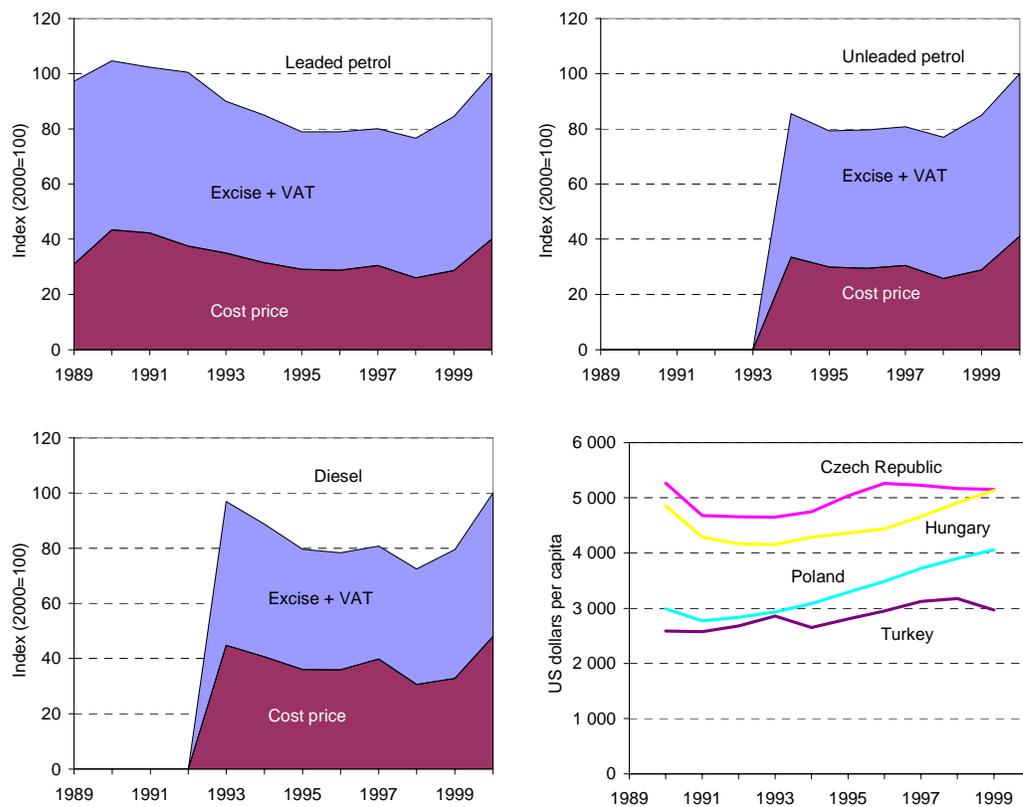


Indicator Fact Sheet

TERM 2002 21 AC – Fuel Prices and Taxes

⊗ The limited data available on average fuel prices in the ACs show that in the Czech Republic, Hungary Poland, and Turkey these are beginning to rise following a slump in prices in the mid to late 1990s. This, together with an increase in disposable income, made road transport less expensive. An expected result of this would have been an increase in personal (car) mobility as well as road freight transport. Since 1998 fuel prices (inflation corrected averages) increased sharply, but are in general still lower than during the early 1990s.

Figure 1: Evolution of the price of fuels Czech Republic, Hungary, Poland, Turkey and GDP per capita (inflation corrected).



Note: The indicator shows the evolution of fuel prices in the four countries as an average over time. Weighted averages are not possible due to the absence of sales figures. GDP is shown for illustrative purposes.

Source: IEA

Results and assessment

Policy relevance:

The transport sector is a significant contributor to pollution and consequentially social and environmental impacts. Fossil fuel consumption results in CO₂, NO_x, HC, NMVOC and noise emissions. In recognition of the significance of these impacts on human health and the natural

environment a number of initiatives exist to reduce fossil fuel consumption and promote a shift towards cleaner fuels in the transport sector.

Initiatives at the EU level include:

- The White Paper 'European transport policy for 2010: time to decide' (European Commission, 2001b). It aims to partially internalise external costs therefore inducing a modal shift; to improve the functioning of the internal market; and to establish more stable retail prices in road transport.
- A Proposal for a Directive on the taxation of energy products (COM(97)30). This proposal contains, inter alia, new EU minimum levels for road fuel taxes. The Proposal dates from March 1997 but has made little progress since then. An agreement is expected by December 2002.
- Other initiatives include the European Commission's Green paper on the security of energy supply (2000). Also the European Climate Change Programme (ECCP) which started in March 2000 and aims to assess and prepare the necessary steps to fulfil the EU's commitments under the Kyoto Protocol.

As part of the accession process candidate countries must comply with EU legislation in force. As such existing EU legislation as well as legislation expected to come into force must be adopted by Accession Countries. This will have a significant impact on transport and environmental policies and should therefore impact upon fuel tax levels. For example leaded petrol should be phased out from the market. The timing of this will however be dependent on the Accession Partnership developed between each AC and the EU.

Policy context:

Fuel prices are determined by a mix of market price and taxes (excise + VAT). The simplest method of influencing fuel price for a government is via taxes. However, there is a relationship between the price set by the producer of a fuel product and the excise duty imposed as demonstrated in the TERM 2002 fact sheet on EU fuel prices and taxes. The UK has the highest excise duty for unleaded and the lowest cost price of EU Member States. Whereas Portugal has the lowest excise duty (with Greece) yet has the highest cost price of all EU Member States. Thus proactive government policy in trying to influence fuel choice can be largely offset by producers adjusting their selling price accordingly.

Environmental context

Fossil fuel consumption is directly linked with CO₂ (the primary greenhouse gas). The link with other pollutant emissions (e.g. NO_x, HC, NMVOC etc) and noise depend also on vehicle technology (Euro and noise classes), trip conditions, apart from the type of fuel. Therefore fuel taxes, originally instruments of fiscal policy, are also seen as instruments to reduce emissions from transport, in particular CO₂. Firstly, fuel taxes stimulate reductions of fuel consumption, e.g. by stimulating fuel efficiency within all modes and stimulating shifts towards less fuel consuming modes. Secondly, they can stimulate a shift towards cleaner fuels, e.g. from leaded towards unleaded petrol, or to low-sulphur fuels (see fact sheet 'Internalisation of external costs').

In the short term the lower cost of diesel contributes to greater environmental impacts particularly in terms of PM₁₀ and NO_x emissions. CO₂ emissions from diesel are some 10 to 20 % lower than for gasoline, whereas particular matter emissions and NO_x are higher. Because of this, the external costs of diesel are in general higher than for gasoline, except for CO₂. However, with the implementation of EURO III and IV emission standards for road vehicles and the fuel sulphur standards the external costs from diesel are likely to decrease. Additionally, greater fuel efficiency and increased use of cleaner fuels in gasoline engines are also expected. Therefore the differences in the external costs and the environmental impacts of the different fuels are expected to equalise as efficiency improvements continue and fuels become cleaner.

Assessment

The indicator illustrates that fuel prices over the 1990s in these countries did not provide an incentive to use alternative transport modes than road. This is particularly evident when the rise in GDP during the same period is taken into account.

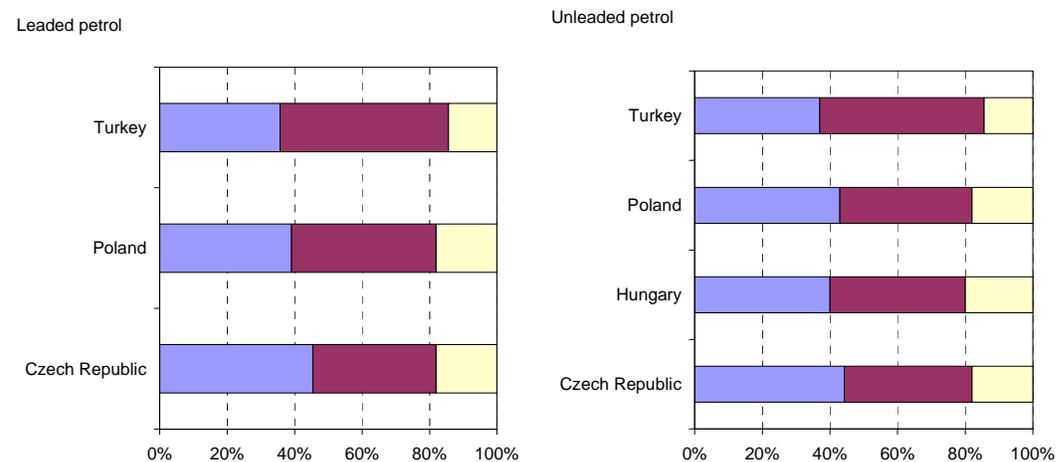
With respect to Turkey the availability and lower cost of leaded gasoline contravenes existing EU legislation as well as contributes to human and environmental health risks.

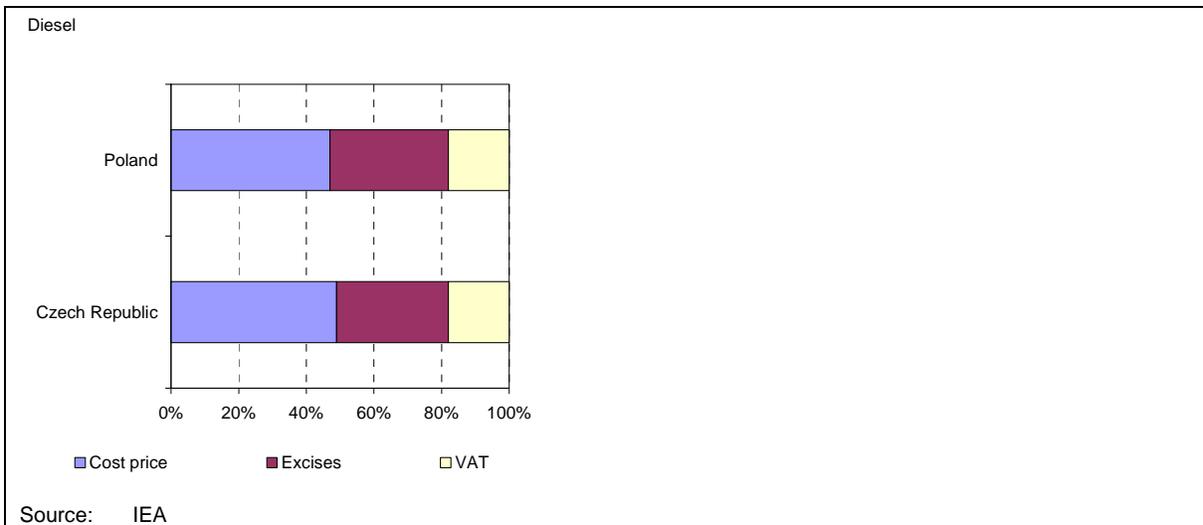
The most significant aspect with respect to this fact sheet is the lack of available data at both a country and regional level. This seriously hinders accurate analysis of the current situation and prevents drawing conclusions of a reasonable nature. This indicator can only be seen as an assessment of four countries, not as a region. Furthermore it is not possible with currently available data to produce weighted averages, as no sales figures are available. It should be expected that both Poland and Turkey would have far greater impact on the regional average than either Hungary or the Czech Republic. Additionally, dynamic changes to the socio-economic and political structure across the AC should be considered when interpreting this indicator.

In order to better understand the significance of the graphs the reader is encouraged to read other TERM fact sheets concerning changes in GDP and disposable income, changes in the number of passenger cars per capita, changes in energy consumption in the transport sector, and more indirectly the split of investments in new infrastructure as opposed to maintenance. Transport energy consumption increased some 15 % over 90-98 for AC 13, with road accounting for 85 % of this. Rail energy consumption decreased some 20 % over the same period (see TERM 2002 01 AC – Energy consumption). Over 93-95, *new* investments in road infrastructure accounted for 51 % of total transport infrastructure investments. Whereas investments in rail accounted for 46 % but in *maintenance* of existing infrastructure (see TERM 2002 19 AC – Investments in infrastructure). And finally car ownership grew 50 % over 90-98 for the AC 13 (TERM 2002 12 AC – Passenger transport demand). Combined with a rise in GDP the overall picture suggests that road transport demand, both passenger and freight was encouraged by lower fuel prices and increased investments in new infrastructure. The energy consumption figures tend to bear this out.

Based on available data the tax base of the different fuels promotes diesel over unleaded in the Czech Republic and Poland. In Turkey, leaded gasoline is available and less expensive than unleaded. For Hungary data is only available for unleaded. The difference in the tax rate between leaded gasoline and unleaded is almost the same. This does not provide a tax-based financial incentive to move towards lead-free gasoline use. In Turkey the price of leaded gasoline is less than unleaded. Diesel is cheaper than unleaded by about 15 % and has a lower tax rate of about 7 %. This promotes the use of diesel over gasoline.

Figure 2: Composition of the market prices (leaded, unleaded and diesel) in the year 2000





References

European Commission, 2001. *European transport policy for 2010: time to decide*. COM (2001) 370. Brussels, Belgium.

European Commission, 1997. *Proposal for a Directive on the Taxation of Energy products*. COM (1997)30. Brussels, Belgium.

European Commission, 2002. *Towards a European strategy for the security of energy supply*. COM (2002) 321

IEA. International Energy Agency – data extracted from EEA's data warehouse.

Meta data

Technical information

1. Data sources: IEA (Prices and Taxes Accessing Countries), extracted from EEA's data warehouse.
2. Description of data: Data available is 1990 to 2000, though varies for countries in the database. Data provided includes cost price, excise duty, VAT, total tax, and sales price.
Original measure units: Local currency and litres.
File: TERM 2002 21 AC – Fuel prices.xls
3. Geographical Coverage: Czech Republic, Hungary, Poland and Turkey
4. Temporal coverage: 1989 to 2000. Variable depending on country and fuel type.
5. Methodology and frequency of data collection: Yearly, methodology of data collection unknown.
6. Methodology of data manipulation, including making 'early estimates': Conversion factors applied: Inflation figures taken from the following sources:
Czech Republic - http://www.czso.cz/cz/cisla/7/mmf/cnb_cpi.xls
Hungary - http://www.siu.edu/~dibo/work/inf_transition.pdf
Turkey - <http://www.die.gov.tr/ENGLISH/SONIST/TUKETICI/cpi0921t5.gif>
Poland - <http://www.stat.gov.pl/english/>

Quality information

7. Strengths and weaknesses (at data level): Data in local currency. Inflation correction needed. Many gaps depending on country and fuel type. For example Bulgaria is also included in the database, but with no data.
8. Reliability, accuracy, robustness, uncertainty (at data level): Information from OECD/IEA and is considered reliable, accurate and robust. Uncertainties relate to currency and inflation variability.
9. Overall scoring (give 1 to 3 points: 1=no major problem, 3=major reservations): 2
Relevancy: 1 – data covers main prices and taxes concerning fuels, if present.
Accuracy: 2 – no reason to suspect accuracy of data, if available. However....
Comparability over time: 2 – significant data gaps regarding countries and fuel types.
Comparability over space: 2 (i.a. due to local currency, gaps, etc.)

Future work

The most significant work required in the future clearly involves greater information gathering to extend the geographic range of this indicator from a small number of countries to the CEEC / AC region as a whole. In doing this a regional picture can be presented and far more appropriate information provided to policy and decision makers regarding transport fuel prices. As it stands the indicator cannot be described as 'regional'.

Also, to promote better comparability between regions (EU – AC) additional data such as sales figures, etc, required. Ideally the same criteria should be used to build the databases in both regions.