

Facing down decline: Possibilities in historical futurism

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Abstract:

If science fiction is the use of science to imagine our future, then historical futurism is the use of history to imagine our future. This paper examines the possibility of economic and ecological decline in the near future and two cases of decline in Japanese history to suggest possible courses of action for the present. The case of the decline of the classical imperial government demonstrates that catastrophe does not necessarily happen at once. Catastrophe can be a slow moving event that takes decades if not hundreds of years, and ruins the lives of everyone in society. The other case, of hitting ecological limits in feudal Japan, demonstrates that decline can be contained and even managed at a relatively high equilibrium point.

Introduction

Talk of decline is proliferating around us today. Whether it is the decline of American power, or of economic decline, or of ecological crisis, one can find many books and papers on this topic. What I propose here is that once we accept that decline is actually happening we learn from the past to correct our present course and chart a future that is not catastrophic. Since I am a specialist in Japanese history, I will examine the Japanese past for clues on dealing with decline.

Declines

But first let me try, briefly, to bring some evidence that decline is happening. First let me address American power, otherwise called the American empire. Here I will point out that every single great power in history has risen and then declined. We are not an exception. Paul Kennedy's classic, *The Rise and Fall of Great Powers* (1987), alluded to this and he cites imperial overstretch as the main cause of the decline of great powers. Today with a military budget of over \$600 billion per year, plus other hidden costs, our military overstretch is clearly crushing the American budget. Chalmers Johnson has written a tetralogy, *Blowback*, *Sorrows of Empire*, *Nemesis*, and *Dismantling the Empire*, to examine and critique the costs of the post-world war two American empire.

In terms of economic decline, we know from numerous statistics that the last decade actually saw a decline in real median incomes in the United States. In terms of per capita income of laborers, we hit our peak sometime in the 1970s. Ordinary household incomes only went up because women entered the work force. But beyond this metric of income, there is an even greater threat: Peak Oil. Oil is the backbone of our industrial economy. We also use coal, natural gas, nuclear energy, and renewable energies but the backbone is still oil (in 2009 the United States energy composition was: oil 35%, natural gas 23%, coal 20%, nuclear 8%, renewables 8%; so 78% is fossil fuels).¹ Many non-renewable, finite resources have an extraction pattern discovered by M. King Hubbert. Hubbert was a Texan geologist who worked for Shell oil and realized that individual oil wells first produce a trickle of oil, then ramps up production, and then once it hits a peak slowly begins to lower production until it falls to a trickle, and then finally the oil well is abandoned. Since oil production in America is nothing but the sum of all oil wells in America, he predicted in 1956 that oil production in America will peak in the late 1960s to the early 1970s, and then decline. Now of course, few believed him at the time, but Hubbert was correct, and US oil production hit its peak in 1970 and has since declined relentlessly (with a minor bump from Alaska that Hubbert excluded in his calculations). Since global oil production is nothing but the sum total of all the oil wells in the world, eventually global production of oil will peak and then decline. What is actually scary is that the International Energy Agency (a research agency of 28 oil importing countries) has calculated that we have already hit peak global conventional oil production in 2006. 11 years after Hubbert's prediction of hitting a peak in 1995. We are currently riding on a thin cushion supplied by natural gas and other forms of irregular

¹ United States Department of Energy, U.S. Energy Information Administration, *Annual Energy Review 2009*, pg 75. According to the DoE, the list does not add up to 100% because of rounding errors when making the chart.

oil like tar sands.² Many specialists predict that effective peak energy will arrive in the 2020s or the 2030s. Considering that industrial oil production began in the 1850s, we have probably about another 160 to 200 years of slowly declining (and increasingly expensive) oil supply. As our main source of present energy peaks and then declines we must take action to deal with this, or the unrelenting decline will force our hand in the near future.

Finally the ecological crisis. This one is clear and obvious to individuals living near the arctic or the Pacific islands. Global warming is a real issue. After all, the Northwest passage, long a dream of explorers, is now possible in the summers. Even if deniers claim that it is not caused by human industrial activity, I do not see any reason why we should contribute further to the problem by releasing more greenhouse gases. The consequences are truly catastrophic. As the global climate warms, global sea levels are rising, primarily because warmer water expands. If it continues, then within a century the map of the earth will have to be rewritten since lowlands will be swallowed by the sea.

All three of these things are pointing to the same thing. We must reduce our imperial overstretch, reduce our use of oil, and reduce our production of climate warming pollution. Everything points to a reduction or a decline. It looks as if the then widely reviled prediction in *Limits to Growth* (1972) by the Club of Rome is actually accurate. Because of exponential growth in human population and its attendant problems, all their models predicted that within the 21st century humanity will hit its limit and unless something was done to manage it, there would be a rapid decline in human population thereafter.

So what can we do about decline? First of all I would like to point out that catastrophic decline is not inevitable. People tend to be fascinated by catastrophic decline like the Roman empire or the Maya, but there were successful examples in history that managed decline. One such example that is often staring in people's faces but forgotten is the Eastern Roman empire or otherwise known as the Byzantine empire. In the eastern Mediterranean the Roman empire held on as an urban civilization for another 1000 years. Since I am a historian of Japan let me cite two examples of declines, one more successful than the other.

First case: Decline of the classical imperial government

The first example is the collapse of the *Ritsuryō* state. This state was the Japanese imperial government modeled after Tang China. It was a powerful centralized state that claimed to control all the land and all the people. After confiscating land and control over the people from the aristocracy, the imperial government conducted a census every 6 years, parceled land according to family size to every family, and raised a vast army of conscripts from that census information. This powerful centralized state was able to fight multiple wars in Korea and expand the frontiers of the imperial government in eastern Japan from the 7th to the 10th centuries.

² International Energy Agency, *Annual Statistical Supplement with 2009 Data*, (2010 edition), pg 4. Also International Energy Agency, *World Energy Outlook 2010: Executive Summary*, pg 8.

http://www.worldenergyoutlook.org/docs/weo2010/WEO2010_ES_English.pdf I am not going to get into Peak Oil theory in depth, but one can examine pro-oil industry websites such as the IEA or the peak oil theory websites such as the ASPO (Association for the Study of Peak Oil).

What happened? The thing that happened or rather did not happen was that the imperial government was unable to fully emasculate the aristocracy. The powerful aristocratic families (and later the powerful Buddhist temples) managed to retain enough land and maintain control over the peasants. After a series of major epidemics (probably itself an outgrowth from the initial population boom generated by the expansion of agriculture), there was too much uncultivated land. So the government allowed private ownership of devastated fields that were reclaimed or of newly opened fields. Now of course, only the aristocrats and the great temples had the economic means to reclaim or open new fields because rice paddies require huge initial investment. So once the aristocrats and temples were allowed to amass these private estates, they began to amass even more. Since aristocrats served in the imperial government, they in turn turned these private estates into tax-free estates. At that point, aristocrats and temples could bargain with ordinary farmers. “If you come to cultivate our fields, you don’t have to pay taxes or serve in the military and I’ll make sure your rent is below the taxes you would have paid.” Once this becomes known, farmers began to desert the public fields with the higher taxes and military service, and become peasants in the private estates. And thus the imperial government loses more people and more public fields lie fallow, and with less people the conscript military runs short of recruits.

What should the imperial government do? Until the 800s, emperors tried to deal with this by limiting, as much as they could, the expansion of private estates. Emperor Kammu (781-806) changed the conscript military into a volunteer force. Interestingly, the minor aristocrats tended to push for these reforms to rehabilitate the *Ritsuryō* state, while the major aristocrats tended to like the transition to privatization. Since the imperial family tended to marry women from the wealthiest and most powerful aristocratic family, the Fujiwara, the attempts to rehabilitate the imperial state was doomed. By the early 900s the imperial family itself abandoned the *Ritsuryō* state and began to amass private estates.

So let’s look at the process in detail. First, as people enrolled in the census declined, the military began to lose effectiveness. Without an effective conscript or volunteer force, the imperial government lost control over the provinces. Provincial governors were thus given increasingly wider latitude in handling troubles. Since these governorships were appointed by the major aristocrats, many governorships became in effect dynastic positions. Finally, the center lost all interest in administrating the provinces and told these provincial governors to only collect taxes and rents and send them to the capital. Once this change happened, the whole point of becoming a governor turned into collecting more from the people than sending to the capital, and naturally the locals resisted the governors collecting excessive taxes and rents. So if the farmers thought that they could get by with lower rents if they became peasants, it turns out that later on the rents might be raised unilaterally without any recourse. Not surprisingly, revolts and rebellions began to pop up throughout Japan. Those with even some means began to arm themselves for self-defense, but this further increased banditry and lawlessness. To resolve the increasing chaos, the imperial government handed the provincial governors the right to raise armies in 881. It was these guys who were fighting in the countryside that would eventually become the rank and file samurai. This overall decline in peace and prosperity was catastrophic, and that catastrophe took place over two hundred years.

In 902 the last census and redistribution of land was held. After this point, private estates became the norm. The imperial family itself amassed its own private estate, thus negating the basic principle that all lands and all people are under the control of the imperial government. As land became privatized, government offices became privatized as well and aristocrats began to hold hereditary office. The aristocrats in the capital were insulated from the chaos going on in the countryside, and with the wealth they received, they created the first flowering of Japanese culture, things like the *Tale of Genji* and the *Pillow Book*.

This system of paying off the governors to keep the wealth flowing and the chaos away lasted for about 250 years. But in the end, as the situation for those below got desperate, change would come. First, Taira no Kiyomori, a samurai leader, lead a coup and took over the imperial government after 1167. The Taira clan only enriched fellow Taira samurai. Then Minamoto no Yoritomo, emerged to overthrow the Taira dictatorship and created the Kamakura shogunate in 1192. This shogunate was an alliance of major eastern samurai families and it firmly established samurai rights over the lands they inhabited. Finally when the former emperor Gotoba tried to topple the shogunate in 1221 and regain power for the imperial family and the aristocrats, the Kamakura shogunate crushed the rebellion and confiscated all the private estates of the imperial family and the great aristocrats and redistributed them to the samurai. This was the final revolution that ended the long decline of the Ritsuryō state.

So from the perspective of the imperial government this was a self-inflicted collapse. The elites, the major aristocrats and eventually the imperial family, chose to focus on the short term rewards and neglected the long term needs of the government. As a consequence, the government had to shrink. As it shrank, more wealth was privatized enriching the elites. This new system did last for about 250 years. But it came at a very high cost. Even if the elites were prosperous, the vast majority of the populace experienced continuous turmoil.

To this author, this situation reminds me of the great privatization that is going on in this country currently and the stripping or weakening of the public sector. The major corporations of today seem to be acting like the great aristocrats of yesterday. While it may prove profitable in the short run, I do not think this bodes well for the body politic as a whole.

Now, what where the consequences of this transition from public lands to private estates? Positive consequences first, the aggressive wars fought by the imperial government came to an end. Perhaps as a consequence of that, or perhaps because Japan was just lucky, there was little need to worry about invasions from the outside. Another positive consequence was that once the transition was made, the aristocratic families generally got along. After all they had their private wealth and past precedence settled most disputes. It was these aristocrats that created the first flowering of Japanese culture. And at the beginning the rent was probably lower for peasants. Here are the negative consequences. The aristocrats may have enjoyed their life, but the geographical size of the capital shrank in half. The capital may have been relatively peaceful and there may have been no foreign wars or invasions, but the countryside was mired in banditry, revolts, and general collapse of order. Rent may have been lower initially but later on, there was nothing to prevent it from going as high as it could. And of course, although the new system may have propped up the aristocrats and the imperial family for 250

years, in the end it all came crashing down with them losing everything in 1221, and they would live in relative poverty for the next 650 years.

Second case: Hitting ecological limits in feudal Japan

Next we examine the second example of decline in Japanese history. The second decline took place during the Edo period (1603-1868) without causing a political collapse. It was not as bad a failure as the first example, but it is also not a successful management of decline either. This example is of muddling through economic and environmental crises that hit the Japan hard in the 18th century. Ever since the 1300s the Japanese economy had been expanding. After the Kamakura (1192-1333) period when land was no longer divided into tiny plots, samurai fought over land and daimyō (feudal lords) emerged. Competing against each other, many of these feudal lords began to realize that military power comes from increased productive capacity. Thus some daimyō began various river control projects and land reclamation projects inside their domain. Of course warfare hindered major projects, so it was not until Japan was united in 1591 that the “peace dividend” could be collected. (The Edo shogunate was founded in 1603, after one decisive battle in 1600.)

Some numbers:

The largest alluvial plain in Japan is the Kantō plain. The arable land in Kantō increased dramatically

| | |
|------|---|
| 930 | 862,000 chō (equivalent to 1 hectare = 100m x 100m or 2.45 acres) |
| 1450 | 946,000 chō |
| 1600 | 1,635,000 chō |
| 1720 | 2,970,000 chō |
| 1847 | 3,050,000 chō |

Number of major civil engineering projects

| | |
|-----------|---|
| 1467-1595 | 14 in 129 years or once every 9 years |
| 1596-1672 | 42 in 77 years or almost twice every year |
| 1673-1745 | 55 in 150 years or once every 3 years |
| 1746-1867 | 26 in 122 years or once every 5 years |

Estimated population

| | | |
|-------|---------------------------|---|
| 1600s | ca15 million | |
| 1650s | ca17.5 million | |
| 1721 | ca31.3 million | 26.1 million commoners + samurai and others |
| 1792 | ca29.9 million | 24.9 million commoners + samurai and others |
| 1846 | ca32.3 million | 26.9 million commoners + samurai and others |
| 1870 | 32.8 million ³ | |

³ The above information is mostly based on Kitō Hiroshi, *Jinkō kara yomu Nihon no rekishi* (Kōdansha: Tokyo, 2000) and Hayami Akira, *Rekishi jinkōgaku de nita Nihon* (Bungei shunjū: Tokyo, 2001).

Notice the spikes in the number of engineering projects, the expansion of arable land, and the rise in population in the first phase from the 1590s to the 1720s. This was a virtuous cycle. More projects → More lands → More foods → More people → More projects. Why then does that expansion stop? The seemingly obvious reason is that Japan ran out of cultivatable land. Once land available for cultivation became scarce, the amount of food that could be gotten from the land ceased to grow, and as such the population had to stabilize.

Was this recognized? It turns out that the shogunate first realized that the engineering projects had run rampant when in 1635 the lord of Owari domain proclaimed that even criminals could come to the newly opened fields and gain land, no questions asked. There were too many fields and not enough people by then. By 1666 so many flash floods had occurred throughout Japan from overdevelopment, the shogunate issued the first edit to curb unsustainable development. The Shokoku yamakawa okite (edict on mountains and rivers of provinces)

- 1) banned new development that digs up the roots of trees and grass
- 2) ordered to plant new trees to prevent the run off of soil and stones, if there are no trees upstream in a river
- 3) banned cultivation and the planting of bamboo shrubs and building of mounds next to rivers, in order to keep open space next to the rivers (to absorb excess rain water). Also banned slash and burn agriculture done in the mountains

This was the beginning of the end of massive construction projects.

But was this the reality? Did Japan as a whole stabilize with a minor decline of 1.4 million (out of a total population of around 31.3 million, a 4.5% decline)? When examined in detail, the reality for the people on the ground was grimmer. Looking at the country as a whole masks the regional disparity inside Japan. Even if the overall decline was 4.5%, there were provinces where the population actually increased, mainly in western Japan. This meant that there were provinces where the population declined tremendously, mainly in eastern Japan. From 1721 to 1846, the population of Japan as a whole increased by 1 million. Yet in the same time period, 3 provinces in the Kantō plan (Kōzuke, Shimotsuke, Hitachi) lost a stunning 20% of their population. 9 more provinces, mostly in eastern Japan and near Osaka and Kyoto lost over 10% of their population. (18 provinces in western Japan and on the Japan Sea coast, had over 20% rise in population.)

Why did this massive disparity take place? There is no single reason. Many factors explain this disparity. First of all, eastern Japan got hit harder by climate change. The 18th century is known as a mini-ice age. Thus with an overall colder weather and two volcanic eruptions that exacerbated the situation in eastern Japan, the famines hit the domains of eastern Japan particularly hard. Then there was economic mismanagement. Generally speaking, domains of western Japan made a transition to a commercial economy relatively early, and thus domain finances while suffering, did not get clobbered as much as the domain finances of eastern Japanese domains. In eastern Japan, to cover rising costs but plummeting incomes, the domains tended to raise taxes on the peasants. Here we actually see the Laffer curve in action. Once people in eastern Japan were taxed

at crazy rates of 60-80% of their rice yields, people in eastern Japan fled the domains and flocked to the cities as migrants. This in turn furthered the problem because the countryside lost population through migration and cities in pre-modern times had a higher death rate than a birth rate. Meaning, cities required rural population inflow to sustain itself. Thus Edo remained a massive city of over 1 million, but it came at the very high cost of population decline in the surrounding countryside. In contrast, the major cities of Western Japan recorded population declines (because fewer people moved to the cities) but the overall population of Western Japan where people stayed in the healthier countryside went up.

In summary one could argue that it was the role of local governments in response to the famines that determined the demographics in eastern and western Japan. The Edo shogunate faced an ecological crisis. Was the national government successful in resolving it? The answer is “no.” For example when famines struck eastern Japan, the shogunate issued orders not to hoard food and to release it, so that the harder hit domains could get in flows from the less harder hit domains. But overall, those domains ignored the shogunal order and each domain tried to fend for itself. Considering that the general principle was for the shogunate to not interfere in the internal affairs of the domains, it is not surprising that desperate domains ignored the order. Thus there is only so much one could blame the shogunate. Under the circumstances, the best we can say is that the shogunate and the domains muddled through. In western Japan where domain governments were in a slightly better position, they managed to not destroy their economic base. They did not increase taxes on the peasantry and instead tapped the new found wealth to be gained from commerce. That is an accomplishment by itself. In eastern Japan where the domain governments had less commercial wealth to tap into, they were forced to tax the peasantry harder, and that destroyed their own economic base leaving many peasants and samurai desperately poor. The solution in domains where they recovered from the collapsing population first, was for domains to borrow from the rich merchants, while lowering taxes on peasants. Once this was done, and it was seen that the domain government would protect peasants even in times of famine (by lowering taxes and opening gruel kitchens), peasants returned to the land and production of food slowly rose. The total population of Japan balanced out because the amount of food to be got remained the same. But it does not mean everyone benefits or suffers equally.

Conclusion

What then are the lessons for today? I chose these two examples from Japanese history because we are facing two threats of decline. One is the threat of imperial overstretch. This is a decline that we can change relatively easily by changing our current political and military trajectory. The decline of the *Ritsuryō* state is a prime example of how political elites drawn to short term gains could destroy the economy they depend on. Changing course is not easy, especially when the leading members of society benefit from it, but I believe that our society’s elites have not been fully captured by the benefits resulting from imperial overstretch. The other comes from the hard limits of ecology. Clearly the Edo case was an ecological crisis. This threat I believe is harder to overcome. Our entire society is beholden to cheap abundant energy (primarily in the form of fossil fuels, particularly oil). Yet as the Edo case demonstrates, overall it is possible to achieve equilibrium at a high level. While some parts may suffer, it may even

be possible for some parts to prosper. Human agency does matter. Thus it is important not to be despondent and actually engage in activities that would lead us to this ecological equilibrium.

First lesson, then, is that the elites must recognize their long term interests and not be focused on the short term gains. Second lesson, once the ecological limits are noticeable, a general acknowledgement of the issues is necessary and a quick transition to pull back from the brink is desirable. Third lesson trust local authorities (from the global perspective, nation-states) to change course and react according to events, do not put too much faith in a global solution. Once the problem is identified, a uniform solution is probably not going to work. When local authorities fail in their task, of providing adequate living standards, the people must be free to move to different locations, this is the only thing that will force local authorities to do what is correct in the long term.

I used the phrase “historical futurism” because if as is often said, history is useful so that we don’t repeat the past, then we must use history to chart possible futures from our collective pasts and actively try not to repeat our mistakes. Science fiction is the use of science to imagine our future. Historical futurism is the use of history to imagine our future.