Received: 6 January 2017 | Revised: 5 November 2017 | Accepted: 6 December 2017

DOI: 10.1002/sd.1728

SPECIAL ISSUE ARTICLE

WILEY Sustainable Development

How big is big enough? Toward a sustainable future by examining alternatives to the conventional economic growth paradigm

Gabor Harangozo | Maria Csutora | Tamas Kocsis

Corvinus University of Budapest, Budapest, Hungary

Correspondence
Gabor Harangozo, Associate Professor, Department for Logistics and Supply Chain Management, Corvinus University of Budapest, Budapest, Hungary.
Email: gabor.harangozo@uni-corvinus.hu

Funding information
National Research, Development and Innovation Office, Grant/Award Number: 120183

Abstract

This study addresses how the sustainability crisis may be overcome by using alternatives to the conventional economic growth paradigm. Based on a literature review, the paper identifies and discusses three alternatives, namely negative, zero and positive economic growth. These alternatives are compared from a feasibility and policy perspective in relation to the transition toward sustainable development. The three alternatives are associated with very far-reaching sets of policies that have different focal points with regard to how the paradigm shift from the conventional growth paradigm can be realized. All these alternatives, however, challenge the effectiveness of market forces. The shortcomings of the alternatives (resistance to voluntary transition with negative or zero growth, no proper consideration of the rebound effect for positive growth) hinder the transition and must be further addressed by policy-makers in public and private sectors, as well as by civil society.

KEYWORDS

ecologic limit, growth, paradigm, policy, sustainability, transition

1 | INTRODUCTION

On the road to a sustainable future, the challenges are manifold. Developed countries may seem to have overcome the financial crisis that started in 2008 in the short term; however, the long-term global outcome of the conventional growth-based economic model remains uncertain. The effects of global environmental crises such as climate change may be less visible or immediate than those of the financial crisis (even though there is more and more evidence that the increasing number of extreme weather events—hurricanes, droughts and heat waves—are the impacts of climate change, many people still do not closely link cause and effect in this context), but seem to be at least as significant and should compel governments, businesses and consumers alike to rethink production and consumption patterns (EEA, 2014). Last but not least—and strongly related to the phenomenon described above—there are also social issues that must be addressed (e.g., growing income inequality in many countries and migration at the global scale). The appropriate path to a sustainable future is being sought both by academics and by practitioners, to which this study aims to contribute.

According to Kuhn (1962), crises resulting from one paradigm cannot be overcome within the same framework. This suggests that new paradigms are needed to address the shortcomings of the conventional growth economy. Unfortunately, in the current paradigm of growth ecological constraints are generally ignored, negative external costs are regarded as part of normal free-market mechanisms and well-being is understood within a strict utilitarian frame (Christopher, 1999). Of course, there are keen efforts by the global community to manage these challenges. However, these attempts often do not look beyond the boundaries of the system that created the crises by promoting material growth and the overuse of natural resources (e.g., see Herman Daly's famous farewell speech to the World Bank in 1994; Daly, 1994). The study of recently published documents by globally important institutions (IMF, 2017; UN, 2015) shows that the problem remains, and that the conventional growth paradigm is still strongly influencing theories regarding the reform of economic systems and society.

The following questions must therefore be raised: what are the alternative framings to the conventional growth paradigm, and how can policy catalyze them? Valuable literature reviews have been carried out on the topic of the economic growth paradigm (Spash, 2015), addressing degrowth from a policy perspective (Cosme, Santos, & O'Neill, 2017; Weiss & Cattaneo, 2017) and the notion of growth itself (van den Bergh, 2011). In addition, Urhammer and Røpke (2013) provide a review of macroeconomic narratives, attempting to address the conventional growth crisis, Dryzek (1997) structures and discusses how the economy and society are related to environmental and planetary boundaries, while Toth and Szigeti (2016) suggest the concept of "fullness" instead of the economic growth paradigm. However, a systematic review and comparative analysis of the main alternatives to the growth model is missing. The purpose of this paper is to: (i) provide an overview of some of the main features of the three major alternatives to the conventional economic growth paradigm, and (ii) discuss the preliminary policy implications of these alternatives for three major stakeholder groups of society (the state, business and civil society).

The main contribution of this paper is its analysis of the conventional growth paradigm and its alternatives using an approach that simultaneously covers ecological boundaries and livability (quality of life). Although the rhetorical question in the title of the paper, "how big is big enough?" regarding the optimal size of the economy cannot be answered precisely based on scientific consensus, the question serves as an organizing principle for the paper. All the reviewed alternatives to the conventional economic growth paradigm appear to have their own implicit answers to this question.

The structure of this paper is as follows: Section 2 introduces the research method, while Section 3 briefly covers the alternatives described above. Section 4 discusses how the alternatives imagine the transition toward sustainable development (where the economy does not grow beyond the carrying capacity of the Earth), while Section 5 concludes.

2 | METHOD

In this paper the growth paradigm is approached in relation to ecological limits and subjective well-being in the search for sustainable alternatives. To review the literature that addresses growth alternatives (negative, zero and positive) through the intersection of these concepts, three groups of search terms were created that we refer to as a "three-cloud model." Based on this, a systematic literature review (Fink, 1998; Klewitz & Hansen, 2014) was performed to identify articles positioned at the intersection of the clouds.

The research process covered the following steps.

2.1 | Step 1—Specification of search terms

Cloud I included search terms relating to the size and growth of the economy, such as negative growth, zero growth, positive growth, good growth as an alternative to growth, beyond growth, degrowth, revised growth, slow growth and steady-state. Cloud II referred to ecological limits to growth with search terms including planetary boundary, ecological constraint, biocapacity, carrying capacity and overshoot, while Cloud III covered subjective factors of well-being, such as subjective welfare, happiness, quality of life and life satisfaction.

2.2 | Step 2—Scope of the review

To manage the number of articles and maintain their quality, the focus was on peer-reviewed academic papers written in English.

2.3 | Step 3: Data sources

The most important scientific databases (EBSCO, Emerald, ScienceDirect, Scopus, SpringerLink and Web of Science) were investigated until 2015, ensuring the interdisciplinary nature of the review, although search terms and strings had to be adjusted to match the differing syntaxes. Initially, a large preliminary list (List C) of 818 publications was generated as some of the search terms are common and are likely to occur somewhere in full texts. The list was significantly reduced to 112 articles (List B) through a title, abstract and keyword analysis. Publications in List B were manually analyzed in depth (abstract and full text), and a further 59 articles were eliminated. Additionally, 21 publications found elsewhere but considered important contributions (e.g., the reference publications of the literature streams) were added manually. Thus, a final list of 74 relevant publications (List A) was analyzed. To improve reliability, three researchers (the co-authors of this paper) were involved in the process.

2.4 | Step 4—Selection of streams

Many concepts (and subvariants of them) address economic growth from a weak or strong sustainability perspective. In this review, these were categorized into the three alternative approaches to conventional growth (as established earlier): negative, zero and positive growth.

2.5 | Step 5—Analysis and discussion

Finally, after a brief description of the alternative paradigms (Section 3) an analysis and discussion is provided (Section 4).

3 | RESULTS

Below, a short description of the alternatives to the conventional growth paradigm is provided.[1]

3.1 | Negative growth

Concepts grouped under this umbrella term share the logic that the sustainability crisis originates in the roots of the conventional growth economy, and support the idea that a total transformation of the economy is essential for addressing the related challenges (Cosme et al., 2017). Negative growth also focuses on the importance of subjective well-being and thus places less (or zero) importance on economic growth for achieving this goal (Bilancini & D'Alessandro, 2012).

Negative growth is often discussed under the term degrowth. Degrowth is a major and widespread framework based on critiques

of the growth-centered economy. The term "décroissance" in French was introduced by the Romanian economist Nicholas Georgescu-Roegen in his essays in an attempt to link entropy, ecology and economy (Georgescu-Roegen, 1971, 1994). However, in his perspective the term inferred "declining," which is not exactly what is understood by the concept of degrowth today. The origins of the degrowth concept can also be found in the report of the Club of Rome (Meadows, Meadows, Randers, & Behrens, 1972) in which the authors highlight overshoot of the use of planetary resources, and the pressing need for the economy to remain within boundaries.

Although the term has been used since the 1970s, Whitehead (2013) notes that it was not considered a normative or activist slogan until the 2000s. Even today, it is very difficult to provide a unanimously accepted definition of the term as it has largely different connotations in different countries and languages; however, some main characteristics can be considered. For example, according to Latouche (2009), the concept of degrowth is based on two major principles. The first is that the economy should not exceed the carrying capacity of the Earth. The second, which has evolved into a grassroots and political movement, is that economic activity should focus on increasing human well-being and happiness, not on increasing wealth for its own sake. Schneider, Martinez-Alier, and Kallis (2011) define sustainable degrowth as the equitable downscaling of production and consumption that increase human well-being in a way that ecological conditions are also enhanced. A somewhat related concept is voluntary simplicity (Elgin & Mitchell, 1977; Etzioni, 2004; Schreurs, 2010), which addresses consumerism (but not consumption itself) and argues that simpler lifestyles can easily increase subjective well-being.

In a critique of the negative growth alternative, Urhammer and Røpke (2013) claim that it is overly censorious and utopian. Another critique is that the discourse in this field is rather unfocused, although Videira, Schneider, Sekulova, and Kallis (2014) have provided a solid structure and map of different proposals and issues related to negative growth.

3.2 | Zero growth

The zero-growth economy is based on the idea that the material and energy throughput of the economy and society should not increase if humanity is to stay within global ecological boundaries (Kerschner, 2010; O'Neill, Dietz, & Jones, 2010).[2] As in the negative growth literature, an argument common to proponents of zero growth is that subjective well-being has not increased over recent decades (at least in wealthy countries), although economic growth has been impressive (e.g., Layard, 2006). Another concept that criticizes the growth-based economy is steady-state economics. A steady-state economy implies neither growth nor recession. As Daly (1997) suggests more specifically, it involves a constant stock of capital and a constant population of people (and thus a constant stock of labor). Advocates of steady-state economics do not precisely specify the ideal size of the economy (Craig, 2006; Daly, 1997), but claim that it should remain within the physical limits of the Earth's ecosystem.

A steady-state economy with relatively stable—or at most mildly fluctuating—levels of production and consumption can be considered a viable alternative to growing economies (Czech & Daly, 2004). Referring to Mill (1900), Czech and Daly (2004) state that a stable-sized economy does not always mean cultural stagnation; ethical and spiritual improvements may deliver a positive contribution to subjective well-being. Similarly, O'Neill et al. (2010) emphasize sufficiency instead of efficiency as a driver of economy and welfare.

A closely related concept is "prosperity without growth." However, while Daly (1997) presented concerns about the negative consequences of growth, Jackson (2009) places the emphasis on the positive social impacts of living in a world with zero growth involving prosperity that goes well beyond material sustenance. Thus, this stream of literature has a strong focus on well-being and the social components that can be enhanced in a zero-growth economy.

3.3 | Positive growth

In contrast to the previously mentioned alternatives that criticize growth per se, advocates of positive growth agree that the following basic logical premises (shortcomings of the business-as-usual economy make system modification necessary, although without the need to address the growth paradigm itself, and can result in revised, positive or green growth) can deliver employment, social stability, prosperity and well-being (Urhammer & Røpke, 2013). An important characteristic of advocates of positive growth is that they seek to decouple economic growth and natural resource use and thus promote an improvement in material and energy efficiency (OECD, 2011; UNEP, 2011).

The green growth framework proposes further growth in the developed world if ecological concerns are properly addressed, along with the current deficiencies of the growth-based economy. In 2008, as the economic crisis was beginning, the New Economics Foundation put forward an ambitious vision called the Green New Deal. This is meant to be an ecological version of the New Deal implemented by the Roosevelt administration in the 1930s, and aims to build a new type of economy to replace the existing crisis-hit system (Whitehead, 2013). The United Nation's approach (UN DESA, 2009) is that a green new deal or green growth implies a type of crisis management wherein top-down, mainly governmental participation is required to increase employment through the creation of jobs in the green sector and investments in infrastructure.

These green growth or green economy initiatives are linked closely to the goals of Rio + 20. They suggest that normative judgment will be essential to providing social and political meaning for establishing environmental limits (Meadowcroft, 2013) and increasing the chance of creating real solutions. On the whole, supporters of the green growth concept claim that it is possible to break the link between economic growth and negative environmental impacts (Hayden, 2015). Although not expressed explicitly, the UN Sustainable Development Goals for 2030 also share the spirit of this idea.

Although the concept of the green economy (UNEP, 2009) may appear similar to that of green growth, a major difference is that this latter approach does not explicitly address economic growth. Instead, the focus is the subjective well-being of future generations.

The concept of positive growth is quite popular among policymakers as it does not question the role of growth in relation to the economy (Berg & Hukkinen, 2011), while it does offer very clear directions

and suggestions (Roe, 1994). Indeed, this alternative rather seems to be a paradigm facelift, instead of a fundamental paradigm shift.

These alternatives briefly summarized above agree about the following: material growth and values should not be pursued for their own sake and do not automatically contribute to a better quality of life; it is crucial to respect planetary ecological limits; and social relationships are key factors for generating a high level of subjective well-being. However, their reflections about growth (either overall, or concerning whether negative, zero or positive growth is preferred) and recommendations are different.

4 | DISCUSSION—HOW CAN POLICY SUPPORT TRANSITIONS?

The different approaches covered in the previous section of this paper describe alternative perspectives about how to address societal challenges that are in line with the concept of sustainable development. However, the main issue here concerns how to promote the outcomes described by the alternatives, and how the transition process can be fostered. Based on the results of the literature review, this section synthesizes some policy features of the three highlighted alternatives with regard to the current growth-based economy by considering planetary boundaries and well-being. The framework used for the analysis and discussion follows the logic of identifying three sectors of society (public, private sectors and civil society) and involves implications related to three main spheres, considering the key actors in these sectors:

- implications for the state
- implications for business
- implications for civil society.

The analysis is followed by a discussion of the shortcomings of the different alternatives.

4.1 | Implications for the state

In principle, transition can occur because of either a bottom-up or a top-down process (or both), depending on the role and weight of the state. As another dimension, technologically oriented (i.e., focusing on more and better technology as a key to the sustainability transition) or culturally oriented (i.e., focusing more on values and attitudes) policies can support the change. A further commonly debated issue is how and to what extent market forces (through resource prices and supply, and demand for more sustainable products and services) are able to foster the transition.

Advocates of *negative growth* promote a voluntary and bottom-up transition and tend to focus on culturally oriented policies. Martínez-Alier (2012), for example, asserts that the process should be "activist-led." Moreover, the shift can be supported by the creative use of the latest results of economic, social and environmental science, so policy-makers should remain receptive to such findings. However, in terms of reducing working hours, policy achievements are yet to be realized (van den Bergh, 2011). Negative growth advocates appear to be averse to technological solutions. As Heikkurinen (2016, p. 10) states, "technological practice does not support the transition to degrowth as it directs its agents towards the continuous transformation of non-human-made objects into human-made objects." This claim clearly highlights degrowth's culturally oriented character. According to Alexander (2013), bottom-up movements (such as the environmental movement) may change the legal system, thus influencing future policy-making as well, but it is not clear what changes can be achieved at the system level.

The literature about *zero growth* again does not really concentrate on the transition process itself, even if the role of the state and central government (the top-down policy approach) is considered crucial (Daly, 1997), often in the form of "cap and trade"-type solutions. There have been developments in this field, but there is still a long way to go before policies are used to develop meaningful and globally effective systems (such as the prospective carbon emission trading schemes). Certain political systems, such as social democracy (e.g., that of Sweden or Switzerland), are more likely to be successful in fostering the transition (Czech & Daly, 2004). However, the latter authors argue that it will be easier to achieve transition for large and wealthy economies (such as the United States) as the former have the economic power necessary to undertake a successful transition process (and later assist other countries with such changes as well). This perspective suggests that ideas about steady-state economics and degrowth may be coupled, as the latter may represent the transition path to the former, at a lower steady-state level (Kerschner, 2010).

Positive growth is less critical about economic growth. At the political level in the European Union (EU), United States and China, positive growth appears to offer a win–win solution and as a policy-making option is thus gaining in popularity. Proponents suggest that the current crisis requires a different understanding of the growth concept based on innovative, eco-efficient and environmentally friendly technologies (Meadowcroft, 2013)—and thus a technological orientation is more important than a cultural orientation. Often agreeing with the hypothesis of the Environmental Kuznets Curve (Dinda, 2004), this stream highlights the importance of innovation and technological development, which is a prevalent feature of the ruling economic system. Market mechanisms may help create these innovations, but green growth does not support untrammeled free-market forces. One further implication is that strong, green political commitment is essential for promoting the more sustainable functioning of the market.

As a bottom-up element, Bauhardt (2014) urges the participation of green parties, relevant think tanks (such as the Heinrich Boell Foundation in Germany, or the Green New Deal Group in Great Britain) and environmental nongovernmental organizations in promoting green growth, and especially the Green New Deal at the EU level. The use of tools that are well established in environmental economics is also supported, such as Pigouvian taxes and "cap and trade"-type solutions (Kocsis, 2002; Pearce & Turner, 1990). Although these have some market-based characteristics, governmental policy is indispensable for their successful and efficient use. However, questions remain about the ideal balance between government ("an eco-authoritarian, expert-based regime") and markets ("pulling back the economic sphere") in well-designed green policy, so governments and policy-makers need to be very cautious in this regard. The sensitivity of this topic among "green researchers" is aptly illustrated by

a debate in an issue of the *Journal of Cleaner Production* (Alcott, 2010a, 2010b; Kallis & Martinez-Alier, 2010; Schneider, Kallis, & Martinez-Alier, 2010).

4.2 | Implications for business

In a *negative growth* economy, there are many bottom-up ways to make a profit without extensive material production or consumption. As an implication for business, improvements in these fields—such as in the recreational services and entertainment sectors, eco-villages and cohousing, cooperative production and consumption, various sharing systems, and so on (Murphy, 2013; Schneider et al., 2011)—are recommended. Douthwaite (2012) supports the issue of debt-free money or regional currencies that would require that companies create different strategies for selling conventional products (e.g., energy delivered at a certain time in the future).

From an employment perspective, negative growth seeks full employment (Kallis, Kerschner, & Martinez-Alier, 2012) and a reduction in working hours, an increase in work-sharing, and the enhancement of social security and even basic income (Schneider et al., 2011). This also implies that supporting policies should focus less on efficiency, and some activities may be transferred from the professional economy to the less "labor-efficient" amateur economy (Nørgård, 2013). This transition will promote a reduction in the overall resource and labor efficiency of the economy, but will improve quality of life and well-being. Furthermore, alternative paradigms may increase demand for jobs that involve the maintenance and repair of products, and reduce demand for jobs that produce goods (Murphy, 2013), which may also increase quality of life. However, Antal (2014) warns that a transition to a negative growth economy and society may negatively impact employment.

A further implication is that in a *zero growth economy* the number and size of enterprises may remain stable but the weights of different sectors may be very different from those currently (Czech & Daly, 2004). For example, the role of the oil industry and chemistry may shrink, but opportunities for entrepreneurs in renewable energy will increase. There will also be a need for a viable financial sector, including ethical and community-based banking (Korten, 2008; Speth, 2012), but less demand for certain financial products (derivatives etc.), potentially reducing the size of the former industry. As a specific policy tool for promoting these two concepts, zero interest rates (or similarly, extra costs on capital) are suggested by Loehr (2012) and Kallis et al. (2012). Through this mechanism, enterprises can tolerate a reduction in profit (on real assets) as a means of downscaling investments and business activity.

Zero growth shares many similarities with negative growth regarding the role of employment in sustainability (Czech & Daly, 2004), but it focuses less on individual and cultural drivers and policies (see also Fritz & Koch, 2014). Here, the top-down approach (state support for creation of jobs in some selected or preferred economic sectors) appears dominant. Moreover, in a zero or negative growth context, the idea of expanding the purpose of business beyond profit-seeking is emerging. For example, fostering environmental sustainability, sufficiency and social change could become among the principal goals of enterprises (Heikkurinen & Bonnedahl, 2013; Stål & Bonnedahl, 2016; Young & Tilley, 2006).

In a *positive growth economy*, enterprise development policy should focus—in this sense similar to zero growth ideas—on "green" industries, but there should also be a strong focus on innovations and eco-efficiency (Meadowcroft, 2013). Market forces are important, but the state plays an essential role (as a top-down policy approach) (Green New Deal Group, 2008). Furthermore, ecological modernization (Mol & Spaargaren, 2000) can even serve as a paradigm of corporate sustainability (for a critical review of the concept, see Pataki, 2009).

Positive growth also focuses on increasing employment, especially in green industries. The UN (2015) agenda in particular has strong expectations with regard to full employment, particularly for the youth of developing countries and specific members of the global community (refugees and immigrants). However, creating quality green jobs in mass quantities also requires strong top-down policy support (Downie, Koestner, & Chua, 2007), as market forces are insufficient for this purpose (Murphy, 2013).

4.3 | Implications for civil society

As *negative growth* may lead to a decline in income and material consumption, more time will become available for personal pursuits, while personal and community-level lifestyles may also change (Murphy, 2013). This implies that, instead of globalization, localization should play an increasing role. The strengthening of local economies (e.g., through the promotion of local currencies or communal property through bottom-up, local policy-making) has been claimed to lead to an increase in the resilience of local communities (Kallis et al., 2012).

In parallel with structural economic changes, community-based forms of development and innovative models of local living will tend to emerge (as cultural-oriented policies), such as transition towns, solidarity- and sharing-based economic models, ethical purchasing groups, community-supported agriculture and other similar initiatives (Muraca, 2012). Beyond the emerging economic models and economic output, work itself can also bring satisfaction to individuals and communities, independent of whether it is salaried. Nierling (2012) and Kallis et al. (2012), note that the negative growth concept encourages a reduction in working hours in the paid sector, thereby enabling members of society to engage in more useful and perhaps more gratifying work in the self-employed or voluntary sectors.

According to Craig (2006), any community that favors making improvements in quality of life over buying and possessing more material goods is already on the right track toward a *zero growth* (or steady-state) economy. Because of this approach, personal relationships within society tend to become stronger (O'Neill et al., 2010). Voluntary simplicity, based on a bottom-up and culturally oriented approach, strengthens local communities through the exchange of goods or services in lieu of payment in money, and through the purchase of used clothing and other items at garage sales or local second-hand stores (Leonard-Barton, 1981), even if this form of simplicity is not always cheaper for individuals than

TABLE 1 Overview of the main alternatives to the conventional growth paradigm (authors' compilation)

	Conventional growth	Positive growth	Zero growth	Negative growth
Main characteristics and assumptions	Efficient resource use Utilitarianism Pareto-optimum Market mechanisms	Deficiencies of the growth-based economy can be corrected Good ecological conditions are essential for a high level of well-being	There is an optimal size for the economy that maximizes well-being For wealthy countries, equitable downscaling of production and consumption increases well-being An economy of a stable size allows room for cultural and ethical development	The ultimate goal of economic activity is to increase human well-being, and equitable downscaling of production/consumption increases well-being The economy and human activity must be maintained within the ecological carrying capacity of the earth Economic growth is in contradiction with sustainability
Implications for the state	Free market Free trade Cost externalization (distancing and shading)	Mainly top-down and technology-driven transition Market forces are only partially capable of creating sufficient green jobs, and thus strong policy support is required in this field Environmental policy-making is a key aspect of intervention Internalization of external costs	Rather top-down and partly culturally driven transition Policy support is also required to foster economic self-sufficiency while not overshooting planetary boundaries Fostered by larger, wealthier economies Externalized costs in nonmonetary forms; analysis incorporates future generations	Mainly bottom-up, culturally oriented and "activist-led" transition Policy support is required in some fields: Reducing working hours, creating green jobs and developing/introducing subjective well-being indicators Externalized costs in nonmonetary forms; analysis incorporates future generations
Implications for business	Enterprises should be profitable Responsibility toward shareholders Paid work for those suitable Natural rate of unemployment	Enterprises with innovative, eco-efficient and environmentally friendly technologies proliferate Ecological modernization Work is mainly a source of income, but more quality jobs are created and available in eco-friendly industries Increases in or full employment can be achieved	Number and size of enterprises remain stable Environmentally intensive sectors (chemical, oil industry) downsize while environmentally sound sectors emerge Finding a balance between work and free time is essential Enterprises also focus on sustainability, sufficiency and social change, going beyond profit-seeking	Less focus on efficiency, more opportunities for the "amateur" economy and the voluntary sector More demand for repairing and maintaining products than producing them Enterprises also focus on promoting sustainability, sufficiency and social change, going beyond profit-seeking Reduction in working hours results in full employment
Implications for civil society	No direct focus on communities Non-paid work (amateur economy) is generally ignored	No direct focus on communities Improving ecological conditions also indirectly improve quality of life at the community level	Reduction of income (or fixed income) and material consumption can create a localized and more community-embedded economy Transition toward new forms of economic activity (sharing economy, community-based agriculture, etc.) strengthens fabric of local communities Work as a source of well-being, not only source of income Less work-related stress is superior to higher income	
Shortcomings	Ecological constraints are ignored Negative external costs are ignored Well-being is understood within a utilitarian frame	Rebound effect decreases ecological achievements and creates further ecological impact Lack of sufficient practical experience	Optimal size of economy is the goal, but size is not specified Applicable to large and wealthy economies, but this excludes the majority of countries Lack of sufficient practical experience	Transition is not popular, especially in times of crisis and among poorer people/countries Fear of unemployment and decrease in living standards Low chance of support from citizenry and thus less political support in any democratic system Lack of sufficient practical experience

consuming mass-produced goods (Lastovicka, Bettencourt, Hughner, & Kuntze, 1999).

Policies that support *positive growth* tend not to focus on communities as such; however, improvements in ecological conditions (at least at the local level) should also contribute to improving quality of life at the community level (UN, 2015). Specific examples include the smart city concept, sustainable city urban planning, and landscape architecture (Hester, 1995) as well as improvements in education policy (Noddings, 2003) that can catalyze improvements in quality of life.

4.4 | Shortcomings of the alternatives

Alternatives to the conventional growth economy have much to offer, but they also face legitimate criticism, especially regarding their preconditions and the feasibility of the transition they propose.

The first major, pragmatic critique of *negative* and *zero growth* is that transition is not very popular in times of crisis, and fear of unemployment and a decline in living standards may be major obstacles to change (Kallis et al., 2012). van den Bergh (2011) argues that alternative lifestyles have always existed, but—by definition—are not accepted by the majority. (However, many now mainstream ideas were once also considered insignificant, and a period of crisis can be seen as a window of opportunity for pushing changes through.)

Second, Sorman and Giampietro (2013) warn that a transition can only be forced upon societies, but—for unspecified reasons—never achieved voluntarily or through collective choice. This approach suggests that it is highly unlikely that a negative or zero growth economy will ever arise voluntarily within cultures that are generally composed of individuals seeking ever-higher levels of income and consumption (Buch-Hansen, 2018; Hamilton & Denniss, 2005).

Third, a lack of precise knowledge and successful narratives concerning alternatives is also an obstacle. Trainer (2010) claims that transitioning to a negative or zero growth economy voluntarily is very unlikely if practical experience is insufficient. Alexander (2013) also considers the lack of experience and infrastructure to be important obstacles to the creation of simpler lifestyles (e.g., it is difficult to exit car culture without the existence of safe and accessible cycle paths).

Another major critique (based on Maslow's, 1954 thesis) is that voluntary reductions in consumption may be lucrative and attractive only in wealthy countries where basic needs are already satisfied, and thus the approach does not properly address sustainability problems in low-income countries. Thus, the question of whether "developing" low-income countries should develop according to the conventional (or positive) growth paradigm remains open. For countries which are in a state of overshoot, it can be argued that negative growth should continue until a "steady-state" is reached—that is, when ecological limits are fully observed (e.g., Goodland and Daly, 1996)—but from a policy perspective, it is still difficult to know when this point has been achieved.

The promise of *positive growth* is significantly different in this regard because it involves attempts to maintain economic growth while increasing well-being and respecting ecological limits. Therefore, this approach may be attractive to all countries in which the growth paradigm prevails due to its reformist rather than revolutionary nature. However, the green growth paradigm does not seem to sufficiently address the negative effects of growth. For example, efficiency gains (from increases in eco-efficiency) are generally reinvested elsewhere, resulting in further growth and thus an increase in resource use—known as the rebound effect—which can be considered a form of market failure (Schneider et al., 2011)—a situation that definitely requires policy responses. The general relationship between green growth and sustainability is still vigorously debated (Antal & van den Bergh, 2016; Gazheli, van den Bergh, & Antal, 2016). Spash (2015), however, warns that all recognition of economic growth is harmful from the perspective of strong sustainability.

In summary, Table 1 highlights the most important aspects of the discussion regarding the three alternatives and their relation to the conventional growth paradigm. The table compares the three alternatives and, while not designed to represent a comprehensive worldview, covers a wide range of issues that are the subject of criticism in alternatives to the conventional growth paradigm [the columns in the table are mainly based on Sahu and Nayak (1994), Samuelson and Nordhaus (2010), Princen (1997) and Friedman (1962)].

Bottom-up (negative growth) and top-down (zero and positive growth) approaches may lead forward, so both should be considered. State policy support is essential for fostering transition, while market forces themselves increasingly seem to be insufficient for achieving the desired outcomes of the streams of thought represented here. Some empirical evidence exists that policy tools can foster some of the alternatives reviewed in this article, but these tools are not yet sufficiently comprehensive. Naturally, the table is a simplification of the alternatives, and thus should be interpreted with caution.

5 | CONCLUSIONS

This study examined how the sustainability crisis may be overcome through pursuing alternatives to the conventional economic growth paradigm. Based on a literature review, the three logical alternatives (negative, zero and positive growth) were discussed and analyzed. The alternatives were evaluated based on their policy implications for the state, business and civil society, as well as their relationship to the transition toward sustainable development.

The three alternatives are associated with very far-reaching sets of policies that have different focal points regarding how any paradigm shift away from the conventional growth-based economy can be implemented. Generally, proponents of negative growth tend to favor bottom-up and culturally driven policies, good growth mainly calls for top-down and technologically oriented policies, while zero growth can be positioned somewhere in between. One shared implication, however, is that the alternatives reject the claim to the efficacy of market forces in the sustainability transition.

As responses to critiques of the conventional growth paradigm, the alternative pathways (especially negative and zero growth) that concern business suggest that development should involve strengthening innovative (mainly "green") industries and supporting new forms of economic activity (the sharing economy, community-based agriculture, and so on). Businesses should also focus more on sustainability, sufficiency and social change. This transition toward new forms of

economic activity will also strengthen the fabric of local communities. Work should be considered much more than a source of income; increasing employment is thus key to any successful transition.

The alternatives have many shortcomings that will surely be the subject of further analysis by both policy-makers and academics. The first is societal inertia; citizen-consumers are locked into unsustainable lifestyles, and may not be able (or wish) to change, while opinion polls reflect public opinions that are driven by mainstream media and politicians ("garbage in – garbage out"). Second, the concept of zero growth (and especially negative growth) appears to be an attractive alternative only for individuals of wealthy countries and is thus less generalizable and hardly applicable to the rest of the world, while good (or green) growth does not address the rebound effect properly. Finally, the lack of sufficient practical experience with enhancing subjective well-being through sustainable lifestyles is also hindering transition. If there is no policy-driven or democratic response to this situation and the conventional growth paradigm remains dominant, then the response that occurs will be crisis-driven.

An obvious limitation of this paper is that—partly because of space constraints, as the alternatives are quite complex—a very general and selective view of each alternative has been presented.

"How much is enough?" asked Alan Durning 25 years ago in an important book about the problems of consumer society (Durning, 1992). The question should again be raised from a more economic and policy-relevant perspective, but modified with a focus on the size of the economy: namely, "How big is big enough?". Whether it is positive, zero or negative growth that is most appropriate for creating a sustainable future, the present conventional growth paradigm must be changed as soon as possible.

ACKNOWLEDGMENTS

This work was supported by the National Research, Development and Innovation Office (no. 120183) in Hungary. We would like to thank two anonymous reviewers and the editors of the Journal for their thorough feedback and constructive suggestions.

ENDNOTES

[1] The authors acknowledge that this very brief description of the literature provides only a selective view of the three very complex alternatives, and is restricted to highlighting the most fundamental differences between them.

[2] Negative growth and zero growth are often logically connected in the case of those countries which are currently in a state of overshoot: the economies/throughput of these countries must shrink (negative growth) to achieve steady-state (zero growth) at a sustainable level. Similarly, degrowth does not call for negative growth for its own sake.

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How to cite this article: Harangozo G, Csutora M, Kocsis T. How big is big enough? Toward a sustainable future by examining alternatives to the conventional economic growth paradigm. *Sustainable Development*. 2018;26:172–181. https://doi.org/10.1002/sd.1728