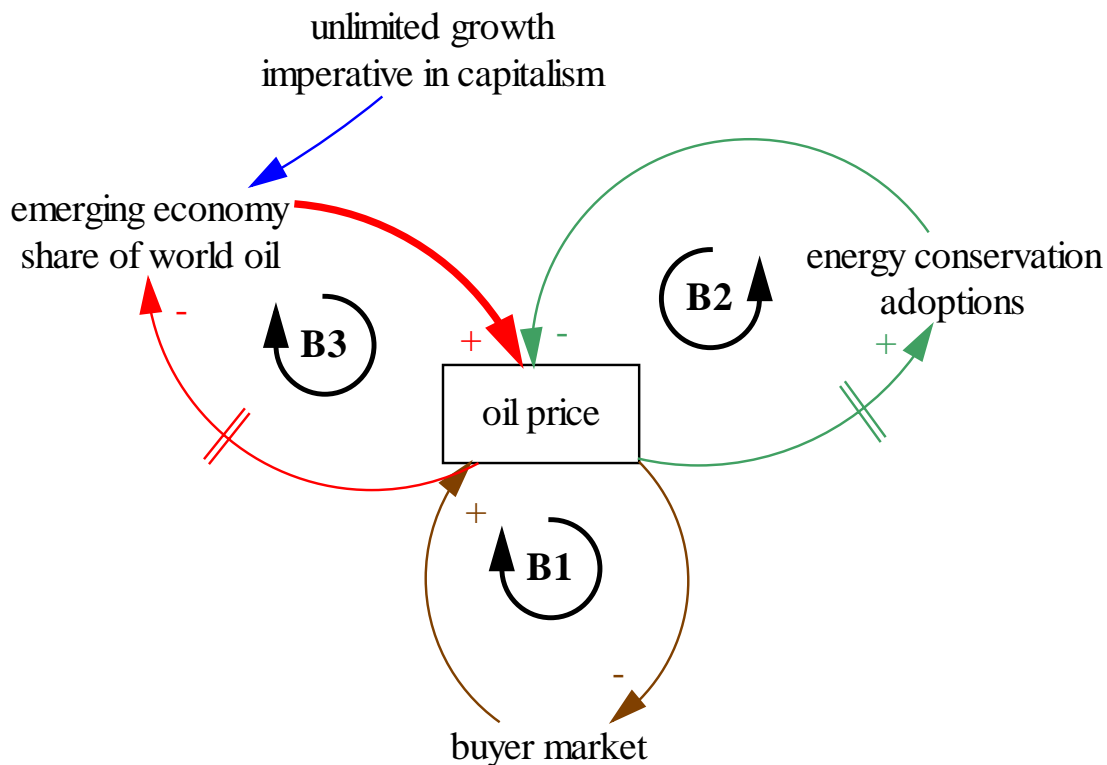


**Geopolitical Feedback Structure of Declining Oil Production:
Analysis of Feedback Effects on Short to Medium Term Oil Prices
After Peak Oil**

- Karl North

Negative feedbacks



What follows is a verbal description of how global trends in key variables are liable to create a 'disorderly oil market' as the oil era ends. It is intended to complement the graphic explanation of feedback shown above. Given the fragility of social and economic structures that emerged in the era of cheap oil where spatial distance of material and labor resources, production facilities and markets has been no inconvenience, perhaps the strongest feedback effect exerting short term downward pressure on oil prices is the specter of a widespread economic depression triggered by a chain reaction of non-performing mortgage and other debt leading to bank and insurance industry collapse, etc., as the *distance economy* becomes increasingly costly and eventually unaffordable. This is the wild card that I did not represent in the feedback diagram, not because it is unlikely, but because its tipping point is much harder to estimate: when it might kick in and possibly overwhelm the other feedbacks. By contrast, the feedbacks described and diagrammed here *can be expected to occur* in the short to medium term. However, the oil price 'disorder' that these feedbacks will generate only puts off the arrival in the longer term of a lower energy civilization (here assumed to be inevitable), with the catastrophic changes that implies. In the relatively short run these could include severe suffering,

particularly for non-peasant populations heavily dependent on the distance economy of the industrialized world. But in the longer run they also include major benefits: a return to a more sustainable pattern of resource use, healthier lifestyles as people are released from the propaganda grip of the consumer economy, and liberation from wage slavery and the constant damage to quality of life from distant decision makers as the power of monopoly capital over the decisions that affect our lives goes into decline. Here is how the feedbacks work:

A shrinking buyer market

This is the 'isolated islands of prosperity' scenario: more and more of the global majority is priced out of the market for all products affected by rising oil price. This is happening already to many populations of the global south. But a shrinking buyer market eventually puts downward pressure on oil price, at least for a while, as in the feedback loop **B1**. Depending on the comparative strength of this feedback loop, it will manifest as either a brake or temporary reversal of the generally upward trend in the global oil price.

Energy Conservation Adoptions

Existing technology can rapidly reduce fossil fuel use, notably in transport and heating, particularly in the US, where such changes will be most affordable, at least in the short term. For example, an expected response in the automotive market to rising motor fuel costs will be an eventual rise in fuel efficiency. When the average US car gets 40 mpg it will more than halve the current U.S. need for automotive fuel and depress oil prices significantly for a while, as in feedback loop **B2**. More than the shrinking buyer market, this feedback loop involves significant delays (marked in the diagram), as consumers react slowly to rising prices in the affected oil products. If delays are too long, however, both consumers and producers become caught in a poverty trap that closes off the window of opportunity to adopt energy conservation technologies. The way this works is that rising oil prices render unaffordable the technologies, whose production still depends on fossil fuel use.

The momentum of economic growth in the global capitalist economy

Analysis of the political economy of capitalism has long demonstrated that its characteristic structure and decision rules generate an historically typical behavior: a drive for unlimited growth, provoked in turn by the need to accumulate capital to compete in a global economy shaped by unrestrained use of private capital. In the era after peak oil, this drive will manifest itself where opportunity offers, e.g., in emerging economies with access to masses of cheap labor, like China and India, and to a lesser extent everywhere that lucrative investment opportunity emerges. In the short to medium term this includes such fuel use as caused by a continuing trend toward exurbanization in developed economies. Eventually rising oil price will put an end to unlimited growth, which will then depress oil price, as in feedback loop **B3**. But due to delays in stemming the growth drive, the loop will be weak in the short term. In that period the momentum of the growth habit of capitalism will act to push oil prices higher.

Conclusion

The timing and time span of the feedbacks described above is impossible to predict due to their interaction (that is, which loops become dominant when) and to the likelihood of unpredictable triggering events such as the likely global economic depression. Some of the positive feedbacks illustrated in the diagram below complicate the picture even more, and would require more analysis. Thus the disorderliness of oil prices in the short and possibly medium term (20 year time horizon), and the damping effects of the feedbacks on oil price rise at times during the period, are the only predictions possible from this analysis.

