Health, Wealth and the Price of Oil

Santé, richesse et prix du pétrole

ROBERT G. EVANS, PhD
Faculty, Centre for Health Services and Policy Research
University of British Columbia
Vancouver, BC

Abstract

The correlation between health and wealth is arguably a very solidly established relationship. Yet that relationship may be reversing. Falling oil prices have raised (average) per capita incomes, worldwide. But from a long-run perspective they are a public health disaster. The latter is easy to see: low oil reduces the incentive to develop alternative energy sources and "bend the curve" of global warming. Their principal impact on incomes has been redistributional – Alberta and Russia lose, Ontario and Germany gain, etc. Zero net gain. But the price has fallen because technical progress in extracting American shale oil has forced the Saudis' hand. These efficiencies have real benefits for (average) incomes, but costs for long-run health. A compensating carbon tax is an obvious response.

Résumé

La forte corrélation entre santé et richesse est clairement établie. Toutefois, cette relation pourrait s'inverser. La chute des prix du pétrole a fait monter (en moyenne) les revenus par habitant, dans le monde entier. Mais à plus long terme, cela représente un désastre en matière de santé publique. Cela est facile à voir : un pétrole abordable amenuise la volonté de développer d'autres sources d'énergie et fait « fléchir la courbe » du réchauffement climatique. Le principal impact des bas prix est une redistribution : l'Alberta et la Russie perdent, l'Ontario et l'Allemagne gagnent, etc. Le gain net est égal à zéro. En fait, les prix ont diminué à cause des progrès techniques de l'extraction du pétrole de schiste américain, ce qui a forcé la main de l'Arabie saoudite. Ces rendements opératoires sont avantageux pour les revenus (moyens), mais ils hypothèquent la santé à plus long terme. Le besoin d'une taxe carbone compensatoire semble évident.

Wealthier Is Healthier, Mostly

The correlation between health and wealth is arguably the most solidly established relationship we have in the study of the determinants of health. Countries with higher levels of gross domestic product (GDP) per capita tend to rank higher on various measures of health status, primarily life expectancy, but also (when available) morbidity and (with some interesting anomalies) self-reported health status. And within countries, people higher up on the socio-economic scale live longer, on average, and suffer less illness and disability while doing so. All long known and extensively documented. Richer is not only better, but also healthier.

Like all generalizations, this one is false-ish. Detailed examination yields all sorts of qualifications, exceptions and anomalies. There are diminishing health returns to wealth; when we look across countries, the relationship flattens out among high-income countries. On the other hand, within societies the relationship seems to hold all the way up the socio-economic spectrum. It also makes a difference how the aggregate national income is distributed, and how it is used. Recent US data, for example, show that over the long term there have been very large gains in life expectancy at the top end of the income distribution, but hardly any at the bottom. Health improvements, or at least gains in life years, are thus following the trends in income growth – big at the top, minimal at the bottom. Again, richer is better, even if a rising tide does not lift all boats. (In the US, at least, those on the bottom stay there.)

But This Time Is Different, Unless …

The details of the health–wealth relationship are endlessly fascinating and offer hours, years and even careers of harmless fun for health researchers. (Believe it!) Yet very recently – indeed, in little more than a year – a remarkable concatenation of technological and political forces has emerged that threatens to reverse this relationship on a very large scale. We are offered a significant short-term increase in average per capita world incomes, in return for an indeterminately large long-run reduction in health. Fortunately, there are well understood and readily available policy levers that could permit us to avert or at least mitigate the threat to health while capturing the economic gains. Unfortunately, a combination of conflicting economic interests and deep ideological convictions may place the obvious policies out of reach. At best, these forces are likely to delay implementation for a long time while health and other damages cumulate.

> The oil price plunge is unambiguously good news for the global economy. It transfers trillions of dollars of wealth from oil-exporting countries to oil-consuming countries. Since there are a lot more of the latter, the net effect is positive – even if it causes enormous pain to the likes of Saudi Arabia, Russia, Nigeria and Venezuela. When fuel prices fall, consumers' buying power increases, especially in regions that are clogged with cars, such as Europe and North America; a cheaper fill-up is the equivalent of a tax cut (Reguly 2016a).

Reguly has it right, of course, about the redistribution of wealth. As the price falls, oil producers lose – Alberta, Newfoundland – and consumers gain – Ontario, Quebec. The massive transfer of wealth from west to east is the exact reverse of that which occurred after the OPEC "oil shocks" of 1974 and 1979. At the first shock, the Liberal government of Pierre Trudeau introduced the much reviled National Energy Program (NEP) in a perfectly reasonable attempt to protect Eastern consumers against the rapacity of the oil companies and their Western provincial backers. But the NEP was greeted by a storm of political protest and propaganda from corporate Canada. The NEP threatened the huge windfall profits that OPEC was handing them on a platter: "landlords, like all other men, love to reap where they never sowed" (Adam Smith 1776). Even today the NEP is a dirty phrase in Western Canada, among the many who have no idea what it was all about. But everybody knows that it was *really bad*. (Its chief architect, Ed Clark, left government for a highly successful career as CEO of Canada Trust Financial Services and, later, of TD Canada Trust. (If you can't beat 'em, join 'em.))

These interprovincial or inter-country swings of wealth when oil prices fluctuate simply rob Peter to pay Paul. How do they, on average, benefit or harm the world as a whole? Reguly counts heads. There are many, many more people in consuming countries, so more winners than losers when the price goes down. Falling oil prices are on balance a *good thing*, no matter what they think in Calgary or Venezuela, Texas or Russia.

Not so fast.

Balancing Benefits. Where's the Net Gain?

First, head-counting ignores the severity of the impacts on winners and losers. Prices at the pump may fall in Ontario and Quebec; in Alberta, people lose jobs and houses. Worse, in countries where oil revenues are used to pacify unhappy populations, there may be blood in the streets. Counting heads may be a reasonable start to judging net benefits in a stable society with various forms of interpersonal and inter-regional transfers; elsewhere, matters become more complicated.

But secondly, wealth redistribution, within and across countries, is only part of the story. There is also a net global wealth gain that tends to be obscured by the loud and very real distress of the losers and the mysterious disappearance of trillions of dollars from world financial markets. (Where did they go?)

Technology Matters

Behind the drama, the real cost of obtaining oil has fallen, and fallen a lot. That cost, the notorious opportunity cost (op cost) of the economics classrooms, is the collection of other good things that could have been produced with the enormous amount of human time, energy and skills, and the huge physical and intellectual capital that has to be devoted to the discovery, extraction, transportation, processing and distribution of petroleum products. Insofar as the fall in oil prices corresponds to a significant decline in that op cost, it follows that the world's people are, on average, better off – wealthier. We do not have to work as hard,

collectively, to get the oil we are using, and we have resources to spare to produce other things – or even just more oil. And the op cost has fallen a lot, as a result of major technological advances in the extraction of "unconventional" oil. As always, technological advances are the fundamental basis for increasing wealth.

The oil locked up in American shale has been well known for at least a century, but was not previously economically feasible to extract. Now it is.

"Peak oil" – the point at which the maximum rate of extraction of petroleum is reached (predicted, not so long ago, for 2005) – would otherwise have been reached. Indeed, we may be reaching it for "conventional" sources. With falling global production, and extraction costs rising, the result would have been a global reduction in economic productivity – more time and effort required to get the same output. This didn't happen.

But the Effects Are Indirect

The simple picture of technological progress, lower op cost and increased wealth (on average) is, however, obscured by the large differences in extraction costs in different parts of the industry. In Saudi Arabia and the Persian Gulf, one needs do little more than stick a pipe into the ground. Drilling from platforms in the North Atlantic is vastly more expensive – as is mining and processing bitumen in Alberta. (There is no oil in the deliberately mislabelled "oil sands." Bitumen must be mined and processed, at relatively high economic and environmental cost.) The current world glut of oil is the indirect result of dramatically expanded American production of shale oil cutting into Saudi Arabian world market share (Reguly 2016b). The Saudis reacted, in November 2014, by maintaining their production levels and allowing the price of oil to collapse. The intent was to force out the American shale oil, which, while much cheaper to produce than previously, is still higher in cost than oil from the big Middle Eastern producers.

The Alberta Economy? Collateral Damage

In the process, the Alberta economy has been crushed and investment in new tar sands development has almost ground to a halt. The Harper strategy of betting all of Canada's economic chips on oil has (predictably) collapsed, leaving the new Trudeau government with a very big mess (while the remaining Harperites jeer from the sidelines). "Tighten your belts, Canadians."

But these are merely local concerns. From a global perspective, driving out the high-cost producers (Canada, for example) has both economic and environmental benefits – lower op cost and less greenhouse gas emissions. From a health standpoint, double happiness. Too bad about the distributional effects, but those will all work out – in the long run. (Actually, they won't. The winners and losers do not even out. Let us, like good economists, look this difficulty squarely in the face and move on. That worked for Alberta in 1974.)

So that is all good. The Saudis turn out to be the environmentalists with real muscle. When they say, "Leave the tar in the ground," it is going to stay in the ground, unless and until the price of oil comes up a long way. But there is a catch.

Is It Getting Hotter In Here, Or Is It Just Me?

The planet is still warming up.

Though the timing may be unclear, we know that the era of fossil fuels is going to come to an end, either by their replacement with other energy sources, or by the "radical restructuring" of the human species. Not this August, perhaps, nor this September, but it will happen. And in the meantime, while we or at least the winners are enjoying their increased wealth every time they fill up at the pump, there is an increasing amount of environmental damage that is not being priced.

The real cost of low oil prices is the thus-reduced incentive to develop alternatives. High oil prices were a double-edged sword. While they stimulated the development of high-cost, high-polluting sources of supply, such as the tar sands and deep-water drilling, they also provided a powerful stimulus to the technological advances that we really need for the collection, distribution and storage of alternative energy sources.

Low-cost oil is thus a short-run benefit, but a long-run disaster for human health, a disaster no less real for unfolding very slowly. Whatever gains may flow in the near term from increased wealth, they will eventually be offset by the costs of planetary warming. (How do you measure the health of an extinct species?)

Make Canadian Tax Policy in Canada, Not in Saudi Arabia

But as noted above, there is a solution ready to hand. Reguly (2016a) points to it: "When fuel prices fall … a cheaper fill-up is the equivalent of a tax cut." So reverse the cut.

In effect, the Saudis have brought about a highly selective tax reduction, one that most rewards the heaviest users of oil. This also creates a powerful incentive to increase consumption.

Consumers are responding already. Cheney (2015) points out that regulatory measures forcing vehicle manufacturers to improve fuel efficiency have had considerable success. Just like a fall in fuel prices, this lowers the cost per mile driven. But drivers are responding by buying bigger, more gas-guzzling vehicles:

> The only obstacles that have stood in the way of the SUV's quest for global domination are fuel prices and government legislation. … The consumer preference for ever-larger vehicles is driven by psychology and enabled by clever engineering that lets them drive a vehicle such as the [large, powerful, luxurious] SVR while burning the same amount of fuel that a mid-size car did in the 1990s. "They use the fuel savings to get more car," says industry analyst Dennis DesRosiers. "That's how it works" (Cheney 2015).

Now the Saudi tax cut has dramatically lowered the first obstacle.

Yet surely no government in its right mind would enact such a selective tax cut as deliberate fiscal policy. It does not become any better by virtue of being introduced by Saudi Arabia. The obvious response is to reverse the ill effects by imposing a countervailing

national carbon tax. The revenues could then be used both to support the development of alternative energy sources, and to build a less energy-intensive public (and private) infrastructure. Why not?

You could even sweeten the politics by knocking a bit off the GST or HST.

The need for a carbon tax is so obvious, and the present opportunity is so golden. But years of ideological anti-tax rhetoric stoked by the representatives of the wealthy have clouded the public discourse. To that is added the fierce opposition of the fossil fuel industries and their political representatives. So we are offered ludicrous proposals to continue extracting and burning oil, and then paying to put the carbon back into the ground – "sequestering" CO_2. Seriously?

Professor Pigou to the Rescue?

The carbon tax is in fact an example of a "Pigouvian tax," named for the Cambridge economist Arthur Cecil Pigou. Pigou was a contemporary, colleague and friend of John Maynard Keynes, whose ideas are also undergoing a revival at present. Canada in particular has a new federal government that is struggling with the legacy of a decade of "pre-Keynesian" fiscal policy. But Pigou was arguably even more influential in his own day, at least prior to the Great Depression.

Pigouvian taxes (or subsidies) are rooted in the presumption that a market-based, price-guided system for determining what to produce, how and for whom, had at least the potential to yield the greatest sum of human happiness, given the inherent scarcity of resources and limitations of technology. That story is laid out in every conventional course in intermediate microeconomics. Consumer sovereignty, free markets, competitive private for-profit production – a beautiful, self-regulating system. No Marxists here, though maybe some echoes of Deism and still earlier influences (see, for example, Becker 1932).

Pigou was well aware that price systems in the real world are both incomplete and distorted. In particular, when human activities absorb resources and yield commodities, both of which can carry prices and trade in well-ordered markets, they may also generate externalities or external effects, negative and positive consequences, that are not priced or traded. The result, in a free-market system, is that activities generating negative (positive) externalities will be oversupplied (undersupplied). Pigouvian taxes and subsidies would correct the system of price signals, taxing activities or commodities that generate non-priced costs to others, such as air or water pollution, and subsidizing those that generate non-priced benefits to others, such as having one's children immunized.

Negative externalities do not come much bigger than global warming.

Keynes launched a fundamental challenge to the idea of a self-regulating economic system – a challenge with major, indeed revolutionary, political implications. Pigou by contrast was proposing a comprehensive repair of the price system to reflect more accurately the full costs and benefits of carrying on different economic activities – in principle, a profoundly conservative agenda (until *your* ox is being gored).

The Pigouvian agenda, though not so labelled, actually played an important role in the early efforts by health economists to fit the observed realities of healthcare systems into the received framework of "mainstream" economic theory. Their (our) indifferent success may suggest some limitations of the Pigouvian approach.

But If Improving Market Efficiency Is Not the Real Objective …

Consider, first, tobacco. Smokers generate various forms of negative externalities of stink, butts and other forms of environmental contamination, fire hazard and, notoriously, various forms of cancer risk. There is thus a good Pigouvian case for heavy taxation. But the objectives of tobacco policy go beyond correcting externalities. Tobacco is a toxic, highly addictive substance that is marketed to children. Many, if not most, adult smokers wish they could quit, and many try. Heavy taxation is part of a three-pronged strategy that includes regulation and education, to suppress or at least minimize a noxious activity. Ideally, the industry would be wiped out. The "consumer sovereignty" basis for the Pigouvian tax could hardly be more irrelevant.

A similar confusion of objectives underlay early efforts to interpret public financing for healthcare as a form of Pigouvian subsidy. The public finance literature referred to it as a "merit good," whose private consumption generated benefits for the wider community, although the nature of those benefits tended to be quite fuzzy. The negative externalities associated with communicable disease are easily identified, but one does not respond to an Ebola epidemic with taxes and subsidies. Moreover, communicable disease is fortunately now a minimal part of healthcare activity. How to offer a Pigouvian explanation for public support of the rest?

Moreover, healthcare is not in itself a uniform "good," but is valued for its putative beneficial effects on the user's health. The right care for the present circumstances of a particular patient can be of enormous value, but the wrong care can be at best useless and at worst seriously harmful. This is the justification for the extensive web of professional and public regulation that surrounds modern healthcare systems. A Pigouvian interpretation of a general public subsidy to undifferentiated "healthcare" amounts to staging *Hamlet* without the Prince of Denmark.

Economists (including this one) responded by extending the concept of externalities to include interactions among individual utility functions, interactions that might depend upon the perceived efficacy of the care provided, not just the amounts. But this approach, although it works (I think) in a formal sense, has a distinct whiff of Claudius Ptolemy – too many epicycles. Why not just accept that the objective of public policy in this sector is not to remedy the imperfections of the private market, but to try to provide people with the healthcare they need, to ensure that it proceeds efficiently, and to discourage useless and harmful care. Seems reasonable.

Please, Granddad, Tax the Carbon!

None of which is to argue against carbon taxation. But Cheney's observations above suggest that we are dealing here with something similar to the tobacco case. We are not just trying

to make the private market work more smoothly; we are trying to reduce the production of greenhouse gases. We have to learn, sooner or later, to live without the industry, or else we die with it. The faster we can develop the necessary technology, the better. This will probably require the multipronged approach – taxation, regulation and education – combined with serious stimulus to technological advances. No industry welcomes its own euthanasia – see above under tobacco. But our grandchildren, and certainly our great-grandchildren, will not thank us for spending the Saudi tax cut on bigger and more powerful vehicles. (But hey, what did they ever do for us?)

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