Prosperity in the new economic reality

Outlook 2015
“The economic system in which progress is defined as an increase in GDP volume, is ecologically and socially not sustainable.”

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Strong economic growth as we usually understand it is not expected to happen in the Western world in the next few years. This is due partly to the ageing population, and partly to the aftermath of the crisis. This is not however a doom scenario. Despite the low level of economic growth, the economic environment is more dynamic than ever. Because this low growth is more than ever based on innovation.

And the good news is, that a great deal is happening in the field of innovation: take the huge changes that ICT still has to bring to bear on business models, and also how you and I communicate with each other and how your devices communicate with each other these days.

This low economic growth and dynamic innovation means that GDP growth, which is how we currently measure economic growth, is becoming less and less useful as a compass to find the way forward.

Firstly, because a large amount of progress driven by innovation is not considered to be economic growth. Actually, it is defined as a contraction in many cases. Look at what ICT is doing to the banking business: we are providing a much better banking service through a banking application for instance with less and less employees and at lower cost. This is progress, although it is a contraction in economic terms.

Furthermore, our current concept of progress takes no account of whether it is sustainable in financial, ecological and social terms. The funding of debt is by definition a good thing in the short term, in the sense that it means people and companies can consume and invest more, which makes the economy grow. However the fact that this growth has literally been bought and has to be paid for at a later date is not taken account of in the definition of GDP. Looked at it in this way, one cannot say we have sustainable growth. The same argument applies to the ecological and social aspects of growth. In the short term,
investment in education simply costs the government money, and does not generate growth. The benefits of a better-educated population and increased progress in the longer term are not so immediately apparent. And, the well-known example of the depletion of natural resources that are not properly priced as a matter of course is obvious: the way our economy is structured offers no assurance of ecological sustainability. Efforts in this direction, such as the introduction of emission rights, are ultimately turning out to be very difficult to achieve in practice.

Now that we know that economic growth as currently defined involves damaging side-effects, it is perhaps time for a new recipe. A different measure of prosperity instead of the volume of our GDP. Because it is definitely questionable whether this indicator is still the right one to express our prosperity.

Fortunately, our economists look further than simply the movements in GDP. In this publication, which accompanies our macro-economic Outlook for 2015, they investigate how exactly is economic growth currently measured and what are the alternatives (in other words, taking account of sustainability). Why indeed should we measure prosperity without taking account of air quality, leisure, child care and the disadvantaged in our environment? Why do we ignore future generations, or people in other parts of the world? And, why do we take no account of the free information we now have available through the Internet, but the contraction in publishing and the music business is counted? The view of our economists is that the large number of missing factors and the fact that GDP growth is not sustainable in the long term mean that this model is more or less redundant.

We need a different model. And not only a different model for measuring prosperity, but a model that as a society we can strive for. The world needs a paradigm shift to sustainable growth, in which ecological and social values are just as important as traditional economic measures.

This theme from our economists concludes with a number of possible steps we can take to make a start on the way to such a sustainable society. I hope that as an entrepreneur this publication will inspire you, and that you will also be prepared to contribute to making our increasing prosperity sustainable. For now, I hope you enjoy reading our new publication and I wish you and those close to you a healthy, happy and successful year in 2015.

Wiebe Draijer
Chairman Executive Board
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1 > Introduction

After nearly seven years of economic stagnation in the Netherlands and the eurozone, some better prospects for the economy are slowly but surely appearing on the horizon. Now that the economy is very cautiously improving, it is a good time to think about what the future will look like. The world has of course changed after the Long Recession, and the road to stable economic growth does not seem to be as assured as was thought a few years ago.

The Western economies seem to have entered a permanently lower growth trend. Contrary to suggestions from many commentators, this does not have to be a depressing prospect. There is much innovation, and this will continue in the years to come. Indeed, in the Netherlands and large parts of the Western world, we have become so rich that a higher income alone is not enough to make us happier. Leisure, work, clean air and social contacts are becoming ever more important. So, do we really need higher economic growth? And, are we measuring the right things? Because much of our future progress will be less visible in the usual economic growth statistics: a lot of innovation does not by definition lead to measurable growth, although it does lead to progress. Take the huge increase in free information: this does not generate GDP growth, it may even lead to contraction, but it does increase prosperity. Innovation is also often much less investment-driven: this also means lower GDP growth with increased prosperity. In other words, some of the gloom is because we are still using an obsolete definition of progress that has been overtaken by developments.

Looking at progress in a different way requires that we take a fresh look at our economic model. The main point is economic progress that is sustainable. Sustainable, if you prefer. But also from a social and financial perspective, not only in ecological terms. This is what progress means in the new economic reality.
A not-so-certain growth outlook

The (relatively) good news is that the eurozone is no longer in a phase of serious crisis. However, the economic recovery has so far been very slow. This raises the question of how will this develop in the years to come. Very modest economic growth would seem to be the most likely outcome.

Slightly better expectations, but still a long way to go

Our economic view Outlook 2015 shows that the strength of the global economic recovery is not yet convincing, especially regarding the prospects for the eurozone. The recovery that is happening is certainly not exuberant.

Endless stagnation, but still with growth

Expectations in recent years regarding the global economic recovery have consistently been overoptimistic (figure 1). In the recently published Ebook from Voxeu (Teulings and Baldwin, 2014) leading economists including Larry Summers and Paul Krugman extensively discuss a scenario of structurally lower growth under the title of ‘secular stagnation.’ To make things clear: stagnation is actually a misleading term in this context. A more accurate description would be ‘economic growth that is significantly lower than we were used to prior to 2008 due to problems in the supply and demand side of the economy, most notably featuring
extremely low nominal and real interest rates’. In other words, a rather broad
definition, and certainly not a situation in which there will be no growth.

The main implication of this term is that a return to the growth trend prior to
2008 is definitely not a given.
Firstly, the potential for growth in the eurozone is less than it was, for example,
ten years ago. In the next 10 years, we expect to see growth at a rate of around
1% a year, with (in our view) the risks being mainly to the downside. In Stegeman
et al (2014) we analysed the factors affecting growth in the eurozone in detail.
The ageing population means that the potential labour supply will diminish over
the coming years. This will pressure the potential for growth. The potential labour
force is declining, especially in Germany and Italy. However one cannot directly
translate this into labour supply. The effect will be offset to some extent by an
expected rise in labour participation, partly due to the rise of the retirement age in
many countries. The contribution to growth from employment is however
expected to be lower than it was in the past. Additional growth could be achieved
by further reforms and European integration, mainly through increased mobility
of labour. The positive effects will be seen mainly in the South European countries.
The big unknown factor in this equation is the development of labour productivity.
The average increase in labour productivity in the period from 1950 to 2013 in
the eurozone was 1.3%, but for the period 2001-2013 the growth in labour
productivity was 0.9%. Like the European Commission (in 2013), we are assuming
an increase in labour productivity of slightly above 1% a year (1.1%), which
equals the increase in the most recent period (2005-2014).

Based on the above mentioned factors, average growth in the eurozone could be
just over 1% in the next ten years (figure 2). What is notable is the clear change of
trend compared to the period before 2008: a structurally lower level of growth,
mainly due to population ageing.

This structurally lower growth trend could however be even lower in the coming
years, mainly due to the risks from the demand side of the economy. Two factors
play a leading role here: the pay-down of debt (both public and private) and the
effects of hysteresis.
We already know that debt reduction in the aftermath of a financial crisis can
suppress growth for a long time (Claessen and Kose, 2013). Many eurozone
countries are currently only deleveraging to a limited extent, unlike the United
States and the United Kingdom. Germany is the only country where private
indebtedness is relatively low in historical terms. On the other hand, collective
pension provisions are relatively poor in Germany. All the other countries still
have a long way ahead in bringing private debt to healthier levels. At the same
time, little progress has been made on reducing public indebtedness, with Germany once again the exception. Together with the European rules that mainly require further austerity measures, this means that government policy is not likely to favour economic growth.

This development makes the second factor, hysteresis, worse. Hysteresis is in itself a temporary but long-lasting effect of unused available production capacity on economic growth. The situation is one of high unemployment, but also low capacity utilisation and low investment. And while it is difficult to quantify, the current situation in the eurozone suggests that there could be some degree of long-term damage to the potential for growth.

Quantifying these factors is even more difficult than quantifying economic growth. However, all in all, we see a picture of low growth which could come close to real stagnation. This will not last for ever, but it will last a long time. And we still have positive expectations regarding the contribution to growth from innovation. Low growth is thus a serious scenario, but not necessarily a doom scenario.

**Conclusion**

*The economic outlook for the Western world is still uncertain. There are serious challenges on the demand side, and the solutions could be a long time coming. At the same time, the ageing of the population in countries such as Germany will increasingly affect growth figures in the next 10 years. Economic growth will therefore most probably remain low, and will more than ever depend on technological progress.*
The potential for progress from innovation

One of the big questions in economic research is the extent to which innovation can contribute to future growth. Future economic development will depend heavily on innovation, especially due to the ageing population. There is no reason to be over-pessimistic, however innovation is not really expected to generate a new spurt of growth. There are two other aspects of innovation that are perhaps more important: how will innovation respond to a wider definition of prosperity, and how will this progress be divided?

The future of innovation and productivity growth

The contribution of innovation to growth is one of the most-studied issues in economics. And in view of the above, more important than ever: GDP growth depends more than ever on innovation, as this enables higher labour productivity. Technological progress comes from product and process innovations that generate higher added value from an equal application of production factors. The exact effects of technological development on productivity are however difficult to estimate. Furthermore, it is nearly impossible to say in advance which technologies will offer opportunities and when this radical innovation will actually generate gains in productivity. Although there are ample suggestions for a new breakthrough technology\textsuperscript{2}, it will probably be at least ten years before we see the economic benefits. Regarding productivity growth, in this decade the world is mainly driven by the breakthrough technology we are currently in the middle of: ICT. It is usually the case that expectations in the initial phase of a new technology are too high (Gordon, 2000), and are followed by sharp disappointment.

Labour productivity growth in many Western countries is in a declining trend (figure 3). This is a decline from a rapid rise in labour productivity growth per employee in historical terms.

\textsuperscript{2} Breakthrough technologies are radical innovations that have such a great effect on existing social-economic structures that they have the potential to drastically change societies. They involve a revolution in production methods in the sector(s) concerned, which is usually followed by additional improvements and applications. Unlike incremental innovations (or innovative improvements) that build on existing technological knowhow within an existing technological paradigm.
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This may of course be a temporary phenomenon. However, if we look at what is known as total factor productivity (Gordon, 2014), this is a structural phenomenon that has been happening for several decades. Gordon (2012) attributes the declining trend in labour productivity growth to the fact that the most important gains in productivity from the current generation of breakthrough technologies have already occurred. A new breakthrough technology is not likely to be able to contribute to economic growth quickly in the next few years. Experience shows that considerable time (several decades) can elapse between the discovery of a breakthrough technology and the subsequent acceleration in economic growth (Shackleton, 2013).

Many economists and other commentators have high expectations for the future of ICT. Brynjolfsson and McAfee (2014) for instance discuss the potential of ICT in detail. They repeatedly stress that computing power doubles approximately every one and a half to two years, a phenomenon known as Moore’s Law. They expect this exponential growth to have an ever-increasing effect on the economy, even if computing power increases at a slower rate. However it is not only the breakthrough technology itself that matters. A large part of the productivity gain is achieved through the application of the technology in the form of new processes and products. It takes time for this to lead to visible results. For now, the contribution to growth of ICT innovation is still unknown.

The challenges of technological progress

Technological progress leads to greater prosperity. This was always the idea. The route was clear. Labour productivity would increase due to higher capital intensity
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and more efficient technology. The increase in labour productivity would increase added value, with part of this added value going to the employee and the rest to the owner of the production factors in the form of profit. Statisticians registered this increase in added value as higher economic growth, and simply concluded that innovation leads to a measurable increase in prosperity for everyone. There are several reasons for doubting whether this idea still holds true. The doubts concern a number of links in the chain. First of all, it would seem that not all technology, and especially not all ICT, has led to higher added value that has accrued to producers. Some of the benefits of progress appear to have accrued to consumers, more or less free of charge. In statistical terms therefore there is no growth, but there is greater prosperity.

Secondly, employees apparently benefit less from increased labour productivity than employers. Jobs are disappearing without any apparent concomitant benefit. Meanwhile, the distribution of income among those in work has become increasingly skewed. And, if the benefits of innovation are being shared less equally, it is debatable whether this actually represents a benefit for society as a whole.

The invisible benefits of ICT

The fact that ICT is delivering more than is visible in the GDP figures is mainly due to our definition of GDP. GDP is measured primarily on the basis of goods and services supplied against payment. In a society where a large part of production consists of services, it is however more difficult to quantify ‘production’, especially in cases where the ‘products’ are not traded at market prices, such as for government services (Coyle, 2014) or if unpaid services are involved. One of the great benefits of the ICT revolution in the last 10 or 20 years is the explosion of free services on the Internet. This development, which incontrovertibly represents progress, is a strange phenomenon in economic terms. It actually leads to economic contraction rather than economic growth. Many of these products, such as music, have now become free or at least very much cheaper than their analogue predecessors. While the average consumer has significantly benefited in these 15 years (much more music, assuming the same quality at lower cost), this implies a decline in the volume of GDP. An example of innovation, or progress, that does not lead to economic growth.

Researchers have adopted different approaches in an attempt to quantify this effect of increasing prosperity that is not visible in GDP. For instance, Brynjolfsson and Oh (2012) used time spent by consumers to estimate the benefit of free information. Consumption of free services takes time, even if it does not cost money. In the US, the voluntary time spent by consumers on the Internet (other than for work) doubled between 2000 and 2011. This in any case means that they
attached more value to this activity than other ways of passing their time. By determining the value of this time, and also by comparing it with the other ways in which this time used to be spent, they come to an annual gain of USD 2,600 per user. Translated into GDP, this represents additional growth of 0.3% per year. A similar development is visible in the Netherlands.

The more problematic sharing of the benefits
Ultimately it is how the increase in prosperity is distributed that matters: if the benefits of ICT only accrue to a few fortunate people one cannot really speak of an increase in average prosperity, regardless of the impact on GDP. And, there is now quite some evidence to suggest that ICT is having a different effect on the labour market – an important mechanism for sharing prosperity – than the above-mentioned breakthrough technologies. Computers can increasingly acquire human skills. And while the industrial revolution made physical human power less important, the same is now happening to brain power.

There is a possibility that a whole range of professions will disappear (Frey and Osborne, 2013). A thought-provoking idea that has appeared many times throughout history. In terms of jobs in the Netherlands, this could amount to several million (NRC, 2014). But this is no doom scenario. When a lot of jobs disappear, a lot of other jobs are created. This has always happened in the past. For example, in 1920 more than a quarter of the population in the Netherlands worked in agriculture. In 1960 this figure was only 11%, and today it is just over 2%. The same applies to industry: at the beginning of the 1980s a third of those in work were employed in industry. In 2013 this was just over 10%. Nevertheless, unemployment just before the financial crisis was historically low. Around half a million jobs on average were created in the Netherlands in the period 2001-2008, and the number of jobs lost was slightly lower. This process is known as job reallocation. On average, 13% of all jobs were reallocated each year between 2001 and 2008, with significant differences in job dynamics between sectors (figure 4). The prospect of two million jobs being lost thus could actually happen within a period of four years. The big question today is, what the new jobs will look like.
It is true, however, that those without higher education have experienced difficulty in the labour market for some considerable time. And this is where the biggest sharing risk lies.

Associated with the dynamics in the labour market, pay for many jobs has lagged due to lower demand for labour. This increase in pay inequality is still relatively acceptable in the Netherlands (figure 5, see also Caminada et al, 2014; WRR, 2014), especially in comparison to the situation in the United States, where a very large proportion of workers have seen little or no benefit from the increase in prosperity in the last 30 years. Inequality has increased in the Netherlands if one looks mainly at the tails of the development of incomes. However on average the Netherlands has one of the most equal income distributions anywhere in the world.

It is not only that an increase in GDP with increasing inequality tells us less about the actual development of prosperity. More recently, we have come to understand that inequality in itself can put a brake on economic growth (Went, 2014; Ostry et al, 2014), depending on where the increase in inequality occurs in the distribution of income (OECD, 2014).

More recent research suggests that increasing inequality of income at the lower end usually entails increasing poverty, and frequently also less investment in
education. This is bad for economic growth. Increasing inequality in the upper half of the distribution of income can on the other hand be good for economic growth, since it rewards entrepreneurship and effort. However, too much inequality, especially in the very highest income segment (the top 0.1%), is certainly not desirable from an economic perspective. It is precisely this segment where the greatest increase in inequality has actually occurred in recent years. Ostry et al (2014) show that countries with lower inequality of income experience longer periods of growth, and that this is therefore experienced by a greater proportion of the population. Experienced happiness is on average also higher in these countries.

**Figure 5:** Income development and inequality of assets in the Netherlands, in %

![Graph showing income development and inequality of assets](chartbook_of_economic_inequality)

Source: Chartbook of Economic Inequality

**Conclusion**

*The question of what ICT, the most important breakthrough technology in the coming years, will contribute to progress is and remains an important one. The extent to which it will contribute to growth in GDP is also highly debatable. Numerous developments will generate progress, however the extent to which this will be noticed by the average citizen is unknown. If jobs disappear and median family incomes decline while GDP increases, this will mean that GDP is no longer a useful indicator of progress.*
We define progress, or prosperity, as an increase in GDP volume. This is actually something that has only applied in the last 70 years. And, there is an increasing awareness that this definition is becoming less relevant to the experienced feeling of progress. An important factor is the conviction that today’s economic system is no longer sustainable in ecological and social terms. These two aspects are closely linked: if we try to redefine progress, we may also be able to make our economic system more sustainable.

**A recent term**

Human nature is designed to want ‘always more’. This may well originate from human evolution as a sort of survival instinct. But it goes further than that. Even after human needs have been satisfied, there would appear to be no limit to human desire for ‘always more’. This is not a new postulation. Both Greek mythology and the Bible say that people are never satisfied with what they have (Sedlacek, 2012).

Where this desire for ‘always more’ comes from is not entirely clear. Even when we have enough of everything and are living in paradise, we are not satisfied and we are continually tempted to consume things we do not need or things we should avoid. In a positive sense, this could be rooted in curiosity. Curiosity and the desire to learn are important drivers of progress in our society. In a negative sense, this can also be rooted in greed: always wanting more for its own sake, without further reason.

Striving for progress is a part of human nature, but what sort of progress exactly are we striving for? Economists and policymakers currently think mainly about economic growth, measured in terms of Gross Domestic Product. This now ageing indicator is actually relatively recent.

Real thinking about progress has been happening since the Age of Enlightenment. People assumed that each generation would continue to build on the shoulders of their predecessors in order to achieve progress. This belief in progress was accompanied by secularisation, whereby religious beliefs, such as the conviction that the world was a finite and unmanageable whole, were abandoned. The belief...
in the releasing power of reason came to the fore. The exact date of the Age of Enlightenment is difficult to establish. However, many ‘enlightened’ minds appeared in the second half of the seventeenth century, mainly in Europe, where the idea of progress steadily began to gain ground. This did not originally concern economic progress. Philosophers and economists like Adam Smith, Bernard Mandeville and Jeremy Bentham focused mainly on happiness, which only later came to be represented in economic studies as ‘usefulness’, or ‘value’.

Later still, and certainly after empirical and macroeconomic models had become more important in economics, this usefulness was assigned a monetary value and replaced by the term economic growth. An important originator of this idea was Simon Kuznets (1934) who laid the foundations for the system of National Accounts and the measurement of economic progress in terms of growth of Gross Domestic Product. Very logically at the time, he focused on a measure of progress that was appropriate to the society of the time, which was mainly engaged in the production of goods. Figure 6 shows how recent this definition of economic growth actually is. As opposed to the previous texts, which for a long time spoke mainly about ‘happiness’ and ‘prosperity’, it was not until after the Second World War that the term ‘economic growth’ appeared for the first time.

The relevance of this definition of progress now seems to be waning. Our society is less and less focused on the production of goods alone. An increasing proportion of production concerns the provision of services, which, as long as these are provided against financial payment, still fall within the definition of GDP. There are however numerous so-called external effects that are not covered by
GDP. For instance, the use of clean water and other (scarce) materials, or the decline in air quality. Increasing environmental problems in the 1950s and 1960s led to a growing perception that humanity would be faced with environmental disasters in the future. In 1972 the Club of Rome stated that the limits of growth as we know it would be reached by the beginning of the 21st century if population growth, industrialisation, pollution, food production and the depletion of natural resources were to continue at the same rate (Meadows et al, 1972). Although these reports are not undisputed and the predictions in many respects have not (or not yet) occurred, they contributed to the perception that the earth’s capacity is finite and our current growth model is not sustainable in the long term.

From linear to … something else

It is becoming increasingly difficult to see economic growth as progress. The GDP definition of progress is also known as ‘linear’. The only factor that counts is the volume of goods and services produced and consumed. No account is taken of inventory or waste. This take-make-and-dispose model is therefore linear in terms of production: to measure growth we only consider the process from point A (the inputs for production) to point B (the consumption of the goods), and from point B to ultimately point C (the disposal of waste as residue). A diagram of our economic system can clarify what we measure and what we do not. What we measure with GDP are the registered flows of income, expenditure and production. Households and businesses make production factors available, businesses produce goods and services which households and businesses in turn consume. GDP is measured by registering these three flows in the economic process (figure 7).

Figure 7: Simple economic process

Source: Rabobank

To simplify our analysis, we have left foreign trade, the government and the financial sector out of consideration. Although all three of these areas play a crucial role in both the definition and the achievement of progress, this does not affect the central point here, that is, what we ignore by measuring progress in terms of GDP growth.
However relevant activities are ignored. The first important omission is the fact that no account is taken of the use of finite inventory, such as natural resources, individual, social and economic capital (figure 8). Pollution is also not monetised, and is therefore not included in GDP. For investment in individual capital, for instance in education, we register primarily the costs, but not the proceeds in the form of an additional production factor (knowledge) which we benefit from in the future. The role of financial capital is also not included in the calculation of GDP. This means that growth funded by debt is by definition encouraged in the short term. The nature of growth is also not considered. So it makes no difference if debt is used to fund investment in infrastructure or knowledge (which reinforce the productive capacity of the economy), or for consumer spending for instance that has no structurally positive effect at all. Simply by not including elements such as these in the definition of progress, the model contains the seed of the derailment of the economy in the long term.

By leaving these aspects out of consideration, we take no account of the prosperity of future generations and also no account of the effects of our growth on the environment, financial assets, accumulation of knowledge or people in other parts of the world.

Figure 8: Economic process: waste and inventory
Another omission is that not all the activities that add value are included (figure 9). Informal services like work at home, child care, care of the sick and elderly and voluntary work are for the purposes of GDP ‘valueless’ and equivalent to leisure activities. So-called ‘black income’ is also not taken account of in GDP. The same applies to the production of goods and services that deliver more than their value in monetary terms. The most obvious example of this is ICT. The production costs are measured in GDP, but the added value consists partly of ‘free’ services. Free information does deliver prosperity, but at the same time it can reduce GDP if old-fashioned publishers, bookshops etc. contract, which also affects GDP. This is shown in the figure by a movement from the dark blue arrow to the light grey one. Leisure also has no value, so the ‘production’ of people at home is not assigned a value. An example of this is that an increase in formal child care implied economic growth, however the value of taking care of children oneself is not considered.
A final omission concerns the distribution of income (figure 10). If the distribution of income is completely skewed, the economic process does not operate as well (see the red star in figure 10) and indeed the difference between progress and GDP becomes greater.

The first aspect does not really fit properly in this simple model, since the biggest problem with the process in case of skewed distribution is that less and less of the income received is used for consumption. Instead of consumption, wealthy people save their money or invest it in order to be assured of a good return in future. In any case, they do not have to consume all of it. With an extremely skewed distribution, earned income does not lead to effective demand. This means that the process becomes blocked. In terms used by economists, the higher the income, the lower the marginal propensity to consume.

The second argument has come to the fore in recent years (OECD, 2014). In many countries, both median and average incomes have significantly lagged the GDP per capita of the population. So prosperity as measured by GDP is actually an overestimate of material progress, even without the other aspects that are not included.
This is reason enough to no longer use GDP as an indicator of progress. This does not mean that we can do without economic growth in the traditional sense of the term. Three factors are involved here: firstly, the human desire for always more, secondly the funding of basic needs and thirdly the stability of the economic system (Stegeman 2014). The desire for more is inextricably linked with progress. Material things, the consumption of goods, play an important social and psychological role. Economic growth is practically indispensable for the funding of basic needs such as health care, education and government services. These basic needs support progress in the wider sense of the word. Increased spending is partly to do with other factors such as the ageing population, but this can only be funded if the basis for taxable income also rises. At least, if no additional choices are made. The final point concerns the stability of the economic system. An economy needs to grow in order to help people into work or keep them in work, to provide funding for businesses, to keep government funding on track and maintain our infrastructure. Economic growth also contributes to political stability. Redistribution becomes easier in a context of economic growth. A gain for one is not necessarily a loss for another. In a zero growth environment, this would be the case. Not basing the economic system on growth would mean that it would have to be designed differently.

**Alternatives to GDP as a measure of progress**

In the search for alternatives to the linear measurement of progress, we can distinguish between objective and subjective indicators. Subjective wellbeing mainly concerns the experiences of individuals. It is based on the assumption that one can measure the quality of a person’s life by directly asking them what they think about their life. The disadvantage of subjective indicators is that while they tell us something about experienced prosperity, they do not tell us anything about a broader definition of progress. It may also be the case that people are satisfied due to a lack of awareness of their alternatives. Another disadvantage is that this kind of information is not of much practical use in setting policy.

Objective indicators for the evaluation of the quality of life are based on economic, ecological and social variables. Examples of this are indicators that attempt to adjust for the shortcomings of national accounting, such as the *Index of Sustainable Economic Welfare* (ISEW; Daly and Cobb (1989); Cobb and Cobb (1994)), and indicators based on various underlying variables that represent important aspects of human wellbeing. Examples of this include the *Human Development Index* (HDI) and the *Better Life Index* (BLI) of the OECD. The so-called dashboards are a variation on these composite indicators. Unlike composite indicators, the underlying series are not aggregated into a total, they are presented separately (per dimension).
Sustainable development

One concept that covers a wider scope than the objective indicators mentioned above is that of sustainable development. Development is sustainable if economic, ecological and social development are in balance. Sustainable development provides for the needs of the present generation (in the sense that it delivers an adequate quality of life), without threatening the provision for the needs of future generations and people in other parts of the world (Brundtland, 1987). Sustainable growth or sustainable progress can be described as a situation in which the total of economic activity, the quality of the living environment and social wellbeing are increasing. Sustainable development therefore involves more than economic and/or ecological sustainability, it also involves social sustainability. There is a reciprocal relationship between these three elements of sustainable development. For instance, natural resources provide the input for economic production. Currently at least, fossil fuels are needed in order for goods to be produced. The development of economic activity moreover produces residues, in the form of waste or greenhouse gas emissions for instance, that are absorbed by nature. There are also links between the economic and the social dimensions. Production leads to economic services that can affect people’s social wellbeing. Lastly, there is interaction between the ecological and the social dimensions. The degree of pollution for example affects human health in a negative way, while recreation facilities contribute positively.

Despite the breadth and subjectivity of the term ‘quality of life’, there have been various attempts to define this in terms of objective factors. Although the selection of indicators is based on value judgements, on the basis of the economic literature Stiglitz et al (2009) identify nine key dimensions that are important for the wellbeing of the people living here and now. These nine dimensions include the material standard of living, economic uncertainty, health, education, personal activities including work, political representation and good governance, social connections and relationships, the environment and the living situation, and personal insecurity. These key dimensions are mutually interrelated. They not only have a direct effect on the quality of life, there are also indirect effects through other key dimensions. How causality between the dimensions actually works is also not always clear. Is the key dimension affecting the quality of life, or is the quality of life affecting the key dimension?

We believe that the way we understand progress will be along these lines in the future. A broad and objective measure of prosperity that takes account of present and future prosperity, both here and in other parts of the world, will enhance the sustainability of our progress. It would be wonderful if this could be expressed in a single figure. Not because by definition this would be the best methodology, but because it would be very effective for both communication and policy. However,
for this there are significant methodological problems to overcome, including problems relating to availability of data. For us, this does not have to be an obstacle to defining an indicator of sustainable progress; after more than 70 years, the definition of GDP still involves many methodological and data-related problems.

**Conclusion**

*Now more than ever, it is time to think about another definition of progress instead of Gross Domestic Product. The good news is, this is already happening in many places. The less good news is that the dominance of thinking in terms of economic growth has yet to be broken. We believe that the future lies in the further development of the term sustainable development to arrive at a concept of progress that is sustainable and is not at the expense of either future generations or people in other parts of the world. Sustainable progress is a good term for this. A new definition of progress will make it easier to understand that a contraction in GDP can also represent progress. However, as long as all the proposed changes are measured in terms of their effects on economic growth there will be no potential for policy designed for progress in the wider sense.*
In our current economic model, economic growth as measured by GDP is an end in itself. This has come about partly because economic growth is wrongly considered to be the most relevant measure of progress. The current design of our social system also makes it difficult to break this addiction to growth. A society less focused on economic growth would be a desirable development for a number of reasons. This involves both a different definition of progress and a sustainable social system. In other words, a sustainable progress model instead of an economic growth model.

**Alternative sustainable progress models**

The current economic system is not sustainable in a number of respects. There are three aspects that play a significant role:

- **Ecological sustainability**: There is now sufficient evidence that our current economic model is not sustainable from an ecological point of view. Depletion of natural resources, the generation of waste, environmental pollution and climate change are important by-products of economic growth.

- **Social sustainability**: Targeting only economic growth implies a very narrow definition of social progress. Although for a long time economic growth was accompanied by rising life expectancy, for part of the population in the United States this is no longer the case. Social cohesion, leisure and equality may also come under pressure as a result of economic growth.

- **Financial sustainability**: Recent years have shown that credit-driven growth also involves risks to society. The social costs of short-term decisions taken purely on the basis of economic growth can lead to social costs in the longer term.
An economic model that is sustainable in the longer term must therefore not only focus on the traditional definition of economic growth, it must take the three aspects mentioned above into consideration. Given the definition of sustainable development or progress, it must also involve a model that is sustainable today, in the future and with reference to people elsewhere in the world.

A large amount of literature has recently appeared putting forward alternative models or ideas for economic progress (see for instance Van den Berg en Kallis, 2012; Ellen McArthur Foundation, 2012) in which terms have been coined such as ‘degrowth economy’, ‘steady state economy’ and ‘circular economy’. There are many more variations in existence, but in this publication we will attempt first to list the most important social characteristics.

Firstly, this type of model or idea is mostly prompted by concerns about the ecological sustainability of society. Accordingly, to put it briefly, they follow the thinking of Malthus and the Club of Rome. In this philosophy economic growth is by definition no longer sustainable because the limits of what the earth can provide are being exceeded, in terms of both raw materials and environmental pollution, or waste. And with the world population continuing to grow, this has to come to an end at some point, they argue.

The other point that these models have in common is that they express support for equal, fair and effective economic systems and intergenerational justice. The aims of these models therefore come closer to a definition of sustainable progress. The element that is usually lacking in these terms however is financial sustainability.

The ‘degrowth’ movement is very explicit: we need less growth, in any case in the Western world. Indeed, a contraction in GDP is the only way to keep our ecological system in a somewhat healthy condition. The moral opinion here is that we are currently consuming too much. Limiting the burden on the environment is therefore more important that material wellbeing. And our economic model needs to be designed for more efficient use of natural resources. This means lower consumption, and lower employment. This is quite a radical view, and diametrically opposed to the current ‘pro-growth’ paradigm. For us in the rich Western world this concept may appear acceptable, but it does not address the need to share our present prosperity. The reason why degrowth is a prominent feature in this movement is that efficiency and technological progress cannot change the fact that economic growth is at the expense of the environment.

Actually, the supporters of this movement say that they do not believe in ‘green growth’. According to the OECD (2011), green growth involves the promotion of economic growth with maintenance of natural resources and the environmental
services that the human environment provides. Or, economic growth whereby the limits of the earth’s resources are respected and raw materials are not exhausted (CPB, 2011). This involves both absolute and relative disconnection. Absolute disconnection means an increase in prosperity (measured by GDP growth) associated with a lower environmental burden. Relative disconnection means that the increase in GDP would involve a less than proportional environmental burden. So far, there is absolutely no question of absolute disconnection, and the degrowth movement accordingly argues for a contraction.

The steady state movement, also known as the A-growth movement, is not especially interested in what happens to GDP (Daly, 2007). The supporters of this movement are in a sense agnostics, as they are indifferent with regard to the effects on economic growth. This is because Gross Domestic Product, the measure we use for progress, measures everything, but only measures the heart of the matter to a very limited extent – at least for the Western world. Using many more indicators, or indeed not concerning ourselves any more with economic growth and focusing on factors such as income development, wealth sharing, unemployment, the environment and so on would allow us to pursue a much more sensible policy. The aim is a stable economy with limited fluctuations in production capacity and therefore also unemployment. It is explicitly stated that this would be expressed in a constant population, constant production capacity and therefore also a more or less constant economy. The scale would be determined by what is sustainable in social and ecological terms. If it is not sustainable, a period of degrowth may be needed first.

There is a trend in the field of sustainability whereby companies, universities and the government are expressly searching for ways in which natural resources, materials and commodities can be reused in such a way as to add value to society and benefit the economy, the ecology and society in terms of prosperity and wellbeing. A new system is being created based on circularity: a circular economy. The principles are: there is no such thing as waste; waste from one production process is the raw material for another process; product design should be based on potential for disassembly of parts and reuse through several cascade cycles; chain cooperation and new networks; a shift from product ownership to product use whereby the ‘service’ the product provides is the main concern, with as little environmental impact as possible. This raises the interesting question of how much the reuse of materials and semi-finished products and biomass (ultimately via the biosphere) could contribute to GDP because value would be retained for longer through reuse and, where possible, upcycled, which would benefit prosperity (new services, new product combinations, lower environmental impact and toxicity). The circular growth movement wants to change the current linear
system on which our industrial society is based into a circular system. Instead of a linear system of ‘produce, use and discard’, proponents of this idea want to move to ‘produce, use and reuse’. The idea of a circular economy thus is primarily ecological in nature, and no account is taken of the social and financial aspects of sustainable or sustainable progress.

The principles of the circular economy are not new: the concept of an economy in which the lifecycle of products is extended in order to reduce the depletion of natural resources was already described in 1982 by Stahel for instance, and subsequently by Braungart and McDonough (2002). A circular economy is broader because it also involves a redesign of the economy to take account of new collaborations, frequently across different sectors, focused on new product and service concepts that will have to have a positive impact on people and the natural world. One example could involve bio-based materials that will be used in the construction or the automotive sectors, and the principle of moving from ownership to use, such as leasing washing machines to social housing residents through housing associations. In recent years the Ellen McArthur Foundation (2012, 2014) has been a prominent proponent of the circular economy, mainly through the study and description of various business models based on the idea of circularity.

The purpose of the circular economy (Braungart and McDonough, 2002) is to encourage the reuse of raw materials and products as far as possible and to limit the destruction of value as far as possible (figure 11). The more we can make our economy circular, the more sustainable it will become in ecological terms. This idea is also opposed to our current economic model, in which raw materials are turned into products which are destroyed after use. The basic principle of the linear model is that used products no longer have economic usefulness and that their remains can be returned to nature without problems or costs. Not only after use, but also during production.
The macroeconomics of sustainable progress

What exactly happens in the ‘new’ models as opposed to in our current growth model? To answer this, we again present a simple economic process, however this time with the addition of the three sustainability problems we want to solve. This is shown in Figure 12. The simple economic process on the basis of which GDP is measured (the blue and orange arrows) is thus shown in the first instance with the sustainability problems. The problems are indicated with red stars. Firstly the capital inventories. These are inventories of ecological, financial and social capital. These apply as inputs in the economic process. The results from the economic process are, on the one hand waste and pollution, on the other additions to inventory in the form of infrastructure, capital gains and individual capital. We are not at this stage considering whether this is sustainable on either the input or the output side.

Secondly, financial sustainability. Credit is provided to businesses and households on the basis of capital with the assistance of leverage. This makes it possible to bring consumption and investment forward in time. If these investments generate
an adequate return, there is no problem. If however the ability to repay is not sufficient as a result, then there is a problem. The system in that case is not financially sustainable. The third sustainability problem concerns the social dimension. This lies partly in inventory (in capital, for instance), but also to a great extent in the distribution of income and capital, partly due to the distribution of work.

The solutions of the sustainable models address various aspects. Regarding the sustainable use of raw materials and the product process, the circular economy is the most explicit. First of all, an important role is assigned to recycling and different production methods. If we want to recycle successfully, the manufacturing industry has to adopt different production methods, both in terms of the use of raw materials and in terms of production itself (figure 13). The reclaiming of raw materials from products, the more efficient use of raw materials so that less waste and pollution is created and the recycling of products would limit the depletion of raw materials. Subject to the condition that this does not lead to higher demand for these raw materials (more efficient use will probably reduce prices), this would contribute to ecological sustainability. Other elements of the circular economy are reuse, repair, longer product lives and more efficient usage (figure 14).
Figure 12: Ecological, financial and social sustainability

Source: Rabobank

Figure 13: Recycling

Source: Rabobank
Prosperity in the new economic reality

**Figure 14**: Recycling, extended life and more efficient use

Source: Rabobank

**Figure 15**: Financial and social sustainability

Source: Rabobank
Additional assumptions are needed to assess the effect of this on a broad definition of prosperity. In the first instance, longer and more efficient use of goods will lead to lower production and lower (new) consumption. So the first tendency of a circular economy is a strategy of contraction in the current approach of economic growth. A circular economy would entail significantly less depletion of raw materials, and a more sustainable social system in ecological terms.

Important questions concern what would happen to stocks of raw materials (the price of which would probably fall) and to the savings made by consumers and businesses. If for instance consumers use their savings to pay for a holiday using air travel, it is then questionable whether ecological sustainability has actually improved. These second-round effects are usually not taken into consideration, and moreover cannot be exactly estimated at a macro level. Most of the empirical studies (TNO, 2013; Ellen MacArthur Foundation, 2013) accordingly choose to take a business or sector-based approach to estimate the effects. Apart from the fact that other behavioural reactions could occur at the macro level, these reports do not for instance consider the implications for sustainability outside their scope. If product lives are extended in our country by means of repair and reuse, this will lead to less production elsewhere, negatively affecting employment in other parts of the world.

A following step is the introduction of financial sustainability (figure 15). This impacts on two aspects, and the effect depends on the current level of sustainability. First of all, unsustainable levels of debt at mainly businesses and households in many Western countries have to be reduced in order to bring ‘inventories’ back to appropriate levels. This will initially involve degrowth. Secondly, the degree of leverage in the financial sector will have to be gradually reduced over time (in comparison to the current situation). This will entail reduced availability of credit in the transition phase and, in the adjustment period, lower economic growth or even contraction (all other things being equal). Financial sustainability therefore mainly involves a strategy of contracting GDP from today’s levels.

The final step is to make the model sustainable in social terms (figure 16). This can be achieved through reducing income and capital inequality, reducing unemployment by job creation, encouraging the combination of work and personal life and bringing the feeling of security and stability in society to a higher level. The effects of this in terms of traditional economic growth cannot be estimated in advance. There is no empirical evidence to suggest that relatively egalitarian societies with good social facilities and a greater feeling of security do worse in terms of economic growth than other societies. Actually, the opposite is the case (OECD, 2014).
A sustainable progress model

In order to arrive at a sustainable progress model for wellbeing now, in the future and in other parts of the world we have to consider three main areas in which sustainability needs to be improved: ecological, social and financial. If one takes a broader perspective with respect to progress, it becomes clear that progress can sometimes be at the expense of GDP growth. Less environmental damage or lower private debt would be good for the sustainability of our wellbeing in the long term. In the short term however, it will be bad for economic growth. All the more reason to adopt a different definition of progress.
Prosperity in the new economic reality

6 > Different model, different goals

The way society operates becomes more complicated if one has to take account of a definition of sustainable progress. And this is still only a limited picture, since the government, foreign countries and also future generations are not explicitly included. But this kind of shift to a broader perspective with regard to wellbeing and sustainable progress requires changes to the way we think and changes to our policy. This is a road that requires stamina. Nevertheless, there are some ‘no-regret’ options in the short term.

The transition time

Transitions take time. A lot of time. A big social transition involving a shift of policy targets from the short to the long term, from economic growth to sustainable progress, could take decades (Rotmans, 2012). This is a transition of culture, structure and working processes.

The structural change involved in the transition to sustainable progress is sizeable and radical. We will have to move to more flexible institutions and organisations from the old structure which is still partly based on an industrial society with large, inflexible organisations and production processes. A structure designed to produce the greatest possible output with the efficient use of the lowest possible production resources without any attention devoted to external impact will have to be changed into a society designed for sustainable production. This will still involve as low and as efficient usage as possible, and making a profit will still be necessary. Only in this case the principle is that the profit should be sufficient to enable the desired level of long-term investment for the continuity of the business and generate the desired return for the stakeholders. And obviously, all costs have to be included. The funding also has to be structured on a sustainable basis: a ratio of equity to loan capital that is appropriate to the company’s long-term objective. The way that the actors in the economy work will also have to change. For instance, the financial housekeeping of a household will not be stable if no account is taken of factors such as the possibility of unemployment. A degree of prudence
in action is part of sustainable progress. This does not mean that we can no longer take a risk. On the contrary, without risk taking, without experimentation to find out whether something works or could work, there will be no innovation and less progress. However society should not take such risks collectively. This particularly applies to businesses. Sometimes in the long term it is better to reinvent a product or process even though the old version is still profitable. If it becomes clear that the business model will certainly no longer be profitable within a few years, proactive action is indeed sustainable progress. A business that continues with fewer people and lower revenue may also represent progress. Culture is the most difficult aspect. Human nature is designed in such a way that we still express progress as new things, more choice and higher consumption. Simply telling people that reducing consumption will represent progress will be misunderstood. We will thus not be able to redefine progress without policy guidance and different incentives. This could reduce the time needed for transition.

**Action**

Although there is a long way to go, now is the time to start with a paradigm shift to sustainable progress. The financial crisis has made it clear that economic growth cannot be assumed and does not have to be seen as the holy grail. Certainly in the West, GDP growth is moreover increasingly less relevant to progress. The changes that could be introduced now to achieve sustainable progress should be considered along three lines: where the biggest problems lie, what is relatively easy to change (within the actor’s power) and what is closest to the current growth paradigm. This last point may sound somewhat counter-intuitive since we want to change course, but it will be easier to convince people if something benefits both sustainable progress and economic growth. Based on the three areas of sustainability identified, the following list can be compiled, which is by definition incomplete:

- Investing in innovation will by definition make the transition to a more sustainable society easier. Innovation can achieve greater efficiency in the use of raw materials and production processes. Innovation can mean that the use of raw materials and production processes will become efficient more quickly and that products can be designed and assembled in a more effective way, so that they add value to the users and to society in the form of lower environmental impact. Product design allowing for the simple disassembly of parts is the basis for effective reuse through various recovery and reuse circles, which will also increase the resilience of companies. Government incentives in the form of subsidies and tax facilities to direct innovation towards sustainability will be essential.
• A similar case can be made for education and the accumulation of knowledge. This encourages future growth potential, contributes to innovation and will also lead to an easier transition. It can also contribute to social sustainability.
• Funding decisions must no longer be taken solely on the basis of short-term return. Making a profit is and will continue to be important. However the sustainability of a business model will usually require more than this, especially a long-term view by the business operator.
• Investments in infrastructure must always be on the basis of sustainable progress. In cases where this is not optimal in the private sphere but is socially desirable, the government has a role to play. Currently, this is not often the case. Sustainable funding may mean that a significantly lower (personal) return is achieved, but at the same time that a contribution is made to sustainable progress from a long-term perspective.
• Many ecological issues cannot be addressed within national borders. This is however no reason to do nothing. Especially the richest countries in the world, which also leave the greatest ecological footprints, should set a good example. Partly by meeting their own responsibilities, but also by helping emerging economies and supporting the poorest countries financially and otherwise along the road to sustainable development.
• In the current situation, high levels of debt should be discouraged. Subsidised lending is still the wrong sort of incentive. There is a clear role here for government and the banks.
• Incentives to consume less will be needed. These incentives could consist of tax policy (higher taxation of polluting consumption in particular), but also government information, advertising policy, etc.
• Systems that prevent bubbles forming are also needed. For example, macro-prudential policy measures to combat bubbles in the financial sector and in financial securities.
• The social role of organisations will have to be given sufficient consideration. Cooperation and social participation are also essential elements in the success of commercial businesses.
• We need a broader definition of progress than only GDP growth. Only a broader aim of progress can lead to a change in policy. Statements such as “it is good for the environment, but we are in a recession” are still evidence of a wrong mind-set.

This is the beginning of a series that will probably become longer in the years to come. And ultimately, it will also concern the sequence of the changes. An economy cannot become sustainable, continue to grow and avoid unemployment all at the same time. A careful transition will take time. But we can make a start now.
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