Review of Gordon (2016): the Rise and Fall of American Growth

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The Rise and Fall of American Growth is a song of praise to the modern era. Gordon systematically analyses aspect by aspect of the human being needs and desires and shows how the life of the average American had changed in a short period of time (1870-1970). Beside vividly describing the changes in food, clothing, shelter, transportation, health, and working conditions, the main theme of the book is that those changes can occur only once, hence, by definition, we should expect a slower growth rate in the future.

The first section of this review discusses the first part of Gordon's book which describes the rise of American growth during the "Special Century". The second section describes the second part of the book, the "Fall" part. The third section discusses Gordon's predictions about the next 25 years. The fourth part is about the policy recommendations of Gordon. In the last part, I review the review of Gregory Clark (2016).

The Special Century: 1870-1970

Gordon describes the life before the revolution of the "Special Century" as "unremitting daily grind of painful manual labor, household drudgery, darkness, isolation, and early death" (p.1). During the years 1870-1940, the life of Americans changed beyond recognition. Houses were "networked," having the connections of electricity, gas, telephone, water, and sewer; work became much easier and for fewer hours; diversity, quantity, and quality of food and clothing increased; new inventions such as car, telegraph, and radio end the isolation and introduce new types of entertainment and communication; and most important, the life expectancy dramatically increased.

Certainly, the detailed discussion of the improvement in all aspects of human life precludes the romantic description of the pastoral life in the village before the industrial revolution, as many today might like to imagine.

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However, it seems that Gordon's description of the change is also somewhat exaggerated. For example, he claims that in 1870 working-class households have almost no entertainment, especially women who were not allowed to drink in the local saloon (p. 49). But what prevent those women (and men) enjoy their leisure time by speaking with their neighbors and family? I believe that if we ask the people today whether they prefer to spend their evening watching TV or having old-fashion community life, many will choose the second option.

This leads us to a more general question: how to compare welfare between two periods? Gordon's answer is simple: new inventions and technology are always improving the life of the people. However, I am not convinced that this is always the right answer. We might distinguish between changes which address concrete needs, such as heating system, air conditioner or laundry machine, and more cosmetic changes. Is TV really better than radio in terms of life satisfaction? Comparison between subjective utility between periods can address that kind of questions.

Another central argument in the book is that if we measure the welfare change only by GDP per capita, we will underestimate large part of the change that comes from things that cannot be measured by GDP such as longer life, better quality of working conditions and better quality of goods. Again, although this argument is right and important, Gordon ignores eras in which the change in GDP may overestimate the welfare change. For instance, consider the great rise in the labor force participation for women (p. 249). As more women do not stay at home with their children, the need for another person to take care of the children increases. This job is now measured by the GDP, although nothing change in this regard.[1] This is one of many tasks that was not measured in the GDP before the "outsourcing" of them.

Additional representative example for the overestimation of the welfare change is cars. Although cars mainly use for commuting to work, the expenditure on car considered as a consumption good whereas it should be considered as work-expenditure. Moreover, as long commuting has a large negative effect on life satisfaction,[2] the benefits from moving to suburbs (p. 363) should be offset by its cost.

From Revolution to Evolution: 1970-2015

The special century 1870-1970 was revolutionary across the full span of human life. In the first part of this century (1870-1920), the second industrial

[1] Off course, this claim has nothing to do with the important change in the women rights that came together with their labor market participation. It is only a technical note about the bias in the GDP measurement.

[2] See, among others, Stutzer and Frey (2008).

revolution took place, with all its big inventions. In the second part (1920-1970), U.S. economy exploited those inventions to create the most rapid period of growth in labor productivity experienced in American history.

The main claim in the second part of the book is that inventions of the third industrial revolution did not have the same effects on living standards as had the great inventions of the special century (p. 522). The scope of the I.T. revolution was limited; it affects only a few subjects such as entertainment, communication, and information technology.

That is Gordon's answer to the famous Solow's paradox that "you can see the computer age everywhere but in the productivity statistics." (Solow, 1987)[3] Gordon says that you cannot see the influence of the computers everywhere, but only in specific fields.

Gordon, again in a systematic and interesting way, shows how the inventions of the last half century are "incremental tinkering", not breakthrough inventions. For example, though faster and safer, the cars today are not so different from the cars of 1950, certainly not like the difference between a horse and a car.

Gordon is aware of the extensive effect of the computers on the entire economy through the efficiency of offices, easier communication, etc. However, he claims that the majority of the productivity growth due to computers and internet was exploited during 1994-2004.

Although I agree with his general claim, that the scope of the I.T. Revolution is limited in comparison to the Second Industrial Revolution, I think that Gordon underestimates the potential of the information technology, even without a new breakthrough in other areas. The main indication to his claim that all the potential of the I.T revolution was extracted in 1994-2004 is that in the decade after that (2004-2014) there was virtually no productivity growth. It is hard to draw a conclusive idea, based on the decade that contains the biggest recession since the great depression. In my opinion, there is still a lot of room for more technological improvements by combining the computers with other fields of the economy.

The Winter is Coming: 2015-2040

In the third and final part of the book, Gordon predicts that the growth rate in the next 25 years will continue to be slow. Besides the evidence that we mentioned about the low potential of the I.T. Revolution to induce additional significant growth, Gordon describes few "headwinds" that would slow down the U.S. future growth, such as rising income inequality, government debt, problems in the U.S. education system and demographic issues such as population aging and low fertility rate.

[3] See Acemoglu, Autor, Dorn, Hanson, and Price (2014) for the relevance of this paradox today.

Taking all together, Gordon predicts an annual productivity growth rate of 1.2%, in comparison to 1.62% in 1970-2014 and 2.82% in 1920-1970. Due to the population aging, this low growth rate of productivity implies only 0.8% annual growth rate in GDP per person. Things looked even worse if we consider the median real GDP per person, with predicted annual growth rate of only 0.4%.

Can we predict the technology in the future? In 1894, The Times newspaper predicted that "In 50 years, every street in London will be buried under nine feet of manure." This famous anecdote is not a warning against any attempt to predict the future, but against decisive ones.

Gordon answers that it is plausible to do such predictions by illustrating few examples of people who made pretty good predictions about future inventions. I think that those examples are appropriate if we consider positive predictions about what we expect the future technology to be, based on our knowledge. However, it cannot motivate negative predictions about no new breakthrough inventions.

Can We Do Better?

Gordon's answer to this question is no, we cannot do much better. The reason for that according to Gordon is very fundamental; the big invention of the special century can occur only once, and there is no room for dramatic change in the standard of living of the American person in the future. Therefore, he does not recommend to the government to put a lot of efforts to encourage the invention of new technologies; it is to fight a losing battle. Instead, the government should focus on the local issues such as fighting the inequality and improving the education system.

Does Gordon right? He definitely made an important point about the dramatic change in the U.S. standard of living during the special century. However, I think that this "consumption side"[4] argument might be wrong for several reasons.

The first and obvious point is, again, it is almost impossible to imagine big changes in the way people live their life. I do not think that 200 years ago many people could say they wish to be able to travel across the ocean in few hours. They did not miss this option and did not consider it. Not speaking about the cellular phone or the internet.

Second, I do think that even the future technology changes that we can imagine today to address our needs could be an important advance in our life. Let us consider two examples. Autonomous cars will probably be functional

[4]When we think about GDP changes we can look on it from the consumption side ("what can people want more") and from the production side ("how can they improve their production process"). In the book, Gordon moves back and forth between the two point of view.

in a decade or two. Unlike Gordon (p. 599), I do think that it is a dramatic change in the quality of life of big part of the Western world, as it will solve one of the most frustrating tasks in daily life. Moreover, the effect of it on the urban environment could be big. Imagine a world without parking lost, narrower roads, significantly fewer cars in the streets, and possibly much faster cars (when the human abilities will not be the barrier for the speed) which can increase the suburbs zones around big cities.

Another important example is the working hours. Why do Keynes (1933) prediction about fifteen-hour week did not happen?[5] I think that there is a lot of room for improvement in this direction, which can considerably change the quality of life for the everybody. This change can lead to a revolution which is not less important than the revolution of the Second Industrial Revolution. Off course, such a big change require complementary changes in many other fields, such as leisure habits, entertainment, education and so on.[6]

Additionally, there is a conflict between Gordon's discussion on the rising inequality (ch. 18) and his claim that the growth rate cannot soar because all the big changes already took place. Even if we just want to bring the standard of living of all the U.S. population today to the frontier of the U.S. standard of living, it gives a lot of room for future growth.[7] To illustrate the quantitative importance of this point, assume that we want all the population of the U.S. to have at least the yearly income of the average upper quintile of 2015. That implies growth of 155% in the average GDP per household, from $79,263 to $202,366.[8]

Review of Gregory Clark's Review

Clark (2016) supports Gordon's view about the slow future productivity growth. He claims that the source of current and the future slowdown is that "modern US economy is now heavily based around services, accounting for 80 percent of output", while Manufacturing "has shrunk to 12 percent of the economy". Clark emphasizes that most of the service sector tasks are actually pre-industrial tasks, in which the industrial revolution, and all the more so the I.T. revolution, have left unchanged. In his words: "Workers in

[5] See the discussion in p. 258.

[6] Again, this is a discussion only from the consumption side, in response to Gordon's main argument. Off course, there should be a technology improvement from the production side to allow such a change. However, I think that in order to be able to move to shorter hour-week (giving, say, the current standard of living) there is no need for technology breakthrough but only for incremental improvements. Moreover, I believe that there is considerable productivity decrease as a function of hours worked, therefore even without big technology improvement in the production side this change is not impossible.

[7] See previous footnotes about the consumption and production point of views.

[8] Data on U.S. household income quintiles for 2015 are from http://www.taxpolicycenter.org/statistics/household-income-quintiles.

these types of jobs in Europe in 1300, if transplanted to modern America, would need little retraining."

In order to proof his claim, Clark looks at the R&D data by industry. He says that "Most of R&D activity is still concentrated in manufacturing, a declining sector of the economy." Moreover, he shows that "more than 80 percent of all corporate R&D falls in three areas of the economy that produce together less than 5 percent of value added." Therefore, he his even more pessimistic that Gordon about the future TFP growth.

While I agree that these interesting facts are disturbing, I believe that one should not accept it as a fate. The conclusion that one should draw from it is that the policymakers should encourage the R&D in the low-skill and services sectors. It seems that the technology improvement becomes too skill-biased, which slows down the whole economy growth.[9] Further research about the frictions and incentives that lead to this apparently inefficient technological change is required.

References

Acemoglu, D. (2002): "Technical Change, Inequality, and the Labor Market," *Journal of Economic Literature*, 40(1), 7–72.

Acemoglu, D., D. H. Autor, D. Dorn, G. Hanson, and B. Price (2014): "Return of the Solow Paradox? IT, Productivity, and Employment in US Manufacturing," *American Economic Review*, 104(5), 394–99.

Clark, G. (2016): "Winter Is Coming: Robert Gordon and the Future of Economic Growth," *The American Economic Review*, 106(5), 68–71.

Gordon, R. J. (2016): *The rise and fall of American growth: The US standard of living since the civil war*. Princeton University Press.

Keynes, J. M. (1933): "Economic possibilities for our grandchildren (1930)," *Essays in persuasion*, pp. 358–73.

Solow, R. (1987): "We'd Better Watch Out, review of SS Cohen and J. Zysman, Manufacturing Matters: The Myth of the Post-Industrial Economy," *New York Times Book Review*, 36.

Stutzer, A., and B. S. Frey (2008): "Stress that doesn't pay: The commuting paradox," *The Scandinavian Journal of Economics*, 110(2), 339–366.

[9]The technology improvement must not be skill-biased. See Acemoglu (2002) who says that the big inventions of the 19th century were unskill-biased.