

The sixty-year downward trend of economic growth in the industrialised countries of the world

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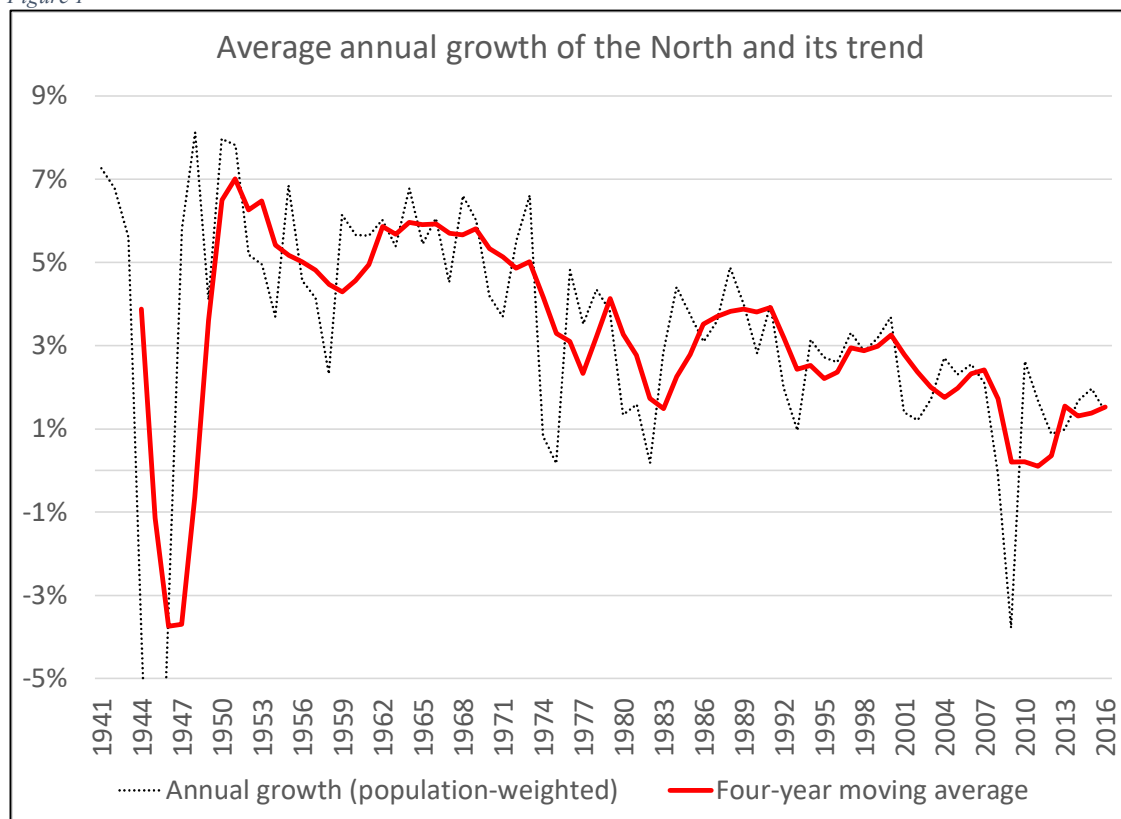
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The sixty-year downward trend of economic growth in the industrialised countries of the world

THE POSTWAR DECLINE OF THE NORTH: A STRONG, ROBUST, LONG-TERM HISTORICAL TREND

This report, using data from a range of authoritative sources, studies the long-term postwar economic growth of the industrialised North and shows that this has fallen continuously, with only brief and limited interruptions, since at least the early 1960s. The trend is extremely strong and includes all major Northern economies without exception. It is confirmed by a wide range of different measures of GDP and growth including Purchasing-Power-Parity (PPP) and standard real GDP measures, and a range of methods for aggregating the data from different countries. It is thus an extremely well-confirmed historical trend.

Figure 1



Source: Jordà et al. (2017). Population-weighted average of annual percentage growth of principal industrialised countries, local currency units. For details see text and the data appendix.

This result sheds new light on the current difficulties of the world economy and has many implications. It conflicts with any idea that the present crisis or ‘Great Depression’ as it is increasingly referred to even in mainstream literature, originates in some recent upset such as the 2008 crash, or in the incidence of, or problems created by, a putative new régime of accumulation such as neoliberalism or financialisation. In fact, the roots of the present crisis

lie in a long historical process which set in very shortly into the ‘Golden Age’ of postwar expansion.

It sheds light on many recent phenomena such as the rise of Trumpism and the far right, the erosion of the traditional social-democratic and liberal centre in Western politics, the expansion of social unrest in much of the Western world and the growing economic and military tensions now besetting North-South relations.

It suggests that limited measures, whether of a left character such as fiscal and monetary stimuli unaccompanied by state-led investment in new production, or of a right character, notably austerity, but also the free-market economic nationalism of Donald Trump and other such figures, are unlikely to resolve these problems.

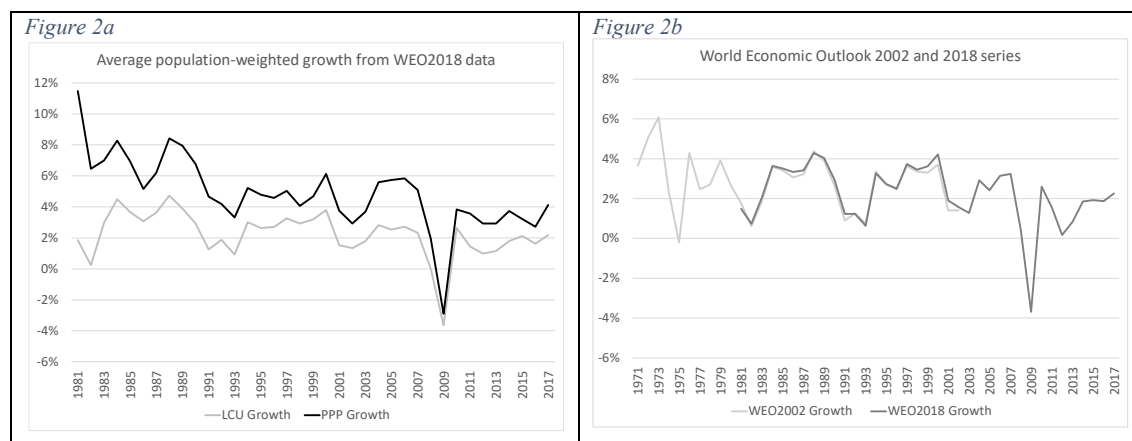
Finally, it contrasts with the pattern in the ‘global South’, including but not confined to China. These topics will be the subject of subsequent reports.

This report draws on a comprehensive dataset on macroeconomic history being assembled as part of the data project of the Geopolitical Economy Research Group (GERG: www.geopoliticeconomy.org) at the University of Manitoba. The data appendix to this report describes it in more detail.

HOW THE IMF’S SHORT-TERM VIEW OBSCURES HISTORICAL REALITY

The International Monetary Fund’s *World Economic Outlook* (WEO), published twice yearly since 2001 (IMF 2018a), is arguably the most influential regular economic report of modern times. The economic press treats it as an authoritative statement on the health of the world economy, while the mass media routinely reproduce its conclusions as ‘News’ – that is to say, as a statement of fact.

The headline figure that attracts greatest attention is the IMF’s growth forecast. Surprisingly, however, neither the IMF nor the press spends much time on the most useful guide to the future, namely, the past. What are the long-term historical trends at work in the world economy which the IMF and its followers hope to descry?



Source: IMF 2018. For details see note on datasources at the end of this report

One difficulty is that the IMF’s publicly available WEO dataset (WEO 2018b) begins in 1980. Prior to 2003, the WEO dataset (which is available on the WEO site) started in 1970

(WEO 2002), and other sites (for example World Bank 2018, United Nations 2018) provide data from earlier dates for many series, especially the more common measures of Gross Domestic Product (GDP).

Any attempt to analyse historical trends, if it is reliant only on the data supplied in the current WEO database, therefore starts long after the Second World War and six years after the great crash of 1974, in which the problems of the postwar boom first became obvious to all.

Among the many problems which arise from this data limitation is that it deprives us of a historical perspective because it offers no comparator. Against the background of today's meagre growth rates between 2% and 4%, annual growth of 3% can be hailed as an economic success; yet in the 1950s, rates of 6% and higher were routine. These high growth rates have a number of causes which we do not analyse here;² a widely-recognised factor was an historical event, the Second World War, which brought in its wake one of the greatest and most prolonged economic expansions since the Industrial Revolution. What has happened, between then and now? Why should we now treat, as a cause for celebration, a growth rate that would have been regarded, fifty years ago, as a signal for alarm and despondency?

Even over the relatively short period between 1981 and 2017, the IMF data suggest a historical trend as Figure 2a shows, but it far from unambiguous. The trend is clearer if we join the 2018 data with the 2002 data that the IMF has ceased publishing, shown in Figure 2b, but is still open to interpretations other than a long-term decline. How can we extend the data to provide a historical view? To this we now turn.

THE LONG-RUN HISTORICAL VIEW: SOURCES AND METHODS

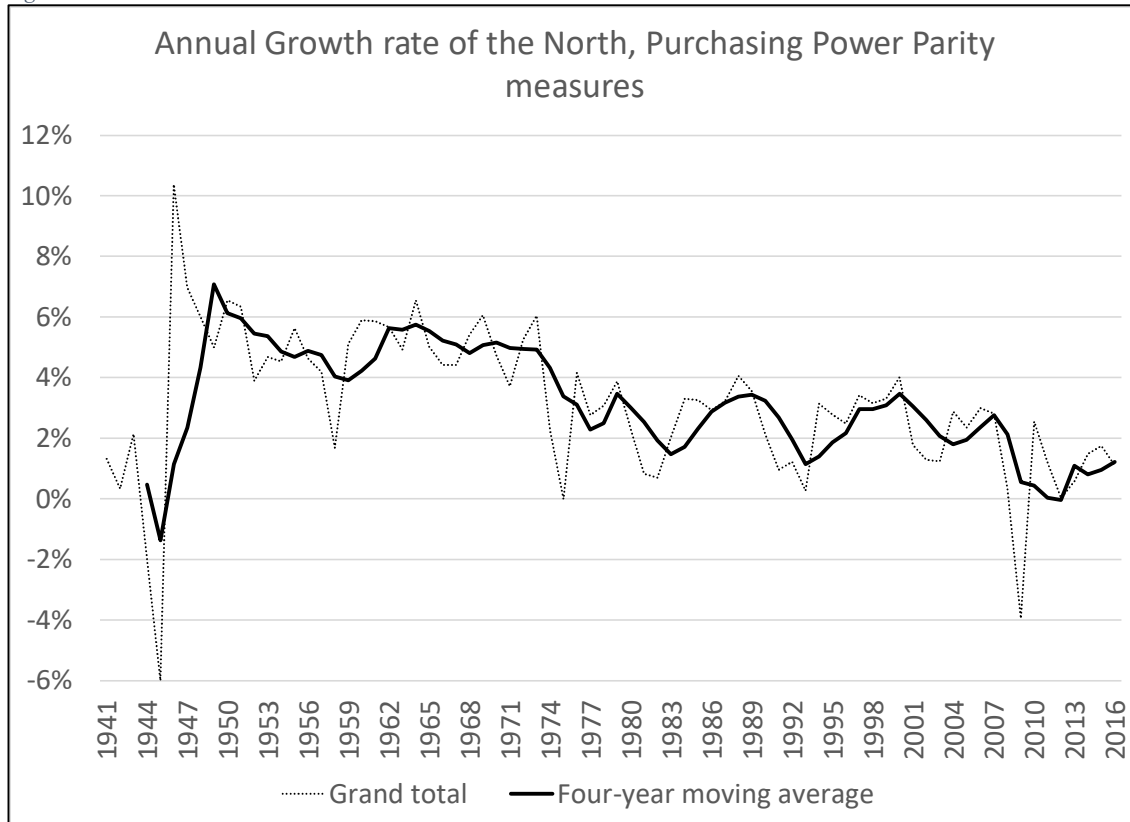
Recent advances in data provision make it possible to correct the weaknesses in the short-term public view embedded in WEO reports and the headline information the IMF provides, on which the press mainly draws.

Indeed, in addition to the commendable practice of publishing archives of its past databases, the IMF itself provides, aside the better-known WEO database, the longer-term International Financial Statistics (IFS) database going back, in many cases, as far as 1946.

A second and authoritative source (Jordà et al. 2017) is published by the National Bureau of Economic Research and provides GDP and other data on 16 countries including all major economies from the industrialised world except those from the 'Newly-Industrialised Countries' or NICS (South Korea, Taiwan, Singapore and Hong Kong) which are inappropriate for inclusion in a study of long-run historical trends. Our definition of the 'North', for consistency, consists of these 16 countries throughout this report. The GDP data in this report is itself derived from the comprehensive database assembled by Barro and Ursúa (2012). On the basis of this data, later in this report, we also compute growth trends using the slightly wider definition of the 'Advanced Countries' which the IMF used in 2002, and the still wider definition in use in 2018.

² See Freeman (2016) for a more detailed discussion.

Figure 3



Source: Maddison 2018. For details see the note on data sources at the end of this report.

A third source is the very long-run dataset compiled initially by Angus Maddison and maintained by the Groningen Growth and Development Centre (GGDC). This dataset calculates GDP on the basis of 'Purchasing Power Parity' (PPP) which attempts to adjust for the difference in prices in different countries, principally for the purpose of making inter-country comparisons.

PPP measures of GDP can in principle be added up, since the PPP process reduces all GDP estimates to a single dimension, the 'International PPP Dollar'.³ Figure 3 shows the results for the 'North' countries of the Macrohistory definition by two measures: the growth in aggregate PPP GDP, and the unweighted sum of the growth rates of individual country GDP. As can be seen, the historical trend by either measure is unambiguously down.

Whilst PPP data introduce many problems into the study of growth and especially inequality (Freeman 2009) we have included them to investigate whether our qualitative findings are sensitive to the way GDP is defined or measured. The very fact that Maddison's data leads to the same qualitative conclusion is a strong indication that result is robust. It is unlikely to be an artefact of the measure adopted or the way the data is aggregated, because it is not sensitive to variations in these factors. As we shall see, it is insensitive, within limits, even to

³Several different measures of this PPP dollar are maintained and published. In the data appendix, we specify which measures have been used in each chart. Because our qualitative results, in particular the historical trends, are not affected by which measure is used, we have not provided comparisons between these different measures. Such comparisons can easily be made using the data provided in conjunction with this report.

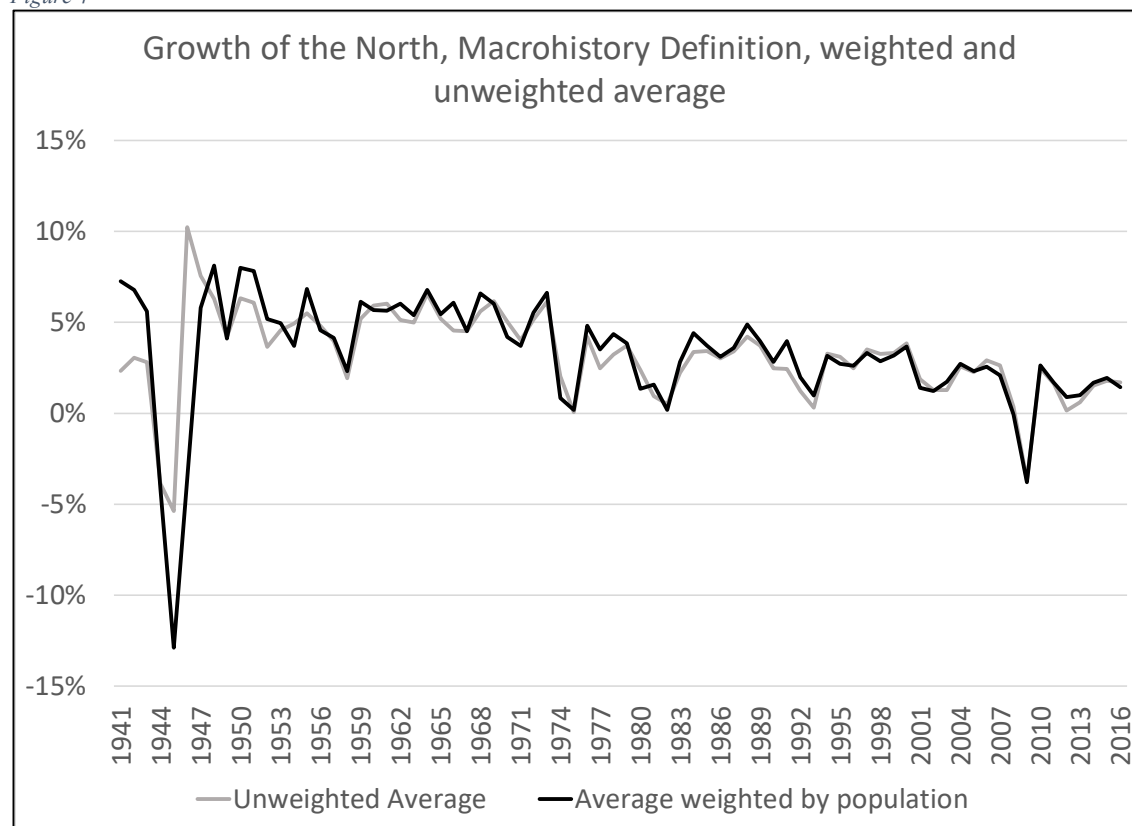
the definition of the ‘North’, to the extent that the inclusion or exclusion of rapid or recent industrialisers (such as Korea) does not have much effect on the main conclusion.

PRELIMINARY RESULTS OF A HISTORICAL PERSPECTIVE

To introduce the historical perspective that these datasets provide, consider first figure 1 at the start of this paper. This chart provides a simple average of the growth rates of each of the 16 countries in our definition of the North.

Such an average could reasonably be criticized on the grounds that, if individual country growth rates are widely different, or exhibit a different trend, and if a small country or group of countries show a more sharply declining trend than the others, then the declining trend will be exaggerated. The IMF is itself aware of this problem, which arises from the quite fundamental cause that ‘real’ output or GDP is normally measured in terms of the prices in each country, and therefore use the currency of that country. The GDP of these countries cannot therefore be simply added up, for example by adding the UK’s 2016 real GDP of £6,801,968,640 to the US’s real GDP of \$34,667,401,216, because the units are different. For the same reason it makes no sense to construct an ‘average GDP’ from these heterogenous measures of it.

Figure 4



Source: Jordà et al. (2017) For details see note on datasources at the end of this report

It is however more reasonable to construct some kind of average of the *growth rates* of GDP because these are dimensionless, that is to say, they are not expressed in any particular currency. The question is, however, what weight should be assigned to each country. The

IMF weights countries, within each of its country groups, by a complex function of the share of their GDP, measured in PPP terms, in world GDP (IMF 2018). This has the disadvantage that growth, estimated in this manner, can appear to be more volatile than it in fact is, since the weights may fluctuate even though the growth rates do not. A further difficulty is that the IMF only publishes these weights for the years in its database, that is, it does not publish them for years prior to 1980. IMF methodology can be reproduced for earlier years, but it cannot be guaranteed as an ‘IMF result’.

An alternative shown in Figure 4 is to weight growth rates by population, which varies only slowly and is also a not unreasonable proxy for the GDP of countries with a similar industrial structure. Furthermore, since the price structure of goods included in the PPP basket varies less, among the advanced countries, than it does between countries of the North and the South, we should expect population weights to produce results broadly similar to the IMF’s weighting procedure, which turns out to be empirically the case.

As can be seen, weighting the various growth rates in this way makes surprisingly little difference to the final result. This buttresses the essential point: estimates of average growth, for countries of the North, are largely independent of the weighting system used. The conclusion that there is a long-term declining trend in the average growth rate of the North is therefore very strongly supported by all the available evidence.

Figures 3 and 4 clearly illustrate the fundamental point that the *trend* in growth rates is quite insensitive to the method of weighting. Measured either as a simple average, as a weighted average, the trend is almost identical. Why?

One reason, shown in figures 5 and 6 is that the declining trend in GDP growth applies across the board to all Northern Countries. This is a further important conclusion: we are witness, not merely to a decline in the GDP growth rate of one country (for example, the United States, whose decline has been studied more exhaustively) but to that of an entire group – the ‘advanced’ or ‘industrialised’ countries – whose growth rates follow the same trend and indeed, have converged, at least since 1974. The trend observed is thus highly likely to be systemic or structural – that is to say, it is accounted for by the structure of the world economy as a whole and the place of the Northern countries within it – than a product of the problems or vagaries of one particular country.

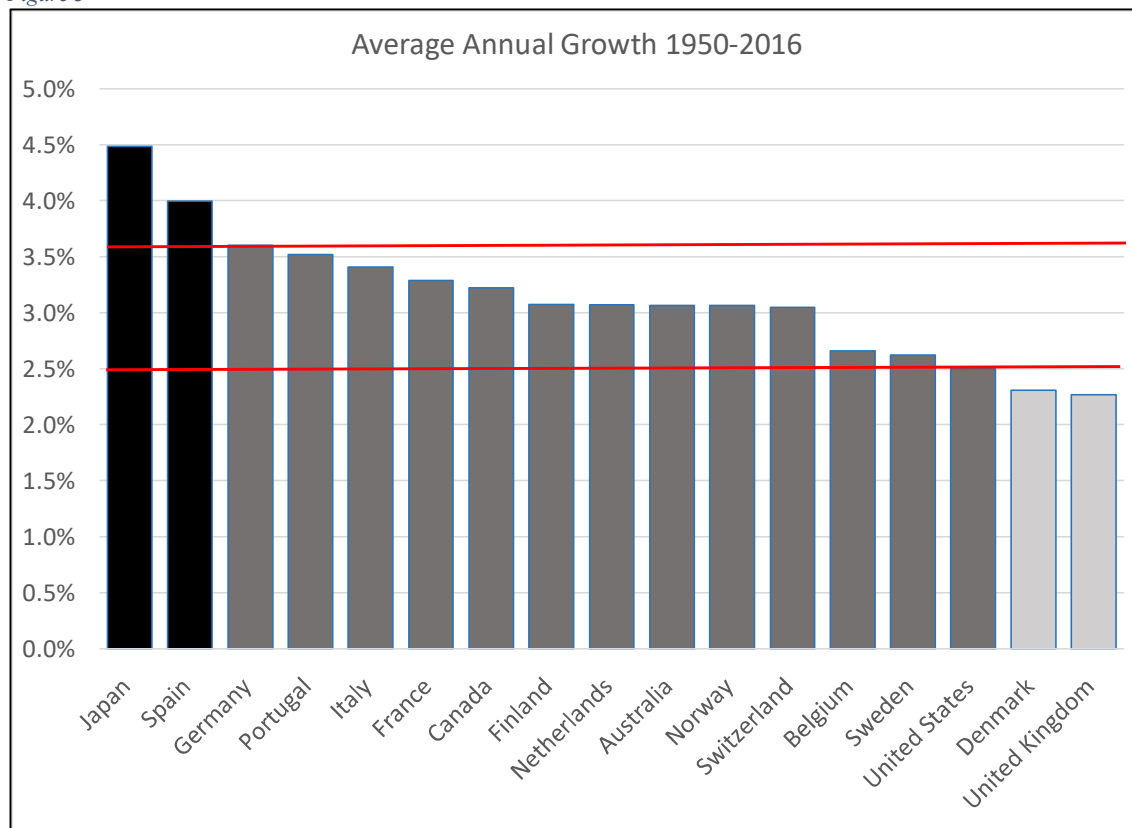
Figure 5, comparing the long-term average annual growth rate of the 16 countries in our group, shows that these averages lie in any case in a quite narrow band between 2.5% and 3.5% with only Japan and Spain above the top threshold and only Denmark and the United Kingdom below it. Figure 6 is even more striking; it partitions growth into that which took place before 1974 and that which took place after. The importance of this separation point is that 1974 – dubbed the ‘Second Slump’ by Ernest Mandel (1978) and the first major recession since 1929 – marked the end of the postwar ‘Golden Age’ boom, ushering in a depressive phase in which full employment vanished which fiscal stimuli could not vanquish, leading only to ‘stagflation’.

Whilst, as our previous charts show, decline had already set in at least 10 years prior to this slump, it signalled the definitive end of the postwar expansion of the industrialised North. A

second reason for its importance, shown in Figure 6, is that almost all the ‘catch-up’ growth of contender economies, notably Japan and Spain, took place before the 1974 slump.

Chart 6 casts further doubt on the idea that, after 1974, the industrialised economies benefitted from some kind of ‘recovery’, or that capitalism entered a new phase of stable or accelerated growth, a view articulated comprehensively by Dumenil and Levy (2004), and also suggested in the literature on Social Structures of Accumulation. A proper historical comparison strongly suggests that 1974 ushered in a profound slowdown in the whole of the economy of the North, punctuated only by an 8-10-year blip following the double crises of 1981.

Figure 3



Source: Jordà et al. (2017) For details see note on datasources at the end of this report

Indeed, as Figure 1 shows, there are grounds for treating this apparent ‘resurgence’ as a simple return to a downward historical trend. The simplest interpretation of this chart is that growth shows a linear downward trend from the high 6-7% averages of the fifties, to the averages of 2% and lower seen since the 2008 crash, which accelerated between the 1974 and 1981 slumps, returning to the same downward trend in the 1990s.

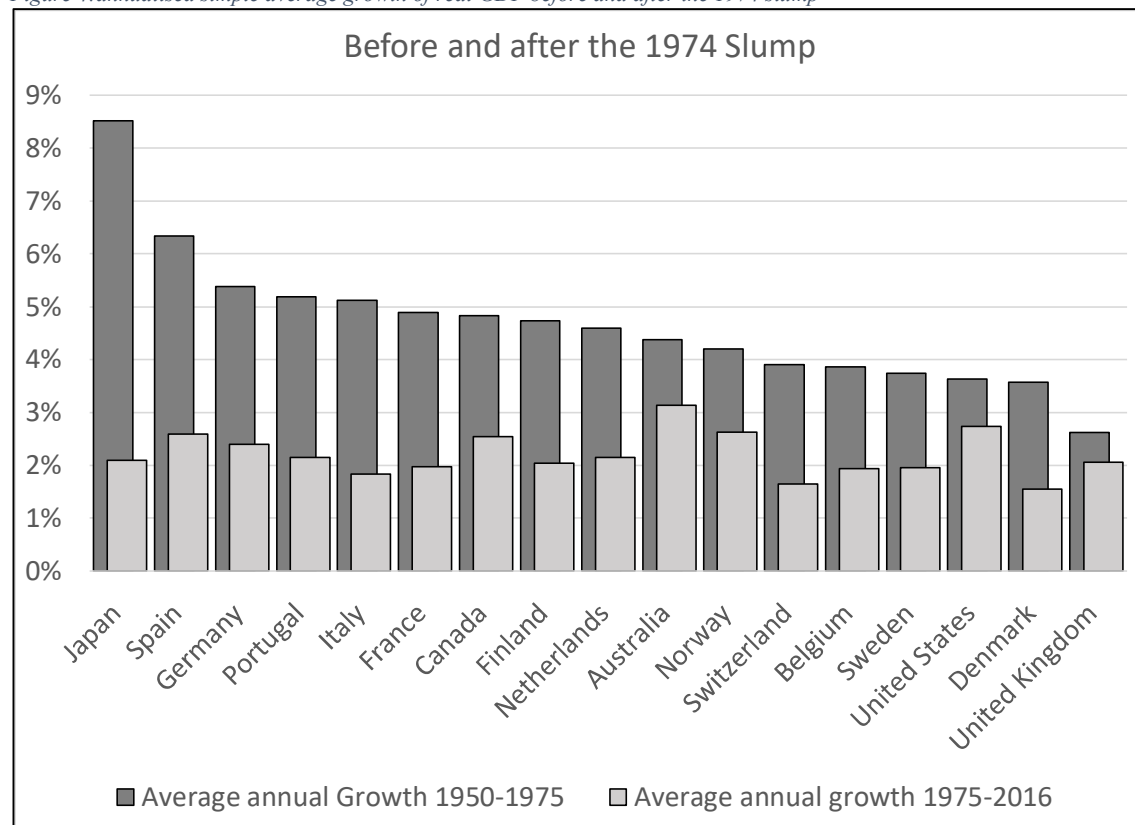
This brief recovery is not without significance. There is strong and widely-reported evidence which we hope to study in subsequent reports, that it arose from a systematic displacement of the economic problems of the North onto the ‘Southern’ countries. The key point, however, is that the attempt did not bring about a long-term historical reversal or restoration. Arguably a second such attempt is now being made but under even more stressful conditions than in the

1980s, offering a plausible explanation for the trade tensions currently racking the political economy of the current world order.

THE USA: EXCEPTION, OR MOST PROMINENT EXAMPLE?

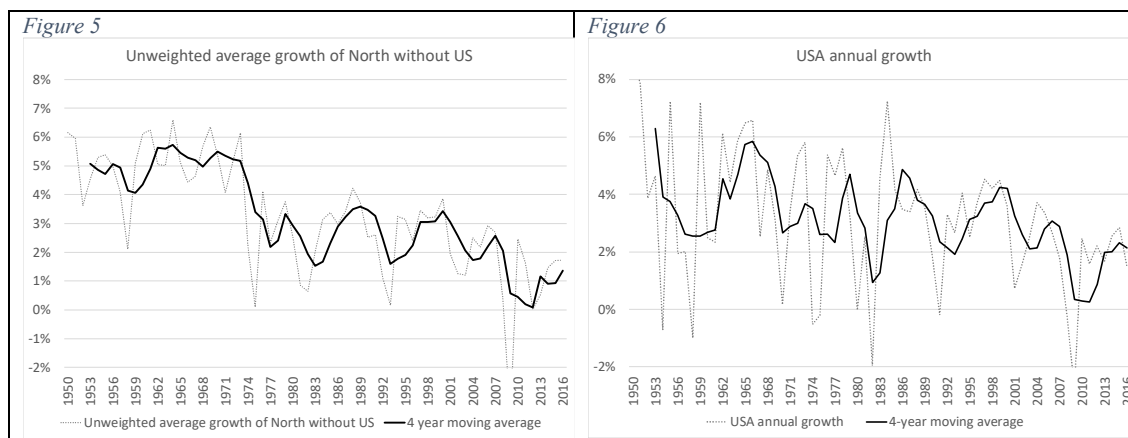
The convergence, and similarity, of North country growth rates, leads to an important question: how does the performance of the United States, the world's largest capitalist country, compare with that of its industrialised rivals? Does it, as perhaps Donald Trump would sustain, outperform these rivals, setting an example to the world? Is it alternatively, as many commentators suggest, an exception to a general pattern of good performance, on a stairway to decline solely of its own making?

Figure 4: annualised simple average growth of real GDP before and after the 1974 slump



Source: Jordà et al. (2017) For details see note on datasources at the end of this report

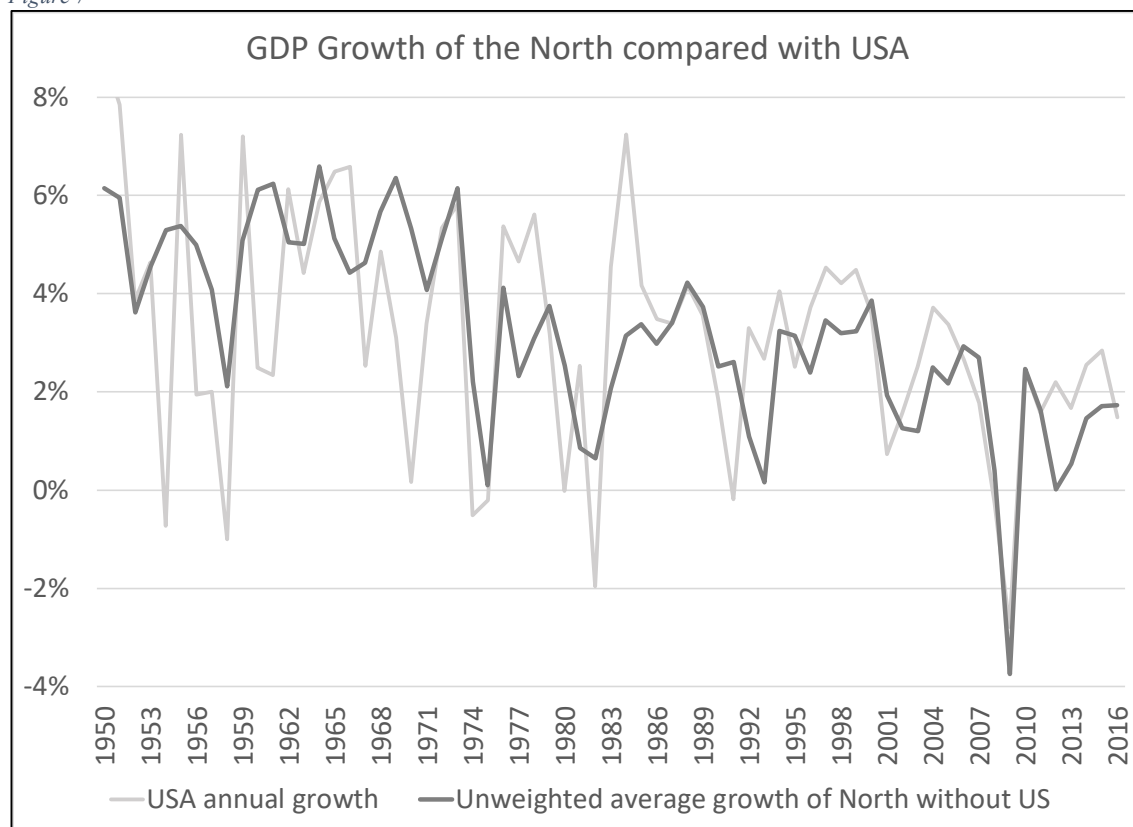
As figures 7 and 8 show, the decline is no more marked in the US than in the rest of the North, but is as inexorably present as throughout. The US decline appears also significantly more volatile, but this is in part at least because the averaging process, for the remaining countries, tends to smooth out sharp fluctuations.



Source: Jordà et al. (2017) For details see note on datasources at the end of this report

Figure 9 provides both measures on the same axis, for comparison, and illustrates the fundamental conclusion: both the US, and the remainder of the North, manifest a long-term historical decline at very similar rates, and have reached a very similar point at the current stage of this process.

Figure 7



Source: Jordà et al. (2017) For details see note on datasources at the end of this report

ALTERNATIVE MEASURES OF GROWTH: PPP AND THE MADDISON STATISTICS

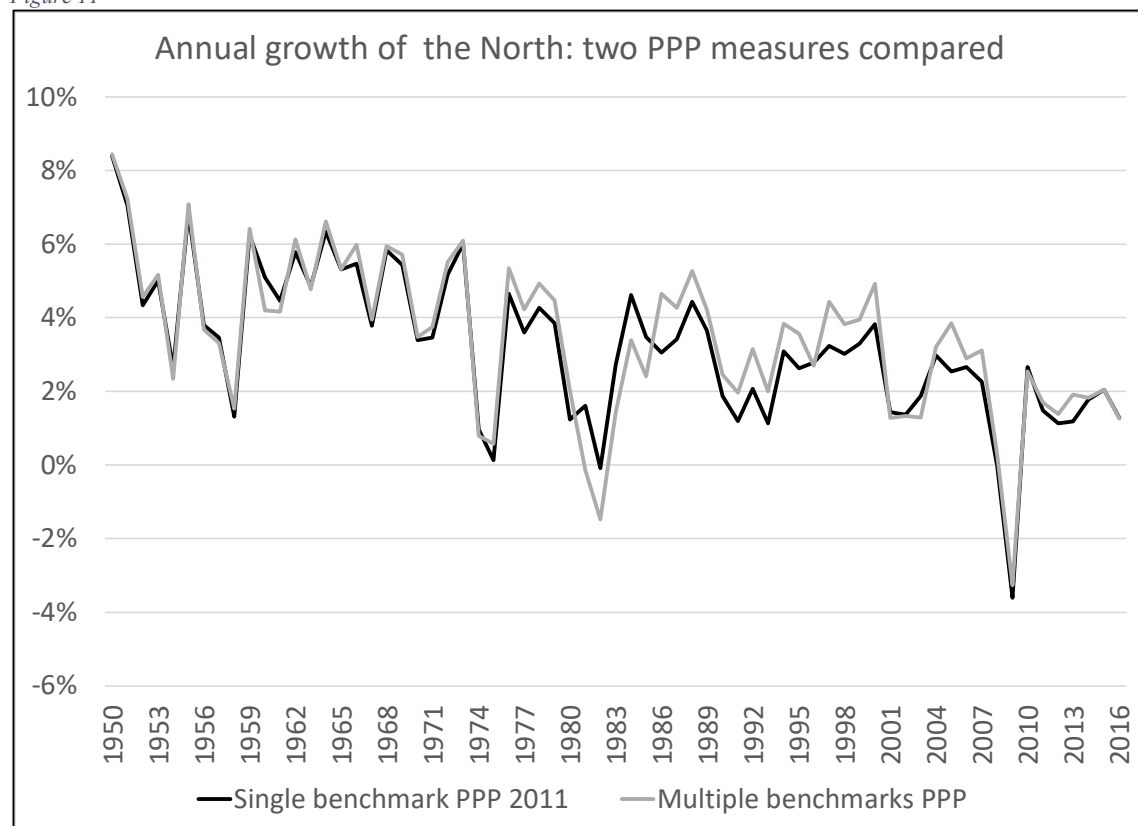
The onset of the 'lost decades', and the unforeseen sharp rise in international inequality which followed the debt crisis of the early 1980s and the dawn of neoliberalism, provoked considerable concern expressed most visibly in the Jubilee 2000 movement, and saw the

beginning of social upheavals contributing substantially to the ‘Pink Tide’ governments of Latin America and the Arab Spring in the Middle East. Among the reactions of international bodies such as the IMF and the World Bank was the adoption of poverty-reduction strategies aimed at the worst hit countries and people, and to the current concern, expressed most cogently in Piketty (2014) and Pickett and Wilkinson (2009).

It also led to something of a revolution in economic statistics, with the adoption of the Millennium Development Goals (UN 2015) and a series of measures designed to capture and track the effects of poverty. Foremost among these was the adoption in 1992, after an initial period of hostility, of ‘Purchasing Power Parity’ measures of GDP. In principle, the purpose of PPP is to adjust for alleged distortions in the measurement of national income, arising from the fact that goods do not cost the same in different countries, based on a spatial analogy with ‘real income’ which adjusts for the effect of purely monetary inflation over time.

The widespread, indeed wholesale adoption of PPP by international agencies is, in no small measure, connected with the fact that such measures increase the reported income of the poor countries and reduce that of the rich countries, leading to significant improvements in the battle against poverty due principally to price differentials, and with no or little relation to productive performance. (Freeman 2009).

Figure 11



Source: Maddison 2018. For details see the note on data sources at the end of this report.

The Groningen Growth and Development Project, which is the principal provider of PPP measures and benchmarks, have now distinguish between PPP measures suited to the study of consumption and inequality, and those suited to the study of production. The former are

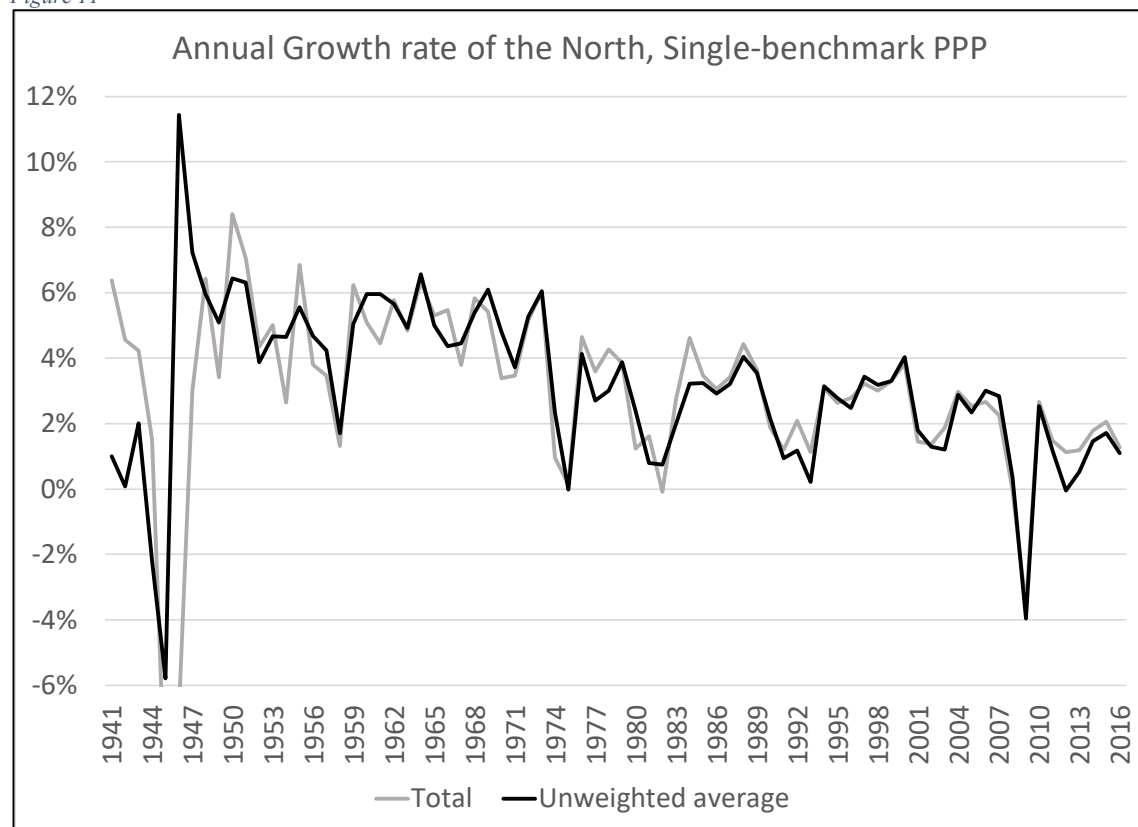
described by the project as ‘multiple benchmark’ PPP measures and the latter as ‘single benchmark’ measures.

The Maddison project states that the latter measure is more appropriate for growth comparisons. This is the PPP measure used throughout this report for data supplied by the Maddison project. The choice of this measure is one possible reason that the PPP data from the World Economic Outlook database (see Figure 2) differs from the Maddison data used in this report.

For the countries of the North, with which this report is exclusively concerned, the difference between the two measures is not great, as shown by figure 11, comparing annual growth of the North as measured by the growth rate of the simple total of GDP, estimated using the two Maddison measures. This is not surprising, given that, as noted early, prices do not differ as much, between the countries of the North, as between countries in more divergent states of industrialisation.

In any case, the above-mentioned difficulties associated with PPP are of less significance for the measurement of growth, which is independent of the absolute scale of GDP.

Figure 11



Source: Maddison 2018. For details see the note on data sources at the end of this report.

Notwithstanding, PPP measures of growth do differ from those based on unadjusted real income or ‘constant local currency’. It is important, for a general study, to compare our results therefore with PPP-based figures. As noted above, a further useful feature of PPP measures is that, being expressed in a single universal currency (the ‘International PPP Dollar’), it is legitimate simply to add them up, prior to estimating growth. Figure 11 shows

this ‘Grand total’ and, for completeness, the population-weighted GDP growth measured in PPP international dollars.

These unmistakable results strongly reinforce our conclusion. The combined evidence of the long-run data now accessible to the public shows an unambiguous decline, lasting 50-65 years, affecting all countries of the industrialised world, and showing no sign of ending.

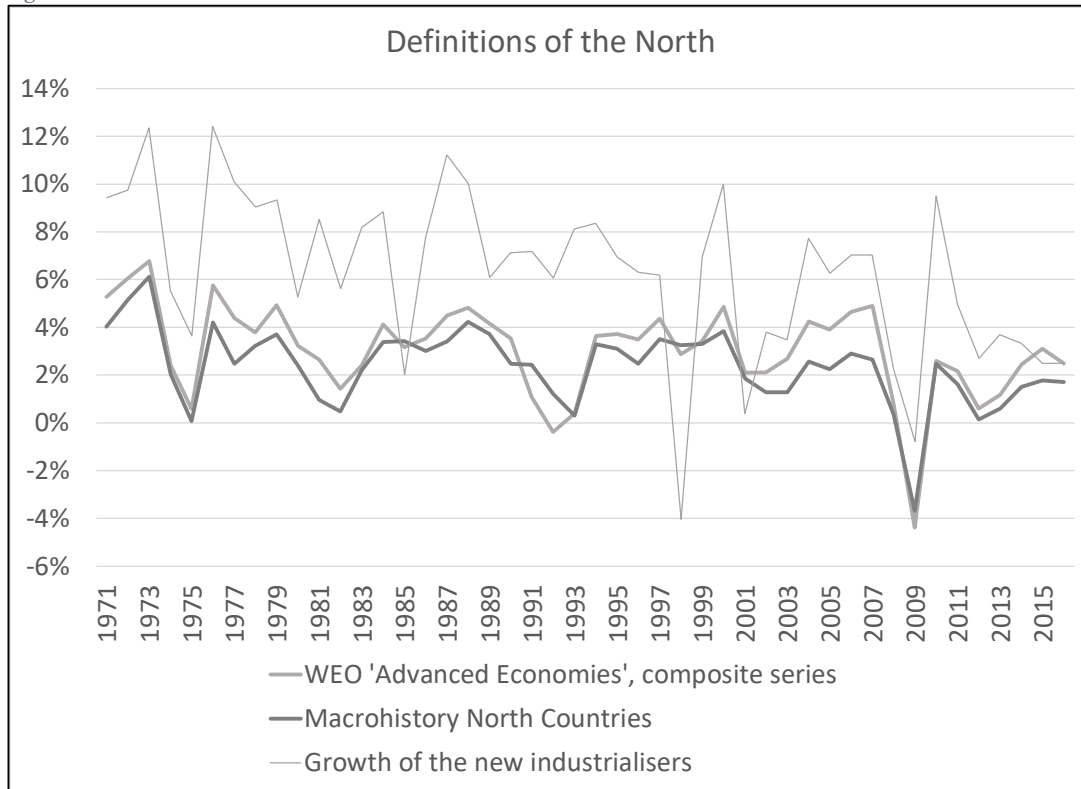
THE DEFINITION OF THE NORTH

Table 1: definitions of ‘North’

WEO 2018 'Advanced' Economies	'North' as used in the report	WEO2002 'Advanced Economies'	Population in 2016
Australia	✓	✓	23,978,000
Austria		✓	8,780,000
Belgium	✓	✓	11,285,000
Canada	✓	✓	36,437,000
Cyprus		✓	1,000,000
Czechoslovakia (Former)			15,935,000
Denmark	✓	✓	5,731,000
Estonia			1,287,000
Finland	✓	✓	5,495,000
France	✓	✓	66,957,000
Germany	✓	✓	83,707,000
Greece		✓	10,688,000
Hong Kong		✓	7,233,000
Iceland		✓	335,000
Ireland		✓	4,711,000
Israel		✓	8,209,000
Italy	✓	✓	60,738,000
Japan	✓	✓	126,310,000
Latvia			1,961,000
Lithuania			2,867,000
Luxembourg	✓	✓	584,000
Malta		✓	439,000
Netherlands	✓	✓	17,035,000
New Zealand		✓	4,659,000
Norway	✓	✓	5,236,000
Portugal	✓	✓	10,263,000
Puerto Rico			3,411,000
Singapore		✓	5,782,000
Slovak Republic			5,393,000
Slovenia			2,057,000
South Korea	✓		51,246,000
Spain	✓	✓	47,024,000
Sweden	✓	✓	9,917,000
Switzerland	✓	✓	8,491,000
United Kingdom	✓	✓	65,888,000
United States	✓	✓	324,656,000
Population in 2016	909,732,000	961,568,000	1,045,725,000

Any attempt to discover aggregate trends applying to a group of countries, such as the ‘North’, carries the risk that the result may depend on what is included in the aggregate. We have used a relatively restrictive definition based on those core countries which are generally considered to have been industrially advanced by the time of World War II, and which are contained in the Jordà et al. (2017) database. A small number of countries are missing for reasons of data availability from our own selection notably Greece and Austria; we hope to make this good in a future update to this report.

Figure 12



Source: WEO 2002 (1971-2002), WEO 2018 (2003-2016)

The WEO has now adopted a wider set of countries in its classification of ‘Advanced Economies’, which additionally includes the recent industrialisers Singapore, Taiwan, South Korea, Hong Kong and Cyprus, a number of smaller countries such as Malta and San Marino, Israel and Ireland, and a selection of countries previously defined as transitional.

To describe this selection as ‘idiosyncratic’ would be an understatement. It includes for example the Baltic states and former Czechoslovakia but not Poland or Hungary, and Slovenia but not Croatia or Serbia, whilst Hong Kong is classified as an advanced country instead of including it in the definition of China to which it geopolitically belongs. Nevertheless, The IMF definition commands attention because the most widely-cited figures on world growth are based on it. Table 1 shows which countries are included in the various contending definitions. Whilst the definition adopted leads to some differences, there is no indication that it affects the fundamental finding of this report – that there has been a long-run decline in the rate of GDP growth of the ‘Northern’ or ‘Advanced’ economies.

With our present dataset it is not possible to verify this across the whole historical period 1950-2016. We therefore constructed a composite series for 1970-2016, using data from the WEO 2002 dataset from 1970 to 2002 and the WEO 2018 dataset for the remaining years, and for those countries included in the WEO's 2002 definition of 'advanced'. This includes the most important group of additions, the 'New Industrialisers' Singapore, South Korea, and Hong Kong (but not Taiwan, for reasons of data availability). The chart clearly shows that for the years covered, the trend is not significantly altered. Perhaps the only difference that commands attention is the higher pre-crash growth registered in 2007. Had we opted for the population-weighted measure of the trend, given the relatively small size of the additions, the difference would have been even smaller.

Figure 13



Source: Barro and Ursúa (2012)

Figure 12 also demonstrates that the New Industrialisers share in – and therefore contribute to – the declining trend. To this end, we used the Barro- Ursúa (2012) dataset to derive the unweighted growth rate of two of the new industrialisers for which this dataset provides longer-run information, namely Singapore and North Korea. From this chart it can be seen that these two countries (as is well-known) underwent a growth spurt from just after the war until 1969, from that point on, they joined the general decline of the Industrialised North.

Notwithstanding, the prime reason we should not expect the New Industrialisers to affect the conclusion is actually a further important point as regards the geopolitical economy of the modern world order: they are few in number and in population. The total number of persons living in countries that the IMF includes, but we do not, is 135 million or 15% of the total, as Table 2, summarising the population data in Table 1, shows.

Table 2: Population of the North according to different definition

	1950	2016
North Population in this report	615,823,000	1,045,725,000
Advanced Economy Population, WEO 2018	545,287,000	909,732,000
Difference	70,536,000	135,993,000
Percentage difference	13%	15%

Source: IMF (2018), IMF(2002), Jordà et al. (2017), Maddison (2018) (population)

This brings us to a further, final point. It should not be thought that data availability is the sole criterion for our choice. If we want to track any cohort defined by a concept, such as ‘being Industrialised’ or ‘Advanced’, not to mention ‘transitional’, variations in aggregate indicators will have two causes. The first is the behaviour of the cohort itself, and the second is the effect of any addition to the cohort. If, for example, we were to include China in the group of Northern countries, we would see all manner of effects which arise not because of what is happening to the Northern countries but because China was not industrialised when the period under study began. This would introduce a discontinuity at the point when China’s industrialisation took off, which would solely be due to what was happening in China, and would tell us nothing about what was happening in any of the other countries. The choice of cohort appropriate for a historical study requires us, therefore, to select countries with certain characteristics in common throughout the period under study.

Of course, if no such cohort existed, and every country followed a completely different path of industrialisation in the period under study, then the results of such a study would be less conclusive. However, this is not the case. There is a strong, economic rationale for our cohort selection based on the perspectives of Chang (2012).and Desai (2013), who point out that the process of industrialisation is an uneven process, in which the early industrialisers compete with ‘contender’ nations by a combination of political and economic measures which impede industrialisation outside their ranks. As a result, over definite historical periods, the group of industrialised nations is quite stable with few new admissions. Within the timeframe of the postwar period and indeed, the whole of the Twentieth Century, the group of Northern countries in our principal definition has been a ‘stable’ aggregate – the proportion of new arrivals, in comparison with the group itself, is small. Tracking this group allows us to discount the effect of these new arrivals without damage to conceptual unity.

WHAT IS A TREND?

The final issue we address is the vexed question: ‘What justifies the assertion that economic data manifests a trend?’ In a certain sense this is obvious from the charts we have provided, and to assert in the face of this data that there is no trend would be simply to fly in the face of the obvious facts.

Notwithstanding, as the literature on economic trends recognises (correctly, in our view) we cannot reduce the variation in observed economic data to the combination of a trend accompanied by random fluctuations alone. This is because, throughout the history of capitalism, most macroeconomic variables vary cyclically, generally speaking rising in periods of boom and falling in periods of slump. The literature on cycles is as copious as it is

contested, with scholars attempting to identify many different intersecting cycles in addition to the most widely-recognised 'Business' Cycle lasting usually between five and eleven years.

If any scholar wishes to refute the evidence of a trend on the basis of some such theory, she or he is welcome to try: the attempt would however be reminiscent of pre-Copernican attempts to explain the contrary movement of the planets by means of 'epicycles' and 'eccentrics' – mathematical artefacts serving only to stave off recognition of the most central fact of all, that the earth moves around the sun.

It nevertheless remains important, indeed essential, when attempting to identify long-term historic economic trends, to distinguish insofar as this is possible between a genuine trend and a cyclic movement that presents itself, for lack of sufficient historical perspective, as a false trend. Thus, were we to conclude, from the steep fall in growth that occurred in the wake of the 1974 slump, that the trend of decline had so dramatically worsened that we should expect growth rates to reach routine levels of -3% by 2008, we would of course be wrong, even though a simple linear extrapolation would lead to this conclusion.

Interestingly, growth rates did in fact fall to this apocalyptic level in the aftermath of the 2008 crash, but in the intervening period, they oscillated around an average of about 3%, nearly half the pre-slump average, but nevertheless positive.

The fundamental difficulty in accounting for cyclic movements is the length of the cycle. There is no shortage of sophisticated econometric techniques for filtering out the effect of cycles of fixed length, or combinations thereof. But the actual length of the cycle varies. If it had a completely regular length of, say, nine years (the generally-accepted average cycle length) then we could reliably apply any of the range of techniques for filtering out this regular movement. However, the turning points agreed on by the NBER's business cycle dating committee (NBER 2010) suggest cycle lengths varying from as short as three years to as long as eleven. The anomalies are especially great during the postwar boom before 1974, when a general surge in growth tended to conceal or override the regularity of the cycle, leading to a succession of apparently short cycles.⁴ After that, the world economy saw a return to the longer cycles of prewar history, though even then, the 'double dip' recession of the early 1980s presents considerable problems.

There is a fairly simple way of approaching this issue, which reveals the strength of the underlying trend if anything more starkly than any other piece of evidence: this is to construct the average annual growth rate over the duration of each boom, measured from the trough of one recession to the trough of its successor, the turning points being more or less those identified by the NBER with the exception of the 1980s double-dip, which it is more sensible to treat as a single recession.

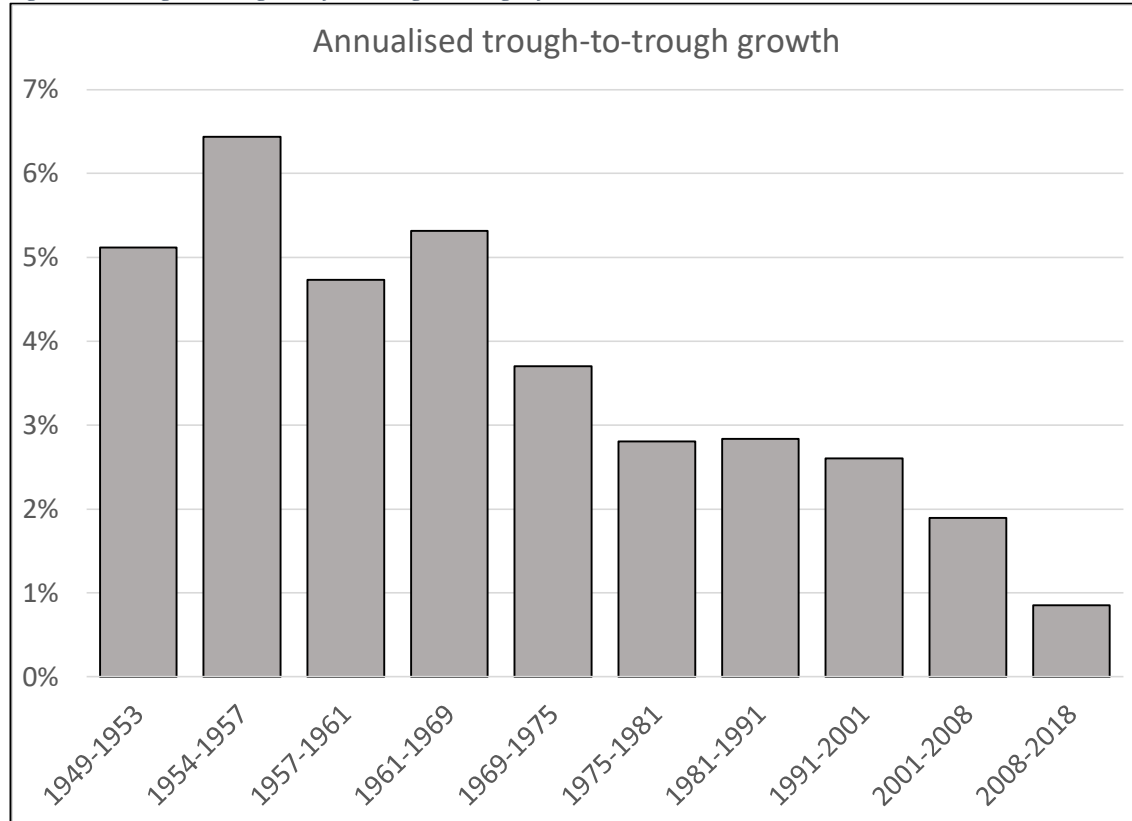
This gives Figure 13. The following salient facts emerge, which conclude our analysis:

- (1) In no period before 1974 (defined by NBER business cycle) did annual average growth of the North fall significantly below 5%

⁴ And indeed, bold assertions that the cycle was no more.

- (2) In no period after 1974 did it rise above 3%
- (3) Since 2001 it has not risen above 2%
- (4) Over the past ten years since the 2008 crash, the annual average growth of the North has been a record historic low of just under 1%.

Figure 13: average annual growth from trough to trough of NBER recessions



Source: Jordà et al 2018, NBER 2010. See Data appendix for details.

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APPENDIX: DATA SOURCES

This report draws on a comprehensive dataset assembled by the data project of the Geopolitical Economy Research Group (GERG: www.geopoliticeconomy.org) at the University of Manitoba. The site brings together, in a single location, data from a range of original sources including both major providers such as the IMF, and more specialist datasets such as the long-term data provided by Jordà et al. (2018) that are extensively used in this report, the Barro- Ursúa dataset and the Maddison dataset. It is not intended as a substitute for these original sources, but as a curated facility that allows researchers to interrogate and compare data from them, at a single location.

The dataset is at <https://axfreeman.github.io/Economic-History/> with a detailed description at <https://github.com/axfreeman/Economic-History/blob/master/ReadMe.md>.

As the GERG data project develops, our aim is to extend the range of sources available to researchers in the format offered by this project, precisely so that such sensitivity tests may be conducted. We refer to this approach as ‘data pluralism’.

The results in this report are provisional and intended to give researchers early access to these important findings. We advise caution in citing them; however, the GERG dataset is fully transparent and the data sources it relies on are all in the public domain. Researchers are therefore welcome to refer to these data sources and draw their own conclusions. Please cite both original source of any data used (see data appendix) and include the following: ‘Data obtained from the Geopolitical Economy Data Project at www.geopoliticeconomy.org/data’

The sources used in this report are:

The World Economic Outlook Database for 2018:

<https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx>

The World Economic Outlook Database for 2002:

<https://www.imf.org/external/pubs/ft/weo/2002/02/data/>

Maddison Historical Statistics: <https://www.rug.nl/ggdc/historicaldevelopment/maddison/>

The Jordà-Schularick-Taylor Macrohistory Database, <http://www.macrohistory.net/data/>

The Barro-Ursúa dataset <http://scholar.harvard.edu/barro/publications/barro-ursua-macroeconomic-data>

A spreadsheet containing all the data used in the report, along with the original charts, is available at <https://github.com/axfreeman/Economic-History/blob/master/DRAFTS/Decline%20of%20the%20North%3B2.xlsx>.