

PERSPECTIVES

The Story of Growth - Ideas and Institutions

October 2022

"Economic growth has been amongst the greatest gifts given to us, as individuals and societies."

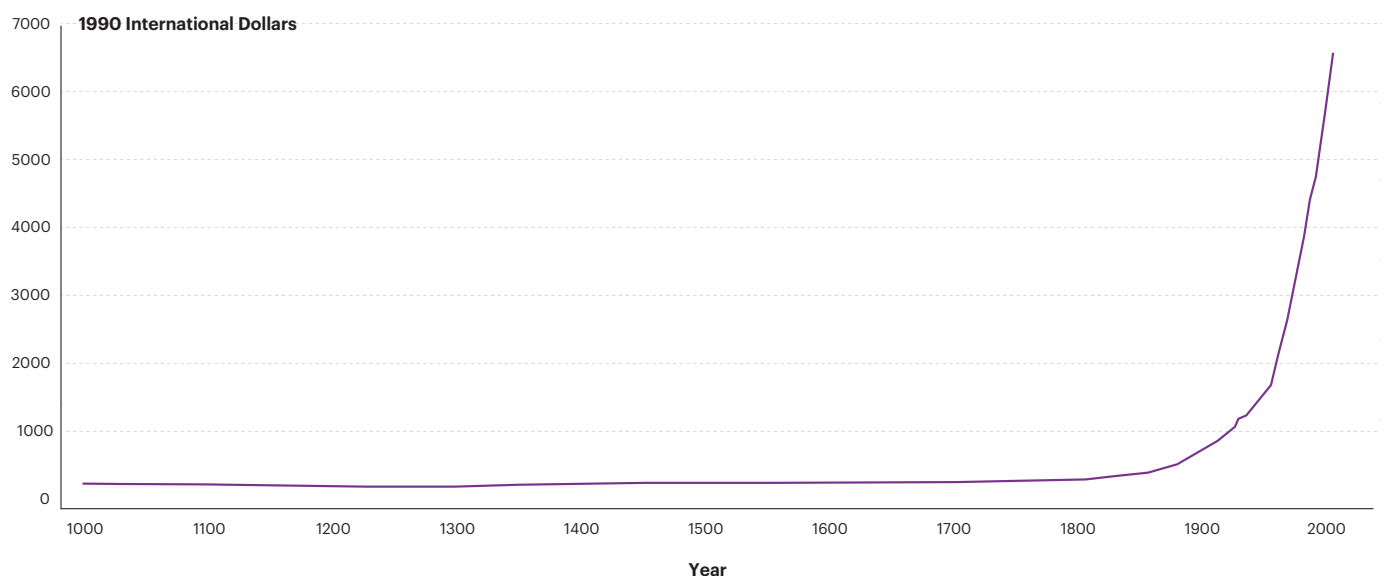
- Andrew Haldane.

This article is based almost entirely on a speech given by Andrew Haldane, the former Chief Economist of the Bank of England, to the Guild Society of Oxford University in May 2018.

Economic growth has been a key driver of poverty alleviation, higher standards of living, much lower infant

mortality, increased life expectancy, leisure time and arguably even happiness in many parts of the world over the last 250 years. Of course, this growth has come with negative externalities, with climate change being the most prominent issue today. However, we aver that the climate challenge will almost certainly be solved provided that "ideas and institutions" work together in tackling this issue.

The chart below plots the history of global growth, as measured by GDP per capita over the past 1000 years.



Source: De Long (1998)

The chart tells a story of two contrasting periods - the period up to 1750 (being three-quarters of the total period) and the period since 1750 (the other quarter). The numbers show that GDP per capita growth averaged a measly 0.1% p.a. for the first 750 years, but for the next 250 years it averaged 1.5% p.a. The power of compound interest means that the difference between growth of 0.1% p.a. and 1.5% p.a. is huge. At a growth rate of 0.1% p.a. it will take about 700 years for GDP per capita to double; if the growth is 1.5% p.a. it only takes 47 years for this statistic to double.

Naturally, the historical data is put together from multiple sources. The result is consistent with the observation that infant mortality was largely unchanged, and life expectancy flat-lined at between 30 and 40 years, over the first 750 years.

A widely held view is that the start of the steep increase in GDP per capital is associated with the Industrial Revolution. According to this theory it is “ideas” that drive economic growth. But this thesis does not tie-up well with history.

In his paper Haldane references the sequence from Monty Python’s “The Life of Brian” which begins with the rhetorical question: “What have the Romans ever done for us?” The sketch concludes: “But apart from better sanitation and medicine and education and irrigation and public health and roads and a freshwater system and baths and public order...what have the Romans done for us?”

One of the most important technological advances for mankind was the development of the printing press, with the Gutenberg Bible being published in the 1450s. Jacob Bernoulli, a Swiss mathematician, published the first book on probability theory in the late 1600s. The windmill was discovered in the 12th century, the mechanical clock in the 13th century, and the telescope and microscope in the 17th century.

In a paper published in 2017 Broadberry and Wallis presented a more granular study of economic growth going back to the 1300s. These results change the growth picture significantly in that the period averages shown in the above chart conceal large and long-lasting swings in growth over time. Their study showed that between 1300 and 1700 GDP expanded slightly more than half the time. Over the expanding periods, growth averaged 5.3% p.a. but in contracting periods (which occurred just under 50% of the time) growth averaged minus 5.4%.

However, since 1700 recessions have only occurred 30% of the time and since the 1900s, contractions have only happened 17% of the time. In addition,

the negative growth arising from contractions since 1700 has averaged minus 2.2% compared to the minus 5.4% quoted for the period up to 1700. It is thus the avoidance of deep recessions that differentiated the so-called Golden Era from its Malthusian predecessor.

Haldane argues that it is the emergence of institutions which has caused economies to be less recession prone since the 1750s. So what exactly are these institutions and how did they come about? We would define institutions as the custodians of the humanly devised constraints that structure political, economic, and social interactions so as to limit negative externalities. They include formal institutions such as parliaments, judiciaries, a constitution, independent central banks, social security nets and schools. They also include less formal associations such as trade unions, public benefit organisations and professional bodies. In a global context, institutions include bodies such as the United Nations, the World Bank, the International Monetary Fund, and the World Health Organisation.

Society needs these institutions because periods of high innovation and disruption are accompanied by a wrenching and long lasting negative impact on the job security of large swathes of society. In addition, periods of technological disruption are associated with rising levels of income inequality. These effects can last for a long time, and it appears to many that only a small proportion of society is benefitting from the disruption (the so-called elites).

If innovation causes widespread economic hardship, and social cohesion is damaged, a societal response is required in the form of new pieces of social infrastructure. Haldane identifies two sets of institutions, namely:

- Equipping workers with the new skills they need to thrive in the new work environment. In the late 1700s and early 1800s this took the form of compulsory schooling; later workers were trained to become skilled tradesmen and artisans and today many more people attend university.

For example, up until 1829 Oxford and Cambridge were the only two universities in the UK. In 1950 only 3% of the population attended university; this had grown to 8% by 1970; 19% by 1990; 33% by 2000 and to 49% by 2016. In effect, higher cognitive skills reduced the odds of a lengthy recessionary period of technological unemployment for many individuals and societies

Haldane defines such social infrastructure as “enabling institutions”.

- In addition, “insuring institutions” provide workers with support to cushion any hits to their finances and well-being. This may take the form of financial support; it might be housing or shelter, or it may be social or emotional support.

The State has been the most important insuring institution. In the UK state spending as a proportion of national income rose from 1% in the 17th century to 12% in the 18th, 14% in the 19th and 33% in the 20th. State support during the global financial crisis of 2008 and the Covid-19 pandemic are recent examples of where it played a critical role in limiting the potentially devastating consequences of such crises. We are currently seeing an additional example in the packages being announced by European governments to provide financial support in response to sharply higher energy prices.

The form and extent of support that insuring institutions such as the state provide is controversial. Some argue that the support should be limited, and people must stand on their own and “make a plan”. Others argue that the support should be more generous because bouncing back is very difficult. Getting the right balance between personal responsibility and empathy is always going to be a challenge.

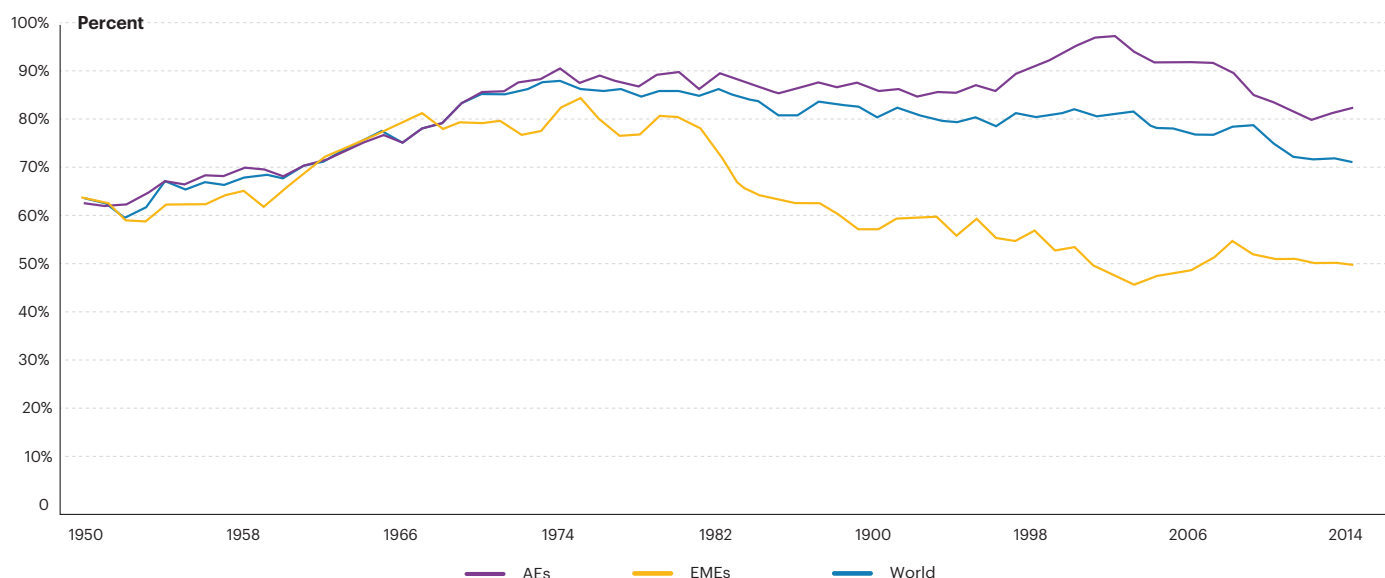
Haldane suggests that “the lesson of history seems to be that we need both to “cultivate the creative” and to “disarm the destructive” if innovation is to translate into rising levels of social, human, and infrastructural capital and then, higher living standards”. We agree.

The propagation of General Purpose Technologies

Innovative ideas often start out small, but in time the most successful of these start to spread out across sectors and regions. As they become widely adopted, they are referred to as General Purpose Technologies (“GPTs”). For example, today computing technology would be regarded as a GPT.

It is helpful to recognise that two forces are at work when a new idea is diffusing through the economy. The first element is the adoption rate, which is the time it takes a new technology to reach a company or country. The time lag of adoption rates has reduced significantly over time from between 40 and 80 years in the 18th century to between 10 and 20 years in the 21st. Globalisation and modern communications technology has allowed ideas to flow more rapidly.

The second component is the penetration rate, which measures the extent to which a GPT reshapes processes and products within a company or country. The data on penetration rates, however, tell a much less positive story and suggests that there has been a divergence between advanced and developing economies. This point is demonstrated in the chart below which measures the productivity level of 44 countries since 1950 relative to the USA (index set at 100%). So, for example, the green line shows the ratio of the productivity level of Emerging Market Economies to the USA over time (also note that AEs stands for Advanced Economies).



Source: Penn World Table 9.0 and Bank of England calculations

The chart shows that there had been a similar pattern in productivity levels up to the 1980's but they have since diverged, with Emerging Market Economies notably underperforming.

It would appear as if the institutions in some Emerging Market countries in particular have not been strong enough to facilitate an effective deployment of new GPTs through society.

However, the aggregation of data at country level masks an important issue in that penetration of GPT's within a country has often varied widely. Research by the OECD suggests that there has been a slowing in the rates for technological diffusion across firms in a number of countries. The dispersion is particularly acute in the UK.

We, like Andrew Haldane, posit that one of the main reasons for this observed much lower diffusion dynamic is the rate of technological change. One can gain a sense of this by noting that the productivity amongst the top 1% of UK firms grew on average by 8% p.a. over the 10 years to 2014. The most productive 0.1% of firms exhibited 12% annual growth. This stands in sharp contrast to the remaining 99% of firms that experienced less than 1% p.a. productivity growth over the same period.

The above is consistent with our view that it has become increasingly difficult for companies to keep up with the rate of technological change, the consequence of which is that more firms will stagnate and eventually go out of business. Expressed differently, companies' morbidity and mortality rates have increased, with smaller companies that are unable to invest in technology being most vulnerable to these effects.

We assert that this wide difference in the company (and country) performance is also impacting on the choice of company people look to work for, and where they choose to live. There is a natural bias for workers to seek employment at the most successful firms (and to live in countries that enjoy prosperity). The consequence is that the best firms will tend to attract the most skilled individuals, which in turn increases their competitive edge. One could extend this to apply on a country basis.

The above is, of course, consistent with Charles Darwin's supposition that the most successful species are those that adapt most readily to the changing environment, and those that evolve to occupy a new area.

Implications for investment strategy

There is extensive research which shows that there is a weak correlation between economic growth and stock market performance. The reasons for this outcome are well documented and make good sense.

- Firstly, the market price should have imputed the expected higher growth rate of winning companies. Nevertheless we point out that the overwhelming majority of investors struggle to make bold assumptions about the growth runway of the ultra-successful firms; it is simply too uncomfortable to do so. Managers that are prepared to take such bold views (and clients that invest with them) must accept that they will have a higher failure rate, but they only need a few big winners to add significant value. The investment thesis becomes one of "ride your winners" for the long term.
- Secondly, some successful companies will elect to remain private, thereby excluding most investors from sharing in the economics of the firm. There is good evidence of firms now remaining private for longer. This point speaks to the need for clients having to consider an allocation to private markets.
- Thirdly, the rewards of strong company performance may go to stakeholders other than shareholders. We hold that it is right that a higher proportion of the rewards go to the "insuring institutions" because societal cohesion is a requirement for sustained growth.

The other side of the coin, namely that company morbidity and mortality rates are likely to increase in proportion to the rate of technological change, also has important investment implications.

- The first of these relates to investment managers who simply reference the long history of value investing out-performing other approaches until recently as evidence that their investment thesis works. If the underlying company morbidity and mortality rates are changing, the future will be different from the past.

We are not arguing that value investing is no longer a valid investment thesis. To the extent that the value thesis is based on assessing that the market is under-estimating the underlying earnings of a particular counter, value investing remains a valid strategy. However, the manager needs to assess properly

the likelihood of these earnings being realised in an increasing competitive environment.

- The second point is that the long-term observed out-performance of small cap shares (again until recently) may come under pressure. Again, we are not arguing that small (and mid) cap investing is dead. Rather, in analysing these companies, investment managers need to build conviction that the company has access to the capital markets and human capital to remain competitive in a world of rapid change.
- If company morbidity and mortality rates are indeed likely to remain higher than the market expects, then the case for short-selling (and hedge funds) is strengthened. It may be appropriate for clients to reconsider whether they should make an allocation to hedge funds.
- At a country level one should fret about the ability of the country to remain competitive. Countries that don't have the resilience to provide the necessary enabling and insuring institutions are vulnerable to falling further behind. This is even more so the case as the de-globalisation trend gains momentum, and the most successful countries look to become more self-sufficient.

Market pricing may well compensate investors fairly for this risk, but even so one would want to size the portfolio's exposure to strategies that could have very poor outcomes. The potential implications for South Africa that flow from this point will of course be obvious to our readers and is one of the key reasons

that we are advising our clients to utilise the full extent of the increased exchange control limit (i.e. 45% of asset invested outside of South Africa) in the structure of their long-term growth portfolios.

- Some investment managers have argued that one should focus on the company fundamentals and that potential macro risks can be ignored. Doing so would not have mattered in the past because most countries have succeeded in limiting the frequency and draw-down of recessions.

We aver that the societal impact of the disruption the world is experiencing at this time is going to be more difficult to deal with than past challenges. We say this because the historic solution of more education is unlikely to work. Rather, the skills that workers will require are likely to be more evenly balanced between cognitive, technical, and social skills, and they will face greater volatility in future career paths.

Making these career transitions will itself call for a particular set of skills – personal resilience, problem-solving and flexibility. These skills are best instilled in the early years of human life. To the extent that workers struggle to make the transition, governments may need to provide a wider social net. In this environment, politics matter, and so we believe that investment managers should factor this into their decision-making to a greater extent than was necessary in the past.

Disclaimer

This document was prepared for general information purposes only and should not be considered a substitute for specific professional advice. In particular, its contents are not intended by WTW to be construed as the provision of investment, legal, accounting, tax or other professional advice or recommendations of any kind, or to form the basis of any decision to do or to refrain from doing anything. As such, this document should not be relied upon for investment or other financial decisions and no such decisions should be taken on the basis of its contents without seeking specific advice. This document is based on information available to WTW at the date of issue, and takes no account of subsequent developments after that date. In producing this document WTW has relied upon the accuracy and completeness of certain data and information obtained from third parties.

This document may not be reproduced or distributed to any other party, whether in whole or in part, without WTW's prior written permission, except as may be required by law. In the absence of its express written permission to the contrary, WTW and its affiliates and their respective directors, officers and employees accept no responsibility and will not be liable for any consequences howsoever arising from any use of or reliance on the contents of this document including any opinions expressed herein. WTW is an authorised financial services provider.

Copyright © 2022 WTW. All rights reserved

About WTW

At WTW (NASDAQ: WTW), we provide data-driven, insight-led solutions in the areas of people, risk and capital. Leveraging the global view and local expertise of our colleagues serving 140 countries and markets, we help you sharpen your strategy, enhance organisational resilience, motivate your workforce and maximise performance. Working shoulder to shoulder with you, we uncover opportunities for sustainable success — and provide perspective that moves you. Learn more at wtwco.com.



wtwco.com/social-media

Towers Watson (Pty) Ltd

Level 4, MontClare Place
23 Main Road, Claremont
Cape Town, 7708
South Africa

Towers Watson (Pty) Ltd is an authorised Financial Services Provider.

Copyright © 2022 WTW. All rights reserved.
WTW-ZA-2022-04101 October 2022.

wtwco.com

