Taxonomy for Sustainable Activities' is part of a series of directed measures within the EU Action Plan on Sustainable Finance. The classification system consists of a list of economic activities with performance criteria that should significantly contribute towards six environmental goals – climate change mitigation, climate change adaptation, protection of water and marine resources, transition to a circular economy, pollution prevention, protection of ecosystems (Technical Expert Group on Sustainable Finance 2019: 3). This is intended to attract capital to achieve the sustainability goals. According to the EU, the 'Green Taxonomy' itself is a 'flexible' and 'dynamic' list of economic activities and criteria relevant for sustainability that 'based on latest scientific and industry experience' (ibid.: 5) can be altered and extended. Ensuring the compliance of the financial strategies and investment portfolios of large institutional investors with these criteria is one of the key challenges for the transition to a more sustainable financial economy. This is audited and communicated by independent certification agencies.

Another closely linked problem that influences the transition to a green financial market is that the taxonomy is a simple binary system: an investment is either green or it is not green. This problem has received scarcely any attention to date; the so-called ESG data shocks (Schumacher/Baek/Nishikizawa 2021) that result can, however, be devastating for investors, halving the market value of enterprises overnight. The principle can be demonstrated with the example of VW's diesel scandal – unrelated to the green taxonomy. An independent study undertaken by the ICCT first officially detected the elevated pollutant levels at VW, rather than the car manufacturer itself or the state supervisory authorities. VW's market value fell substantially after the results were published and the economic and reputational damage for

6 The article describes the situation at the beginning of 2020. The EU taxonomy debate has developed considerably since then, as have other phenomena covered/addressed in this chapter.

the corporation were significant. A similar logic would apply in a situation where certification agencies were too generous when certifying green financial products. Independent ex-post audits could then lead to the shares losing their green status. This would not only impact on investors who purchased the shares in good faith for their green investment portfolio but also on the enterprises that had profited from this green investment and now lost their financing and an essential element of their long-term business plan. Such a case is also likely to lead to ruinous damage to the reputation of the certification agencies and thus of the financial centres and financial supervisory authorities that host and supervise the agencies.

Certification agencies

Certification agencies like LuxFlag (Luxembourg) or FNG (Germany) are now a significant element of the ecosystem of IFCs. They are committed to ecological and sustainable principles but primarily use common market and growth logics for implementation and certification. There are large differences between the certification agencies, for instance in terms of transparency in cases when the 'green' standard is awarded. Several testing agencies disclose their questionnaires and the results of their evaluations (at least in part) and thus make their decisions easily comprehensible to the public, but others keep a lower profile, seemingly exploiting this advantage to provide faster certification. If the increasing number of NGOs in the environmental sector and other independent institutes make spot checks of such certifications and reach different conclusions to the testing agencies, this will directly affect the performance of regional and global investment portfolios. Trading in green securities, which then would no longer be 'green', would decline rapidly and thus also directly affect trading on the secondary markets; as a result, many large investors like insurance companies and pension funds would want and need to dump significant bond investments without this green 'label'. At least in the short term, the market would collapse due to a lack of buyers. In short: the market for green finance would suffer considerable and lasting damage. The economic and social consequences of a so-called ESG data shock would be similarly far-reaching: all kinds of projects (e. g. climate and infrastructure projects) that represent large, long-term investments and drive local development would face financing difficulties overnight.

Sections 2 and 3 have broadly outlined the logics of green finance and its classification by certification agencies. Clearly, it is not only the definition of new green standards that is complex and complicated, but also their implementation. For reasons of brevity, we have omitted discussion of the way in which governance structures must change to support the transition of the financial system across very different scales. What should be noted, however, is that the transition to a green financial system at least promises to move away from the short-term focus on shareholder value and to bring long-term ecological and social criteria back to centre stage. The public sector has a major role to play in the form of start-up finance and risk assumption, providing important impulses and incentives for private investment. We believe that this can also open up regional scope for individually linking private sector approaches with sustainable finance. However, this requires that appropriate parameters are created by developing regional institutions and governance to enable the upscaling and equal raison d'être of successful, regional and alternative forms of economic activity and financing. Section 4 discusses a few such examples.

4. Alternative finance instruments and logics

Similar to the situation with the internationally propagated green economy (UNEP 2011) and alternative, post-growth variations (Kenis/Lievens 2015; Bina 2013; Davies 2013; Gibbs/O'Neill 2017; Schulz/Bailey 2014), there are alternatives to the global 'greening' financial sector that are motivated by fundamentally different interests and are generally more public-welfare oriented. By way of example, three increasingly popular instruments are presented here and assessed in terms of their transformative potential: first, complementary currencies and their role in regional value creation; second, forms of the 'collaborative economy' that are supported and co-financed by civil society; and third, the 'renaissance' of cooperative organisations and their investment models.

Complementary currencies

Also known as 'regional currencies', these complementary means of payment have emerged in many places since the 1990s. They are a way to develop and support regional circular economies that – embedded in the logic of alternative economies – successfully break away from over-consumption, speculation with natural 'assets' and land, and economic inflation at the regional level (Thiel 2011; Seyfang 2001). They can promote socially and environmentally sustainable production with short, primarily regional supply chains (Kopatz 2015). *Regiogeld* (regiomoney), as regional currencies are also known in German-speaking countries,

> … is a type of money privately issued in the form of hard cash and accepted by a number of participants. Its validity is regionally limited, it carries a negative interest rate (or is at least interest-free) and it pursues non-profit objectives (Thiel 2011: 134, translated from German).

Advocates of regional currencies, whose experience goes back to about the 2000s (North 2006, 2007; Lietaer/Dunne 2013), suggest that they bring great regional benefits linked to the explicit promotion of non-profit projects (Gelleri, 2013). In Germany, such currencies include the '*Chiemgauer*' (founded in 2002), the '*Tauber-Franken*' (2005), the '*Landmark*' (2004) and the '*Berliner Regional*' (2005). It is argued that the regions that practise such alternative forms of self-organisation are more stable and effectively crisis-resilient than open regional economic systems that are closely integrated in global value creation and speculation systems (Kopatz, 2015: 105). Such stability is supported by the constant circulation of the regional currency, driven by its interest-free character and stringent devaluation, which often involves 'statutory depreciation days' (Thiel 2011, translated from German). Furthermore, local identity and the social cohesion of inhabitants is strengthened through voluntary work, exchange, cooperation and other social innovations. Seyfang (2001) notes that in the 1990s, the goals of many regional currencies were extended to include broader social and political objectives in addition to ecological aims, especially targeting the formation of community spirit through reciprocity and local participation. In the German debate, increasing attention is being paid to questions concerning the institutionalisation

of complementary currencies in market-based economic systems (Degen 2016; Doerr 2019).

Current debates about regional currencies are usually conceptually anchored in or inspired by much earlier and more fundamental attempts to develop complementary currencies. The pioneer of such approaches and probably the most successful project to date was the Swiss 'WIR-Bank', which has existed since 1934. Based on Silvio Gesell's 'free economy' ideas, the '*Wirtschaftsring*' ('Swiss Economic Circle') was founded as an alternative network which today comprises over 50,000 small and medium-sized enterprises. With a turnover of more than 5.5 billion Swiss francs (in 2019), the *Wirtschaftsring* is considerably larger in terms of volume and geographical reach than the aforementioned regional currencies (Stodder/Lietaer 2015). The '*WIR-francs*', like a growing number of other regional currencies, today often use electronic methods of payment (cash cards, smartphone apps). There is hope that such developments will improve public acceptance of such currencies thanks to their low threshold use.

Collaborative economies and financing models

The example of the community supported agriculture (CSA) is used to demonstrate how civil-society initiatives and idealistic, financial and operational commitment can maintain and further develop sustainable economies. 'CSA' initiatives have emerged not only in urban hinterlands but also in more rural regions and represent a particular form of social engagement working to preserve and develop farming and agriculture in line with sustainability goals. Members of the public can become financially involved (see below) but can also play an active role on the farm. As prosumers who develop an emotional link to the food they purchase, they thus contribute towards the farm's survival (on the role of alternative food networks see Rosol 2018 for more detail). There are various diverse 'CSA' funding models, ranging from formal participation (shares, participation certificates, cooperative shares, partial land ownership) to specific subscription models[7] and concepts based on the commons. In order to gain the basic finance necessary for an operating year,

7 In comparison to commercial subscriptions (such as 'vegetable boxes'), they are often more tied to the subscriber's personal contribution/shares and are more dependent on the harvest.

the commons approach, for example, holds so-called 'bidding rounds'. After a budgeting plan and a minimum budget have been presented, all members are asked to voluntarily submit bids to finance some part of the operations in line with their individual capacities. These bidding rounds are repeated as often as necessary to secure the target annual budget. In contrast to models based on participation certificates or subscriptions, this approach decouples the 'giving' and 'taking'. Silke Helfrich sees a 'general pattern of social transformation' in this abandonment of 'the principle of equivalent exchange' (Helfrich 2015: 47, translated from German). A similar decoupling, i. e. financial commitment with no expectation of an absolutely equivalent return, can also be observed in the increasingly popular (internet-based) crowdfunding.

Cooperative banks and investments for the common good

Growing criticism of the financialised world economy, the decoupling of the business models of the financial economy from the financial needs of the real economy, and, not least, issues linked to ecological sustainability and social justice have led to louder calls for finance to focus more strongly on the common good. In addition to the established cooperative banks (e. g. Volks- und Raiffeisen-Banken, GLS-Bank) and public financial institutions (e. g. Sparkassen), a number of civil society initiatives have led to the establishment of more 'citizens banks'. These banks tend to offer their members ESG-compliant savings and deposits options and specific financing concepts. The spectrum of organisations ranges from small local cooperative banks to regional players (e. g. Caisse Solidaire Nord-Pas-de-Calais/Lille) to nationwide and even cross-border models (e. g. Triodos Belgium/Netherlands, Alternative Bank Switzerland, etika Luxembourg) (also see Dörry/Schulz 2018).

Alongside the establishment of alternative banks, voices from civil society are also demanding that the goals and business practices of public institutions should be more closely aligned with the common good. In Belgium, for example, where the state rescue of the Belgian branch of the DEXIA bank in 2012 led to the creation of a new public bank (Belfius), the movement '*Belfius est à nous*' ('Belfius belongs to us') is vehemently demanding more transparency and co-determination. And in Germany, increasing complaints can be heard about the void left by the 'Bank für Gemeinwirtschaft' (BfG), primarily in the context of current debates on affordable housing, public housing construction and municipal real estate holdings. The real estate sector

provides another interesting example. Not only are the business practices of this increasingly financialised industry being critically questioned, but alternatives with a common-good orientation are being tested and established with new forms of housing and associated financing and planning models (e. g. joint building ventures ['*Baugruppen*'], new housing cooperatives, independently organised apartment building projects ['*Mietshäuser Syndikate*']).

5. Conclusion and discussion

The above examples show that fundamental changes in production and consumption are, and will increasingly be, dependent on a transformation in the finance sector. These adaptations will need to extend beyond consideration of ethical, social and ecological minimum standards in established products and investment strategies. The finance sector is rather called upon to question conventional business models and their one-sided growth fixation and to focus on the common good. The challenges associated with this are immense – not only in light of the enormous sums of finance that need to be administered and relocated but also in terms of inert systemic constraints. Systemic constraints can be found both in the financial sector itself (new standards, business practices, self-conceptions, value systems, training focuses, etc.) and at a higher level (tax, interest and depreciation policies, economic and research funding, financial market regulation).

If a possible post-growth transition is understood as a democratic process involving the redefinition of societal goals, then it is clear that the reorientation of the financial economy will be part of this process of negotiation. This is obviously easiest where, for example, new public-interest banks are founded (see above), but it can also occur where banks are already publicly or cooperatively owned and, for instance, municipal decision-makers have a right to be heard. Greater proximity to the local dynamics of the real economy and to changing financial needs and investment strategies may favour more fundamental transformations here. At the same time this could offer a new perspective for banks, which are increasingly deprived of their traditional commercial basis in these times of low interest rates, digitalisation and (re-)regulation. It remains to be seen whether this pressure to adapt also similarly impacts non-banks which are practically exempt from banking regulation despite their similar business models. Generally, however,

there is also increasing pressure to adapt in the non-banking sector. And it can be assumed that the shift to technology-based fields only postpones the more fundamental need for solutions. The forces of inertia are complex, systemic and integrative, as revealed, for instance, in the daily provision of global liquidity via (largely unregulated) interbank trading and the great dependency of our social security systems on the global financial industry, for instance via the banks, pension funds, life insurance companies and, not least, the functionality of important financial market infrastructures such as SWIFT, Clearstream and Euroclear.

In view of current debates on global climate protection, distributive justice and taxation justice, it seems probable that a central role will be played by the international financial centres with their knowledge bases, innovation potentials and geostrategic positions. It is not yet possible to predict the extent to which the current 'greening efforts' of IFCs favour or facilitate the fundamental transformation of the sector or whether the 'business as usual' policy that they imply actually hinders such a transformation. It is, however, beyond doubt that a significant reorientation of the sector towards post-growth goals will not be able to develop from within the financial sector alone. Rather, strong political, regulatory and scientific support for the process is needed – ideally based on a broad social consensus on the necessity and desirability of transition.

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