Economics Focus: Fuelling discontent

How much should petrol be taxed?

The tax on petrol varies widely around the developed world. America’s gasoline tax is currently about 40 cents an American gallon, equivalent to 7 pence a litre. Many Americans are calling for it to be cut, as the summer increase in prices begins to make itself felt, and reflecting a more general alarm about the country’s “energy crisis”. In Canada the tax is half as big again as in America; in Australia it is more than double. In Japan and most of Europe, the specific tax on petrol is around five times higher than in America, standing at the equivalent of some 35 pence a litre. At the upper extreme is Britain, where fuel duty (paid in addition to value-added tax) has risen in recent years to a punitive rate of just under 50 pence a litre, seven times the American levy.

You would expect well-designed petrol taxes to vary from country to country, according to national circumstances—but not, on the face of it, by a factor of seven. In America it is taken for granted that Europe’s petrol taxes, let alone Britain’s, are insanely high, and presumably something to do with socialism. In Britain, on the other hand, it is taken for granted that America’s gas tax is insanely low, part of a broader scheme to wreck the planet. Protests in Britain last year showed that petrol tax had finally been raised all the way up to its political ceiling—but nobody expects or even calls for the tax to be cut to the American level.

America and Britain may both be wrong about the gas tax, but it seems unlikely that they can both be right. So how heavily should petrol be taxed? A paper by Ian Parry of Resources for the Future, an environmental think-tank in Washington, DC, looks at the arguments.

The most plausible justification for taxing petrol more highly than other goods is that using the stuff harms the environment and adds to the costs of traffic congestion. This is indeed how Britain’s government defends its policy. But the fact that burning petrol creates these “negative externalities” does not imply, as many seem to think, that no tax on petrol could ever be too high. Economics is precise about the tax that should, in principle, be set to deal with negative externalities: the tax on a litre of fuel should be equal to the harm caused by using a litre of fuel. If the tax is more than that, its costs (which include the inconvenience inflicted on people who would rather have used their cars) will exceed its benefits (including any reduction in congestion and pollution).

The pollution costs of using petrol are of two main kinds: damage to health from breathing in emissions such as carbon monoxide and assorted particulates, and broader damage to the environment through the contribution that burning petrol makes to global warming. Reviewing the literature, Mr Parry notes that most recent studies estimate the health costs of burning petrol at around 10 pence a litre or less. The harm caused by petrol’s contribution to global warming is, for the time being, much more speculative. Recent high-damage scenarios, however, put an upper limit on the cost at about $100 per ton of carbon, equivalent to 5 pence a litre of petrol. Adding these together, you come to an optimal petrol tax of no more than 15 pence a litre.

Jammed

High petrol taxes also help to reduce traffic congestion. However, they are badly designed for that purpose. Curbing the number of car journeys is only one way to reduce congestion. Others include persuading people either to drive outside peak hours or to use routes that carry less traffic. High petrol taxes fail to exploit those additional channels. As a result, Mr Parry finds, the net benefits of a road-specific peak-period fee (the gain of less congestion minus the cost of disrupted travel) would be about three times bigger than a petrol-tax increase calculated to curb congestion by the same amount. Still, if politics or technology rules out congestion-based road-pricing, a second-best case can be made for raising the petrol tax instead. According to Mr Parry, congestion costs in Britain might then justify an additional 10 pence a litre in tax.

This brings you to a total petrol tax of around 25 pence a litre. The pre-tax price of petrol is currently about 20 pence a litre, so this upper-bound estimate of the optimal tax represents a tax rate of well over 100%—a “high tax”, to be sure. Yet Britain’s current rate is roughly double this. On the same basis, of course, America’s rate is far too low (even a lower bound for the optimal rate would be a lot higher than 7 pence a litre).

Britain’s rate, judged according to the environmental and congestion arguments, looks way too high—but plainly the British government has another reason for taxing petrol so heavily. It needs the money to finance its plans for public spending. Politically, raising money through the tax on petrol, protests notwithstanding, has proved easier than it would have been to collect the cash through increases in income tax or in the broadly based value-added tax—or, for that matter, through congestion-based road-pricing (always dismissed as “politically impossible”).

This seems odd. Supposing that actual and projected public spending justified higher taxation, Mr Parry’s analysis strongly suggests that the country would have been better off paying for it through income taxes than through a punitive petrol tax. And the petrol tax is not only wasteful in economic terms, if Mr Parry is right; it is also regressive in its distributional effects, increasing the cost of living for poor car-owning households much more than for their richer counterparts.

At last, Britain has found the political ceiling for the petrol tax. What is remarkable is just how high it proved to be.