

What The Donald

...maybe should be looking at

Or: The Sustainable Competitiveness of the USA

Foreword

Dear The Donald,

Not many people have predicted and even less would have believed that you could pull off what you did. But you did. So honour where honour is due: congratulations to that. It's really quite unbelievable. In many aspects and from many points of views.

One thing you were always right during your campaign is that the US is currently not that great as it probably used to be: **The US is currently sitting on rank 32 of 180** in the Global Sustainable Competitiveness Index (GSCI). In the top 20% - but not in the top 15%. And all data trends signs indicate a further slide in the future.

The Global Sustainable Competitiveness Model is an adaption of methodologies used to measure the real competitiveness of companies (i.e. the underlying fundamentals that at the end of each year translate into a positive/negative balance sheet) to a national level. It is not based on ideology or political preference. To exclude any form of subjectivity, the GSCI is based purely on quantitative performance indicators collected by the World Bank. It is based on what makes economies work. Sustainable and successful.

This document analysis the performance of the US according the GSCI model of competitiveness in a bit more detail – and highlights the critical issues that we believe the US has to manage in order to sustain, and hopefully, increase competitiveness.

We are a management consultancy. If the US were a corporation, and as such our client, this is what we urgently would advise you to address for MAGA.

Many people actual hope that MAGA works - but doubt that your team is able to deliver. This is for REAL MAGA. Free for you - The Donald.

We hope you enjoy.

Sadly, you will probably never read this. But boy – you have no idea how much we wish you'd listen to people with a decent sense for common sense.

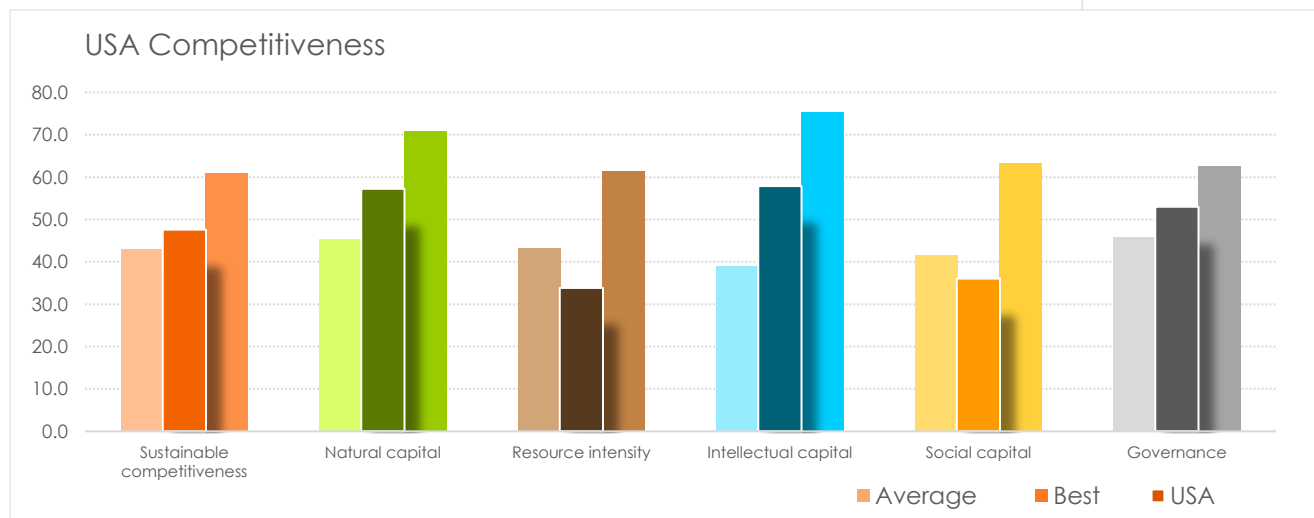
PS - It has been reported that you don't like long documents. So we try to keep this as short as possible.

For further information – www.solability.com

1 Summary

The US is ranked only 32...

The US is currently only ranked 32 of 180 nations in the GSCI, scoring only 10% above average, but nearly 25% below the best. The GSCI is based on 109 quantitative performance indicators, analysed for current performance and past trends to anticipate the future. While the US scores above average in natural capital, intellectual capital and governance, the country is considerably below the global average in both resource intensity and social cohesion.



Why the US is not in the top league

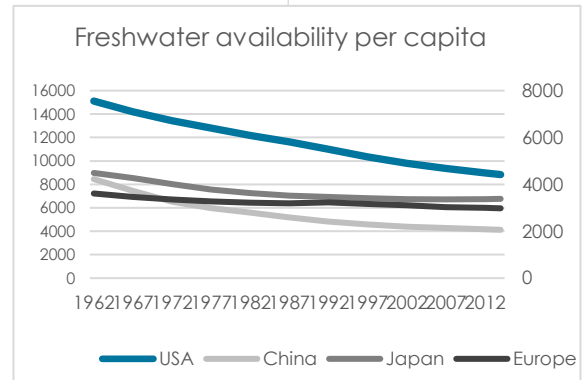
The US is below the leaders in all parts that define sustainable competitiveness. The key deficits in each dimension are:

- **Natural capital**, rank 31: The US is a big and beautiful country with abundant natural resources. However – **water scarcity** and efficiency are issues that need to be looked at urgently, especially in the dry plains and on the West Coast.
- **Resource intensity**, rank 161: the US uses significantly more energy, water, and raw materials than other economies to achieve economic output. **High resource intensity is equal to higher cost** for the economy, and urgently needs to be addressed in order to MAGA.
- **Intellectual capital**, rank 19: compared to global peers the **performance of US student is simply dismal**, and **R&D investments are scarily low**, raising serious doubts over US' ability to compete in an innovation-driven global economy.
- **Governance**, rank 41: No real news here – the **lack of investment in infrastructure**, and a high structural deficit remain the main concerns.
- **Social capital**, rank 114: **high crime rates**, and **social inequality** are not only dividing the nation – they are also costly.

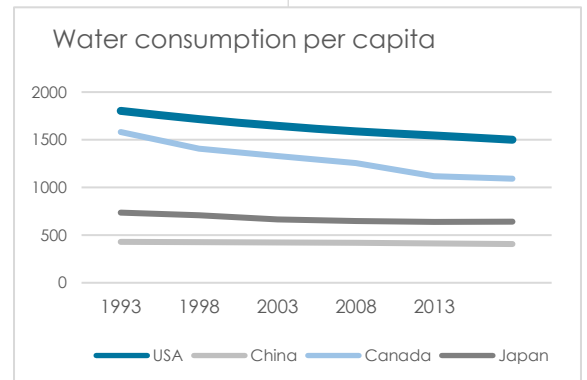
2 Natural Capital

The USA is big country, with different climate and geographic zones, abundant with natural resources. Considering that most countries with a high rank in Natural Capital are small nations in tropical areas, the US is ranked fairly high on 31 in this sub-category of the GSCI. There are a number of indicators that show good health – forest area for example (as percentage of total land) have remained more or less stable over more than 50 years. However, there are some critical issues that need to be addressed – better sooner than later:

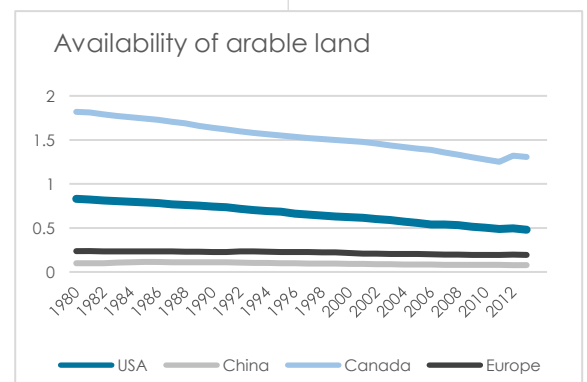
- Water availability.** Water, water, water. In the 1960s, there was three times as much freshwater available per capita than now, and freshwater availability is still declining. The US water consumption per capita remains the second highest in the World, second only to Turkmenistan. While there is more than sufficient water available in many parts of the country, other areas are not that privileged. Prolonged droughts and over-use of natural aquifers have led to severe droughts and wild-fires, in particular in California, and to a lesser extent, also other areas in the Mid-west and the South of the country. The best scenario, would be of course, to regular rainfalls to return, and natural aquifers to be refilled. Unfortunately, due to climate change and depletion of natural aquifers that is unlikely to happen anytime soon. Which leaves two options: Increase water supply (e.g. through desalination of sea water in special plants), and/or increasing water efficiency.
- Water purity.** Due to the lack of a standardised indicator to measure water cleanness on a national level, we do not take into account water pollution. However, it is clear that the safety of freshwater is as important as its availability – and the water quality in some areas has been deteriorating. It is also suggested that fracking has a negative impact on groundwater quality – an issue that at least should be probed in light of expected increase of fracking activities. Regardless of political stance, and also regardless of the fact that in a few years' time, fracked fossil energy will not be competitive against renewable energy technologies.
- Land availability.** While the US is in the comfortable position to have more than sufficient land resources and agricultural output to feed the population (and export grains), the statistics should not be overlooked: arable land per capita has nearly halved since 1980 – and the population did not double since then. It is better to stop this trend – better sooner than later.



Availability of freshwater per capita declined by nearly 70% since the 1960s (not due to population increase).
Data source: World Bank



While water consumption per capita was reduced significantly, it remains the second highest in the World
Data source: World Bank

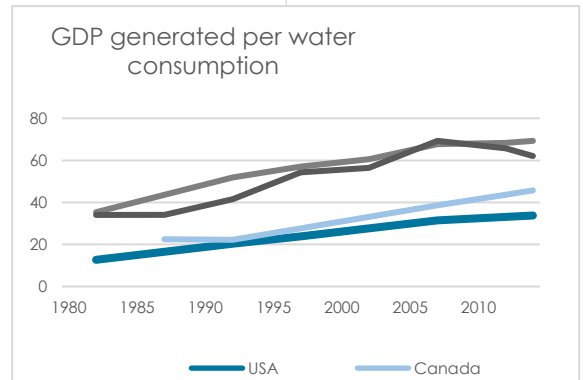


Available arable land per capita declined by nearly 50% since 1980
Data source: World Bank

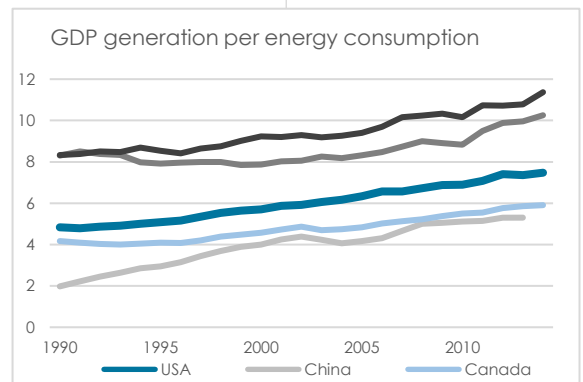
3 Resource Intensity

In the resource intensity dimension of the GSCI, the US ranks 161 of 180 countries. In the bottom 11%. Please. You might say that doesn't matter. Well, it does. Even if the 3% of scientists who are not sure if climate change is happening or whether it is made/influenced by humanity should be right: resources are not for free. Raw materials, water, energy, waste disposal: all these are costs. Financial costs. In other words: the US has higher costs to achieve the same compared to other countries. Resource efficiency is a billion-dollar business. It is also money that is not available for other purposes, in particular for the low-income segment of the population.

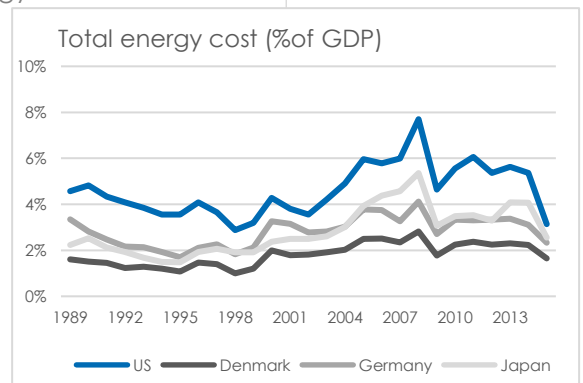
- Water:** US water efficiency is deplorable. The US uses more than double the amount of water than other leading economies for the same result. Water is still abundantly available in some parts of the US, but in others, it is not. And: it is cost, too.
- Energy.** Energy is definitely the main issue here. Energy is cost. While energy efficiency in the US (as everywhere in the World) has increased thanks to better technologies, the US uses nearly double the energy per economic output (aka: national wealth) compared to other leading economies. That translates into cost: depending on the oil price, the US is spending as much as 8% of GDP (2007) for energy. That number has come down in 2014 and 15, but is set to increase with global oil prices rising again. Even Japan, that has to import nearly every single GJ of energy, is spending far less on energy than the US. Regardless of the oil price developments, other leading nations are spending between 1-2% of GDP less on energy than the US. While it is unrealistic to achieve that efficiency gains very quickly, every tenth of a percentage that energy efficiency is increased equals 20 billion dollars. So – come on. That is money lying on the streets.
- Renewable energy, fossil energy.** What is worrying is that the US is left behind in the installation of cheap energy technologies. Renewable energy will be the cheapest energy in a few years' time, while fossil energy cost will keep rising. Europe now sources nearly 25% of its electricity from renewable sources, vs. less than 15% in the US. And Europe (as well as China) are investing heavily in more renewable capacity. As are US businesses and utilities: because it makes business sense to invest in future technologies, and not in dying 20th century technology. Focussing on coal and/or fracking will further increase US energy cost rather than reduce. And increase the cost-competitiveness gap to other leading economies.



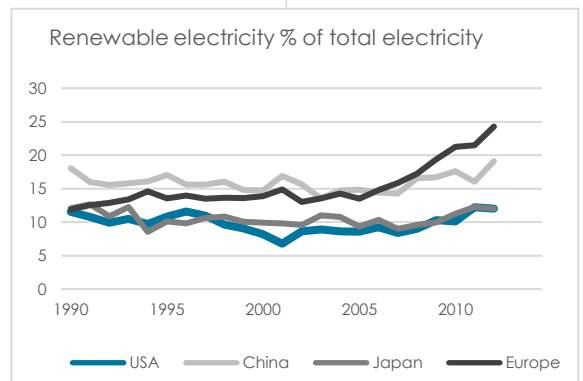
GDP generated per unit water
Data source: World Bank



GDP generated per unit energy
Data source: World Bank



Total energy cost
Data source: BP, IEA

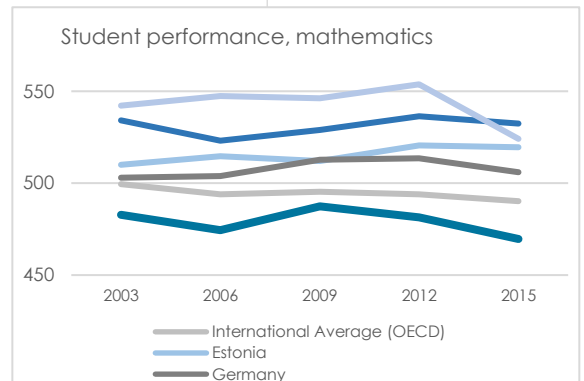


Share of renewable energy
Data source: World Bank

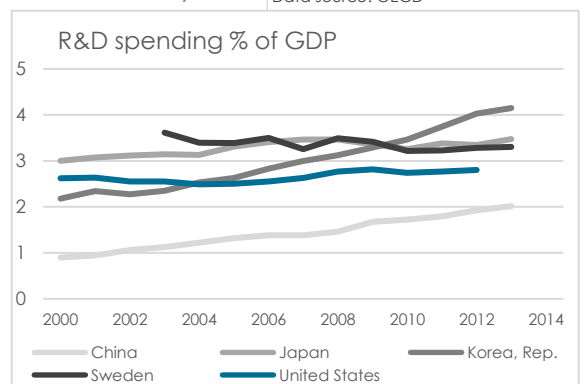
4 Intellectual Capital

Intellectual capital is a mixed bag. The US, ranked 19 (the highest rank amongst all sub-indexes of the GSCI), shows healthy performance related to R&D, albeit not on par with the highest scorers. However, school-related performance is appealing.

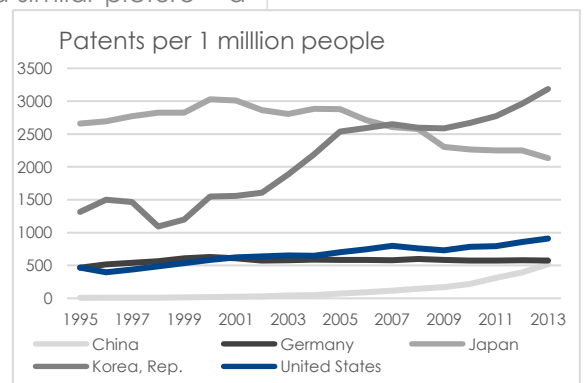
- Schools:** The US education system is a mirror of the real economy: the US (Silicon Valley, that is) is dominating the World in terms of software & applications, and has the most sophisticated weapons. But beyond that, what does the US have to offer on the global markets – Nappa Valley? The same with higher education – there is the MIT, Stanford, and some other excellent institutes, but beyond that most universities don't compare on the international level. But what is most worrying is student performance. US students perform way below the leading nations, and considerably below international average. Today's students are tomorrow's engineers, scientists, teachers, managers and workers, and if they do badly today, so will tomorrow's economy.
- Research & Development:** The US is currently spending 2.8% of GDP on R&D – which is a decent number compared on the international level. However, funding for R&D is below leading high-tech economies, and China is set to catch up soon. US Patent registration trends shows a similar picture – a decent performance, but significantly below the Asian Tigers, where much of the electronic innovation these days is coming from. In addition, only a comparable small percentage of US students choose a science or engineering degree (8%), compared to more than double that percentage in Japan, Korea, or China. That means that China, in nearly 6 times as much engineering students are graduating each year compared to the US. That is going to have an impact somewhere down the line.
- High-tech industries:** US high-tech exports have declined significantly over the past 2 decades from 20% of exports to 8% of exports - maybe as a result of the combined factors described above (low student performance, comparable low percentage of engineering graduates, below leading nation R&D investments). Whatever the exact reason for the decline is – it is a very bad sign. It means that the US has less to offer on the World markets, i.e. has lost competitiveness.



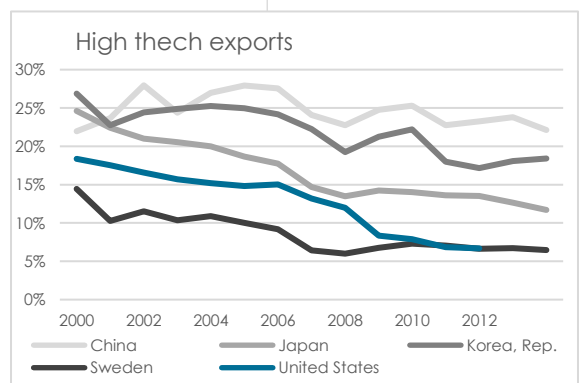
High-school student performance
Data source: OECD



Spending on R&D
Data source: World Bank



Registered patents
Data source: World Bank

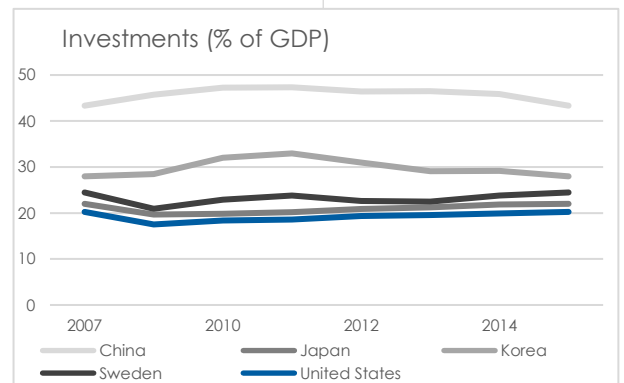


High tech exports (% of total exports)
Data source: World Bank

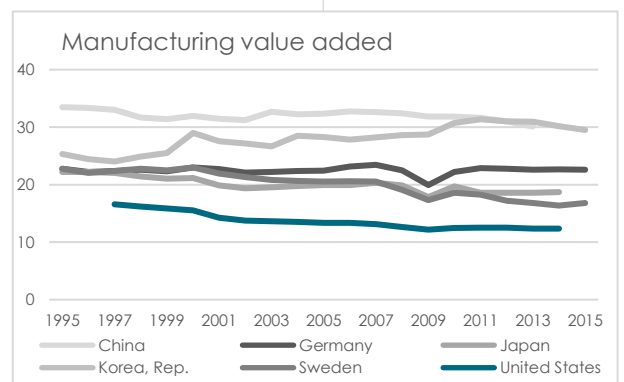
5 Governance

The US is ranked 41 in the governance dimension of the GSCI – just within the top 25%. Key issues that need to be analysed here include the level of investments, and the structure of the economy:

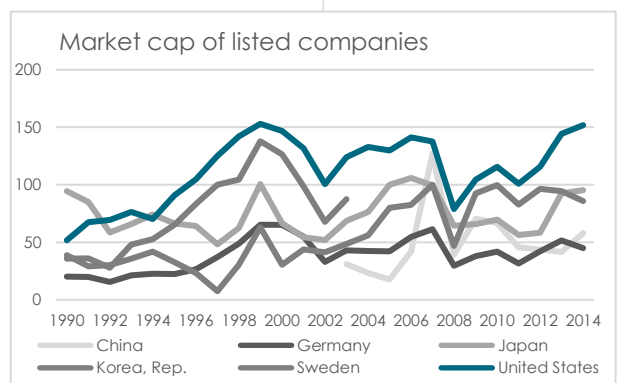
- Investments:** It has been reported widely that the state of infrastructure in many parts of the US is dismal. For example, 10% of all bridges are "structurally deficient" and 3% "fracture critical". China already has 20'000 km of high-speed networks that can rival or surpass planes in speed when deducting the time needed for travelling to/from airports, check-in, boarding and exiting a plane. And China is adding another 30'000 km to 2020, connecting all major cities around the country. Compare that to the dire state of the US Rail Network and the speed of US trains – once the pride of the country. Maybe that has to do with the level of investments: the US is reinvesting less than 20% of GDP; half the China value, and several points below most OECD countries.
- Structure of the economy:** Only 12% of US GDP comes now from manufacturing, providing 15% of jobs. The share of the manufacturing sector of the US economy has been in constant decline since the 1970s (long before Chinese factories started to export to the global markets). Some of this can be explained by the shifts in the economy; however, Germany, Japan and many other European and Asian countries maintain a considerable higher manufacturing industry share than the US. Indicating either structural problems – or lack of competitiveness.
- The financial markets:** Much of the gains of the past 2 decades have been made on the financial markets, leading to 3 major problems: the gains are not equally shared across the country, less investment goes into the real economy, and maybe more importantly, increases the exposure to fluctuations. The market cap of listed companies has risen from less than 50% of GDP before the 1990s to 150% of GDP – significantly higher in terms of GDP than all other economies. The same applies for the value of financial transactions (that have reached more than 400% of GDP – for stocks alone). Future potential disruptions on the financial markets therefore will have a higher impact on the US than on other economies.



Investments (% of GDP)
Data source: IMF



GDP-hare of manufacturing sector
Data source: World Bank

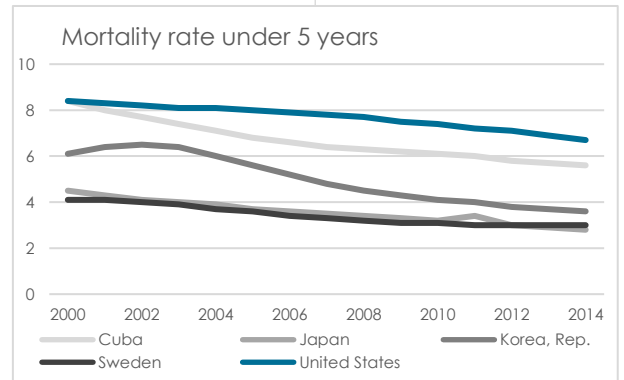


Share value of listed companies
Data source: World Bank

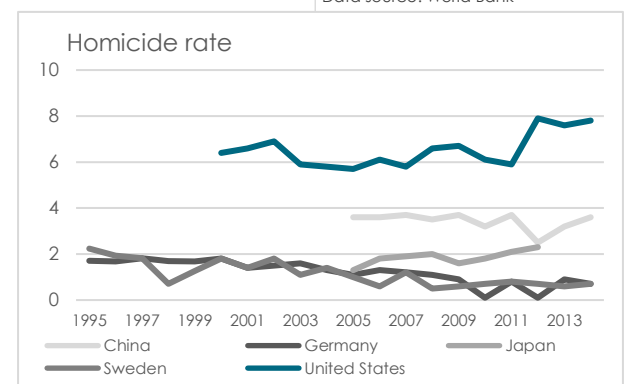
6 Social Capital

The US ranks 114 of 180 in the social capital dimension of the GSCI. Insufficient health-care, high crime rates, and inequality are the main obstacles to achieve higher competitiveness.

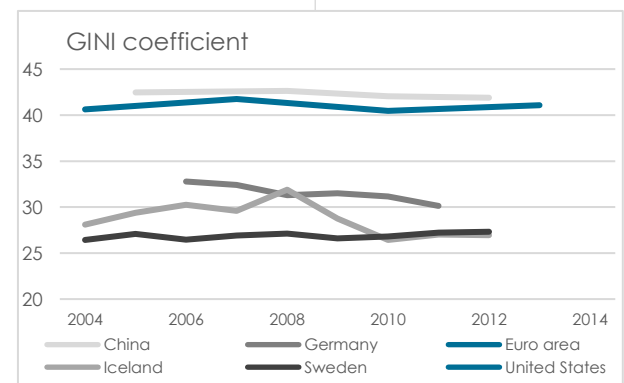
- Health care:** more than 7 out of a 1000 children die before the age of 5 in the US. That's more than in Cuba, and about 3 times as much as the developed World average. This single indicator alone shows that something about the US health care system is seriously wrong.
- Crime:** crime rates in the US are significantly higher than in the rest of the developed World, despite or because the US also has the highest prison population rate. The homicide rates in the US is 3 times higher than in other developed countries. Whatever the causes of the high rate of violent crime, it needs to be addressed. Both the symptoms, and more importantly, the causes.
- Inequality:** The American dream is only working for a few selected. Inequality levels in the US are greater than in other developed countries. In other words: hard work alone does not get you anywhere in the US. It also facilitates kind of a feudal system, where birth is more important than accomplishment, increases crime rates and threatens the fabric that keeps the nation together. (The Gini coefficient measures distribution of income and assets, whereby 1= perfect equal distribution and 100 perfect unequal distribution)
- Last but not least, and this is very politically incorrect, but that's something you apparently like anyway, so: Americans are fat. 35% of the population are now what is considered "obese". Which, as many studies show, increases medical cost and lowers productivity. Seriously - how can a country be competitive when your population is not?



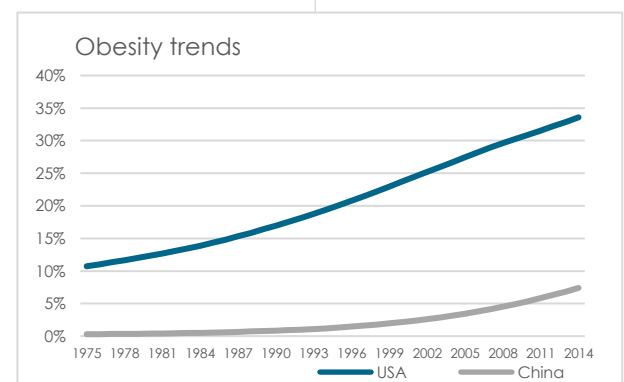
Mortality rate under 5yrs (per 1000)
Data source: World Bank



Homicide rate (per 100'000)
Data source: World Bank



GINI coefficient.
Data source: World Bank



Obesity rates
Data source: World Bank



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