



Possible Responses to Peak Oil: Some Lessons from the Past

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This is a guest post by Dr. Joerg Friedrichs, University Lecturer in Politics, University of Oxford.

In a recent article (found [here](#) (PDF) and [at Science Direct](#)), I have investigated how different societies have responded to sharp and rapid cutbacks in their energy supplies. These responses may give us some insight into what might happen as our energy supplies shrink in the future.

In the examples I looked at, I found the following results:

[North Korea](#), 1990s: Response was totalitarian retrenchment

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Hypothesis 1: *The shorter and the less a country or society has practiced humanism, pluralism and liberal democracy, the more likely its elites will be willing and able to impose a*

Hypothesis 2: *The shorter and the less a country or society has been exposed to individualism, industrialism and mass consumerism, the more likely there will be a adaptive regression to community-based values and a subsistence lifestyle (as in the case of Cuba).*

Hypothesis 3: *The greater a country's military potential and the stronger the perception that force will be more effective than the free market to protect access to vital resources, the more likely there will be a strategy of predatory militarism (as in the case of Japan).*

In addition to my three cases, I also looked at the [South of the United States](#) after the Civil War, where the abolition of slavery led to sharp economic decline and a full century was needed for recovery. This case seems to suggest a fourth hypothesis in addition to the three hypotheses stated above.

Hypothesis 4: *In the event of peak oil, we should not expect either immediate collapse or a smooth transition. People do not give up their lifestyle easily. We should expect painful adaptation processes that may last for a century or more (as in the case of the US South).*

Based on this, I show how different parts of the world would be likely to react to a peak oil scenario. After discussing what happened in each of my four case studies, in the [final section](#) I extract lessons for the first two decades after peak oil (assuming an annual decline of oil supply in the order of 2-5 %).

A full version of my article, complete with detailed references to the relevant literature, is published by the journal [Energy Policy](#) under the title "[Global energy crunch: how different parts of the world would react to a peak oil scenario](#)". The [pre-print version](#) is freely accessible.

1. North Korea, 1990s: totalitarian retrenchment

My first case study is North Korea, where something comparable to peak oil happened in fast motion in the 1990s. After the demise of the Soviet Union, there was a massive loss of subsidized oil deliveries. The availability of oil went down by more than 50% within a couple of years after the end of the Cold War. North Korea reacted by a totalitarian retrenchment to maintain elite privileges, irrespective of the cost to the people. The military and state apparatus were kept intact, while industry and agriculture were crumbling in the absence of fuel and fertilizers. This culminated in a terrible famine between 1995 and 1998 that led to the starvation of 600,000 to 1 Million people, or 3 to 5% of the North Korean population. The international community was eventually forced to step in with food aid, thereby unintentionally stabilizing the regime. From the cynical viewpoint of the North Korean regime it all worked out handsomely. While life for North Koreans is more solitary, brutish and nasty than ever, Kim Jong-il and his cronies have managed to stay in power thanks to brutal repression and nuclear blackmail.

2. Cuba, 1990s: mobilization of local resilience

In the 1990s, Cuba faced a similar shock to North Korea. Subsidized oil deliveries from the Soviet Bloc were stopped, but the country could not afford buying an equivalent amount of oil on the world market. As a consequence, access to oil also fell by more than 50%. Cuba is seen by many observers as a Stalinist regime similar to North Korea. However there is an important difference. While Pyongyang relies on the atomization of society for political control, Havana on the contrary relies on grassroots organizations at the neighbourhood level. Ever since 1959, the Cuban regime

has heavily invested in social cohesion. This was done for the sake of social control rather than empowerment, and ordinary Cubans were not consulted. Nevertheless, the accumulated social capital could be mobilized to weather the “special period” after the loss of Soviet subsidies. People helped each other at the neighbourhood level, and the wastelands of Havana and other cities were utilized for urban gardening. Unlike North Korea, Cuba did therefore not experience mass starvation despite considerable hardship in the so-called “special period”.

3. Japan, 1940: predatory militarism

My third case is imperial Japan on the brink of the Pacific War (1941-1945). Since the world economic crisis of 1929, Tokyo was committed to a strategy of military expansion into China. The objective was to construct a geo-economic bloc in which Japan could sustain itself as a great power. However, oil was Nippon’s Achilles heel. Japan was almost completely dependent on oil deliveries from California. The only alternative to importing oil from the United States was looting it from the Dutch East Indies and British Borneo. In anticipation of a US oil embargo, Tokyo radicalized its strategy of military predation and decided to attack the East Indies where there were abundant oil resources. To secure its flank and pre-empt a strike by the US Pacific Fleet, Japan famously attacked Pearl Harbor in 1941.

For the sake of maximum clarity, let me summarize the cases discussed so far in a table:

Country	Timing	Challenge	Reaction
North Korea	1990s	Loss of access to subsidized oil	Totalitarian retrenchment
Cuba	1990s	Loss of access to subsidized oil	Mobilization of local resilience
Japan	1929-1945	Dependency on imported oil	Predatory militarism

The case studies seem to suggest that countries prone to military solutions may follow a Japanese-style strategy of predatory militarism. Countries with a strong authoritarian tradition may follow a North Korean path of totalitarian retrenchment. Countries with a strong community ethos may embark on a Cuban-style mobilization of local resilience, relying on their people to mitigate the effects of peak oil.

4. The South of the United States after the Civil War

After the Civil War (1861-5), the challenge for the former Confederate States of America was to abandon the slave economy and embark on radical socioeconomic change. This happened under the most favourable conditions. Southerners only had to look north to see industrial capitalism unfolding. They were operating in the same national economy, and the transfer of technology was no serious obstacle. Given the right incentives, it would not have been difficult to attract financial capital from the North. So Dixieland is the “most likely case” where we would expect to see smooth and successful adaptation. But alas, the historical record shows slow and painful adaptation: economically well into the 1950s/60s, politically at least until the *Civil Rights Act of 1964*, and socially in part until the present day.

Dixieland is a cautionary tale for those who predict a smooth transition to a post-oil or even post-fossil world. If it took the South of the United States a full century to fully adopt an industrial upgrade, how much harder will it be for highly industrial countries to accept a de-industrial

downgrade? In fact, an easy upgrade from oil to some superior resource does not appear to be in sight. Time is a serious issue. Oil exploration and exploitation takes considerable time. The invention and implementation of new technologies takes even more time. What takes most time of all, is socioeconomic adaptation and the formation of “new consciousness”. This can be gleaned from the painful adaptation in Dixieland.

5. Peak oil futures

My first case studies suggest different likely reactions to a global peak in oil production. There are other possible reactions, such as the mobilization of national sentiment by populist regimes. However, only for the scenarios depicted in my case studies could I easily identify historical precedents. It is possible to harness the knowledge gained from the case studies to develop plausible future scenarios.

The most obvious candidate for a Japanese-style strategy of military predation is the United States. There may be a point when the US will prefer the military stick to diplomatic skirmishes with people like Iran’s Ahmadinejad or Venezuela’s Chavez. Iraq’s Saddam Hussein has already experienced this. Other likely candidates for a military strategy are, although to a lesser extent, China and India. They do not have the ability to project power globally, but they may be tempted to scramble for oil in Central Asia.

North-Korean style totalitarian retrenchment is extremely repulsive to imagine, but we should not forget that even democracies may degenerate into autocracies. Remember Germany, 1933-45? Political elites are sometimes willing to “screw” their populations in order to preserve their own privileges. The ruling elites of certain petro-states, for example in Latin America and Africa, could be among them. There are many countries with an authoritarian or totalitarian past that might be recovered.

Cuban-style mobilization of local resilience is more appealing than totalitarian retrenchment. It may happen in places where industrialization has not yet eclipsed the traditional community ethos. Poor developing countries are more likely candidates for this than rich Western societies where individualism and mass consumerism have deep roots. Highly overpopulated areas may not be able to feed themselves in the absence of fertilizers and food aid, but other poor communities may become self-reliant.

Europe and Japan would be in a quandary because a strategy of rearmament and military predation would not be acceptable to citizens in the decisive phase of geopolitical positioning. Totalitarian retrenchment is hard to imagine because humanism, pluralism and liberalism are deeply rooted in these countries. And a smooth regression to a community-based lifestyle is also hard to imagine because societies in Europe and Japan have long been exposed to individualism, industrialism and mass consumerism. Europe and Japan have accumulated enormous wealth, but it is unclear how much this would help in adapting to peak oil (remember that we are assuming 2-5% decline of oil production every year).

Of course there would also be winners. Thus, oil producing countries in the Middle East are likely to prosper after peak oil. In some cases, ordinary people in these countries may benefit. We may imagine a certain inter-Arab solidarity, with migration flows redirected from an impoverishing Europe to an industrializing Muslim world. Russian elites could also afford distributing the gains from soaring oil prices more equitably. In other petro-states, from Latin America to sub-Saharan Africa, elites would be less likely to distribute a significant part of the national energy wealth to their populations.

Despite the difficulties, coal would become a more important energy source regardless of possible harmful consequences for the climate. This would particularly apply to Asia and Australasia, but also to the United States. By the same token available oil reserves (including “unconventional oil” from oil sands and oil shale) would be exploited regardless of the environmental consequences. There would be further investment in nuclear reactors, as well as relatively expensive forms of renewable energy. However, such investment would be seriously limited by the constraints imposed by economic turmoil.

6. Further readings

Detailed references to the relevant literature are found in the full academic [version](#) of this research; [pre-print version](#). So I list just a few titles about my case studies here.

An excellent article on the crisis in North Korea is James H. Williams, David Von Hippel and Nautilus Team (2002) Fuel and famine: rural energy crisis in the DPRK, *Asian Perspective* 26 (1): 111-140. A free electronic version is available [here](#).

On local resilience in Cuba I recommend Henry Louis Taylor (2009) [*Inside el Barrio: A Bottom-Up View of Neighbourhood Life in Castro's Cuba*](#), Sterling, VA: Kumarian Press. There is an extensive literature on urban gardening, but you can simply watch [The Power of Community: How Cuba Survived Peak Oil](#).

For the Japanese case, see Michael A. Barnhart (1987) [*Japan Prepares for Total War: The Search for Economic Security, 1919-1941*](#), Ithaca, N.Y.: Cornell University Press. Or download Jeffrey Record (2009) [*Japan's Decision for War in 1941: Some Enduring Lessons*](#), Carlisle, PA: Strategic Studies Institute.

On the impact of the abolition of slavery on the South of the United States, see Gavin Wright (2006) [*Slavery and American Economic Development*](#), Baton Rouge: Louisiana State University Press; and Michael W. Fitzgerald (2007) [*Splendid Failure: Postwar Reconstruction in the American South*](#), Chicago: Dee.



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