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Prices for Petrol and Gasoline: Modelling a Global Phenomenon

Bureau of Infrastructure, Transport and Regional Economics

Prices for Petrol and Gasoline: Modelling a Global Phenomenon

Report 150

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Foreword

This report describes and models the prices of petrol and gasoline in 24 countries around the world.

The models cover prices since 1965. The prices are broken down into components: energy content price, excise taxes, value added tax (goods and services tax), and other taxes (Provincial, State and other taxes). Once the tax components are removed, the energy content 'price' is then modelled using world oil prices, thus establishing a key link in the understanding of world fuel prices.

This project was undertaken by Dr David Gargett.

Gary Dolman
Head of Bureau
Bureau of Infrastructure, transport and Regional Economics
March 2019

At a Glance

This Report describes modelling of petrol/gasoline prices around the world.

Twenty-four country petrol/gasoline prices are modelled, mostly over the 54 years from 1965 to 2018. The countries modelled are: Australia, Austria, Belgium, Britain, Canada, China, Denmark, Finland, France, Germany, Greece, Hungary, India, Ireland, Italy, Japan, Korea, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, and the United States. The modelling is based on datasets that include energy content price, excise taxes, value added tax (goods and services tax), and other taxes (Provincial, State and other taxes).

The models can provide estimates to policy makers and motorists of the effect on petrol/gasoline prices of fluctuations or trends in world oil prices.

In addition, a model of the world oil price allows some insight into how prices might vary with different supply/demand scenarios for oil.

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Executive Summary

Background

The price of petrol/gasoline is a key element in motorists' cost of operation of their vehicles. It also affects taxes collected through Value Added Tax (VAT), also known as Goods and Service Tax (GST).

This report describes an approach for modelling petrol/gasoline prices for each of 24 counties around the world. The resulting models allow an understanding of the forces producing prices in each of the countries.

Models of petrol/gasoline prices were derived for Australia, Austria, Belgium, Britain, Canada, China, Denmark, Finland, France, Germany, Greece, Hungary, India, Ireland, Italy, Japan, Korea, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, and the United States.

Modelling Petrol/Gasoline Prices in Twenty-four Countries

The modelling is based on datasets that include energy content price, excise taxes, Value Added Tax (Goods and Services Tax), and other taxes (Provincial, State and other taxes).

Twenty-four country petrol/gasoline prices are modelled, mostly over the 54 years from 1965 to 2018.

The models are approximate, relying on abundant dummy variables, but none of the dummies are turned on in recent years. So the relationship between world oil price and country petrol/gasoline price in future years should be simply predicted by the models. The analysis also allows calculations of the elasticity of each country's petrol price to the oil price. For example, in Australia a 10 per cent increase in world oil prices would be likely to cause a 4 per cent increase in petrol prices.

The modelling also includes a model of the world oil price, linked to supply/demand balance changes. This allows scenarios to include consideration of future trends or changes in world GDP and oil production.

Policy Implications and Conclusions

The models can provide estimates to policy makers and motorists of the effect on petrol/gasoline prices of fluctuations or trends in world oil prices. In addition, a model of the world oil price allows some insight into how prices might vary with different supply/demand scenarios for oil.

An understanding of determinants of petrol/gasoline prices in countries is important for policy makers in several ways.

Taxes on fuel include excise taxes, carbon taxes, and VAT/GST. These taxes are currently used to fund a substantial part of the cost of road construction and maintenance. Only the latter tax varies with fuel price, but increases in the former two are more difficult with higher fuel prices (as has been evident lately in France).

Of course, the level of petrol/gasoline prices is also important to motorists, for whom fuel costs are an important component of vehicle operating costs

In all of these ways, the modelling of petrol/gasoline prices for the 24 countries will be of interest to policy makers charged with maintaining and funding the transport and energy systems and to motorists who pay for fuel.

CHAPTER 1

Oil Prices

Summary

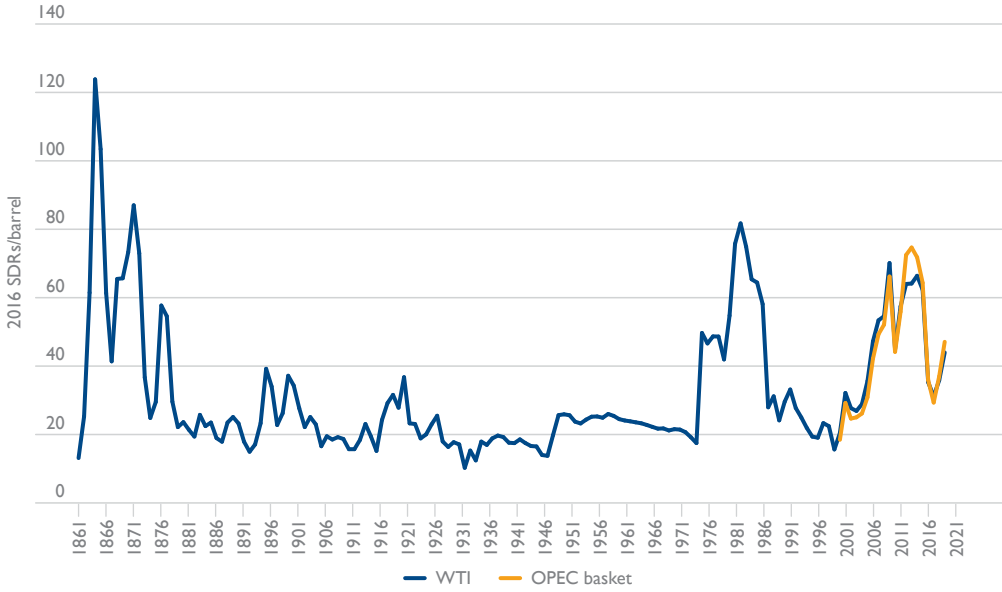
The world oil price is the basis for petrol/gasoline prices in all of the 24 countries that will be modelled in Chapter 2. This chapter presents modelling of the world price of oil.

The real price of oil since 1861 is shown in Figure 1.1.

The price is expressed in 2016 Special Drawing Rights (SDRs) per barrel of West Texas Intermediate (WTI) oil. The SDR is a weighted average of major currencies, and using it allows one to abstract from fluctuations in the value of the US dollar.

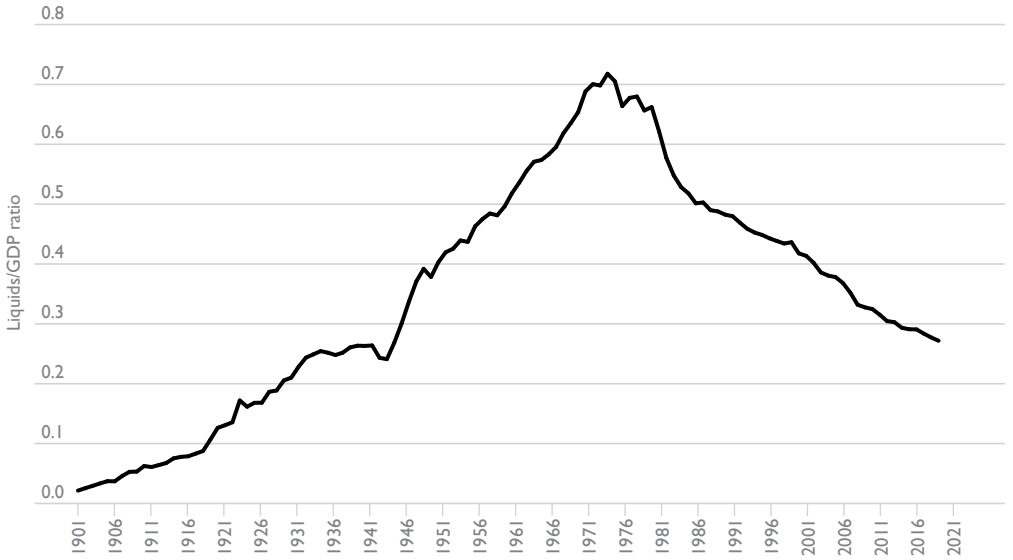
Since the 1990s, the WTI oil price has moved similarly to other alternatives (Brent, Tapis, OPEC basket), except for the periods 2011 to 2014, and 2018 when America had a glut of shale oil that couldn't be exported. That restriction has been partially removed, and oil prices should again move similarly in the future, as long as US export pipelines are adequate.

Figure 1.1 Real oil price, 1861 to 2018



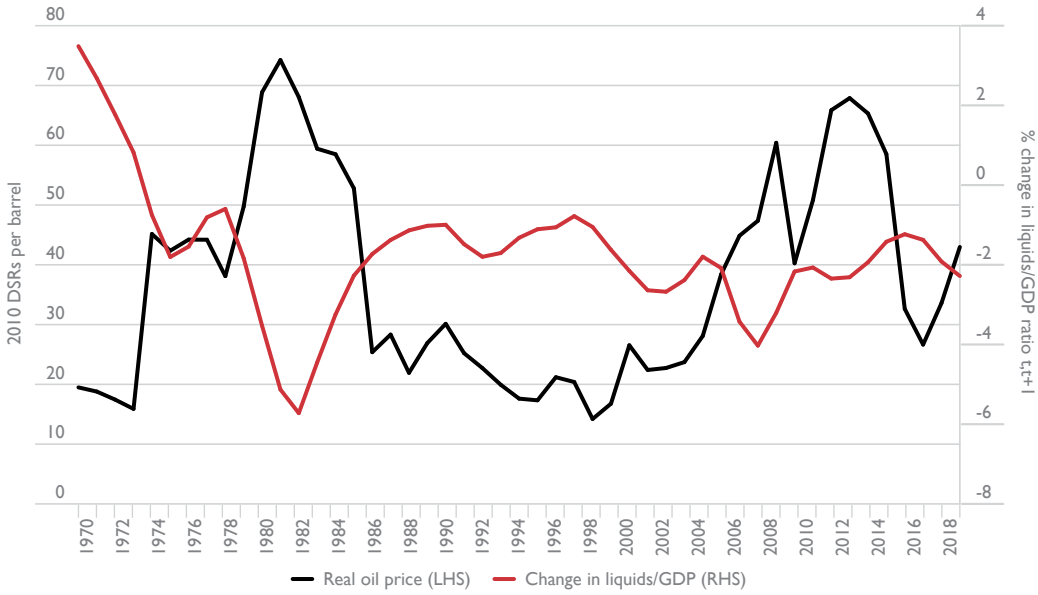
A variable of interest regarding oil prices is the liquids/GDP ratio, as shown since 1901 in Figure 1.2. As oil became a staple of the world economy, the oil/GDP ratio increased, until the first oil price spike of the mid-70s, early 80s when it peaked and declined sharply. Since the mid 80s, a shallow decline has set in, and a negative change in the liquids/GDP ratio each year has become the new norm.

Figure 1.2 Liquids/GDP ratio, 1901 to 2018



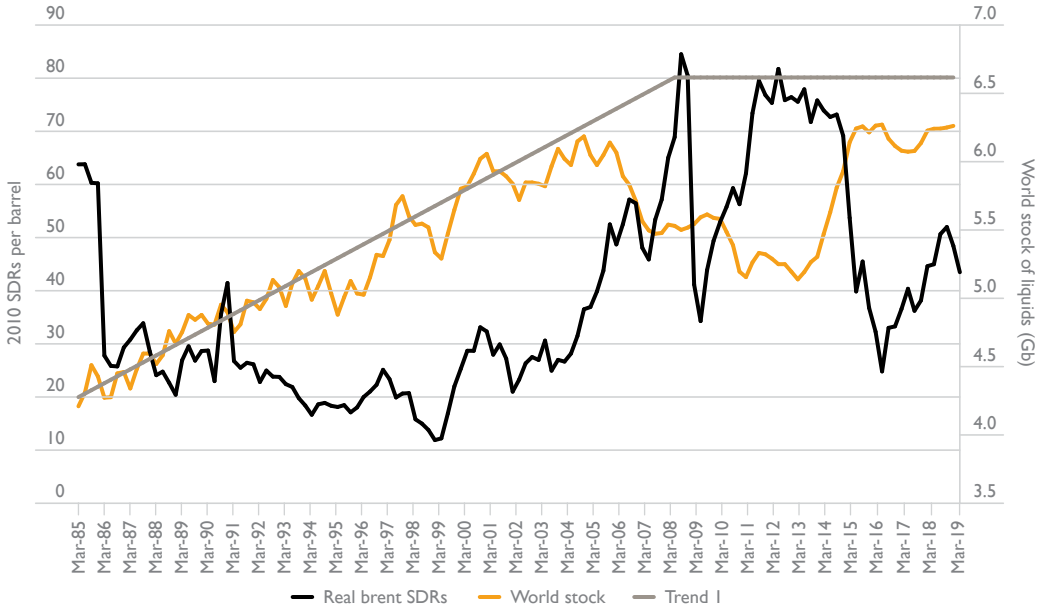
Focussing on the period from 1972, Figure 1.3 shows that this negative rate of change in the liquids/GDP ratio (average of current year and one year ahead) bears an inverse relationship to the real oil price (WTI to 1998 and OPEC basket thereafter). Basically, price serves to balance supply and demand for oil. This will be the first explanatory variable in a world oil price equation. It is also the basis for another – the 'echo' variable, which is the change in liquids to GDP ratio one year back minus that of three years back.

Figure 1.3 Change in the Liquids/GDP ratio versus real oil price



A second major variable related to the world oil price involves the deviation of world liquids stocks from their trend. Figure 1.4 shows estimated world liquids stock levels since 1985 (with EIA projections to December 2019) together with a rough estimate of a 'normal' trend level (plotted against the oil price).

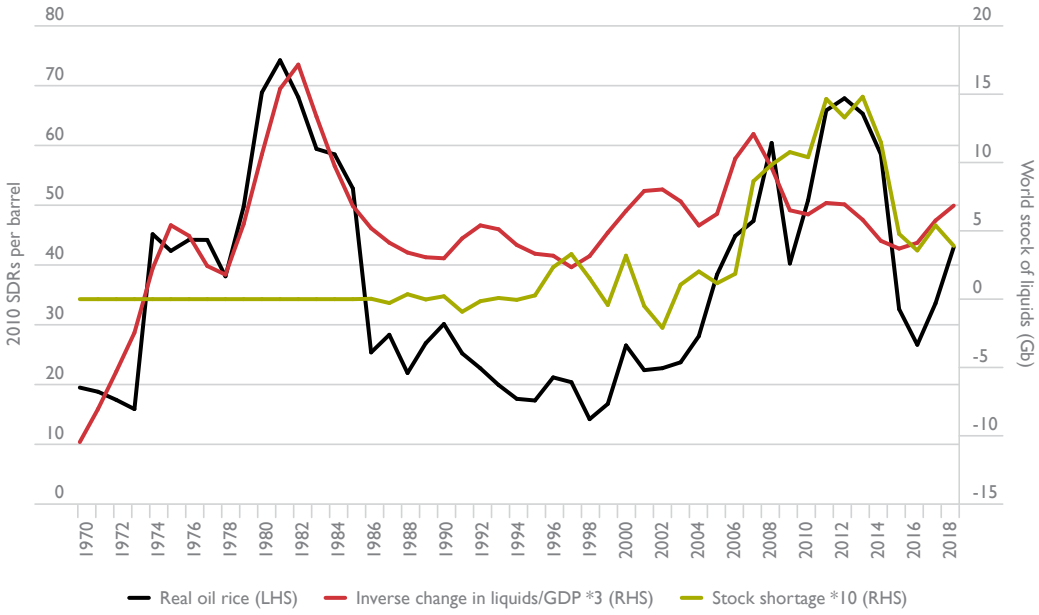
Figure 1.4 Liquid stock versus trend



There is a 6-month lag from stock change to price change before 2007.

So the second independent variable for the oil price equation is derived in 3 steps: 1) the level of the quarterly trend is subtracted from the actual oil stock, giving a 'stock shortage' variable 2) that quarterly variable is lagged 6 months up to March 2007, and 3) then annualised , giving the second independent variable in the equation. This stock shortage variable (multiplied by 10 to scale up for charting) is shown in Figure 1.5, along with the inverse of the change in the oil to GDP ratio (times 3) and the real SDR oil price.

Figure 1.5 Real oil price and the two independent variables



The results of a regression of the two independent variables, two dummies and the 'echo' variable on oil price are shown in Table 1.1. Figure 1.6 shows the fit of the predicted to actual.

Table 1.1 Regression equation for the real SDR oil price (WTI to 1998 and then OPEC)

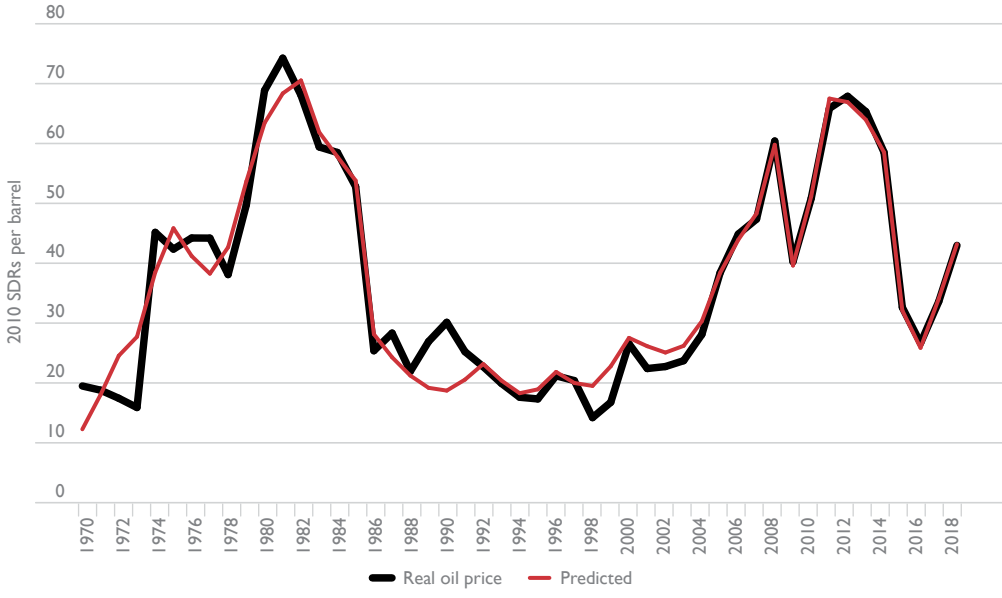
Regression statistics	
Multiple R	0.97242628
R Square	0.945612871
Adjusted R Square	0.937843281
Standard Error	4.373818331
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	13969.72993	2328.288322	121.706922	6.34215E-25
Residual	42	803.4720453	19.13028679		
Total	48	14773.20198			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	37.21327049	1.274938946	29.18827651	1.61546E-29	34.64033953	39.78620145
ch liq/GDP t,t+1	-7.157521718	0.43415172	-16.48622219	5.97136E-20	-8.03367536	-6.281368075
stock shortage	9.551755289	1.728565704	5.525827145	1.90406E-06	6.063368469	13.04014211
dumlow	-26.90372101	1.582094385	-17.0051302	1.91778E-20	-30.09651674	-23.71092528
dum0608	-24.71012419	3.640446628	-6.78766281	2.92711E-08	-32.05684292	-17.36340546
dumGFC	-20.69547523	4.113685662	-5.030883964	9.62941E-06	-28.99722899	-12.39372146
echo	2.251409811	0.521994796	4.313088613	9.55067E-05	1.197981664	3.304837957

Figure 1.6 Actual and predicted real oil price



This equation will be used to generate the medium oil price scenario in Chapter 3, which in turn will be used to generate the medium petrol price forecast for each of the 24 countries covered in the report. High and low oil price scenarios will come from the EIA (EIA 2018).

CHAPTER 2

Petrol Prices

Summary

Petrol prices are determined by movements in world oil prices, the country's exchange rate, and numerous other components of the price chain. An understanding and modelling of how individual countries' petrol prices are set is important in understanding the outlook for petrol prices, given different scenarios about world oil prices. This chapter presents petrol price models for the 24 countries in the study.

2.1 The Petrol Price Chain

The basic mechanism of the petrol price chain is depicted in Figure 2.1. Given a world oil price, putting the price through the domestic exchange rate gives a landed oil price.

This is then modelled as determining the energy component of domestic petrol prices.

Then adding excise tax and value added tax, results in the retail petrol price (price at the pump).

Figure 2.1 The Petrol Price Chain

WORLD OIL PRICE

times

EXCHANGE RATE,

Equals

LANDED OIL PRICE

is modelled as determining

PETROL ENERGY CONTENT,

plus

PETROL TAX COMPONENT

equals

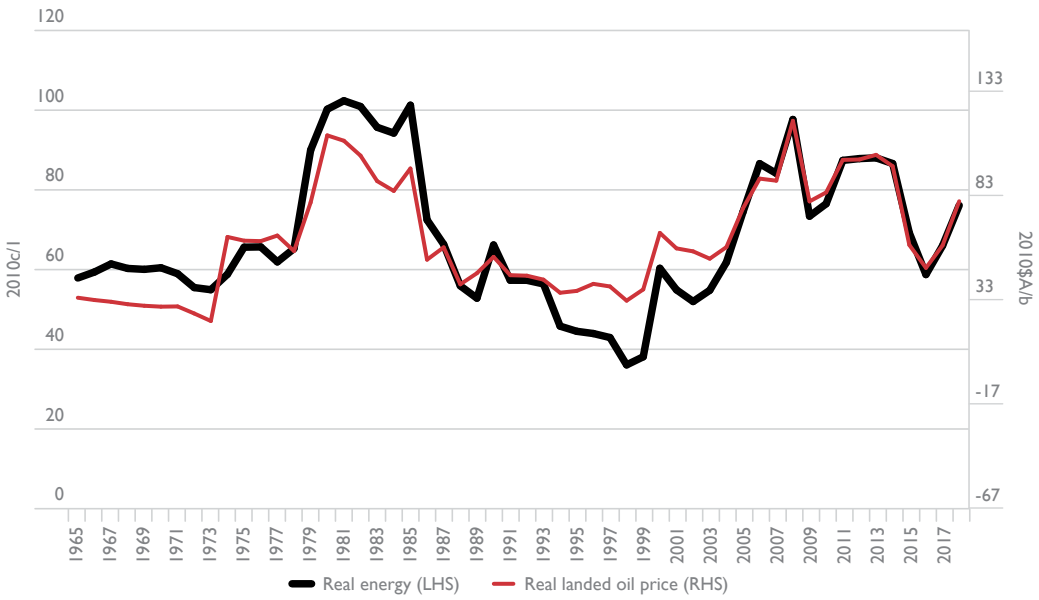
DOMESTIC PETROL PRICE

It is useful in many policy examinations involving petrol prices to use world oil price scenarios to generate the scenarios for individual country petrol prices. The following sections develop translation equations – landed oil prices to country petrol energy components (the orange step in Figure 2.1) for all 24 countries, starting with Australia. These equations will be used to generate petrol price scenarios, which can then be used where scenario testing is needed that involves a county's petrol price. It should be remembered that in all the following analyses, the price of oil is taken as West Texas Intermediate (WTI) to 1998 and the OPEC reference basket thereafter (except the US, where WTI is used throughout).

2.2 Australian Petrol Prices

Subtracting total tax (federal and state excise, and Goods and Services Tax) from nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Australian petrol price. The real landed price of oil in Australia is simply the price of West Texas Intermediate oil (or post-1999, the price of the OPEC basket) in US dollars per barrel, times the Australian exchange rate in Australian dollars per US dollar, divided by the Consumer Price Index set to 100 in 2010. A plot of the energy content versus the landed price of oil is shown in Figure 2.2. The relationship varies over time, but is quite close in later years.

Figure 2.2 Australian energy content and landed oil price



A regression was performed using the real 2010 energy content price of Australian petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B1. The results are shown in Table 2.1

Table 2.1 Regression results for predicting Australian energy content price

Regression statistics	
Multiple R	0.990015207
R Square	0.98013011
Adjusted R Square	0.97806033
Standard Error	2.592385345
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	15912.14124	3182.428248	473.5430917	1.32999E-39
Residual	48	322.5821653	6.720461777		
Total	53	16234.7234			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	32.54903359	1.5129479	21.51365133	2.69524E-26	29.50704796	35.59101922
landed oil price	0.544489509	0.020595422	26.43740426	2.90984E-30	0.503079637	0.585899381
dum9403	-15.80452012	1.650206285	-9.577299674	1.02153E-12	-19.12248223	-12.486558
dum8086	12.4992946	1.19252939	10.48133044	5.31408E-14	10.10155356	14.89703564
dum79	14.07147545	2.646714797	5.3165817	2.72097E-06	8.749898688	19.39305222
dum6573	10.00806978	1.287182625	7.775174697	4.82254E-10	7.420015651	12.5961239

Figure 2.3 shows the fit of the regression predictions to the actual energy content price data in 2010 cents per litre. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.4, this time expressed in real 2018 cents per litre.

Figure 2.3 Actual and predicted energy content price of Australian petrol

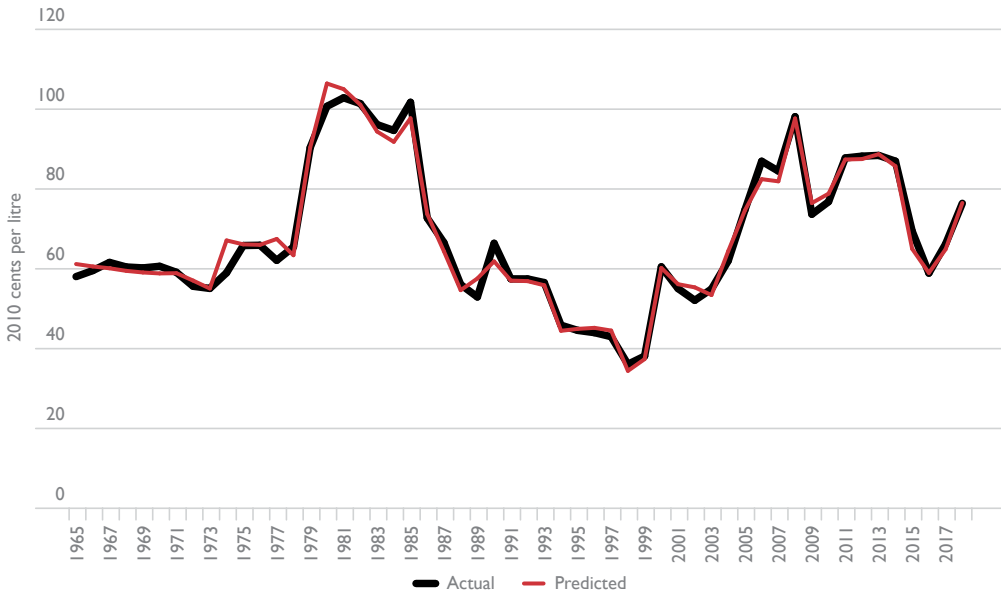
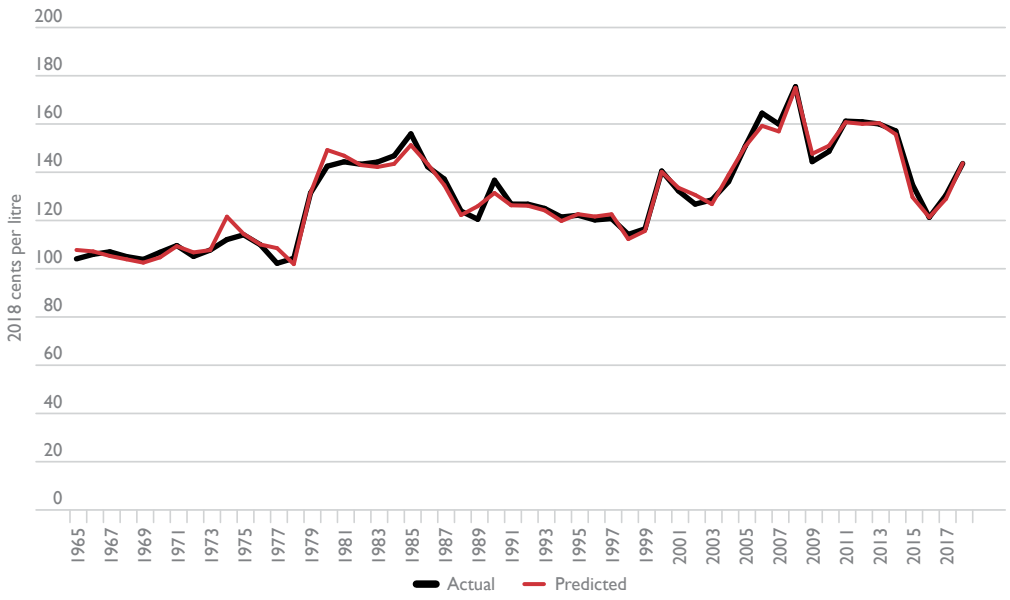


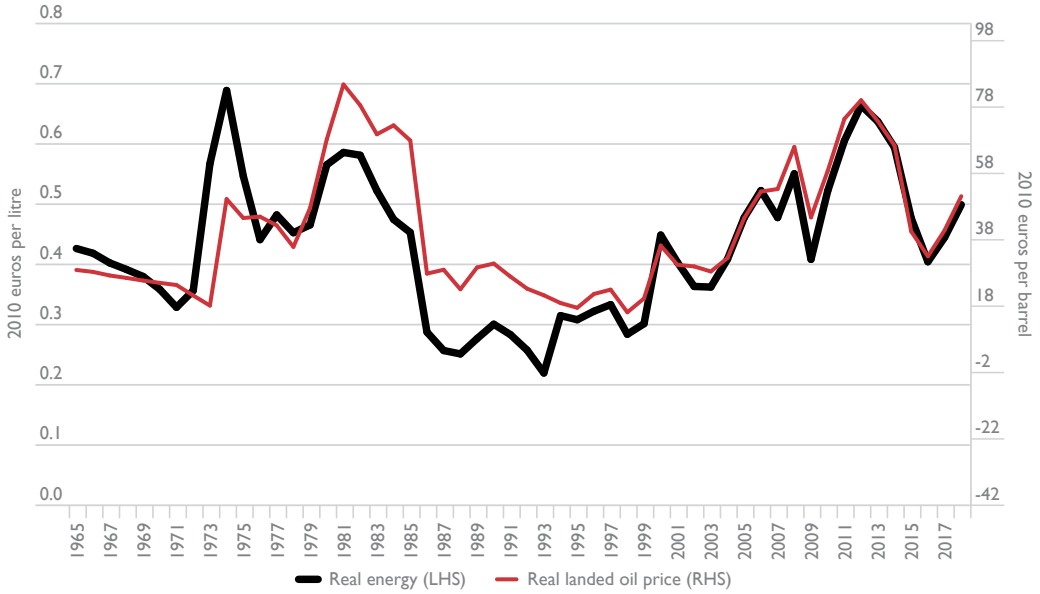
Figure 2.4 Actual and predicted price of Australian petrol in 2018 cents per litre



2.3 Austrian Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Austrian petrol in Euros. The real landed price of oil in Austria is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.5. The relationship varies over time, but is quite close in later years.

Figure 2.5 Austrian energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B2, and the results are shown in Table 2.2.

Table 2.2 Regression results for predicting Austrian energy content price

Regression statistics	
Multiple R	0.978400175
R Square	0.957266902
Adjusted R Square	0.952815538
Standard Error	0.02534372
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	0.69063825	0.13812765	215.0502239	1.23242E-31
Residual	48	0.030830599	0.000642304		
Total	53	0.721468849			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.213470545	0.009376721	22.76601319	2.26111E-27	0.194617385	0.232323705
landed oil price	0.005612841	0.000189122	29.67842331	1.54763E-32	0.005232586	0.005993096
dum6579	0.119107604	0.010123239	11.76576037	9.50544E-16	0.098753467	0.13946174
dum7374	0.19904889	0.019252663	10.33877196	8.41386E-14	0.160338817	0.237758963
dum6593	-0.095771771	0.008742886	-10.95425196	1.17856E-14	-0.11335052	-0.078193021
dum0709	-0.041465074	0.015826174	-2.620031512	0.011736388	-0.073285729	-0.009644419

Figure 2.6 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.7, this time in 2018 Euros per litre.

Figure 2.6 Actual and predicted energy content price of Austrian petrol

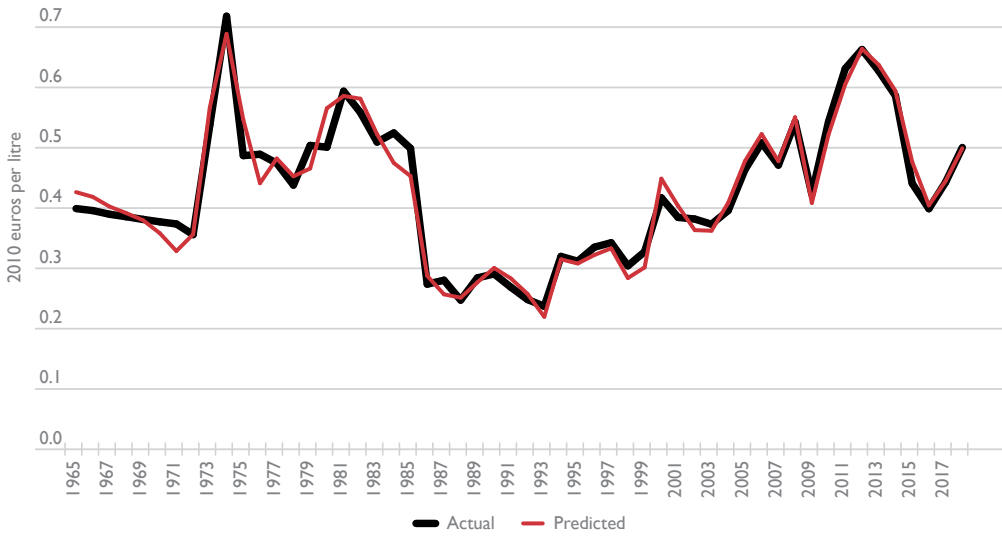
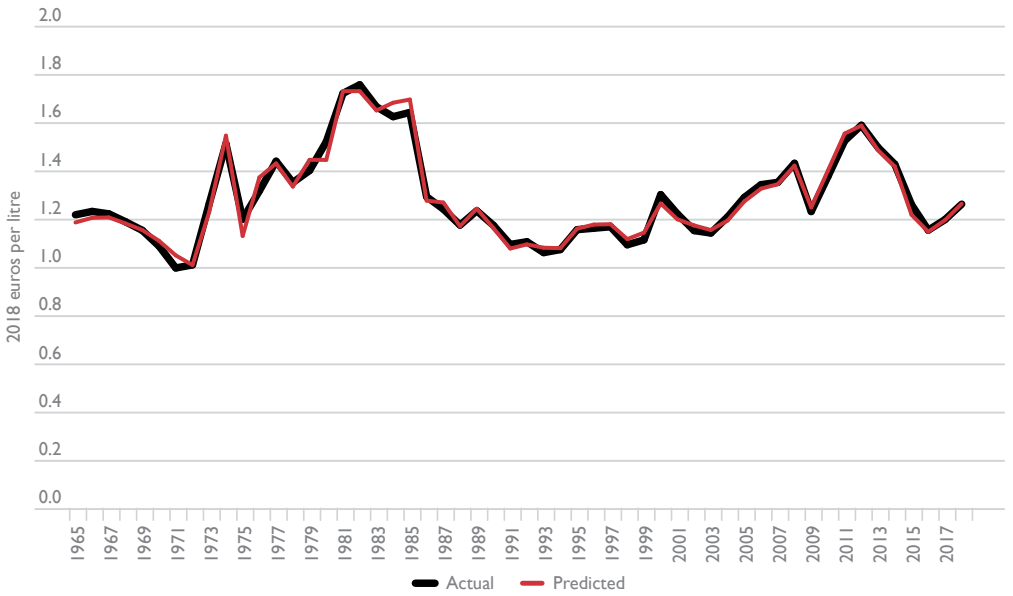


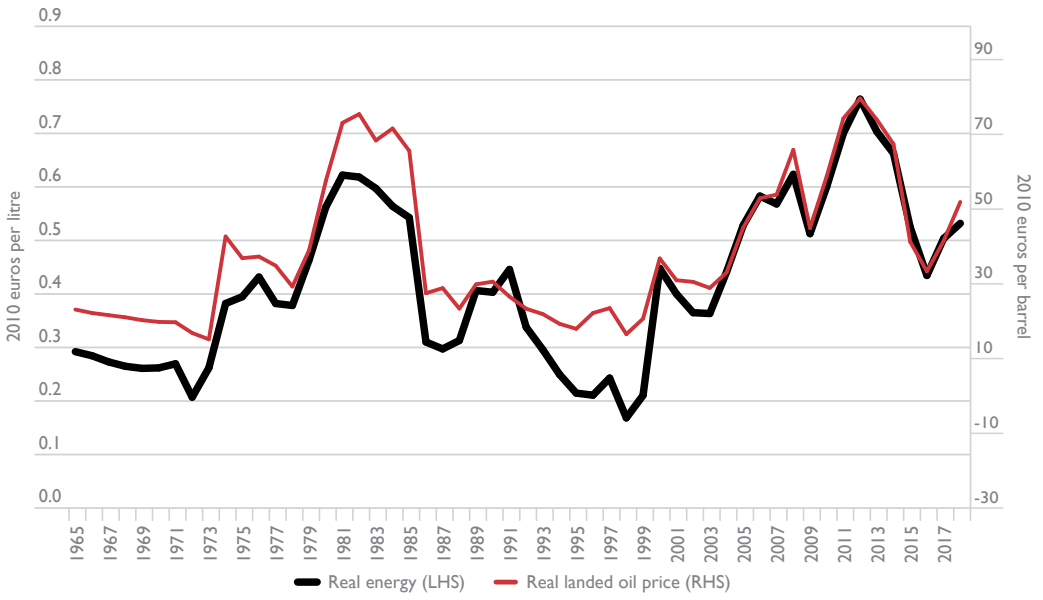
Figure 2.7 Actual and predicted price of Austrian petrol in 2018 Euros per litre



2.4 Belgian Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Belgian petrol in Euros. The real landed price of oil in Belgium is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.8. The relationship varies over time, but is quite close in later years.

Figure 2.8 Belgian energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B3 and the results are shown in Table 2.3.

Table 2.3 Regression results for predicting Belgian energy content price

Regression statistics	
Multiple R	0.987284258
R Square	0.974730205
Adjusted R Square	0.972667365
Standard Error	0.025196217
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	1.199912208	0.299978052	472.5184777	1.81806E-38
Residual	49	0.031107619	0.000634849		
Total	53	1.231019826			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.208976967	0.011836215	17.65572535	6.98227E-23	0.185191202	0.232762732
landed oil price	0.006655604	0.000207731	32.03955809	1.58258E-34	0.006238153	0.007073055
dum8992	0.118820477	0.019312907	6.152386789	1.36228E-07	0.080009736	0.157631217
dum6599	-0.07180058	0.008122113	-8.840135208	1.02177E-11	-0.088122578	-0.055478582
dum9599	-0.061912675	0.012712083	-4.87038015	1.20489E-05	-0.087458562	-0.036366789

Figure 2.9 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.10, this time in 2018 Euros per litre.

Figure 2.9 Actual and predicted energy content price of Belgian petrol

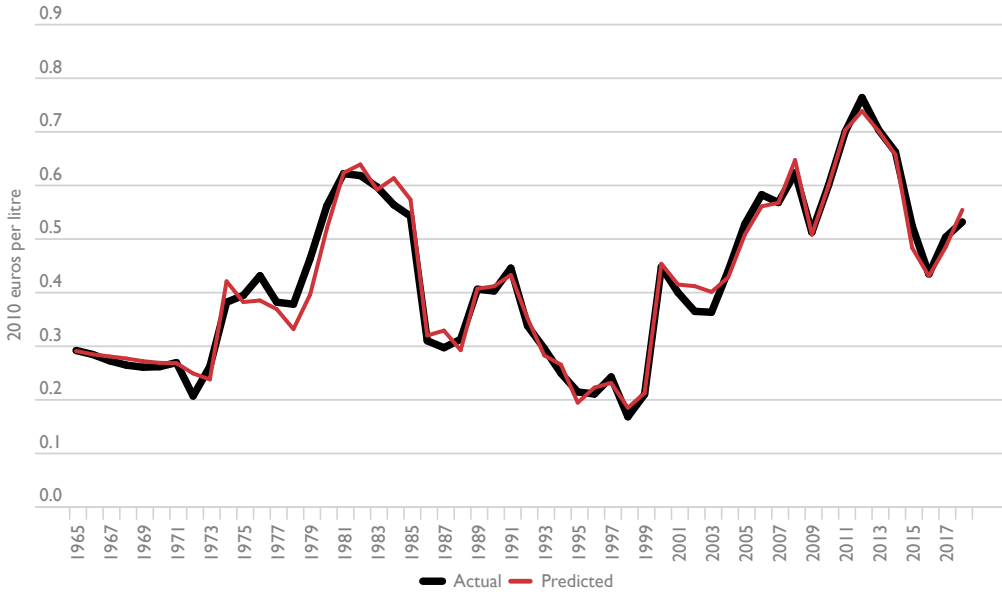
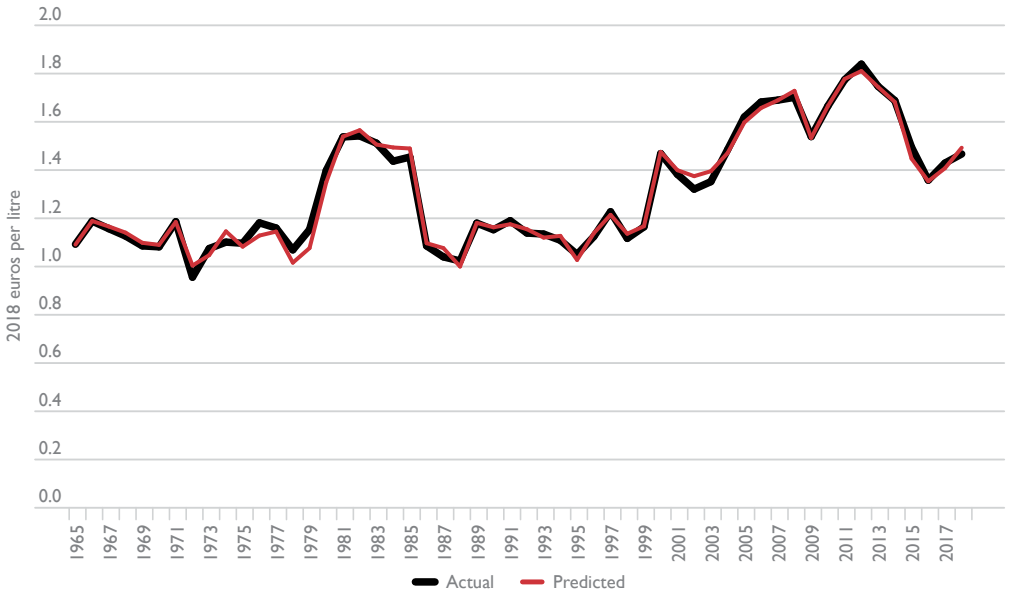


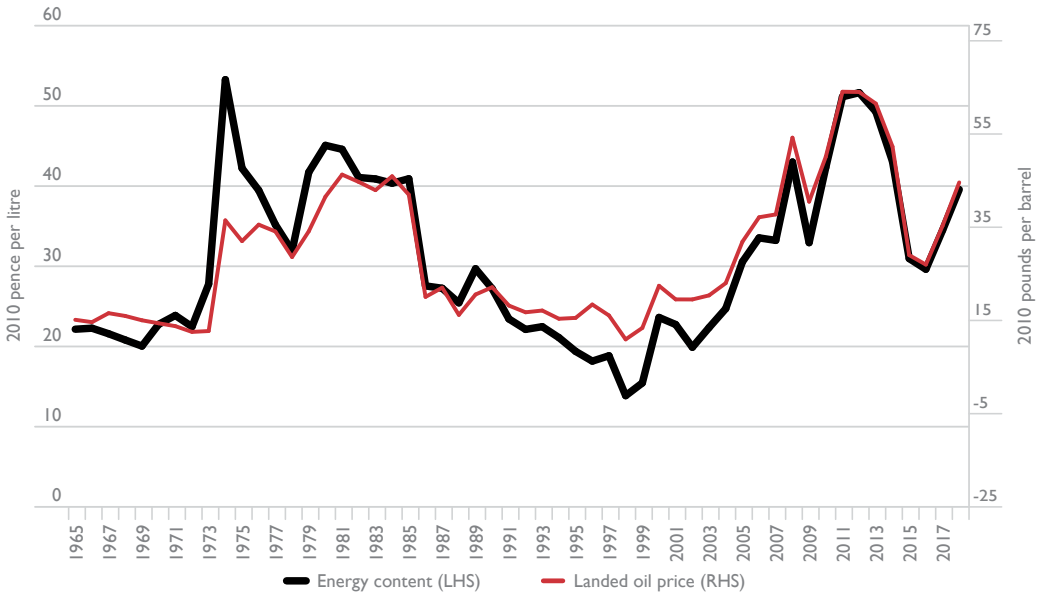
Figure 2.10 Actual and predicted price of Belgian petrol in 2018 Euros per litre



2.5 British Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of British petrol in Pence. The real landed price of oil in Britain is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Pounds per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.11. The relationship varies over time, but is quite close in later years.

Figure 2.11 British energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B4, and the results are shown in Table 2.4.

Table 2.4 Regression results for predicting British energy content price

Regression statistics	
Multiple R	0.997522272
R Square	0.995050683
Adjusted R Square	0.994170805
Standard Error	0.789836756
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	5644.001813	705.5002267	1130.895503	3.23372E-49
Residual	45	28.07289455	0.623842101		
Total	53	5672.074708			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	13.91943253	0.601824329	23.12873021	1.29086E-26	12.70729611	15.13156895
landed oil price	0.576823877	0.011381516	50.68076186	2.43309E-41	0.553900328	0.599747426
dum7376	16.55941533	0.731393474	22.64091208	3.12762E-26	15.08631326	18.0325174
dum9104	-7.838797145	0.43036037	-18.21449578	2.1623E-22	-8.705587425	-6.972006865
dum6504	1.670316839	0.40058834	4.169659157	0.000137027	0.863490506	2.477143171
dum7981	6.870716251	0.681819474	10.07703141	4.08695E-13	5.497461339	8.243971163
dum0514	-2.054123731	0.481854772	-4.262951929	0.00010193	-3.024629061	-1.083618401
dumGFC	-2.271219629	0.88306845	-2.571963284	0.013485091	-4.049810787	-0.492628472
dum6570	-3.929767385	0.501594287	-7.834553718	6.00771E-10	-4.940030139	-2.919504632

Figure 2.12 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.13, this time in 2018 pence per litre.

Figure 2.12 Actual and predicted energy content price of British petrol

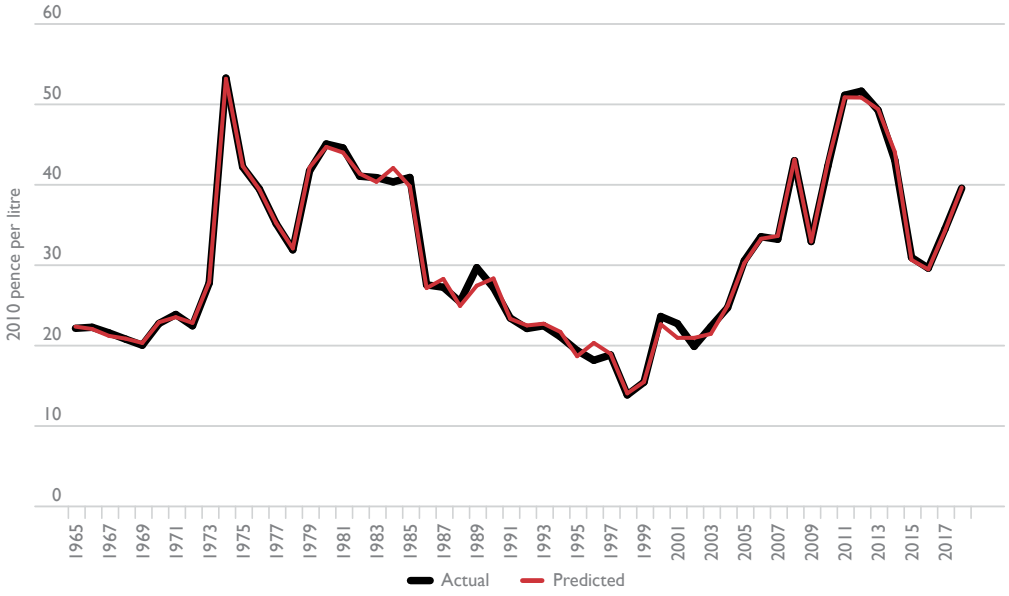
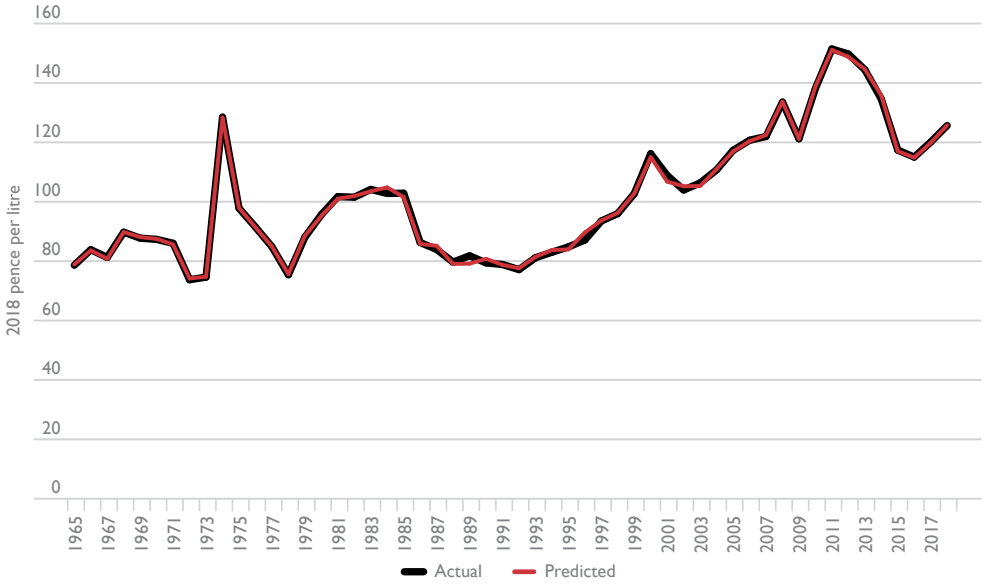


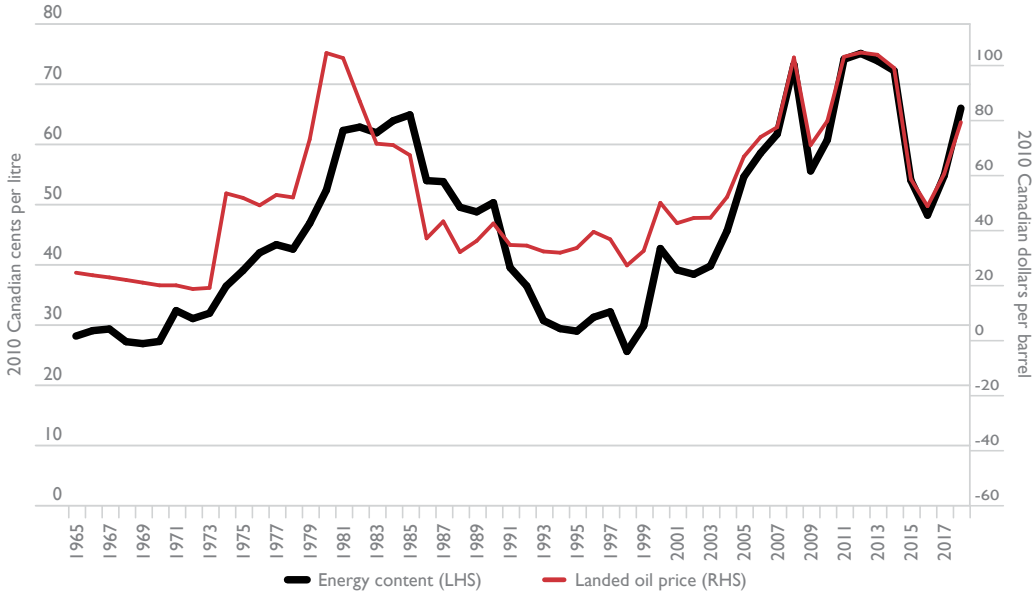
Figure 2.13 Actual and predicted price of British petrol in 2018 pence per litre



2.6 Canadian Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Canadian petrol in Canadian dollars. The real landed price of oil in Canada is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Canadian dollars per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.14. The relationship varies over time, but is quite close in later years.

Figure 2.14 Canadian energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B5, and the results are shown in Table 2.5.

Table 2.5 Regression results for predicting Canadian energy content price

Regression statistics	
Multiple R	0.997694397
R Square	0.995394111
Adjusted R Square	0.994806125
Standard Error	1.073145475
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	11697.59596	1949.599327	1692.887777	3.79051E-53
Residual	47	54.12713686	1.15164121		
Total	53	11751.7231			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	27.85100545	0.550559977	50.58668742	1.21961E-42	26.74342164	28.95858926
landed oil price	0.451309387	0.006672376	67.63848682	1.72418E-48	0.437886299	0.464732475
dumGFC	-3.70790573	0.807805586	-4.590096672	3.31323E-05	-5.333000953	-2.082810506
dum9106	-14.47298401	0.608888183	-23.76952683	7.6913E-28	-15.69790903	-13.24805898
dum6582	-20.7388002	0.758643186	-27.3366987	1.6634E-30	-22.26499343	-19.21260697
dumswitch	-6.813480321	0.724857378	-9.399753009	2.27107E-12	-8.271705275	-5.355255367
dum8490	7.002059163	0.587837969	11.91154625	8.44276E-16	5.819481704	8.184636621

Figure 2.15 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit of this model value and the actual petrol price is shown in Figure 2.16, this time in 2018 cents per litre.

Figure 2.15 Actual and predicted energy content price of Canadian petrol

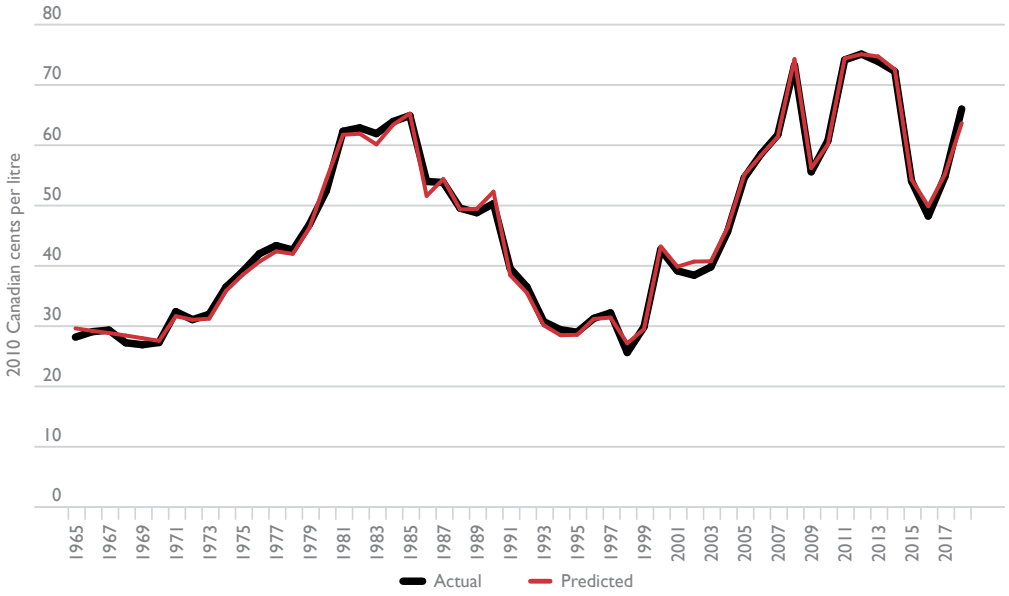
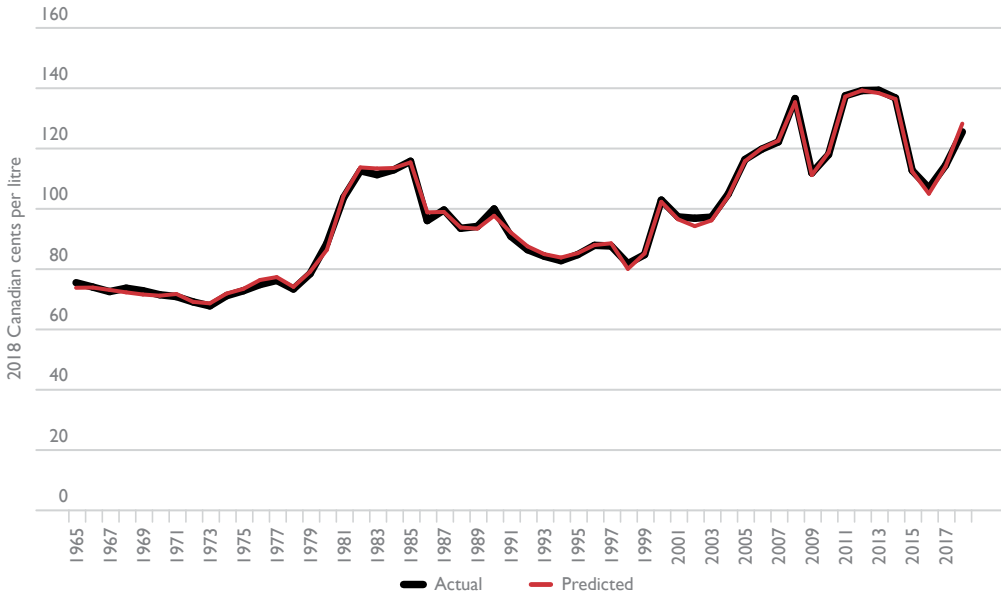


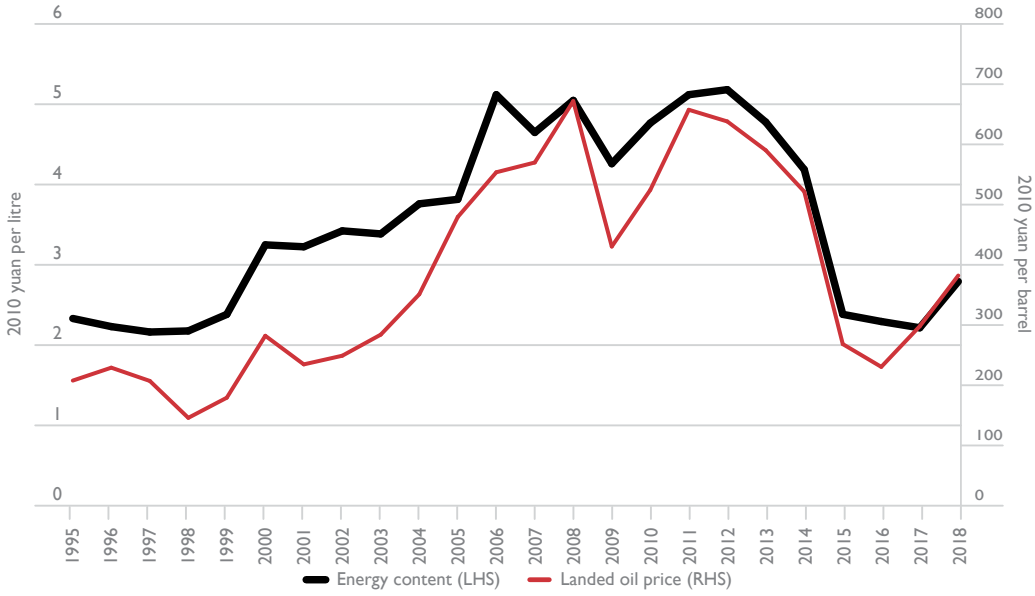
Figure 2.16 Actual and predicted price of Canadian petrol



2.7 Chinese Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Chinese petrol in yuan. The real landed price of petrol in China is calculated as simply the energy content of petrol in US cents per litre times the exchange rate in yuan per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.17. The relationship varies over time, but is quite close in later years.

Figure 2.17 Chinese energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B6, and the results are shown in Table 2.6.

Table 2.6 Regression results for predicting Chinese energy content price

Regression statistics	
Multiple R	0.992118148
R Square	0.984298419
Adjusted R Square	0.979936869
Standard Error	0.158963471
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	28.51350358	5.702700717	225.6762749	1.4007E-15
Residual	18	0.454848933	0.025269385		
Total	23	28.96835252			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.220658049	0.138296485	1.595543432	0.127997932	-0.069892085	0.511208183
landed oil price	0.006714581	0.000236905	28.34295775	2.18488E-16	0.006216863	0.007212299
dum9504	0.698194802	0.088317172	7.905538497	2.90121E-07	0.512647309	0.883742295
dum0910	0.575751691	0.121743939	4.729202093	0.000167396	0.319977166	0.831526215
dum06	0.669144921	0.167658741	3.991112652	0.000856619	0.316906978	1.021382864
dum9516	0.511005165	0.123665015	4.132172432	0.000625796	0.25119461	0.77081572

Figure 2.18 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.19, this time in 2018 yuan per litre.

Figure 2.18 Chinese energy content and landed oil price

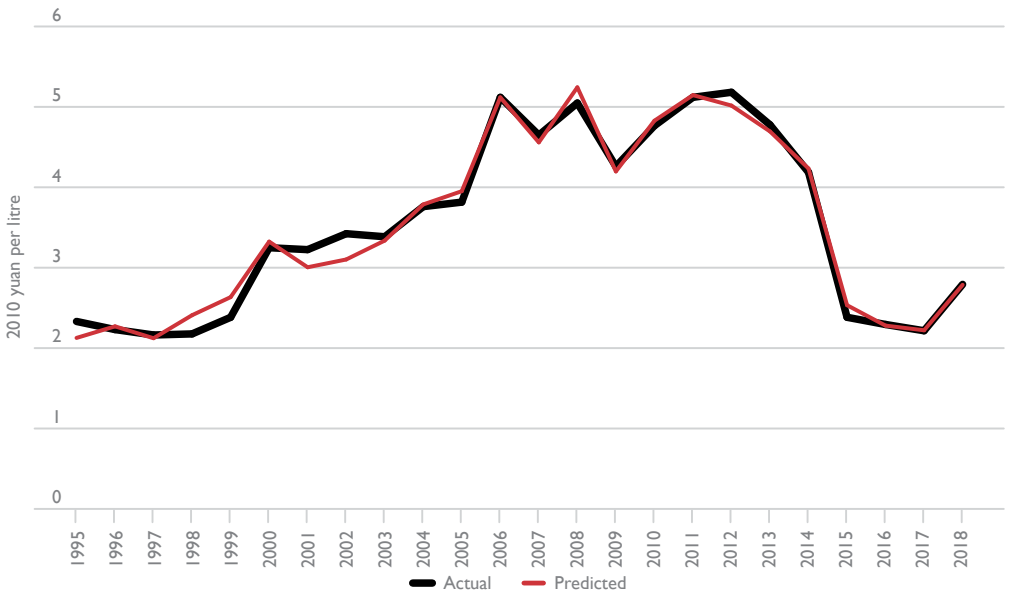
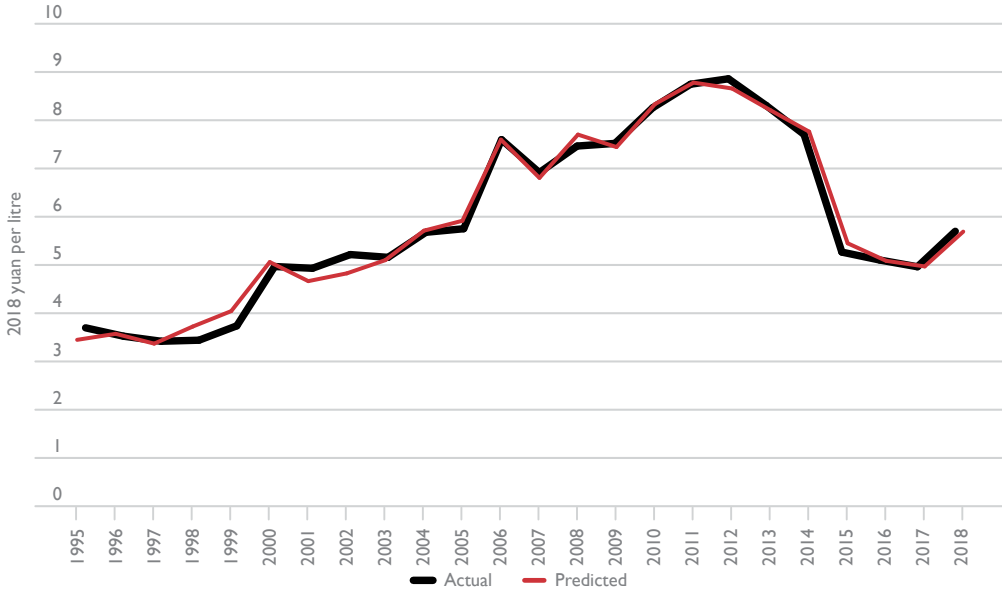


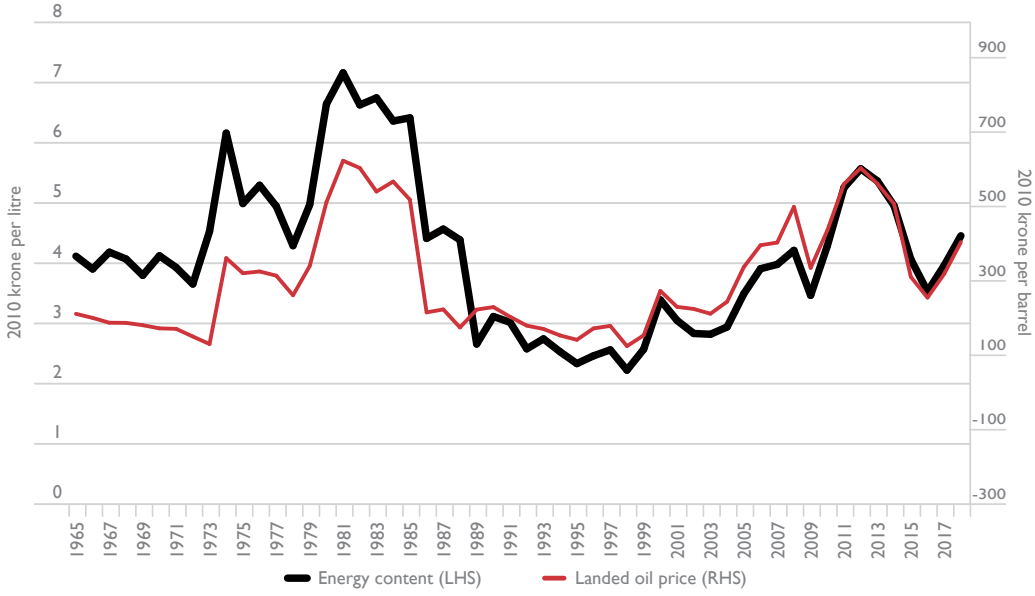
Figure 2.19 Actual and predicted price of Chinese petrol



2.8 Danish Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Danish petrol in Krone. The real landed price of oil in Denmark is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Krone per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.20. The relationship varies over time, but is quite close in later years.

Figure 2.20 Danish energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B7, and the results are shown in Table 2.7.

Table 2.7 Regression results for predicting Danish energy content price

Regression statistics	
Multiple R	0.987619422
R Square	0.975392124
Adjusted R Square	0.973383317
Standard Error	0.208620699
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	84.53099434	21.13274859	485.5580903	9.49435E-39
Residual	49	2.132607202	0.043522596		
Total	53	86.66360154			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.983170698	0.132103202	15.01228339	5.8361E-20	1.717699375	2.24864202
landed oil price	0.005986405	0.000250012	23.94446989	1.06629E-28	0.005483987	0.006488822
dum7388	1.916452729	0.130187872	14.72067025	1.2861E-19	1.654830406	2.178075052
dum8909	-0.437554611	0.097562005	-4.48488745	4.40843E-05	-0.633612801	-0.241496422
dum6572	0.895886844	0.121092292	7.398380452	1.60567E-09	0.652542773	1.139230915

Figure 2.21 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.22, this time in 2018 krone per litre.

Figure 2.21 Actual and predicted energy content price of Danish petrol

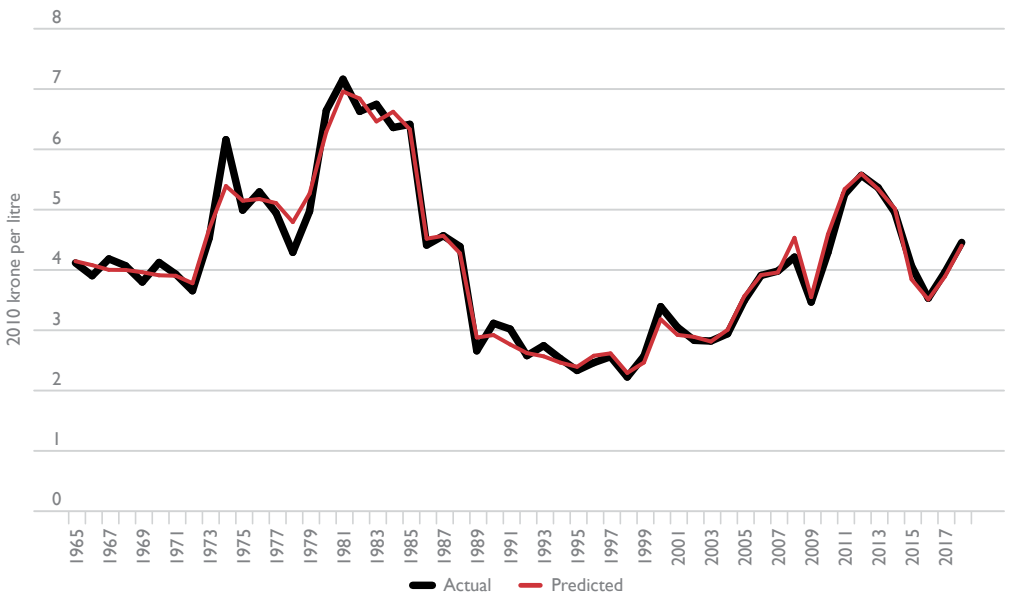
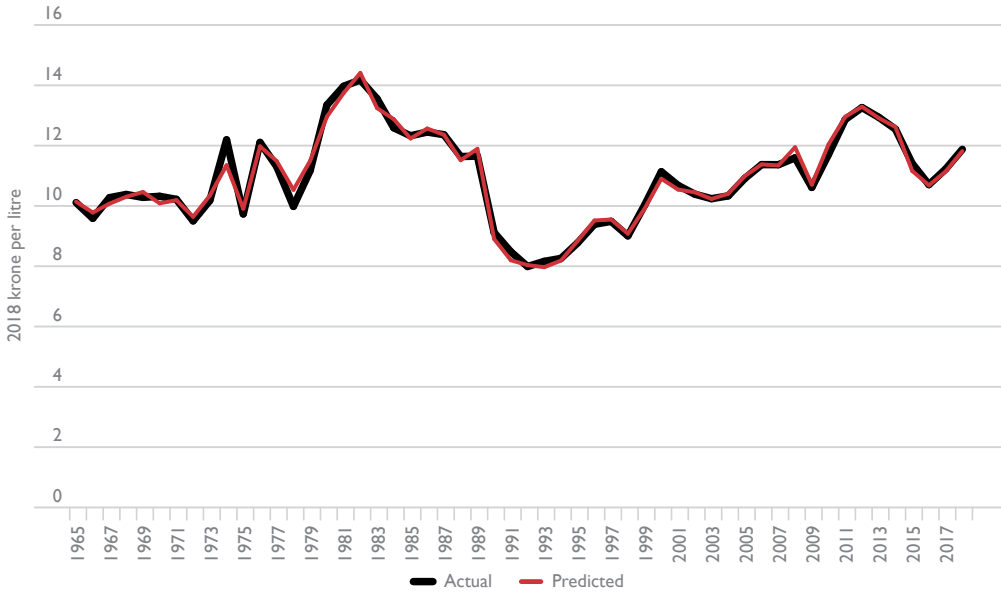


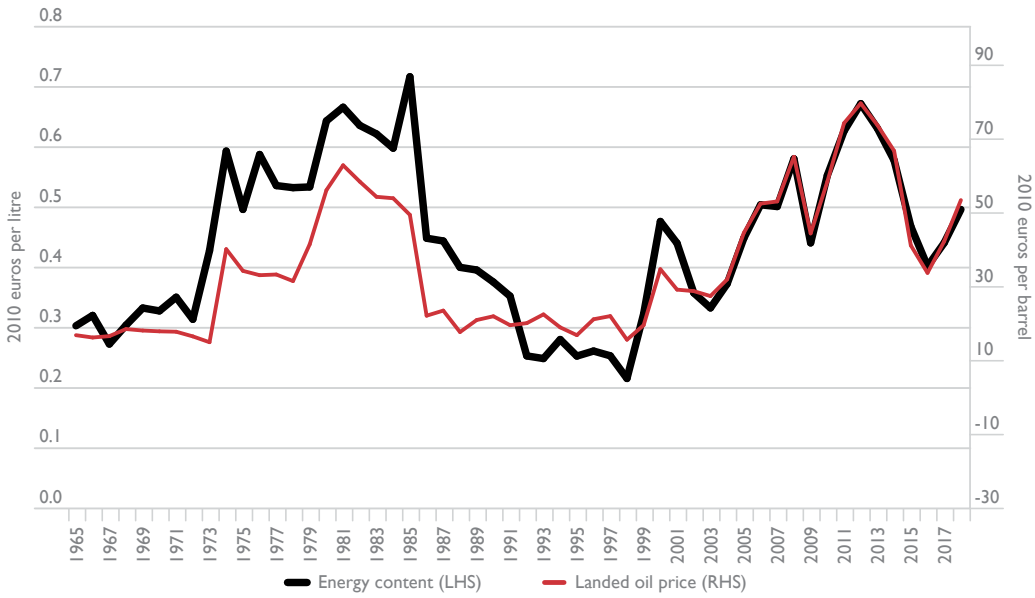
Figure 2.22 Actual and predicted price of Danish petrol



2.9 Finnish Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Finnish petrol in Euros. The real landed price of oil in Finland is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.23. The relationship varies over time, but is quite close in later years.

Figure 2.23 Finnish energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and two dummy variables. The data is set out in Appendix B8, and the results are shown in Table 2.8.

Table 2.8 Regression results for predicting Finnish energy content price

Regression statistics	
Multiple R	0.977150594
R Square	0.954823284
Adjusted R Square	0.951135389
Standard Error	0.029744614
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	0.916264991	0.229066248	258.9073806	2.70818E-32
Residual	49	0.043352361	0.000884742		
Total	53	0.959617352			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.201490812	0.023953157	8.411868572	4.5121E-11	0.15335514	0.249626484
landed oil price	0.005578828	0.000239195	23.323341	3.49097E-28	0.005098148	0.006059509
dum7391	0.117786641	0.009432469	12.48736114	7.70151E-17	0.098831386	0.136741896
dum9298	-0.074207954	0.013327993	-5.567826418	1.07625E-06	-0.10099156	-0.047424349
dum6516	0.015360988	0.021948395	0.699868408	0.487319049	-0.028745963	0.059467939

Figure 2.24 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.25, this time in 2018 Euros per litre.

Figure 2.24 Actual and predicted energy content price of Finnish petrol

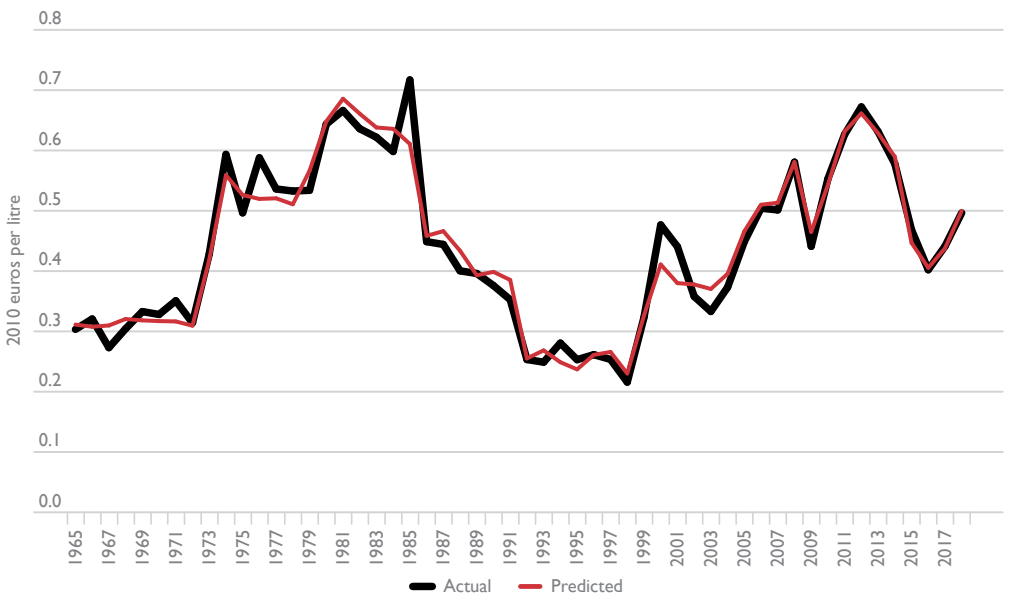
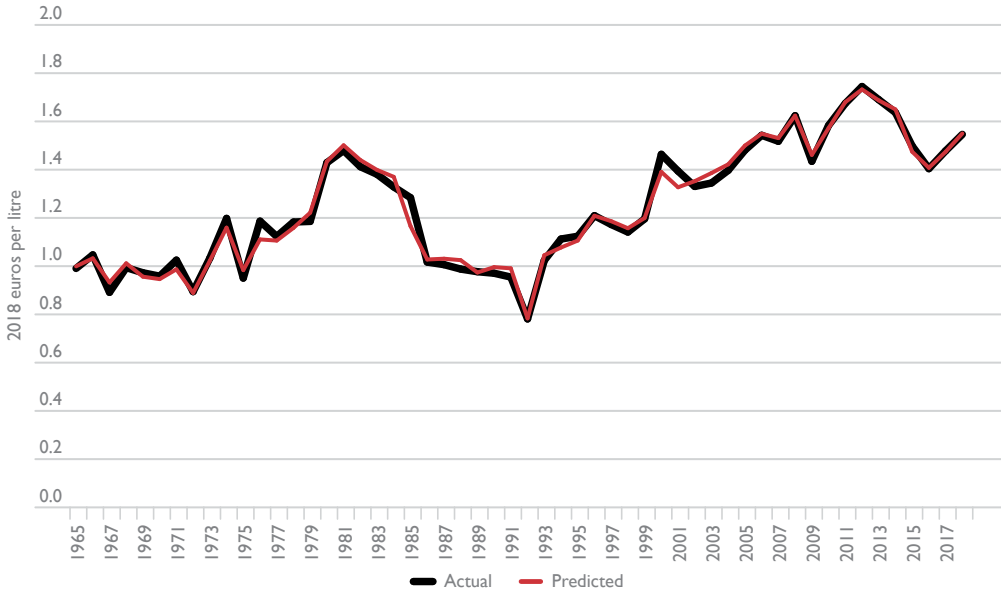


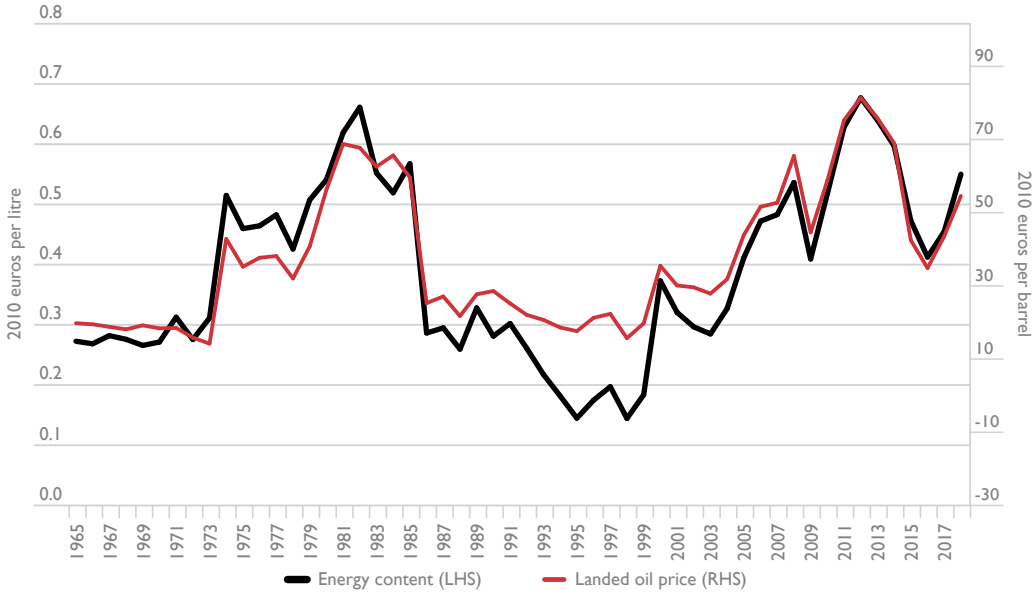
Figure 2.25 Actual and predicted price of Finnish petrol



2.10 French Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of French petrol in Euros. The real landed price of oil in France is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.26. The relationship varies over time, but is quite close in later years.

Figure 2.26 French energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B9, and the results are shown in Table 2.9.

Table 2.9 Regression results for predicting French energy content price

Regression statistics	
Multiple R	0.992498651
R Square	0.985053572
Adjusted R Square	0.982779116
Standard Error	0.019239956
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	7	1.122246885	0.160320984	433.0940736	9.13419E-40
Residual	46	0.017028091	0.000370176		
Total	53	1.139274976			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.206628808	0.012355558	16.7235513	3.54089E-21	0.18175836	0.231499257
landed oil price	0.005785556	0.000214354	26.99066027	7.53217E-30	0.005354084	0.006217028
dum0509	-0.043139964	0.009735123	-4.431373186	5.75551E-05	-0.06273575	-0.023544177
dum8604	-0.063839999	0.009781167	-6.526828171	4.68202E-08	-0.083528468	-0.04415153
dum0001	0.087433481	0.018596277	4.701665793	2.37449E-05	0.050001116	0.124865845
dum9304	-0.089326568	0.011552448	-7.732263442	7.35871E-10	-0.112580438	-0.066072697
dum7479	0.050515867	0.009682889	5.217024076	4.22879E-06	0.031025221	0.070006512
dum6570	-0.043721819	0.011720539	-3.730359246	0.000523774	-0.06731404	-0.020129599

Figure 2.27 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.28, this time expressed in 2018 euros per litre.

Figure 2.27 Actual and predicted energy content price of French petrol

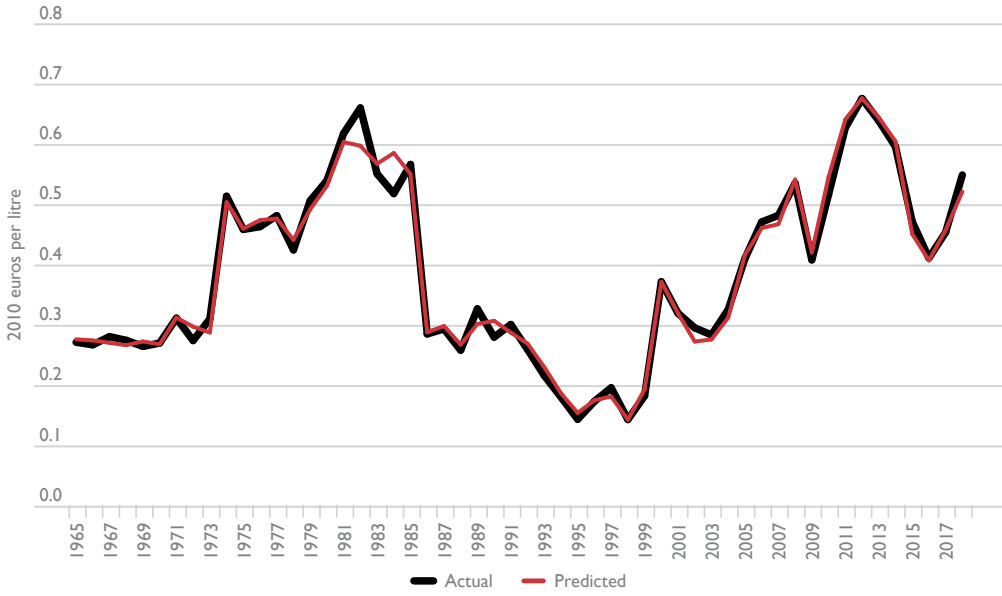
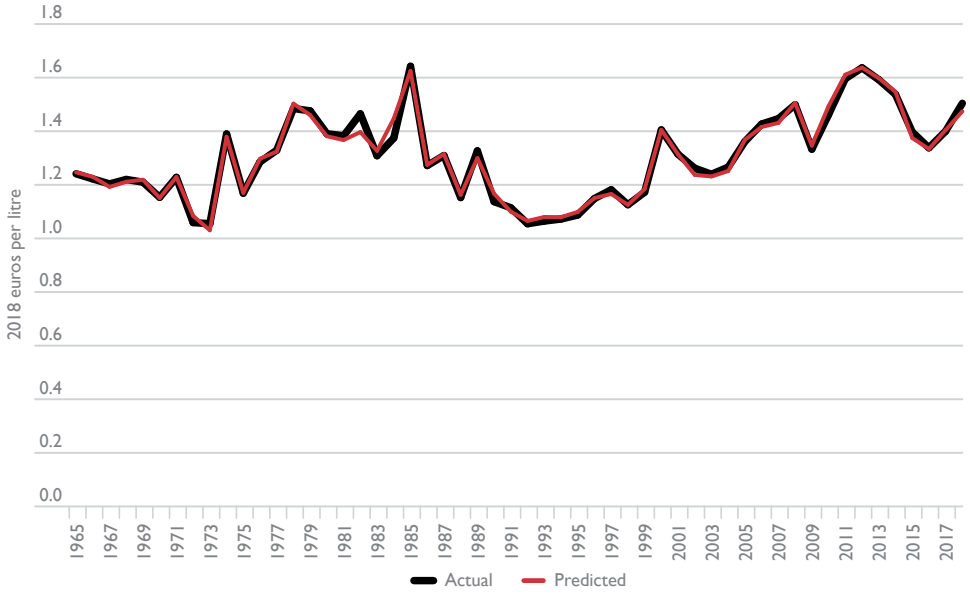


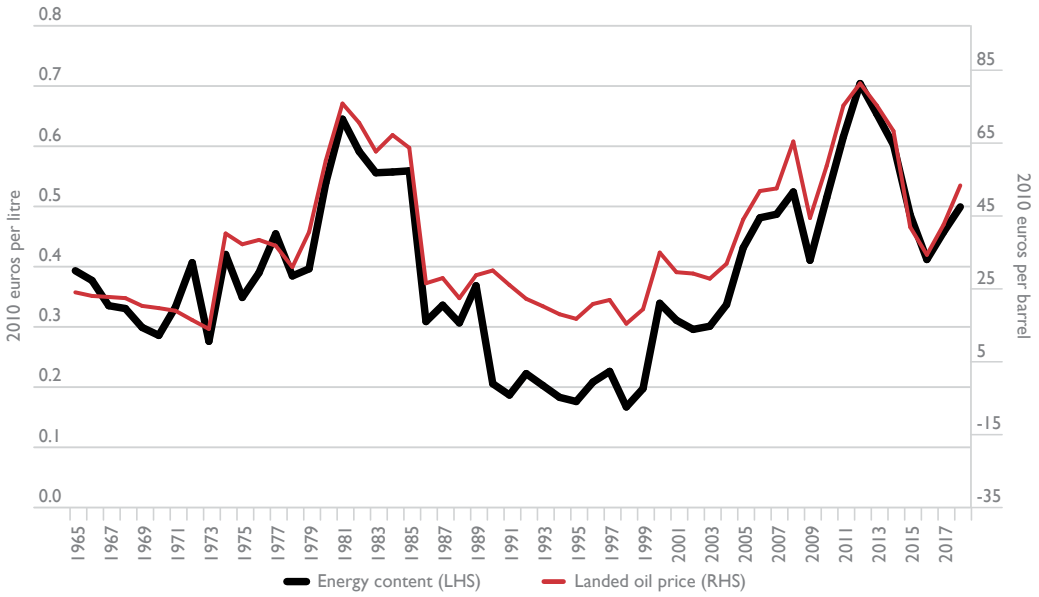
Figure 2.28 Actual and predicted price of French petrol



2.11 German Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of German petrol in Euros. The real landed price of oil in Germany is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.29. The relationship varies over time, but is quite close in later years.

Figure 2.29 German energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B10, and the results are shown in Table 2.10.

Table 2.10 Regression results for predicting German energy content price

Regression statistics	
Multiple R	0.983159927
R Square	0.966603442
Adjusted R Square	0.963877192
Standard Error	0.026422964
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	0.990160932	0.247540233	354.5542645	1.67135E-35
Residual	49	0.03421048	0.000698173		
Total	53	1.024371412			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.211358095	0.010085933	20.95573134	4.14056E-26	0.191089655	0.231626536
landed oil price	0.005705066	0.000213379	26.73683427	6.98926E-31	0.005276266	0.006133866
dum8211	-0.035450621	0.008923247	-3.97283884	0.000232711	-0.053382556	-0.017518685
dum0003	-0.037491768	0.015315761	-2.447920753	0.017996905	-0.068269941	-0.006713595
dum9099	-0.139502799	0.016571119	-8.41842971	4.41004E-11	-0.17280371	-0.106201889

Figure 2.30 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.31, this time in 2018 euros per litre.

Figure 2.30 Actual and predicted energy content price of German petrol

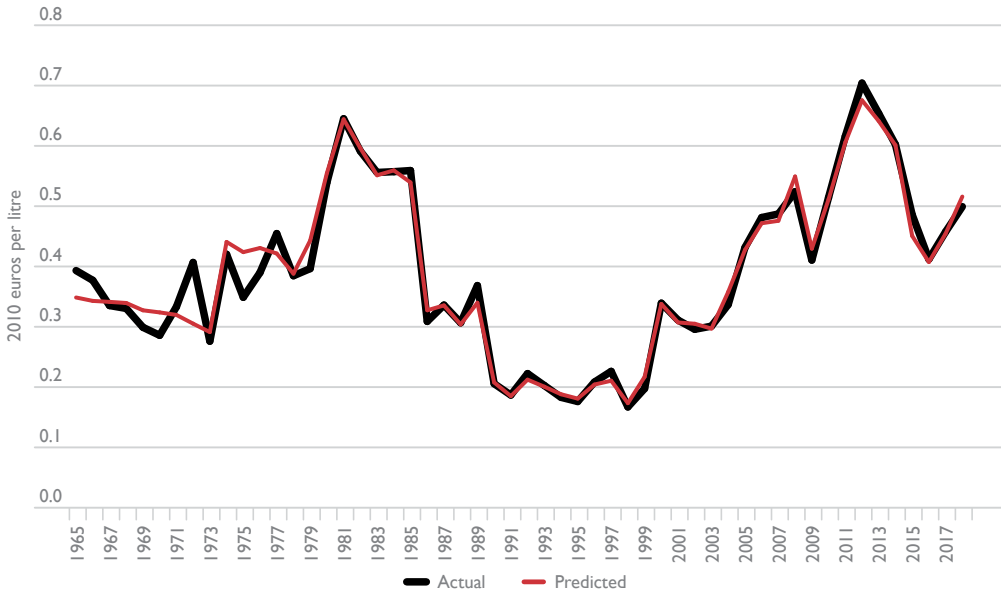
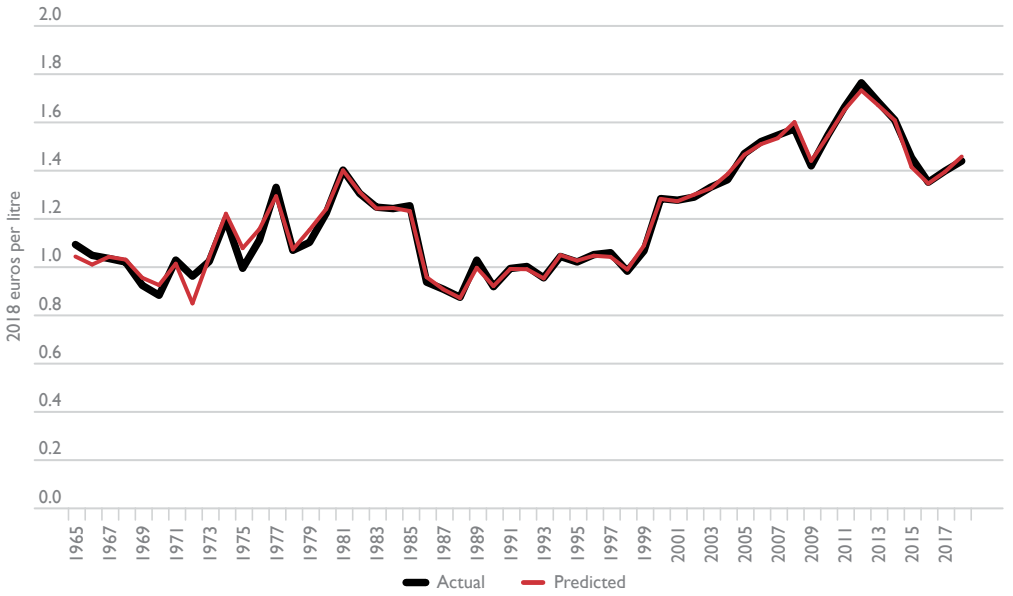


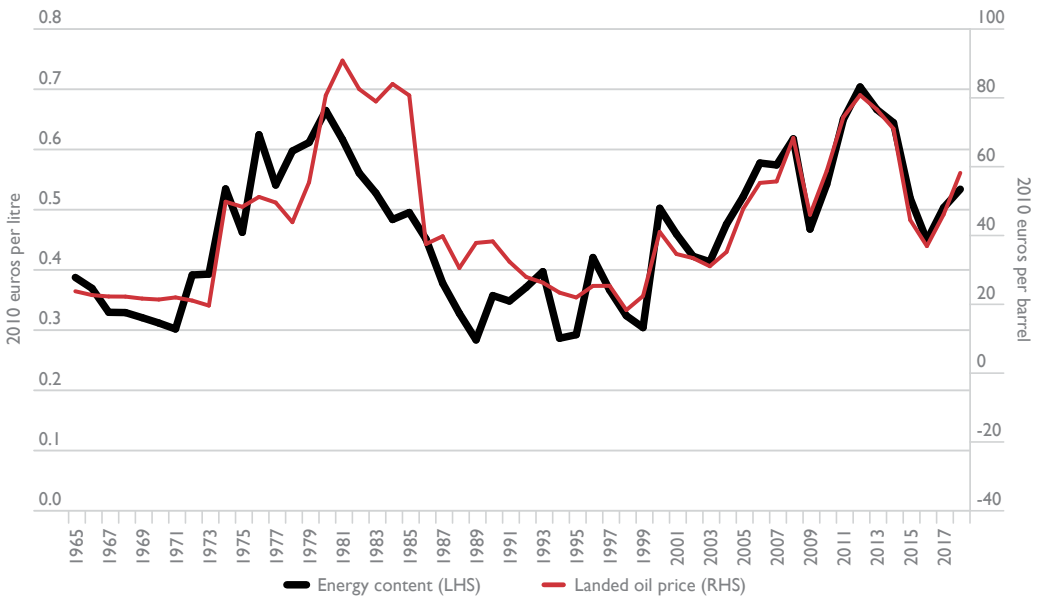
Figure 2.31 Actual and predicted price of German petrol



2.12 Greek Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Greek petrol in Euros. The real landed price of oil in Greece is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.32. The relationship varies over time, but is quite close in later years.

Figure 2.32 Greek energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B11, and the results are shown in Table 2.11.

Table 2.11 Regression results for predicting Greek energy content price

Regression statistics	
Multiple R	0.969156282
R Square	0.939263899
Adjusted R Square	0.931510354
Standard Error	0.030906971
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	0.694306898	0.115717816	121.1399336	7.1375E-27
Residual	47	0.044896321	0.000955241		
Total	53	0.739203219			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.26256631	0.016295186	16.11312176	9.05495E-21	0.229784625	0.295347995
landed oil price	0.005202503	0.00030379	17.12531318	7.77503E-22	0.004591356	0.005813651
dum7279	0.03646896	0.012739409	2.862688562	0.006255471	0.010840575	0.062097346
dum8185	-0.218517567	0.024006279	-9.102517015	6.08431E-12	-0.266811972	-0.170223162
dum6771	-0.057946841	0.017322293	-3.345217728	0.001622824	-0.092794799	-0.023098883
dum9499	-0.04889043	0.016239184	-3.010645717	0.004184744	-0.081559455	-0.016221406
dum8792	-0.116038916	0.016504573	-7.030712846	7.3424E-09	-0.149241835	-0.082835997

Figure 2.33 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.34, this time expressed in 2018 euros per litre.

Figure 2.33 Actual and predicted energy content price of Greek petrol

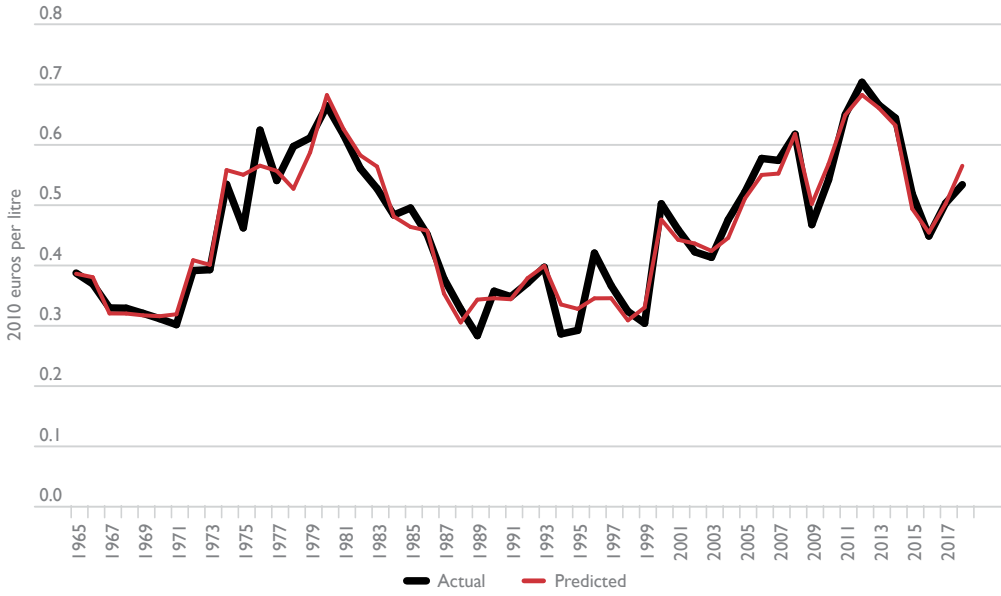
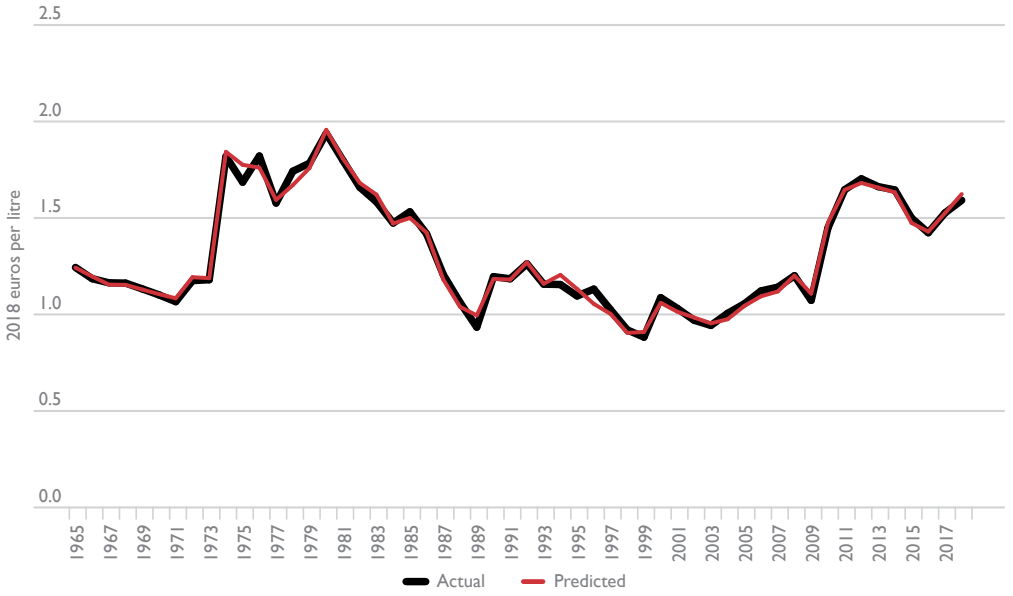


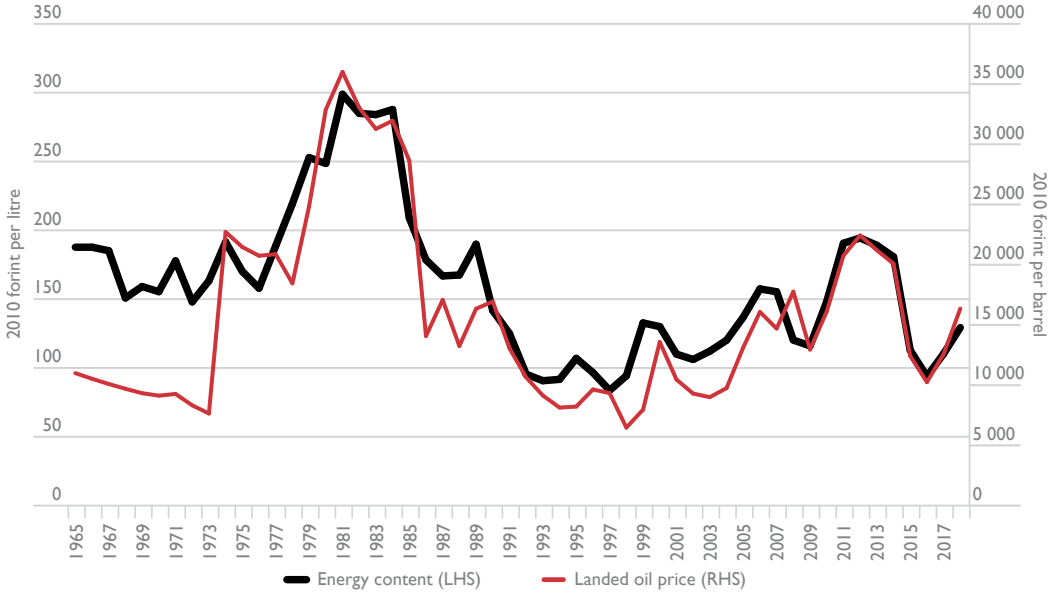
Figure 2.34 Actual and predicted price of Greek petrol



2.13 Hungarian Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Hungarian petrol in Euros. The real landed price of oil in Hungary is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.35. The relationship varies over time, but is quite close in later years.

Figure 2.35 Hungarian energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B12, and the results are shown in Table 2.12.

Table 2.12 Regression results for predicting Hungarian energy content price

Regression statistics	
Multiple R	0.958887604
R Square	0.919465436
Adjusted R Square	0.909184428
Standard Error	16.33089809
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	143110.3667	23851.72778	89.43339279	5.19321E-24
Residual	47	12534.81693	266.6982325		
Total	53	155645.1836			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	24.15542459	9.425132452	2.562873754	0.013643146	5.194503793	43.11634539
landed oil price	0.006776539	0.000364794	18.57631882	2.75495E-23	0.006042667	0.007510411
dum6573	56.09362915	7.201858716	7.788771116	5.27323E-10	41.6053582	70.5819001
dum0809	-46.69256907	15.11555199	-3.089041612	0.003367273	-77.10113739	-16.28400075
dum8689	24.53419441	8.839338863	2.775568941	0.007885119	6.751738305	42.31665052
dum9207	-16.30593976	8.208444603	-1.986483499	0.052827705	-32.81920032	0.207320806
dum6514	24.0838136	9.02068639	2.669842688	0.010387246	5.936533326	42.23109387

Figure 2.36 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.37, this time in 2018 forints per litre.

Figure 2.36 Actual and predicted energy content price of Hungarian petrol

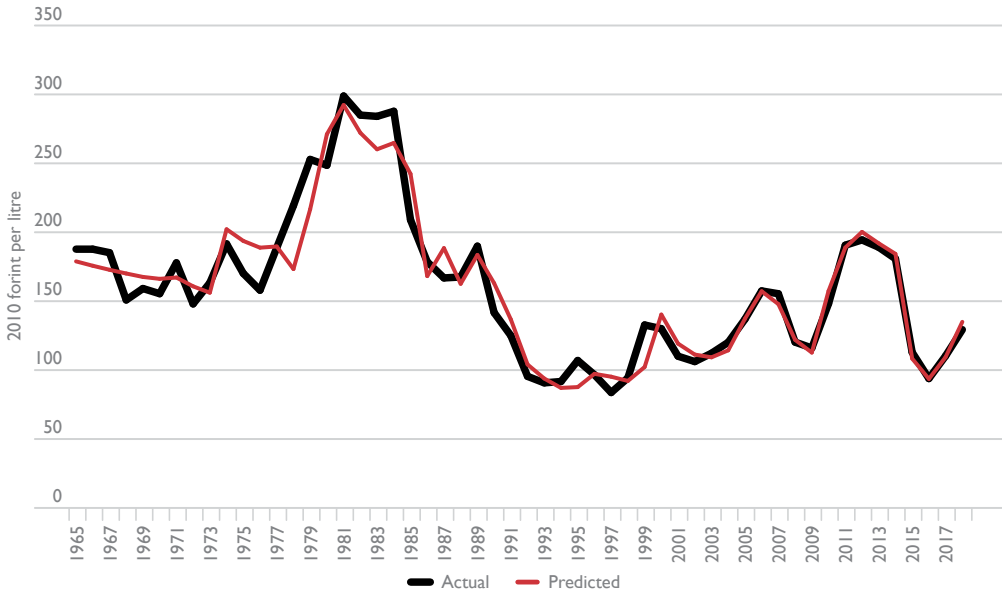
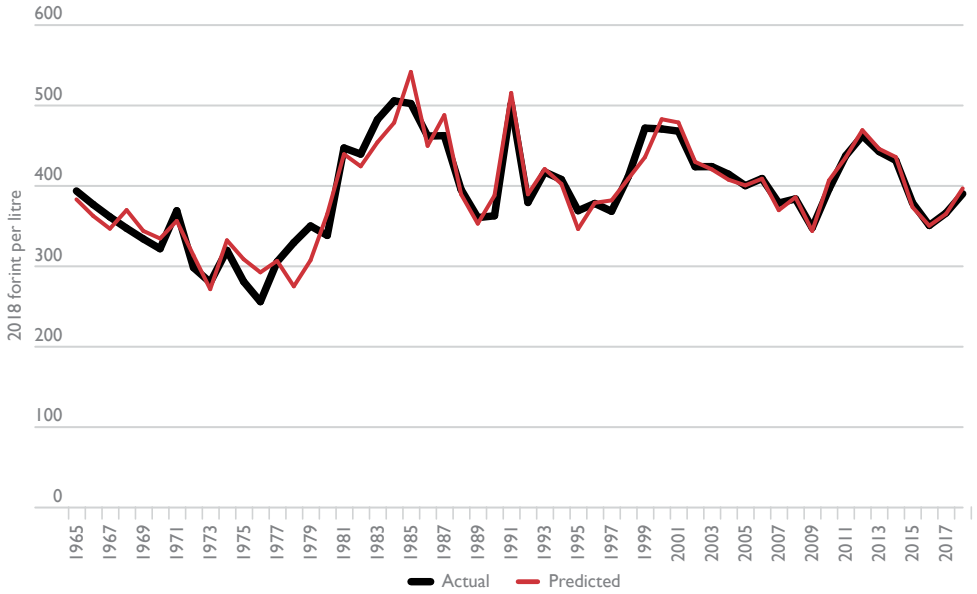


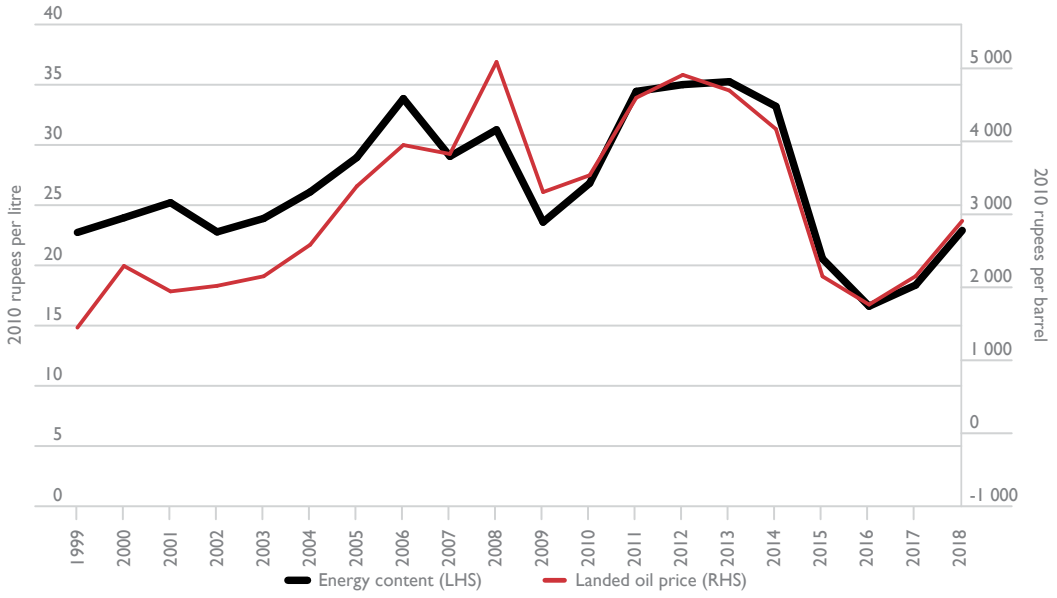
Figure 2.37 Actual and predicted price of Hungarian petrol



2.14 Indian Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Indian petrol in Rupees. The real landed price of oil in India is calculated as simply the price of oil in US dollars per barrel times the exchange rate in rupees per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.38. The relationship varies over time, but is quite close in later years.

Figure 2.38 Indian energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and three dummy variables. The data is set out in Appendix B13, and the results are shown in Table 2.13.

Table 2.13 Regression results for predicting India energy content price

Regression statistics	
Multiple R	0.992056384
R Square	0.984175868
Adjusted R Square	0.978524393
Standard Error	0.829909339
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	599.7112106	119.9422421	174.14494	4.33215E-12
Residual	14	9.642493144	0.68874951		
Total	19	609.3537038			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	5.137219479	0.844363454	6.084132913	2.81782E-05	3.326239984	6.948198974
landed oil price	0.006120815	0.000239815	25.52302987	3.85803E-13	0.005606462	0.006635168
dum9906	7.249226584	0.742286786	9.766072529	1.25141E-07	5.657179768	8.841273401
dum0809	-6.257141893	0.901217953	-6.942984071	6.83941E-06	-8.190062162	-4.324221624
dum00	-3.440347366	0.953976397	-3.606323359	0.002862345	-5.486423244	-1.394271488
dum9916	0.972656454	0.706908153	1.375930452	0.190456198	-0.543510741	2.488823649

Figure 2.39 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.40, this time in 2018 rupees per litre.

Figure 2.39 Actual and predicted energy content price of Indian petrol

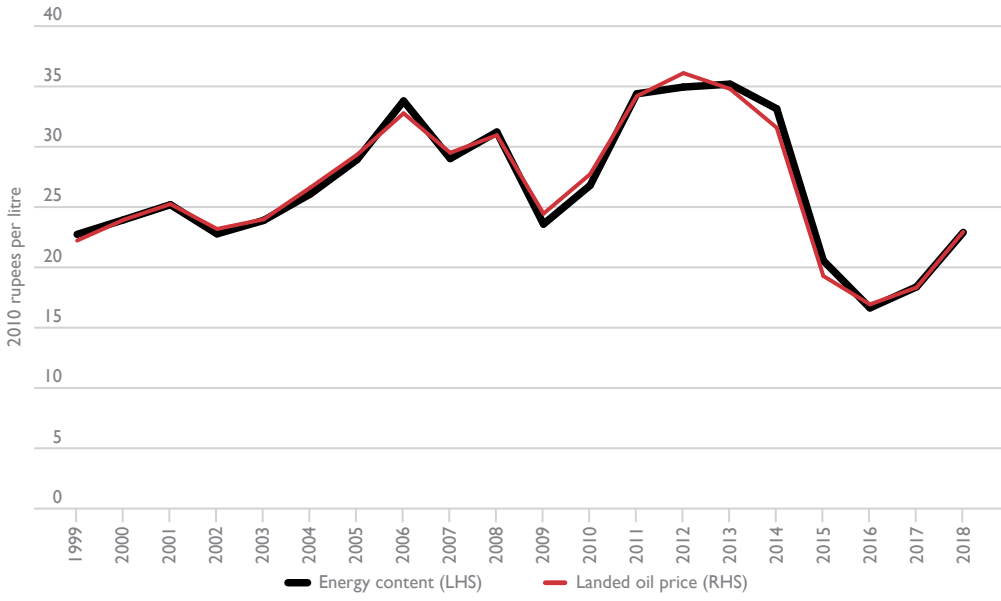
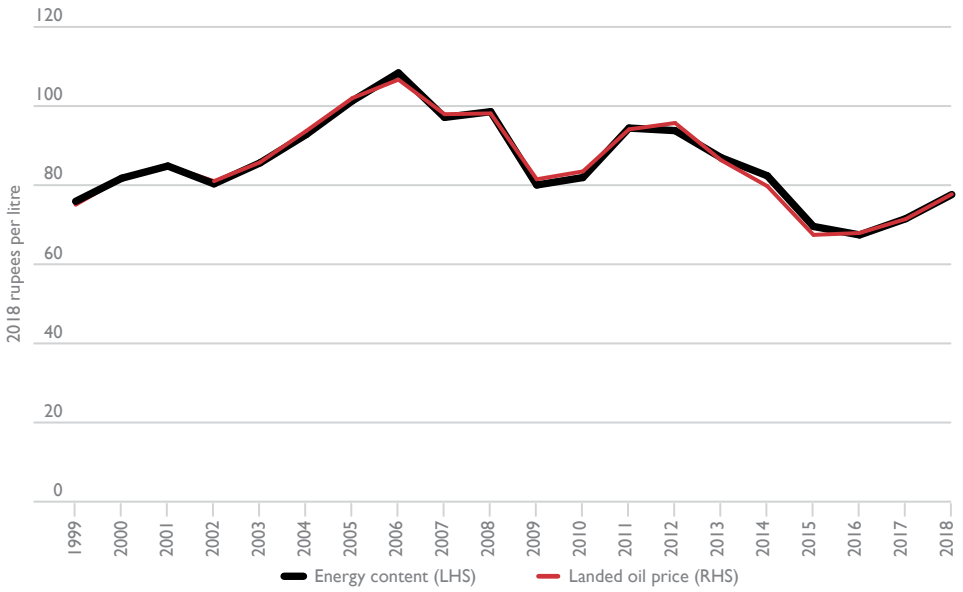


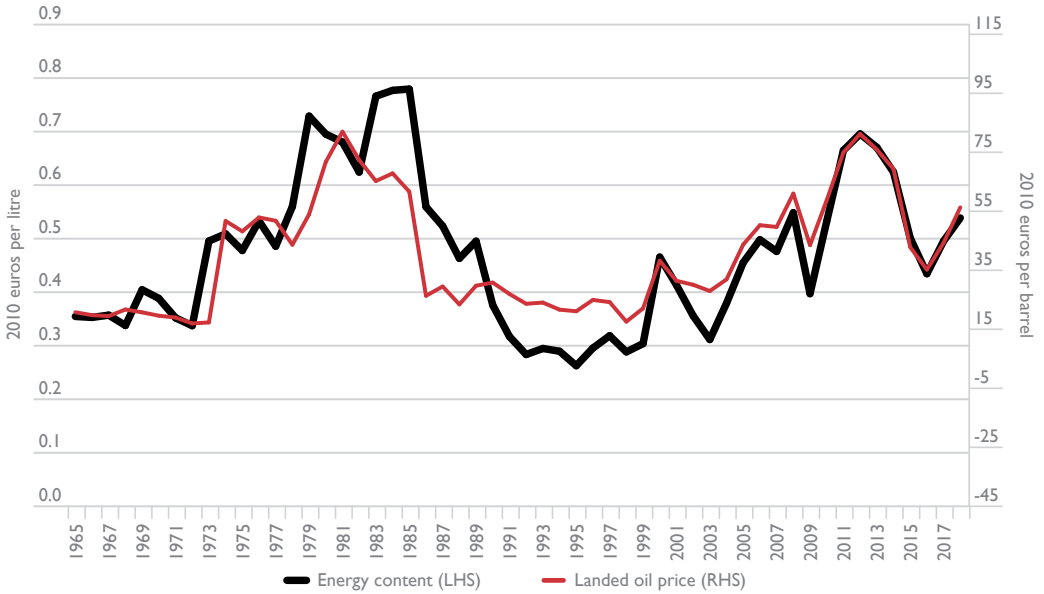
Figure 2.40 Actual and predicted price of Indian petrol



2.15 Irish Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content price of Irish petrol in Euros. The real landed price of oil in Ireland is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.41. The relationship varies over time, but is quite close in later years.

Figure 2.41 Irish energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B14, and the results are shown in Table 2.14.

Table 2.14 Regression results for predicting Irish energy content price

Regression statistics	
Multiple R	0.992666415
R Square	0.985386612
Adjusted R Square	0.983162835
Standard Error	0.018717305
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	7	1.086676313	0.155239473	443.1140601	5.44418E-40
Residual	46	0.016115525	0.000350338		
Total	53	1.102791838			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.240323422	0.007329884	32.78679778	1.51233E-33	0.22556913	0.255077713
landed oil price	0.005478094	0.000147519	37.13493251	6.03519E-36	0.005181154	0.005775033
dum73	0.160371844	0.019432049	8.252955729	1.25664E-10	0.121257157	0.199486531
dum7880	0.157045146	0.014452576	10.86623904	2.71412E-14	0.12795362	0.186136673
dum8389	0.172758763	0.009045145	19.09961195	1.67072E-23	0.15455183	0.190965696
dum9199	-0.082766444	0.00883722	-9.365665174	3.1359E-12	-0.100554845	-0.064978043
dum0409	-0.07690375	0.015199189	-5.059727088	7.19181E-06	-0.107498131	-0.046309369
dum0203	-0.085327328	0.017457683	-4.887666353	1.28024E-05	-0.120467821	-0.050186835

Figure 2.42 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.43, this time in 2018 euros per litre.

Figure 2.42 Actual and predicted energy content price of Irish petrol

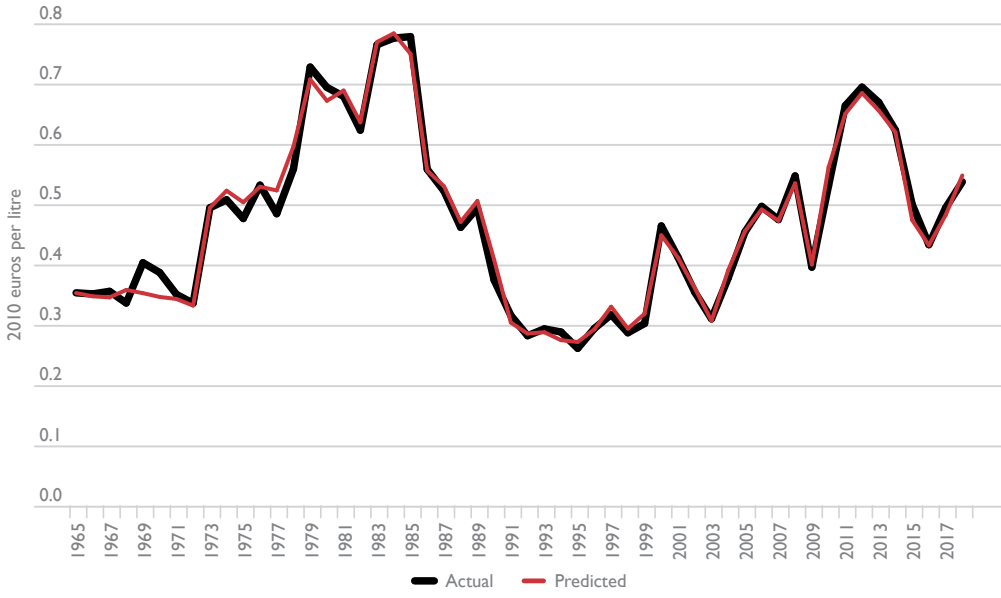
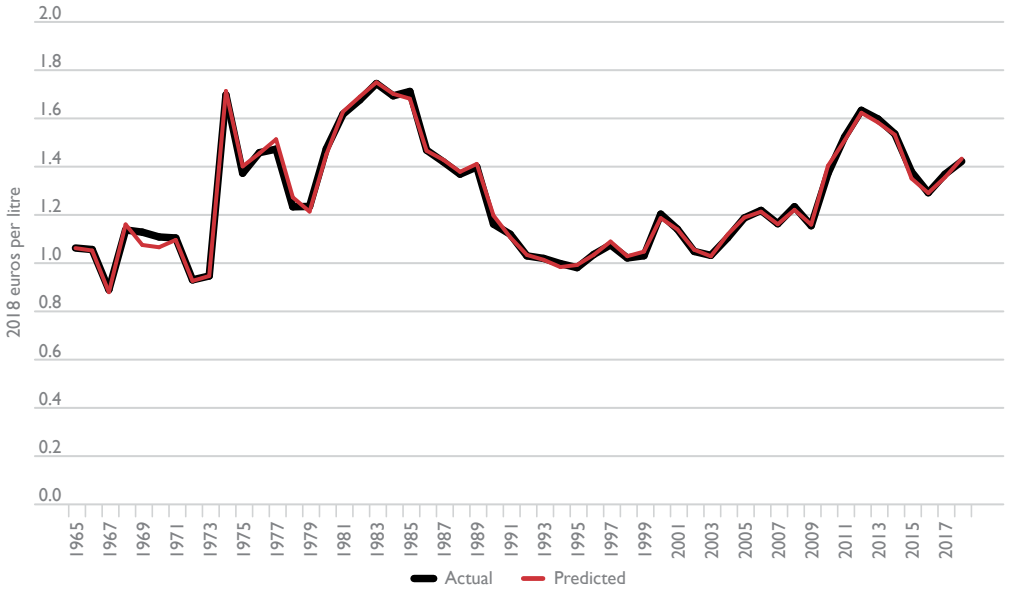


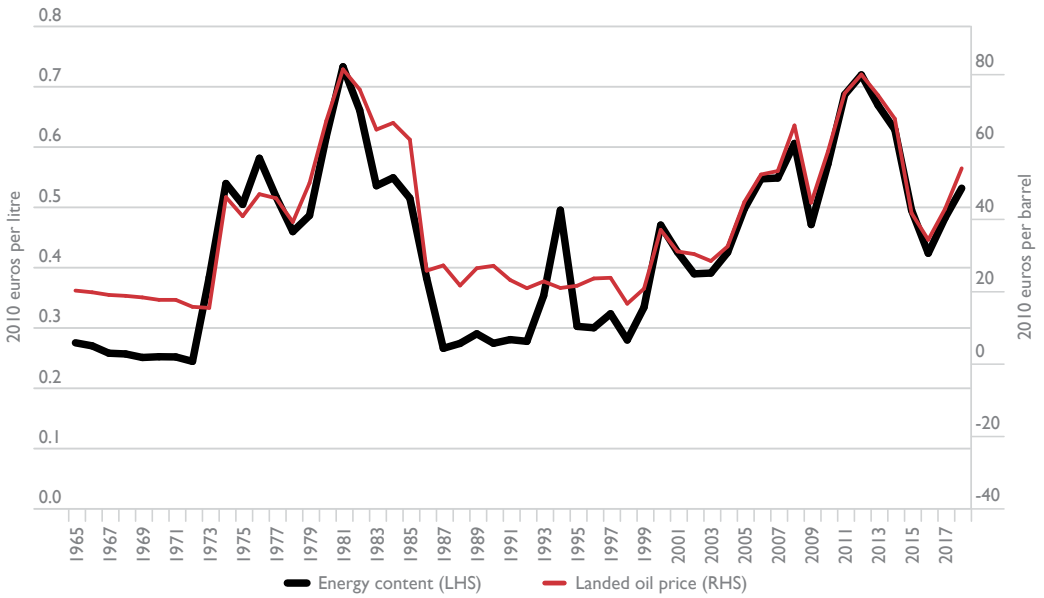
Figure 2.43 Actual and predicted price of Irish petrol



2.16 Italian Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Italian petrol price in Euros. The real landed price of oil in Italy is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.44. The relationship varies over time, but is quite close in later years.

Figure 2.44 Italian energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B15, and the results are shown in Table 2.15.

Table 2.15 Regression results for predicting Italian energy content price

Regression statistics	
Multiple R	0.99508883
R Square	0.990201779
Adjusted R Square	0.988950942
Standard Error	0.015046063
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	1.075276348	0.179212725	791.6315203	1.8986E-45
Residual	47	0.010640049	0.000226384		
Total	53	1.085916397			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.213867316	0.007183285	29.77291073	3.73036E-32	0.19941641	0.228318223
landed oil price	0.006172614	0.000130515	47.29438116	2.71601E-41	0.005910052	0.006435176
dum6572	-0.070440448	0.007351897	-9.581260951	1.25035E-12	-0.085230558	-0.055650338
dum8398	-0.083514698	0.00607925	-13.73766457	4.49287E-18	-0.095744572	-0.071284825
dum86	0.093100442	0.015773205	5.902443039	3.7803E-07	0.061368847	0.124832037
dum9394	0.240566389	0.015684446	15.33789503	6.39358E-20	0.209013353	0.272119425
dum7377	0.081409292	0.011883731	6.850482777	1.37808E-08	0.05750231	0.105316274

Figure 2.45 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.46, this time in 2018 euros per litre.

Figure 2.45 Actual and predicted energy content of Italian petrol price

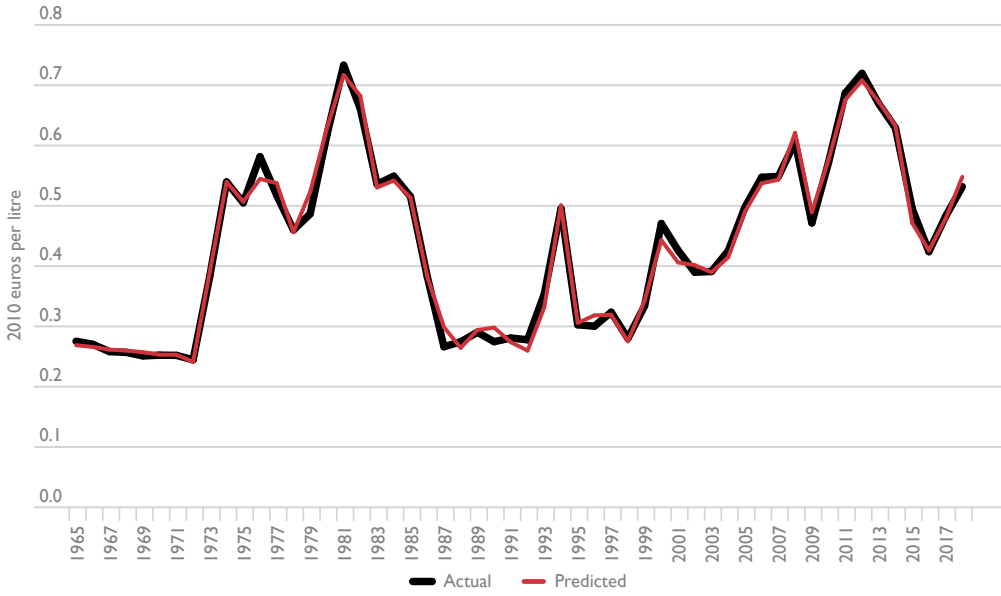
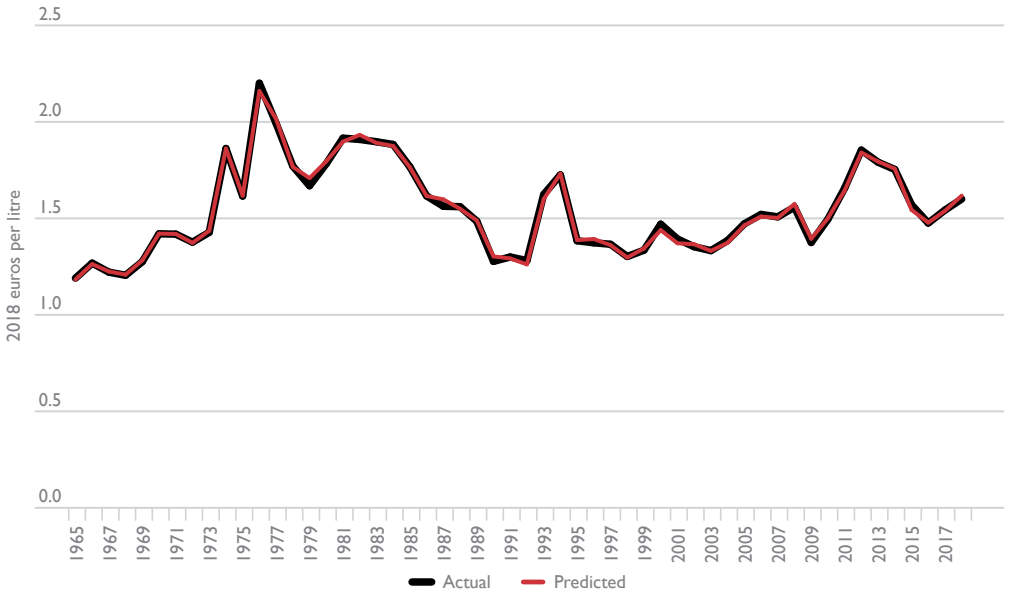


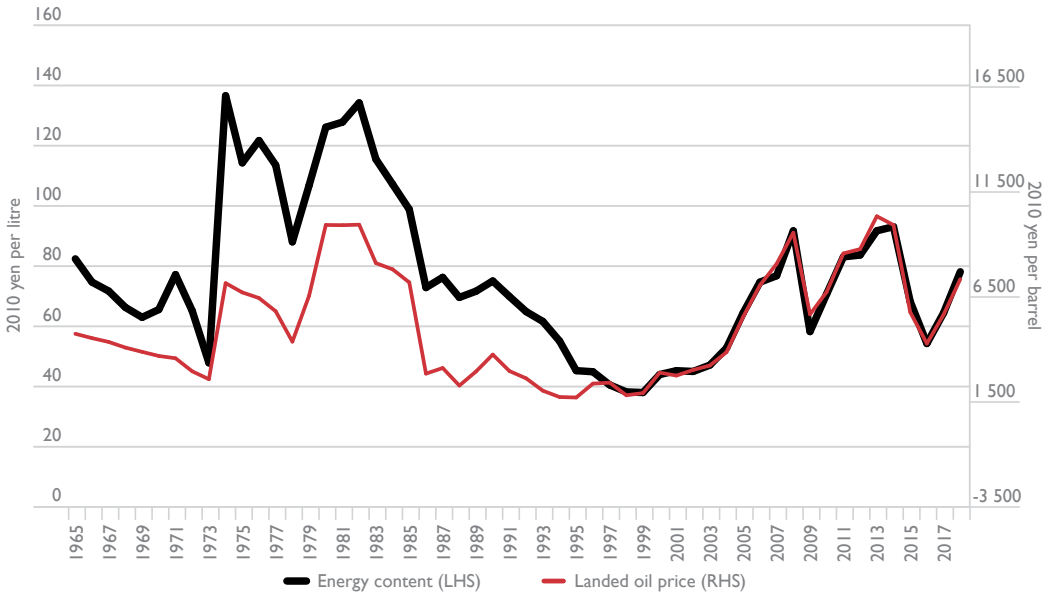
Figure 2.46 Actual and predicted Italian petrol price



2.17 Japanese Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Japanese petrol price in Yen. The real landed price of oil in Japan is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Yen per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.47. The relationship varies over time, but is very close for the last 20 years.

Figure 2.47 Japanese energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and three dummy variables. The data is set out in Appendix B16, and the results are shown in Table 2.16.

Table 2.16 Regression results for predicting Japanese energy content price

Regression statistics	
Multiple R	0.989293706
R Square	0.978702038
Adjusted R Square	0.9764835
Standard Error	3.994892894
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	35201.72565	7040.345131	441.1473446	7.02035E-39
Residual	48	766.0401233	15.95916924		
Total	53	35967.76578			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	24.84856508	1.398409656	17.7691601	9.53222E-23	22.03687402	27.66025614
landed oil price	0.006917024	0.000218081	31.71771165	7.41736E-34	0.006478543	0.007355505
dum6573	-16.70026515	1.77793091 1	-9.393090047	1.88804E-12	-20.27503483	-13.12549546
dum7477	17.88458385	2.298757318	7.780109588	4.74009E-10	13.26262249	22.50654521
dum6595	33.57760548	1.464716281	22.92430686	1.66649E-27	30.63259601	36.52261494
dumGFC	-5.82569465	4.082113062	-1.427127216	0.160016442	-14.03333306	2.381943756

Figure 2.48 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.49, this time in 2018 yen per litre.

Figure 2.48 Actual and predicted energy content of Japanese petrol price

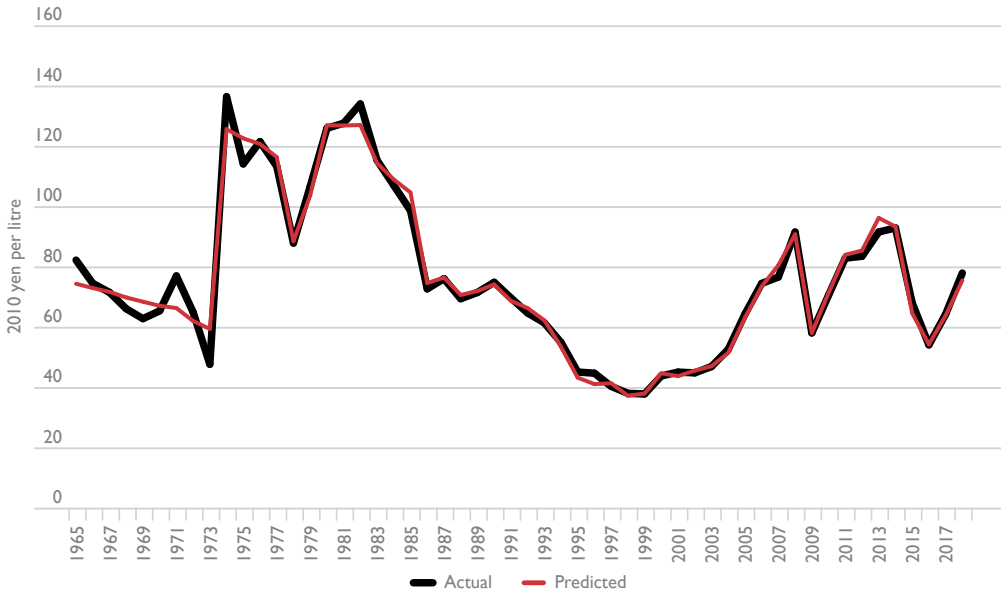
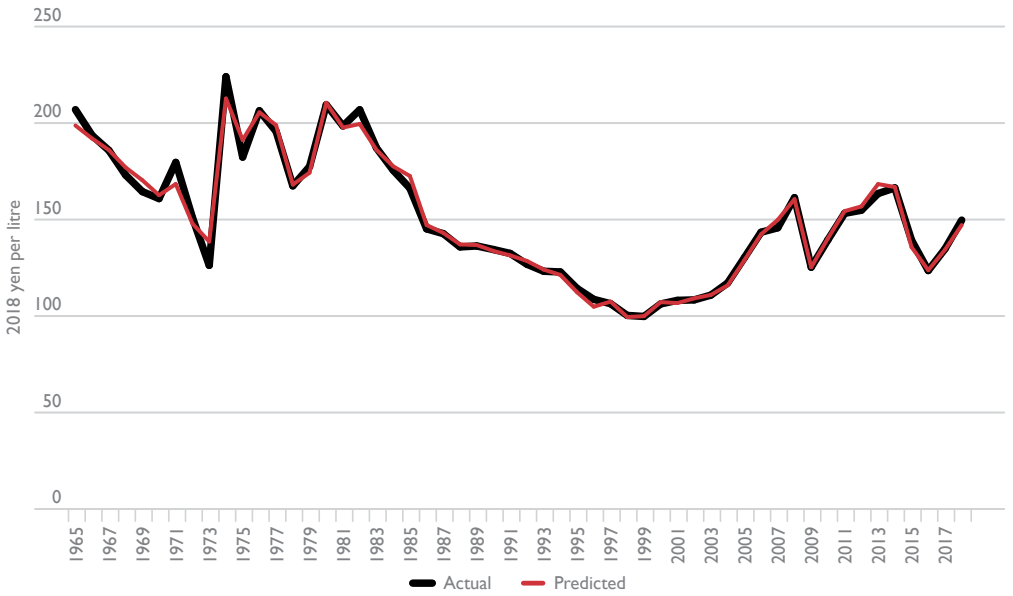


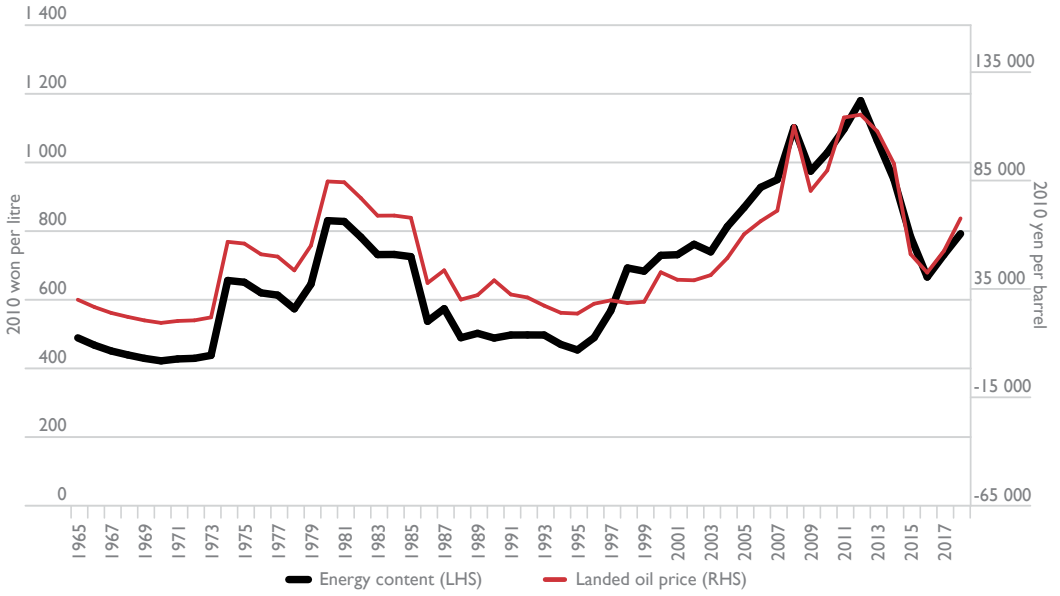
Figure 2.49 Actual and predicted Japanese petrol price



2.18 Korean Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Korean petrol price in Won. The real landed price of oil in Korea is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Won per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.50. The relationship varies over time, but is quite close in later years.

Figure 2.50 Korean energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and one dummy variable. The data is set out in Appendix B17, and the results are shown in Table 2.17.

Table 2.17 Regression results for predicting Korean energy content price

Regression statistics	
Multiple R	0.993476768
R Square	0.986996089
Adjusted R Square	0.98482877
Standard Error	26.63142835
Observations	29

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	1291937.778	322984.4444	455.3996435	3.00322E-22
Residual	24	17021.59142	709.232976		
Total	28	1308959.369			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	403.0554857	20.75961352	19.41536557	3.50773E-16	360.2097492	445.9012222
landed oil price	0.006225482	0.000242165	25.70760241	5.61834E-19	0.005725678	0.006725286
dum9807	94.11537741	14.16744511	6.643073375	7.16756E-07	64.87520783	123.355547
dumGFC	66.33869741	20.69053866	3.206233462	0.003783148	23.63552443	109.0418704
dum6596	-101.3882957	17.69118726	-5.731005735	6.62527E-06	-137.9011116	-64.87547971

Figure 2.51 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.52, this time in 2018 won per litre.

Figure 2.51 Actual and predicted energy content of Korean petrol price

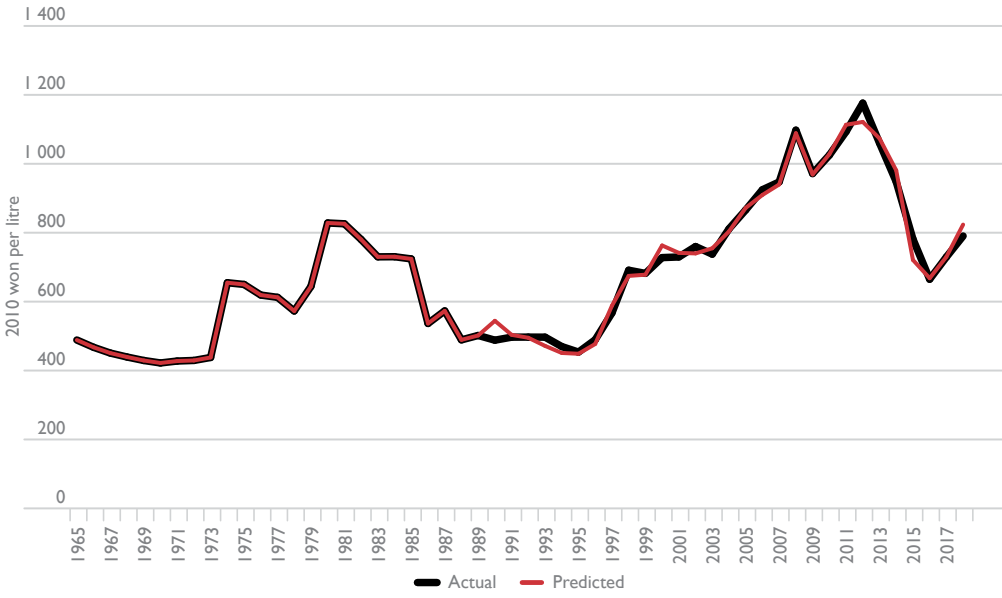
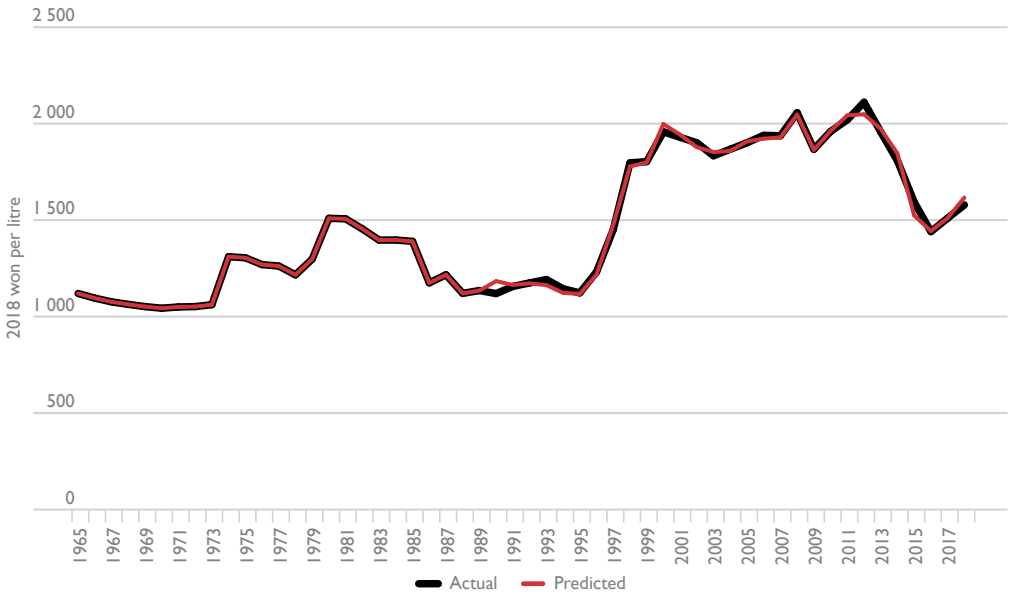


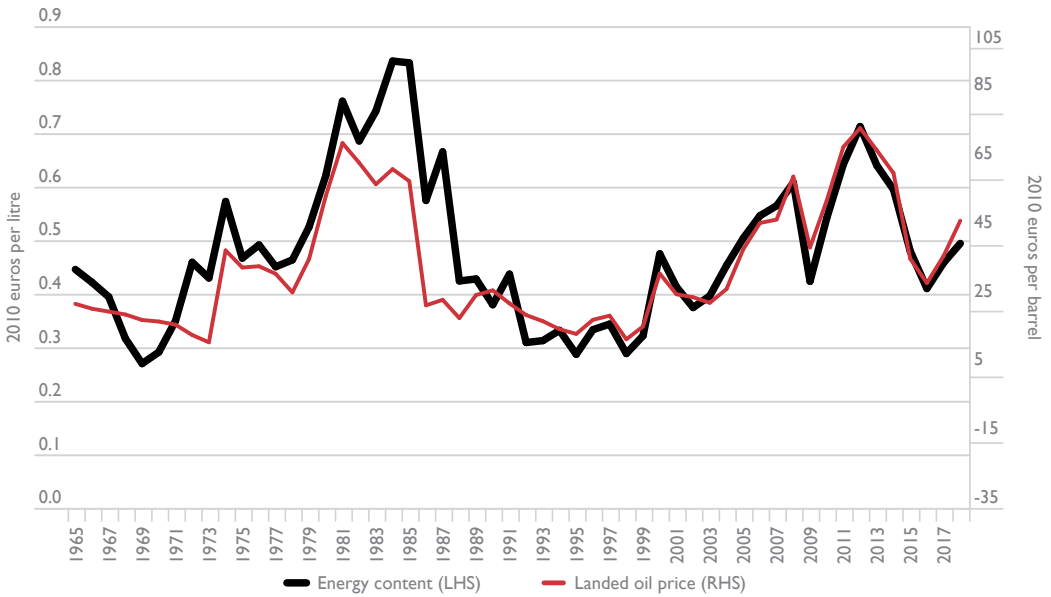
Figure 2.52 Actual and predicted Korean petrol price



2.19 Dutch Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Dutch petrol price in Euros. The real landed price of oil in the Netherlands is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.53. The relationship varies over time, but is quite close in later years.

Figure 2.53 Dutch energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B18, and the results are shown in Table 2.18.

Table 2.18 Regression results for predicting Dutch energy content price

Regression statistics	
Multiple R	0.981867254
R Square	0.964063305
Adjusted R Square	0.960319899
Standard Error	0.028329312
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	1.033429141	0.206685828	257.5364178	1.94871E-33
Residual	48	0.038522396	0.00080255		
Total	53	1.071951537			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.208555984	0.010317731	20.21335671	4.01377E-25	0.187810795	0.229301173
landed oil price	0.005797105	0.000219548	26.40473142	3.07626E-30	0.005355674	0.006238536
dum6588	0.226951639	0.013855945	16.37936953	2.76187E-21	0.199092395	0.254810883
dum0007	0.037966998	0.0115658	3.282695367	0.001921963	0.014712399	0.061221598
dum6671	-0.164219874	0.020279269	-8.097918991	1.56698E-10	-0.204994077	-0.123445672
dumGFC	-0.041686983	0.028939071	-1.440508696	0.156214932	-0.099872884	0.016498918

Figure 2.54 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.55, this time in 2018 euros per litre.

Figure 2.54 Actual and predicted energy content of Dutch petrol price

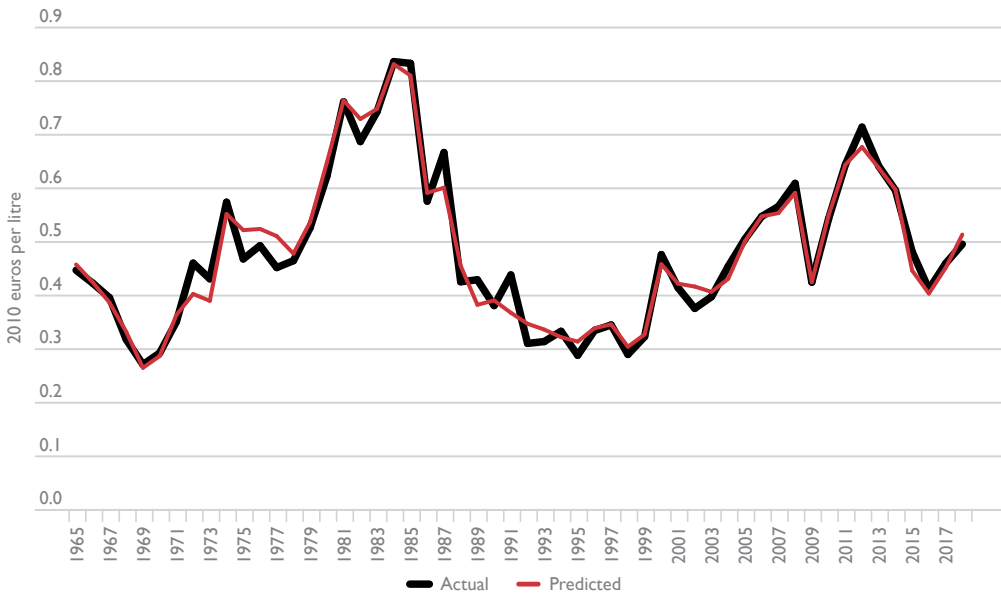
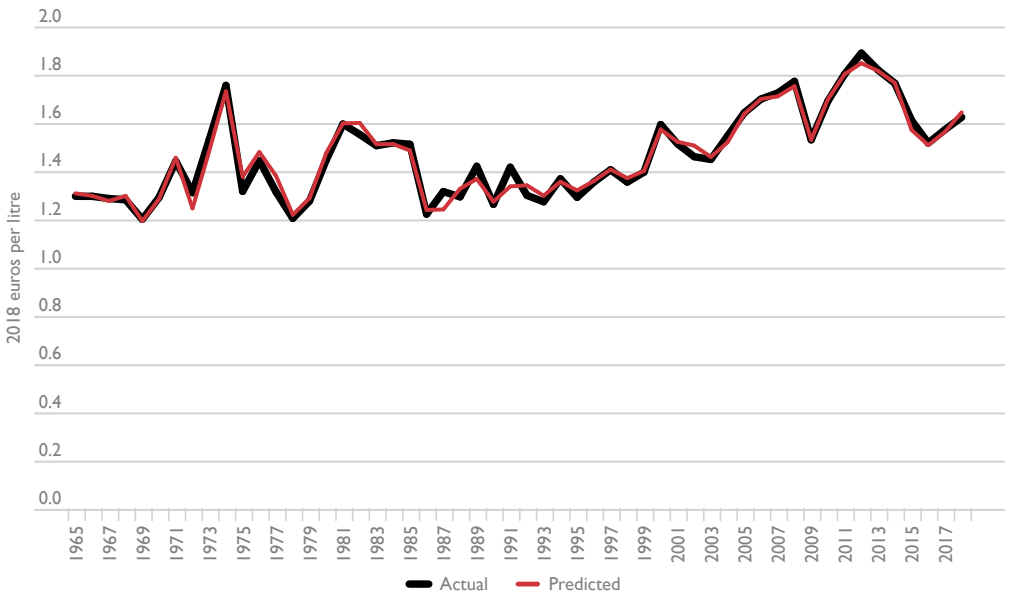


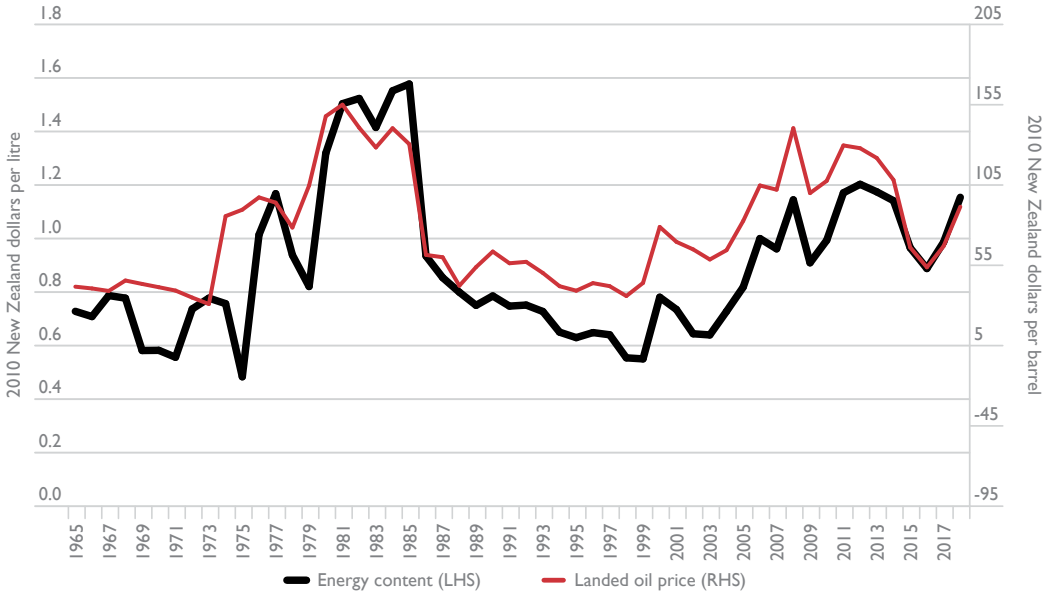
Figure 2.55 Actual and predicted Dutch petrol price



2.20 New Zealand Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the New Zealand petrol price in New Zealand dollars. The real landed price of oil in the New Zealand is calculated as simply the price of oil in US dollars per barrel times the exchange rate in New Zealand dollars per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.56. The relationship varies over time, but is quite close in later years.

Figure 2.56 New Zealand energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B19, and the results are shown in Table 2.19.

Table 2.19 Regression results for predicting New Zealand energy content price

Regression statistics	
Multiple R	0.981525601
R Square	0.963392505
Adjusted R Square	0.958719208
Standard Error	0.05664726
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	3.969071525	0.661511921	206.1483496	5.09947E-32
Residual	47	0.150818866	0.003208912		
Total	53	4.119890391			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.519930921	0.032416038	16.03931135	1.08761E-20	0.454718264	0.585143577
landed oil price	0.006878195	0.000226659	30.34597249	1.59021E-32	0.006422215	0.007334175
dum7475	-0.616080186	0.052820358	-11.66368828	1.77577E-15	-0.722341039	-0.509819333
dum8914	-0.246602938	0.020819291	-11.84492468	1.03024E-15	-0.28848595	-0.204719926
dum6514	-0.039181996	0.030946297	-1.266128721	0.211706753	-0.101437916	0.023073924
dum79	-0.380026778	0.058246716	-6.524432726	4.31012E-08	-0.497204056	-0.2628495
dum6971	-0.191637719	0.035974601	-5.32702839	2.762E-06	-0.26400928	-0.119266157

Figure 2.57 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.58, this time in 2018 New Zealand dollars per litre.

Figure 2.57 Actual and predicted energy content of New Zealand petrol price

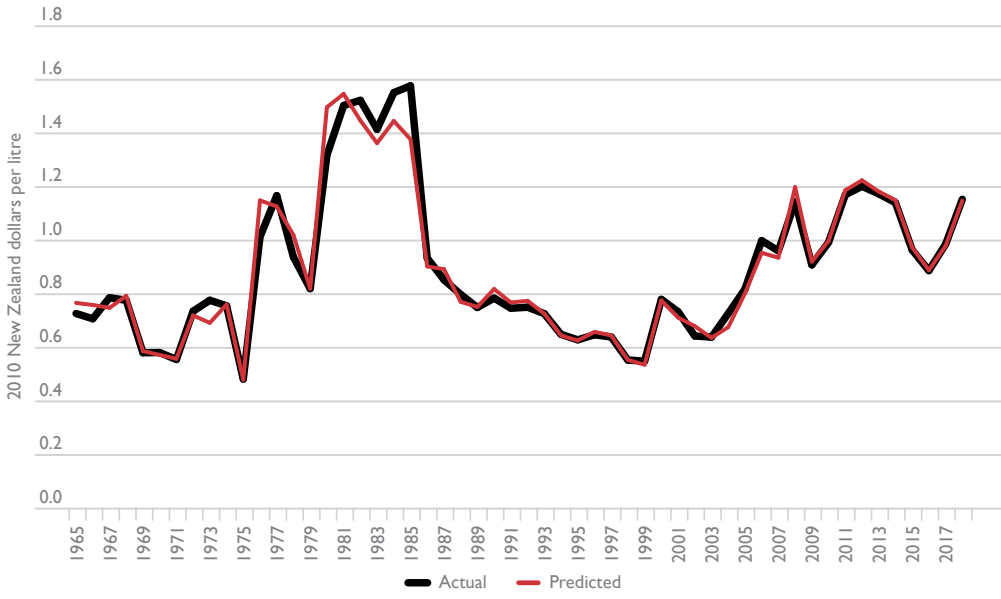
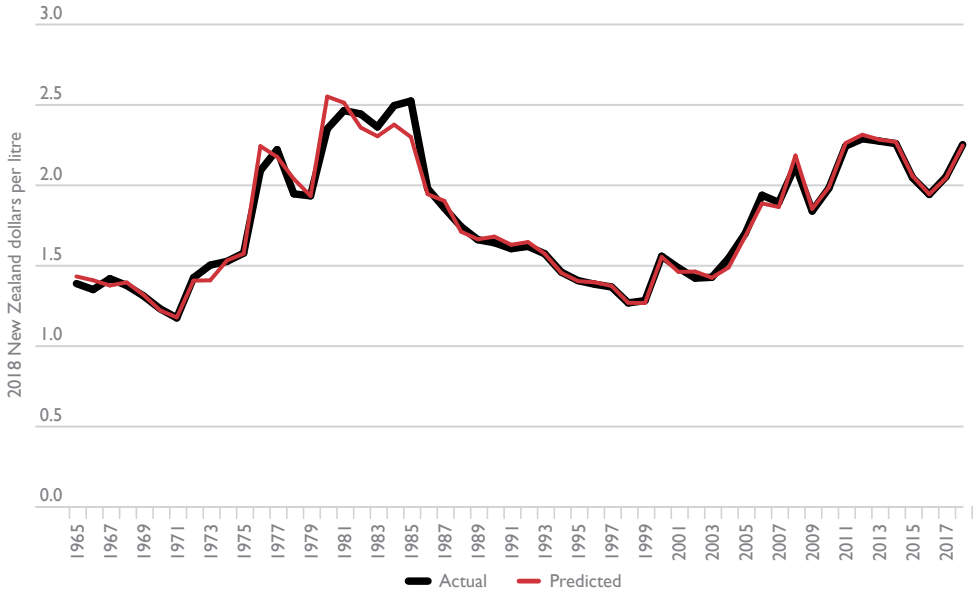


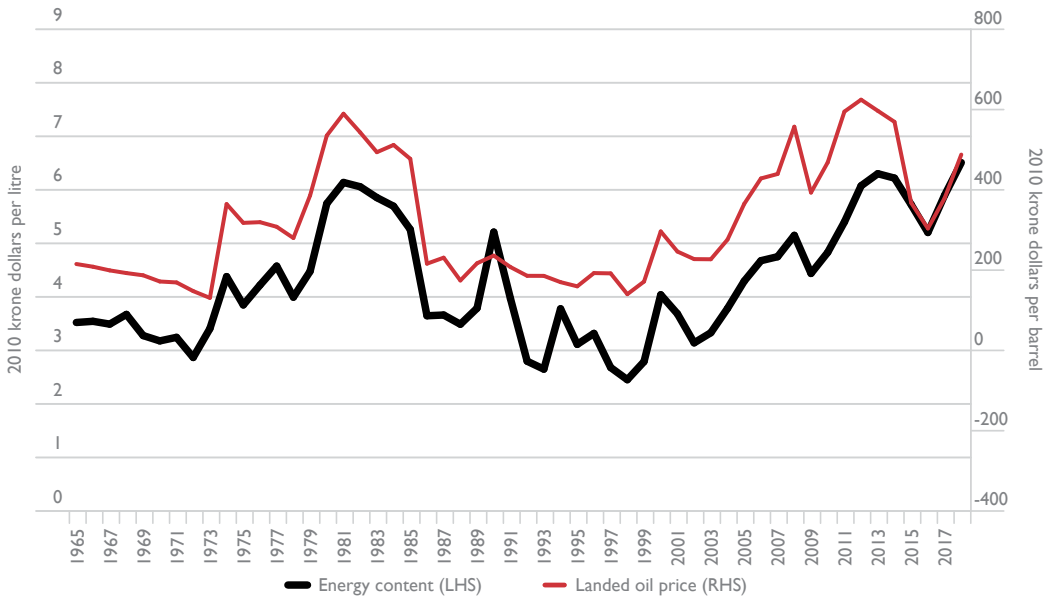
Figure 2.58 Actual and predicted New Zealand petrol price



2.21 Norwegian Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Norwegian petrol price in Krone. The real landed price of oil in the Norway is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Krone per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.59. The relationship is close over time, but the introduction of a heavier oil tax changes the level in later years.

Figure 2.59 Norwegian energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B20, and the results are shown in Table 2.20.

Table 2.20 Regression results for predicting Norwegian energy content price

Regression statistics	
Multiple R	0.975881498
R Square	0.952344699
Adjusted R Square	0.94845447
Standard Error	0.257233061
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	64.79367382	16.19841846	244.8042996	9.99794E-32
Residual	49	3.242273545	0.066168848		
Total	53	68.03594737			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	3.194267897	0.158829847	20.11125717	2.52911E-25	2.87508737	3.513448424
landed oil price	0.006863455	0.000242351	28.32035945	4.93151E-32	0.006376433	0.007350476
dum90	1.479203552	0.261707722	5.652120388	8.00272E-07	0.953282194	2.00512491
dumPreTax	-1.083450465	0.137878676	-7.857998736	3.15152E-10	-1.360528039	-0.806372891
dum9612	-0.419565543	0.077857595	-5.388883909	2.01341E-06	-0.576026238	-0.263104847

Figure 2.60 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.61, this time in 2018 Krone per litre.

Figure 2.60 Actual and predicted energy content of Norwegian petrol price

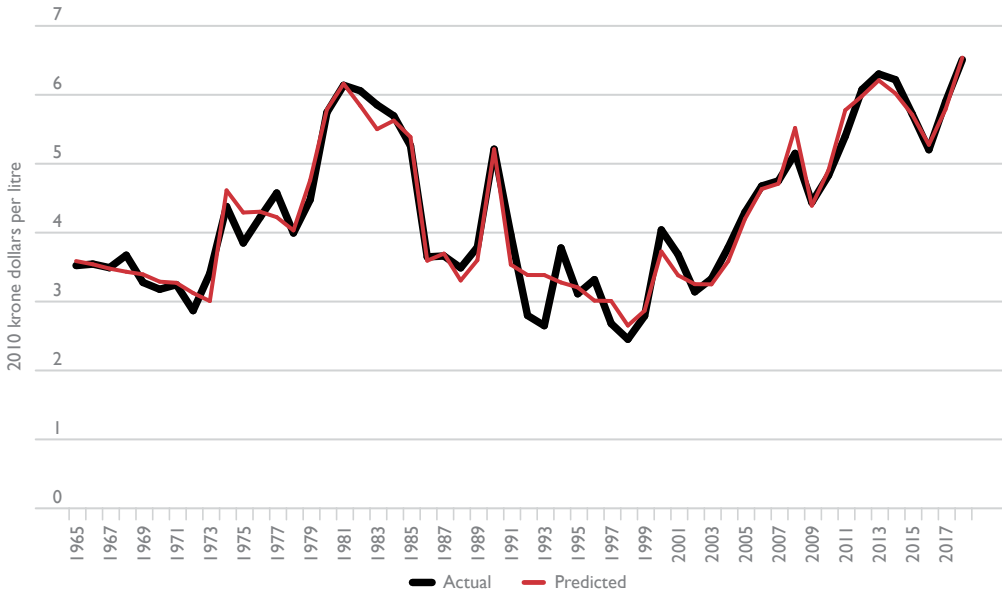
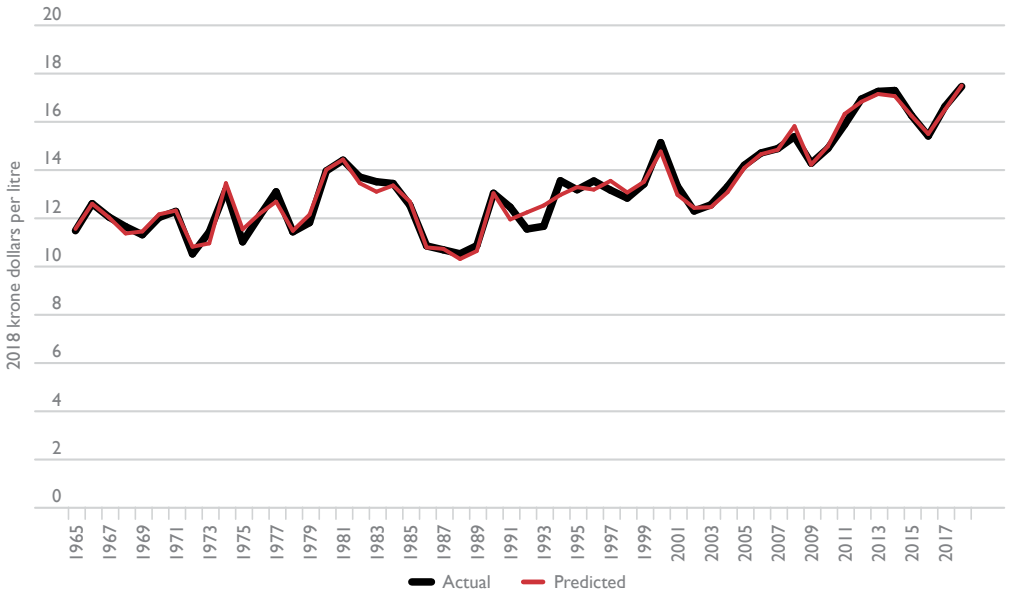


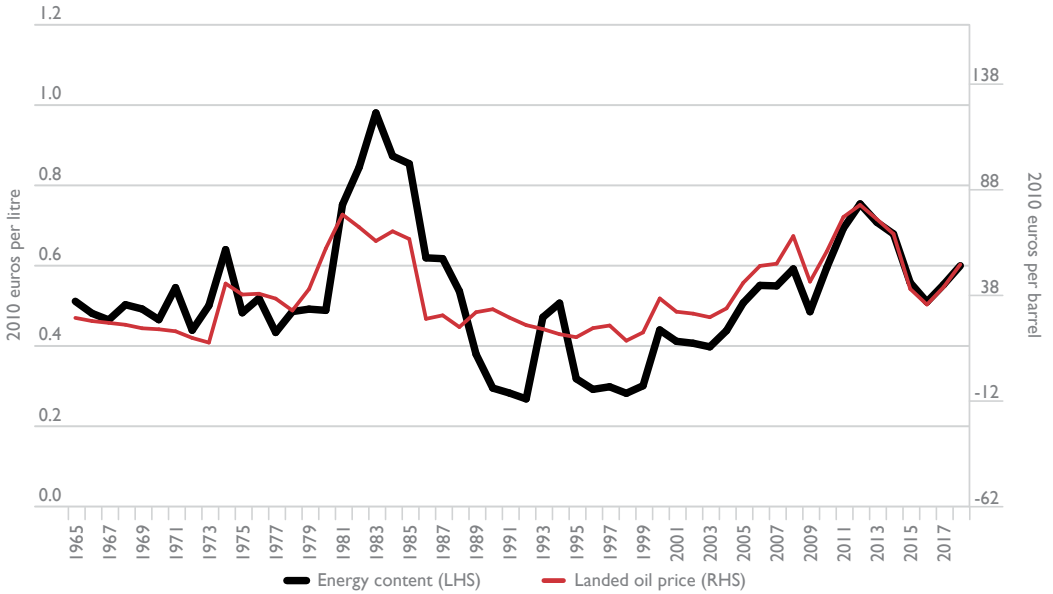
Figure 2.61 Actual and predicted Norwegian petrol price



2.22 Spanish Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Spanish petrol price in Euros. The real landed price of oil in the Spain is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Euros per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.62. The relationship varies over time, but is quite close in later years.

Figure 2.62 Spanish energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B21, and the results are shown in Table 2.21.

Table 2.21 Regression results for predicting Spanish energy content price

Regression statistics	
Multiple R	0.994747183
R Square	0.989521957
Adjusted R Square	0.987659194
Standard Error	0.017601948
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	1.316677055	0.164584632	531.2118982	6.78876E-42
Residual	45	0.013942286	0.000309829		
Total	53	1.330619342			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.314854123	0.012265927	25.66900431	1.64042E-28	0.290149279	0.339558967
landed oil price	0.005353744	0.000194571	27.51565587	8.64795E-30	0.004961858	0.00574563
dum8909	-0.165302785	0.011889625	-13.90311164	6.73558E-18	-0.189249719	-0.141355851
dum9394	0.202913019	0.013668354	14.84546164	5.90695E-19	0.175383542	0.230442496
dumGFC	-0.030465737	0.012290209	-2.478862469	0.016994593	-0.055219488	-0.005711986
dum8288	0.227291465	0.012640027	17.98188182	3.60086E-22	0.201833144	0.252749785
dum7579	-0.128245952	0.013573483	-9.448271113	2.98387E-12	-0.155584351	-0.100907553
dum80	-0.192174302	0.018442157	-10.42038102	1.40908E-13	-0.229318713	-0.155029891
dum6574	0.033270784	0.009754371	3.410858896	0.001377665	0.013624472	0.052917096

Figure 2.63 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.64, this time in 2018 euros per litre.

Figure 2.63 Actual and predicted energy content of Spanish petrol price

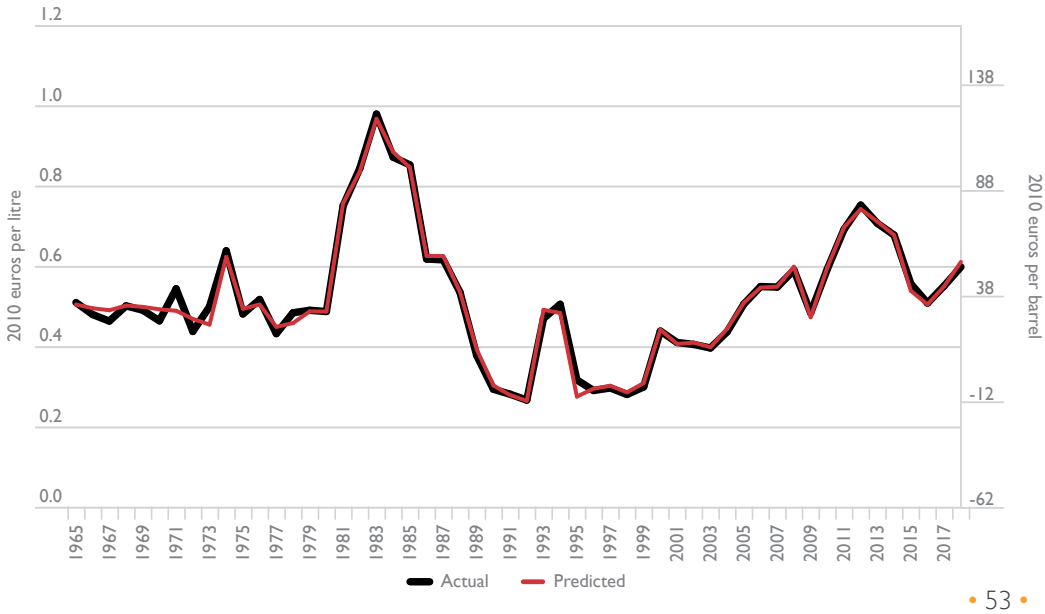
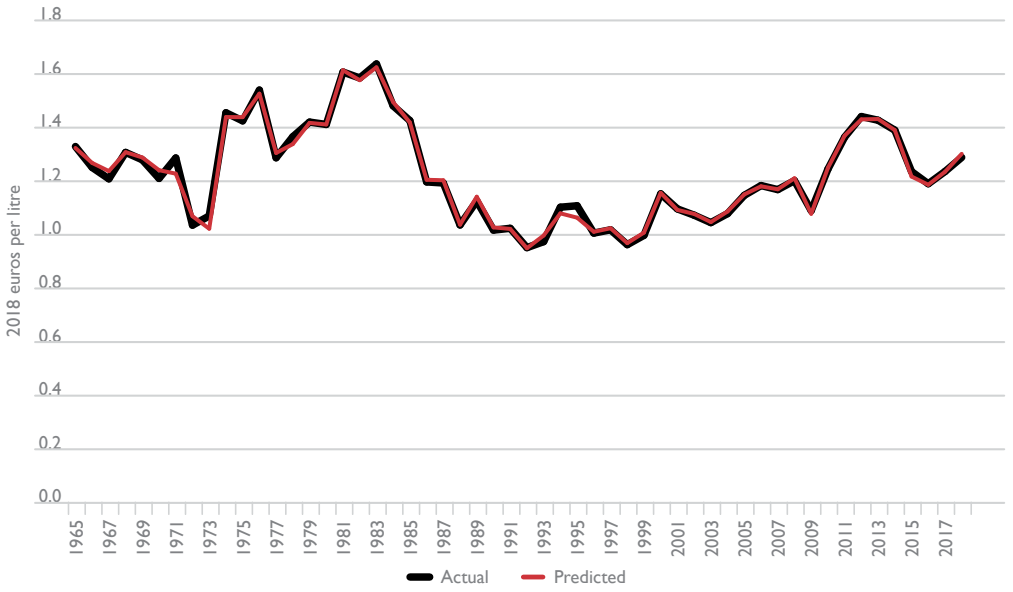


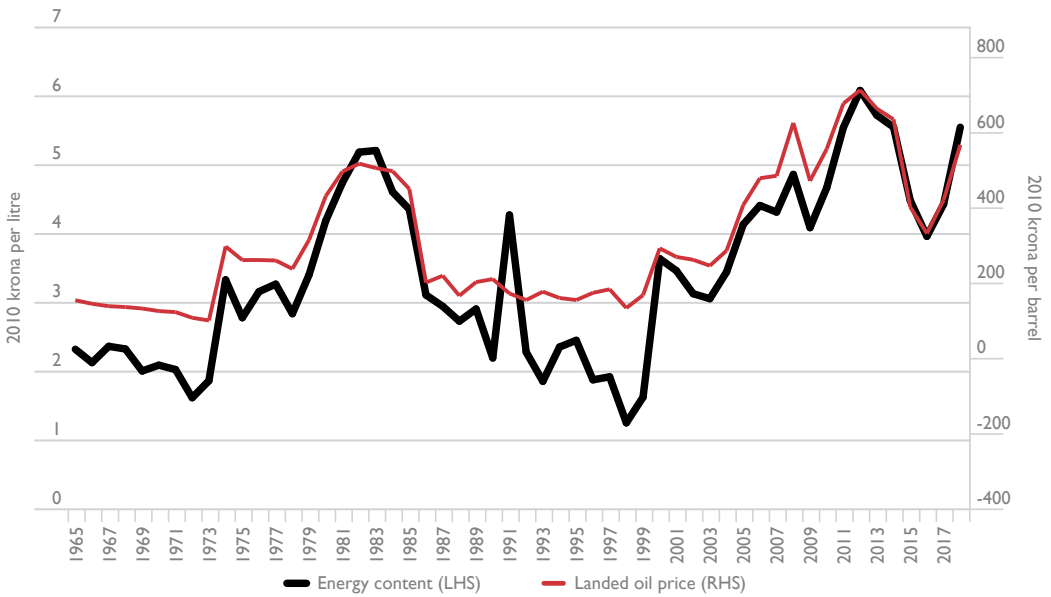
Figure 2.64 Actual and predicted Spanish petrol price



2.23 Swedish Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Swedish petrol price in Krona. The real landed price of oil in the Sweden is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Krona per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.65. The relationship varies over time, but is quite close in later years.

Figure 2.65 Swedish energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price (divided into pre-2001 and post 2001 series) and dummy variables. The data is set out in Appendix B22, and the results are shown in Table 2.22.

Table 2.22 Regression results for predicting Swedish energy content price

Regression statistics	
Multiple R	0.990797523
R Square	0.981679731
Adjusted R Square	0.978422794
Standard Error	0.186098767
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	83.50980787	10.43872598	301.4119769	1.9122E-36
Residual	45	1.558473801	0.034632751		
Total	53	85.06828167			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	2.198457429	0.182909779	12.01935422	1.20741E-15	1.830058223	2.566856636
oil01on	0.0054596	0.000323905	16.85556926	4.57612E-21	0.004807222	0.006111977
oil6500	0.007619965	0.000260715	29.22723618	6.58807E-31	0.007094859	0.008145071
dum91	1.905978066	0.190689052	9.995214964	5.27898E-13	1.5219106	2.290045531
dum0111	-0.411445657	0.106614585	-3.859187353	0.000360439	-0.626178453	-0.196712861
dum6500	-1.149576196	0.197842694	-5.810556738	5.96172E-07	-1.548051836	-0.751100557
dum8689	0.365290931	0.100767715	3.625079046	0.000732512	0.162334336	0.568247527
dum9699	-0.64013187	0.102349807	-6.254353481	1.30772E-07	-0.846274963	-0.433988778
dumGFC	-0.31012931	0.155322568	-1.99667901	0.051930532	-0.62296502	0.002706399

Figure 2.66 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.67, this time in 2018 Krona per litre.

Figure 2.66 Actual and predicted energy content of Swedish petrol price

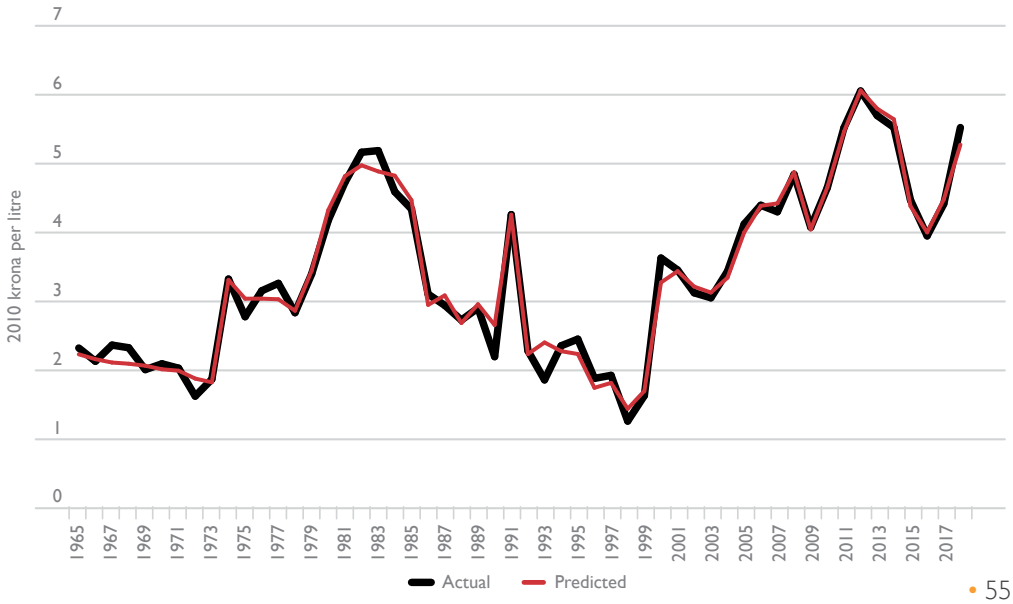
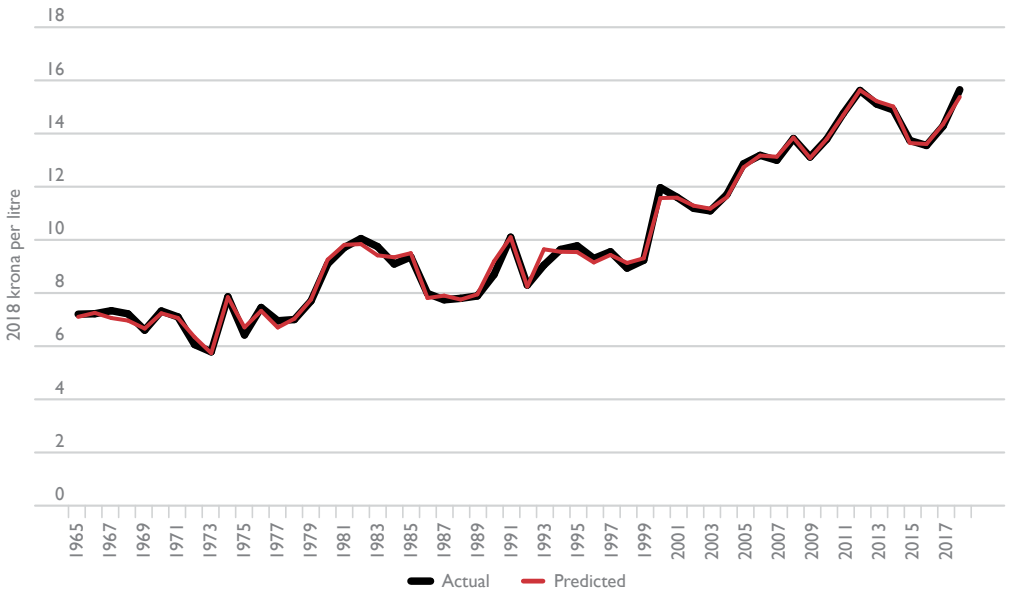


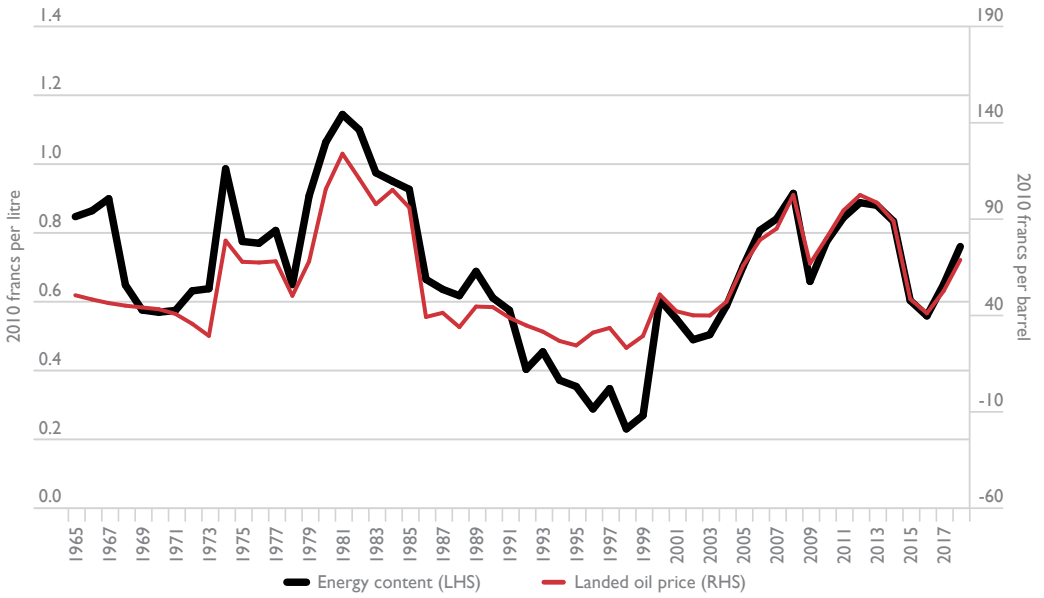
Figure 2.67 Actual and predicted Swedish petrol price



2.24 Swiss Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the Swiss petrol price in Francs. The real landed price of oil in Switzerland is calculated as simply the price of oil in US dollars per barrel times the exchange rate in Francs per US dollar divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.68. The relationship varies over time, but is quite close in later years.

Figure 2.68 Swiss energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and several dummy variables. The data is set out in Appendix B23, and the results are shown in Table 2.23.

Table 2.23 Regression results for predicting Swiss energy content price

Regression statistics	
Multiple R	0.990646112
R Square	0.98137972
Adjusted R Square	0.978546199
Standard Error	0.031393918
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	7	2.389459976	0.341351425	346.3463923	1.41941E-37
Residual	46	0.045336593	0.000985578		
Total	53	2.434796569			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.332108176	0.017486756	18.99198303	2.1055E-23	0.296909161	0.36730719
landed oil price	0.005769259	0.000205021	28.13981311	1.23184E-30	0.005356573	0.006181945
dum6567	0.177679628	0.019693539	9.02222946	9.66007E-12	0.13803859	0.217320666
dum9003	-0.326162047	0.019518036	-16.71080231	3.64954E-21	-0.365449816	-0.286874277
dum6503	0.081174554	0.011701219	6.937273413	1.1317E-08	0.057621222	0.104727886
dum74	0.117913865	0.032257816	3.655357993	0.000657316	0.05298225	0.182845481
dum 6971	-0.08648117	0.019931332	-4.338955968	7.76079E-05	-0.12660086	-0.046361481
dumGFC	-0.054045907	0.025349896	-2.131997236	0.038379368	-0.1050726	-0.003019214

Figure 2.69 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.70, this time in 2018 Francs per litre.

Figure 2.69 Actual and predicted energy content of Swiss petrol price

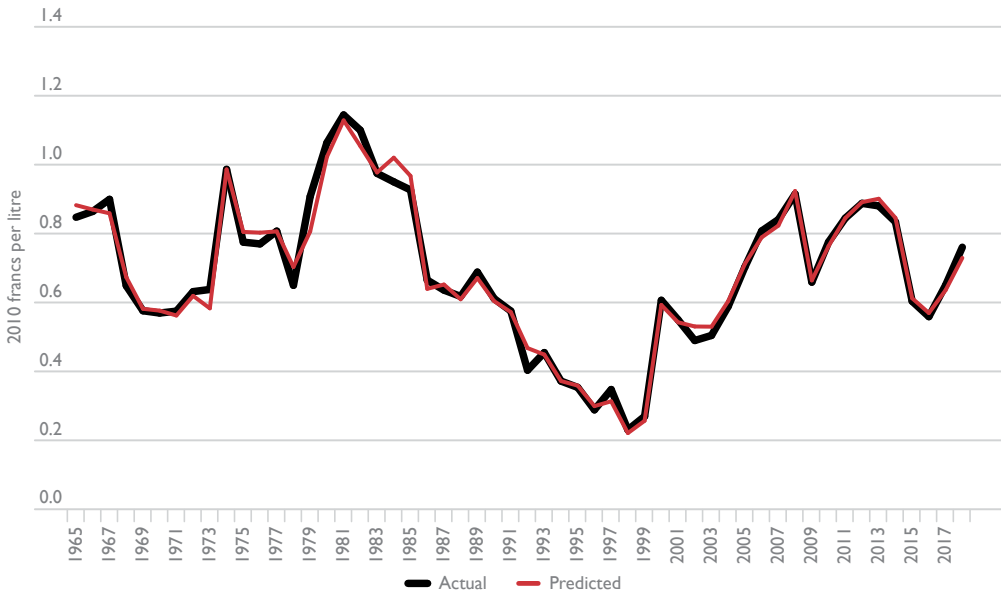
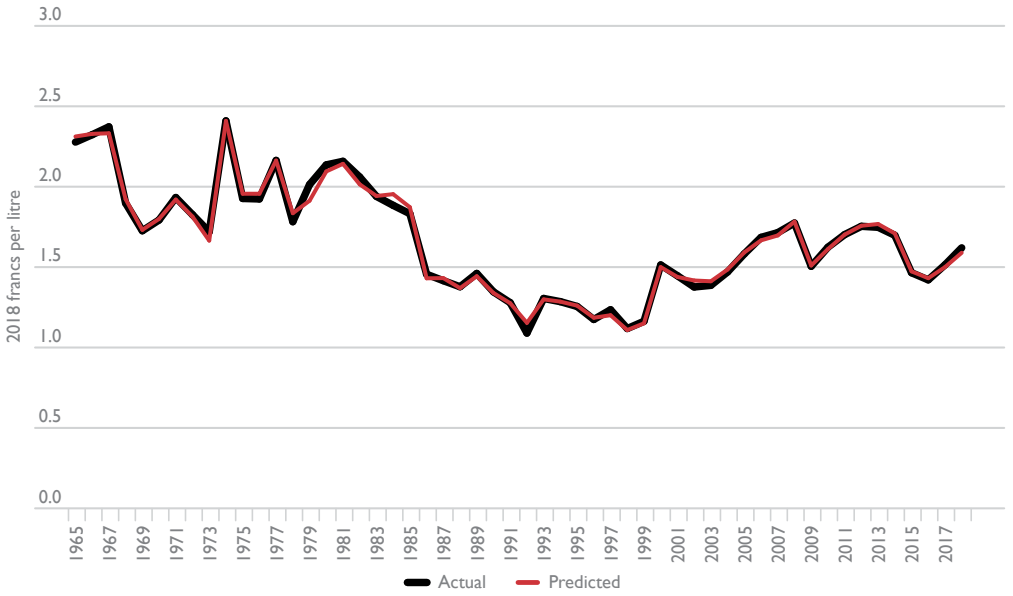


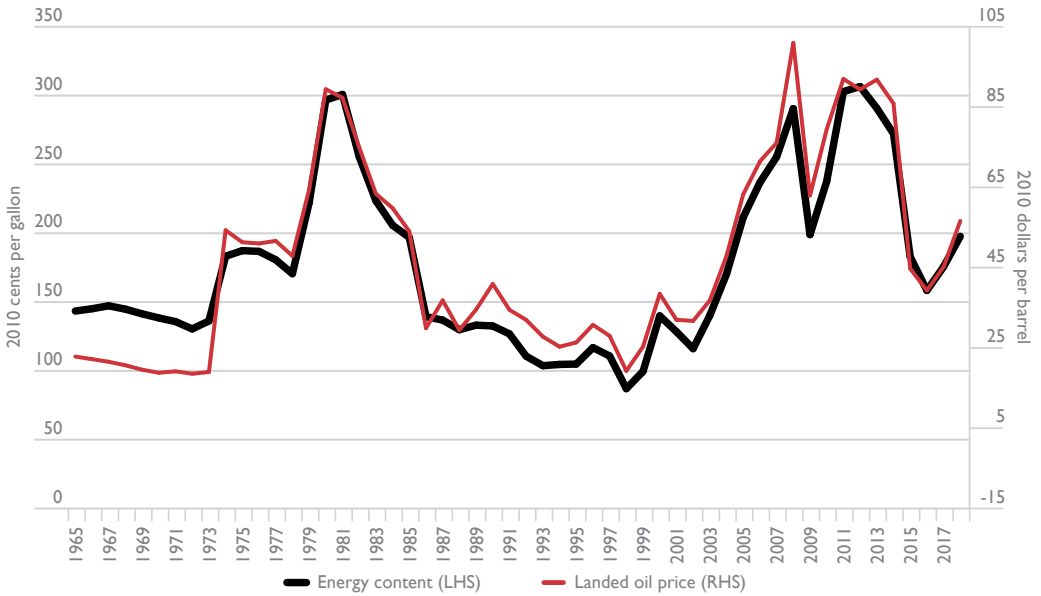
Figure 2.70 Actual and predicted Swiss petrol price



2.25 American Petrol Prices

Subtracting total tax from the nominal petrol price and dividing by the Consumer Price Index, gives the real energy content of the American petrol price in US dollars per gallon. The real landed price of oil in the US is calculated as simply the price of oil (WTI) in US dollars per barrel divided by the Consumer Price Index. A plot of the energy content versus the landed price of oil is shown in Figure 2.71. The relationship varies over time, but is quite close in later years.

Figure 2.71 American energy content and landed oil price



A regression was performed using the energy content price of petrol regressed against the landed oil price and dummy variables. The data is set out in Appendix B24, and the results are shown in Table 2.24.

Table 2.24 Regression results for predicting American energy content price per gallon

Regression statistics	
Multiple R	0.995404891
R Square	0.990830896
Adjusted R Square	0.990082398
Standard Error	6.119761356
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	198306.8469	49576.71172	1323.758446	3.01791E-49
Residual	49	1835.122474	37.45147905		
Total	53	200141.9693			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	40.6436539	3.078084181	13.20420479	9.23942E-18	34.45801216	46.82929565
landed oil price	2.840214057	0.050053219	56.74388461	2.31656E-46	2.739628348	2.940799765
dum6573	42.13434242	2.977648779	14.1502056	6.21255E-19	36.15053317	48.11815167
dum0810	-40.97840802	5.571588746	-7.354887427	1.87415E-09	-52.17493479	-29.78188124
dum8906	-29.93223499	5.189821208	-5.767488666	5.32895E-07	-40.36157118	-19.50289881

Figure 2.72 shows the fit of the regression model values to the actual energy content price data. Adding tax to the model values for energy content gives a model value for total petrol price. The fit between this model value and the actual petrol price is shown in Figure 2.73, this time in 2018 cents per gallon (and litre).

Figure 2.72 Actual and predicted energy content of American petrol price

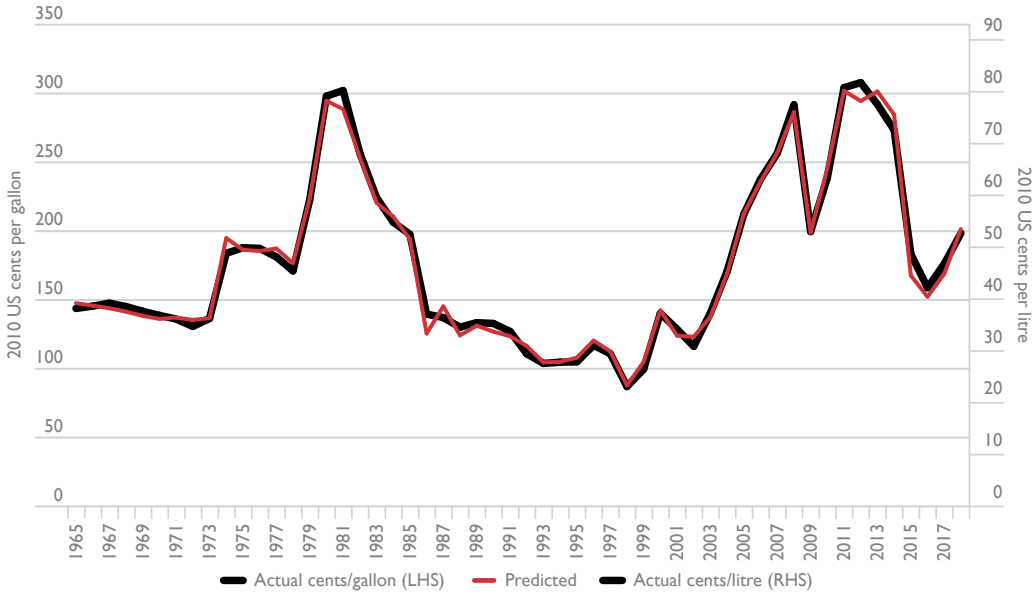
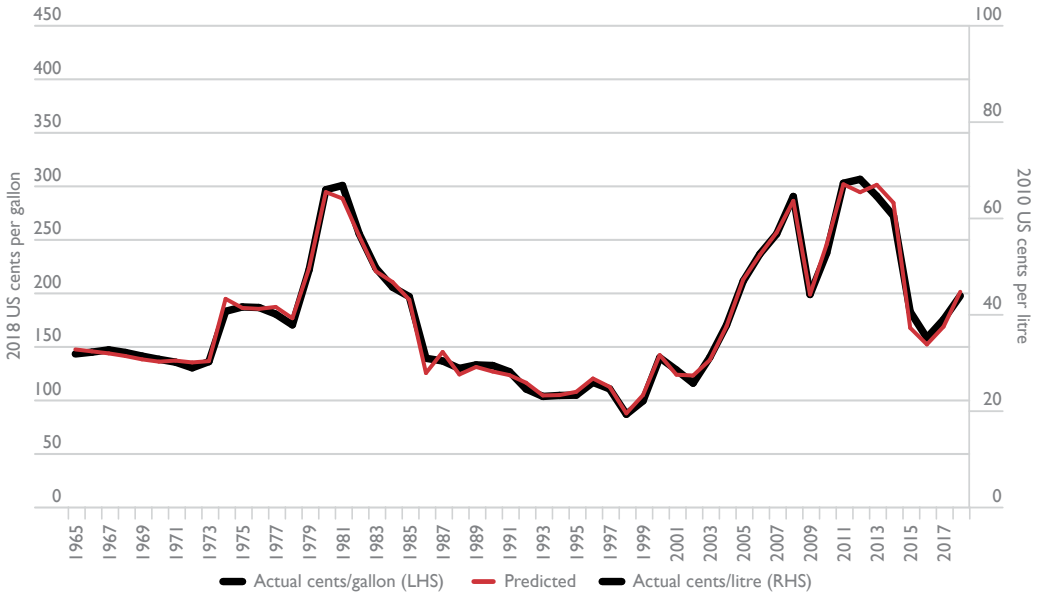


Figure 2.73 Actual and predicted American petrol price



CHAPTER 3
Scenario Testing

Summary

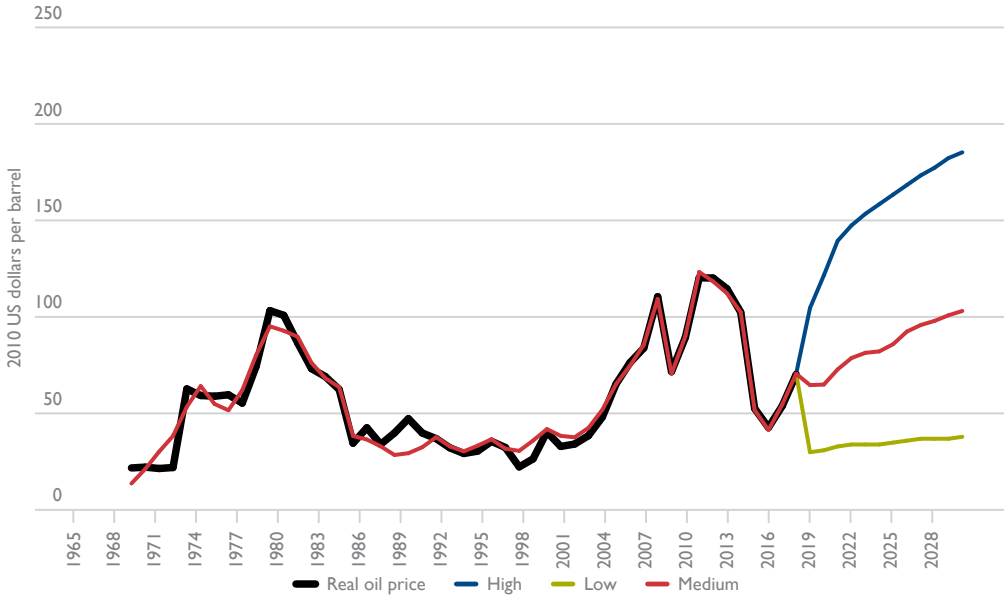
This chapter presents petrol price scenarios out to 2030 for the 24 countries in the study, based on the oil price scenarios presented in Chapter 1.

Chapter 1 presented a model for world oil prices. Using that model, medium scenario forecasts to 2030 are based on the assumptions set out in Appendix A. There is a forecast 'change in liquids to GDP ratio' based on a slow-down in world economic growth in 2020 followed by a return to 3.5 per cent GDP growth from 2022, and future liquids production flat in the 2020s.

High and low scenarios are based on projections by the EIA in their Annual Energy Outlook 2018 (EIA 2018).

Expressing prices in 2018 US dollars per barrel gives the high, medium and low scenario forecasts shown in Figure 3.1.

Figure 3.1 Actual, predicted and scenario oil prices



These scenario oil prices are used to generate petrol price scenarios for all the 24 countries except for the United States, which uses the West Texas Intermediate (WTI) price.

The following section shows how the OPEC oil price scenarios are translated into WTI oil price scenarios for use in the American model.

3.1 Deriving WTI Oil Price Scenarios from OPEC Scenarios

A simple model for WTI price as a fraction of the OPEC basket price is derived as follows:

WTI price/OPEC =f(% change in US production (t+1) , dummy for pipeline inadequacies).

The results of the regression are shown in Table 3.1, and the data is presented in Appendix C.

Table 3.1 Regression results for WTI price as a fraction of the OPEC basket price

Regression statistics	
Multiple R	0.989269262
R Square	0.978653674
Adjusted R Square	0.976142341
Standard Error	0.012536227
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	0.122486579	0.06124329	389.6949799	6.29864E-15
Residual	17	0.002671669	0.000157157		
Total	19	0.125158248			

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.076496972	0.00337161	319.2827744	1.4709E-33	1.069383497	1.083610448
lead prod change	-0.01585481	0.000612137	-25.90076952	4.21997E-15	-0.017146305	-0.014563315
pipelinedum	-0.096105871	0.011798098	-8.145878031	2.85137E-07	-0.120997683	-0.071214059

Figure 3.2 shows the fit of the equation prediction to the actual price ratio (WTI/OPEC).

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Figure 3.2 Actual and predicted WTI/OPEC price ratio

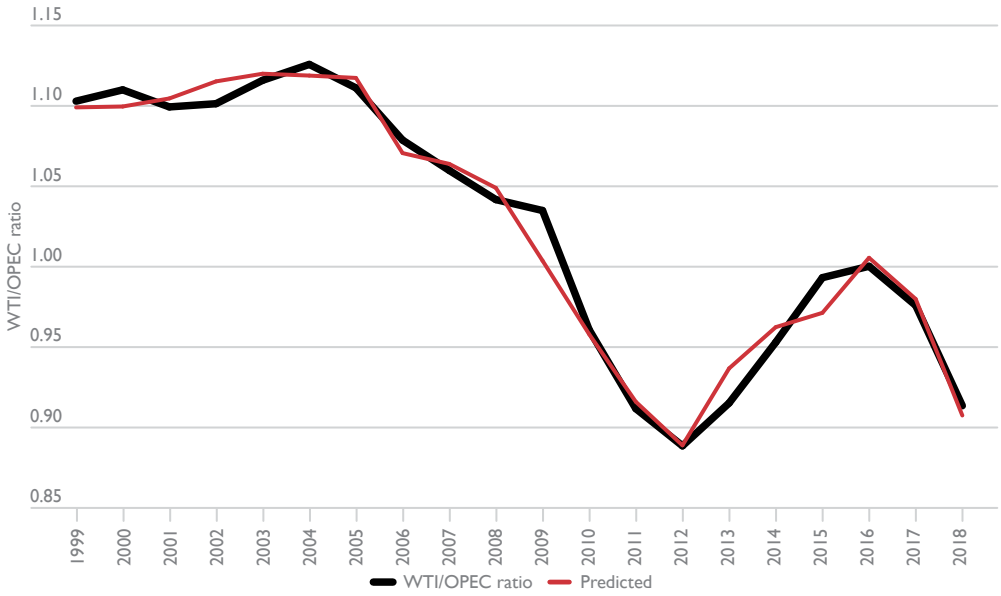


Figure 3.3 shows the WTI/OPEC ratio versus the US oil production change, and Figure 3.4 shows the actual and predicted WTI prices and the OPEC basket price.

It can be seen from Figure 3.3 that in the 2000s, US production growth was low and from Figure 3.4 that the WTI was above the OPEC basket price.

The reverse occurred in the early 2010s, and the WTI was below the OPEC basket price.

Figure 3.3 The WTI/OPEC ratio and US oil production change

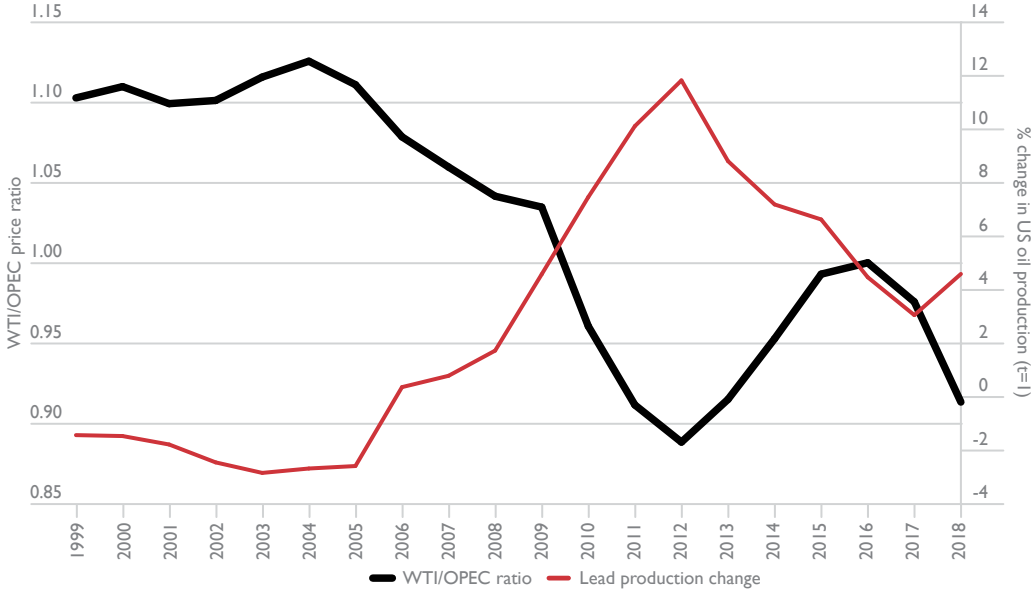
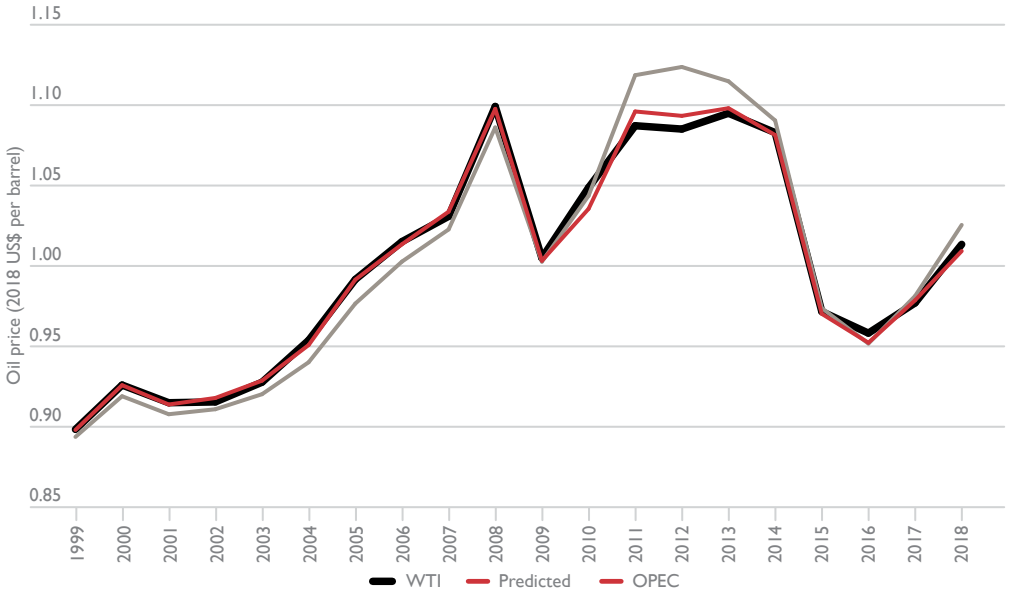
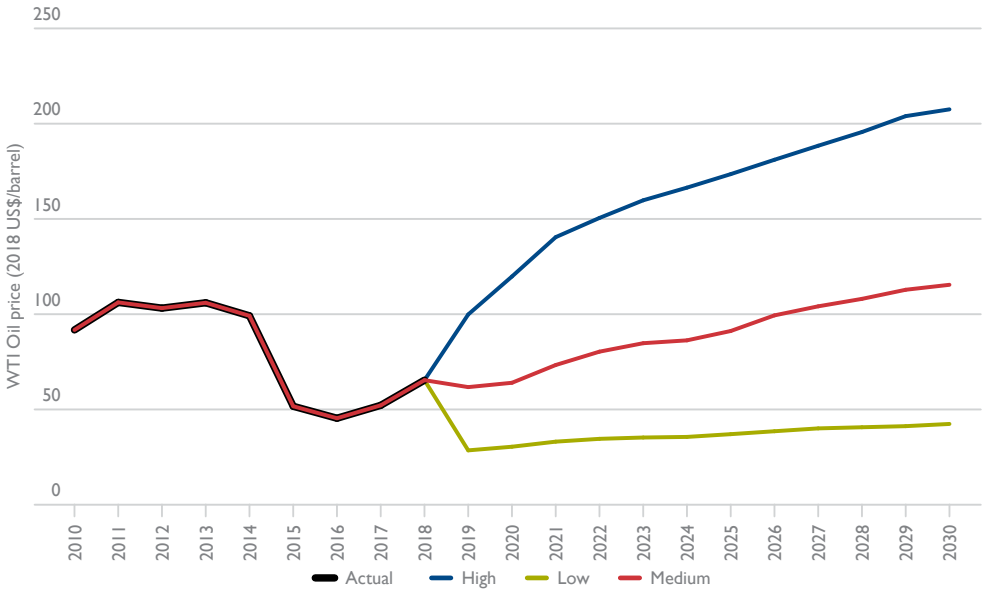


Figure 3.4 Actual WTI prices, and WTI prices predicted from the OPEC basket price



This analysis of WTI as a function of the OPEC basket price allows the OPEC price scenarios (shown in Figure 3.1) to be translated into equivalent WTI scenarios for use in the American petrol price model. Figure 3.5 shows the equivalent WTI oil price scenarios.

Figure 3.5 WTI Oil Price Scenarios



3.2 Australian Petrol Price Scenarios

The Australian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Australian CPI puts them into real Australian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Goods and Services Tax rate of 10 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.6.

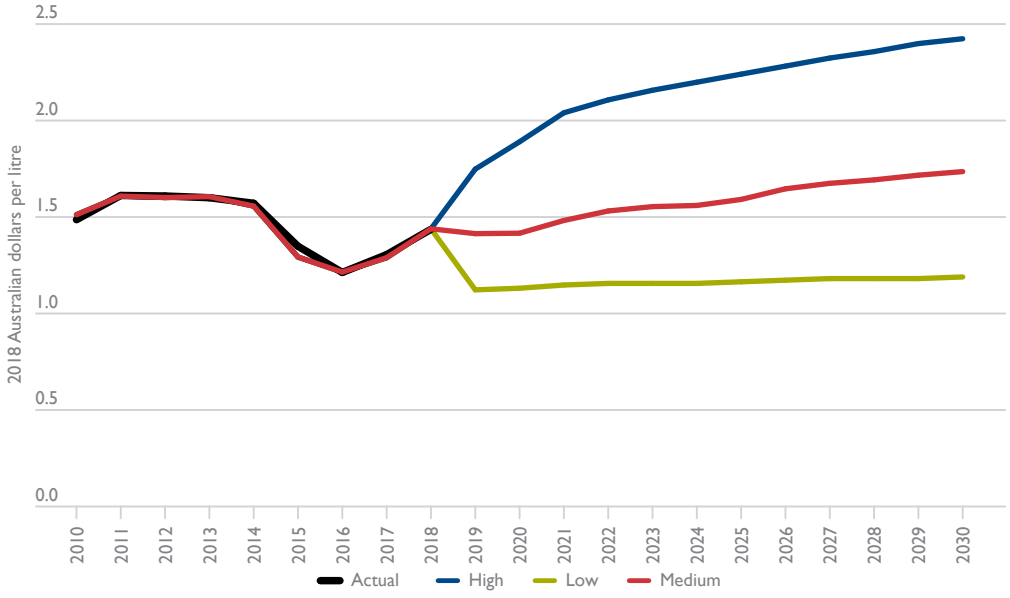
Table 3.2 Australian Petrol Price Scenario Calculations

	real 2010 US$ oil price ($/b)				exchange	real Australian 2010 landed oil price ($A/b)				real 2010 energy cost of petrol (c/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	1.0870	84.19	84.19	84.19	84.19	78.39	78.39	78.39	78.39
2011	104.19	104.19	104.19	104.19	0.9609	100.04	100.04	100.04	100.04	87.02	87.02	87.02	87.02
2012	104.07	104.07	104.07	104.07	0.9622	100.24	100.24	100.24	100.24	87.13	87.13	87.13	87.13
2013	99.29	99.29	99.29	99.29	1.0416	102.46	102.46	102.46	102.46	88.34	88.34	88.34	88.34
2014	88.69	88.69	88.69	88.69	1.1123	96.99	96.99	96.99	96.99	85.36	85.36	85.36	85.36
2015	45.56	45.56	45.56	45.56	1.3396	59.23	59.23	59.23	59.23	64.80	64.80	64.80	64.80
2016	36.96	36.96	36.96	36.96	1.3452	48.23	48.23	48.23	48.23	58.81	58.81	58.81	58.81
2017	46.71	46.71	46.71	46.71	1.3001	59.01	59.01	59.01	59.01	64.68	64.68	64.68	64.68
2018	60.82	60.82	60.82	60.82	1.3473	80.20	80.20	80.20	80.20	76.21	76.21	76.21	76.21
2019		90.61	56.02	25.89	1.3980		123.97	76.65	35.42		100.05	74.28	51.84
2020		105.28	56.25	26.75	1.3980		144.05	76.96	36.60		110.98	74.45	52.48
2021		120.82	63.08	28.48	1.3980		165.30	86.31	38.96		122.55	79.54	53.76
2022		127.72	68.17	29.34	1.3980		174.74	93.27	40.14		127.70	83.33	54.41
2023		132.90	70.51	29.34	1.3980		181.83	96.47	40.14		131.55	85.08	54.41
2024		137.21	71.13	29.34	1.3980		187.73	97.32	40.14		134.77	85.54	54.41
2025		141.53	74.36	30.20	1.3980		193.64	101.75	41.32		137.98	87.95	55.05
2026		145.84	80.06	31.07	1.3980		199.54	109.53	42.51		141.20	92.19	55.69
2027		150.16	82.99	31.93	1.3980		205.44	113.54	43.69		144.41	94.37	56.34
2028		153.61	84.84	31.93	1.3980		210.17	116.08	43.69		146.98	95.76	56.34
2029		157.92	87.36	31.93	1.3980		216.07	119.53	43.69		150.20	97.63	56.34
2030		160.51	89.29	32.79	1.3980		219.61	122.16	44.87		152.12	99.06	56.98

Table 3.2 Australian Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (c/l)			10%	real 2010 total petrol price (c/l)				real 2018 total petrol price (Australian $/l)			
	tax (c/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	38.14	11.65	11.65	11.65	11.65	125.99	128.18	128.18	128.18	1.49	1.51	1.51	1.51
2011	36.95	12.40	12.40	12.40	12.40	136.65	136.37	136.37	136.37	1.61	1.61	1.61	1.61
2012	36.29	12.34	12.34	12.34	12.34	136.41	135.75	135.75	135.75	1.61	1.60	1.60	1.60
2013	35.41	12.38	12.38	12.38	12.38	135.66	136.13	136.13	136.13	1.60	1.61	1.61	1.61
2014	34.63	12.00	12.00	12.00	12.00	133.22	131.98	131.98	131.98	1.57	1.56	1.56	1.56
2015	34.82	9.96	9.96	9.96	9.96	114.31	109.59	109.59	109.59	1.35	1.29	1.29	1.29
2016	34.82	9.36	9.36	9.36	9.36	102.83	103.00	103.00	103.00	1.21	1.21	1.21	1.21
2017	34.70	9.94	9.94	9.94	9.94	110.66	109.32	109.32	109.32	1.31	1.29	1.29	1.29
2018	34.70	11.09	11.09	11.09	11.09	121.78	122.00	122.00	122.00	1.44	1.44	1.44	1.44
2019	34.70		13.47	10.90	8.65		148.22	119.88	95.19		1.75	1.41	1.12
2020	34.70		14.57	10.92	8.72		160.25	120.07	95.89		1.89	1.42	1.13
2021	34.70		15.73	11.42	8.85		172.98	125.66	97.31		2.04	1.48	1.15
2022	34.70		16.24	11.80	8.91		178.63	129.83	98.02		2.11	1.53	1.16
2023	34.70		16.63	11.98	8.91		182.88	131.75	98.02		2.16	1.55	1.16
2024	34.70		16.95	12.02	8.91		186.41	132.26	98.02		2.20	1.56	1.16
2025	34.70		17.27	12.26	8.97		189.95	134.91	98.72		2.24	1.59	1.16
2026	34.70		17.59	12.69	9.04		193.48	139.57	99.43		2.28	1.65	1.17
2027	34.70		17.91	12.91	9.10		197.02	141.98	100.14		2.32	1.67	1.18
2028	34.70		18.17	13.05	9.10		199.85	143.50	100.14		2.36	1.69	1.18
2029	34.70		18.49	13.23	9.10		203.38	145.56	100.14		2.40	1.72	1.18
2030	34.70		18.68	13.38	9.17		205.50	147.14	100.84		2.42	1.74	1.19

Figure 3.6 Australian Petrol Price Scenarios



3.3 Austrian Petrol Price Scenarios

The Austrian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Austrian CPI puts them into real Austrian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 20 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.7.

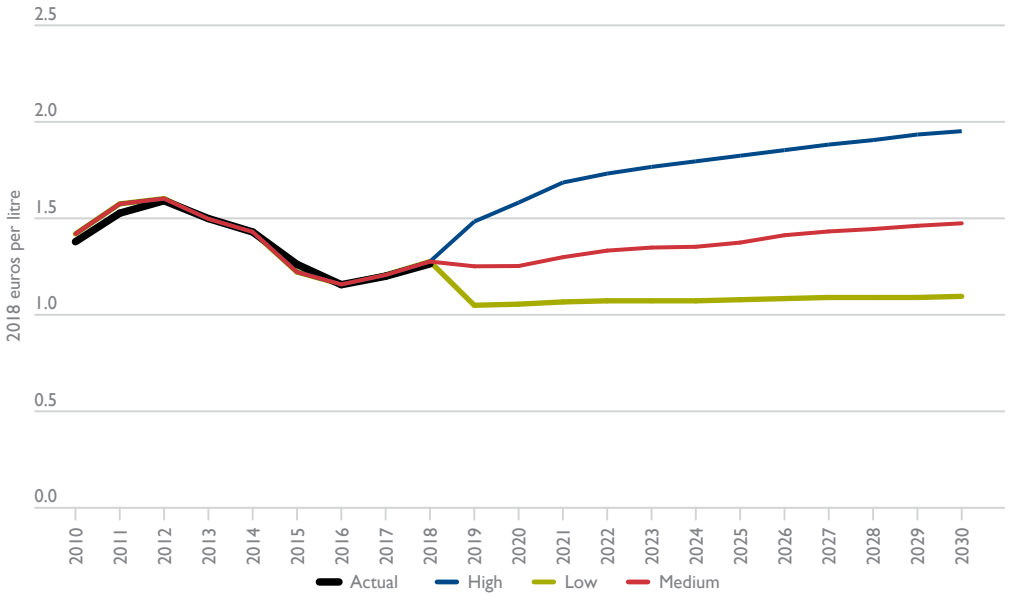
Table 3.3 Austrian Petrol Price Scenario Calculations

	real 2010 US$ oil price ($/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.54	0.54	0.54	0.54
2011	104.19	104.19	104.19	104.19	0.72	74.44	74.44	74.44	74.44	0.63	0.63	0.63	0.63
2012	104.07	104.07	104.07	104.07	0.77	80.07	80.07	80.07	80.07	0.66	0.66	0.66	0.66
2013	99.29	99.29	99.29	99.29	0.75	73.76	73.76	73.76	73.76	0.63	0.63	0.63	0.63
2014	88.69	88.69	88.69	88.69	0.76	66.42	66.42	66.42	66.42	0.59	0.59	0.59	0.59
2015	45.56	45.56	45.56	45.56	0.91	40.53	40.53	40.53	40.53	0.44	0.44	0.44	0.44
2016	36.96	36.96	36.96	36.96	0.91	33.04	33.04	33.04	33.04	0.40	0.40	0.40	0.40
2017	46.71	46.71	46.71	46.71	0.89	40.86	40.86	40.86	40.86	0.44	0.44	0.44	0.44
2018	60.82	60.82	60.82	60.82	0.85	51.13	51.13	51.13	51.13	0.50	0.50	0.50	0.50
2019		90.61	56.02	25.89	0.86		77.62	47.99	22.18		0.65	0.48	0.34
2020		105.28	56.25	26.75	0.86		90.19	48.19	22.92		0.72	0.48	0.34
2021		120.82	63.08	28.48	0.86		103.50	54.04	24.40		0.79	0.52	0.35
2022		127.72	68.17	29.34	0.86		109.41	58.40	25.13		0.83	0.54	0.35
2023		132.90	70.51	29.34	0.86		113.85	60.40	25.13		0.85	0.55	0.35
2024		137.21	71.13	29.34	0.86		117.54	60.93	25.13		0.87	0.56	0.35
2025		141.53	74.36	30.20	0.86		121.24	63.70	25.87		0.89	0.57	0.36
2026		145.84	80.06	31.07	0.86		124.93	68.58	26.61		0.91	0.60	0.36
2027		150.16	82.99	31.93	0.86		128.63	71.09	27.35		0.94	0.61	0.37
2028		153.61	84.84	31.93	0.86		131.59	72.68	27.35		0.95	0.62	0.37
2029		157.92	87.36	31.93	0.86		135.28	74.84	27.35		0.97	0.63	0.37
2030		160.51	89.29	32.79	0.86		137.50	76.49	28.09		0.99	0.64	0.37

Table 3.3 Austrian Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			20%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.48	0.20	0.20	0.20	0.20	1.19	1.22	1.22	1.22	1.38	1.42	1.42	1.42
2011	0.50	0.23	0.23	0.23	0.23	1.31	1.36	1.36	1.36	1.53	1.58	1.58	1.58
2012	0.49	0.23	0.23	0.23	0.23	1.37	1.38	1.38	1.38	1.59	1.60	1.60	1.60
2013	0.45	0.21	0.21	0.21	0.21	1.29	1.29	1.29	1.29	1.50	1.50	1.50	1.50
2014	0.44	0.21	0.21	0.21	0.21	1.23	1.23	1.23	1.23	1.43	1.43	1.43	1.43
2015	0.44	0.18	0.18	0.18	0.18	1.09	1.05	1.05	1.05	1.26	1.22	1.22	1.22
2016	0.43	0.17	0.17	0.17	0.17	1.00	1.00	1.00	1.00	1.16	1.16	1.16	1.16
2017	0.42	0.17	0.17	0.17	0.17	1.03	1.04	1.04	1.04	1.20	1.21	1.21	1.21
2018	0.41	0.18	0.18	0.18	0.18	1.09	1.10	1.10	1.10	1.26	1.28	1.28	1.28
2019	0.41		0.21	0.18	0.15		1.28	1.08	0.90		1.48	1.25	1.05
2020	0.41		0.23	0.18	0.15		1.36	1.08	0.91		1.58	1.25	1.06
2021	0.41		0.24	0.19	0.15		1.45	1.12	0.92		1.69	1.30	1.07
2022	0.41		0.25	0.19	0.15		1.49	1.15	0.92		1.73	1.33	1.07
2023	0.41		0.25	0.19	0.15		1.52	1.16	0.92		1.77	1.35	1.07
2024	0.41		0.26	0.19	0.15		1.55	1.16	0.92		1.80	1.35	1.07
2025	0.41		0.26	0.20	0.15		1.57	1.18	0.93		1.82	1.37	1.08
2026	0.41		0.27	0.20	0.16		1.60	1.22	0.93		1.85	1.41	1.08
2027	0.41		0.27	0.21	0.16		1.62	1.23	0.94		1.88	1.43	1.09
2028	0.41		0.27	0.21	0.16		1.64	1.24	0.94		1.91	1.44	1.09
2029	0.41		0.28	0.21	0.16		1.67	1.26	0.94		1.93	1.46	1.09
2030	0.41		0.28	0.21	0.16		1.68	1.27	0.94		1.95	1.47	1.10

Figure 3.7 Austrian Petrol Price Scenarios



3.4 Belgian Petrol Price Scenarios

The Belgian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Belgian CPI puts them into real Belgian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 21 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.8.

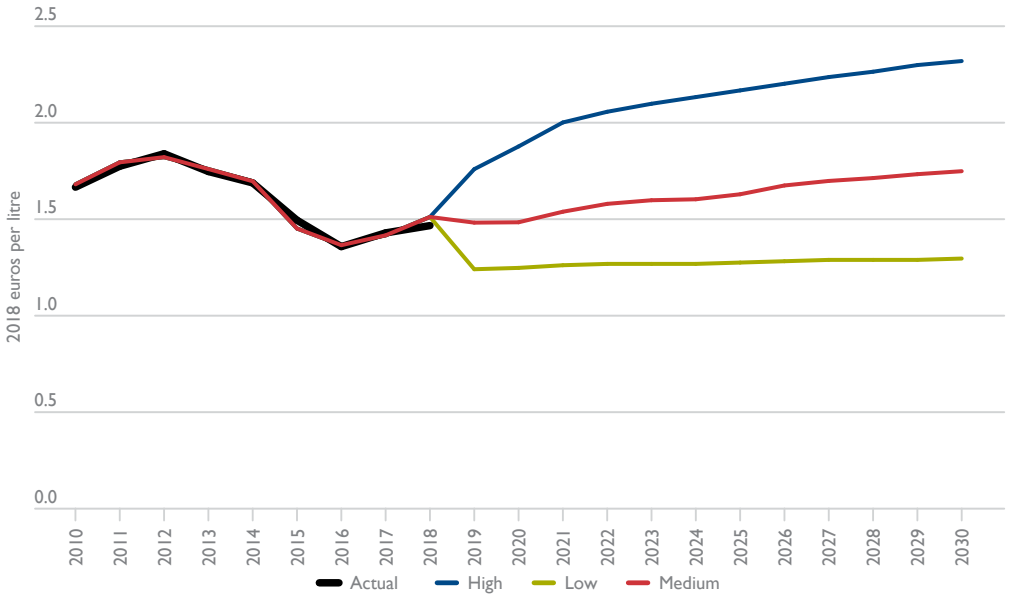
Table 3.4 Belgian Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.60	0.60	0.60	0.60
2011	104.19	104.19	104.19	104.19	0.72	74.26	74.26	74.26	74.26	0.70	0.70	0.70	0.70
2012	104.07	104.07	104.07	104.07	0.77	79.61	79.61	79.61	79.61	0.74	0.74	0.74	0.74
2013	99.29	99.29	99.29	99.29	0.75	73.94	73.94	73.94	73.94	0.70	0.70	0.70	0.70
2014	88.69	88.69	88.69	88.69	0.76	67.40	67.40	67.40	67.40	0.66	0.66	0.66	0.66
2015	45.56	45.56	45.56	45.56	0.91	41.27	41.27	41.27	41.27	0.48	0.48	0.48	0.48
2016	36.96	36.96	36.96	36.96	0.91	33.34	33.34	33.34	33.34	0.43	0.43	0.43	0.43
2017	46.71	46.71	46.71	46.71	0.89	41.44	41.44	41.44	41.44	0.48	0.48	0.48	0.48
2018	60.82	60.82	60.82	60.82	0.85	51.91	51.91	51.91	51.91	0.55	0.55	0.55	0.55
2019		90.61	56.02	25.89	0.86		78.80	48.72	22.52		0.73	0.53	0.36
2020		105.28	56.25	26.75	0.86		91.56	48.92	23.27		0.82	0.53	0.36
2021		120.82	63.08	28.48	0.86		105.07	54.86	24.77		0.91	0.57	0.37
2022		127.72	68.17	29.34	0.86		111.07	59.28	25.52		0.95	0.60	0.38
2023		132.90	70.51	29.34	0.86		115.58	61.32	25.52		0.98	0.62	0.38
2024		137.21	71.13	29.34	0.86		119.33	61.86	25.52		1.00	0.62	0.38
2025		141.53	74.36	30.20	0.86		123.08	64.67	26.27		1.03	0.64	0.38
2026		145.84	80.06	31.07	0.86		126.83	69.62	27.02		1.05	0.67	0.39
2027		150.16	82.99	31.93	0.86		130.59	72.17	27.77		1.08	0.69	0.39
2028		153.61	84.84	31.93	0.86		133.59	73.79	27.77		1.10	0.70	0.39
2029		157.92	87.36	31.93	0.86		137.34	75.98	27.77		1.12	0.71	0.39
2030		160.51	89.29	32.79	0.86		139.59	77.65	28.52		1.14	0.73	0.40

Table 3.4 Belgian Petrol Price Scenario Calculation (continued)

	excise	real 2010 sales tax (euros/l)			21%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.61	0.25	0.25	0.25	0.25	1.46	1.47	1.47	1.47	1.67	1.68	1.68	1.68
2011	0.59	0.27	0.27	0.27	0.27	1.55	1.57	1.57	1.57	1.77	1.79	1.79	1.79
2012	0.58	0.28	0.28	0.28	0.28	1.61	1.59	1.59	1.59	1.84	1.82	1.82	1.82
2013	0.57	0.27	0.27	0.27	0.27	1.53	1.54	1.54	1.54	1.75	1.76	1.76	1.76
2014	0.57	0.26	0.26	0.26	0.26	1.48	1.48	1.48	1.48	1.69	1.70	1.70	1.70
2015	0.56	0.22	0.22	0.22	0.22	1.31	1.27	1.27	1.27	1.49	1.45	1.45	1.45
2016	0.56	0.21	0.21	0.21	0.21	1.19	1.19	1.19	1.19	1.36	1.37	1.37	1.37
2017	0.54	0.21	0.21	0.21	0.21	1.25	1.24	1.24	1.24	1.43	1.42	1.42	1.42
2018	0.54	0.23	0.23	0.23	0.23	1.32	1.32	1.32	1.32	1.47	1.51	1.51	1.51
2019	0.54		0.27	0.22	0.19		1.54	1.30	1.08		1.76	1.48	1.24
2020	0.54		0.28	0.23	0.19		1.64	1.30	1.09		1.88	1.48	1.25
2021	0.54		0.30	0.23	0.19		1.75	1.34	1.10		2.00	1.54	1.26
2022	0.54		0.31	0.24	0.19		1.80	1.38	1.11		2.06	1.58	1.27
2023	0.54		0.32	0.24	0.19		1.83	1.40	1.11		2.10	1.60	1.27
2024	0.54		0.32	0.24	0.19		1.86	1.40	1.11		2.13	1.60	1.27
2025	0.54		0.33	0.25	0.19		1.89	1.42	1.11		2.17	1.63	1.28
2026	0.54		0.33	0.25	0.19		1.92	1.46	1.12		2.20	1.67	1.28
2027	0.54		0.34	0.26	0.20		1.95	1.48	1.13		2.24	1.70	1.29
2028	0.54		0.34	0.26	0.20		1.98	1.50	1.13		2.26	1.71	1.29
2029	0.54		0.35	0.26	0.20		2.01	1.51	1.13		2.30	1.73	1.29
2030	0.54		0.35	0.27	0.20		2.03	1.53	1.13		2.32	1.75	1.30

Figure 3.8 Belgian Petrol Price Scenarios



3.5 British Petrol Price Scenarios

The British scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the British CPI puts them into real British 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 20 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.9.

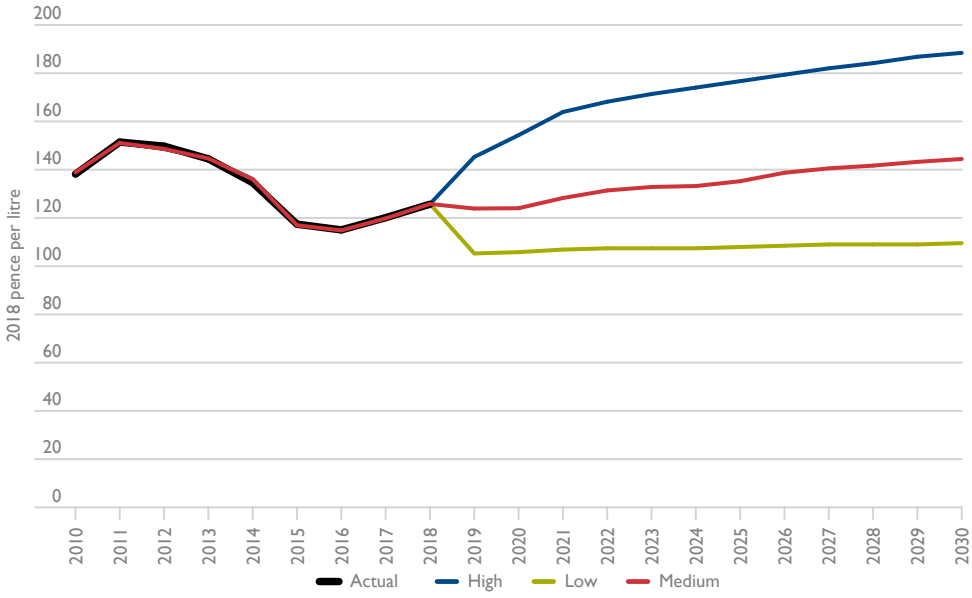
Table 3.5 British Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (pounds/b)				real 2010 energy cost of petrol (pence/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.65	50.21	50.21	50.21	50.21	42.88	42.88	42.88	42.88
2011	104.19	104.19	104.19	104.19	0.62	64.07	64.07	64.07	64.07	50.88	50.88	50.88	50.88
2012	104.07	104.07	104.07	104.07	0.63	64.02	64.02	64.02	64.02	50.85	50.85	50.85	50.85
2013	99.29	99.29	99.29	99.29	0.64	61.52	61.52	61.52	61.52	49.41	49.41	49.41	49.41
2014	88.69	88.69	88.69	88.69	0.61	52.30	52.30	52.30	52.30	44.09	44.09	44.09	44.09
2015	45.56	45.56	45.56	45.56	0.66	29.02	29.02	29.02	29.02	30.66	30.66	30.66	30.66
2016	36.96	36.96	36.96	36.96	0.75	26.98	26.98	26.98	26.98	29.48	29.48	29.48	29.48
2017	46.71	46.71	46.71	46.71	0.78	35.30	35.30	35.30	35.30	34.28	34.28	34.28	34.28
2018	60.82	60.82	60.82	60.82	0.75	44.61	44.61	44.61	44.61	39.65	39.65	39.65	39.65
2019		90.61	56.02	25.89	0.77		68.42	42.30	19.55		53.38	38.32	25.19
2020		105.28	56.25	26.75	0.77		79.49	42.47	20.20		59.77	38.42	25.57
2021		120.82	63.08	28.48	0.77		91.22	47.63	21.50		66.54	41.39	26.32
2022		127.72	68.17	29.34	0.77		96.43	51.47	22.15		69.54	43.61	26.70
2023		132.90	70.51	29.34	0.77		100.34	53.24	22.15		71.80	44.63	26.70
2024		137.21	71.13	29.34	0.77		103.60	53.70	22.15		73.68	44.90	26.70
2025		141.53	74.36	30.20	0.77		106.86	56.15	22.81		75.56	46.31	27.07
2026		145.84	80.06	31.07	0.77		110.12	60.45	23.46		77.44	48.79	27.45
2027		150.16	82.99	31.93	0.77		113.38	62.66	24.11		79.32	50.06	27.83
2028		153.61	84.84	31.93	0.77		115.98	64.06	24.11		80.82	50.87	27.83
2029		157.92	87.36	31.93	0.77		119.24	65.96	24.11		82.70	51.97	27.83
2030		160.51	89.29	32.79	0.77		121.19	67.41	24.76		83.83	52.81	28.20

Table 3.5 British Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (pence/l)			20%	real 2010 total petrol price (pence/l)				real 2018 total petrol price (pence/l)			
	tax (p/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	57.15	17.51	17.51	17.51	17.51	116.90	117.53	117.53	117.53	138.15	138.90	138.90	138.90
2011	55.65	21.31	21.31	21.31	21.31	128.15	127.84	127.84	127.84	151.44	151.07	151.07	151.07
2012	53.94	20.96	20.96	20.96	20.96	126.70	125.74	125.74	125.74	149.74	148.60	148.60	148.60
2013	52.60	20.40	20.40	20.40	20.40	122.25	122.40	122.40	122.40	144.47	144.65	144.65	144.65
2014	51.84	19.19	19.19	19.19	19.19	113.88	115.11	115.11	115.11	134.58	136.04	136.04	136.04
2015	51.81	16.49	16.49	16.49	16.49	99.33	98.97	98.97	98.97	117.39	116.96	116.96	116.96
2016	51.48	16.19	16.19	16.19	16.19	97.34	97.16	97.16	97.16	115.03	114.82	114.82	114.82
2017	50.20	16.90	16.90	16.90	16.90	101.63	101.37	101.37	101.37	120.10	119.80	119.80	119.80
2018	49.04	17.74	17.74	17.74	17.74	106.34	106.43	106.43	106.43	125.67	125.77	125.77	125.77
2019	49.04		20.48	17.47	14.85		122.90	104.83	89.08		145.24	123.88	105.27
2020	49.04		21.76	17.49	14.92		130.57	104.95	89.53		154.31	124.02	105.80
2021	49.04		23.11	18.09	15.07		138.69	108.52	90.43		163.90	128.24	106.87
2022	49.04		23.72	18.53	15.15		142.30	111.17	90.88		168.16	131.38	107.40
2023	49.04		24.17	18.73	15.15		145.00	112.40	90.88		171.36	132.83	107.40
2024	49.04		24.54	18.79	15.15		147.26	112.72	90.88		174.03	133.21	107.40
2025	49.04		24.92	19.07	15.22		149.51	114.41	91.33		176.69	135.21	107.93
2026	49.04		25.29	19.56	15.30		151.77	117.39	91.78		179.36	138.72	108.47
2027	49.04		25.67	19.82	15.37		154.02	118.92	92.24		182.02	140.54	109.00
2028	49.04		25.97	19.98	15.37		155.83	119.89	92.24		184.15	141.68	109.00
2029	49.04		26.35	20.20	15.37		158.08	121.21	92.24		186.82	143.24	109.00
2030	49.04		26.57	20.37	15.45		159.44	122.21	92.69		188.42	144.42	109.53

Figure 3.9 British Petrol Price Scenarios



3.6 Canadian Petrol Price Scenarios

The Canadian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Canadian CPI puts them into real Canadian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 17 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.10.

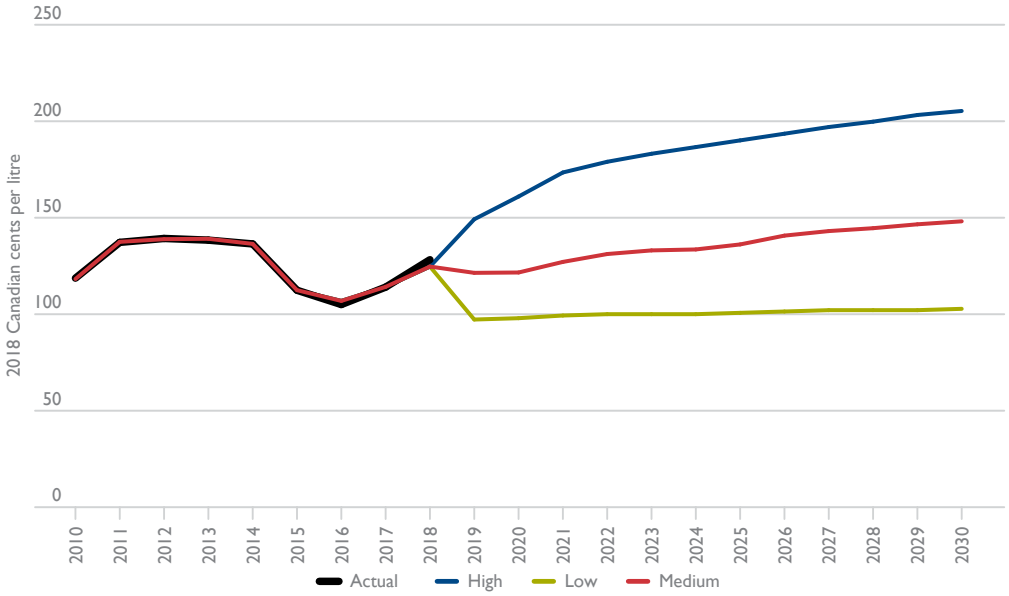
Table 3.6 Canadian Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (C$/b)				real 2010 energy cost of petrol (c/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	1.03	80.11	80.11	80.11	80.11	60.30	60.30	60.30	60.30
2011	104.19	104.19	104.19	104.19	0.99	103.14	103.14	103.14	103.14	74.40	74.40	74.40	74.40
2012	104.07	104.07	104.07	104.07	1.00	104.66	104.66	104.66	104.66	75.09	75.09	75.09	75.09
2013	99.29	99.29	99.29	99.29	1.03	103.86	103.86	103.86	103.86	74.72	74.72	74.72	74.72
2014	88.69	88.69	88.69	88.69	1.11	99.06	99.06	99.06	99.06	72.56	72.56	72.56	72.56
2015	45.56	45.56	45.56	45.56	1.29	58.67	58.67	58.67	58.67	54.33	54.33	54.33	54.33
2016	36.96	36.96	36.96	36.96	1.32	48.82	48.82	48.82	48.82	49.88	49.88	49.88	49.88
2017	46.71	46.71	46.71	46.71	1.30	60.56	60.56	60.56	60.56	55.18	55.18	55.18	55.18
2018	60.82	60.82	60.82	60.82	1.30	79.34	79.34	79.34	79.34	63.66	63.66	63.66	63.66
2019		90.61	56.02	25.89	1.32		119.66	73.98	34.19		81.86	61.24	43.28
2020		105.28	56.25	26.75	1.32		139.04	74.29	35.33		90.60	61.38	43.80
2021		120.82	63.08	28.48	1.32		159.55	83.31	37.61		99.86	65.45	44.82
2022		127.72	68.17	29.34	1.32		168.67	90.02	38.75		103.97	68.48	45.34
2023		132.90	70.51	29.34	1.32		175.51	93.11	38.75		107.06	69.87	45.34
2024		137.21	71.13	29.34	1.32		181.20	93.93	38.75		109.63	70.24	45.34
2025		141.53	74.36	30.20	1.32		186.90	98.21	39.89		112.20	72.17	45.85
2026		145.84	80.06	31.07	1.32		192.60	105.72	41.03		114.77	75.56	46.37
2027		150.16	82.99	31.93	1.32		198.30	109.59	42.17		117.34	77.31	46.88
2028		153.61	84.84	31.93	1.32		202.86	112.05	42.17		119.40	78.42	46.88
2029		157.92	87.36	31.93	1.32		208.56	115.37	42.17		121.97	79.92	46.88
2030		160.51	89.29	32.79	1.32		211.97	117.91	43.31		123.52	81.07	47.40

Table 3.6 Canadian Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (c/l)			17%	real 2010 total petrol price (c/l)				real 2018 total petrol price (c/l)			
	tax (c/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	27.50	14.93	14.93	14.93	14.93	103.10	102.72	102.72	102.72	118.69	118.25	118.25	118.25
2011	27.69	17.36	17.36	17.36	17.36	119.21	119.45	119.45	119.45	137.23	137.50	137.50	137.50
2012	28.05	17.53	17.53	17.53	17.53	120.97	120.66	120.66	120.66	139.26	138.90	138.90	138.90
2013	28.54	17.56	17.56	17.56	17.56	120.22	120.82	120.82	120.82	138.39	139.09	139.09	139.09
2014	28.75	17.22	17.22	17.22	17.22	118.51	118.53	118.53	118.53	136.42	136.45	136.45	136.45
2015	29.17	14.19	14.19	14.19	14.19	97.65	97.69	97.69	97.69	112.41	112.46	112.46	112.46
2016	29.48	13.49	13.49	13.49	13.49	91.22	92.86	92.86	92.86	105.01	106.90	106.90	106.90
2017	29.59	14.41	14.41	14.41	14.41	99.06	99.18	99.18	99.18	114.04	114.17	114.17	114.17
2018	28.92	15.74	15.74	15.74	15.74	111.41	108.32	108.32	108.32	128.26	124.70	124.70	124.70
2019	28.92		18.83	15.33	12.27		129.61	105.49	84.48		149.20	121.44	97.25
2020	28.92		20.32	15.35	12.36		139.84	105.65	85.08		160.98	121.62	97.94
2021	28.92		21.89	16.04	12.54		150.67	110.41	86.28		173.45	127.11	99.33
2022	28.92		22.59	16.56	12.62		155.49	113.96	86.89		178.99	131.19	100.02
2023	28.92		23.12	16.80	12.62		159.10	115.59	86.89		183.15	133.07	100.02
2024	28.92		23.55	16.86	12.62		162.11	116.02	86.89		186.61	133.56	100.02
2025	28.92		23.99	17.19	12.71		165.12	118.28	87.49		190.08	136.16	100.71
2026	28.92		24.43	17.76	12.80		168.12	122.25	88.09		193.54	140.73	101.41
2027	28.92		24.87	18.06	12.89		171.13	124.30	88.69		197.00	143.08	102.10
2028	28.92		25.22	18.25	12.89		173.54	125.59	88.69		199.77	144.58	102.10
2029	28.92		25.65	18.50	12.89		176.55	127.34	88.69		203.24	146.60	102.10
2030	28.92		25.91	18.70	12.97		178.35	128.69	89.29		205.32	148.14	102.79

Figure 3.10 Canadian Petrol Price Scenarios



3.7 Chinese Petrol Price Scenarios

The Chinese scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Chinese CPI puts them into real Chinese 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 16 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.11.

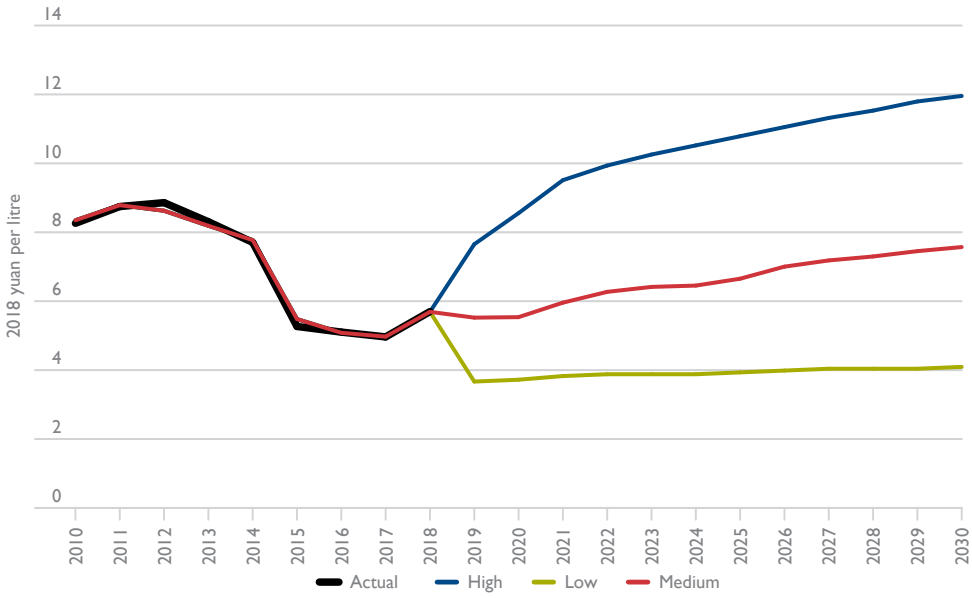
Table 3.7 Chinese Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (yuan/b)				real 2010 energy cost of petrol (yuan/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	1.03	80.11	80.11	80.11	80.11	60.30	60.30	60.30	60.30
2011	104.19	104.19	104.19	104.19	0.99	103.14	103.14	103.14	103.14	74.40	74.40	74.40	74.40
2012	104.07	104.07	104.07	104.07	1.00	104.66	104.66	104.66	104.66	75.09	75.09	75.09	75.09
2013	99.29	99.29	99.29	99.29	1.03	103.86	103.86	103.86	103.86	74.72	74.72	74.72	74.72
2014	88.69	88.69	88.69	88.69	1.11	99.06	99.06	99.06	99.06	72.56	72.56	72.56	72.56
2015	45.56	45.56	45.56	45.56	1.29	58.67	58.67	58.67	58.67	54.33	54.33	54.33	54.33
2016	36.96	36.96	36.96	36.96	1.32	48.82	48.82	48.82	48.82	49.88	49.88	49.88	49.88
2017	46.71	46.71	46.71	46.71	1.30	60.56	60.56	60.56	60.56	55.18	55.18	55.18	55.18
2018	60.82	60.82	60.82	60.82	1.30	79.34	79.34	79.34	79.34	63.66	63.66	63.66	63.66
2019		90.61	56.02	25.89	1.32		119.66	73.98	34.19		81.86	61.24	43.28
2020		105.28	56.25	26.75	1.32		139.04	74.29	35.33		90.60	61.38	43.80
2021		120.82	63.08	28.48	1.32		159.55	83.31	37.61		99.86	65.45	44.82
2022		127.72	68.17	29.34	1.32		168.67	90.02	38.75		103.97	68.48	45.34
2023		132.90	70.51	29.34	1.32		175.51	93.11	38.75		107.06	69.87	45.34
2024		137.21	71.13	29.34	1.32		181.20	93.93	38.75		109.63	70.24	45.34
2025		141.53	74.36	30.20	1.32		186.90	98.21	39.89		112.20	72.17	45.85
2026		145.84	80.06	31.07	1.32		192.60	105.72	41.03		114.77	75.56	46.37
2027		150.16	82.99	31.93	1.32		198.30	109.59	42.17		117.34	77.31	46.88
2028		153.61	84.84	31.93	1.32		202.86	112.05	42.17		119.40	78.42	46.88
2029		157.92	87.36	31.93	1.32		208.56	115.37	42.17		121.97	79.92	46.88
2030		160.51	89.29	32.79	1.32		211.97	117.91	43.31		123.52	81.07	47.40

Table 3.7 Chinese Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (yuan/l)			16%	real 2010 total petrol price (yuan/l)				real 2018 total petrol price (yuan/l)			
	tax (y/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	1.05	1.00	1.00	1.00	1.00	6.80	6.87	6.87	6.87	8.26	8.35	8.35	8.35
2011	1.04	1.05	1.05	1.05	1.05	7.20	7.23	7.23	7.23	8.75	8.79	8.79	8.79
2012	1.05	0.94	1.03	1.03	1.03	7.29	7.10	7.10	7.10	8.86	8.62	8.62	8.62
2013	1.07	0.89	0.98	0.98	0.98	6.84	6.74	6.74	6.74	8.31	8.19	8.19	8.19
2014	1.24	0.84	0.93	0.93	0.93	6.34	6.40	6.40	6.40	7.71	7.77	7.77	7.77
2015	1.32	0.57	0.66	0.66	0.66	4.34	4.51	4.51	4.51	5.27	5.48	5.48	5.48
2016	1.30	0.52	0.61	0.61	0.61	4.20	4.18	4.18	4.18	5.10	5.08	5.08	5.08
2017	1.28	0.59	0.59	0.59	0.59	4.09	4.09	4.09	4.09	4.96	4.97	4.97	4.97
2018	1.25	0.65	0.65	0.65	0.65	4.69	4.68	4.68	4.68	5.70	5.69	5.69	5.69
2019	1.25		0.87	0.63	0.42		6.30	4.55	3.02		7.65	5.52	3.67
2020	1.25		0.97	0.63	0.42		7.04	4.56	3.06		8.56	5.54	3.72
2021	1.25		1.08	0.68	0.43		7.83	4.90	3.15		9.51	5.96	3.83
2022	1.25		1.13	0.71	0.44		8.18	5.16	3.19		9.94	6.27	3.88
2023	1.25		1.16	0.73	0.44		8.44	5.28	3.19		10.26	6.41	3.88
2024	1.25		1.19	0.73	0.44		8.66	5.31	3.19		10.52	6.45	3.88
2025	1.25		1.22	0.76	0.45		8.88	5.48	3.24		10.79	6.65	3.93
2026	1.25		1.25	0.80	0.45		9.10	5.76	3.28		11.05	7.00	3.99
2027	1.25		1.29	0.82	0.46		9.32	5.91	3.33		11.32	7.18	4.04
2028	1.25		1.31	0.83	0.46		9.49	6.01	3.33		11.53	7.30	4.04
2029	1.25		1.34	0.85	0.46		9.71	6.13	3.33		11.80	7.45	4.04
2030	1.25		1.36	0.86	0.46		9.84	6.23	3.37		11.96	7.57	4.09

Figure 3.11 Chinese Petrol Price Scenarios



3.8 Danish Petrol Price Scenarios

The Danish scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Danish CPI puts them into real Danish 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 25 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.12.

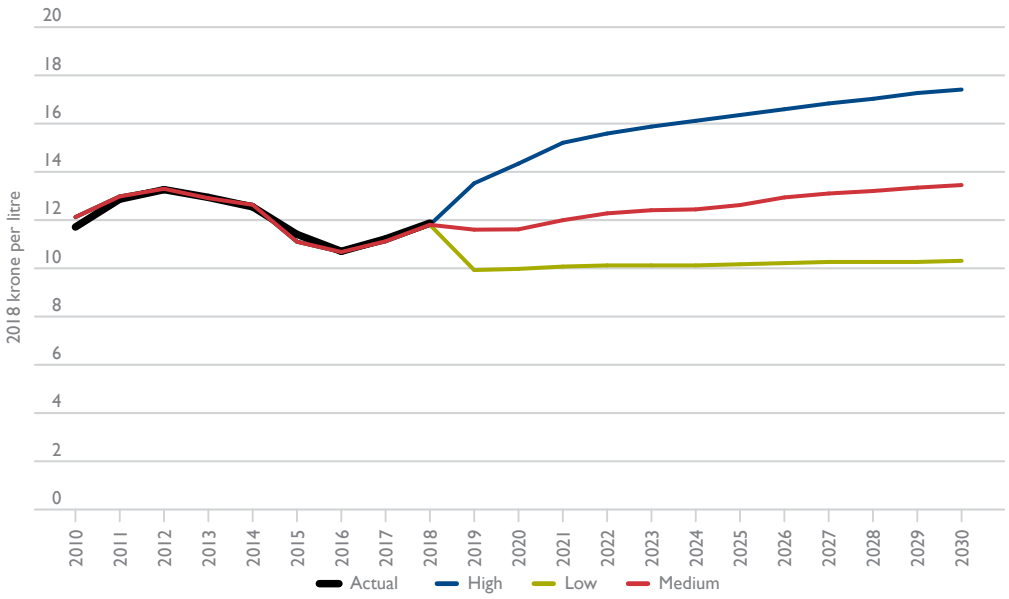
Table 3.8 Danish Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (krone/b)				real 2010 energy cost of petrol (krone/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	5.62	435.58	435.58	435.58	435.58	4.59	4.59	4.59	4.59
2011	104.19	104.19	104.19	104.19	5.36	560.70	560.70	560.70	560.70	5.34	5.34	5.34	5.34
2012	104.07	104.07	104.07	104.07	5.80	603.26	603.26	603.26	603.26	5.59	5.59	5.59	5.59
2013	99.29	99.29	99.29	99.29	5.62	561.10	561.10	561.10	561.10	5.34	5.34	5.34	5.34
2014	88.69	88.69	88.69	88.69	5.62	506.78	506.78	506.78	506.78	5.02	5.02	5.02	5.02
2015	45.56	45.56	45.56	45.56	6.73	310.91	310.91	310.91	310.91	3.84	3.84	3.84	3.84
2016	36.96	36.96	36.96	36.96	6.73	255.04	255.04	255.04	255.04	3.51	3.51	3.51	3.51
2017	46.71	46.71	46.71	46.71	6.60	318.87	318.87	318.87	318.87	3.89	3.89	3.89	3.89
2018	60.82	60.82	60.82	60.82	6.31	404.21	404.21	404.21	404.21	4.40	4.40	4.40	4.40
2019		90.61	56.02	25.89	6.44		614.34	379.81	175.53		5.66	4.26	3.03
2020		105.28	56.25	26.75	6.44		713.80	381.38	181.38		6.26	4.27	3.07
2021		120.82	63.08	28.48	6.44		819.12	427.69	193.08		6.89	4.54	3.14
2022		127.72	68.17	29.34	6.44		865.93	462.17	198.93		7.17	4.75	3.17
2023		132.90	70.51	29.34	6.44		901.03	478.04	198.93		7.38	4.84	3.17
2024		137.21	71.13	29.34	6.44		930.29	482.24	198.93		7.55	4.87	3.17
2025		141.53	74.36	30.20	6.44		959.54	504.19	204.78		7.73	5.00	3.21
2026		145.84	80.06	31.07	6.44		988.79	542.77	210.63		7.90	5.23	3.24
2027		150.16	82.99	31.93	6.44		1018.05	562.65	216.48		8.08	5.35	3.28
2028		153.61	84.84	31.93	6.44		1041.45	575.24	216.48		8.22	5.43	3.28
2029		157.92	87.36	31.93	6.44		1070.71	592.30	216.48		8.39	5.53	3.28
2030		160.51	89.29	32.79	6.44		1088.26	605.35	222.33		8.50	5.61	3.31

Table 3.8 Danish Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (krone/l)			25%	real 2010 total petrol price (krone/l)				real 2018 total petrol price (krone/l)			
	tax (k/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	4.26	2.21	2.21	2.21	2.21	10.69	11.07	11.07	11.07	11.71	12.12	12.12	12.12
2011	4.14	2.37	2.37	2.37	2.37	11.74	11.85	11.85	11.85	12.87	12.98	12.98	12.98
2012	4.12	2.43	2.43	2.43	2.43	12.10	12.14	12.14	12.14	13.26	13.30	13.30	13.30
2013	4.08	2.36	2.36	2.36	2.36	11.81	11.78	11.78	11.78	12.94	12.91	12.91	12.91
2014	4.21	2.31	2.31	2.31	2.31	11.45	11.53	11.53	11.53	12.55	12.63	12.63	12.63
2015	4.26	2.03	2.03	2.03	2.03	10.41	10.14	10.14	10.14	11.41	11.10	11.10	11.10
2016	4.29	1.95	1.95	1.95	1.95	9.77	9.75	9.75	9.75	10.71	10.68	10.68	10.68
2017	4.23	2.03	2.03	2.03	2.03	10.24	10.15	10.15	10.15	11.22	11.12	11.12	11.12
2018	4.22	2.15	2.15	2.15	2.15	10.84	10.77	10.77	10.77	11.88	11.80	11.80	11.80
2019	4.22		2.47	2.12	1.81		12.35	10.59	9.06		13.53	11.60	9.93
2020	4.22		2.62	2.12	1.82		13.09	10.60	9.11		14.34	11.62	9.98
2021	4.22		2.78	2.19	1.84		13.88	10.95	9.19		15.21	12.00	10.07
2022	4.22		2.85	2.24	1.85		14.23	11.21	9.24		15.59	12.28	10.12
2023	4.22		2.90	2.27	1.85		14.49	11.33	9.24		15.88	12.41	10.12
2024	4.22		2.94	2.27	1.85		14.71	11.36	9.24		16.12	12.44	10.12
2025	4.22		2.99	2.30	1.86		14.93	11.52	9.28		16.36	12.62	10.17
2026	4.22		3.03	2.36	1.87		15.15	11.81	9.33		16.60	12.94	10.22
2027	4.22		3.07	2.39	1.87		15.37	11.96	9.37		16.84	13.10	10.26
2028	4.22		3.11	2.41	1.87		15.54	12.05	9.37		17.03	13.21	10.26
2029	4.22		3.15	2.44	1.87		15.76	12.18	9.37		17.27	13.35	10.26
2030	4.22		3.18	2.46	1.88		15.89	12.28	9.41		17.41	13.45	10.31

Figure 3.12 Danish Petrol Price Scenarios



3.9 Finnish Petrol Price Scenarios

The Finnish scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Finnish CPI puts them into real Finnish 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 24 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.13.

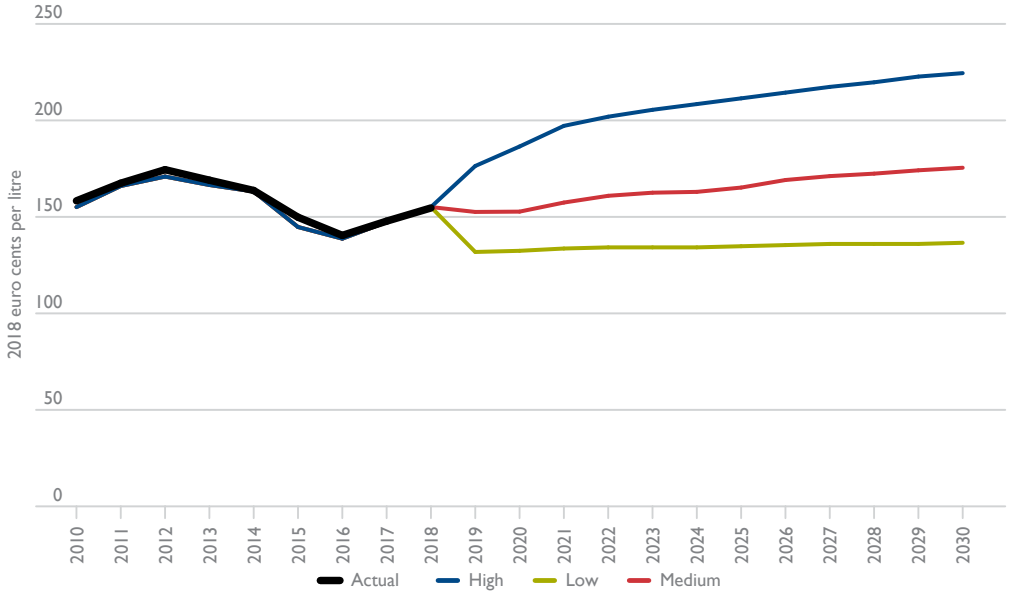
Table 3.9 Finnish Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.53	0.53	0.53	0.53
2011	104.19	104.19	104.19	104.19	0.72	74.33	74.33	74.33	74.33	0.62	0.62	0.62	0.62
2012	104.07	104.07	104.07	104.07	0.77	79.70	79.70	79.70	79.70	0.65	0.65	0.65	0.65
2013	99.29	99.29	99.29	99.29	0.75	73.80	73.80	73.80	73.80	0.61	0.61	0.61	0.61
2014	88.69	88.69	88.69	88.69	0.76	66.83	66.83	66.83	66.83	0.57	0.57	0.57	0.57
2015	45.56	45.56	45.56	45.56	0.91	41.23	41.23	41.23	41.23	0.43	0.43	0.43	0.43
2016	36.96	36.96	36.96	36.96	0.91	33.79	33.79	33.79	33.79	0.39	0.39	0.39	0.39
2017	46.71	46.71	46.71	46.71	0.89	42.34	42.34	42.34	42.34	0.44	0.44	0.44	0.44
2018	60.82	60.82	60.82	60.82	0.85	53.50	53.50	53.50	53.50	0.50	0.50	0.50	0.50
2019		90.61	56.02	25.89	0.86		81.21	50.21	23.20		0.65	0.48	0.33
2020		105.28	56.25	26.75	0.86		94.36	50.42	23.98		0.73	0.48	0.34
2021		120.82	63.08	28.48	0.86		108.28	56.54	25.52		0.81	0.52	0.34
2022		127.72	68.17	29.34	0.86		114.47	61.10	26.30		0.84	0.54	0.35
2023		132.90	70.51	29.34	0.86		119.11	63.19	26.30		0.87	0.55	0.35
2024		137.21	71.13	29.34	0.86		122.98	63.75	26.30		0.89	0.56	0.35
2025		141.53	74.36	30.20	0.86		126.84	66.65	27.07		0.91	0.57	0.35
2026		145.84	80.06	31.07	0.86		130.71	71.75	27.84		0.93	0.60	0.36
2027		150.16	82.99	31.93	0.86		134.58	74.38	28.62		0.95	0.62	0.36
2028		153.61	84.84	31.93	0.86		137.67	76.04	28.62		0.97	0.63	0.36
2029		157.92	87.36	31.93	0.86		141.54	78.30	28.62		0.99	0.64	0.36
2030		160.51	89.29	32.79	0.86		143.86	80.02	29.39		1.00	0.65	0.37

Table 3.9 Finnish Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			24%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.61	0.26	0.26	0.26	0.26	1.43	1.40	1.40	1.40	158	155	155	155
2011	0.60	0.28	0.28	0.28	0.28	1.51	1.50	1.50	1.50	167	166	166	166
2012	0.61	0.29	0.29	0.29	0.29	1.57	1.54	1.54	1.54	174	171	171	171
2013	0.60	0.29	0.29	0.29	0.29	1.52	1.50	1.50	1.50	169	167	167	167
2014	0.61	0.28	0.28	0.28	0.28	1.47	1.47	1.47	1.47	164	163	163	163
2015	0.62	0.25	0.25	0.25	0.25	1.35	1.30	1.30	1.30	150	145	145	145
2016	0.62	0.24	0.24	0.24	0.24	1.26	1.25	1.25	1.25	140	139	139	139
2017	0.63	0.26	0.26	0.26	0.26	1.33	1.33	1.33	1.33	148	147	147	147
2018	0.63	0.27	0.27	0.27	0.27	1.39	1.40	1.40	1.40	155	155	155	155
2019	0.63		0.31	0.27	0.23		1.59	1.37	1.19		176	153	132
2020	0.63		0.33	0.27	0.23		1.68	1.38	1.19		186	153	132
2021	0.63		0.34	0.27	0.23		1.78	1.42	1.20		197	157	134
2022	0.63		0.35	0.28	0.23		1.82	1.45	1.21		202	161	134
2023	0.63		0.36	0.28	0.23		1.85	1.46	1.21		205	163	134
2024	0.63		0.36	0.28	0.23		1.88	1.47	1.21		208	163	134
2025	0.63		0.37	0.29	0.23		1.90	1.49	1.21		211	165	135
2026	0.63		0.37	0.29	0.24		1.93	1.52	1.22		214	169	135
2027	0.63		0.38	0.30	0.24		1.96	1.54	1.22		217	171	136
2028	0.63		0.38	0.30	0.24		1.98	1.55	1.22		220	172	136
2029	0.63		0.39	0.30	0.24		2.01	1.57	1.22		223	174	136
2030	0.63		0.39	0.31	0.24		2.02	1.58	1.23		224	175	137

Figure 3.13 Finnish Petrol Price Scenarios



3.10 French Petrol Price Scenarios

The French scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the French CPI puts them into real French 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 20 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.14.

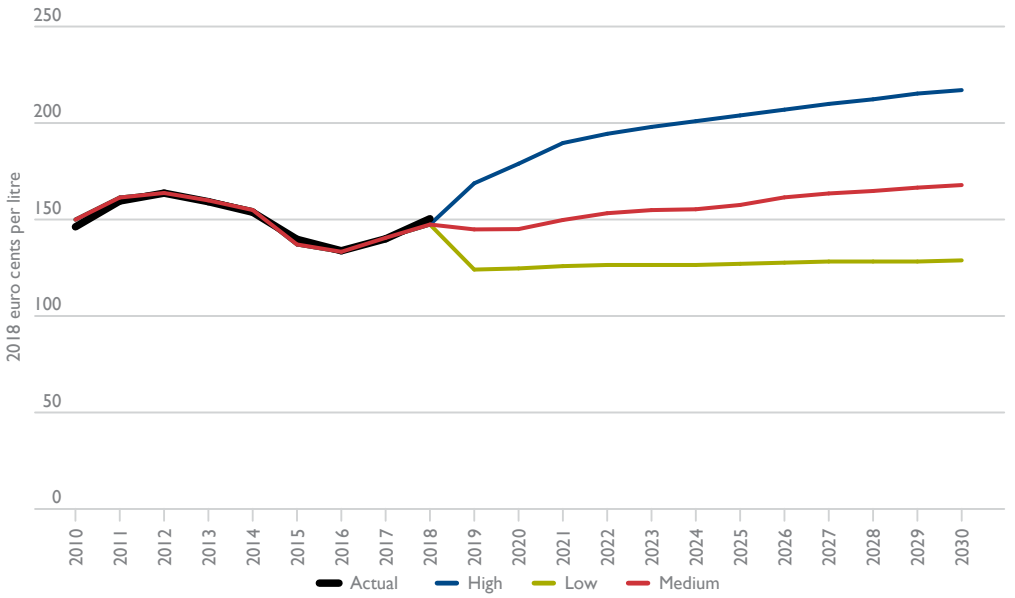
Table 3.10 French Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.55	0.55	0.55	0.55
2011	104.19	104.19	104.19	104.19	0.72	75.28	75.28	75.28	75.28	0.64	0.64	0.64	0.64
2012	104.07	104.07	104.07	104.07	0.77	81.39	81.39	81.39	81.39	0.68	0.68	0.68	0.68
2013	99.29	99.29	99.29	99.29	0.75	75.83	75.83	75.83	75.83	0.65	0.65	0.65	0.65
2014	88.69	88.69	88.69	88.69	0.76	69.02	69.02	69.02	69.02	0.61	0.61	0.61	0.61
2015	45.56	45.56	45.56	45.56	0.91	42.48	42.48	42.48	42.48	0.45	0.45	0.45	0.45
2016	36.96	36.96	36.96	36.96	0.91	34.87	34.87	34.87	34.87	0.41	0.41	0.41	0.41
2017	46.71	46.71	46.71	46.71	0.89	43.58	43.58	43.58	43.58	0.46	0.46	0.46	0.46
2018	60.82	60.82	60.82	60.82	0.85	54.60	54.60	54.60	54.60	0.52	0.52	0.52	0.52
2019		90.61	56.02	25.89	0.86		82.88	51.24	23.68		0.69	0.50	0.34
2020		105.28	56.25	26.75	0.86		96.30	51.45	24.47		0.76	0.50	0.35
2021		120.82	63.08	28.48	0.86		110.51	57.70	26.05		0.85	0.54	0.36
2022		127.72	68.17	29.34	0.86		116.82	62.35	26.84		0.88	0.57	0.36
2023		132.90	70.51	29.34	0.86		121.56	64.49	26.84		0.91	0.58	0.36
2024		137.21	71.13	29.34	0.86		125.51	65.06	26.84		0.93	0.58	0.36
2025		141.53	74.36	30.20	0.86		129.45	68.02	27.63		0.96	0.60	0.37
2026		145.84	80.06	31.07	0.86		133.40	73.23	28.42		0.98	0.63	0.37
2027		150.16	82.99	31.93	0.86		137.35	75.91	29.21		1.00	0.65	0.38
2028		153.61	84.84	31.93	0.86		140.50	77.61	29.21		1.02	0.66	0.38
2029		157.92	87.36	31.93	0.86		144.45	79.91	29.21		1.04	0.67	0.38
2030		160.51	89.29	32.79	0.86		146.82	81.67	30.00		1.06	0.68	0.38

Table 3.10 French Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			20%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.61	0.23	0.23	0.23	0.23	1.34	1.38	1.38	1.38	146	150	150	150
2011	0.60	0.24	0.24	0.24	0.24	1.47	1.48	1.48	1.48	160	161	161	161
2012	0.58	0.25	0.25	0.25	0.25	1.50	1.51	1.51	1.51	164	164	164	164
2013	0.58	0.24	0.24	0.24	0.24	1.46	1.47	1.47	1.47	159	160	160	160
2014	0.58	0.24	0.24	0.24	0.24	1.41	1.42	1.42	1.42	154	155	155	155
2015	0.60	0.21	0.21	0.21	0.21	1.28	1.26	1.26	1.26	140	137	137	137
2016	0.61	0.20	0.20	0.20	0.20	1.23	1.23	1.23	1.23	134	133	133	133
2017	0.62	0.22	0.22	0.22	0.22	1.29	1.29	1.29	1.29	140	141	141	141
2018	0.61	0.23	0.23	0.23	0.23	1.38	1.36	1.36	1.36	150	147	147	147
2019	0.61		0.26	0.22	0.19		1.55	1.33	1.14		169	145	124
2020	0.61		0.27	0.22	0.19		1.64	1.33	1.15		179	145	125
2021	0.61		0.29	0.23	0.19		1.74	1.38	1.16		190	150	126
2022	0.61		0.30	0.23	0.19		1.79	1.41	1.16		194	153	126
2023	0.61		0.30	0.24	0.19		1.82	1.42	1.16		198	155	126
2024	0.61		0.31	0.24	0.19		1.85	1.43	1.16		201	155	126
2025	0.61		0.31	0.24	0.19		1.87	1.45	1.17		204	158	127
2026	0.61		0.32	0.25	0.20		1.90	1.48	1.17		207	161	128
2027	0.61		0.32	0.25	0.20		1.93	1.50	1.18		210	164	128
2028	0.61		0.33	0.25	0.20		1.95	1.51	1.18		212	165	128
2029	0.61		0.33	0.26	0.20		1.98	1.53	1.18		215	167	128
2030	0.61		0.33	0.26	0.20		2.00	1.54	1.18		217	168	129

Figure 3.14 French Petrol Price Scenarios



3.11 German Petrol Price Scenarios

The German scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the German CPI puts them into real German 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 19 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.15.

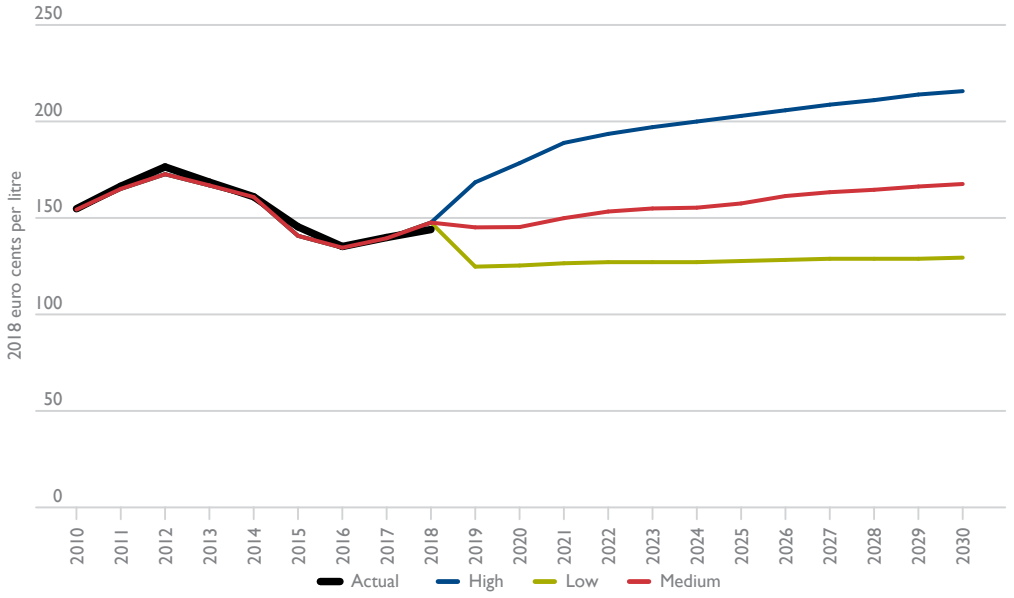
Table 3.11 German Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.51	0.51	0.51	0.51
2011	104.19	104.19	104.19	104.19	0.72	75.31	75.31	75.31	75.31	0.61	0.61	0.61	0.61
2012	104.07	104.07	104.07	104.07	0.77	81.38	81.38	81.38	81.38	0.68	0.68	0.68	0.68
2013	99.29	99.29	99.29	99.29	0.75	75.34	75.34	75.34	75.34	0.64	0.64	0.64	0.64
2014	88.69	88.69	88.69	88.69	0.76	68.31	68.31	68.31	68.31	0.60	0.60	0.60	0.60
2015	45.56	45.56	45.56	45.56	0.91	41.96	41.96	41.96	41.96	0.45	0.45	0.45	0.45
2016	36.96	36.96	36.96	36.96	0.91	34.34	34.34	34.34	34.34	0.41	0.41	0.41	0.41
2017	46.71	46.71	46.71	46.71	0.89	42.62	42.62	42.62	42.62	0.45	0.45	0.45	0.45
2018	60.82	60.82	60.82	60.82	0.85	53.38	53.38	53.38	53.38	0.52	0.52	0.52	0.52
2019		90.61	56.02	25.89	0.86		81.04	50.10	23.15		0.67	0.50	0.34
2020		105.28	56.25	26.75	0.86		94.16	50.31	23.93		0.75	0.50	0.35
2021		120.82	63.08	28.48	0.86		108.05	56.42	25.47		0.83	0.53	0.36
2022		127.72	68.17	29.34	0.86		114.23	60.97	26.24		0.86	0.56	0.36
2023		132.90	70.51	29.34	0.86		118.86	63.06	26.24		0.89	0.57	0.36
2024		137.21	71.13	29.34	0.86		122.72	63.61	26.24		0.91	0.57	0.36
2025		141.53	74.36	30.20	0.86		126.58	66.51	27.01		0.93	0.59	0.37
2026		145.84	80.06	31.07	0.86		130.44	71.60	27.79		0.96	0.62	0.37
2027		150.16	82.99	31.93	0.86		134.30	74.22	28.56		0.98	0.63	0.37
2028		153.61	84.84	31.93	0.86		137.38	75.88	28.56		1.00	0.64	0.37
2029		157.92	87.36	31.93	0.86		141.24	78.13	28.56		1.02	0.66	0.37
2030		160.51	89.29	32.79	0.86		143.56	79.85	29.33		1.03	0.67	0.38

Table 3.11 German Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			19%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.65	0.22	0.22	0.22	0.22	1.39	1.39	1.39	1.39	155	154	154	154
2011	0.64	0.24	0.24	0.24	0.24	1.50	1.48	1.48	1.48	166	165	165	165
2012	0.63	0.25	0.25	0.25	0.25	1.59	1.55	1.55	1.55	176	173	173	173
2013	0.62	0.24	0.24	0.24	0.24	1.51	1.50	1.50	1.50	169	167	167	167
2014	0.61	0.23	0.23	0.23	0.23	1.45	1.45	1.45	1.45	161	161	161	161
2015	0.61	0.20	0.20	0.20	0.20	1.31	1.26	1.26	1.26	145	141	141	141
2016	0.61	0.19	0.19	0.19	0.19	1.22	1.21	1.21	1.21	135	135	135	135
2017	0.60	0.20	0.20	0.20	0.20	1.26	1.25	1.25	1.25	140	139	139	139
2018	0.60	0.21	0.21	0.21	0.21	1.29	1.33	1.33	1.33	144	148	148	148
2019	0.60		0.24	0.21	0.18		1.51	1.30	1.12		168	145	125
2020	0.60		0.26	0.21	0.18		1.60	1.31	1.13		178	145	125
2021	0.60		0.27	0.22	0.18		1.70	1.35	1.14		189	150	127
2022	0.60		0.28	0.22	0.18		1.74	1.38	1.14		194	153	127
2023	0.60		0.28	0.22	0.18		1.77	1.39	1.14		197	155	127
2024	0.60		0.29	0.22	0.18		1.80	1.40	1.14		200	155	127
2025	0.60		0.29	0.23	0.18		1.82	1.42	1.15		203	158	128
2026	0.60		0.30	0.23	0.18		1.85	1.45	1.15		206	161	128
2027	0.60		0.30	0.23	0.18		1.88	1.47	1.16		209	163	129
2028	0.60		0.30	0.24	0.18		1.90	1.48	1.16		211	165	129
2029	0.60		0.31	0.24	0.18		1.92	1.49	1.16		214	166	129
2030	0.60		0.31	0.24	0.19		1.94	1.51	1.16		216	168	129

Figure 3.15 German Petrol Price Scenarios



3.12 Greek Petrol Price Scenarios

The Greek scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Greek CPI puts them into real Greek 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 24 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.16.

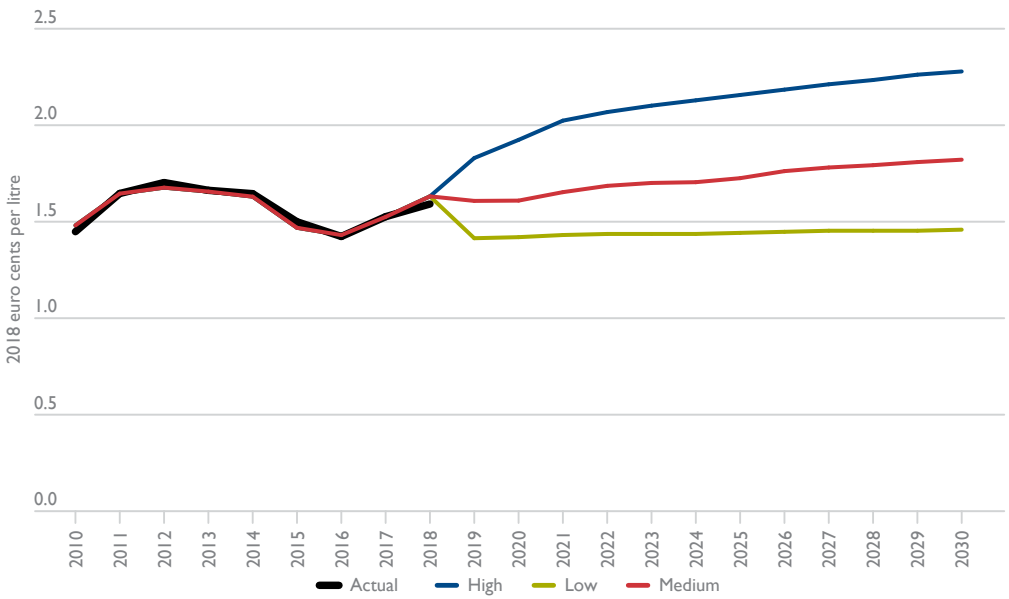
Table 3.12 Greek Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.759	58.76	58.76	58.76	58.76	0.54	0.57	0.57	0.57
2011	104.19	104.19	104.19	104.19	0.715	74.40	74.40	74.40	74.40	0.65	0.65	0.65	0.65
2012	104.07	104.07	104.07	104.07	0.774	80.79	80.79	80.79	80.79	0.70	0.68	0.68	0.68
2013	99.29	99.29	99.29	99.29	0.752	76.63	76.63	76.63	76.63	0.67	0.66	0.66	0.66
2014	88.69	88.69	88.69	88.69	0.757	71.04	71.04	71.04	71.04	0.64	0.63	0.63	0.63
2015	45.56	45.56	45.56	45.56	0.906	44.52	44.52	44.52	44.52	0.52	0.49	0.49	0.49
2016	36.96	36.96	36.96	36.96	0.907	36.91	36.91	36.91	36.91	0.45	0.45	0.45	0.45
2017	46.71	46.71	46.71	46.71	0.887	46.09	46.09	46.09	46.09	0.50	0.50	0.50	0.50
2018	60.82	60.82	60.82	60.82	0.846	58.19	58.19	58.19	58.19	0.53	0.57	0.57	0.57
2019		90.61	56.02	25.89	0.862		88.33	54.61	25.24		0.72	0.55	0.39
2020		105.28	56.25	26.75	0.862		102.63	54.84	26.08		0.80	0.55	0.40
2021		120.82	63.08	28.48	0.862		117.78	61.50	27.76		0.88	0.58	0.41
2022		127.72	68.17	29.34	0.862		124.51	66.45	28.60		0.91	0.61	0.41
2023		132.90	70.51	29.34	0.862		129.56	68.74	28.60		0.94	0.62	0.41
2024		137.21	71.13	29.34	0.862		133.76	69.34	28.60		0.96	0.62	0.41
2025		141.53	74.36	30.20	0.862		137.97	72.49	29.44		0.98	0.64	0.42
2026		145.84	80.06	31.07	0.862		142.17	78.04	30.29		1.00	0.67	0.42
2027		150.16	82.99	31.93	0.862		146.38	80.90	31.13		1.02	0.68	0.42
2028		153.61	84.84	31.93	0.862		149.75	82.71	31.13		1.04	0.69	0.42
2029		157.92	87.36	31.93	0.862		153.95	85.16	31.13		1.06	0.71	0.42
2030		160.51	89.29	32.79	0.862		156.48	87.04	31.97		1.08	0.72	0.43

Table 3.12 Greek Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			24%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.65	0.22	0.22	0.22	0.22	1.39	1.39	1.39	1.39	155	154	154	154
2011	0.64	0.24	0.24	0.24	0.24	1.50	1.48	1.48	1.48	166	165	165	165
2012	0.63	0.25	0.25	0.25	0.25	1.59	1.55	1.55	1.55	176	173	173	173
2013	0.62	0.24	0.24	0.24	0.24	1.51	1.50	1.50	1.50	169	167	167	167
2014	0.61	0.23	0.23	0.23	0.23	1.45	1.45	1.45	1.45	161	161	161	161
2015	0.61	0.20	0.20	0.20	0.20	1.31	1.26	1.26	1.26	145	141	141	141
2016	0.61	0.19	0.19	0.19	0.19	1.22	1.21	1.21	1.21	135	135	135	135
2017	0.60	0.20	0.20	0.20	0.20	1.26	1.25	1.25	1.25	140	139	139	139
2018	0.60	0.21	0.21	0.21	0.21	1.29	1.33	1.33	1.33	144	148	148	148
2019	0.60		0.24	0.21	0.18		1.51	1.30	1.12		168	145	125
2020	0.60		0.26	0.21	0.18		1.60	1.31	1.13		178	145	125
2021	0.60		0.27	0.22	0.18		1.70	1.35	1.14		189	150	127
2022	0.60		0.28	0.22	0.18		1.74	1.38	1.14		194	153	127
2023	0.60		0.28	0.22	0.18		1.77	1.39	1.14		197	155	127
2024	0.60		0.29	0.22	0.18		1.80	1.40	1.14		200	155	127
2025	0.60		0.29	0.23	0.18		1.82	1.42	1.15		203	158	128
2026	0.60		0.30	0.23	0.18		1.85	1.45	1.15		206	161	128
2027	0.60		0.30	0.23	0.18		1.88	1.47	1.16		209	163	129
2028	0.60		0.30	0.24	0.18		1.90	1.48	1.16		211	165	129
2029	0.60		0.31	0.24	0.18		1.92	1.49	1.16		214	166	129
2030	0.60		0.31	0.24	0.19		1.94	1.51	1.16		216	168	129

Figure 3.16 Greek Petrol Price Scenarios



3.13 Hungarian Petrol Price Scenarios

The Hungarian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Hungarian CPI puts them into real Hungarian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018), and zero sales tax allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.17.

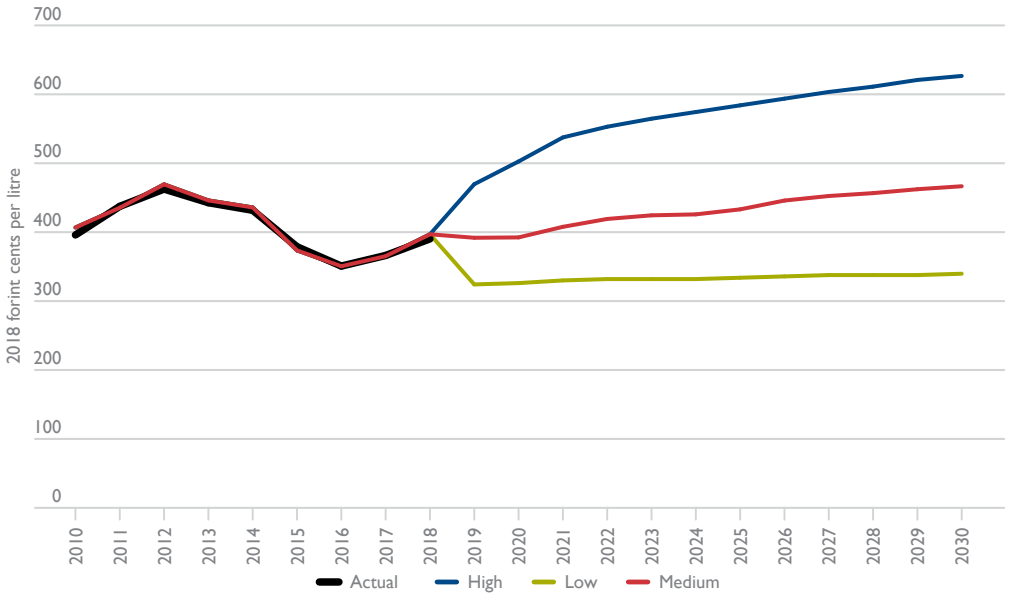
Table 3.13 Hungarian Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (forint/b)				real 2010 energy cost of petrol (forint/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	207.99	16109	16109	16109	16109	148.25	157.40	157.40	157.40
2011	104.19	104.19	104.19	104.19	200.68	20750	20750	20750	20750	190.59	188.85	188.85	188.85
2012	104.07	104.07	104.07	104.07	224.96	22432	22432	22432	22432	194.45	200.25	200.25	200.25
2013	99.29	99.29	99.29	99.29	223.62	21208	21208	21208	21208	189.13	191.95	191.95	191.95
2014	88.69	88.69	88.69	88.69	232.67	20081	20081	20081	20081	180.80	184.32	184.32	184.32
2015	45.56	45.56	45.56	45.56	279.47	12425	12425	12425	12425	112.87	108.36	108.36	108.36
2016	36.96	36.96	36.96	36.96	281.70	10249	10249	10249	10249	93.86	93.61	93.61	93.61
2017	46.71	46.71	46.71	46.71	274.31	12586	12586	12586	12586	110.31	109.44	109.44	109.44
2018	60.82	60.82	60.82	60.82	275.16	16356	16356	16356	16356	129.36	134.99	134.99	134.99
2019		90.61	56.02	25.89	287.25		25438	15727	7268		196.54	130.73	73.41
2020		105.28	56.25	26.75	287.25		29556	15792	7510		224.45	131.17	75.05
2021		120.82	63.08	28.48	287.25		33917	17709	7995		254.00	144.16	78.33
2022		127.72	68.17	29.34	287.25		35855	19137	8237		267.13	153.84	79.97
2023		132.90	70.51	29.34	287.25		37309	19794	8237		276.98	158.29	79.97
2024		137.21	71.13	29.34	287.25		38520	19968	8237		285.19	159.47	79.97
2025		141.53	74.36	30.20	287.25		39732	20877	8479		293.40	165.63	81.62
2026		145.84	80.06	31.07	287.25		40943	22474	8722		301.61	176.45	83.26
2027		150.16	82.99	31.93	287.25		42154	23298	8964		309.82	182.03	84.90
2028		153.61	84.84	31.93	287.25		43123	23819	8964		316.38	185.57	84.90
2029		157.92	87.36	31.93	287.25		44335	24525	8964		324.59	190.35	84.90
2030		160.51	89.29	32.79	287.25		45061	25065	9206		329.52	194.01	86.54

Table 3.13 Hungarian Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (forint/l)			0%	real 2010 total petrol price (forint/l)				real 2018 total petrol price (forint/l)			
	tax (f/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	186.98	0.00	0.00	0.00	0.00	335.23	344.38	344.38	344.38	395.94	406.75	406.75	406.75
2011	179.76	0.00	0.00	0.00	0.00	370.35	368.61	368.61	368.61	437.42	435.37	435.37	435.37
2012	197.14	0.00	0.00	0.00	0.00	391.60	397.39	397.39	397.39	462.52	469.36	469.36	469.36
2013	185.72	0.00	0.00	0.00	0.00	374.85	377.68	377.68	377.68	442.74	446.08	446.08	446.08
2014	184.72	0.00	0.00	0.00	0.00	365.52	369.04	369.04	369.04	431.71	435.87	435.87	435.87
2015	207.89	0.00	0.00	0.00	0.00	320.76	316.25	316.25	316.25	378.85	373.52	373.52	373.52
2016	203.16	0.00	0.00	0.00	0.00	297.02	296.77	296.77	296.77	350.81	350.52	350.52	350.52
2017	199.73	0.00	0.00	0.00	0.00	310.03	309.17	309.17	309.17	366.18	365.16	365.16	365.16
2018	201.05	0.00	0.00	0.00	0.00	330.41	336.04	336.04	336.04	390.25	396.90	396.90	396.90
2019	201.05		0.00	0.00	0.00		397.59	331.78	274.46		469.59	391.87	324.16
2020	201.05		0.00	0.00	0.00		425.50	332.22	276.10		502.56	392.39	326.10
2021	201.05		0.00	0.00	0.00		455.05	345.22	279.38		537.46	407.74	329.98
2022	201.05		0.00	0.00	0.00		468.18	354.89	281.03		552.97	419.16	331.92
2023	201.05		0.00	0.00	0.00		478.03	359.34	281.03		564.61	424.42	331.92
2024	201.05		0.00	0.00	0.00		486.24	360.52	281.03		574.30	425.81	331.92
2025	201.05		0.00	0.00	0.00		494.45	366.68	282.67		584.00	433.09	333.86
2026	201.05		0.00	0.00	0.00		502.66	377.51	284.31		593.69	445.87	335.80
2027	201.05		0.00	0.00	0.00		510.87	383.08	285.95		603.39	452.46	337.74
2028	201.05		0.00	0.00	0.00		517.43	386.62	285.95		611.14	456.63	337.74
2029	201.05		0.00	0.00	0.00		525.64	391.40	285.95		620.84	462.29	337.74
2030	201.05		0.00	0.00	0.00		530.57	395.06	287.59		626.66	466.61	339.68

Figure 3.17 Hungarian Petrol Price Scenarios



3.14 Indian Petrol Price Scenarios

The Indian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Indian CPI puts them into real Indian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 27 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.18.

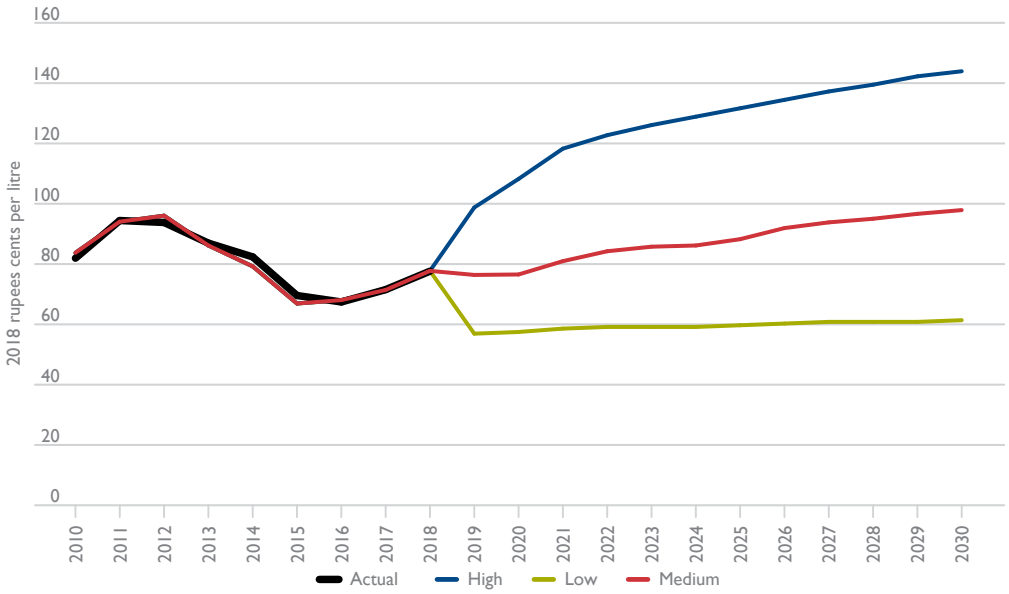
Table 3.14 Indian Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (rupees/b)				real 2010 energy cost of petrol (rupees/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	45.7	3535.65	3535.65	3535.65	3535.65	27.75	27.75	27.75	27.75
2011	104.19	104.19	104.19	104.19	46.6	4597.58	4597.58	4597.58	4597.58	34.25	34.25	34.25	34.25
2012	104.07	104.07	104.07	104.07	53.4	4911.35	4911.35	4911.35	4911.35	36.17	36.17	36.17	36.17
2013	99.29	99.29	99.29	99.29	58.5	4697.00	4697.00	4697.00	4697.00	34.86	34.86	34.86	34.86
2014	88.69	88.69	88.69	88.69	61.0	4168.43	4168.43	4168.43	4168.43	31.62	31.62	31.62	31.62
2015	45.56	45.56	45.56	45.56	64.1	2149.83	2149.83	2149.83	2149.83	19.27	19.27	19.27	19.27
2016	36.96	36.96	36.96	36.96	67.2	1763.25	1763.25	1763.25	1763.25	16.90	16.90	16.90	16.90
2017	46.71	46.71	46.71	46.71	65.1	2152.82	2152.82	2152.82	2152.82	18.31	18.31	18.31	18.31
2018	60.82	60.82	60.82	60.82	68.8	2910.27	2910.27	2910.27	2910.27	22.95	22.95	22.95	22.95
2019		90.61	56.02	25.89	72.0		4538.88	2806.12	1296.82		32.92	22.31	13.07
2020		105.28	56.25	26.75	72.0		5273.75	2817.73	1340.05		37.42	22.38	13.34
2021		120.82	63.08	28.48	72.0		6051.85	3159.89	1426.51		42.18	24.48	13.87
2022		127.72	68.17	29.34	72.0		6397.66	3414.65	1469.73		44.30	26.04	14.13
2023		132.90	70.51	29.34	72.0		6657.03	3531.88	1469.73		45.88	26.76	14.13
2024		137.21	71.13	29.34	72.0		6873.17	3562.88	1469.73		47.21	26.94	14.13
2025		141.53	74.36	30.20	72.0		7089.30	3725.05	1512.96		48.53	27.94	14.40
2026		145.84	80.06	31.07	72.0		7305.44	4010.10	1556.19		49.85	29.68	14.66
2027		150.16	82.99	31.93	72.0		7521.58	4157.01	1599.42		51.18	30.58	14.93
2028		153.61	84.84	31.93	72.0		7694.49	4250.00	1599.42		52.23	31.15	14.93
2029		157.92	87.36	31.93	72.0		7910.63	4376.05	1599.42		53.56	31.92	14.93
2030		160.51	89.29	32.79	72.0		8040.31	4472.43	1642.64		54.35	32.51	15.19

Table 3.14 Indian Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (rupees/l)			27%	real 2010 total petrol price (rupees/l)				real 2018 total petrol price (rupees/l)			
	tax (r/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	15.48	7.22	7.22	7.22	7.22	49.36	50.44	50.44	50.44	81.93	83.74	83.74	83.74
2011	14.30	8.11	8.11	8.11	8.11	56.89	56.66	56.66	56.66	94.44	94.06	94.06	94.06
2012	13.40	8.28	8.28	8.28	8.28	56.50	57.85	57.85	57.85	93.79	96.04	96.04	96.04
2013	8.39	8.65	8.65	8.65	8.65	52.37	51.90	51.90	51.90	86.94	86.16	86.16	86.16
2014	8.15	7.95	7.95	7.95	7.95	49.62	47.73	47.73	47.73	82.37	79.23	79.23	79.23
2015	12.98	8.06	8.06	8.06	8.06	41.90	40.31	40.31	40.31	69.56	66.91	66.91	66.91
2016	15.37	8.71	8.71	8.71	8.71	40.62	40.99	40.99	40.99	67.43	68.04	68.04	68.04
2017	15.56	9.15	9.15	9.15	9.15	43.08	43.02	43.02	43.02	71.52	71.41	71.41	71.41
2018	13.92	9.96	9.96	9.96	9.96	46.76	46.83	46.83	46.83	77.63	77.74	77.74	77.74
2019	13.92		12.65	9.78	7.29		59.49	46.02	34.28		98.75	76.39	56.92
2020	13.92		13.86	9.80	7.36		65.20	46.11	34.62		108.23	76.54	57.47
2021	13.92		15.15	10.37	7.50		71.25	48.77	35.29		118.28	80.96	58.59
2022	13.92		15.72	10.79	7.57		73.94	50.75	35.63		122.74	84.24	59.15
2023	13.92		16.15	10.98	7.57		75.95	51.66	35.63		126.09	85.76	59.15
2024	13.92		16.50	11.03	7.57		77.63	51.90	35.63		128.87	86.16	59.15
2025	13.92		16.86	11.30	7.65		79.31	53.16	35.97		131.66	88.25	59.70
2026	13.92		17.22	11.77	7.72		80.99	55.38	36.30		134.45	91.93	60.26
2027	13.92		17.58	12.02	7.79		82.67	56.52	36.64		137.24	93.82	60.82
2028	13.92		17.86	12.17	7.79		84.02	57.24	36.64		139.47	95.02	60.82
2029	13.92		18.22	12.38	7.79		85.70	58.22	36.64		142.26	96.65	60.82
2030	13.92		18.43	12.54	7.86		86.71	58.97	36.97		143.94	97.89	61.38

Figure 3.18 Indian Petrol Price Scenarios



3.15 Irish Petrol Price Scenarios

The Irish scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Irish CPI puts them into real Irish 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 23 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.19.

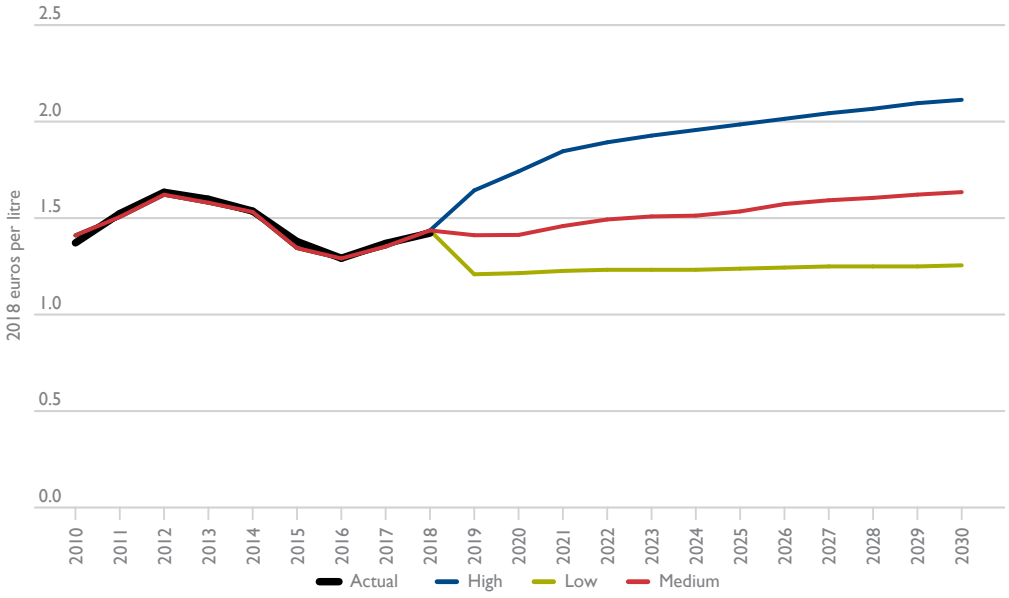
Table 3.15 Irish Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.759	58.76	58.76	58.76	58.76	0.56	0.56	0.56	0.56
2011	104.19	104.19	104.19	104.19	0.715	74.94	74.94	74.94	74.94	0.65	0.65	0.65	0.65
2012	104.07	104.07	104.07	104.07	0.774	81.23	81.23	81.23	81.23	0.69	0.69	0.69	0.69
2013	99.29	99.29	99.29	99.29	0.752	75.95	75.95	75.95	75.95	0.66	0.66	0.66	0.66
2014	88.69	88.69	88.69	88.69	0.757	69.35	69.35	69.35	69.35	0.62	0.62	0.62	0.62
2015	45.56	45.56	45.56	45.56	0.906	42.83	42.83	42.83	42.83	0.48	0.48	0.48	0.48
2016	36.96	36.96	36.96	36.96	0.907	35.22	35.22	35.22	35.22	0.43	0.43	0.43	0.43
2017	46.71	46.71	46.71	46.71	0.887	44.32	44.32	44.32	44.32	0.48	0.48	0.48	0.48
2018	60.82	60.82	60.82	60.82	0.846	56.32	56.32	56.32	56.32	0.55	0.55	0.55	0.55
2019		90.61	56.02	25.89	0.862		85.49	52.85	24.43		0.71	0.53	0.37
2020		105.28	56.25	26.75	0.862		99.33	53.07	25.24		0.79	0.53	0.38
2021		120.82	63.08	28.48	0.862		113.99	59.52	26.87		0.87	0.57	0.39
2022		127.72	68.17	29.34	0.862		120.50	64.32	27.68		0.90	0.59	0.39
2023		132.90	70.51	29.34	0.862		125.39	66.53	27.68		0.93	0.61	0.39
2024		137.21	71.13	29.34	0.862		129.46	67.11	27.68		0.95	0.61	0.39
2025		141.53	74.36	30.20	0.862		133.53	70.16	28.50		0.97	0.63	0.40
2026		145.84	80.06	31.07	0.862		137.60	75.53	29.31		1.00	0.65	0.40
2027		150.16	82.99	31.93	0.862		141.67	78.30	30.13		1.02	0.67	0.41
2028		153.61	84.84	31.93	0.862		144.93	80.05	30.13		1.04	0.68	0.41
2029		157.92	87.36	31.93	0.862		149.00	82.43	30.13		1.06	0.69	0.41
2030		160.51	89.29	32.79	0.862		151.44	84.24	30.94		1.07	0.70	0.41

Table 3.15 Irish Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			23%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.54	0.23	0.23	0.23	0.23	1.30	1.34	1.34	1.34	1.37	1.41	1.41	1.41
2011	0.53	0.25	0.25	0.25	0.25	1.44	1.43	1.43	1.43	1.52	1.51	1.51	1.51
2012	0.56	0.29	0.29	0.29	0.29	1.55	1.54	1.54	1.54	1.63	1.62	1.62	1.62
2013	0.56	0.28	0.28	0.28	0.28	1.51	1.50	1.50	1.50	1.60	1.58	1.58	1.58
2014	0.56	0.27	0.27	0.27	0.27	1.46	1.45	1.45	1.45	1.54	1.53	1.53	1.53
2015	0.56	0.24	0.24	0.24	0.24	1.31	1.28	1.28	1.28	1.38	1.34	1.34	1.34
2016	0.56	0.23	0.23	0.23	0.23	1.22	1.22	1.22	1.22	1.29	1.29	1.29	1.29
2017	0.56	0.24	0.24	0.24	0.24	1.30	1.28	1.28	1.28	1.37	1.35	1.35	1.35
2018	0.56	0.25	0.25	0.25	0.25	1.35	1.36	1.36	1.36	1.42	1.44	1.44	1.44
2019	0.56		0.29	0.25	0.21		1.56	1.34	1.15		1.64	1.41	1.21
2020	0.56		0.31	0.25	0.22		1.65	1.34	1.15		1.74	1.41	1.21
2021	0.56		0.33	0.26	0.22		1.75	1.38	1.16		1.85	1.46	1.23
2022	0.56		0.34	0.26	0.22		1.79	1.42	1.17		1.89	1.49	1.23
2023	0.56		0.34	0.27	0.22		1.83	1.43	1.17		1.93	1.51	1.23
2024	0.56		0.35	0.27	0.22		1.86	1.43	1.17		1.96	1.51	1.23
2025	0.56		0.35	0.27	0.22		1.88	1.45	1.17		1.99	1.53	1.24
2026	0.56		0.36	0.28	0.22		1.91	1.49	1.18		2.01	1.57	1.24
2027	0.56		0.36	0.28	0.22		1.94	1.51	1.18		2.04	1.59	1.25
2028	0.56		0.37	0.28	0.22		1.96	1.52	1.18		2.07	1.60	1.25
2029	0.56		0.37	0.29	0.22		1.99	1.54	1.18		2.10	1.62	1.25
2030	0.56		0.37	0.29	0.22		2.00	1.55	1.19		2.11	1.63	1.26

Figure 3.19 Irish Petrol Price Scenarios



3.16 Italian Petrol Price Scenarios

The Italian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Italian CPI puts them into real Italian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 22 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.20.

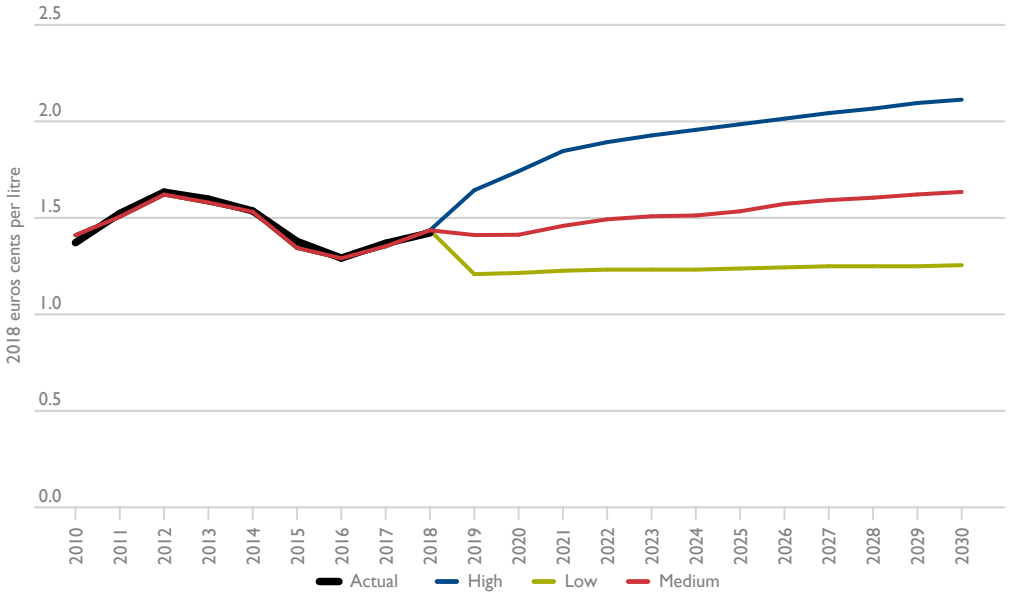
Table 3.16 Italian Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.58	0.58	0.58	0.58
2011	104.19	104.19	104.19	104.19	0.72	74.82	74.82	74.82	74.82	0.68	0.68	0.68	0.68
2012	104.07	104.07	104.07	104.07	0.77	80.04	80.04	80.04	80.04	0.71	0.71	0.71	0.71
2013	99.29	99.29	99.29	99.29	0.75	74.31	74.31	74.31	74.31	0.67	0.67	0.67	0.67
2014	88.69	88.69	88.69	88.69	0.76	67.82	67.82	67.82	67.82	0.63	0.63	0.63	0.63
2015	45.56	45.56	45.56	45.56	0.91	41.75	41.75	41.75	41.75	0.47	0.47	0.47	0.47
2016	36.96	36.96	36.96	36.96	0.91	34.37	34.37	34.37	34.37	0.43	0.43	0.43	0.43
2017	46.71	46.71	46.71	46.71	0.89	42.87	42.87	42.87	42.87	0.48	0.48	0.48	0.48
2018	60.82	60.82	60.82	60.82	0.85	54.12	54.12	54.12	54.12	0.55	0.55	0.55	0.55
2019		90.61	56.02	25.89	0.86		82.16	50.79	23.47		0.72	0.53	0.36
2020		105.28	56.25	26.75	0.86		95.46	51.00	24.26		0.80	0.53	0.36
2021		120.82	63.08	28.48	0.86		109.54	57.20	25.82		0.89	0.57	0.37
2022		127.72	68.17	29.34	0.86		115.80	61.81	26.60		0.93	0.60	0.38
2023		132.90	70.51	29.34	0.86		120.50	63.93	26.60		0.96	0.61	0.38
2024		137.21	71.13	29.34	0.86		124.41	64.49	26.60		0.98	0.61	0.38
2025		141.53	74.36	30.20	0.86		128.32	67.43	27.39		1.01	0.63	0.38
2026		145.84	80.06	31.07	0.86		132.23	72.59	28.17		1.03	0.66	0.39
2027		150.16	82.99	31.93	0.86		136.15	75.24	28.95		1.05	0.68	0.39
2028		153.61	84.84	31.93	0.86		139.28	76.93	28.95		1.07	0.69	0.39
2029		157.92	87.36	31.93	0.86		143.19	79.21	28.95		1.10	0.70	0.39
2030		160.51	89.29	32.79	0.86		145.53	80.95	29.73		1.11	0.71	0.40

Table 3.16 Italian Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			22%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.56	0.23	0.23	0.23	0.23	1.36	1.37	1.37	1.37	150	150	150	150
2011	0.57	0.25	0.25	0.25	0.25	1.51	1.50	1.50	1.50	166	164	164	164
2012	0.68	0.29	0.29	0.29	0.29	1.69	1.67	1.67	1.67	185	184	184	184
2013	0.68	0.28	0.28	0.28	0.28	1.63	1.64	1.64	1.64	179	180	180	180
2014	0.68	0.29	0.29	0.29	0.29	1.60	1.60	1.60	1.60	175	176	176	176
2015	0.68	0.25	0.25	0.25	0.25	1.43	1.40	1.40	1.40	157	154	154	154
2016	0.68	0.24	0.24	0.24	0.24	1.34	1.35	1.35	1.35	148	148	148	148
2017	0.67	0.25	0.25	0.25	0.25	1.41	1.40	1.40	1.40	154	154	154	154
2018	0.66	0.27	0.27	0.27	0.27	1.46	1.48	1.48	1.48	160	162	162	162
2019	0.66		0.30	0.26	0.22		1.69	1.45	1.25		185	159	137
2020	0.66		0.32	0.26	0.23		1.79	1.45	1.25		196	160	137
2021	0.66		0.34	0.27	0.23		1.90	1.50	1.26		208	165	139
2022	0.66		0.35	0.28	0.23		1.94	1.54	1.27		213	169	139
2023	0.66		0.36	0.28	0.23		1.98	1.55	1.27		217	170	139
2024	0.66		0.36	0.28	0.23		2.01	1.56	1.27		220	171	139
2025	0.66		0.37	0.28	0.23		2.04	1.58	1.28		223	173	140
2026	0.66		0.37	0.29	0.23		2.07	1.62	1.28		227	177	141
2027	0.66		0.38	0.30	0.23		2.10	1.64	1.29		230	180	141
2028	0.66		0.38	0.30	0.23		2.12	1.65	1.29		233	181	141
2029	0.66		0.39	0.30	0.23		2.15	1.67	1.29		236	183	141
2030	0.66		0.39	0.30	0.23		2.17	1.68	1.29		238	184	142

Figure 3.20 Italian Petrol Price Scenarios



3.17 Japanese Petrol Price Scenarios

The Japanese scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Japanese CPI puts them into real Japanese 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 8 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.21.

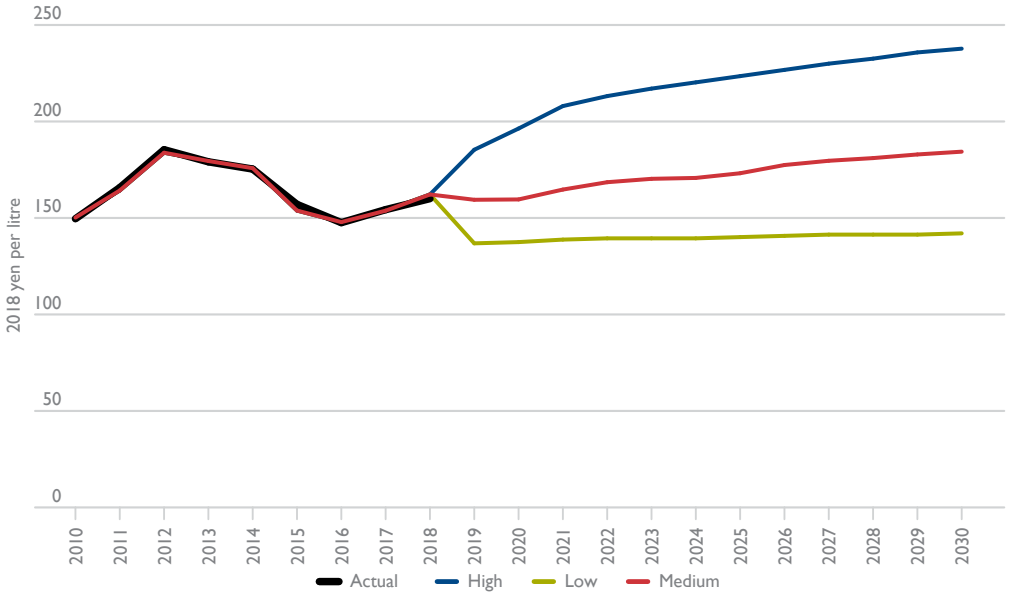
Table 3.17 Japanese Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (yen/b)				real 2010 energy cost of petrol (yen/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	87.09	6745	6745	6745	6745	71.51	71.51	71.51	71.51
2011	104.19	104.19	104.19	104.19	79.60	8576	8576	8576	8576	84.17	84.17	84.17	84.17
2012	104.07	104.07	104.07	104.07	79.94	8781	8781	8781	8781	85.59	85.59	85.59	85.59
2013	99.29	99.29	99.29	99.29	97.69	10346	10346	10346	10346	96.41	96.41	96.41	96.41
2014	88.69	88.69	88.69	88.69	106.11	9930	9930	9930	9930	93.53	93.53	93.53	93.53
2015	45.56	45.56	45.56	45.56	120.94	5780	5780	5780	5780	64.83	64.83	64.83	64.83
2016	36.96	36.96	36.96	36.96	108.95	4283	4283	4283	4283	54.48	54.48	54.48	54.48
2017	46.71	46.71	46.71	46.71	112.14	5664	5664	5664	5664	64.02	64.02	64.02	64.02
2018	60.82	60.82	60.82	60.82	109.91	7351	7351	7351	7351	75.70	75.70	75.70	75.70
2019		90.61	56.02	25.89	111.28		11089	6856	3168		101.55	72.27	46.76
2020		105.28	56.25	26.75	111.28		12884	6884	3274		113.97	72.47	47.49
2021		120.82	63.08	28.48	111.28		14785	7720	3485		127.12	78.25	48.96
2022		127.72	68.17	29.34	111.28		15630	8342	3591		132.96	82.55	49.69
2023		132.90	70.51	29.34	111.28		16264	8629	3591		137.35	84.53	49.69
2024		137.21	71.13	29.34	111.28		16792	8704	3591		141.00	85.06	49.69
2025		141.53	74.36	30.20	111.28		17320	9101	3696		144.65	87.80	50.42
2026		145.84	80.06	31.07	111.28		17848	9797	3802		148.30	92.61	51.15
2027		150.16	82.99	31.93	111.28		18376	10156	3908		151.96	95.10	51.88
2028		153.61	84.84	31.93	111.28		18798	10383	3908		154.88	96.67	51.88
2029		157.92	87.36	31.93	111.28		19326	10691	3908		158.53	98.80	51.88
2030		160.51	89.29	32.79	111.28		19643	10927	4013		160.72	100.43	52.61

Table 3.17 Japanese Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (yen/l)			8%	real 2010 total petrol price (yen/l)				real 2018 total petrol price (yen/l)			
	tax (y/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	55.80	6.37	6.37	6.37	6.37	132.90	133.67	133.67	133.67	139.50	140.31	140.31	140.31
2011	55.95	7.01	7.01	7.01	7.01	145.97	147.13	147.13	147.13	153.22	154.43	154.43	154.43
2012	56.78	7.12	7.12	7.12	7.12	147.49	149.49	149.49	149.49	154.82	156.91	156.91	156.91
2013	56.59	7.65	7.65	7.65	7.65	155.74	160.65	160.65	160.65	163.47	168.62	168.62	168.62
2014	55.06	10.40	10.40	10.40	10.40	158.53	159.00	159.00	159.00	166.40	166.89	166.89	166.89
2015	54.63	9.56	9.56	9.56	9.56	132.71	129.02	129.02	129.02	139.30	135.43	135.43	135.43
2016	54.70	8.73	8.73	8.73	8.73	117.72	117.91	117.91	117.91	123.56	123.76	123.76	123.76
2017	54.44	9.48	9.48	9.48	9.48	128.41	127.94	127.94	127.94	134.78	134.29	134.29	134.29
2018	53.92	10.37	10.37	10.37	10.37	142.62	139.99	139.99	139.99	149.70	146.94	146.94	146.94
2019	53.92		12.44	10.10	8.05		167.91	136.29	108.74		176.25	143.05	114.14
2020	53.92		13.43	10.11	8.11		181.32	136.50	109.53		190.32	143.28	114.97
2021	53.92		14.48	10.57	8.23		195.53	142.74	111.11		205.23	149.83	116.62
2022	53.92		14.95	10.92	8.29		201.84	147.39	111.90		211.86	154.71	117.45
2023	53.92		15.30	11.08	8.29		206.57	149.53	111.90		216.82	156.96	117.45
2024	53.92		15.59	11.12	8.29		210.51	150.10	111.90		220.96	157.55	117.45
2025	53.92		15.89	11.34	8.35		214.46	153.06	112.69		225.10	160.66	118.28
2026	53.92		16.18	11.72	8.41		218.40	158.26	113.48		229.25	166.12	119.11
2027	53.92		16.47	11.92	8.46		222.35	160.94	114.26		233.39	168.93	119.94
2028	53.92		16.70	12.05	8.46		225.50	162.64	114.26		236.70	170.71	119.94
2029	53.92		17.00	12.22	8.46		229.45	164.94	114.26		240.84	173.13	119.94
2030	53.92		17.17	12.35	8.52		231.82	166.70	115.05		243.32	174.97	120.76

Figure 3.21 Japanese Petrol Price Scenarios



3.18 Korean Petrol Price Scenarios

The Korean scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Korean CPI puts them into real Korean 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 10 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.22.

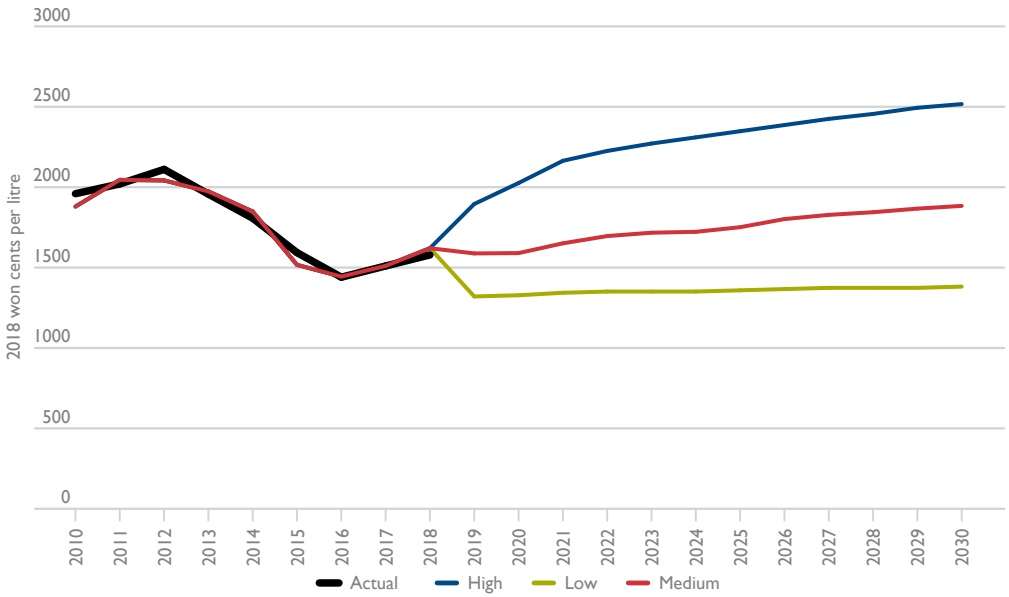
Table 3.18 Korean Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (won/b)				real 2010 energy cost of petrol (won/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	1158	89669	89669	89669	89669	961	961	961	961
2011	104.19	104.19	104.19	104.19	1104	114084	114084	114084	114084	1113	1113	1113	1113
2012	104.07	104.07	104.07	104.07	1120	115400	115400	115400	115400	1121	1121	1121	1121
2013	99.29	99.29	99.29	99.29	1095	107716	107716	107716	107716	1074	1074	1074	1074
2014	88.69	88.69	88.69	88.69	1052	92800	92800	92800	92800	981	981	981	981
2015	45.56	45.56	45.56	45.56	1133	51070	51070	51070	51070	721	721	721	721
2016	36.96	36.96	36.96	36.96	1160	42545	42545	42545	42545	668	668	668	668
2017	46.71	46.71	46.71	46.71	1130	52495	52495	52495	52495	730	730	730	730
2018	60.82	60.82	60.82	60.82	1103	67542	67542	67542	67542	824	824	824	824
2019		90.61	56.02	25.89	1124		102569	63412	29305		1042	798	585
2020		105.28	56.25	26.75	1124		119175	63675	30282		1145	799	592
2021		120.82	63.08	28.48	1124		136758	71407	32236		1254	848	604
2022		127.72	68.17	29.34	1124		144573	77164	33213		1303	883	610
2023		132.90	70.51	29.34	1124		150434	79813	33213		1340	900	610
2024		137.21	71.13	29.34	1124		155318	80513	33213		1370	904	610
2025		141.53	74.36	30.20	1124		160203	84178	34190		1400	927	616
2026		145.84	80.06	31.07	1124		165087	90619	35166		1431	967	622
2027		150.16	82.99	31.93	1124		169971	93939	36143		1461	988	628
2028		153.61	84.84	31.93	1124		173878	96041	36143		1486	1001	628
2029		157.92	87.36	31.93	1124		178763	98889	36143		1516	1019	628
2030		160.51	89.29	32.79	1124		181693	101067	37120		1534	1032	634

Table 3.18 Korean Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (won/l)			10%	real 2010 total petrol price (won/l)				real 2018 total petrol price (won/l)			
	tax (w/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	529	149	149	149	149	1709	1639	1639	1639	1959	1879	1879	1879
2011	509	162	162	162	162	1762	1784	1784	1784	2020	2045	2045	2045
2012	498	162	162	162	162	1841	1781	1781	1781	2111	2042	2042	2042
2013	491	156	156	156	156	1707	1721	1721	1721	1957	1974	1974	1974
2014	485	147	147	147	147	1576	1612	1612	1612	1807	1849	1849	1849
2015	482	120	120	120	120	1389	1323	1323	1323	1593	1517	1517	1517
2016	477	114	114	114	114	1256	1259	1259	1259	1440	1444	1444	1444
2017	468	120	120	120	120	1317	1318	1318	1318	1510	1511	1511	1511
2018	461	128	128	128	128	1377	1413	1413	1413	1579	1621	1621	1621
2019	461		150	126	105		1653	1385	1152		1896	1588	1320
2020	461		161	126	105		1767	1387	1158		2026	1590	1328
2021	461		172	131	107		1887	1440	1172		2164	1651	1343
2022	461		176	134	107		1941	1479	1178		2225	1696	1351
2023	461		180	136	107		1981	1497	1178		2271	1717	1351
2024	461		183	137	107		2015	1502	1178		2310	1722	1351
2025	461		186	139	108		2048	1527	1185		2348	1751	1359
2026	461		189	143	108		2081	1571	1192		2386	1802	1366
2027	461		192	145	109		2115	1594	1198		2425	1828	1374
2028	461		195	146	109		2142	1609	1198		2455	1844	1374
2029	461		198	148	109		2175	1628	1198		2494	1867	1374
2030	461		200	149	110		2195	1643	1205		2517	1884	1382

Figure 3.22 Korean Petrol Price Scenarios



3.19 Dutch Petrol Price Scenarios

The Dutch scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Dutch CPI puts them into real Dutch 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 21 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.23.

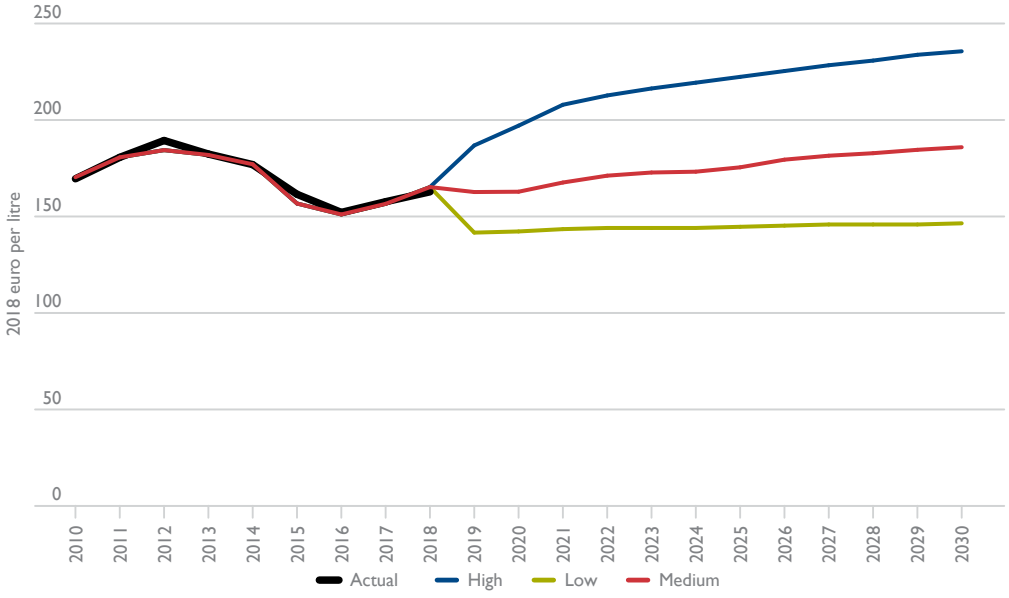
Table 3.19 Dutch Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.55	0.55	0.55	0.55
2011	104.19	104.19	104.19	104.19	0.72	75.12	75.12	75.12	75.12	0.64	0.64	0.64	0.64
2012	104.07	104.07	104.07	104.07	0.77	80.82	80.82	80.82	80.82	0.68	0.68	0.68	0.68
2013	99.29	99.29	99.29	99.29	0.75	74.09	74.09	74.09	74.09	0.64	0.64	0.64	0.64
2014	88.69	88.69	88.69	88.69	0.76	67.13	67.13	67.13	67.13	0.60	0.60	0.60	0.60
2015	45.56	45.56	45.56	45.56	0.91	41.09	41.09	41.09	41.09	0.45	0.45	0.45	0.45
2016	36.96	36.96	36.96	36.96	0.91	33.68	33.68	33.68	33.68	0.40	0.40	0.40	0.40
2017	46.71	46.71	46.71	46.71	0.89	41.94	41.94	41.94	41.94	0.45	0.45	0.45	0.45
2018	60.82	60.82	60.82	60.82	0.85	52.66	52.66	52.66	52.66	0.51	0.51	0.51	0.51
2019		90.61	56.02	25.89	0.86		79.93	49.42	22.84		0.67	0.50	0.34
2020		105.28	56.25	26.75	0.86		92.88	49.62	23.60		0.75	0.50	0.35
2021		120.82	63.08	28.48	0.86		106.58	55.65	25.12		0.83	0.53	0.35
2022		127.72	68.17	29.34	0.86		112.67	60.13	25.88		0.86	0.56	0.36
2023		132.90	70.51	29.34	0.86		117.24	62.20	25.88		0.89	0.57	0.36
2024		137.21	71.13	29.34	0.86		121.04	62.75	25.88		0.91	0.57	0.36
2025		141.53	74.36	30.20	0.86		124.85	65.60	26.64		0.93	0.59	0.36
2026		145.84	80.06	31.07	0.86		128.65	70.62	27.41		0.95	0.62	0.37
2027		150.16	82.99	31.93	0.86		132.46	73.21	28.17		0.98	0.63	0.37
2028		153.61	84.84	31.93	0.86		135.51	74.85	28.17		0.99	0.64	0.37
2029		157.92	87.36	31.93	0.86		139.31	77.07	28.17		1.02	0.66	0.37
2030		160.51	89.29	32.79	0.86		141.60	78.76	28.93		1.03	0.67	0.38

Table 3.19 Dutch Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			21%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros c/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.72	0.24	0.24	0.24	0.24	1.50	1.51	1.51	1.51	170	170	170	170
2011	0.70	0.26	0.26	0.26	0.26	1.60	1.60	1.60	1.60	181	181	181	181
2012	0.70	0.26	0.26	0.26	0.26	1.68	1.63	1.63	1.63	189	184	184	184
2013	0.69	0.28	0.28	0.28	0.28	1.62	1.61	1.61	1.61	182	182	182	182
2014	0.70	0.27	0.27	0.27	0.27	1.57	1.57	1.57	1.57	177	177	177	177
2015	0.70	0.24	0.24	0.24	0.24	1.43	1.39	1.39	1.39	162	157	157	157
2016	0.70	0.23	0.23	0.23	0.23	1.35	1.34	1.34	1.34	152	151	151	151
2017	0.70	0.24	0.24	0.24	0.24	1.40	1.39	1.39	1.39	158	157	157	157
2018	0.70	0.25	0.25	0.25	0.25	1.44	1.46	1.46	1.46	163	165	165	165
2019	0.70		0.29	0.25	0.22		1.66	1.44	1.26		187	163	142
2020	0.70		0.30	0.25	0.22		1.75	1.44	1.26		197	163	142
2021	0.70		0.32	0.26	0.22		1.84	1.49	1.27		208	168	143
2022	0.70		0.33	0.26	0.22		1.89	1.52	1.28		213	171	144
2023	0.70		0.33	0.27	0.22		1.92	1.53	1.28		216	173	144
2024	0.70		0.34	0.27	0.22		1.94	1.54	1.28		219	173	144
2025	0.70		0.34	0.27	0.22		1.97	1.56	1.28		222	175	145
2026	0.70		0.35	0.28	0.22		2.00	1.59	1.29		225	179	145
2027	0.70		0.35	0.28	0.22		2.02	1.61	1.29		228	181	146
2028	0.70		0.36	0.28	0.22		2.05	1.62	1.29		231	183	146
2029	0.70		0.36	0.28	0.22		2.07	1.64	1.29		234	185	146
2030	0.70		0.36	0.29	0.23		2.09	1.65	1.30		236	186	146

Figure 3.23 Dutch Petrol Price Scenarios



3.20 New Zealand Petrol Price Scenarios

The New Zealand scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the New Zealand CPI puts them into real New Zealand 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 15 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.24.

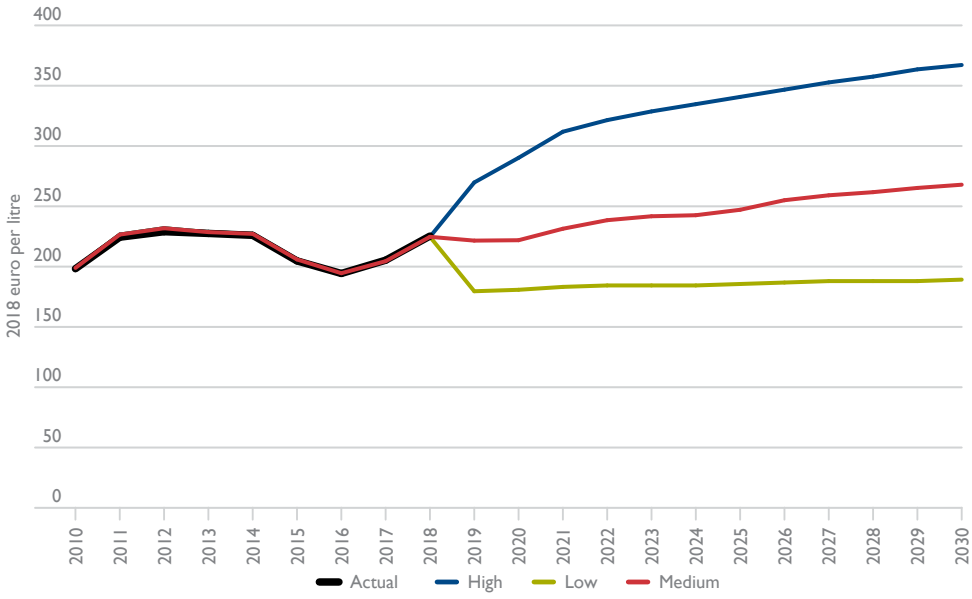
Table 3.20 New Zealand Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (NZ/b)				real 2010 energy cost of petrol (NZ/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	1.39	107.57	107.57	107.57	107.57	1.00	1.00	1.00	1.00
2011	104.19	104.19	104.19	104.19	1.25	129.65	129.65	129.65	129.65	1.19	1.19	1.19	1.19
2012	104.07	104.07	104.07	104.07	1.23	127.91	127.91	127.91	127.91	1.22	1.22	1.22	1.22
2013	99.29	99.29	99.29	99.29	1.22	121.80	121.80	121.80	121.80	1.18	1.18	1.18	1.18
2014	88.69	88.69	88.69	88.69	1.21	108.17	108.17	108.17	108.17	1.15	1.15	1.15	1.15
2015	45.56	45.56	45.56	45.56	1.44	66.11	66.11	66.11	66.11	0.97	0.97	0.97	0.97
2016	36.96	36.96	36.96	36.96	1.44	53.74	53.74	53.74	53.74	0.89	0.89	0.89	0.89
2017	46.71	46.71	46.71	46.71	1.41	66.90	66.90	66.90	66.90	0.98	0.98	0.98	0.98
2018	60.82	60.82	60.82	60.82	1.46	91.48	91.48	91.48	91.48	1.15	1.15	1.15	1.15
2019		90.61	56.02	25.89	1.53		142.26	87.95	40.65		1.50	1.12	0.80
2020		105.28	56.25	26.75	1.53		165.29	88.32	42.00		1.66	1.13	0.81
2021		120.82	63.08	28.48	1.53		189.68	99.04	44.71		1.82	1.20	0.83
2022		127.72	68.17	29.34	1.53		200.52	107.02	46.07		1.90	1.26	0.84
2023		132.90	70.51	29.34	1.53		208.65	110.70	46.07		1.96	1.28	0.84
2024		137.21	71.13	29.34	1.53		215.42	111.67	46.07		2.00	1.29	0.84
2025		141.53	74.36	30.20	1.53		222.20	116.75	47.42		2.05	1.32	0.85
2026		145.84	80.06	31.07	1.53		228.97	125.69	48.78		2.09	1.38	0.86
2027		150.16	82.99	31.93	1.53		235.75	130.29	50.13		2.14	1.42	0.86
2028		153.61	84.84	31.93	1.53		241.17	133.21	50.13		2.18	1.44	0.86
2029		157.92	87.36	31.93	1.53		247.94	137.16	50.13		2.23	1.46	0.86
2030		160.51	89.29	32.79	1.53		252.00	140.18	51.48		2.25	1.48	0.87

Table 3.20 New Zealand Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (NZ/l)			15%	real 2010 total petrol price (NZ/l)				real 2018 total petrol price (NZ c/l)			
	tax (NZ$/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.57	0.205	0.205	0.205	0.205	1.77	1.77	1.77	1.77	198	199	199	199
2011	0.57	0.263	0.263	0.263	0.263	2.00	2.02	2.02	2.02	224	227	227	227
2012	0.57	0.270	0.270	0.270	0.270	2.04	2.07	2.07	2.07	229	232	232	232
2013	0.59	0.266	0.266	0.266	0.266	2.03	2.04	2.04	2.04	228	229	229	229
2014	0.61	0.264	0.264	0.264	0.264	2.01	2.02	2.02	2.02	226	227	227	227
2015	0.62	0.239	0.239	0.239	0.239	1.82	1.84	1.84	1.84	205	206	206	206
2016	0.62	0.226	0.226	0.226	0.226	1.73	1.73	1.73	1.73	194	195	195	195
2017	0.60	0.238	0.238	0.238	0.238	1.83	1.82	1.82	1.82	205	205	205	205
2018	0.59	0.261	0.261	0.261	0.261	2.01	2.00	2.00	2.00	225	225	225	225
2019	0.59		0.314	0.258	0.209		2.40	1.97	1.60		270	222	180
2020	0.59		0.337	0.258	0.210		2.59	1.98	1.61		290	222	181
2021	0.59		0.363	0.269	0.213		2.78	2.06	1.63		312	231	183
2022	0.59		0.374	0.277	0.214		2.87	2.13	1.64		321	238	184
2023	0.59		0.382	0.281	0.214		2.93	2.15	1.64		329	242	184
2024	0.59		0.389	0.282	0.214		2.98	2.16	1.64		335	243	184
2025	0.59		0.396	0.287	0.216		3.04	2.20	1.65		341	247	186
2026	0.59		0.403	0.297	0.217		3.09	2.27	1.66		347	255	187
2027	0.59		0.410	0.301	0.219		3.14	2.31	1.68		353	259	188
2028	0.59		0.416	0.304	0.219		3.19	2.33	1.68		358	262	188
2029	0.59		0.423	0.308	0.219		3.24	2.36	1.68		364	265	188
2030	0.59		0.427	0.311	0.220		3.27	2.39	1.69		367	268	189

Figure 3.24 New Zealand Petrol Price Scenarios



3.21 Norwegian Petrol Price Scenarios

The Norwegian scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Norwegian CPI puts them into real Norwegian 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 15 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.25.

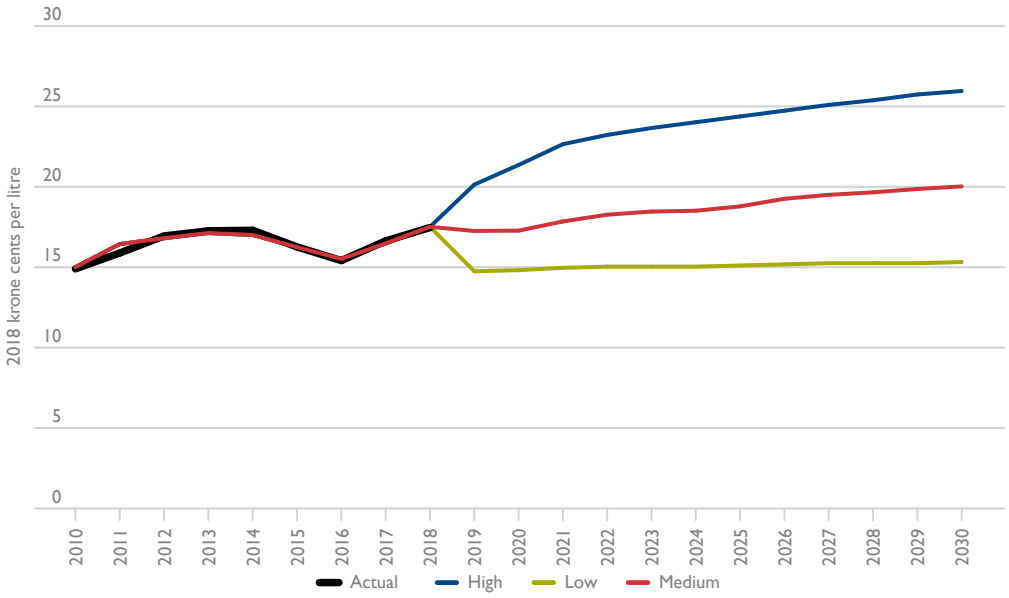
Table 3.21 Norwegian Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (krone/b)				real 2010 energy cost of petrol (krone/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	6.05	468	468	468	468	4.91	4.91	4.91	4.91
2011	104.19	104.19	104.19	104.19	5.61	595	595	595	595	5.78	5.78	5.78	5.78
2012	104.07	104.07	104.07	104.07	5.82	625	625	625	625	5.98	5.98	5.98	5.98
2013	99.29	99.29	99.29	99.29	5.87	597	597	597	597	6.21	6.21	6.21	6.21
2014	88.69	88.69	88.69	88.69	6.29	569	569	569	569	6.02	6.02	6.02	6.02
2015	45.56	45.56	45.56	45.56	8.06	368	368	368	368	5.71	5.71	5.71	5.71
2016	36.96	36.96	36.96	36.96	8.40	304	304	304	304	5.27	5.27	5.27	5.27
2017	46.71	46.71	46.71	46.71	8.27	379	379	379	379	5.79	5.79	5.79	5.79
2018	60.82	60.82	60.82	60.82	8.16	488	488	488	488	6.54	6.54	6.54	6.54
2019		90.61	56.02	25.89	8.40		748	463	214		8.33	6.37	4.66
2020		105.28	56.25	26.75	8.40		869	465	221		9.16	6.38	4.71
2021		120.82	63.08	28.48	8.40		998	521	235		10.04	6.77	4.80
2022		127.72	68.17	29.34	8.40		1055	563	242		10.43	7.06	4.85
2023		132.90	70.51	29.34	8.40		1097	582	242		10.73	7.19	4.85
2024		137.21	71.13	29.34	8.40		1133	587	242		10.97	7.22	4.85
2025		141.53	74.36	30.20	8.40		1169	614	249		11.22	7.41	4.90
2026		145.84	80.06	31.07	8.40		1204	661	257		11.46	7.73	4.95
2027		150.16	82.99	31.93	8.40		1240	685	264		11.71	7.90	5.00
2028		153.61	84.84	31.93	8.40		1268	701	264		11.90	8.00	5.00
2029		157.92	87.36	31.93	8.40		1304	721	264		12.15	8.14	5.00
2030		160.51	89.29	32.79	8.40		1325	737	271		12.30	8.25	5.05

Table 3.21 Norwegian Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (krone/l)			25%	real 2010 total petrol price (krone/l)				real 2018 total petrol price (krone/l)			
	tax (k/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	5.32	2.56	2.56	2.56	2.56	12.69	12.78	12.78	12.78	14.90	15.01	15.01	15.01
2011	5.42	2.80	2.80	2.80	2.80	13.53	14.00	14.00	14.00	15.88	16.44	16.44	16.44
2012	5.47	2.86	2.86	2.86	2.86	14.43	14.31	14.31	14.31	16.94	16.80	16.80	16.80
2013	5.46	2.92	2.92	2.92	2.92	14.70	14.59	14.59	14.59	17.26	17.13	17.13	17.13
2014	5.57	2.90	2.90	2.90	2.90	14.73	14.49	14.49	14.49	17.30	17.01	17.01	17.01
2015	5.36	2.77	2.77	2.77	2.77	13.85	13.84	13.84	13.84	16.26	16.25	16.25	16.25
2016	5.30	2.64	2.64	2.64	2.64	13.13	13.22	13.22	13.22	15.41	15.52	15.52	15.52
2017	5.44	2.81	2.81	2.81	2.81	14.17	14.04	14.04	14.04	16.64	16.48	16.48	16.48
2018	5.39	2.98	2.98	2.98	2.98	14.91	14.91	14.91	14.91	17.47	17.51	17.51	17.51
2019	5.39		3.43	2.94	2.51		17.15	14.70	12.56		20.14	17.26	14.75
2020	5.39		3.64	2.94	2.52		18.19	14.71	12.62		21.36	17.27	14.82
2021	5.39		3.86	3.04	2.55		19.29	15.20	12.74		22.65	17.84	14.96
2022	5.39		3.96	3.11	2.56		19.78	15.56	12.81		23.23	18.27	15.03
2023	5.39		4.03	3.15	2.56		20.15	15.73	12.81		23.66	18.46	15.03
2024	5.39		4.09	3.15	2.56		20.46	15.77	12.81		24.02	18.51	15.03
2025	5.39		4.15	3.20	2.57		20.76	16.00	12.87		24.38	18.78	15.11
2026	5.39		4.21	3.28	2.59		21.07	16.40	12.93		24.73	19.26	15.18
2027	5.39		4.27	3.32	2.60		21.37	16.61	12.99		25.09	19.50	15.25
2028	5.39		4.32	3.35	2.60		21.62	16.74	12.99		25.38	19.66	15.25
2029	5.39		4.38	3.38	2.60		21.92	16.92	12.99		25.74	19.87	15.25
2030	5.39		4.42	3.41	2.61		22.11	17.06	13.05		25.96	20.03	15.32

Figure 3.25 Norwegian Petrol Price Scenarios



3.22 Spanish Petrol Price Scenarios

The Spanish scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Spanish CPI puts them into real Spanish 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 25 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.26.

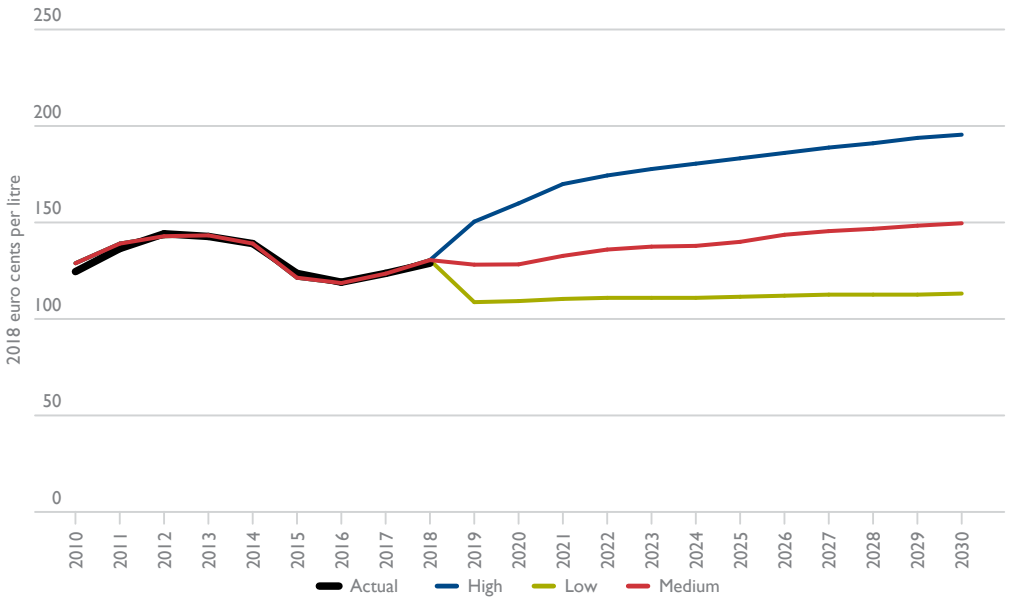
Table 3.22 Spanish Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (euros/b)				real 2010 energy cost of petrol (euros/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	0.76	58.76	58.76	58.76	58.76	0.63	0.63	0.63	0.63
2011	104.19	104.19	104.19	104.19	0.72	74.49	74.49	74.49	74.49	0.71	0.71	0.71	0.71
2012	104.07	104.07	104.07	104.07	0.77	80.15	80.15	80.15	80.15	0.74	0.74	0.74	0.74
2013	99.29	99.29	99.29	99.29	0.75	74.27	74.27	74.27	74.27	0.71	0.71	0.71	0.71
2014	88.69	88.69	88.69	88.69	0.76	68.05	68.05	68.05	68.05	0.68	0.68	0.68	0.68
2015	45.56	45.56	45.56	45.56	0.91	42.11	42.11	42.11	42.11	0.54	0.54	0.54	0.54
2016	36.96	36.96	36.96	36.96	0.91	35.75	35.75	35.75	35.75	0.51	0.51	0.51	0.51
2017	46.71	46.71	46.71	46.71	0.89	44.27	44.27	44.27	44.27	0.55	0.55	0.55	0.55
2018	60.82	60.82	60.82	60.82	0.85	55.56	55.56	55.56	55.56	0.61	0.61	0.61	0.61
2019		90.61	56.02	25.89	0.86		84.35	52.15	24.10		0.77	0.59	0.44
2020		105.28	56.25	26.75	0.86		98.00	52.36	24.90		0.84	0.60	0.45
2021		120.82	63.08	28.48	0.86		112.46	58.72	26.51		0.92	0.63	0.46
2022		127.72	68.17	29.34	0.86		118.89	63.46	27.31		0.95	0.65	0.46
2023		132.90	70.51	29.34	0.86		123.71	65.63	27.31		0.98	0.67	0.46
2024		137.21	71.13	29.34	0.86		127.73	66.21	27.31		1.00	0.67	0.46
2025		141.53	74.36	30.20	0.86		131.74	69.22	28.12		1.02	0.69	0.47
2026		145.84	80.06	31.07	0.86		135.76	74.52	28.92		1.04	0.71	0.47
2027		150.16	82.99	31.93	0.86		139.78	77.25	29.72		1.06	0.73	0.47
2028		153.61	84.84	31.93	0.86		142.99	78.98	29.72		1.08	0.74	0.47
2029		157.92	87.36	31.93	0.86		147.01	81.32	29.72		1.10	0.75	0.47
2030		160.51	89.29	32.79	0.86		149.42	83.11	30.53		1.11	0.76	0.48

Table 3.22 Spanish Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (euros/l)			21%	real 2010 total petrol price (euros/l)				real 2018 total petrol price (euros c/l)			
	tax (e/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.40	0.18	0.18	0.18	0.18	1.17	1.21	1.21	1.21	125	129	129	129
2011	0.39	0.20	0.20	0.20	0.20	1.28	1.30	1.30	1.30	136	139	139	139
2012	0.38	0.21	0.21	0.21	0.21	1.35	1.34	1.34	1.34	144	143	143	143
2013	0.40	0.23	0.23	0.23	0.23	1.34	1.34	1.34	1.34	143	143	143	143
2014	0.40	0.23	0.23	0.23	0.23	1.30	1.30	1.30	1.30	139	139	139	139
2015	0.40	0.20	0.20	0.20	0.20	1.16	1.14	1.14	1.14	124	121	121	121
2016	0.41	0.19	0.19	0.19	0.19	1.11	1.11	1.11	1.11	119	119	119	119
2017	0.40	0.20	0.20	0.20	0.20	1.16	1.16	1.16	1.16	124	123	123	123
2018	0.40	0.21	0.21	0.21	0.21	1.21	1.22	1.22	1.22	129	131	131	131
2019	0.40		0.24	0.21	0.18		1.41	1.20	1.02		150	128	109
2020	0.40		0.26	0.21	0.18		1.50	1.20	1.02		160	128	109
2021	0.40		0.28	0.22	0.18		1.59	1.24	1.03		170	133	110
2022	0.40		0.28	0.22	0.18		1.63	1.27	1.04		174	136	111
2023	0.40		0.29	0.22	0.18		1.66	1.29	1.04		178	137	111
2024	0.40		0.29	0.22	0.18		1.69	1.29	1.04		180	138	111
2025	0.40		0.30	0.23	0.18		1.71	1.31	1.04		183	140	111
2026	0.40		0.30	0.23	0.18		1.74	1.34	1.05		186	144	112
2027	0.40		0.31	0.24	0.18		1.77	1.36	1.05		189	146	113
2028	0.40		0.31	0.24	0.18		1.79	1.37	1.05		191	147	113
2029	0.40		0.31	0.24	0.18		1.81	1.39	1.05		194	148	113
2030	0.40		0.32	0.24	0.18		1.83	1.40	1.06		195	150	113

Figure 3.26 Spanish Petrol Price Scenarios



3.23 Swedish Petrol Price Scenarios

The Swedish scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel). Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Swedish CPI puts them into real Swedish 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 25 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.27.

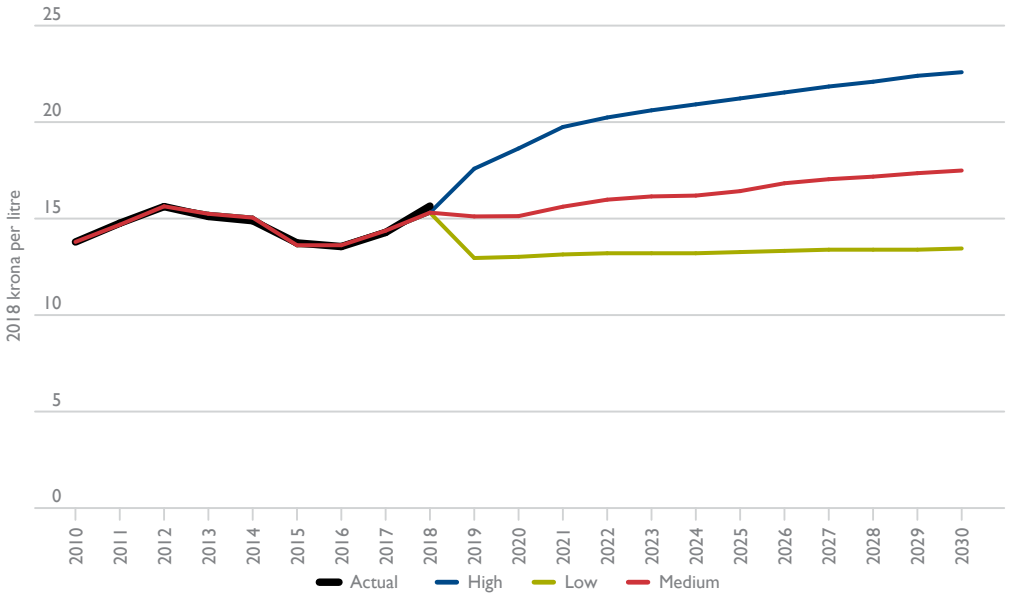
Table 3.23 Swedish Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (krona/b)				real 2010 energy cost of petrol (krona/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	7.20	557.35	557.35	557.35	557.35	4.67	4.67	4.67	4.67
2011	104.19	104.19	104.19	104.19	6.50	678.13	678.13	678.13	678.13	5.49	5.49	5.49	5.49
2012	104.07	104.07	104.07	104.07	6.77	713.69	713.69	713.69	713.69	6.09	6.09	6.09	6.09
2013	99.29	99.29	99.29	99.29	6.51	664.58	664.58	664.58	664.58	5.83	5.83	5.83	5.83
2014	88.69	88.69	88.69	88.69	6.85	636.07	636.07	636.07	636.07	5.67	5.67	5.67	5.67
2015	45.56	45.56	45.56	45.56	8.44	403.23	403.23	403.23	403.23	4.40	4.40	4.40	4.40
2016	36.96	36.96	36.96	36.96	8.56	332.99	332.99	332.99	332.99	4.02	4.02	4.02	4.02
2017	46.71	46.71	46.71	46.71	8.55	421.46	421.46	421.46	421.46	4.50	4.50	4.50	4.50
2018	60.82	60.82	60.82	60.82	8.77	568.05	568.05	568.05	568.05	5.30	5.30	5.30	5.30
2019		90.61	56.02	25.89	9.08		875.74	541.42	250.21		6.98	5.15	3.56
2020		105.28	56.25	26.75	9.08		1017.53	543.66	258.55		7.75	5.17	3.61
2021		120.82	63.08	28.48	9.08		1167.66	609.68	275.23		8.57	5.53	3.70
2022		127.72	68.17	29.34	9.08		1234.38	658.83	283.57		8.94	5.80	3.75
2023		132.90	70.51	29.34	9.08		1284.42	681.45	283.57		9.21	5.92	3.75
2024		137.21	71.13	29.34	9.08		1326.12	687.43	283.57		9.44	5.95	3.75
2025		141.53	74.36	30.20	9.08		1367.83	718.72	291.91		9.67	6.12	3.79
2026		145.84	80.06	31.07	9.08		1409.53	773.72	300.25		9.89	6.42	3.84
2027		150.16	82.99	31.93	9.08		1451.23	802.06	308.59		10.12	6.58	3.88
2028		153.61	84.84	31.93	9.08		1484.59	820.00	308.59		10.30	6.68	3.88
2029		157.92	87.36	31.93	9.08		1526.29	844.32	308.59		10.53	6.81	3.88
2030		160.51	89.29	32.79	9.08		1551.31	862.92	316.94		10.67	6.91	3.93

Table 3.23 Swedish Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (krona/l)			25%	real 2010 total petrol price (krona/l)				real 2018 total petrol price (krona/l)			
	tax (k/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	5.50	2.54	2.54	2.54	2.54	12.71	12.72	12.72	12.72	13.79	13.79	13.79	13.79
2011	5.34	2.71	2.71	2.71	2.71	13.61	13.54	13.54	13.54	14.76	14.68	14.68	14.68
2012	5.44	2.88	2.88	2.88	2.88	14.41	14.42	14.42	14.42	15.62	15.63	15.63	15.63
2013	5.42	2.81	2.81	2.81	2.81	13.93	14.06	14.06	14.06	15.11	15.25	15.25	15.25
2014	5.43	2.78	2.78	2.78	2.78	13.73	13.88	13.88	13.88	14.89	15.05	15.05	15.05
2015	5.65	2.51	2.51	2.51	2.51	12.67	12.56	12.56	12.56	13.74	13.62	13.62	13.62
2016	6.03	2.51	2.51	2.51	2.51	12.50	12.56	12.56	12.56	13.55	13.62	13.62	13.62
2017	6.10	2.65	2.65	2.65	2.65	13.17	13.25	13.25	13.25	14.28	14.37	14.37	14.37
2018	5.99	2.82	2.82	2.82	2.82	14.43	14.12	14.12	14.12	15.65	15.31	15.31	15.31
2019	5.99		3.24	2.79	2.39		16.22	13.94	11.95		17.59	15.11	12.96
2020	5.99		3.44	2.79	2.40		17.19	13.95	12.01		18.63	15.13	13.02
2021	5.99		3.64	2.88	2.42		18.21	14.40	12.12		19.75	15.62	13.14
2022	5.99		3.73	2.95	2.44		18.66	14.74	12.18		20.24	15.98	13.20
2023	5.99		3.80	2.98	2.44		19.01	14.89	12.18		20.61	16.15	13.20
2024	5.99		3.86	2.99	2.44		19.29	14.93	12.18		20.92	16.19	13.20
2025	5.99		3.92	3.03	2.45		19.58	15.15	12.23		21.23	16.42	13.27
2026	5.99		3.97	3.10	2.46		19.86	15.52	12.29		21.54	16.83	13.33
2027	5.99		4.03	3.14	2.47		20.14	15.71	12.35		21.84	17.04	13.39
2028	5.99		4.07	3.17	2.47		20.37	15.84	12.35		22.09	17.17	13.39
2029	5.99		4.13	3.20	2.47		20.66	16.00	12.35		22.40	17.35	13.39
2030	5.99		4.17	3.23	2.48		20.83	16.13	12.40		22.58	17.49	13.45

Figure 3.27 Swedish Petrol Price Scenarios



3.24 Swiss Petrol Price Scenarios

The Swiss scenario calculations start from the real OPEC basket oil price scenarios (in 2010 US dollars per barrel).

Putting them back into nominal dollars with the US CPI, putting them through the exchange rate (kept constant after 2018), and then using the Swiss CPI puts them into real Swiss 2010 landed oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of petrol. Adding excise (constant after 2018) and calculating sales tax using a constant Value Added Tax rate of 7.7 per cent after 2018, allows the scenario real 2010 petrol prices to be calculated. Then corresponding real 2018 petrol price scenarios can be derived. These are shown in Figure 3.28.

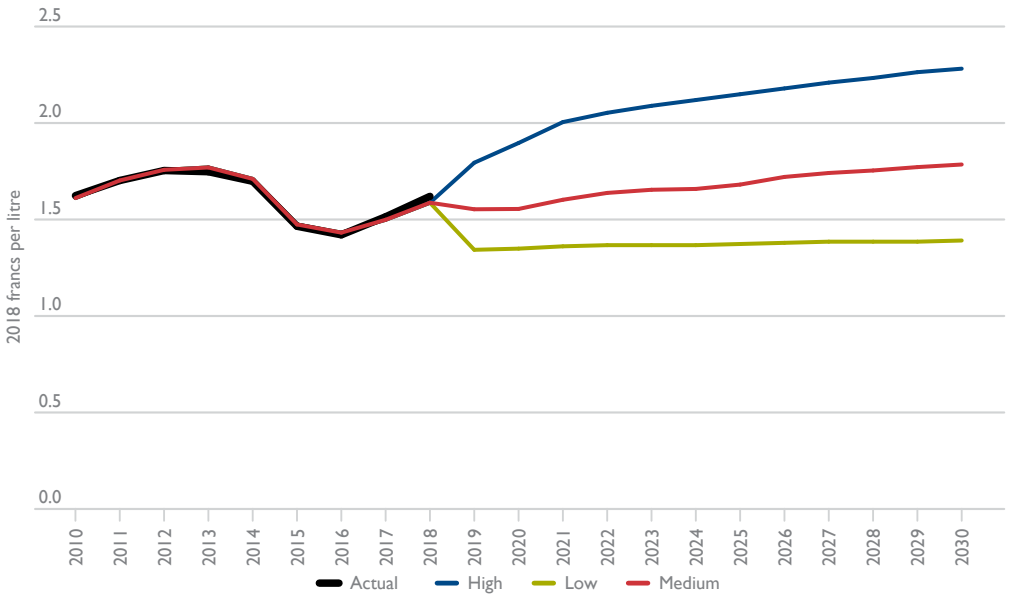
Table 3.24 Swiss Petrol Price Scenario Calculations

	real 2010 world oil price (US$/b)				exchange	real 2010 landed oil price (francs/b)				real 2010 energy cost of petrol (francs/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	77.45	77.45	77.45	77.45	1.04	80.40	80.40	80.40	80.40	0.76	0.76	0.76	0.76
2011	104.19	104.19	104.19	104.19	0.88	94.49	94.49	94.49	94.49	0.84	0.84	0.84	0.84
2012	104.07	104.07	104.07	104.07	0.93	102.52	102.52	102.52	102.52	0.89	0.89	0.89	0.89
2013	99.29	99.29	99.29	99.29	0.92	98.60	98.60	98.60	98.60	0.90	0.90	0.90	0.90
2014	88.69	88.69	88.69	88.69	0.92	88.99	88.99	88.99	88.99	0.85	0.85	0.85	0.85
2015	45.56	45.56	45.56	45.56	0.96	48.57	48.57	48.57	48.57	0.61	0.61	0.61	0.61
2016	36.96	36.96	36.96	36.96	0.99	41.14	41.14	41.14	41.14	0.57	0.57	0.57	0.57
2017	46.71	46.71	46.71	46.71	0.99	52.64	52.64	52.64	52.64	0.64	0.64	0.64	0.64
2018	60.82	60.82	60.82	60.82	0.97	68.87	68.87	68.87	68.87	0.73	0.73	0.73	0.73
2019		90.61	56.02	25.89	0.97		102.50	63.37	29.29		0.92	0.70	0.50
2020		105.28	56.25	26.75	0.97		119.10	63.63	30.26		1.02	0.70	0.51
2021		120.82	63.08	28.48	0.97		136.67	71.36	32.21		1.12	0.74	0.52
2022		127.72	68.17	29.34	0.97		144.48	77.11	33.19		1.17	0.78	0.52
2023		132.90	70.51	29.34	0.97		150.33	79.76	33.19		1.20	0.79	0.52
2024		137.21	71.13	29.34	0.97		155.21	80.46	33.19		1.23	0.80	0.52
2025		141.53	74.36	30.20	0.97		160.09	84.12	34.17		1.26	0.82	0.53
2026		145.84	80.06	31.07	0.97		164.98	90.56	35.14		1.28	0.85	0.53
2027		150.16	82.99	31.93	0.97		169.86	93.88	36.12		1.31	0.87	0.54
2028		153.61	84.84	31.93	0.97		173.76	95.98	36.12		1.33	0.89	0.54
2029		157.92	87.36	31.93	0.97		178.64	98.82	36.12		1.36	0.90	0.54
2030		160.51	89.29	32.79	0.97		181.57	101.00	37.10		1.38	0.91	0.55

Table 3.24 Swiss Petrol Price Scenario Calculations (continued)

	excise	real 2010 sales tax (francs/l)			7.7%	real 2010 total petrol price (francs/l)				real 2018 total petrol price (francs/l)			
	tax (f/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	0.75	0.11	0.11	0.11	0.11	1.64	1.62	1.62	1.62	1.62	1.61	1.61	1.61
2011	0.74	0.13	0.13	0.13	0.13	1.72	1.72	1.72	1.72	1.70	1.70	1.70	1.70
2012	0.75	0.13	0.13	0.13	0.13	1.77	1.77	1.77	1.77	1.75	1.76	1.76	1.76
2013	0.75	0.13	0.13	0.13	0.13	1.76	1.78	1.78	1.78	1.75	1.77	1.77	1.77
2014	0.75	0.13	0.13	0.13	0.13	1.71	1.72	1.72	1.72	1.70	1.71	1.71	1.71
2015	0.76	0.11	0.11	0.11	0.11	1.48	1.49	1.49	1.49	1.46	1.47	1.47	1.47
2016	0.77	0.11	0.11	0.11	0.11	1.43	1.44	1.44	1.44	1.42	1.43	1.43	1.43
2017	0.76	0.11	0.11	0.11	0.11	1.53	1.51	1.51	1.51	1.51	1.50	1.50	1.50
2018	0.76	0.11	0.11	0.11	0.11	1.63	1.60	1.60	1.60	1.62	1.59	1.59	1.59
2019	0.76		0.13	0.11	0.10		1.81	1.57	1.35		1.79	1.55	1.34
2020	0.76		0.14	0.11	0.10		1.91	1.57	1.36		1.90	1.55	1.35
2021	0.76		0.14	0.12	0.10		2.02	1.62	1.37		2.00	1.60	1.36
2022	0.76		0.15	0.12	0.10		2.07	1.65	1.38		2.05	1.64	1.37
2023	0.76		0.15	0.12	0.10		2.11	1.67	1.38		2.09	1.65	1.37
2024	0.76		0.15	0.12	0.10		2.14	1.67	1.38		2.12	1.66	1.37
2025	0.76		0.15	0.12	0.10		2.17	1.69	1.38		2.15	1.68	1.37
2026	0.76		0.16	0.12	0.10		2.20	1.73	1.39		2.18	1.72	1.38
2027	0.76		0.16	0.13	0.10		2.23	1.76	1.40		2.21	1.74	1.39
2028	0.76		0.16	0.13	0.10		2.25	1.77	1.40		2.23	1.75	1.39
2029	0.76		0.16	0.13	0.10		2.28	1.79	1.40		2.26	1.77	1.39
2030	0.76		0.16	0.13	0.10		2.30	1.80	1.40		2.28	1.78	1.39

Figure 3.28 Swiss Petrol Price Scenarios



3.25 American Gasoline Price Scenarios (cents per litre)

The American scenario calculations start from the real WTI oil price scenarios (in 2010 US dollars per barrel), representing real American 2010 'landed' oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of gasoline. Adding excise (constant after 2018) and calculating sales tax using a constant sales tax rate of zero per cent after 2018, allows the scenario real 2010 gasoline prices to be calculated. Then corresponding real 2018 cents per litre gasoline price scenarios can be derived. These are shown in Figure 3.29.

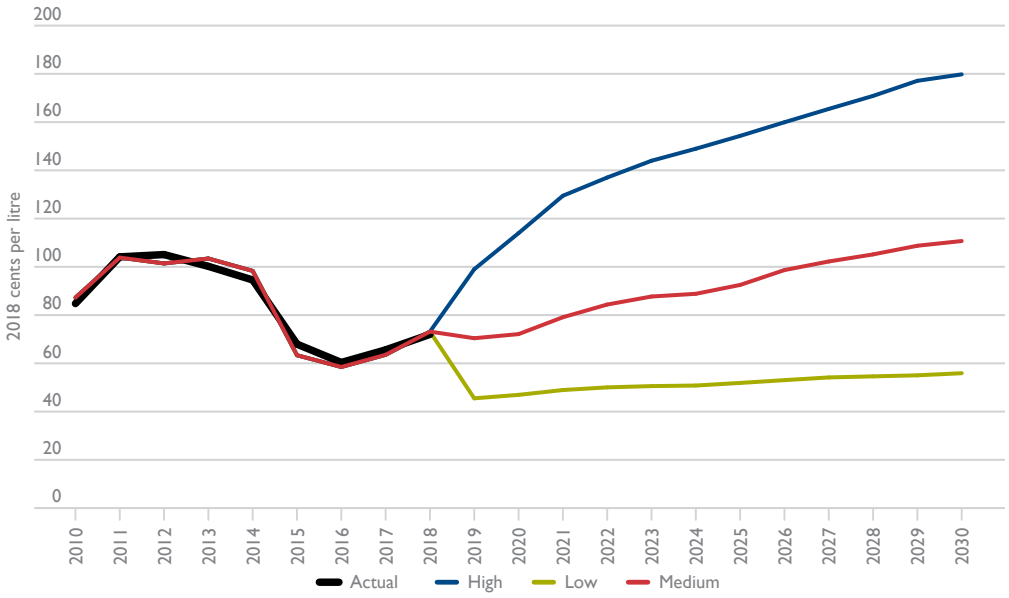
Table 3.25 American Gasoline Price Scenario Calculations (cents/litre)

	real 2010 WTI oil price (US$/b)				exchange	real 2010 WTI oil price (US$/b)				real 2010 energy cost of petrol (c/l)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	79.48	79.48	79.48	79.48	1.000	79.48	79.48	79.48	79.48	62.81	64.96	64.96	64.96
2011	92.00	92.00	92.00	92.00	1.000	92.00	92.00	92.00	92.00	80.03	79.76	79.76	79.76
2012	89.39	89.39	89.39	89.39	1.000	89.39	89.39	89.39	89.39	80.99	77.81	77.81	77.81
2013	91.83	91.83	91.83	91.83	1.000	91.83	91.83	91.83	91.83	76.83	79.64	79.64	79.64
2014	85.90	85.90	85.90	85.90	1.000	85.90	85.90	85.90	85.90	71.94	75.19	75.19	75.19
2015	44.77	44.77	44.77	44.77	1.000	44.77	44.77	44.77	44.77	48.31	44.33	44.33	44.33
2016	39.33	39.33	39.33	39.33	1.000	39.33	39.33	39.33	39.33	41.86	40.24	40.24	40.24
2017	45.18	45.18	45.18	45.18	1.000	45.18	45.18	45.18	45.18	46.40	44.64	44.64	44.64
2018	56.64	56.64	56.64	56.64	1.000	56.64	56.64	56.64	56.64	52.24	53.23	53.23	53.23
2019		86.51	53.48	24.72	1.000		86.51	53.48	24.72		75.64	50.86	29.28
2020		103.78	55.45	26.37	1.000		103.78	55.45	26.37		88.60	52.34	30.52
2021		121.67	63.53	28.68	1.000		121.67	63.53	28.68		102.03	58.40	32.25
2022		130.40	69.60	29.96	1.000		130.40	69.60	29.96		108.58	62.96	33.21
2023		138.43	73.44	30.56	1.000		138.43	73.44	30.56		114.60	65.84	33.67
2024		144.18	74.74	30.83	1.000		144.18	74.74	30.83		118.92	66.81	33.87
2025		150.32	78.99	32.08	1.000		150.32	78.99	32.08		123.53	70.00	34.81
2026		156.85	86.10	33.41	1.000		156.85	86.10	33.41		128.42	75.34	35.81
2027		163.23	90.21	34.71	1.000		163.23	90.21	34.71		133.21	78.42	36.78
2028		169.46	93.60	35.23	1.000		169.46	93.60	35.23		137.89	80.97	37.17
2029		176.69	97.74	35.73	1.000		176.69	97.74	35.73		143.31	84.08	37.54
2030		179.77	100.00	36.73	1.000		179.77	100.00	36.73		145.62	85.77	38.29

Table 3.25 American Gasoline Price Scenario Calculations (cents/litre) (continued)

	excise	real 2010 sales tax (c/l)			0%	real 2010 total gasoline price (c/l)				real 2018 total gasoline price (c/l)			
	tax (c/l)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	10.63	0.00	0.00	0.00	0.00	73.43	75.58	75.58	75.58	84.77	87.25	87.25	87.25
2011	10.19	0.00	0.00	0.00	0.00	90.22	89.95	89.95	89.95	104.14	103.83	103.83	103.83
2012	10.05	0.00	0.00	0.00	0.00	91.04	87.86	87.86	87.86	105.09	101.42	101.42	101.42
2013	9.98	0.00	0.00	0.00	0.00	86.81	89.61	89.61	89.61	100.21	103.44	103.44	103.44
2014	9.98	0.00	0.00	0.00	0.00	81.92	85.17	85.17	85.17	94.56	98.31	98.31	98.31
2015	10.56	0.00	0.00	0.00	0.00	58.87	54.89	54.89	54.89	67.95	63.36	63.36	63.36
2016	10.43	0.00	0.00	0.00	0.00	52.29	50.67	50.67	50.67	60.36	58.49	58.49	58.49
2017	10.40	0.00	0.00	0.00	0.00	56.81	55.04	55.04	55.04	65.57	63.54	63.54	63.54
2018	10.13	0.00	0.00	0.00	0.00	62.37	63.36	63.36	63.36	72.00	73.14	73.14	73.14
2019	10.13		0.00	0.00	0.00		85.78	61.00	39.41		99.01	70.41	45.50
2020	10.13		0.00	0.00	0.00		98.74	62.47	40.66		113.97	72.11	46.93
2021	10.13		0.00	0.00	0.00		112.16	68.53	42.39		129.47	79.11	48.93
2022	10.13		0.00	0.00	0.00		118.71	73.09	43.35		137.03	84.37	50.04
2023	10.13		0.00	0.00	0.00		124.73	75.97	43.80		143.98	87.70	50.56
2024	10.13		0.00	0.00	0.00		129.05	76.95	44.00		148.96	88.82	50.79
2025	10.13		0.00	0.00	0.00		133.66	80.13	44.94		154.28	92.50	51.88
2026	10.13		0.00	0.00	0.00		138.56	85.47	45.94		159.94	98.66	53.03
2027	10.13		0.00	0.00	0.00		143.34	88.56	46.91		165.46	102.22	54.15
2028	10.13		0.00	0.00	0.00		148.02	91.10	47.30		170.86	105.16	54.60
2029	10.13		0.00	0.00	0.00		153.44	94.21	47.67		177.12	108.75	55.03
2030	10.13		0.00	0.00	0.00		155.76	95.90	48.43		179.79	110.70	55.90

Figure 3.29 American Gasoline Price Scenarios (cents/litre)



3.26 American Gasoline Price Scenarios (cents per gallon)

The American scenario calculations start from the real WTI oil price scenarios (in 2010 US dollars per barrel), representing real American 2010 'landed' oil prices.

Then the formula from Chapter Two is used to convert those oil prices to a 2010 energy cost of gasoline. Adding excise (constant after 2018) and calculating sales tax using a constant sales tax rate of zero per cent, allows the scenario real 2010 gasoline prices to be calculated. Then corresponding real 2018 gasoline price scenarios can be derived. These are shown in Figure 3.30.

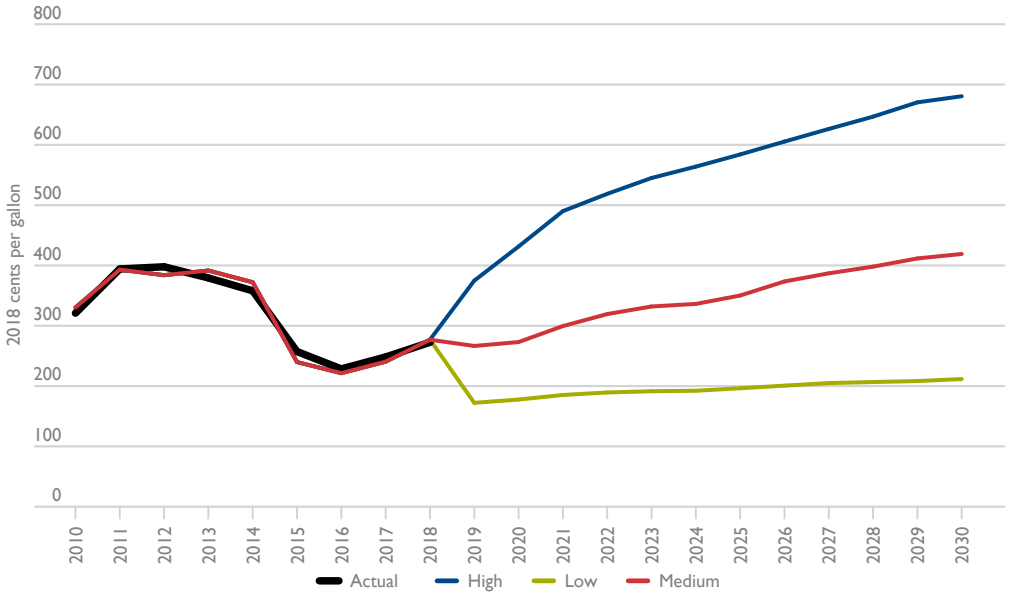
Table 3.26 American Gasoline Price Scenario Calculations (cents/gallon)

	real 2010 WTI oil price (US$/b)				exchange	real 2010 WTI oil price (US$/b)				real 2010 energy cost of gasoline (c/gal)			
	base	high	medium	low	rate	base	high	medium	low	base	high	medium	low
2010	79.48	79.48	79.48	79.48	1.000	79.48	79.48	79.48	79.48	237.75	245.89	245.89	245.89
2011	92.00	92.00	92.00	92.00	1.000	92.00	92.00	92.00	92.00	302.93	301.94	301.94	301.94
2012	89.39	89.39	89.39	89.39	1.000	89.39	89.39	89.39	89.39	306.57	294.54	294.54	294.54
2013	91.83	91.83	91.83	91.83	1.000	91.83	91.83	91.83	91.83	290.84	301.46	301.46	301.46
2014	85.90	85.90	85.90	85.90	1.000	85.90	85.90	85.90	85.90	272.34	284.63	284.63	284.63
2015	44.77	44.77	44.77	44.77	1.000	44.77	44.77	44.77	44.77	182.86	167.79	167.79	167.79
2016	39.33	39.33	39.33	39.33	1.000	39.33	39.33	39.33	39.33	158.44	152.34	152.34	152.34
2017	45.18	45.18	45.18	45.18	1.000	45.18	45.18	45.18	45.18	175.66	168.98	168.98	168.98
2018	56.64	56.64	56.64	56.64	1.000	56.64	56.64	56.64	56.64	197.76	201.50	201.50	201.50
2019		86.51	53.48	24.72	1.000		86.51	53.48	24.72		286.34	192.54	110.84
2020		103.78	55.45	26.37	1.000		103.78	55.45	26.37		335.40	198.13	115.54
2021		121.67	63.53	28.68	1.000		121.67	63.53	28.68		386.21	221.07	122.10
2022		130.40	69.60	29.96	1.000		130.40	69.60	29.96		411.01	238.32	125.73
2023		138.43	73.44	30.56	1.000		138.43	73.44	30.56		433.81	249.24	127.45
2024		144.18	74.74	30.83	1.000		144.18	74.74	30.83		450.15	252.92	128.21
2025		150.32	78.99	32.08	1.000		150.32	78.99	32.08		467.60	264.98	131.76
2026		156.85	86.10	33.41	1.000		156.85	86.10	33.41		486.13	285.18	135.54
2027		163.23	90.21	34.71	1.000		163.23	90.21	34.71		504.25	296.87	139.23
2028		169.46	93.60	35.23	1.000		169.46	93.60	35.23		521.95	306.49	140.69
2029		176.69	97.74	35.73	1.000		176.69	97.74	35.73		542.49	318.26	142.11
2030		179.77	100.00	36.73	1.000		179.77	100.00	36.73		551.24	324.66	144.96

Table 3.26 American Gasoline Price Scenario Calculations (cents/gallon) (continued)

	excise	real 2010 sales tax (c/gal)			0%	real 2010 total gasoline price (c/gal)				real 2018 total gasoline price (c/gal)			
	tax (c/gal)	base	high	medium	low	actual	high	medium	low	actual	high	medium	low
2010	40.22	0.00	0.00	0.00	0.00	277.98	286.12	286.12	286.12	320.87	330.27	330.27	330.27
2011	38.57	0.00	0.00	0.00	0.00	341.50	340.51	340.51	340.51	394.20	393.06	393.06	393.06
2012	38.05	0.00	0.00	0.00	0.00	344.62	332.58	332.58	332.58	397.80	383.91	383.91	383.91
2013	37.77	0.00	0.00	0.00	0.00	328.61	339.23	339.23	339.23	379.33	391.58	391.58	391.58
2014	37.77	0.00	0.00	0.00	0.00	310.10	322.40	322.40	322.40	357.96	372.15	372.15	372.15
2015	39.97	0.00	0.00	0.00	0.00	222.83	207.76	207.76	207.76	257.22	239.83	239.83	239.83
2016	39.48	0.00	0.00	0.00	0.00	197.93	191.82	191.82	191.82	228.47	221.42	221.42	221.42
2017	39.38	0.00	0.00	0.00	0.00	215.04	208.36	208.36	208.36	248.22	240.51	240.51	240.51
2018	38.36	0.00	0.00	0.00	0.00	236.11	239.86	239.86	239.86	272.55	276.87	276.87	276.87
2019	38.36		0.00	0.00	0.00		324.70	230.90	149.20		374.80	266.53	172.22
2020	38.36		0.00	0.00	0.00		373.76	236.49	153.90		431.44	272.98	177.65
2021	38.36		0.00	0.00	0.00		424.56	259.43	160.46		490.08	299.47	185.22
2022	38.36		0.00	0.00	0.00		449.37	276.68	164.09		518.71	319.38	189.41
2023	38.36		0.00	0.00	0.00		472.17	287.59	165.80		545.03	331.98	191.39
2024	38.36		0.00	0.00	0.00		488.51	291.28	166.57		563.89	336.23	192.27
2025	38.36		0.00	0.00	0.00		505.95	303.34	170.12		584.03	350.15	196.37
2026	38.36		0.00	0.00	0.00		524.49	323.54	173.90		605.43	373.47	200.73
2027	38.36		0.00	0.00	0.00		542.61	335.23	177.58		626.35	386.96	204.99
2028	38.36		0.00	0.00	0.00		560.31	344.85	179.05		646.78	398.07	206.68
2029	38.36		0.00	0.00	0.00		580.85	356.62	180.47		670.49	411.65	208.32
2030	38.36		0.00	0.00	0.00		589.60	363.02	183.32		680.58	419.04	211.61

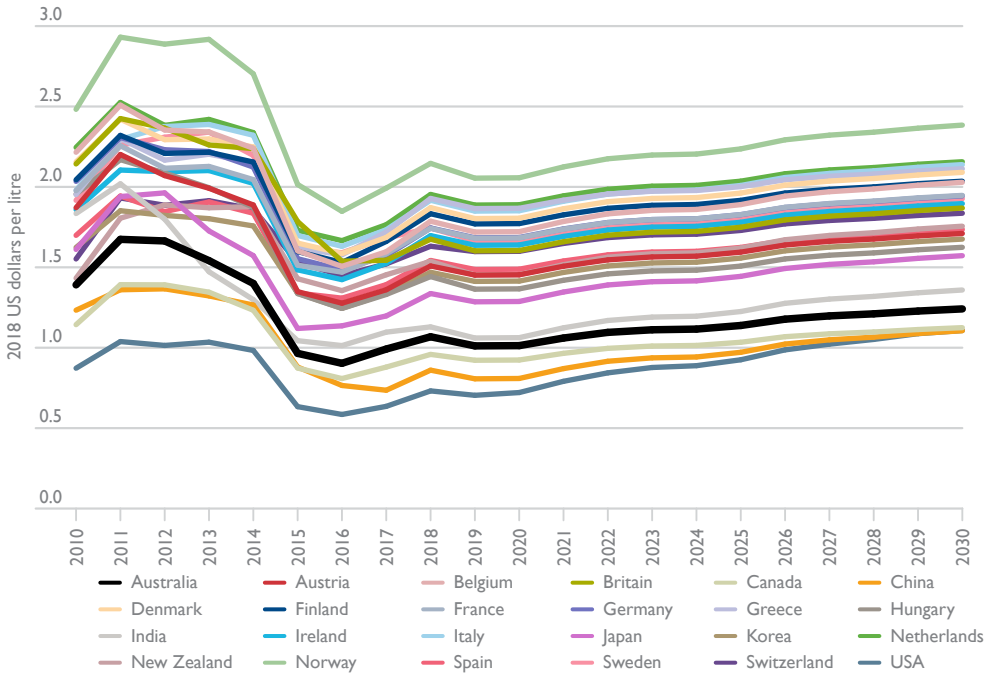
Figure 3.30 American Gasoline Price Scenarios (cents/gallon)



3.27 Twenty-Four Countries Petrol Price Medium Scenarios

The oil price scenarios drive the energy cost content of each country's petrol price scenario. The difference in level between the counties (in US dollars per litre) is mainly driven by the taxation component. As the taxation component is held roughly constant in the forecasts, the paths of the medium scenario forecasts roughly track each other at different levels. This 'rough parallelism' is apparent from Figure 3.31 (where exchange rates are held constant after 2018.

Figure 3.31 Medium Scenario Petrol Prices for the 24 Countries



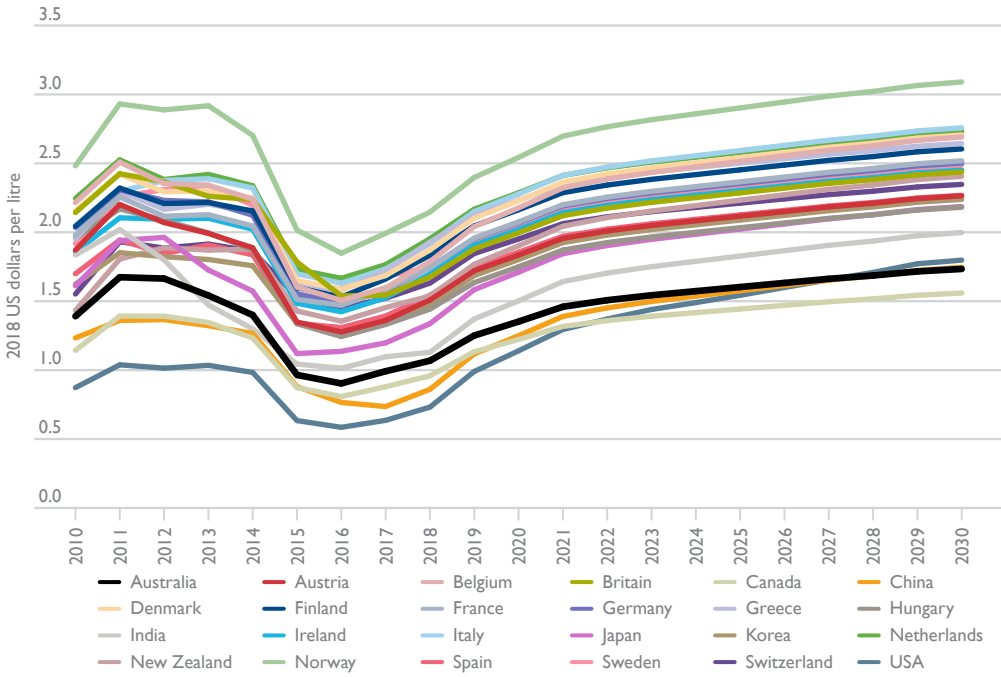
The exception to the 'rough parallelism' is the United States, where the scenario forecasts are based on the WTI oil price. WTI is forecast as rising more rapidly than the OPEC basket over the period. Another feature to notice is that parallelism means the same absolute increase – an average for all countries excluding the US and China of about 20 US cents in 2018 currency from 2018 to 2030. This equates to a percentage rise of about 13 per cent. *But* countries that start with a high price such as Norway go up less as a percentage – 11 per cent for Norway. Canada and Australia (on the low end of the scale) go up by a somewhat *smaller* absolute amount than the average – 17 cents each – *but* go up a greater percentage – about 17 per cent respectively. The biggest effect is in the US, where not only is there a greater rise in the WTI oil price but as shall be demonstrated in the following chapter, a higher elasticity of response of gasoline price to oil price. This gives a rise of 38 cents per litre. Moreover, it comes off the lowest base in the sample of countries – 73 cents per litre in 2018. This means the percentage increase from 2018 to 2030 is about 51 per cent. The faster rising oil price and greater elasticity means that the US medium scenario gasoline price in 2030 equals that in the early 2010s, something that doesn't occur in any other country in the study (because

most countries' currencies have fallen against the US dollar from the early 2010s to 2018). So the range of effects go from high price countries such as Norway at 11 per cent, to low price countries such as Australia and Canada at 17 per cent, to the extremely low priced and faster increasing USA at 51 per cent.

3.28 Twenty-Four Countries Petrol Price High Scenarios

The high oil price scenarios result in petrol prices in 2018 US dollars per litre rising substantially more than in the medium price scenario. Figure 3.32 shows that the 'rough parallelism' still holds. Average petrol prices across the countries (excluding the US and China) rise by 78 cents per litre (versus 20 medium), or 50 per cent (versus 13 medium), from 2018 to 2030.

Figure 3.32 High Scenario Petrol Prices for the 24 Countries



CHAPTER 4

Petrol Price / Oil Price Elasticities

Summary

This chapter analyses the response of petrol prices in the 24 countries to changes in the world price of oil. The elasticity of petrol price changes to oil price changes in the various countries varies substantially. These differences are shown to be caused by the degree of variable versus fixed components of the individual countries' petrol prices.

Future changes in petrol prices will be driven by changes in world oil prices (in the absence of tax changes). But as was seen in the previous chapter, there are differences between countries in the forecast future trends in petrol prices, even though they are all driven by the same oil price scenarios.

For example, the medium oil price scenario presented in Chapter 1 results in oil prices in 2030 somewhat below the peak level of the early 2010s, as shown in Figure 4.1.

Figure 4.1 Oil price scenarios

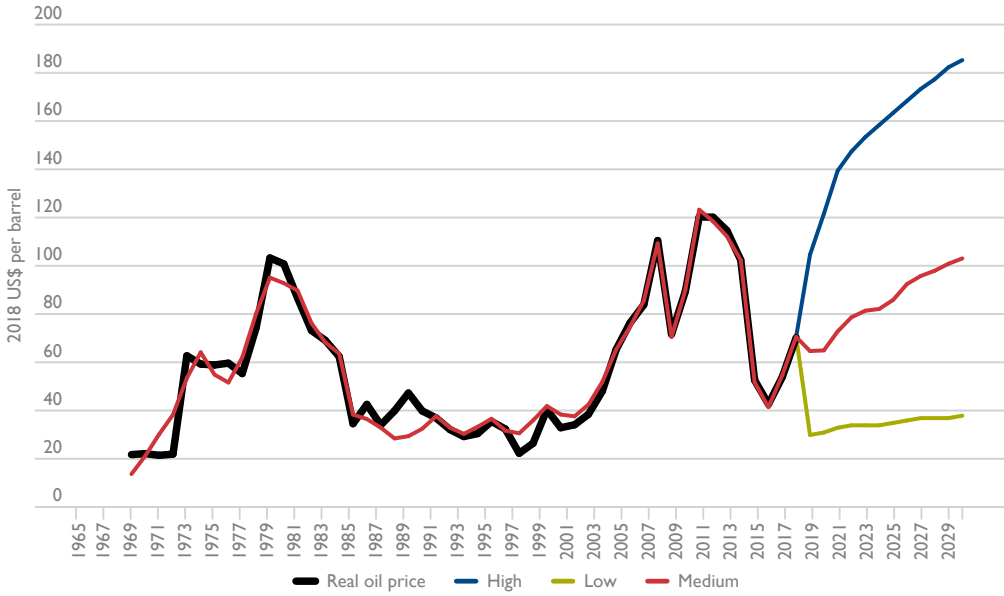


Table 4.1 shows how the medium oil price scenario plays out in Australia for 2030 versus 2011 – the previous peak.

Table 4.1 Australian medium oil price scenario, 2030 versus 2011

	2010 US$/b	A/US	2010 $A/b	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 USc/l
		Exchange	Landed	Energy Component (.64 of petrol)			Petrol tax (about .36 of petrol)				
	Oil price	rate	Oil	Constant	Oil component	Total	Excise	GST	Total	Petrol Price	Petrol Usc/l
2011	104.19	0.961	100.04	32.55	54.47	87.02	36.95	12.40	49.35	136.37	141.91
2030	89.29	1.398	122.16	32.55	66.51	99.06	36.95	13.38	50.33	149.39	106.86
% change			22%	0%	22%	14%	0%	8%	2%	10%	-25%
elasticity			1.00	0.00	1.00	0.63		0.36	0.09	0.43	

The medium scenario oil price in 2030 is 15 US$ per barrel lower than at the last peak in 2011. However, the Australian dollar has depreciated against the US currency (more Australian dollars needed to buy a US dollar). This has raised the landed oil price by 22 per cent. This percentage change in the landed oil price is used as an elasticity base for the following elements of the petrol price.

The constant from the regression equation predicting the Australian energy component from the landed oil price is 32.55 Ac/l. This does not change. Subtracting it from the predicted energy component gives the 'oil component'. This increases by the same 22 per cent as landed oil, giving it a 1.0 elasticity with regard to landed oil. Calculating a weighted average (32.55/87.02*0%)+(54.47/87.02*22%) equals about a 14 per cent change in the energy component, or an elasticity of about 0.63.

The excise tax is taken as unchanged from 2011 to 2030 (in spite of it being lowered in real terms by inflation to 2017).

The GST is based on the 14 per cent change in the energy component (about 2/3 of energy plus excise) and the zero per cent change in excise (one third). The weighted average for GST is about 8 per cent. Total tax is a sum of excise (about 75 per cent of total tax) at zero per cent (ignoring the excise decrease) plus GST (about 25 per cent of total tax) at 8 per cent. This gives a weighted average change for total tax of about 2 per cent, which represents an elasticity with regard to the landed oil price change of about 0.09.

The weighted average per cent change for the total petrol price is then 14% for the energy component (about .64 of the total) plus 2% for the tax component (about 0.36 of the total), giving a total petrol price change of about 10 per cent. This represents an elasticity of 0.43 with regard to the 22 per cent change in the landed oil price (approximately equal to an energy component elasticity of 0.63 times 0.64 share plus a tax elasticity of 0.09 times .36 share). So a 22 per cent increase in the landed oil price results in only a 10 per cent increase in the petrol price, an elasticity of 0.43.

Equally interesting is that when the Australian dollar petrol price is converted to US dollars, the price *drops* by 25 per cent. This is the explanation as to why, under the medium oil price scenario where oil prices return to near their early 2010s high, the medium scenario petrol prices in Figure 3.32 do not. The US dollar has risen against most currencies over the period.

This can be seen more clearly by examining the change in Australian petrol prices over the period 2019 to 2030 when the scenario exchange rate is being held constant, as shown in Table 4.2.

Table 4.2 Australian medium oil price scenario, 2030 versus 2019

	2010 US$/b	A/US	2010 $A/b	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 Ac/l	2010 USc/l
		Exchange	Landed	Energy Component (.64 of petrol)			Petrol tax (about .36 of petrol)				
	Oil price	rate	Oil	Constant	Oil component	Total	Excise	GST	Total	Petrol Price	Petrol Usc/l
2011	56.02	1.398	76.65	32.55	41.73	74.28	34.70	10.90	45.60	119.88	85.75
2030	89.29	1.398	122.16	32.55	66.51	99.06	34.70	13.38	48.07	147.14	105.25
% change			59%	0%	59%	33%	0%	23%	5%	23%	23%
elasticity			1.00	0.00	1.00	0.56		0.38	0.07	0.38	

The medium oil price scenario has oil prices rising from 56.02 to 89.29, or 59 per cent. At a constant exchange rate, the landed oil price also rises 59 per cent.

This percentage change in the landed oil price is used as an elasticity base for the following elements of the petrol price.

The constant from the regression equation predicting the Australian energy component from the landed oil price is 32.55 Ac/l. This does not change.

Subtracting it from the predicted energy component gives the 'oil component'. This increases by the same 59 per cent as landed oil, giving it a 1.0 elasticity with regard to landed oil.

Calculating a weighted average (32.55/74.28*0%)+(41.73/74.28*59%) equals about a 33 per cent change in the energy component, or an elasticity of about 0.56 (similar to the 0.63 elasticity in Table 4.1).

The excise tax is projected as unchanged.

The GST is based on the 33 per cent change in the energy component (about 2/3 of energy plus excise) and the zero per cent change in excise (one third). The weighted average for GST is about 23 per cent.

Total tax is a sum of excise (about 75 per cent of total tax) at 0 per cent plus GST (about 25 per cent of total tax) at 23 per cent. This gives a weighted average change for total tax of about 5 per cent, which represents an elasticity with regard to the landed oil price change of about 0.07 (similar to the 0.09 from Table 4.1).

The weighted average per cent change for the total petrol price is then 33 per cent for the energy component (about 0.64 of the total) plus 5 per cent for the tax component (about 0.36 of the total), giving a weighted total petrol price change of about 23 per cent. This represents an elasticity of 0.38 with regard to the 59 per cent change in the landed price (approximately equal to an energy component elasticity of 0.56 times 0.64 share plus a tax elasticity of 0.07 times 0.36 share).

So a 59 per cent increase in the landed oil price results in only a 23 per cent increase in the petrol price, **an elasticity of 0.38** (approximately equal to the 0.44 from Table 4.1). Equally interesting is that when the Australian dollar petrol price is converted to US dollars at an unchanged exchange rate, the price also rises by 23 per cent.

The results in the two cases above show that an increase in the landed oil price resulting from US dollar oil price changes alone feeds through partially to the Australian petrol price, and this change is maintained when Australian dollar petrol prices are converted back to US dollars at an unchanged exchange rate. *But* when the landed oil price changes are the result of exchange rate changes, there is a similar partial feed through to Australian dollar petrol prices, but when the Australian dollar is then converted back to US dollars it is the total petrol price that is changed, not just the partial changes.

The final point to be taken from the above analysis is that the approximate elasticity of the Australian petrol price to changes in the landed oil price is about 0.4. So if world oil prices go up 10 per cent with the exchange rate unchanged, expect Australian pump prices to go up 4 per cent.

Similar calculations of petrol price elasticities, with regard to a doubling of the oil price in 2019, result in the following table of elasticities for the 24 countries.

Table 4.3 Petrol price/Oil price elasticities

	Australia	Austria	Belgium	Britain	Canada	China	Denmark	Finland	France	Germany	Greece	Hungary
Petrol/Oil elasticity	0.38	0.30	0.30	0.28	0.37	0.62	0.27	0.25	0.27	0.26	0.22	0.32
	India	Ireland	Italy	Japan	Korea	Netherlands	New Zealand	Norway	Spain	Sweden	Switzerland	USA
Petrol/Oil elasticity	0.47	0.27	0.26	0.38	0.31	0.24	0.35	0.27	0.28	0.27	0.25	0.66

There is much variety in the elasticities, from 0.22 for Greece and 0.24 for the Netherlands, to 0.62 for China and 0.66 for the United States. The reason for these differences in the responsiveness of country petrol prices to changes in oil prices, lies in the amount of variable components (oil-price-affected) in each country's petrol price.

To calculate this, it is first necessary to calculate the fixed components of the petrol price.

The regressions presented in the previous chapter each contain an 'intercept', which is an estimate of those elements of the *energy component* of the petrol price that don't change with changes in the oil price. These are things like labour, refining, transport, and retail margins.

Another element of the petrol price that doesn't change with changes in the oil price is the excise charge.

In addition, the unchanging excise and intercept are included in calculating VAT and so this portion of VAT remains fixed.

Table 4.4 below sets out calculations of the fixed components of the petrol price in each of the 24 countries, and by subtraction from the total petrol price, the *variable component,* both in absolute currency per litre and as a fraction of the total price.

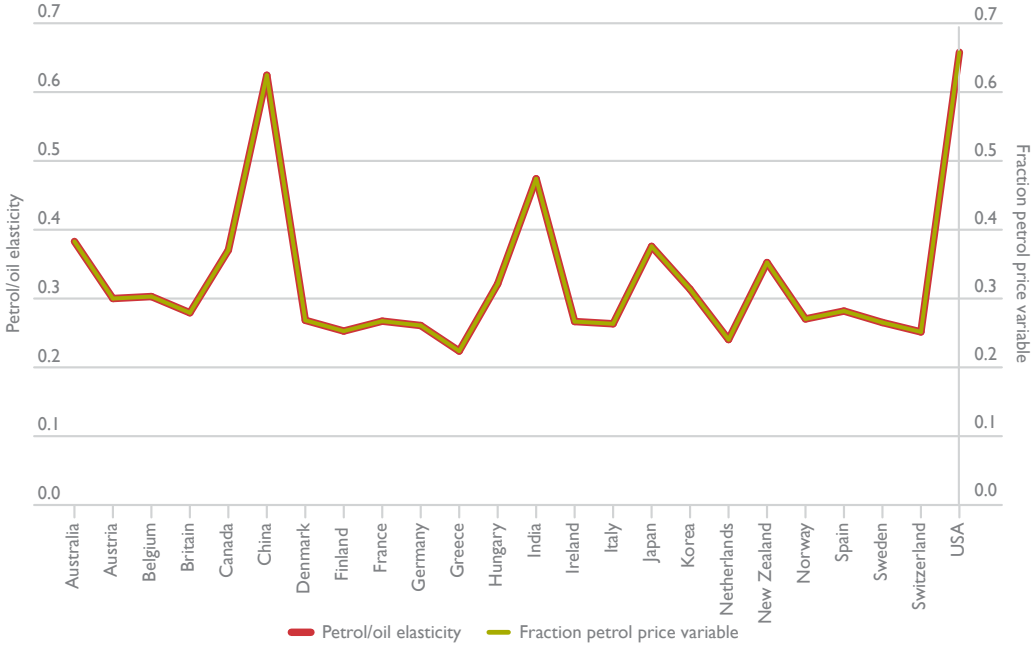
Table 4.4 Variable components of country petrol prices

	Intercept	Excise	VAT rate	Fixed VAT	Total Fixed	Petrol Price	Total Variable	Fraction Variable
Australia	32.55	34.70	10	6.72	73.97	119.88	45.91	0.38
Austria	0.21	0.41	20	0.13	0.75	1.08	0.32	0.30
Belgium	0.21	0.54	21	0.16	0.90	1.30	0.39	0.30
Britain	13.92	49.04	20	12.59	75.55	104.83	29.28	0.28
Canada	27.85	28.92	17	9.65	66.43	105.49	39.06	0.37
China	0.22	1.25	16	0.24	1.71	4.55	2.84	0.62
Denmark	1.98	4.22	25	1.55	7.75	10.59	2.84	0.27
Finland	0.20	0.63	24	0.20	1.03	1.37	0.35	0.25
France	0.21	0.61	20	0.16	0.98	1.33	0.36	0.27
Germany	0.21	0.60	19	0.15	0.96	1.30	0.34	0.26
Greece	0.26	0.72	24	0.24	1.22	1.58	0.35	0.22
Hungary	24.16	201.05	0	0.00	225.21	331.78	106.57	0.32
India	5.14	13.92	27	5.15	24.20	46.02	21.81	0.47
Ireland	0.24	0.56	23	0.18	0.98	1.34	0.36	0.27
Italy	0.21	0.66	22	0.19	1.07	1.45	0.38	0.26
Japan	24.85	53.92	8	6.30	85.07	136.29	51.21	0.38
Korea	403	461	10	86	951	1385	434	0.31
Netherlands	0.21	0.70	21	0.19	1.10	1.44	0.35	0.24
New Zealand	0.52	0.59	15	0.17	1.28	1.97	0.70	0.35
Norway	3.19	5.39	25	2.15	10.73	14.70	3.97	0.27
Spain	0.31	0.40	21	0.15	0.86	1.20	0.34	0.28
Sweden	2.20	5.99	25	2.05	10.24	13.94	3.69	0.27
Switzerland	0.33	0.76	7.7	0.08	1.17	1.57	0.39	0.25
USA (per gallon)	40.64	38.36	0	0.00	79.00	230.90	151.90	0.66

The 'Fraction Variable' (the fraction of the petrol price that varies with oil price changes) is plotted against the country elasticities in Figure 4.2. It can be seen that the petrol price to oil price elasticities are identical to the fraction of the petrol price in each country that is variable. The advantage of the analysis of fixed and variable components is that it allows calculation of how the elasticity will change with changes in excise level or VAT rates.

The USA, China and India have the highest elasticities and variable fractions, and European countries some of the lowest. The high elasticities of the USA, China and India explain why their price scenario paths in Figure 3.31 and 3.32 rise faster than the European countries, albeit from a lower level.

Figure 4.2 Petrol/Oil Price Elasticities and the Fraction of Petrol Price that is Variable



CHAPTER 5
Conclusions

This report has described the modelling of petrol prices in 24 countries as a function of world oil prices. The models are approximate and rely on multiple dummy variables. But lately the fit using the landed oil price alone has been good, and no dummy variables are still in operation in any of the models in recent years.

The analysis works by breaking the petrol price into components – the energy component, excise tax, and Value-Added Tax. A 'landed oil price' is calculated as the world oil price converted through the exchange rate into local currency. Then the energy component is modelled as a function of the landed oil price.

The models allow high, medium and low scenarios for world oil prices to be used to generate high, medium and low scenarios for future petrol prices in each country.

The component framework allows an understanding of how world oil prices are turned into country petrol prices, and why changes in world oil prices have larger effects in some countries and smaller effects in others.

APPENDIX A
Oil Price Modelling Data

	SDRs2010/b	predicted	stock					
	real oil price	medium	ch liq/GDP t,t+1	shortage	dumlow	dum0608	dumGFC	echo
1970	19.49	12.26	3.49	0	0	0	0	0
1971	18.79	18.03	2.68	0	0	0	0	0
1972	17.44	24.55	1.77	0	0	0	0	0
1973	15.89	27.72	0.82	0	0	0	0	-1.61
1974	45.15	38.48	-0.75	0	0	0	0	-1.82
1975	42.35	45.85	-1.80	0	0	0	0	-1.90
1976	44.21	41.20	-1.54	0	0	0	0	-3.14
1977	44.19	38.26	-0.81	0	0	0	0	-2.11
1978	38.10	42.67	-0.60	0	0	0	0	0.52
1979	49.76	53.66	-1.83	0	0	0	0	1.47
1980	68.86	63.42	-3.53	0	0	0	0	0.42
1981	74.25	68.37	-5.13	0	0	0	0	-2.47
1982	68.06	70.54	-5.72	0	0	0	0	-3.39
1983	59.42	61.87	-4.45	0	0	0	0	-3.20
1984	58.50	57.79	-3.25	0	0	0	0	-1.18
1985	52.79	53.81	-2.27	0.0000	0.2	0	0	2.54
1986	25.38	28.15	-1.73	0.0028	1	0	0	2.41
1987	28.33	24.28	-1.38	-0.0285	1	0	0	1.95
1988	21.93	21.23	-1.14	0.0361	1	0	0	1.08
1989	26.91	19.19	-1.02	-0.0024	1	0	0	0.71
1990	30.13	18.72	-1.00	0.0211	1	0	0	0.48
1991	25.22	20.56	-1.48	-0.0923	1	0	0	0.23
1992	22.72	23.16	-1.80	-0.0149	1	0	0	0.05
1993	19.93	20.40	-1.70	0.0086	1	0	0	-0.97
1994	17.61	18.29	-1.32	-0.0053	1	0	0	-0.63
1995	17.33	18.93	-1.11	0.0273	1	0	0	0.19
1996	21.19	21.85	-1.06	0.2333	1	0	0	0.77
1997	20.39	19.99	-0.78	0.3299	1	0	0	0.43
1998	14.21	19.51	-1.05	0.1526	1	0	0	0.10
1999	16.76	22.78	-1.62	-0.0429	1	0	0	0.56
2000	26.54	27.53	-2.15	0.3183	1	0	0	-0.54
2001	22.41	26.14	-2.64	-0.0506	1	0	0	-1.15
2002	22.74	25.08	-2.68	-0.2096	1	0	0	-1.06
2003	23.72	26.20	-2.38	0.1059	1	0	0	-0.97
2004	28.10	30.32	-1.80	0.2024	0.8	0	0	-0.07
2005	38.40	38.38	-2.08	0.1164	0.6	0	0	0.58
2006	44.87	43.93	-3.43	0.1856	0	0.9	0	1.18
2007	47.37	48.30	-4.03	0.8631	0	1	0	-0.57
2008	60.41	59.79	-3.21	0.9843	0	0.15	0	-2.70
2009	40.25	39.61	-2.17	1.0762	0	0	1	-1.20
2010	50.82	51.15	-2.07	1.0388	0	0	0.7	1.64
2011	65.86	67.51	-2.35	1.4650	0	0	0.25	2.08
2012	67.89	66.91	-2.31	1.3299	0	0	0	0.20

(continued)

	SDRs2010/b	predicted	stock					
	real oil price	medium	ch liq/GDP t,t+1	shortage	dumlow	dum0608	dumGFC	echo
2013	65.31	63.96	-1.94	1.4814	0	0	0	-0.56
2014	58.51	58.51	-1.42	1.1483	0	0	0	0.07
2015	32.62	32.12	-1.23	0.4776	0.75	0	0	0.75
2016	26.65	25.86	-1.37	0.3563	1	0	0	1.03
2017	33.59	34.07	-1.92	0.5397	0.85	0	0	0.38
2018	42.98	43.18	-2.28	0.3900	0.50	0	0	-0.28
2019		40.01	-2.16	0.34	0.5	0	0	-1.09
2020		40.18	-2.08	0.33	0.5	0	0	-0.73
2021		45.06	-2.32	0.44	0.5	0	0	0.25
2022		48.69	-2.71	0.54	0.5	0	0	0.15
2023		50.36	-3.00	0.65	0.5	0	0	-0.47
2024		50.81	-3.03	0.75	0.5	0	0	-0.79
2025		53.12	-3.14	0.86	0.5	0	0	-0.58
2026		57.18	-3.40	0.96	0.5	0	0	-0.05
2027		59.28	-3.60	1.07	0.5	0	0	-0.23
2028		60.60	-3.74	1.18	0.5	0	0	-0.51
2029		62.40	-3.81	1.29	0.5	0	0	-0.41
2030		63.78	-3.82	1.39	0.5	0	0	-0.27
2031		64.92	-3.80	1.50	0.5	0	0	-0.15
2032		65.38	-3.81	1.50	0.5	0	0	-0.01
2033		65.33	-3.79	1.50	0.5	0	0	0.04
2034		64.40	-3.69	1.50	0.5	0	0	-0.04
2035		64.32	-3.65	1.50	0.5	0	0	0.04
2036		65.18	-3.72	1.50	0.5	0	0	0.21
2037		65.54	-3.81	1.50	0.5	0	0	0.07
2038		65.71	-3.90	1.50	0.5	0	0	-0.13
2039		66.23	-3.99	1.50	0.5	0	0	-0.19
2040		66.69	-4.05	1.50	0.5	0	0	-0.17

APPENDIX B

Petrol Price Modelling Data

B.1 Australia

CY	c/l petrol	c/l Excise	c/l State	c/l GST	c/l tax	c/l energy	Cpi	2010c/l petrol	2010c/l predicted	2010c/l tax	2010c/l energy	2010c/l predicted	2010$A/b landed oil	dum 9403	dum 8086	dum 79	dum 6573
1965	7.67	2.64	0.00	0.00	2.64	5.03	8.69	88.25	91.37	30.36	57.89	61.02	33.90	0	0	0	1
1966	8.07	2.74	0.00	0.00	2.74	5.34	8.98	89.85	90.87	30.46	59.39	60.41	32.80	0	0	0	1
1967	8.36	2.70	0.00	0.00	2.70	5.66	9.22	90.73	89.26	29.30	61.42	59.96	31.96	0	0	0	1
1968	8.52	2.75	0.00	0.00	2.75	5.77	9.57	89.05	88.08	28.76	60.28	59.32	30.78	0	0	0	1
1969	8.64	2.75	0.00	0.00	2.75	5.89	9.81	88.06	86.92	28.00	60.05	58.92	30.05	0	0	0	1
1970	9.15	3.04	0.00	0.00	3.04	6.11	10.10	90.56	88.78	30.10	60.46	58.68	29.62	0	0	0	1
1971	9.82	3.59	0.00	0.00	3.59	6.23	10.57	92.93	92.71	33.97	58.96	58.74	29.73	0	0	0	1
1972	10.10	3.81	0.00	0.00	3.81	6.29	11.33	89.10	90.52	33.62	55.48	56.90	26.35	0	0	0	1
1973	10.94	4.36	0.00	0.00	4.36	6.58	11.98	91.34	91.33	36.40	54.95	54.93	22.73	0	0	0	1
1974	12.89	4.91	0.00	0.00	4.91	7.98	13.56	95.03	103.09	36.20	58.83	66.89	63.07	0	0	0	0
1975	15.28	4.91	0.00	0.00	4.91	10.37	15.80	96.70	97.00	31.08	65.62	65.91	61.27	0	0	0	0
1976	16.64	4.91	0.00	0.00	4.91	11.73	17.85	93.19	93.30	27.51	65.69	65.79	61.06	0	0	0	0
1977	17.61	5.03	0.00	0.00	5.03	12.58	20.32	86.69	92.01	24.76	61.93	67.26	63.74	0	0	0	0
1978	19.68	5.16	0.00	0.00	5.16	14.52	22.25	88.45	86.39	23.19	65.26	63.20	56.29	0	0	0	0
1979	26.82	5.16	0.00	0.00	5.16	21.66	24.08	111.41	111.41	21.43	89.98	89.98	79.63	0	0	1	0
1980	32.07	5.16	0.30	0.00	5.46	26.61	26.54	120.81	126.50	20.57	100.24	105.93	111.81	0	1	0	0
1981	35.49	5.16	0.64	0.00	5.80	29.69	29.01	122.36	124.52	19.99	102.37	104.52	109.23	0	1	0	0
1982	38.96	5.66	0.94	0.00	6.60	32.36	32.06	121.51	121.22	20.59	100.92	100.63	102.09	0	1	0	0
1983	43.73	7.55	1.95	0.00	9.50	34.23	35.76	122.27	120.54	26.57	95.71	93.98	89.86	0	1	0	0
1984	47.51	9.39	2.15	0.00	11.54	35.97	38.17	124.48	121.65	30.23	94.25	91.41	85.15	0	1	0	0
1985	52.63	9.82	2.50	0.00	12.32	40.31	39.81	132.19	128.22	30.95	101.25	97.28	95.92	0	1	0	0
1986	52.07	17.72	3.07	0.00	20.79	31.28	43.16	120.64	121.62	48.17	72.47	73.45	52.17	0	1	0	0
1987	54.91	19.88	3.71	0.00	23.59	31.32	47.21	116.30	114.14	49.97	66.33	64.17	58.08	0	0	0	0
1988	53.23	21.06	3.83	0.00	24.89	28.34	50.68	105.04	103.63	49.12	55.92	54.51	40.34	0	0	0	0
1989	55.55	22.70	4.13	0.00	26.83	28.72	54.37	102.16	106.76	49.34	52.82	57.42	45.68	0	0	0	0
1990	68.05	24.50	4.69	0.00	29.19	38.86	58.72	115.89	111.40	49.71	66.18	61.69	53.52	0	0	0	0
1991	66.47	25.70	5.32	0.00	31.02	35.45	61.83	107.50	107.07	50.17	57.33	56.90	44.72	0	0	0	0
1992	67.71	26.15	5.45	0.00	31.60	36.11	63.01	107.47	106.92	50.15	57.31	56.77	44.48	0	0	0	0
1993	67.45	26.35	5.20	0.00	31.55	35.90	63.65	105.97	105.30	49.57	56.40	55.73	42.58	0	0	0	0
1994	66.74	30.94	6.11	0.00	37.05	29.69	64.83	102.96	101.56	57.15	45.81	44.41	36.29	0.50	0	0	0
1995	69.28	33.00	6.51	0.00	39.51	29.77	66.88	103.59	103.96	59.07	44.51	44.89	37.17	0.50	0	0	0
1996	71.05	33.75	6.66	0.00	40.41	30.64	69.70	101.93	103.12	57.98	43.95	45.15	40.55	0.60	0	0	0
1997	72.34	34.50	7.50	0.00	42.00	30.34	70.64	102.40	103.93	59.46	42.95	44.47	39.31	0.60	0	0	0
1998	68.41	34.80	8.12	0.00	42.92	25.49	70.64	96.84	95.20	60.76	36.08	34.44	32.49	1.00	0	0	0
1999	70.66	35.20	8.20	0.00	43.40	27.26	71.52	98.80	98.05	60.68	38.12	37.37	37.88	1.00	0	0	0
2000	87.22	36.74	-1.54	7.85	43.05	44.17	73.22	119.12	118.84	58.79	60.32	60.05	65.01	0.50	0	0	0
2001	87.06	38.14	-1.54	7.84	44.44	42.63	77.63	112.15	113.24	57.24	54.91	56.00	57.58	0.50	0	0	0
2002	85.84	38.14	-1.54	7.73	44.33	41.51	79.86	107.49	110.72	55.50	51.98	55.22	56.14	0.50	0	0	0
2003	89.72	38.14	-1.61	8.07	44.60	45.12	82.33	108.98	107.48	54.18	54.80	53.30	52.63	0.50	0	0	0
2004	97.22	38.14	-1.76	8.75	45.13	52.09	84.26	115.38	117.78	53.56	61.82	64.22	58.17	0	0	0	0
2005	110.38	38.14	-1.98	9.93	46.09	64.29	86.32	127.88	127.78	53.40	74.48	74.38	76.82	0	0	0	0
2006	124.24	38.14	-2.21	11.18	47.11	77.13	89.08	139.47	135.02	52.89	86.59	82.13	91.06	0	0	0	0
2007	124.29	38.14	-2.16	11.19	47.17	77.12	91.66	135.60	133.05	51.46	84.14	81.59	90.07	0	0	0	0
2008	141.00	38.14	-2.39	12.69	48.44	92.56	94.77	148.78	148.35	51.11	97.66	97.24	118.81	0	0	0	0
2009	119.61	38.14	-1.01	10.76	47.89	71.72	97.71	122.41	125.19	49.02	73.40	76.18	80.13	0	0	0	0
2010	125.99	38.14	0.00	11.34	49.48	76.51	100.00	125.99	128.00	49.48	76.51	78.52	84.43	0	0	0	0
2011	141.04	38.14	0.00	12.69	50.83	90.21	103.21	136.65	136.27	49.25	87.40	87.02	100.04	0	0	0	0
2012	143.39	38.14	0.00	12.90	51.04	92.34	105.11	136.41	135.69	48.56	87.85	87.13	100.24	0	0	0	0
2013	146.10	38.14	0.00	13.15	51.29	94.81	107.69	135.66	135.96	47.62	88.04	88.34	102.46	0	0	0	0
2014	146.96	38.20	0.00	13.23	51.42	95.54	110.32	133.22	131.97	46.62	86.60	85.36	96.99	0	0	0	0
2015	128.02	39.00	0.00	11.52	50.52	77.50	111.99	114.31	109.91	45.11	69.20	64.80	59.23	0	0	0	0
2016	116.68	39.52	0.00	10.50	50.02	66.67	113.48	102.83	102.89	44.08	58.75	58.81	48.23	0	0	0	0
2017	128.02	40.14	0.00	11.52	51.66	76.36	115.69	110.66	109.34	44.66	66.00	64.68	59.01	0	0	0	0
2018	143.63	40.92	0.00	12.93	53.85	89.78	117.95	121.78	121.87	45.66	76.12	76.21	80.20	0	0	0	0

B.2 Austria

	Euro c/l	Euro c/l	Euro c/l	Euro c/l	Euro c/l		2010c/l	2010c/l	2010c/l	2010c/l	2010c/l	2010E/b	dum	dum	dum	dum
CY	petrol	excise	VAT	tax	energy	Cpi	petrol	predicted	tax	energy	predicted	landed oil	6579	7374	6593	0709
1965	0.23	0.13	0.00	0.13	0.09	21.56	1.05	1.02	0.62	0.43	0.40	28.91	1	0	1	0
1966	0.23	0.14	0.00	0.14	0.09	22.01	1.06	1.04	0.64	0.42	0.40	28.33	1	0	1	0
1967	0.24	0.15	0.00	0.15	0.09	22.88	1.05	1.04	0.65	0.40	0.39	27.25	1	0	1	0
1968	0.24	0.15	0.00	0.15	0.09	23.52	1.03	1.02	0.63	0.39	0.39	26.52	1	0	1	0
1969	0.24	0.15	0.00	0.15	0.09	24.24	0.99	1.00	0.61	0.38	0.38	25.72	1	0	1	0
1970	0.24	0.15	0.00	0.15	0.09	25.30	0.94	0.96	0.58	0.36	0.38	25.02	1	0	1	0
1971	0.23	0.14	0.00	0.14	0.09	26.49	0.86	0.91	0.53	0.33	0.37	24.38	1	0	1	0
1972	0.25	0.15	0.00	0.15	0.10	28.17	0.87	0.87	0.52	0.36	0.36	21.23	1	0	1	0
1973	0.33	0.13	0.02	0.16	0.17	30.30	1.09	1.06	0.52	0.57	0.54	18.18	1	1	1	0
1974	0.43	0.17	0.03	0.20	0.23	33.18	1.30	1.33	0.61	0.69	0.72	50.28	1	1	1	0
1975	0.37	0.15	0.03	0.18	0.20	35.98	1.03	0.97	0.49	0.55	0.49	44.57	1	0	1	0
1976	0.44	0.24	0.03	0.27	0.17	38.62	1.14	1.18	0.69	0.44	0.49	44.97	1	0	1	0
1977	0.51	0.27	0.04	0.31	0.20	40.74	1.24	1.23	0.76	0.48	0.47	42.34	1	0	1	0
1978	0.49	0.26	0.04	0.30	0.19	42.19	1.17	1.15	0.71	0.45	0.44	35.87	1	0	1	0
1979	0.53	0.29	0.04	0.32	0.20	43.76	1.21	1.25	0.74	0.47	0.50	47.58	1	0	1	0
1980	0.61	0.30	0.04	0.35	0.26	46.53	1.31	1.25	0.75	0.57	0.50	68.29	0	0	1	0
1981	0.74	0.36	0.08	0.45	0.29	49.69	1.48	1.49	0.90	0.59	0.59	84.81	0	0	1	0
1982	0.79	0.40	0.09	0.49	0.30	52.39	1.51	1.49	0.93	0.58	0.56	78.56	0	0	1	0
1983	0.78	0.41	0.09	0.49	0.28	54.14	1.44	1.42	0.91	0.52	0.51	69.80	0	0	1	0
1984	0.80	0.40	0.13	0.53	0.27	57.21	1.40	1.45	0.93	0.47	0.52	72.49	0	0	1	0
1985	0.84	0.43	0.13	0.57	0.27	59.03	1.42	1.46	0.96	0.45	0.50	67.93	0	0	1	0
1986	0.67	0.39	0.11	0.50	0.17	60.04	1.11	1.10	0.83	0.29	0.27	27.81	0	0	1	0
1987	0.65	0.39	0.10	0.50	0.16	60.88	1.07	1.09	0.81	0.26	0.28	28.97	0	0	1	0
1988	0.63	0.37	0.10	0.47	0.16	62.05	1.01	1.01	0.76	0.25	0.25	23.10	0	0	1	0
1989	0.68	0.39	0.11	0.50	0.18	63.64	1.06	1.07	0.79	0.28	0.28	29.67	0	0	1	0
1990	0.67	0.36	0.11	0.47	0.20	65.72	1.01	1.00	0.71	0.30	0.29	30.84	0	0	1	0
1991	0.64	0.35	0.10	0.45	0.19	67.91	0.94	0.93	0.66	0.28	0.27	26.91	0	0	1	0
1992	0.67	0.38	0.11	0.49	0.18	70.64	0.95	0.94	0.70	0.26	0.25	23.27	0	0	1	0
1993	0.67	0.40	0.11	0.51	0.16	73.21	0.92	0.93	0.70	0.22	0.24	21.28	0	0	1	0
1994	0.70	0.35	0.11	0.46	0.24	75.37	0.93	0.93	0.61	0.31	0.32	18.94	0	0	0	0
1995	0.77	0.41	0.12	0.53	0.24	77.06	1.00	1.00	0.69	0.31	0.31	17.52	0	0	0	0
1996	0.79	0.41	0.13	0.53	0.25	78.49	1.00	1.02	0.68	0.32	0.34	21.68	0	0	0	0
1997	0.80	0.41	0.13	0.54	0.26	79.52	1.01	1.02	0.67	0.33	0.34	22.99	0	0	0	0
1998	0.76	0.41	0.12	0.53	0.23	80.25	0.94	0.96	0.66	0.28	0.30	16.16	0	0	0	0
1999	0.78	0.41	0.12	0.53	0.24	80.71	0.96	0.99	0.66	0.30	0.33	20.33	0	0	0	0
2000	0.93	0.41	0.15	0.56	0.37	82.60	1.12	1.09	0.67	0.45	0.42	36.27	0	0	0	0
2001	0.89	0.41	0.14	0.55	0.34	84.79	1.05	1.03	0.65	0.40	0.38	30.47	0	0	0	0
2002	0.86	0.41	0.14	0.54	0.31	86.33	0.99	1.01	0.63	0.36	0.38	29.98	0	0	0	0
2003	0.86	0.41	0.14	0.54	0.32	87.50	0.99	1.00	0.62	0.36	0.37	28.46	0	0	0	0
2004	0.93	0.42	0.15	0.57	0.37	89.30	1.04	1.03	0.63	0.41	0.40	32.51	0	0	0	0
2005	1.02	0.42	0.16	0.58	0.44	91.35	1.11	1.10	0.63	0.48	0.46	44.58	0	0	0	0
2006	1.07	0.42	0.17	0.59	0.48	92.67	1.16	1.14	0.64	0.52	0.51	52.54	0	0	0	0
2007	1.10	0.48	0.18	0.65	0.45	94.68	1.17	1.16	0.69	0.48	0.47	53.31	0	0	0	1
2008	1.21	0.48	0.19	0.67	0.54	97.72	1.23	1.23	0.68	0.55	0.54	65.98	0	0	0	1
2009	1.04	0.48	0.17	0.64	0.40	98.22	1.06	1.08	0.65	0.41	0.42	44.75	0	0	0	1
2010	1.19	0.48	0.19	0.66	0.52	100.00	1.19	1.21	0.66	0.52	0.54	58.76	0	0	0	0
2011	1.36	0.52	0.22	0.73	0.63	103.27	1.31	1.34	0.71	0.61	0.63	74.44	0	0	0	0
2012	1.45	0.52	0.23	0.75	0.70	105.83	1.37	1.37	0.71	0.66	0.66	80.07	0	0	0	0
2013	1.39	0.48	0.22	0.70	0.69	107.95	1.29	1.28	0.65	0.64	0.63	73.76	0	0	0	0
2014	1.35	0.48	0.22	0.70	0.65	109.68	1.23	1.22	0.64	0.59	0.59	66.42	0	0	0	0
2015	1.20	0.48	0.19	0.67	0.53	110.67	1.09	1.05	0.61	0.48	0.44	40.53	0	0	0	0
2016	1.11	0.48	0.18	0.66	0.45	111.65	1.00	0.99	0.59	0.40	0.40	33.04	0	0	0	0
2017	1.18	0.48	0.19	0.67	0.51	113.98	1.03	1.03	0.59	0.44	0.44	40.86	0	0	0	0
2018	1.26	0.48	0.20	0.68	0.58	116.15	1.09	1.09	0.59	0.50	0.50	51.13	0	0	0	0

B.3 Belgium

	Euro c/l	Euro c/l	Euro c/l	Euro c/l	Euro c/l		2010c/l	2010c/l	2010c/l	2010c/l	2010c/l	2010E/b	dum	dum	dum
CY	petrol	excise	VAT	tax	energy	Cpi	petrol	predicted	tax	energy	predicted	landed oil	8992	6599	9599
1965	0.17	0.12	0.00	0.12	0.05	17.69	0.95	0.95	0.66	0.29	0.29	23.13	0	1.0	0
1966	0.19	0.14	0.00	0.14	0.05	18.43	1.04	1.04	0.75	0.28	0.28	22.20	0	1.0	0
1967	0.19	0.14	0.00	0.14	0.05	18.93	1.01	1.02	0.74	0.27	0.28	21.61	0	1.0	0
1968	0.19	0.14	0.00	0.14	0.05	19.44	0.98	1.00	0.72	0.26	0.28	21.04	0	1.0	0
1969	0.19	0.14	0.00	0.14	0.05	20.17	0.95	0.96	0.69	0.26	0.27	20.28	0	1.0	0
1970	0.20	0.14	0.00	0.14	0.05	20.96	0.95	0.95	0.68	0.26	0.27	19.81	0	1.0	0
1971	0.23	0.17	0.00	0.17	0.06	21.87	1.04	1.04	0.77	0.27	0.27	19.72	0	1.0	0
1972	0.19	0.14	0.00	0.14	0.05	23.06	0.84	0.88	0.63	0.21	0.25	16.84	0	1.0	0
1973	0.23	0.17	0.00	0.17	0.06	24.66	0.94	0.92	0.68	0.26	0.24	15.16	0	1.0	0
1974	0.27	0.16	0.00	0.16	0.11	27.79	0.96	1.00	0.58	0.38	0.42	42.67	0	1.0	0
1975	0.30	0.18	0.00	0.18	0.12	31.34	0.96	0.95	0.56	0.39	0.38	36.86	0	1.0	0
1976	0.35	0.21	0.00	0.21	0.15	34.18	1.03	0.99	0.60	0.43	0.39	37.29	0	1.0	0
1977	0.37	0.23	0.00	0.23	0.14	36.61	1.01	1.00	0.63	0.38	0.37	34.86	0	1.0	0
1978	0.36	0.19	0.02	0.21	0.14	38.24	0.93	0.89	0.56	0.38	0.33	29.27	0	1.0	0
1979	0.40	0.19	0.02	0.22	0.19	39.95	1.01	0.94	0.54	0.46	0.40	38.99	0	1.0	0
1980	0.52	0.25	0.03	0.28	0.24	42.61	1.22	1.18	0.66	0.56	0.52	57.49	0	1.0	0
1981	0.62	0.25	0.08	0.33	0.29	45.86	1.34	1.35	0.72	0.62	0.62	73.08	0	1.0	0
1982	0.67	0.27	0.09	0.36	0.31	49.86	1.35	1.37	0.73	0.62	0.64	75.42	0	1.0	0
1983	0.71	0.29	0.10	0.39	0.32	53.68	1.32	1.32	0.72	0.60	0.59	68.36	0	1.0	0
1984	0.72	0.29	0.10	0.39	0.32	57.08	1.26	1.31	0.69	0.56	0.61	71.57	0	1.0	0
1985	0.76	0.33	0.11	0.44	0.32	59.86	1.27	1.30	0.73	0.54	0.57	65.58	0	1.0	0
1986	0.58	0.31	0.08	0.39	0.19	60.64	0.95	0.96	0.64	0.31	0.32	27.48	0	1.0	0
1987	0.56	0.30	0.08	0.38	0.18	61.58	0.91	0.94	0.61	0.30	0.33	28.86	0	1.0	0
1988	0.56	0.28	0.08	0.36	0.20	62.29	0.89	0.87	0.58	0.31	0.29	23.37	0	1.0	0
1989	0.66	0.31	0.09	0.40	0.26	64.23	1.03	1.03	0.63	0.41	0.41	29.87	0.6	1.0	0
1990	0.67	0.31	0.09	0.40	0.27	66.44	1.01	1.02	0.60	0.40	0.41	30.58	0.6	1.0	0
1991	0.71	0.31	0.10	0.41	0.31	68.58	1.04	1.03	0.59	0.45	0.43	26.59	1.0	1.0	0
1992	0.70	0.35	0.11	0.46	0.24	70.25	1.00	1.01	0.66	0.34	0.35	23.35	0.5	1.0	0
1993	0.72	0.39	0.11	0.50	0.21	72.18	0.99	0.98	0.70	0.30	0.28	21.90	0	1.0	0
1994	0.72	0.42	0.12	0.53	0.18	73.90	0.97	0.99	0.72	0.25	0.27	19.30	0	1.0	0
1995	0.69	0.42	0.11	0.53	0.16	74.98	0.92	0.90	0.70	0.21	0.19	17.96	0	1.0	1.0
1996	0.75	0.47	0.12	0.59	0.16	76.54	0.98	0.99	0.77	0.21	0.22	22.18	0	1.0	1.0
1997	0.83	0.51	0.14	0.65	0.19	77.78	1.07	1.06	0.83	0.24	0.23	23.50	0	1.0	1.0
1998	0.77	0.51	0.13	0.63	0.13	78.52	0.98	0.99	0.81	0.17	0.19	16.52	0	1.0	1.0
1999	0.81	0.51	0.13	0.64	0.17	79.40	1.02	1.02	0.81	0.21	0.21	20.66	0	1.0	1.0
2000	1.05	0.51	0.17	0.68	0.36	81.42	1.28	1.29	0.84	0.45	0.45	36.79	0	0	0
2001	1.01	0.51	0.17	0.67	0.33	83.43	1.21	1.22	0.81	0.40	0.42	30.97	0	0	0
2002	0.98	0.51	0.16	0.67	0.31	84.80	1.15	1.20	0.79	0.37	0.41	30.52	0	0	0
2003	1.02	0.54	0.17	0.70	0.31	86.15	1.18	1.22	0.82	0.36	0.40	28.90	0	0	0
2004	1.14	0.56	0.19	0.75	0.39	87.95	1.30	1.29	0.86	0.44	0.43	33.01	0	0	0
2005	1.28	0.59	0.21	0.80	0.48	90.41	1.42	1.40	0.89	0.53	0.51	45.04	0	0	0
2006	1.35	0.59	0.22	0.82	0.54	92.03	1.47	1.45	0.89	0.58	0.56	52.91	0	0	0
2007	1.38	0.62	0.23	0.85	0.53	93.70	1.48	1.48	0.91	0.57	0.57	53.86	0	0	0
2008	1.46	0.60	0.24	0.85	0.61	97.91	1.49	1.51	0.86	0.62	0.65	65.85	0	0	0
2009	1.32	0.60	0.22	0.81	0.50	97.86	1.34	1.34	0.83	0.51	0.51	44.92	0	0	0
2010	1.46	0.61	0.24	0.86	0.60	100.00	1.46	1.46	0.86	0.60	0.60	58.76	0	0	0
2011	1.61	0.61	0.27	0.88	0.73	103.52	1.55	1.55	0.85	0.70	0.70	74.26	0	0	0
2012	1.71	0.61	0.28	0.90	0.81	106.44	1.61	1.58	0.84	0.76	0.74	79.61	0	0	0
2013	1.64	0.61	0.27	0.89	0.76	107.69	1.53	1.52	0.82	0.70	0.70	73.94	0	0	0
2014	1.59	0.61	0.26	0.88	0.72	108.09	1.48	1.47	0.81	0.66	0.66	67.40	0	0	0
2015	1.42	0.61	0.24	0.85	0.57	108.69	1.31	1.27	0.78	0.52	0.48	41.27	0	0	0
2016	1.31	0.61	0.22	0.83	0.48	110.64	1.19	1.18	0.75	0.43	0.43	33.34	0	0	0
2017	1.40	0.61	0.23	0.84	0.57	112.39	1.25	1.23	0.75	0.50	0.48	41.44	0	0	0
2018	1.47	0.61	0.24	0.86	0.61	114.41	1.28	1.30	0.75	0.53	0.55	51.91	0	0	0

B.4 Britain

CY	pence/l petrol	pence/l excise	pence/l VAT	pence/l tax	pence/l energy	Cpi	2010 p/l petrol	2010 p/l pred	2010 p/l tax	2010 p/l energy	2010 p/l pred	2010 pds/b landed oil	dum 7376	dum 9104	dum 6504	dum 7981	dum 0514	dum GFC	dum 6570
1965	5.16	3.44	0.00	3.44	1.72	7.76	66.52	66.73	44.37	22.15	22.36	15.14	0.00	0.00	1.00	0.00	0.00	0.00	0.50
1966	5.72	3.92	0.00	3.92	1.80	8.06	70.96	70.75	48.68	22.28	22.07	14.64	0.00	0.00	1.00	0.00	0.00	0.00	0.50
1967	5.68	3.90	0.00	3.90	1.78	8.26	68.75	68.38	47.16	21.59	21.21	16.56	0.00	0.00	1.00	0.00	0.00	0.00	1.00
1968	6.57	4.77	0.00	4.77	1.80	8.65	75.94	76.00	55.13	20.81	20.87	15.96	0.00	0.00	1.00	0.00	0.00	0.00	1.00
1969	6.77	4.94	0.00	4.94	1.83	9.12	74.25	74.54	54.20	20.05	20.33	15.03	0.00	0.00	1.00	0.00	0.00	0.00	1.00
1970	7.17	4.96	0.00	4.96	2.21	9.70	73.89	74.04	51.13	22.76	22.91	14.39	0.00	0.00	1.00	0.00	0.00	0.00	0.25
1971	7.73	5.19	0.00	5.19	2.53	10.61	72.78	72.45	48.91	23.87	23.54	13.78	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1972	7.09	4.54	0.00	4.54	2.55	11.37	62.40	62.76	39.93	22.46	22.82	12.54	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1973	7.84	4.39	0.00	4.39	3.45	12.41	63.15	63.26	35.36	27.78	27.90	12.73	0.30	0.00	1.00	0.00	0.00	0.00	0.00
1974	15.66	6.82	1.16	7.98	7.67	14.40	108.71	108.63	55.44	53.27	53.19	36.47	1.00	0.00	1.00	0.00	0.00	0.00	0.00
1975	14.81	6.16	1.10	7.26	7.55	17.89	82.79	82.90	40.57	42.22	42.34	32.02	0.50	0.00	1.00	0.00	0.00	0.00	0.00
1976	16.14	6.71	1.20	7.91	8.23	20.85	77.40	77.34	37.93	39.48	39.41	35.55	0.20	0.00	1.00	0.00	0.00	0.00	0.00
1977	17.34	7.56	1.28	8.84	8.50	24.15	71.80	71.87	36.62	35.18	35.25	34.08	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1978	16.69	7.11	1.24	8.34	8.34	26.15	63.82	64.00	31.91	31.91	32.09	28.60	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1979	22.10	6.84	2.88	9.72	12.37	29.66	74.51	74.92	32.78	41.73	42.14	34.12	0.00	0.00	1.00	1.00	0.00	0.00	0.00
1980	28.31	8.85	3.69	12.54	15.77	34.99	80.93	80.57	35.85	45.08	44.71	41.56	0.00	0.00	1.00	0.75	0.00	0.00	0.00
1981	33.69	11.84	4.39	16.24	17.45	39.14	86.07	85.50	41.49	44.59	44.01	46.29	0.00	0.00	1.00	0.25	0.00	0.00	0.00
1982	36.52	14.30	4.76	19.06	17.46	42.51	85.92	86.23	44.85	41.07	41.38	44.71	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1983	39.19	15.89	5.11	21.00	18.18	44.47	88.13	87.60	47.24	40.89	40.37	42.95	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1984	40.60	16.46	5.30	21.76	18.84	46.67	86.98	88.71	46.62	40.36	42.09	45.94	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1985	43.09	17.22	5.62	22.84	20.25	49.51	87.05	85.94	46.13	40.91	39.80	41.98	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1986	37.38	18.40	4.88	23.28	14.11	51.20	73.01	72.62	45.46	27.55	27.16	20.05	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1987	37.88	18.40	4.94	23.34	14.54	53.33	71.03	72.07	43.77	27.26	28.30	22.03	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1988	37.38	18.40	4.88	23.28	14.11	55.46	67.41	66.90	41.97	25.44	24.93	16.19	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1989	40.40	17.80	5.27	23.07	17.33	58.36	69.22	66.98	39.53	29.69	27.45	20.57	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1990	41.95	19.50	5.47	24.97	16.98	62.43	67.20	68.35	40.00	27.20	28.35	22.13	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1991	44.80	22.40	6.67	29.07	15.73	67.13	66.74	66.65	43.31	23.43	23.34	18.19	0.00	0.35	1.00	0.00	0.00	0.00	0.00
1992	45.70	23.40	6.81	30.21	15.49	69.99	65.29	65.66	43.16	22.13	22.51	16.75	0.00	0.35	1.00	0.00	0.00	0.00	0.00
1993	49.26	25.80	7.34	33.14	16.12	71.75	68.65	68.91	46.18	22.47	22.73	17.13	0.00	0.35	1.00	0.00	0.00	0.00	0.00
1994	51.40	28.30	7.65	35.95	15.44	73.17	70.24	70.85	49.14	21.10	21.71	15.36	0.00	0.35	1.00	0.00	0.00	0.00	0.00
1995	53.89	31.30	8.03	39.33	14.56	75.11	71.75	71.04	52.36	19.39	18.68	15.55	0.00	0.75	1.00	0.00	0.00	0.00	0.00
1996	56.74	34.30	8.45	42.75	13.99	76.97	73.71	75.87	55.54	18.17	20.34	18.42	0.00	0.75	1.00	0.00	0.00	0.00	0.00
1997	62.00	38.00	9.23	47.23	14.76	78.34	79.13	79.27	60.29	18.84	18.98	16.07	0.00	0.75	1.00	0.00	0.00	0.00	0.00
1998	64.67	44.00	9.63	53.63	11.04	79.59	81.25	81.45	67.39	13.87	14.06	10.94	0.00	1.00	1.00	0.00	0.00	0.00	0.00
1999	70.10	47.20	10.44	57.64	12.46	80.65	86.92	86.95	71.47	15.45	15.48	13.40	0.00	1.00	1.00	0.00	0.00	0.00	0.00
2000	79.90	48.80	11.90	60.70	19.20	81.28	98.30	97.33	74.68	23.62	22.66	22.44	0.00	0.75	1.00	0.00	0.00	0.00	0.00
2001	75.80	45.80	11.29	57.09	18.71	82.29	92.11	90.35	69.38	22.74	20.97	19.52	0.00	0.75	1.00	0.00	0.00	0.00	0.00
2002	73.30	45.80	10.92	56.72	16.58	83.32	87.97	89.03	68.07	19.90	20.96	19.51	0.00	0.75	1.00	0.00	0.00	0.00	0.00
2003	76.00	45.80	11.32	57.12	18.88	84.46	89.99	89.10	67.63	22.36	21.46	20.38	0.00	0.75	1.00	0.00	0.00	0.00	0.00
2004	80.20	47.10	11.94	59.04	21.16	85.59	93.70	93.92	68.98	24.72	24.94	23.00	0.00	0.50	1.00	0.00	0.00	0.00	0.00
2005	86.70	47.10	12.91	60.01	26.69	87.35	99.26	98.96	68.71	30.55	30.26	31.89	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2006	91.30	47.72	13.60	61.32	29.98	89.39	102.14	101.89	68.60	33.54	33.29	37.14	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2007	94.40	49.95	14.06	64.01	30.39	91.46	103.21	103.62	69.99	33.23	33.64	37.75	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2008	107.10	50.40	15.95	66.35	40.75	94.77	113.02	113.15	70.02	43.00	43.14	54.22	0.00	0.00	0.00	0.00	1.00	0.00	0.00
2009	99.30	54.45	12.95	67.40	31.90	96.82	102.56	102.56	69.62	32.95	32.95	40.48	0.00	0.00	0.00	0.00	1.00	1.00	0.00
2010	116.90	57.15	17.41	74.56	42.34	100.00	116.90	117.39	74.56	42.34	42.83	50.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	133.89	58.15	22.32	80.47	53.43	104.48	128.15	127.89	77.01	51.13	50.88	64.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	136.12	57.95	22.69	80.64	55.48	107.43	126.70	125.90	75.06	51.65	50.85	64.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	134.69	57.95	22.45	80.40	54.29	110.18	122.25	122.38	72.97	49.28	49.41	61.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	127.30	57.95	21.22	79.17	48.14	111.79	113.88	114.91	70.82	43.06	44.09	52.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	111.09	57.95	18.52	76.47	34.63	111.84	99.33	99.03	68.37	30.96	30.66	29.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	109.56	57.95	18.26	76.21	33.35	112.56	97.34	97.19	67.71	29.63	29.48	26.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	117.32	57.95	19.55	77.50	39.82	115.44	101.63	101.42	67.14	34.49	34.28	35.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	125.67	57.95	20.94	78.89	46.77	118.18	106.34	106.41	66.76	39.58	39.65	44.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B.5 Canada

CY	c/l petrol	c/l excise	c/l provinces	c/l VAT	c/l tax	c/l energy	Cpi	2010c/l petrol	2010c/l predicted	2010c/l tax	2010c/l energy	2010c/l predicted	2010$/b landed oil	dum 0910	dum 9106	dum 6582	dum switch	dum 8490
1965	9.26	0.69	4.13	0.37	5.19	4.07	14.44	64.13	65.59	35.95	28.18	29.64	24.64	0.00	0.00	0.45	0.00	0.00
1966	9.62	0.74	4.14	0.38	5.26	4.36	14.99	64.19	64.33	35.11	29.08	29.22	23.72	0.00	0.00	0.45	0.00	0.00
1967	9.86	0.77	4.14	0.39	5.30	4.56	15.53	63.51	63.03	34.16	29.35	28.87	22.93	0.00	0.00	0.45	0.00	0.00
1968	10.15	0.76	4.55	0.44	5.74	4.40	16.16	62.80	64.01	35.56	27.25	28.45	22.01	0.00	0.00	0.45	0.00	0.00
1969	10.51	0.78	4.70	0.47	5.96	4.55	16.89	62.19	63.27	35.26	26.92	28.01	21.03	0.00	0.00	0.45	0.00	0.00
1970	10.80	0.82	4.72	0.49	6.03	4.76	17.46	61.84	62.12	34.56	27.29	27.57	20.05	0.00	0.00	0.45	0.00	0.00
1971	11.18	0.97	3.97	0.43	5.37	5.81	17.93	62.34	61.59	29.94	32.41	31.65	20.05	0.00	0.00	0.45	-0.60	0.00
1972	11.31	0.98	4.04	0.44	5.46	5.85	18.83	60.07	60.05	28.99	31.08	31.06	18.72	0.00	0.00	0.45	-0.60	0.00
1973	12.07	1.08	4.05	0.47	5.60	6.47	20.23	59.64	58.91	27.67	31.97	31.24	19.13	0.00	0.00	0.45	-0.60	0.00
1974	14.03	1.36	3.94	0.53	5.84	8.19	22.46	62.46	61.83	26.00	36.47	35.84	53.47	0.00	0.00	0.45	1.00	0.00
1975	15.86	1.61	3.94	0.60	6.15	9.71	24.86	63.81	63.26	24.75	39.06	38.51	51.85	0.00	0.00	0.45	0.50	0.00
1976	17.74	1.86	3.97	0.68	6.51	11.23	26.73	66.37	65.05	24.36	42.01	40.69	49.13	0.00	0.00	0.45	0.00	0.00
1977	19.40	2.07	4.05	0.76	6.88	12.52	28.86	67.20	66.24	23.84	43.36	42.40	52.91	0.00	0.00	0.45	0.00	0.00
1978	20.25	2.21	3.88	0.76	6.85	13.40	31.45	64.39	63.77	21.78	42.62	41.99	52.00	0.00	0.00	0.45	0.00	0.00
1979	23.61	2.65	3.95	0.90	7.50	16.10	34.33	68.76	68.19	21.85	46.91	46.34	73.12	0.00	0.00	0.70	0.00	0.00
1980	28.38	3.27	4.15	1.13	8.56	19.82	37.81	75.06	76.91	22.63	52.43	54.27	104.50	0.00	0.00	1.00	0.00	0.00
1981	38.57	4.45	5.58	2.04	12.07	26.50	42.52	90.71	90.13	28.39	62.32	61.74	102.66	0.00	0.00	0.60	0.00	0.00
1982	46.54	5.17	8.21	3.54	16.92	29.62	47.10	98.80	97.83	35.92	62.88	61.91	86.96	0.00	0.00	0.25	0.00	0.00
1983	49.11	5.44	8.80	3.98	18.23	30.88	49.86	98.49	96.70	36.56	61.93	60.14	71.55	0.00	0.00	0.00	0.00	0.00
1984	51.30	5.81	8.30	3.94	18.05	33.25	52.01	98.64	98.10	34.70	63.94	63.40	71.01	0.00	0.00	0.00	0.00	0.50
1985	54.21	6.15	8.63	4.32	19.11	35.10	54.07	100.25	100.59	35.34	64.92	65.25	67.35	0.00	0.00	0.00	0.00	1.00
1986	48.38	5.35	8.71	3.89	17.96	30.42	56.34	85.87	83.48	31.87	53.99	51.60	37.12	0.00	0.00	0.00	0.00	1.00
1987	50.54	5.60	9.08	4.22	18.90	31.64	58.79	85.97	86.55	32.15	53.82	54.40	43.30	0.00	0.00	0.00	0.00	1.00
1988	49.83	5.42	9.68	4.41	19.52	30.32	61.16	81.48	81.26	31.91	49.57	49.36	32.14	0.00	0.00	0.00	0.00	1.00
1989	52.11	5.65	10.26	4.86	20.77	31.34	64.21	81.16	81.80	32.35	48.81	49.45	36.21	0.00	0.00	0.00	0.00	0.75
1990	57.10	6.19	11.26	5.80	23.24	33.86	67.28	84.88	86.85	34.55	50.33	52.30	42.54	0.00	0.00	0.00	0.00	0.75
1991	56.89	8.50	11.60	8.69	28.79	28.11	71.06	80.06	78.96	40.51	39.55	38.46	34.73	0.00	0.35	0.00	0.00	0.00
1992	54.86	8.50	11.30	8.74	28.54	26.32	72.12	76.07	75.10	39.58	36.49	35.52	34.49	0.00	0.55	0.00	0.00	0.00
1993	54.23	8.50	14.00	9.14	31.64	22.60	73.47	73.82	73.22	43.06	30.75	30.15	32.36	0.00	0.85	0.00	0.00	0.00
1994	53.60	8.50	14.30	9.16	31.96	21.65	73.59	72.84	71.93	43.42	29.41	28.51	31.92	0.00	0.95	0.00	0.00	0.00
1995	55.70	10.00	14.40	9.51	33.91	21.80	75.17	74.10	73.67	45.11	29.00	28.56	33.65	0.00	1.00	0.00	0.00	0.00
1996	58.37	10.00	14.50	9.97	34.47	23.90	76.35	76.44	76.35	45.15	31.30	31.21	39.50	0.00	1.00	0.00	0.00	0.00
1997	59.70	10.00	14.60	10.11	34.71	24.99	77.59	76.94	76.16	44.74	32.20	31.42	36.78	0.00	0.90	0.00	0.00	0.00
1998	54.51	10.00	15.20	9.23	34.43	20.08	78.36	69.56	71.08	43.94	25.63	27.15	27.30	0.00	0.90	0.00	0.00	0.00
1999	59.00	10.00	15.20	9.99	35.19	23.81	79.72	74.00	73.66	44.14	29.87	29.53	32.58	0.00	0.90	0.00	0.00	0.00
2000	72.80	10.00	15.50	12.32	37.82	34.98	81.89	88.90	89.39	46.19	42.71	43.20	50.05	0.00	0.50	0.00	0.00	0.00
2001	70.40	10.00	15.60	11.92	37.52	32.88	83.96	83.85	84.55	44.68	39.17	39.86	42.65	0.00	0.50	0.00	0.00	0.00
2002	70.30	10.00	15.40	11.90	37.30	33.00	85.85	81.88	84.15	43.44	38.44	40.71	44.53	0.00	0.50	0.00	0.00	0.00
2003	73.70	10.00	16.10	12.47	38.57	35.13	88.22	83.54	84.47	43.72	39.82	40.75	44.63	0.00	0.50	0.00	0.00	0.00
2004	81.30	10.00	16.50	13.76	40.26	41.04	89.86	90.47	91.14	44.80	45.68	46.34	52.19	0.00	0.35	0.00	0.00	0.00
2005	92.40	10.00	16.60	15.63	42.23	50.17	91.85	100.60	101.08	45.97	54.62	55.11	66.81	0.00	0.20	0.00	0.00	0.00
2006	97.70	10.00	17.00	15.83	42.83	54.87	93.69	104.28	104.05	45.72	58.56	58.33	73.95	0.00	0.20	0.00	0.00	0.00
2007	101.90	10.00	16.60	16.23	42.83	59.07	95.69	106.49	106.16	44.76	61.73	61.40	77.54	0.00	0.10	0.00	0.00	0.00
2008	115.20	10.00	16.90	16.56	43.46	71.74	97.96	117.60	118.64	44.36	73.24	74.28	102.88	0.00	0.00	0.00	0.00	0.00
2009	94.90	10.00	16.60	13.67	40.27	54.63	98.25	96.59	97.19	40.99	55.60	56.20	71.04	1.00	0.00	0.00	0.00	0.00
2010	103.10	10.00	17.50	14.85	42.35	60.75	100.00	103.10	102.50	42.35	60.75	60.15	79.79	1.00	0.00	0.00	0.00	0.00
2011	122.68	10.00	18.50	17.87	46.37	76.31	102.91	119.21	119.45	45.06	74.15	74.40	103.14	0.00	0.00	0.00	0.00	0.00
2012	126.38	10.00	19.30	18.61	47.91	78.47	104.47	120.97	120.94	45.86	75.11	75.09	104.66	0.00	0.00	0.00	0.00	0.00
2013	126.77	10.00	20.10	18.75	48.85	77.92	105.45	120.22	121.04	46.32	73.90	74.72	103.86	0.00	0.00	0.00	0.00	0.00
2014	127.35	10.00	20.90	18.82	49.71	77.64	107.46	118.51	118.82	46.26	72.24	72.56	99.06	0.00	0.00	0.00	0.00	0.00
2015	106.12	10.00	21.70	15.67	47.37	58.75	108.67	97.65	97.92	43.59	54.06	54.33	58.67	0.00	0.00	0.00	0.00	0.00
2016	100.55	10.00	22.50	14.86	47.36	53.19	110.22	91.22	92.85	42.96	48.26	49.88	48.82	0.00	0.00	0.00	0.00	0.00
2017	111.49	10.00	23.30	16.49	49.78	61.71	112.54	99.06	99.42	44.23	54.83	55.18	60.56	0.00	0.00	0.00	0.00	0.00
2018	128.26	10.00	23.30	18.96	52.26	76.00	115.12	111.41	109.06	45.40	66.02	63.66	79.34	0.00	0.00	0.00	0.00	0.00

B.6 China

CY	yuan/l petrol	yuan/l excise	yuan/l VAT	yuan/l tax	yuan/l energy	Cpi	2010 y/l petrol	2010 y/l predicted	2010 y/l tax	2010 y/l energy	2010 y/l predicted	2010 y/b landed oil	dum 9504	dum 0910	dum 06	dum 9516
1995	2.25	0.20	0.33	0.53	1.73	74.08	3.04	2.84	0.71	2.33	2.13	207.76	0.00	0.00	0.00	1.00
1996	2.33	0.20	0.34	0.54	1.79	80.24	2.90	2.94	0.67	2.23	2.27	229.20	0.00	0.00	0.00	1.00
1997	2.32	0.20	0.34	0.54	1.78	82.47	2.81	2.77	0.65	2.16	2.12	207.17	0.00	0.00	0.00	1.00
1998	2.32	0.20	0.34	0.54	1.78	81.84	2.83	3.07	0.66	2.18	2.41	145.88	1.00	0.00	0.00	1.00
1999	2.48	0.20	0.36	0.56	1.92	80.69	3.08	3.33	0.70	2.38	2.63	179.33	1.00	0.00	0.00	1.00
2000	3.31	0.20	0.48	0.68	2.63	80.97	4.09	4.17	0.84	3.25	3.32	282.18	1.00	0.00	0.00	1.00
2001	3.31	0.20	0.48	0.68	2.63	81.55	4.06	3.84	0.84	3.22	3.01	234.66	1.00	0.00	0.00	1.00
2002	3.48	0.20	0.51	0.71	2.77	80.96	4.29	3.97	0.87	3.42	3.10	249.05	1.00	0.00	0.00	1.00
2003	3.48	0.20	0.51	0.71	2.77	81.87	4.25	4.20	0.86	3.38	3.34	284.09	1.00	0.00	0.00	1.00
2004	3.97	0.20	0.58	0.78	3.20	85.00	4.67	4.70	0.91	3.76	3.79	351.03	1.00	0.00	0.00	1.00
2005	4.10	0.20	0.60	0.80	3.30	86.51	4.73	4.87	0.92	3.82	3.95	479.51	0.00	0.00	0.00	1.00
2006	5.50	0.20	0.80	1.00	4.50	87.94	6.25	6.25	1.14	5.12	5.12	553.69	0.00	0.00	1.00	1.00
2007	5.25	0.20	0.76	0.96	4.28	92.17	5.69	5.60	1.04	4.65	4.56	569.91	0.00	0.00	0.00	1.00
2008	6.00	0.20	0.87	1.07	4.93	97.63	6.15	6.34	1.10	5.05	5.24	671.89	0.00	0.00	0.00	1.00
2009	6.00	1.00	0.87	1.87	4.13	96.92	6.19	6.13	1.93	4.26	4.20	430.36	0.00	1.00	0.00	1.00
2010	6.80	1.05	0.99	2.03	4.77	100.00	6.80	6.86	2.03	4.77	4.83	524.30	0.00	1.00	0.00	1.00
2011	7.60	1.09	1.10	2.20	5.40	105.55	7.20	7.23	2.08	5.12	5.15	657.51	0.00	0.00	0.00	1.00
2012	7.90	1.14	1.15	2.29	5.61	108.32	7.29	7.13	2.11	5.18	5.02	638.10	0.00	0.00	0.00	1.00
2013	7.60	1.19	1.10	2.29	5.31	111.16	6.84	6.75	2.06	4.78	4.69	590.22	0.00	0.00	0.00	1.00
2014	7.19	1.40	1.04	2.44	4.74	113.29	6.34	6.39	2.16	4.19	4.23	521.56	0.00	0.00	0.00	1.00
2015	4.98	1.52	0.72	2.24	2.74	114.92	4.34	4.49	1.95	2.38	2.53	268.37	0.00	0.00	0.00	1.00
2016	4.92	1.52	0.72	2.24	2.69	117.22	4.20	4.19	1.91	2.29	2.28	230.54	0.00	0.00	0.00	1.00
2017	4.87	1.52	0.71	2.23	2.64	119.09	4.09	4.09	1.87	2.22	2.22	298	0.00	0.00	0.00	0.00
2018	5.70	1.52	0.79	2.31	3.39	121.47	4.69	4.69	1.90	2.79	2.79	382	0.00	0.00	0.00	0.00

B.7 Denmark

CY	Krone/l petrol	Krone/l excise	Krone/l VAT	Krone/l tax	Krone/l energy	Cpi	2010 K/l petrol	2010 K/l predicted	2010 K/l tax	2010 K/l energy	2010 K/l predicted	2010 K/b landed oil	dum 7388	dum 8909	dum 6572
1965	0.99	0.40	0.15	0.55	0.44	10.78	9.23	9.26	5.11	4.12	4.15	211.48	0.00	0.00	1.00
1966	0.99	0.40	0.15	0.55	0.44	11.37	8.75	8.93	4.85	3.90	4.08	200.55	0.00	0.00	1.00
1967	1.15	0.46	0.18	0.64	0.51	12.24	9.38	9.20	5.19	4.18	4.00	187.56	0.00	0.00	1.00
1968	1.25	0.52	0.19	0.71	0.54	13.22	9.47	9.40	5.40	4.07	4.00	187.22	0.00	0.00	1.00
1969	1.28	0.57	0.20	0.76	0.52	13.68	9.39	9.55	5.59	3.80	3.96	180.91	0.00	0.00	1.00
1970	1.37	0.56	0.21	0.77	0.60	14.57	9.42	9.21	5.29	4.12	3.91	172.42	0.00	0.00	1.00
1971	1.44	0.61	0.22	0.83	0.61	15.43	9.33	9.30	5.40	3.93	3.90	171.15	0.00	0.00	1.00
1972	1.43	0.61	0.22	0.83	0.60	16.44	8.67	8.80	5.02	3.65	3.78	150.49	0.00	0.00	1.00
1973	1.67	0.60	0.25	0.86	0.81	17.97	9.29	9.44	4.76	4.53	4.68	130.29	1.00	0.00	0.00
1974	2.31	0.68	0.35	1.03	1.28	20.71	11.13	10.36	4.97	6.16	5.39	361.33	0.65	0.00	0.00
1975	2.02	0.58	0.31	0.88	1.13	22.70	8.88	9.04	3.89	4.99	5.15	320.67	0.65	0.00	0.00
1976	2.73	1.01	0.42	1.42	1.31	24.75	11.05	10.93	5.75	5.30	5.18	325.34	0.65	0.00	0.00
1977	2.83	1.04	0.43	1.48	1.36	27.45	10.32	10.48	5.37	4.94	5.11	314.02	0.65	0.00	0.00
1978	2.76	1.04	0.42	1.46	1.30	30.26	9.11	9.61	4.82	4.29	4.79	261.36	0.65	0.00	0.00
1979	3.38	1.17	0.56	1.73	1.65	33.16	10.20	10.49	5.23	4.97	5.26	339.95	0.65	0.00	0.00
1980	4.54	1.28	0.79	2.06	2.47	37.25	12.18	11.83	5.54	6.64	6.29	511.30	0.65	0.00	0.00
1981	5.31	1.37	0.96	2.33	2.98	41.63	12.75	12.54	5.59	7.16	6.96	623.04	0.65	0.00	0.00
1982	5.93	1.82	1.07	2.89	3.04	45.84	12.94	13.15	6.31	6.63	6.84	603.46	0.65	0.00	0.00
1983	6.06	1.66	1.09	2.76	3.31	49.01	12.37	12.09	5.62	6.75	6.46	540.21	0.65	0.00	0.00
1984	5.99	1.59	1.08	2.67	3.31	52.09	11.49	11.75	5.13	6.36	6.62	567.02	0.65	0.00	0.00
1985	6.14	1.53	1.11	2.64	3.50	54.53	11.25	11.17	4.84	6.41	6.33	518.27	0.65	0.00	0.00
1986	6.42	2.77	1.16	3.93	2.49	56.53	11.36	11.47	6.95	4.41	4.52	215.39	0.65	0.00	0.00
1987	6.64	2.75	1.20	3.95	2.69	58.81	11.28	11.28	6.72	4.57	4.57	223.33	0.65	0.00	0.00
1988	6.53	2.65	1.18	3.83	2.70	61.47	10.62	10.51	6.23	4.39	4.28	174.87	0.65	0.00	0.00
1989	6.85	3.90	1.24	5.14	1.71	64.41	10.63	10.86	7.98	2.66	2.88	222.91	0.00	1.00	0.00
1990	5.50	2.45	0.99	3.44	2.06	66.11	8.32	8.13	5.21	3.12	2.92	229.63	0.00	1.00	0.00
1991	5.24	2.25	0.94	3.19	2.04	67.69	7.74	7.48	4.72	3.02	2.76	203.54	0.00	1.00	0.00
1992	5.04	2.25	1.01	3.26	1.78	69.11	7.29	7.34	4.71	2.58	2.62	179.74	0.00	1.00	0.00
1993	5.21	2.25	1.04	3.29	1.92	69.98	7.45	7.27	4.71	2.74	2.57	170.76	0.00	1.00	0.00
1994	5.38	2.50	1.08	3.58	1.80	71.37	7.54	7.47	5.01	2.53	2.46	153.28	0.00	1.00	0.00
1995	5.84	2.97	1.17	4.14	1.70	72.86	8.01	8.07	5.68	2.33	2.39	141.71	0.00	1.00	0.00
1996	6.38	3.27	1.28	4.55	1.83	74.41	8.57	8.69	6.11	2.46	2.58	172.38	0.00	1.00	0.00
1997	6.58	3.32	1.32	4.64	1.95	76.04	8.66	8.72	6.10	2.56	2.62	179.02	0.00	1.00	0.00
1998	6.37	3.37	1.27	4.64	1.72	77.44	8.22	8.29	6.00	2.22	2.29	124.78	0.00	1.00	0.00
1999	7.26	3.77	1.45	5.22	2.04	79.37	9.15	9.05	6.58	2.57	2.47	153.64	0.00	1.00	0.00
2000	8.30	3.87	1.66	5.53	2.77	81.68	10.16	9.95	6.77	3.39	3.18	273.14	0.00	1.00	0.00
2001	8.15	3.97	1.63	5.60	2.55	83.60	9.75	9.62	6.70	3.05	2.92	230.18	0.00	1.00	0.00
2002	8.12	4.07	1.62	5.69	2.43	85.62	9.48	9.54	6.65	2.83	2.89	224.60	0.00	1.00	0.00
2003	8.17	4.07	1.63	5.70	2.47	87.41	9.35	9.34	6.53	2.82	2.81	211.76	0.00	1.00	0.00
2004	8.34	4.07	1.67	5.74	2.60	88.43	9.43	9.50	6.49	2.94	3.01	244.24	0.00	1.00	0.00
2005	8.97	4.03	1.79	5.82	3.15	90.03	9.96	10.03	6.47	3.49	3.56	337.32	0.00	1.00	0.00
2006	9.52	4.03	1.90	5.93	3.59	91.73	10.38	10.39	6.47	3.91	3.92	395.98	0.00	1.00	0.00
2007	9.68	4.03	1.94	5.97	3.71	93.30	10.37	10.35	6.39	3.98	3.96	403.04	0.00	1.00	0.00
2008	10.21	4.10	2.04	6.15	4.07	96.47	10.58	10.90	6.37	4.21	4.53	499.12	0.00	1.00	0.00
2009	9.47	4.19	1.89	6.08	3.39	97.75	9.69	9.77	6.22	3.47	3.55	334.86	0.00	1.00	0.00
2010	10.69	4.26	2.14	6.40	4.29	100.00	10.69	10.99	6.40	4.29	4.59	435.58	0.00	0.00	0.00
2011	12.07	4.25	2.41	6.67	5.40	102.76	11.74	11.83	6.49	5.26	5.34	560.70	0.00	0.00	0.00
2012	12.74	4.33	2.55	6.88	5.86	105.22	12.10	12.13	6.54	5.57	5.59	603.26	0.00	0.00	0.00
2013	12.53	4.33	2.51	6.84	5.69	106.05	11.81	11.79	6.45	5.37	5.34	561.10	0.00	0.00	0.00
2014	12.21	4.49	2.44	6.93	5.28	106.65	11.45	11.52	6.50	4.95	5.02	506.78	0.00	0.00	0.00
2015	11.15	4.57	2.23	6.80	4.36	107.13	10.41	10.19	6.35	4.07	3.84	310.91	0.00	0.00	0.00
2016	10.49	4.60	2.10	6.70	3.79	107.40	9.77	9.75	6.24	3.53	3.51	255.04	0.00	0.00	0.00
2017	11.13	4.59	2.23	6.82	4.31	108.64	10.24	10.17	6.28	3.96	3.89	318.87	0.00	0.00	0.00
2018	11.88	4.62	2.38	6.99	4.88	109.56	10.84	10.79	6.38	4.46	4.40	404.21	0.00	0.00	0.00

B.8 Finland

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 7391	dum 9298	dum 6516
1965	0.0936	0.0468	0.0150	0.0618	0.0318	10.50	0.8922	0.9001	0.5888	0.3033	0.3112	16.92	0.00	0.00	1.00
1966	0.1028	0.0514	0.0165	0.0678	0.0350	10.90	0.9428	0.9300	0.6223	0.3206	0.3077	16.29	0.00	0.00	1.00
1967	0.0923	0.0461	0.0148	0.0609	0.0314	11.49	0.8030	0.8398	0.5300	0.2730	0.3098	16.67	0.00	0.00	1.00
1968	0.1123	0.0561	0.0180	0.0741	0.0382	12.55	0.8953	0.9114	0.5909	0.3044	0.3205	18.58	0.00	0.00	1.00
1969	0.1123	0.0516	0.0180	0.0696	0.0427	12.82	0.8759	0.8614	0.5431	0.3329	0.3183	18.18	0.00	0.00	1.00
1970	0.1137	0.0523	0.0182	0.0705	0.0432	13.17	0.8633	0.8523	0.5352	0.3281	0.3171	17.96	0.00	0.00	1.00
1971	0.1295	0.0595	0.0208	0.0803	0.0492	14.03	0.9232	0.8889	0.5724	0.3508	0.3165	17.86	0.00	0.00	1.00
1972	0.1205	0.0542	0.0193	0.0735	0.0470	14.96	0.8054	0.8007	0.4913	0.3141	0.3094	16.59	0.00	0.00	1.00
1973	0.1542	0.0586	0.0247	0.0833	0.0710	16.57	0.9308	0.9210	0.5027	0.4282	0.4184	15.01	1.00	0.00	1.00
1974	0.2091	0.0606	0.0335	0.0941	0.1150	19.38	1.0790	1.0446	0.4855	0.5934	0.5590	40.22	1.00	0.00	1.00
1975	0.1954	0.0507	0.0313	0.0821	0.1134	22.83	0.8562	0.8858	0.3596	0.4966	0.5262	34.34	1.00	0.00	1.00
1976	0.2790	0.0808	0.0447	0.1255	0.1534	26.10	1.0687	1.0006	0.4809	0.5878	0.5197	33.17	1.00	0.00	1.00
1977	0.2952	0.0914	0.0473	0.1387	0.1565	29.18	1.0117	0.9962	0.4755	0.5362	0.5207	33.35	1.00	0.00	1.00
1978	0.3352	0.1138	0.0538	0.1676	0.1676	31.46	1.0655	1.0435	0.5328	0.5328	0.5108	31.57	1.00	0.00	1.00
1979	0.3610	0.1226	0.0579	0.1805	0.1805	33.80	1.0678	1.1003	0.5339	0.5339	0.5663	41.53	1.00	0.00	1.00
1980	0.4856	0.1649	0.0779	0.2428	0.2428	37.72	1.2872	1.2917	0.6436	0.6436	0.6481	56.19	1.00	0.00	1.00
1981	0.5596	0.1900	0.0897	0.2798	0.2798	41.99	1.3326	1.3521	0.6663	0.6663	0.6857	62.93	1.00	0.00	1.00
1982	0.5854	0.1988	0.0939	0.2927	0.2927	46.01	1.2721	1.2970	0.6361	0.6361	0.6610	58.50	1.00	0.00	1.00
1983	0.6202	0.2106	0.0995	0.3101	0.3101	49.86	1.2437	1.2599	0.6219	0.6219	0.6381	54.39	1.00	0.00	1.00
1984	0.6388	0.2170	0.1024	0.3194	0.3194	53.39	1.1966	1.2342	0.5983	0.5983	0.6359	54.00	1.00	0.00	1.00
1985	0.6494	0.1426	0.1041	0.2468	0.4026	56.16	1.1563	1.0502	0.4394	0.7169	0.6108	49.50	1.00	0.00	1.00
1986	0.5295	0.1851	0.0849	0.2700	0.2594	57.81	0.9159	0.9256	0.4671	0.4488	0.4585	22.20	1.00	0.00	1.00
1987	0.5456	0.1260	0.0875	0.2783	0.2673	60.19	0.9065	0.9285	0.4623	0.4442	0.4662	23.58	1.00	0.00	1.00
1988	0.5628	0.1500	0.0903	0.3095	0.2533	63.25	0.8898	0.9231	0.4894	0.4004	0.4337	17.76	1.00	0.00	1.00
1989	0.5933	0.1600	0.0968	0.3263	0.2670	67.42	0.8800	0.8770	0.4840	0.3960	0.3930	21.03	0.50	0.00	1.00
1990	0.6257	0.2150	0.1064	0.3566	0.2691	71.56	0.8743	0.8971	0.4984	0.3760	0.3987	22.04	0.50	0.00	1.00
1991	0.6419	0.2660	0.1127	0.3787	0.2632	74.65	0.8599	0.8926	0.5074	0.3526	0.3852	19.63	0.50	0.00	1.00
1992	0.5406	0.3000	0.0975	0.3460	0.1946	76.83	0.7037	0.7056	0.4504	0.2533	0.2552	20.18	0.00	1.00	1.00
1993	0.7239	0.3950	0.1305	0.5285	0.1955	78.51	0.9221	0.9416	0.6731	0.2490	0.2685	22.55	0.00	1.00	1.00
1994	0.7952	0.3890	0.1434	0.5726	0.2227	79.37	1.0020	0.9703	0.7214	0.2806	0.2489	19.04	0.00	1.00	1.00
1995	0.8098	0.4310	0.1460	0.6073	0.2024	79.99	1.0123	0.9963	0.7592	0.2531	0.2370	16.92	0.00	1.00	1.00
1996	0.8768	0.4980	0.1581	0.6664	0.2104	80.50	1.0893	1.0889	0.8278	0.2614	0.2611	21.23	0.00	1.00	1.00
1997	0.8605	0.4910	0.1552	0.6540	0.2065	81.46	1.0564	1.0687	0.8028	0.2535	0.2659	22.09	0.00	1.00	1.00
1998	0.8491	0.5200	0.1531	0.6708	0.1783	82.60	1.0280	1.0423	0.8121	0.2159	0.2302	15.69	0.00	1.00	1.00
1999	0.9001	0.5200	0.1623	0.6301	0.2700	83.56	1.0773	1.0805	0.7541	0.3232	0.3264	19.64	0.00	0.00	1.00
2000	1.1350	0.5200	0.2047	0.7247	0.4103	86.10	1.3183	1.2526	0.8417	0.4766	0.4110	34.79	0.00	0.00	1.00
2001	1.1090	0.5200	0.2000	0.7200	0.3890	88.32	1.2557	1.1953	0.8152	0.4405	0.3801	29.25	0.00	0.00	1.00
2002	1.0750	0.5600	0.1939	0.7539	0.3211	89.71	1.1984	1.2182	0.8404	0.3580	0.3778	28.85	0.00	0.00	1.00
2003	1.0960	0.5970	0.1976	0.7946	0.3014	90.49	1.2111	1.2485	0.8781	0.3330	0.3703	27.51	0.00	0.00	1.00
2004	1.1410	0.5970	0.2058	0.8028	0.3382	90.66	1.2585	1.2809	0.8854	0.3731	0.3955	32.02	0.00	0.00	1.00
2005	1.2170	0.5880	0.2195	0.8075	0.4095	91.23	1.3340	1.3510	0.8851	0.4489	0.4659	44.64	0.00	0.00	1.00
2006	1.2874	0.5880	0.2322	0.8202	0.4672	92.66	1.3894	1.3952	0.8851	0.5043	0.5100	52.55	0.00	0.00	1.00
2007	1.2984	0.5880	0.2341	0.8221	0.4762	94.98	1.3669	1.3789	0.8656	0.5014	0.5133	53.14	0.00	0.00	1.00
2008	1.4456	0.6110	0.2607	0.8717	0.5739	98.85	1.4625	1.4626	0.8819	0.5806	0.5808	65.23	0.00	0.00	1.00
2009	1.2772	0.6110	0.2303	0.8413	0.4359	98.85	1.2922	1.3161	0.8511	0.4410	0.4649	44.47	0.00	0.00	1.00
2010	1.4260	0.6110	0.2619	0.8729	0.5531	100.00	1.4260	1.4160	0.8729	0.5531	0.5431	58.48	0.00	0.00	1.00
2011	1.5598	0.6200	0.2917	0.9117	0.6481	103.42	1.5083	1.5131	0.8815	0.6267	0.6316	74.33	0.00	0.00	1.00
2012	1.6707	0.6436	0.3124	0.9560	0.7147	106.32	1.5714	1.5607	0.8992	0.6722	0.6615	79.70	0.00	0.00	1.00
2013	1.6425	0.6436	0.3179	0.9615	0.6810	107.89	1.5224	1.5198	0.8912	0.6312	0.6286	73.80	0.00	0.00	1.00
2014	1.6073	0.6661	0.3111	0.9772	0.6301	109.02	1.4744	1.4860	0.8964	0.5780	0.5897	66.83	0.00	0.00	1.00
2015	1.4681	0.6745	0.2841	0.9586	0.5094	108.79	1.3495	1.3281	0.8812	0.4683	0.4469	41.23	0.00	0.00	1.00
2016	1.3808	0.6745	0.2673	0.9418	0.4391	109.18	1.2648	1.2679	0.8626	0.4022	0.4054	33.79	0.00	0.00	1.00
2017	1.4643	0.6957	0.2834	0.9791	0.4852	110.00	1.3312	1.3278	0.8901	0.4411	0.4377	42.34	0.00	0.00	0.00
2018	1.5463	0.6957	0.2993	0.9950	0.5513	111.02	1.3928	1.3961	0.8962	0.4966	0.4999	53.50	0.00	0.00	0.00

B.9 France

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 0509	dum 8604	dum 0001	dum 9304	dum 7479	dum 6570
1965	0.1428	0.0873	0.0214	0.1087	0.0341	12.52	1.1411	1.1459	0.8683	0.2727	0.2776	19.82	0.00	0.00	0.00	0.00	0.00	1.00
1966	0.1443	0.0882	0.0216	0.1098	0.0345	12.84	1.1235	1.1307	0.8550	0.2685	0.2758	19.51	0.00	0.00	0.00	0.00	0.00	1.00
1967	0.1461	0.0870	0.0219	0.1088	0.0372	13.20	1.1063	1.0959	0.8242	0.2821	0.2718	18.82	0.00	0.00	0.00	0.00	0.00	1.00
1968	0.1548	0.0936	0.0232	0.1167	0.0381	13.80	1.1216	1.1135	0.8457	0.2759	0.2679	18.14	0.00	0.00	0.00	0.00	0.00	1.00
1969	0.1628	0.0995	0.0244	0.1239	0.0389	14.64	1.1123	1.1206	0.8465	0.2658	0.2741	19.22	0.00	0.00	0.00	0.00	0.00	1.00
1970	0.1634	0.0971	0.0245	0.1216	0.0418	15.41	1.0603	1.0582	0.7889	0.2714	0.2694	18.40	0.00	0.00	0.00	0.00	0.00	1.00
1971	0.1834	0.1051	0.0274	0.1326	0.0508	16.24	1.1287	1.1298	0.8161	0.3127	0.3138	18.52	0.00	0.00	0.00	0.00	0.00	0.00
1972	0.1678	0.0952	0.0251	0.1203	0.0475	17.23	0.9737	0.9967	0.6981	0.2756	0.2986	15.89	0.00	0.00	0.00	0.00	0.00	0.00
1973	0.1794	0.0950	0.0269	0.1218	0.0576	18.50	0.9697	0.9473	0.6584	0.3113	0.2889	14.22	0.00	0.00	0.00	0.00	0.00	0.00
1974	0.2686	0.1202	0.0402	0.1604	0.1082	21.03	1.2775	1.2678	0.7627	0.5148	0.5051	42.86	0.00	0.00	0.00	0.00	1.00	0.00
1975	0.2523	0.1066	0.0378	0.1443	0.1080	23.48	1.0743	1.0756	0.6145	0.4598	0.4611	35.25	0.00	0.00	0.00	0.00	1.00	0.00
1976	0.3042	0.1391	0.0455	0.1847	0.1196	25.74	1.1818	1.1926	0.7174	0.4644	0.4752	37.70	0.00	0.00	0.00	0.00	1.00	0.00
1977	0.3444	0.1568	0.0515	0.2084	0.1360	28.19	1.2219	1.2171	0.7392	0.4826	0.4779	38.16	0.00	0.00	0.00	0.00	1.00	0.00
1978	0.4204	0.2263	0.0629	0.2892	0.1312	30.80	1.3650	1.3816	0.9391	0.4259	0.4425	32.04	0.00	0.00	0.00	0.00	1.00	0.00
1979	0.4623	0.2202	0.0692	0.2894	0.1729	34.07	1.3567	1.3424	0.8493	0.5074	0.4931	40.79	0.00	0.00	0.00	0.00	1.00	0.00
1980	0.4947	0.2114	0.0740	0.2855	0.2093	38.70	1.2785	1.2698	0.7377	0.5408	0.5321	56.25	0.00	0.00	0.00	0.00	0.00	0.00
1981	0.5574	0.2025	0.0834	0.2860	0.2715	43.85	1.2712	1.2568	0.6521	0.6191	0.6046	68.80	0.00	0.00	0.00	0.00	0.00	0.00
1982	0.6613	0.2357	0.1009	0.3366	0.3247	49.10	1.3467	1.2841	0.6855	0.6613	0.5986	67.75	0.00	0.00	0.00	0.00	0.00	0.00
1983	0.6466	0.2484	0.1014	0.3498	0.2968	53.75	1.2030	1.2196	0.6508	0.5522	0.5687	62.58	0.00	0.00	0.00	0.00	0.00	0.00
1984	0.7311	0.3160	0.1147	0.4306	0.3005	57.87	1.2634	1.3307	0.7442	0.5193	0.5865	65.66	0.00	0.00	0.00	0.00	0.00	0.00
1985	0.9245	0.4319	0.1450	0.5769	0.3476	61.24	1.5096	1.4937	0.9420	0.5676	0.5517	59.65	0.00	0.00	0.00	0.00	0.00	0.00
1986	0.7343	0.4392	0.1152	0.5544	0.1799	62.80	1.1692	1.1719	0.8828	0.2865	0.2892	25.30	0.00	1.00	0.00	0.00	0.00	0.00
1987	0.7807	0.4670	0.1224	0.5894	0.1913	64.86	1.2036	1.2084	0.9087	0.2949	0.2997	27.12	0.00	1.00	0.00	0.00	0.00	0.00
1988	0.7058	0.4222	0.1107	0.5329	0.1729	66.62	1.0595	1.0687	0.7999	0.2596	0.2687	21.77	0.00	1.00	0.00	0.00	0.00	0.00
1989	0.8409	0.4828	0.1319	0.6147	0.2262	68.95	1.2197	1.1947	0.8916	0.3281	0.3031	27.71	0.00	1.00	0.00	0.00	0.00	0.00
1990	0.7440	0.4272	0.1167	0.5439	0.2001	71.17	1.0454	1.0725	0.7642	0.2812	0.3083	28.61	0.00	1.00	0.00	0.00	0.00	0.00
1991	0.7526	0.4125	0.1180	0.5306	0.2220	73.47	1.0244	1.0109	0.7222	0.3022	0.2887	25.22	0.00	1.00	0.00	0.00	0.00	0.00
1992	0.7295	0.4360	0.1144	0.5333	0.1962	75.23	0.9697	0.9793	0.7088	0.2608	0.2705	22.08	0.00	1.00	0.00	0.00	0.00	0.00
1993	0.7517	0.4668	0.1179	0.5847	0.1670	76.80	0.9789	0.9928	0.7614	0.2175	0.2314	20.72	0.00	1.00	0.00	0.35	0.00	0.00
1994	0.7697	0.5070	0.1207	0.6277	0.1420	78.07	0.9858	0.9921	0.8040	0.1818	0.1881	18.65	0.00	1.00	0.00	0.70	0.00	0.00
1995	0.7944	0.5490	0.1302	0.6792	0.1152	79.47	0.9997	1.0102	0.8546	0.1450	0.1556	17.65	0.00	1.00	0.00	1.00	0.00	0.00
1996	0.8559	0.5680	0.1462	0.7142	0.1417	81.06	1.0559	1.0577	0.8811	0.1749	0.1766	21.28	0.00	1.00	0.00	1.00	0.00	0.00
1997	0.8910	0.5770	0.1522	0.7292	0.1618	82.02	1.0862	1.0718	0.8890	0.1972	0.1828	22.36	0.00	1.00	0.00	1.00	0.00	0.00
1998	0.8542	0.5890	0.1459	0.7349	0.1193	82.55	1.0349	1.0347	0.8903	0.1445	0.1444	15.71	0.00	1.00	0.00	1.00	0.00	0.00
1999	0.8944	0.5890	0.1528	0.7418	0.1526	82.99	1.0777	1.0884	0.8938	0.1839	0.1946	19.77	0.00	1.00	0.00	0.70	0.00	0.00
2000	1.0900	0.5890	0.1862	0.7752	0.3148	84.40	1.2915	1.2916	0.9185	0.3730	0.3731	35.50	0.00	1.00	1.00	0.70	0.00	0.00
2001	1.0360	0.5840	0.1770	0.7610	0.2750	85.77	1.2078	1.2078	0.8872	0.3207	0.3206	30.12	0.00	1.00	0.50	0.45	0.00	0.00
2002	1.0140	0.5815	0.1732	0.7547	0.2593	87.42	1.1600	1.1372	0.8633	0.2966	0.2739	29.61	0.00	1.00	0.00	0.45	0.00	0.00
2003	1.0170	0.5890	0.1737	0.7627	0.2543	89.26	1.1394	1.1319	0.8545	0.2849	0.2774	27.89	0.00	1.00	0.00	0.30	0.00	0.00
2004	1.0610	0.5890	0.1739	0.7629	0.2981	91.17	1.1638	1.1504	0.8368	0.3270	0.3136	31.85	0.00	1.00	0.00	0.15	0.00	0.00
2005	1.1610	0.5890	0.1903	0.7793	0.3817	92.75	1.2518	1.2577	0.8402	0.4116	0.4175	43.90	1.00	0.00	0.00	0.00	0.00	0.00
2006	1.2370	0.5890	0.2027	0.7917	0.4453	94.31	1.3116	1.3017	0.8395	0.4721	0.4622	51.63	1.00	0.00	0.00	0.00	0.00	0.00
2007	1.2730	0.6020	0.2086	0.8106	0.4624	95.71	1.3300	1.3155	0.8469	0.4831	0.4686	52.73	1.00	0.00	0.00	0.00	0.00	0.00
2008	1.3560	0.6060	0.2222	0.8282	0.5278	98.41	1.3780	1.3842	0.8416	0.5363	0.5426	65.52	1.00	0.00	0.00	0.00	0.00	0.00
2009	1.2070	0.6060	0.1978	0.8038	0.4032	98.49	1.2255	1.2378	0.8161	0.4094	0.4217	44.63	1.00	0.00	0.00	0.00	0.00	0.00
2010	1.3440	0.6060	0.2203	0.8263	0.5177	100.00	1.3440	1.3728	0.8263	0.5177	0.5466	58.76	0.00	0.00	0.00	0.00	0.00	0.00
2011	1.4981	0.6110	0.2455	0.8565	0.6416	102.12	1.4671	1.4809	0.8388	0.6283	0.6422	75.28	0.00	0.00	0.00	0.00	0.00	0.00
2012	1.5664	0.6050	0.2567	0.8617	0.7047	104.11	1.5045	1.5052	0.8276	0.6769	0.6775	81.39	0.00	0.00	0.00	0.00	0.00	0.00
2013	1.5372	0.6130	0.2519	0.8649	0.6723	105.01	1.4638	1.4690	0.8236	0.6402	0.6453	75.83	0.00	0.00	0.00	0.00	0.00	0.00
2014	1.4919	0.6130	0.2487	0.8617	0.6303	105.55	1.4135	1.4223	0.8164	0.5971	0.6060	69.02	0.00	0.00	0.00	0.00	0.00	0.00
2015	1.3564	0.6310	0.2261	0.8571	0.4993	105.59	1.2846	1.2641	0.8117	0.4729	0.4524	42.48	0.00	0.00	0.00	0.00	0.00	0.00
2016	1.3012	0.6480	0.2169	0.8649	0.4363	105.78	1.2301	1.2260	0.8176	0.4125	0.4084	34.87	0.00	0.00	0.00	0.00	0.00	0.00
2017	1.3754	0.6600	0.2292	0.8892	0.4861	106.87	1.2870	1.2908	0.8321	0.4549	0.4588	43.58	0.00	0.00	0.00	0.00	0.00	0.00
2018	1.5042	0.6600	0.2457	0.9057	0.5985	108.78	1.3827	1.3551	0.8326	0.5502	0.5225	54.60	0.00	0.00	0.00	0.00	0.00	0.00

B.10 Germany

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 8211	dum 0003	dum 9099
1965	0.2772	0.1366	0.0297	0.1663	0.1109	28.19	0.9831	0.9384	0.5899	0.3932	0.3486	24.05	0.00	0.00	0.00
1966	0.2752	0.1356	0.0295	0.1651	0.1101	29.19	0.9427	0.9085	0.5656	0.3771	0.3429	23.06	0.00	0.00	0.00
1967	0.2767	0.1474	0.0296	0.1771	0.0996	29.72	0.9312	0.9373	0.5959	0.3352	0.3413	22.78	0.00	0.00	0.00
1968	0.2768	0.1475	0.0297	0.1771	0.0996	30.15	0.9179	0.9269	0.5875	0.3304	0.3395	22.46	0.00	0.00	0.00
1969	0.2553	0.1360	0.0274	0.1634	0.0919	30.73	0.8309	0.8591	0.5318	0.2991	0.3273	20.33	0.00	0.00	0.00
1970	0.2524	0.1345	0.0270	0.1615	0.0909	31.79	0.7940	0.8320	0.5082	0.2858	0.3239	19.72	0.00	0.00	0.00
1971	0.3095	0.1649	0.0332	0.1981	0.1114	33.46	0.9252	0.9118	0.5921	0.3331	0.3197	18.99	0.00	0.00	0.00
1972	0.3054	0.1291	0.0327	0.1618	0.1435	35.29	0.8653	0.7638	0.4586	0.4067	0.3052	16.45	0.00	0.00	0.00
1973	0.3476	0.2061	0.0372	0.2433	0.1043	37.77	0.9202	0.9354	0.6441	0.2761	0.2912	14.00	0.00	0.00	0.00
1974	0.4355	0.2190	0.0467	0.2656	0.1698	40.41	1.0776	1.0981	0.6573	0.4203	0.4407	40.21	0.00	0.00	0.00
1975	0.3829	0.1925	0.0410	0.2335	0.1493	42.80	0.8946	0.9695	0.5457	0.3489	0.4238	37.24	0.00	0.00	0.00
1976	0.4460	0.2243	0.0478	0.2721	0.1740	44.62	0.9997	1.0405	0.6098	0.3899	0.4306	38.44	0.00	0.00	0.00
1977	0.5537	0.2840	0.0593	0.3433	0.2104	46.28	1.1963	1.1632	0.7417	0.4546	0.4215	36.84	0.00	0.00	0.00
1978	0.4571	0.2253	0.0490	0.2743	0.1829	47.54	0.9616	0.9650	0.5769	0.3846	0.3881	30.98	0.00	0.00	0.00
1979	0.4903	0.2397	0.0545	0.2942	0.1961	49.46	0.9912	1.0377	0.5947	0.3965	0.4430	40.60	0.00	0.00	0.00
1980	0.5740	0.2267	0.0660	0.2927	0.2812	52.15	1.1005	1.1161	0.5612	0.5392	0.5549	60.21	0.00	0.00	0.00
1981	0.6992	0.2610	0.0804	0.3414	0.3577	55.46	1.2606	1.2597	0.6156	0.6450	0.6441	75.86	0.00	0.00	0.00
1982	0.6849	0.2610	0.0788	0.3398	0.3451	58.37	1.1734	1.1784	0.5821	0.5913	0.5962	70.57	0.50	0.00	0.00
1983	0.6767	0.2610	0.0805	0.3415	0.3352	60.29	1.1223	1.1176	0.5664	0.5559	0.5512	62.68	0.50	0.00	0.00
1984	0.6898	0.2610	0.0847	0.3457	0.3441	61.74	1.1171	1.1193	0.5599	0.5572	0.5594	67.21	1.00	0.00	0.00
1985	0.7106	0.2710	0.0873	0.3583	0.3523	63.02	1.1276	1.1078	0.5685	0.5591	0.5393	63.70	1.00	0.00	0.00
1986	0.5306	0.2710	0.0652	0.3362	0.1944	62.94	0.8430	0.8615	0.5341	0.3089	0.3274	26.55	1.00	0.00	0.00
1987	0.5153	0.2400	0.0633	0.3033	0.2120	63.09	0.8167	0.8161	0.4807	0.3360	0.3355	27.97	1.00	0.00	0.00
1988	0.5026	0.2450	0.0617	0.3067	0.1959	63.90	0.7866	0.7840	0.4800	0.3066	0.3039	22.44	1.00	0.00	0.00
1989	0.6075	0.2910	0.0746	0.3656	0.2419	65.68	0.9251	0.8966	0.5567	0.3684	0.3399	28.75	1.00	0.00	0.00
1990	0.5571	0.3500	0.0684	0.4184	0.1387	67.45	0.8261	0.8282	0.6204	0.2057	0.2078	30.05	1.00	0.00	1.00
1991	0.6270	0.4190	0.0770	0.4960	0.1310	70.15	0.8939	0.8921	0.7071	0.1868	0.1850	26.05	1.00	0.00	1.00
1992	0.6647	0.4190	0.0816	0.5006	0.1640	73.75	0.9012	0.8911	0.6788	0.2224	0.2123	22.28	1.00	0.00	0.65
1993	0.6613	0.4190	0.0863	0.5053	0.1561	76.99	0.8590	0.8570	0.6563	0.2027	0.2007	20.24	1.00	0.00	0.65
1994	0.7426	0.5010	0.0969	0.5979	0.1448	79.11	0.9387	0.9439	0.7557	0.1830	0.1881	18.04	1.00	0.00	0.65
1995	0.7392	0.5010	0.0964	0.5974	0.1417	80.50	0.9182	0.9231	0.7421	0.1761	0.1809	16.78	1.00	0.00	0.65
1996	0.7717	0.5010	0.1007	0.6017	0.1700	81.61	0.9456	0.9414	0.7372	0.2083	0.2042	20.85	1.00	0.00	0.65
1997	0.7924	0.5010	0.1034	0.6044	0.1881	83.18	0.9527	0.9371	0.7266	0.2261	0.2106	21.97	1.00	0.00	0.65
1998	0.7424	0.5010	0.1010	0.6020	0.1403	84.01	0.8836	0.8899	0.7166	0.1671	0.1733	15.44	1.00	0.00	0.65
1999	0.8107	0.5320	0.1118	0.6438	0.1669	84.47	0.9598	0.9791	0.7622	0.1976	0.2170	19.42	1.00	0.00	0.50
2000	0.9890	0.5620	0.1364	0.6984	0.2906	85.67	1.1544	1.1531	0.8152	0.3392	0.3379	34.97	1.00	1.00	0.00
2001	1.0030	0.5930	0.1383	0.7313	0.2717	87.34	1.1484	1.1446	0.8374	0.3110	0.3072	29.58	1.00	1.00	0.00
2002	1.0280	0.6240	0.1418	0.7658	0.2622	88.63	1.1598	1.1690	0.8640	0.2958	0.3050	29.20	1.00	1.00	0.00
2003	1.0720	0.6545	0.1479	0.8024	0.2696	89.56	1.1970	1.1930	0.8959	0.3011	0.2970	27.80	1.00	1.00	0.00
2004	1.1150	0.6545	0.1538	0.8083	0.3067	91.04	1.2248	1.2457	0.8879	0.3369	0.3579	31.89	1.00	0.00	0.00
2005	1.2217	0.6545	0.1685	0.8230	0.3987	92.42	1.3219	1.3178	0.8905	0.4314	0.4273	44.06	1.00	0.00	0.00
2006	1.2833	0.6545	0.1770	0.8315	0.4518	93.90	1.3667	1.3573	0.8855	0.4812	0.4717	51.85	1.00	0.00	0.00
2007	1.3354	0.6545	0.2132	0.8677	0.4677	96.03	1.3907	1.3794	0.9036	0.4871	0.4758	52.56	1.00	0.00	0.00
2008	1.3934	0.6545	0.2225	0.8770	0.5164	98.52	1.4143	1.4394	0.8901	0.5241	0.5493	65.45	1.00	0.00	0.00
2009	1.2620	0.6545	0.2015	0.8560	0.4060	98.89	1.2762	1.2951	0.8656	0.4106	0.4295	44.45	1.00	0.00	0.00
2010	1.3911	0.6545	0.2221	0.8766	0.5145	100.00	1.3911	1.3877	0.8766	0.5145	0.5111	58.76	1.00	0.00	0.00
2011	1.5269	0.6545	0.2438	0.8983	0.6286	102.08	1.4959	1.4856	0.8800	0.6159	0.6056	75.31	1.00	0.00	0.00
2012	1.6513	0.6545	0.2636	0.9181	0.7331	104.13	1.5858	1.5574	0.8818	0.7041	0.6756	81.38	0.00	0.00	0.00
2013	1.6011	0.6545	0.2556	0.9101	0.6910	105.69	1.5149	1.5023	0.8611	0.6538	0.6412	75.34	0.00	0.00	0.00
2014	1.5432	0.6545	0.2464	0.9009	0.6423	106.65	1.4469	1.4458	0.8447	0.6022	0.6011	68.31	0.00	0.00	0.00
2015	1.3970	0.6545	0.2231	0.8776	0.5195	106.90	1.3069	1.2717	0.8209	0.4860	0.4508	41.96	0.00	0.00	0.00
2016	1.3054	0.6545	0.2084	0.8629	0.4425	107.42	1.2153	1.2106	0.8033	0.4119	0.4073	34.34	0.00	0.00	0.00
2017	1.3739	0.6545	0.2194	0.8739	0.5000	109.29	1.2571	1.2541	0.7996	0.4575	0.4545	42.62	0.00	0.00	0.00
2018	1.4399	0.6545	0.2299	0.8844	0.5555	111.25	1.2943	1.3109	0.7949	0.4993	0.5159	53.38	0.00	0.00	0.00

B.11 Greece

CY	nominal petrol	nominal tax	nominal energy	Cpi	real petrol	real pred	real tax	real energy	real pred	real landed oil price	dum7279	dum8185	dum6771	dum9499	dum8792
1965	0.01	0.01	0.00	1.22	1.22	1.22	0.83	0.39	0.39	23.79	0	0	0	0	0
1966	0.01	0.01	0.00	1.28	1.16	1.17	0.79	0.37	0.38	22.68	0	0	0	0	0
1967	0.01	0.01	0.00	1.30	1.14	1.13	0.81	0.33	0.32	22.27	0	0	1	0	0
1968	0.01	0.01	0.00	1.31	1.14	1.13	0.81	0.33	0.32	22.24	0	0	1	0	0
1969	0.01	0.01	0.00	1.34	1.11	1.11	0.79	0.32	0.32	21.67	0	0	1	0	0
1970	0.01	0.01	0.00	1.38	1.08	1.08	0.77	0.31	0.32	21.39	0	0	1	0	0
1971	0.01	0.01	0.00	1.42	1.04	1.06	0.74	0.30	0.32	22.00	0	0	1	0	0
1972	0.02	0.01	0.01	1.49	1.15	1.17	0.76	0.39	0.41	21.09	1	0	0	0	0
1973	0.02	0.01	0.01	1.71	1.16	1.16	0.76	0.39	0.40	19.62	1	0	0	0	0
1974	0.04	0.03	0.01	2.17	1.78	1.81	1.25	0.53	0.56	49.82	1	0	0	0	0
1975	0.04	0.03	0.01	2.47	1.65	1.74	1.19	0.46	0.55	48.33	1	0	0	0	0
1976	0.05	0.03	0.02	2.79	1.78	1.73	1.16	0.62	0.57	51.22	1	0	0	0	0
1977	0.05	0.03	0.02	3.13	1.55	1.56	1.00	0.54	0.56	49.57	1	0	0	0	0
1978	0.06	0.04	0.02	3.53	1.71	1.64	1.11	0.60	0.53	43.86	1	0	0	0	0
1979	0.07	0.05	0.03	4.20	1.75	1.72	1.14	0.61	0.59	55.48	1	0	0	0	0
1980	0.10	0.06	0.03	5.23	1.90	1.92	1.23	0.66	0.68	80.73	0	0	0	0	0
1981	0.11	0.07	0.04	6.52	1.76	1.77	1.14	0.62	0.63	90.84	0	0.5	0	0	0
1982	0.13	0.08	0.04	7.89	1.63	1.65	1.06	0.56	0.58	82.54	0	0.5	0	0	0
1983	0.15	0.10	0.05	9.48	1.55	1.59	1.02	0.53	0.56	78.95	0	0.5	0	0	0
1984	0.16	0.11	0.05	11.23	1.44	1.44	0.96	0.48	0.48	84.04	0	1	0	0	0
1985	0.20	0.13	0.07	13.39	1.50	1.47	1.01	0.50	0.46	80.71	0	1	0	0	0
1986	0.23	0.15	0.07	16.48	1.39	1.40	0.94	0.45	0.46	37.52	0	0	0	0	0
1987	0.23	0.15	0.07	19.18	1.18	1.16	0.80	0.38	0.35	39.79	0	0	0	0	1
1988	0.23	0.16	0.07	21.77	1.04	1.02	0.71	0.33	0.31	30.55	0	0	0	0	1
1989	0.23	0.16	0.07	24.75	0.92	0.97	0.63	0.28	0.34	37.84	0	0	0	0	1
1990	0.35	0.24	0.11	29.80	1.17	1.16	0.81	0.36	0.35	38.29	0	0	0	0	1
1991	0.41	0.29	0.12	35.60	1.16	1.16	0.81	0.35	0.34	32.38	0	0	0	0	0.75
1992	0.51	0.36	0.15	41.26	1.24	1.24	0.87	0.37	0.38	27.94	0	0	0	0	0.25
1993	0.54	0.35	0.19	47.20	1.13	1.14	0.74	0.40	0.40	26.29	0	0	0	0	0
1994	0.59	0.44	0.15	52.33	1.13	1.18	0.85	0.29	0.34	23.39	0	0	0	1	0
1995	0.61	0.45	0.17	57.01	1.07	1.11	0.78	0.29	0.33	21.99	0	0	0	1	0
1996	0.68	0.42	0.26	61.68	1.11	1.03	0.69	0.42	0.35	25.35	0	0	0	1	0
1997	0.65	0.41	0.24	65.09	1.00	0.98	0.64	0.37	0.35	25.38	0	0	0	1	0
1998	0.61	0.39	0.22	68.20	0.90	0.89	0.58	0.32	0.31	18.33	0	0	0	1	0
1999	0.61	0.39	0.21	70.00	0.86	0.89	0.56	0.30	0.33	22.42	0	0	0	1	0
2000	0.77	0.41	0.36	72.20	1.07	1.04	0.56	0.50	0.48	41.04	0	0	0	0	0
2001	0.75	0.41	0.34	74.64	1.01	0.99	0.55	0.46	0.44	34.62	0	0	0	0	0
2002	0.74	0.41	0.33	77.35	0.95	0.96	0.53	0.42	0.44	33.43	0	0	0	0	0
2003	0.74	0.41	0.33	80.08	0.92	0.93	0.51	0.41	0.42	31.07	0	0	0	0	0
2004	0.81	0.42	0.39	82.40	0.99	0.96	0.51	0.48	0.45	35.21	0	0	0	0	0
2005	0.88	0.44	0.45	85.32	1.03	1.02	0.51	0.52	0.51	47.77	0	0	0	0	0
2006	0.97	0.46	0.51	88.05	1.10	1.07	0.52	0.58	0.55	55.28	0	0	0	0	0
2007	1.01	0.49	0.52	90.60	1.12	1.10	0.54	0.57	0.55	55.71	0	0	0	0	0
2008	1.11	0.53	0.58	94.36	1.18	1.18	0.56	0.62	0.62	68.33	0	0	0	0	0
2009	1.00	0.56	0.45	95.50	1.05	1.09	0.58	0.47	0.50	46.03	0	0	0	0	0
2010	1.42	0.88	0.54	100.00	1.42	1.45	0.88	0.54	0.57	58.76	0	0	0	0	0
2011	1.67	0.99	0.67	103.33	1.61	1.61	0.96	0.65	0.65	74.40	0	0	0	0	0
2012	1.75	1.01	0.74	104.88	1.67	1.65	0.96	0.70	0.68	80.79	0	0	0	0	0
2013	1.69	1.00	0.69	103.92	1.63	1.62	0.96	0.67	0.66	76.63	0	0	0	0	0
2014	1.65	0.99	0.66	102.55	1.61	1.60	0.97	0.64	0.63	71.04	0	0	0	0	0
2015	1.48	0.96	0.52	100.77	1.47	1.44	0.95	0.52	0.49	44.52	0	0	0	0	0
2016	1.39	0.95	0.45	99.94	1.39	1.40	0.95	0.45	0.45	36.91	0	0	0	0	0
2017	1.51	1.00	0.51	101.06	1.50	1.49	0.99	0.50	0.50	46.09	0	0	0	0	0
2018	1.59	1.05	0.55	102.07	1.56	1.59	1.03	0.53	0.57	58.19	0	0	0	0	0

B.12 Hungary

CY	nominal petrol	nominal tax	nominal energy	Cpi	real petrol	real pred	real tax	real energy	real pred	real landed oil price	dum6573	dum0809	dum8689	dum9207	dum6514
1965	6.0	2.6	3.4	1.80	333.3	324.5	145.6	187.7	178.9	11000	1	0	0	0	1
1966	6.0	2.5	3.5	1.88	319.1	307.1	131.4	187.7	175.7	10530	1	0	0	0	1
1967	6.0	2.4	3.6	1.96	306.0	293.6	120.8	185.2	172.8	10099	1	0	0	0	1
1968	6.0	2.9	3.1	2.04	294.0	313.2	143.2	150.9	170.1	9701	1	0	0	0	1
1969	6.0	2.6	3.4	2.12	282.8	291.3	123.7	159.2	167.6	9334	1	0	0	0	1
1970	6.0	2.6	3.4	2.20	272.5	283.3	117.1	155.4	166.2	9130	1	0	0	0	1
1971	7.1	3.1	4.1	2.28	312.5	301.9	134.7	177.8	167.2	9271	1	0	0	0	1
1972	6.0	2.5	3.5	2.36	252.6	265.4	104.6	148.0	160.8	8328	1	0	0	0	1
1973	5.8	1.8	4.0	2.44	237.1	229.9	73.8	163.3	156.1	7646	1	0	0	0	1
1974	6.8	2.0	4.8	2.53	270.8	281.4	79.3	191.6	202.2	22715	0	0	0	0	1
1975	6.1	1.7	4.4	2.57	237.9	261.4	67.7	170.1	193.7	21467	0	0	0	0	1
1976	5.8	1.6	4.2	2.67	216.8	247.7	58.8	158.0	188.8	20745	0	0	0	0	1
1977	7.3	2.0	5.3	2.81	258.8	259.7	70.0	188.7	189.7	20875	0	0	0	0	1
1978	8.1	1.7	6.4	2.92	279.0	232.9	59.6	219.3	173.3	18453	0	0	0	0	1
1979	9.1	1.3	7.7	3.06	296.5	260.4	43.7	252.8	216.7	24859	0	0	0	0	1
1980	9.5	1.3	8.3	3.33	286.6	309.1	38.0	248.6	271.1	32889	0	0	0	0	1
1981	13.2	2.8	10.4	3.49	378.6	372.1	79.8	298.8	292.3	36012	0	0	0	0	1
1982	13.9	3.2	10.6	3.72	372.2	359.3	87.2	285.0	272.1	33037	0	0	0	0	1
1983	16.3	5.0	11.3	3.99	408.5	384.6	124.4	284.1	260.2	31277	0	0	0	0	1
1984	18.6	6.1	12.5	4.33	428.2	405.2	140.5	287.8	264.8	31954	0	0	0	0	1
1985	19.7	10.0	9.7	4.63	425.4	458.7	216.4	209.0	242.4	28648	0	0	0	0	1
1986	19.1	10.4	8.7	4.88	391.2	380.8	212.6	178.5	168.2	14081	0	0	1	0	1
1987	20.8	11.9	8.8	5.30	391.6	413.2	224.7	166.9	188.5	17078	0	0	1	0	1
1988	20.5	10.3	10.3	6.14	334.9	329.9	167.3	167.5	162.6	13254	0	0	1	0	1
1989	21.9	8.3	13.6	7.19	305.3	298.9	115.4	189.9	183.5	16346	0	0	1	0	1
1990	28.3	15.3	13.1	9.23	307.2	328.6	165.5	141.7	163.0	16942	0	0	0	0	1
1991	52.9	37.3	15.6	12.44	424.9	436.6	299.8	125.0	136.7	13061	0	0	0	0	1
1992	49.4	34.7	14.7	15.38	321.2	329.8	225.8	95.5	104.1	10645	0	0	0	1	1
1993	66.6	49.5	17.1	18.84	353.4	356.5	262.6	90.7	93.9	9141	0	0	0	1	1
1994	77.4	56.8	20.5	22.39	345.4	340.8	253.7	91.7	87.1	8139	0	0	0	1	1
1995	89.8	59.1	30.7	28.73	312.5	293.2	205.6	107.0	87.7	8225	0	0	0	1	1
1996	113.6	79.3	34.3	35.47	320.2	320.9	223.6	96.6	97.3	9644	0	0	0	1	1
1997	130.9	95.8	35.1	41.97	311.9	323.4	228.2	83.7	95.2	9338	0	0	0	1	1
1998	166.9	121.7	45.2	47.91	348.4	346.2	254.0	94.3	92.1	6478	0	0	0	0	1
1999	210.5	140.6	69.9	52.70	399.5	369.0	266.7	132.7	102.2	7964	0	0	0	0	1
2000	230.7	155.4	75.2	57.86	398.7	408.9	268.6	130.0	140.3	13584	0	0	0	0	1
2001	250.2	180.7	69.5	63.14	396.3	405.4	286.2	110.1	119.2	10472	0	0	0	0	1
2002	238.5	167.9	70.6	66.46	358.9	364.0	252.7	106.2	111.3	9300	0	0	0	0	1
2003	249.7	171.7	78.0	69.56	359.0	356.0	246.8	112.2	109.3	9007	0	0	0	0	1
2004	260.6	171.4	89.2	74.25	351.0	345.2	230.8	120.1	114.3	9755	0	0	0	0	1
2005	260.6	155.3	105.3	76.89	338.9	339.2	202.0	136.9	137.2	13133	0	0	0	0	1
2006	276.9	151.0	125.8	79.92	346.4	346.2	189.0	157.4	157.2	16080	0	0	0	0	1
2007	276.6	142.5	134.1	86.28	320.6	313.1	165.2	155.4	147.9	14703	0	0	0	0	1
2008	297.4	187.3	110.0	91.49	325.0	326.7	204.7	120.3	122.0	17768	0	1	0	0	1
2009	280.8	170.1	110.6	95.34	294.5	291.2	178.5	116.0	112.7	12958	0	0.5	0	0	1
2010	335.2	187.0	148.3	100.00	335.2	344.38	187.0	148.3	157.4	16109	0	0	0	0	1
2011	384.9	186.8	198.1	103.92	370.4	368.61	179.8	190.6	188.8	20750	0	0	0	0	1
2012	430.0	216.5	213.5	109.81	391.6	397.39	197.1	194.5	200.2	22432	0	0	0	0	1
2013	418.7	207.5	211.3	111.70	374.9	377.68	185.7	189.1	192.0	21208	0	0	0	0	1
2014	407.4	205.9	201.5	111.45	365.5	369.04	184.7	180.8	184.3	20081	0	0	0	0	1
2015	357.2	231.5	125.7	111.37	320.8	316.25	207.9	112.9	108.4	12425	0	0	0	0	0
2016	332.1	227.2	105.0	111.82	297.0	296.77	203.2	93.9	93.6	10249	0	0	0	0	0
2017	354.8	228.6	126.2	114.45	310.0	309.17	199.7	110.3	109.4	12586	0	0	0	0	0
2018	390.3	237.5	152.8	118.11	330.4	336.04	201.1	129.4	135.0	16356	0	0	0	0	0

B.13 India

CY	Rupees/l petrol	Rupees/l excise	Rupees/l dealer	Rupees/l VAT	Rupees/l tax	Rupees/l energy	Cpi	2010R/l petrol	2010R/l predicted	2010R/l tax	2010R/l energy	2010R/l predicted	2010R/b landed oil	dum 9906	dum 0809	dum 00	dum 9916
1999	23.81	8.48	0.44	3.05	11.97	11.84	52.07	45.73	45.21	22.99	22.73	22.22	1447.71	1.00	0.00	0.00	1.00
2000	26.67	9.48	0.53	3.69	13.70	12.97	54.16	49.25	49.25	25.29	23.95	23.95	2293.04	1.00	0.00	1.00	1.00
2001	28.70	10.01	0.57	3.97	14.55	14.15	56.16	51.11	51.16	25.90	25.21	25.26	1944.08	1.00	0.00	0.00	1.00
2002	28.37	10.53	0.57	3.92	15.02	13.35	58.62	48.40	48.81	25.62	22.78	23.19	2020.57	0.65	0.00	0.00	1.00
2003	31.39	11.88	0.63	4.34	16.85	14.54	60.85	51.59	51.68	27.69	23.90	23.99	2151.37	0.65	0.00	0.00	1.00
2004	35.30	13.24	0.71	4.88	18.82	16.48	63.15	55.90	56.44	29.81	26.10	26.64	2583.92	0.65	0.00	0.00	1.00
2005	40.18	14.59	0.78	5.75	21.12	19.06	65.83	61.04	61.44	32.08	28.96	29.37	3384.83	0.35	0.00	0.00	1.00
2006	45.62	14.59	0.85	6.53	21.97	23.65	69.87	65.28	64.26	31.44	33.85	32.82	3949.94	0.35	0.00	0.00	1.00
2007	43.49	14.78	0.89	6.22	21.90	21.59	74.32	58.51	59.00	29.46	29.05	29.54	3827.18	0.00	0.00	0.00	1.00
2008	47.82	14.78	1.02	6.84	22.65	25.17	80.53	59.38	59.12	28.12	31.26	31.00	5088.41	0.00	1.00	0.00	1.00
2009	43.06	14.78	1.05	6.16	21.99	21.06	89.29	48.22	49.09	24.63	23.59	24.46	3305.09	0.00	0.30	0.00	1.00
2010	49.36	14.35	1.13	7.06	22.54	26.82	100.00	49.36	50.289	22.54	26.82	27.75	3535.65	0.00	0.00	0.00	1.00
2011	61.93	14.35	1.22	8.86	24.43	37.50	108.86	56.89	56.693	22.44	34.45	34.25	4597.58	0.00	0.00	0.00	1.00
2012	67.23	14.45	1.50	9.62	25.57	41.66	119.00	56.50	57.659	21.49	35.01	36.17	4911.35	0.00	0.00	0.00	1.00
2013	69.12	9.28	1.79	11.52	22.59	46.52	131.97	52.37	51.979	17.12	35.25	34.86	4697.00	0.00	0.00	0.00	1.00
2014	69.84	9.42	2.05	11.64	23.11	46.73	140.75	49.62	48.042	16.42	33.20	31.62	4168.43	0.00	0.00	0.00	1.00
2015	61.88	16.95	2.21	12.38	31.54	30.34	147.66	41.90	40.626	21.36	20.55	19.27	2149.83	0.00	0.00	0.00	1.00
2016	62.94	21.48	2.34	13.38	37.20	25.74	154.95	40.62	40.910	24.01	16.61	16.90	1763.25	0.00	0.00	0.00	1.00
2017	68.42	21.48	3.23	14.55	39.26	29.16	158.81	43.08	43.033	24.72	18.36	18.31	2152.82	0.00	0.00	0.00	0.00
2018	77.63	19.48	3.63	16.50	39.61	38.02	166.01	46.76	46.813	23.86	22.90	22.95	2910.27	0.00	0.00	0.00	0.00

B.14 Ireland

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 73	dum 7880	dum 8389	dum 9199	dum 0409	dum 0203
1965	0.0726	0.0373	0.0097	0.0470	0.0255	7.20	1.0076	1.0073	0.6530	0.3547	0.3543	20.78	0	0	0	0	0	0
1966	0.0757	0.0389	0.0102	0.0491	0.0267	7.56	1.0018	0.9978	0.6489	0.3529	0.3489	19.80	0	0	0	0	0	0
1967	0.0657	0.0291	0.0088	0.0379	0.0278	7.79	0.8439	0.8340	0.4868	0.3571	0.3472	19.48	0	0	0	0	0	0
1968	0.0867	0.0479	0.0116	0.0596	0.0272	8.04	1.0787	1.1004	0.7409	0.3378	0.3595	21.72	0	0	0	0	0	0
1969	0.0900	0.0439	0.0121	0.0560	0.0340	8.41	1.0701	1.0196	0.6655	0.4046	0.3542	20.75	0	0	0	0	0	0
1970	0.0950	0.0472	0.0128	0.0599	0.0351	9.04	1.0512	1.0107	0.6628	0.3884	0.3479	19.61	0	0	0	0	0	0
1971	0.1024	0.0542	0.0137	0.0680	0.0344	9.78	1.0471	1.0396	0.6950	0.3521	0.3445	18.99	0	0	0	0	0	0
1972	0.0941	0.0455	0.0126	0.0581	0.0360	10.66	0.8825	0.8786	0.5451	0.3374	0.3335	16.98	0	0	0	0	0	0
1973	0.1039	0.0326	0.0139	0.0465	0.0574	11.57	0.8978	0.8978	0.4021	0.4956	0.4956	17.33	1	0	0	0	0	0
1974	0.2076	0.1141	0.0279	0.1419	0.0656	12.90	1.6097	1.6248	1.1007	0.5090	0.5241	51.72	0	0	0	0	0	0
1975	0.1964	0.0979	0.0264	0.1243	0.0721	15.09	1.3016	1.3286	0.8237	0.4779	0.5048	48.21	0	0	0	0	0	0
1976	0.2459	0.1181	0.0330	0.1511	0.0948	17.79	1.3825	1.3800	0.8493	0.5332	0.5307	52.92	0	0	0	0	0	0
1977	0.2818	0.1460	0.0378	0.1838	0.0981	20.18	1.3965	1.4350	0.9106	0.4859	0.5245	51.79	0	0	0	0	0	0
1978	0.2543	0.0984	0.0341	0.1325	0.1218	21.74	1.1697	1.2069	0.6095	0.5602	0.5974	43.68	0	0.75	0	0	0	0
1979	0.2885	0.0702	0.0387	0.1089	0.1795	24.63	1.1713	1.1510	0.4423	0.7290	0.7087	53.98	0	1.1	0	0	0	0
1980	0.4066	0.1497	0.0546	0.2042	0.2024	29.10	1.3972	1.3749	0.7018	0.6954	0.6731	71.75	0	0.25	0	0	0	0
1981	0.5372	0.2268	0.0721	0.2989	0.2383	35.03	1.5337	1.5434	0.8532	0.6804	0.6902	82.00	0	0	0	0	0	0
1982	0.6522	0.3084	0.0875	0.3960	0.2562	41.03	1.5894	1.6024	0.9650	0.6244	0.6374	72.38	0	0	0	0	0	0
1983	0.7500	0.3020	0.1006	0.4026	0.3473	45.33	1.6544	1.6589	0.8882	0.7662	0.7706	65.25	0	0	1	0	0	0
1984	0.7907	0.3020	0.1061	0.4081	0.3826	49.23	1.6060	1.6139	0.8289	0.7771	0.7849	67.86	0	0	1	0	0	0
1985	0.8429	0.3250	0.1131	0.4381	0.4048	51.93	1.6232	1.5947	0.8437	0.7795	0.7510	61.67	0	0	1	0	0	0
1986	0.7501	0.3480	0.1007	0.4487	0.3015	53.88	1.3923	1.3900	0.8327	0.5596	0.5573	26.36	0	0	1	0	0	0
1987	0.7485	0.3570	0.1004	0.4574	0.2910	55.58	1.3466	1.3545	0.8230	0.5236	0.5315	29.51	0	0	0.75	0	0	0
1988	0.7369	0.3750	0.0989	0.4739	0.2630	56.77	1.2980	1.3071	0.8348	0.4632	0.4724	23.45	0	0	0.6	0	0	0
1989	0.7839	0.3860	0.1052	0.4912	0.2927	59.09	1.3265	1.3383	0.8313	0.4953	0.5071	29.78	0	0	0.6	0	0	0
1990	0.6728	0.3530	0.0903	0.4433	0.2295	61.07	1.1017	1.1354	0.7259	0.3758	0.4095	30.84	0	0	0	0	0	0
1991	0.6689	0.3530	0.1161	0.4691	0.1998	62.99	1.0618	1.0500	0.7447	0.3172	0.3053	26.97	0	0	0	1	0	0
1992	0.6342	0.3400	0.1101	0.4501	0.1841	64.92	0.9768	0.9804	0.6932	0.2836	0.2871	23.66	0	0	0	1	0	0
1993	0.6367	0.3320	0.1105	0.4425	0.1942	65.86	0.9668	0.9613	0.6719	0.2949	0.2894	24.06	0	0	0	1	0	0
1994	0.6380	0.3320	0.1107	0.4427	0.1953	67.42	0.9464	0.9329	0.6567	0.2897	0.2762	21.66	0	0	0	1	0	0
1995	0.6432	0.3500	0.1116	0.4616	0.1815	69.12	0.9305	0.9411	0.6679	0.2626	0.2732	21.12	0	0	0	1	0	0
1996	0.6908	0.3630	0.1199	0.4829	0.2079	70.31	0.9825	0.9812	0.6868	0.2957	0.2943	24.97	0	0	0	1	0	0
1997	0.7274	0.3740	0.1262	0.5002	0.2272	71.30	1.0202	1.0332	0.7016	0.3186	0.3317	24.21	0	0	0	0.5	0	0
1998	0.7075	0.3740	0.1228	0.4968	0.2107	73.04	0.9686	0.9756	0.6802	0.2885	0.2954	17.60	0	0	0	0.5	0	0
1999	0.7255	0.3740	0.1259	0.4999	0.2256	74.23	0.9773	0.9935	0.6734	0.3039	0.3201	22.10	0	0	0	0.5	0	0
2000	0.8940	0.3740	0.1552	0.5292	0.3648	78.36	1.1409	1.1254	0.6753	0.4656	0.4501	38.23	0	0	0	0	0	0
2001	0.8890	0.4010	0.1482	0.5492	0.3398	82.18	1.0818	1.0811	0.6682	0.4135	0.4128	31.44	0	0	0	0	0	0
2002	0.8550	0.4010	0.1480	0.5490	0.3060	85.99	0.9943	1.0010	0.6384	0.3559	0.3627	30.10	0	0	0	0	0	0.5
2003	0.8710	0.4430	0.1507	0.5937	0.2773	88.99	0.9788	0.9754	0.6672	0.3116	0.3082	27.98	0	0	0	0	0	1
2004	0.9530	0.4430	0.1649	0.6079	0.3451	90.95	1.0478	1.0606	0.6684	0.3794	0.3922	31.92	0	0	0	0	0.3	0
2005	1.0487	0.4430	0.1815	0.6245	0.4243	93.14	1.1260	1.1274	0.6705	0.4555	0.4569	43.72	0	0	0	0	0.3	0
2006	1.1188	0.4430	0.1936	0.6366	0.4822	96.81	1.1556	1.1505	0.6575	0.4980	0.4930	50.29	0	0	0	0	0.3	0
2007	1.1206	0.4430	0.1939	0.6369	0.4837	101.57	1.1032	1.1012	0.6270	0.4762	0.4742	49.69	0	0	0	0	0.5	0
2008	1.2367	0.4430	0.2140	0.6570	0.5797	105.69	1.1701	1.1579	0.6216	0.5485	0.5363	61.01	0	0	0	0	0.5	0
2009	1.1057	0.5090	0.1957	0.7047	0.4011	100.96	1.0953	1.0996	0.6980	0.3973	0.4016	43.54	0	0	0	0	1	0
2010	1.3005	0.5430	0.2250	0.7680	0.5325	100.00	1.3005	1.3307	0.7680	0.5325	0.5627	58.76	0	0	0	0	0	0
2011	1.4815	0.5430	0.2564	0.7994	0.6821	102.58	1.4442	1.4307	0.7793	0.6650	0.6515	74.94	0	0	0	0	0	0
2012	1.6159	0.5880	0.3022	0.8902	0.7258	104.32	1.5491	1.5393	0.8533	0.6957	0.6860	81.23	0	0	0	0	0	0
2013	1.5881	0.5880	0.2970	0.8850	0.7031	104.84	1.5148	1.5011	0.8441	0.6707	0.6570	75.95	0	0	0	0	0	0
2014	1.5299	0.5880	0.2861	0.8741	0.6558	105.05	1.4564	1.4529	0.8321	0.6243	0.6208	69.35	0	0	0	0	0	0
2015	1.3690	0.5880	0.2560	0.8440	0.5250	104.74	1.3071	1.2811	0.8058	0.5013	0.4753	42.83	0	0	0	0	0	0
2016	1.2830	0.5880	0.2399	0.8279	0.4551	104.74	1.2250	1.2240	0.7905	0.4345	0.4336	35.22	0	0	0	0	0	0
2017	1.3638	0.5880	0.2550	0.8430	0.5208	105.09	1.2977	1.2856	0.8022	0.4955	0.4835	44.32	0	0	0	0	0	0
2018	1.4221	0.5880	0.2659	0.8539	0.5682	105.46	1.3484	1.3590	0.8097	0.5387	0.5493	56.32	0	0	0	0	0	0

B.15 Italy

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 6572	dum 8398	dum 86	dum 9394	dum 7377
1965	0.057	0.037	0.006	0.043	0.015	5.27	1.08	1.08	0.81	0.28	0.27	20.33	1	0	0	0	0
1966	0.062	0.041	0.007	0.048	0.015	5.39	1.16	1.15	0.89	0.27	0.27	19.86	1	0	0	0	0
1967	0.062	0.041	0.007	0.048	0.014	5.60	1.11	1.12	0.85	0.26	0.26	19.13	1	0	0	0	0
1968	0.062	0.041	0.007	0.048	0.015	5.67	1.10	1.10	0.84	0.26	0.26	18.87	1	0	0	0	0
1969	0.068	0.046	0.007	0.053	0.015	5.82	1.16	1.17	0.91	0.25	0.26	18.44	1	0	0	0	0
1970	0.079	0.055	0.008	0.064	0.015	6.11	1.29	1.29	1.04	0.25	0.25	17.77	1	0	0	0	0
1971	0.083	0.058	0.009	0.067	0.016	6.40	1.29	1.29	1.04	0.25	0.25	17.76	1	0	0	0	0
1972	0.085	0.059	0.009	0.068	0.017	6.77	1.25	1.25	1.01	0.24	0.24	15.84	1	0	0	0	0
1973	0.098	0.058	0.010	0.069	0.029	7.50	1.30	1.31	0.92	0.38	0.39	15.54	0	0	0	0	1
1974	0.152	0.087	0.016	0.103	0.048	8.94	1.70	1.70	1.16	0.54	0.54	46.16	0	0	0	0	0.5
1975	0.154	0.085	0.016	0.101	0.053	10.45	1.47	1.47	0.97	0.50	0.51	40.88	0	0	0	0	0.5
1976	0.244	0.147	0.026	0.173	0.071	12.19	2.00	1.97	1.42	0.58	0.54	46.98	0	0	0	0	0.5
1977	0.259	0.158	0.028	0.185	0.074	14.27	1.82	1.84	1.30	0.52	0.54	45.84	0	0	0	0	0.5
1978	0.258	0.153	0.032	0.185	0.074	16.00	1.61	1.61	1.15	0.46	0.46	39.28	0	0	0	0	0
1979	0.279	0.156	0.034	0.190	0.089	18.37	1.52	1.56	1.03	0.49	0.52	50.06	0	0	0	0	0
1980	0.361	0.180	0.044	0.224	0.137	22.24	1.63	1.64	1.01	0.62	0.63	67.21	0	0	0	0	0
1981	0.458	0.206	0.060	0.266	0.192	26.23	1.75	1.73	1.01	0.73	0.72	81.48	0	0	0	0	0
1982	0.532	0.260	0.069	0.330	0.202	30.56	1.74	1.76	1.08	0.66	0.68	75.89	0	0	0	0	0
1983	0.606	0.325	0.092	0.418	0.188	35.03	1.73	1.72	1.19	0.54	0.53	64.82	0	1	0	0	0
1984	0.666	0.351	0.102	0.453	0.213	38.81	1.72	1.71	1.17	0.55	0.54	66.67	0	1	0	0	0
1985	0.682	0.360	0.104	0.464	0.218	42.39	1.61	1.61	1.09	0.52	0.51	62.05	0	1	0	0	0
1986	0.661	0.388	0.101	0.489	0.172	44.86	1.47	1.47	1.09	0.38	0.38	25.83	0	1	1	0	0
1987	0.669	0.442	0.102	0.544	0.125	46.99	1.42	1.46	1.16	0.27	0.30	27.29	0	1	0	0	0
1988	0.702	0.459	0.107	0.566	0.135	49.36	1.42	1.41	1.15	0.27	0.26	21.73	0	1	0	0	0
1989	0.710	0.444	0.113	0.558	0.152	52.45	1.35	1.36	1.06	0.29	0.29	26.51	0	1	0	0	0
1990	0.650	0.393	0.104	0.496	0.153	55.84	1.16	1.19	0.89	0.27	0.30	27.18	0	1	0	0	0
1991	0.703	0.424	0.112	0.536	0.167	59.33	1.18	1.18	0.90	0.28	0.27	23.25	0	1	0	0	0
1992	0.729	0.439	0.116	0.556	0.174	62.46	1.17	1.15	0.89	0.28	0.26	20.99	0	1	0	0	0
1993	0.967	0.581	0.154	0.736	0.231	65.35	1.48	1.46	1.13	0.35	0.33	22.87	0	1	0	0.25	0
1994	1.069	0.562	0.171	0.732	0.337	67.99	1.57	1.58	1.08	0.50	0.50	21.05	0	1	0	1	0
1995	0.902	0.542	0.144	0.686	0.217	71.55	1.26	1.26	0.96	0.30	0.31	21.66	0	0.5	0	0	0
1996	0.931	0.559	0.149	0.708	0.224	74.42	1.25	1.27	0.95	0.30	0.32	23.68	0	0.5	0	0	0
1997	0.945	0.548	0.151	0.699	0.246	75.94	1.24	1.24	0.92	0.32	0.32	23.86	0	0.5	0	0	0
1998	0.919	0.549	0.153	0.702	0.217	77.43	1.19	1.18	0.91	0.28	0.28	16.70	0	0.5	0	0	0
1999	0.958	0.535	0.160	0.695	0.263	78.71	1.22	1.22	0.88	0.33	0.34	20.85	0	0	0	0	0
2000	1.081	0.521	0.180	0.701	0.380	80.71	1.34	1.31	0.87	0.47	0.44	37.11	0	0	0	0	0
2001	1.053	0.524	0.176	0.700	0.354	82.96	1.27	1.25	0.84	0.43	0.41	31.15	0	0	0	0	0
2002	1.048	0.542	0.175	0.717	0.331	85.00	1.23	1.24	0.84	0.39	0.40	30.41	0	0	0	0	0
2003	1.060	0.542	0.177	0.719	0.341	87.28	1.21	1.21	0.82	0.39	0.39	28.51	0	0	0	0	0
2004	1.126	0.559	0.188	0.747	0.379	89.20	1.26	1.25	0.84	0.43	0.41	32.53	0	0	0	0	0
2005	1.220	0.564	0.203	0.767	0.453	90.97	1.34	1.33	0.84	0.50	0.49	44.80	0	0	0	0	0
2006	1.287	0.564	0.214	0.778	0.508	92.87	1.39	1.38	0.84	0.55	0.54	52.41	0	0	0	0	0
2007	1.300	0.564	0.217	0.781	0.519	94.57	1.37	1.37	0.83	0.55	0.54	53.37	0	0	0	0	0
2008	1.388	0.564	0.231	0.795	0.592	97.74	1.42	1.43	0.81	0.61	0.62	65.97	0	0	0	0	0
2009	1.234	0.564	0.206	0.770	0.464	98.50	1.25	1.27	0.78	0.47	0.49	44.62	0	0	0	0	0
2010	1.363	0.564	0.227	0.791	0.572	100.00	1.36	1.37	0.79	0.57	0.58	58.76	0	0	0	0	0
2011	1.551	0.587	0.259	0.846	0.706	102.74	1.51	1.50	0.82	0.69	0.68	74.82	0	0	0	0	0
2012	1.788	0.716	0.310	1.026	0.762	105.87	1.69	1.68	0.97	0.72	0.71	80.04	0	0	0	0	0
2013	1.749	0.728	0.304	1.032	0.717	107.16	1.63	1.64	0.96	0.67	0.67	74.31	0	0	0	0	0
2014	1.716	0.731	0.309	1.040	0.676	107.42	1.60	1.60	0.97	0.63	0.63	67.82	0	0	0	0	0
2015	1.538	0.728	0.277	1.005	0.532	107.46	1.43	1.41	0.94	0.50	0.47	41.75	0	0	0	0	0
2016	1.443	0.728	0.260	0.988	0.455	107.33	1.34	1.35	0.92	0.42	0.43	34.37	0	0	0	0	0
2017	1.528	0.728	0.275	1.003	0.524	108.65	1.41	1.40	0.92	0.48	0.48	42.87	0	0	0	0	0
2018	1.600	0.728	0.289	1.017	0.584	109.74	1.46	1.47	0.93	0.53	0.55	54.12	0	0	0	0	0

B.16 Japan

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 6573	dum 7477	dum 6595	dum GFC
1965	49.761	27.512	1.449	28.961	20.800	25.24	197.2	189.3	114.8	82.42	74.58	4749.5	1	0	1	0
1966	48.887	27.664	1.424	29.088	19.799	26.51	184.4	182.9	109.7	74.69	73.14	4541.6	1	0	1	0
1967	48.806	27.618	1.422	29.040	19.767	27.57	177.0	177.2	105.3	71.70	71.88	4360.1	1	0	1	0
1968	47.880	27.238	1.395	28.632	19.248	29.04	164.9	168.6	98.6	66.28	70.02	4091.1	1	0	1	0
1969	47.893	27.245	1.395	28.640	19.253	30.56	156.7	162.3	93.7	62.99	68.62	3888.1	1	0	1	0
1970	50.040	27.165	1.457	28.623	21.417	32.66	153.2	154.9	87.7	65.58	67.27	3693.1	1	0	1	0
1971	59.386	30.873	1.730	32.603	26.783	34.71	171.1	160.5	93.9	77.17	66.51	3583.4	1	0	1	0
1972	52.388	27.130	1.526	28.656	23.732	36.43	143.8	140.9	78.7	65.15	62.22	2962.8	1	0	1	0
1973	48.906	28.017	1.424	29.441	19.465	40.66	120.3	132.0	72.4	47.87	59.61	2586.0	1	0	1	0
1974	106.901	35.371	3.114	38.484	68.417	50.09	213.4	202.7	76.8	136.59	125.84	7160.9	0	1	1	0
1975	97.228	30.420	2.832	33.252	63.976	55.97	173.7	182.2	59.4	114.31	122.78	6718.7	0	1	1	0
1976	120.400	42.365	3.507	45.872	74.527	61.24	196.6	195.8	74.9	121.70	120.93	6450.3	0	1	1	0
1977	123.461	44.677	3.596	48.273	75.188	66.22	186.4	189.5	72.9	113.54	116.58	5822.4	0	1	1	0
1978	110.060	46.101	3.206	49.307	60.753	68.99	159.5	160.1	71.5	88.06	88.68	4374.0	0	0	1	0
1979	120.964	40.992	3.523	44.515	76.449	71.56	169.0	166.0	62.2	106.83	103.82	6562.6	0	0	1	0
1980	153.956	52.172	4.484	56.656	97.300	77.15	199.6	200.6	73.4	126.12	127.12	9931.0	0	0	1	0
1981	153.055	45.132	4.458	49.590	103.465	80.94	189.1	188.3	61.3	127.83	127.05	9921.1	0	0	1	0
1982	163.895	47.509	4.774	52.282	111.612	83.15	197.1	190.1	62.9	134.22	127.21	9944.8	0	0	1	0
1983	151.056	48.772	4.400	53.172	97.885	84.73	178.3	177.3	62.8	115.53	114.56	8115.5	0	0	1	0
1984	144.887	47.794	4.220	52.014	92.873	86.63	167.2	169.2	60.0	107.20	109.15	7819.3	0	0	0.9	0
1985	140.023	48.570	4.078	52.649	87.374	88.41	158.4	164.4	59.6	98.83	104.84	7196.1	0	0	0.9	0
1986	123.019	54.605	3.583	58.188	64.831	88.95	138.3	140.2	65.4	72.88	74.79	2851.3	0	0	0.9	0
1987	121.064	49.621	3.526	53.147	67.917	89.06	135.9	136.3	59.7	76.26	76.64	3118.3	0	0	0.9	0
1988	115.976	50.203	3.378	53.581	62.395	89.64	129.4	130.6	59.8	69.61	70.86	2283.2	0	0	0.9	0
1989	119.059	49.871	3.468	53.338	65.721	91.69	129.9	130.3	58.2	71.68	72.15	2955.2	0	0	0.8	0
1990	121.046	46.587	3.526	50.113	70.933	94.50	128.1	127.4	53.0	75.06	74.35	3758.6	0	0	0.7	0
1991	123.122	51.326	3.586	54.912	68.209	97.58	126.2	125.2	56.3	69.90	68.92	2973.5	0	0	0.7	0
1992	119.939	52.038	3.493	55.532	64.407	99.26	120.8	122.5	55.9	64.89	66.52	2626.0	0	0	0.7	0
1993	117.981	52.605	3.436	56.041	61.940	100.52	117.4	118.2	55.8	61.62	62.46	2038.8	0	0	0.7	0
1994	118.459	59.214	3.450	62.665	55.794	101.21	117.0	115.6	61.9	55.13	53.65	1736.9	0	0	0.5	0
1995	110.050	61.064	3.205	64.269	45.781	101.09	108.9	107.0	63.6	45.29	43.43	1714.9	0	0	0.2	0
1996	104.754	56.240	3.051	59.291	45.463	101.22	103.5	99.9	58.6	44.91	41.29	2377.2	0	0	0	0
1997	104.415	58.153	4.496	62.649	41.766	103.01	101.4	102.4	60.8	40.55	41.59	2420.7	0	0	0	0
1998	99.095	54.738	4.719	59.457	39.638	103.70	95.6	94.8	57.3	38.22	37.44	1820.3	0	0	0	0
1999	98.255	54.274	4.679	58.953	39.302	103.35	95.1	95.2	57.0	38.03	38.17	1926.5	0	0	0	0
2000	103.900	53.800	4.948	58.748	45.152	102.62	101.2	102.1	57.2	44.00	44.90	2898.4	0	0	0	0
2001	104.900	53.800	4.995	58.795	46.105	101.84	103.0	101.7	57.7	45.27	43.93	2759.0	0	0	0	0
2002	104.200	53.800	4.962	58.762	45.438	100.93	103.2	104.0	58.2	45.02	45.78	3026.4	0	0	0	0
2003	106.300	53.800	5.062	58.862	47.438	100.68	105.6	105.7	58.5	47.12	47.23	3235.8	0	0	0	0
2004	112.300	53.800	5.348	59.148	53.152	100.67	111.6	110.4	58.8	52.80	51.65	3874.4	0	0	0	0
2005	124.500	53.800	5.929	59.729	64.771	100.39	124.0	122.8	59.5	64.52	63.30	5559.6	0	0	0	0
2006	137.500	55.800	6.548	62.348	75.152	100.64	136.6	135.6	62.0	74.68	73.67	7058.7	0	0	0	0
2007	139.800	55.800	6.657	62.457	77.343	100.69	138.8	142.8	62.0	76.81	80.73	8078.4	0	0	0	0
2008	156.900	55.800	7.471	63.271	93.629	102.08	153.7	153.0	62.0	91.72	91.00	9563.1	0	0	0	0
2009	120.200	55.800	5.724	61.524	58.676	100.70	119.4	119.4	61.1	58.27	58.27	5673.5	0	0	0	1
2010	132.900	55.800	6.329	62.129	70.771	100.00	132.9	133.6	62.1	70.77	71.51	6745.3	0	0	0	0
2011	145.582	55.800	6.932	62.732	82.849	99.73	146.0	147.1	62.9	83.07	84.17	8576.2	0	0	0	0
2012	147.023	56.600	7.001	63.601	83.422	99.68	147.5	149.4	63.8	83.69	85.59	8781.0	0	0	0	0
2013	155.782	56.600	7.418	64.018	91.763	100.03	155.7	160.4	64.0	91.74	96.41	10345.8	0	0	0	0
2014	162.950	56.600	10.660	67.260	95.690	102.79	158.5	159.0	65.4	93.09	93.53	9929.9	0	0	0	0
2015	137.486	56.600	10.184	66.784	70.702	103.60	132.7	129.3	64.5	68.24	64.83	5780.4	0	0	0	0
2016	121.817	56.600	9.023	65.623	56.193	103.48	117.7	117.9	63.4	54.30	54.48	4283.4	0	0	0	0
2017	133.500	56.600	9.889	66.489	67.011	103.97	128.4	128.0	64.0	64.46	64.02	5663.7	0	0	0	0
2018	149.700	56.600	11.089	67.689	82.011	104.96	142.6	140.2	64.5	78.13	75.70	7351.3	0	0	0	0

B.17 Korea

	Won/l	Won/l	Won/l	Won/l	Won/l		2010W/l	2010W/l	2010W/l	2010W/l	2010W/l	2010W/b	dum	dum	dum
CY	petrol	excise	VAT	tax	energy	Cpi	petrol	predicted	tax	energy	predicted	landed oil	9807	GFC	6596
1965	29.52	6.17	2.68	8.85	20.66	3.02	976.71	976.71	488.10	488.62	488.62	30030	0	0	1
1966	32.13	6.97	2.92	9.90	22.23	3.36	955.56	955.56	488.10	467.46	467.46	26631	0	0	1
1967	35.00	7.88	3.18	11.06	23.94	3.73	938.83	938.83	488.10	450.74	450.74	23945	0	0	1
1968	38.30	8.93	3.48	12.41	25.89	4.13	927.39	927.39	488.10	439.29	439.29	22106	0	0	1
1969	42.58	10.26	3.87	14.14	28.44	4.64	917.31	917.31	488.10	429.21	429.21	20488	0	0	1
1970	48.98	12.20	4.45	16.65	32.33	5.38	910.11	910.11	488.10	422.01	422.01	19331	0	0	1
1971	55.94	14.38	5.09	19.47	36.47	6.11	915.71	915.71	488.10	427.61	427.61	20230	0	0	1
1972	62.59	16.59	5.69	22.28	40.31	6.82	917.38	917.38	488.10	429.29	429.29	20499	0	0	1
1973	65.22	17.81	5.93	23.74	41.48	7.04	926.02	926.02	488.10	437.93	437.93	21887	0	0	1
1974	100.06	28.13	9.10	37.22	62.84	8.75	1142.97	1142.97	488.10	654.87	654.87	56735	0	0	1
1975	124.77	36.07	11.34	47.41	77.36	10.97	1137.93	1137.93	488.10	649.83	649.83	55926	0	0	1
1976	140.01	41.59	12.73	54.32	85.68	12.65	1107.15	1107.15	488.10	619.05	619.05	50981	0	0	1
1977	153.22	46.75	13.93	60.68	92.55	13.92	1100.55	1100.55	488.10	612.45	612.45	49921	0	0	1
1978	169.06	52.93	15.37	68.30	100.76	15.94	1060.91	1060.91	488.10	572.81	572.81	43554	0	0	1
1979	213.49	68.55	19.41	87.96	125.53	18.86	1132.22	1132.22	488.10	644.12	644.12	55008	0	0	1
1980	319.43	105.12	29.04	134.16	185.27	24.27	1316.32	1316.32	488.10	828.22	828.22	84581	0	0	1
1981	386.94	130.43	35.18	165.61	221.33	29.45	1313.97	1313.97	488.10	825.87	825.87	84203	0	0	1
1982	400.40	138.17	36.40	174.57	225.82	31.57	1268.46	1268.46	488.10	780.36	780.36	76893	0	0	1
1983	397.63	140.40	36.15	176.55	221.08	32.65	1218.04	1218.04	488.10	729.94	729.94	68794	0	0	1
1984	406.79	146.89	36.98	183.87	222.92	33.39	1218.37	1218.37	488.10	730.27	730.27	68847	0	0	1
1985	414.62	153.03	37.69	190.73	223.90	34.21	1212.03	1212.03	488.10	723.93	723.93	67829	0	0	1
1986	360.18	135.82	32.74	168.57	191.62	35.15	1024.72	1024.72	488.10	536.62	536.62	37741	0	0	1
1987	384.39	148.02	34.94	182.97	201.42	36.22	1061.21	1061.21	488.10	573.11	573.11	43602	0	0	1
1988	379.23	149.07	34.48	183.55	195.68	38.81	977.15	977.15	488.10	489.05	489.05	30099	0	0	1
1989	406.08	162.87	36.92	199.79	206.29	41.02	989.90	989.90	488.10	501.80	501.80	32147	0	0	1
1990	434.79	177.87	39.53	217.39	217.39	44.54	976.19	1032.44	488.10	488.10	544.34	38980	0	0	1
1991	491.15	204.54	44.65	249.19	241.95	48.70	1008.60	1015.35	511.73	496.86	503.61	32439	0	0	1
1992	529.80	224.55	48.16	272.71	257.09	51.72	1024.33	1022.31	527.27	497.06	495.04	31062	0	0	1
1993	563.61	243.03	51.24	294.27	269.34	54.20	1039.79	1014.46	542.89	496.90	471.57	27291	0	0	1
1994	574.89	252.13	52.26	304.39	270.49	57.60	998.05	979.48	528.45	469.59	451.02	23991	0	0	1
1995	589.38	262.83	53.58	316.41	272.97	60.18	979.33	974.47	525.76	453.57	448.71	23619	0	0	1
1996	677.95	307.33	61.63	368.96	308.99	63.15	1073.62	1061.40	584.30	489.32	477.10	28180	0	0	1
1997	834.15	414.00	75.83	460.12	374.03	65.95	1264.83	1285.82	697.69	567.15	588.13	29729	0	0	0
1998	1111.12	559.00	101.01	621.09	490.03	70.90	1567.09	1550.57	875.96	691.12	674.61	28502	1	0	0
1999	1124.01	668.00	102.18	636.58	487.43	71.48	1572.46	1568.71	890.56	681.91	678.16	29072	1	0	0
2000	1248.00	603.00	113.00	716.00	532.00	73.10	1707.23	1742.47	979.47	727.76	763.00	42701	1	0	0
2001	1280.00	609.00	116.00	725.00	555.00	76.07	1682.61	1694.47	953.04	729.57	741.43	39236	1	0	0
2002	1296.00	587.00	115.00	702.00	594.00	78.17	1657.84	1637.87	898.00	759.84	739.87	38986	1	0	0
2003	1294.00	579.00	118.00	697.00	597.00	80.92	1599.08	1616.10	861.33	737.75	754.77	41379	1	0	0
2004	1365.00	561.00	124.00	685.00	680.00	83.82	1628.41	1621.00	817.19	811.22	803.82	49256	1	0	0
2005	1428.00	552.00	130.00	682.00	746.00	86.13	1657.91	1663.82	791.80	866.11	872.01	60211	1	0	0
2006	1489.00	540.00	135.00	675.00	814.00	88.03	1691.52	1676.42	766.81	924.71	909.61	66250	1	0	0
2007	1525.00	531.00	139.00	670.00	855.00	90.27	1689.43	1682.14	742.24	947.19	939.89	71115	1	0	0
2008	1695.00	504.00	154.00	658.00	1037.00	94.49	1793.89	1785.25	696.39	1097.50	1088.86	110161	0	0	0
2009	1582.00	494.00	144.00	638.00	944.00	97.16	1628.28	1625.66	656.66	971.62	968.99	80250	0	1	0
2010	1709.00	529.00	155.00	684.00	1025.00	100.00	1709.00	1711.63	684.00	1025.00	1027.63	89669	0	1	0
2011	1833.00	529.00	166.64	695.64	1137.36	104.03	1762.06	1782.00	668.71	1093.35	1113.28	114084	0	0	0
2012	1957.00	529.00	177.91	706.91	1250.09	106.30	1841.00	1786.48	665.01	1175.99	1121.48	115400	0	0	0
2013	1838.00	529.00	167.09	696.09	1141.91	107.68	1706.84	1720.06	646.42	1060.42	1073.64	107716	0	0	0
2014	1719.00	529.00	156.27	685.27	1033.73	109.06	1576.24	1609.14	628.36	947.88	980.78	92800	0	0	0
2015	1526.00	529.00	138.73	667.73	858.27	109.83	1389.45	1328.97	607.98	781.47	720.99	51070	0	0	0
2016	1393.00	529.00	126.64	655.64	737.36	110.89	1256.15	1259.14	591.23	664.92	667.92	42545	0	0	0
2017	1489.00	529.00	135.36	664.36	824.64	113.06	1317.04	1317.50	587.64	729.40	729.86	52495	0	0	0
2018	1578.73	529.00	143.52	672.52	906.21	114.65	1376.99	1410.12	586.58	790.41	823.54	67542	0	0	0

B.18 Netherlands

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 6588	dum 0007	dum 6671	dum GFC
1965	0.2283	0.1397	0.0000	0.1397	0.0886	19.81	1.1526	1.1634	0.7054	0.4472	0.4580	27.37	0.4	0	0	0
1966	0.2415	0.1529	0.0000	0.1529	0.0886	20.95	1.1526	1.1543	0.7296	0.4230	0.4247	25.87	0.4	0	0.15	0
1967	0.2480	0.1622	0.0000	0.1622	0.0858	21.67	1.1444	1.1353	0.7484	0.3960	0.3868	25.01	0.4	0	0.35	0
1968	0.2563	0.1848	0.0000	0.1848	0.0715	22.48	1.1399	1.1542	0.8219	0.3180	0.3324	24.11	0.4	0	0.65	0
1969	0.2579	0.1531	0.0393	0.1924	0.0655	24.15	1.0679	1.0619	0.7967	0.2713	0.2652	22.45	0.4	0	1	0
1970	0.2875	0.1703	0.0439	0.2142	0.0733	25.04	1.1482	1.1426	0.8554	0.2928	0.2872	21.98	0.4	0	0.85	0
1971	0.3449	0.1978	0.0526	0.2504	0.0945	26.91	1.2817	1.2943	0.9305	0.3512	0.3638	21.03	0.4	0	0.35	0
1972	0.3382	0.1530	0.0516	0.2046	0.1336	29.01	1.1658	1.1083	0.7053	0.4605	0.4030	17.87	0.4	0	0	0
1973	0.4262	0.2261	0.0650	0.2911	0.1351	31.33	1.3603	1.3192	0.9291	0.4312	0.3902	15.67	0.4	0	0	0
1974	0.5358	0.2569	0.0817	0.3386	0.1972	34.34	1.5603	1.5383	0.9861	0.5742	0.5522	43.62	0.4	0	0	0
1975	0.4431	0.1983	0.0676	0.2659	0.1772	37.85	1.1707	1.2245	0.7024	0.4683	0.5220	38.42	0.4	0	0	0
1976	0.5289	0.2451	0.0807	0.3258	0.2031	41.19	1.2839	1.3151	0.7909	0.4930	0.5242	38.80	0.4	0	0	0
1977	0.5121	0.2358	0.0781	0.3139	0.1982	43.83	1.1684	1.2271	0.7162	0.4522	0.5109	36.49	0.4	0	0	0
1978	0.4889	0.2022	0.0746	0.2767	0.2122	45.63	1.0715	1.0847	0.6065	0.4650	0.4782	30.86	0.4	0	0	0
1979	0.5398	0.2070	0.0823	0.2893	0.2505	47.55	1.1353	1.1457	0.6085	0.5268	0.5372	41.03	0.4	0	0	0
1980	0.6514	0.2367	0.0994	0.3361	0.3153	50.64	1.2862	1.3120	0.6637	0.6225	0.6483	60.20	0.4	0	0	0
1981	0.7665	0.2380	0.1169	0.3549	0.4116	54.05	1.4181	1.4207	0.6566	0.7615	0.7642	76.27	0.5	0	0	0
1982	0.7900	0.2761	0.1205	0.3966	0.3934	57.25	1.3799	1.4221	0.6927	0.6872	0.7294	70.27	0.5	0	0	0
1983	0.7874	0.2303	0.1201	0.3504	0.4370	58.82	1.3388	1.3441	0.5958	0.7430	0.7483	63.75	0.75	0	0	0
1984	0.8197	0.1806	0.1309	0.3115	0.5082	60.76	1.3491	1.3444	0.5127	0.8365	0.8317	68.34	1	0	0	0
1985	0.8350	0.1840	0.1333	0.3173	0.5177	62.13	1.3439	1.3212	0.5107	0.8332	0.8105	64.69	1	0	0	0
1986	0.6760	0.2098	0.1079	0.3177	0.3583	62.19	1.0870	1.1024	0.5109	0.5761	0.5915	26.91	1	0	0	0
1987	0.7225	0.1903	0.1204	0.3107	0.4118	61.76	1.1700	1.1043	0.5031	0.6669	0.6012	28.58	1	0	0	0
1988	0.7158	0.3316	0.1193	0.4509	0.2648	62.21	1.1505	1.1803	0.7248	0.4257	0.4555	23.02	0.5	0	0	0
1989	0.7942	0.4002	0.1240	0.5242	0.2700	62.88	1.2630	1.2164	0.8336	0.4294	0.3828	30.06	0	0	0	0
1990	0.7236	0.3650	0.1130	0.4780	0.2456	64.43	1.1231	1.1328	0.7419	0.3813	0.3909	31.46	0	0	0	0
1991	0.8371	0.4150	0.1307	0.5457	0.2914	66.46	1.2596	1.1890	0.8211	0.4385	0.3680	27.50	0	0	0	0
1992	0.7929	0.4560	0.1238	0.5798	0.2131	68.58	1.1561	1.1928	0.8454	0.3107	0.3474	23.95	0	0	0	0
1993	0.7967	0.4570	0.1187	0.5757	0.2210	70.35	1.1325	1.1548	0.8183	0.3142	0.3366	22.08	0	0	0	0
1994	0.8802	0.5080	0.1311	0.6391	0.2411	72.32	1.2171	1.2061	0.8837	0.3334	0.3224	19.64	0	0	0	0
1995	0.8468	0.5080	0.1261	0.6341	0.2127	73.71	1.1488	1.1744	0.8603	0.2885	0.3142	18.22	0	0	0	0
1996	0.9055	0.5190	0.1349	0.6539	0.2516	75.17	1.2045	1.2089	0.8698	0.3347	0.3391	22.51	0	0	0	0
1997	0.9601	0.5520	0.1430	0.6950	0.2651	76.81	1.2500	1.2511	0.9049	0.3451	0.3463	23.76	0	0	0	0
1998	0.9438	0.5760	0.1406	0.7166	0.2272	78.33	1.2049	1.2194	0.9148	0.2901	0.3046	16.57	0	0	0	0
1999	0.9938	0.5870	0.1480	0.7350	0.2588	80.05	1.2415	1.2456	0.9182	0.3233	0.3274	20.50	0	0	0	0
2000	1.1600	0.5970	0.1728	0.7698	0.3902	81.90	1.4163	1.3984	0.9398	0.4765	0.4586	36.58	0	1	0	0
2001	1.1480	0.6110	0.1833	0.7943	0.3537	85.31	1.3456	1.3531	0.9310	0.4146	0.4221	30.28	0	1	0	0
2002	1.1440	0.6300	0.1827	0.8127	0.3313	88.12	1.2983	1.3391	0.9222	0.3760	0.4168	29.37	0	1	0	0
2003	1.1590	0.6160	0.1851	0.8011	0.3579	89.98	1.2881	1.2972	0.8903	0.3978	0.4069	27.67	0	1	0	0
2004	1.2520	0.6380	0.1999	0.8379	0.4141	91.09	1.3744	1.3511	0.9198	0.4546	0.4313	31.87	0	1	0	0
2005	1.3520	0.6680	0.2159	0.8839	0.4681	92.62	1.4598	1.4557	0.9543	0.5054	0.5014	43.97	0	1	0	0
2006	1.4150	0.6760	0.2259	0.9019	0.5131	93.70	1.5101	1.5103	0.9626	0.5476	0.5478	51.96	0	1	0	0
2007	1.4590	0.6870	0.2329	0.9199	0.5391	95.21	1.5324	1.5200	0.9662	0.5662	0.5538	53.01	0	1	0	0
2008	1.5370	0.6970	0.2454	0.9424	0.5946	97.58	1.5751	1.5574	0.9658	0.6093	0.5916	66.08	0	0	0	0
2009	1.3430	0.7090	0.2144	0.9234	0.4196	98.74	1.3601	1.3601	0.9352	0.4249	0.4249	44.51	0	0	0	1
2010	1.5030	0.7200	0.2400	0.9600	0.5430	100.00	1.5030	1.5092	0.9600	0.5430	0.5492	58.76	0	0	0	0
2011	1.6390	0.7183	0.2617	0.9800	0.6590	102.34	1.6015	1.6015	0.9575	0.6439	0.6440	75.12	0	0	0	0
2012	1.7604	0.7305	0.2811	1.0116	0.7489	104.85	1.6789	1.6418	0.9647	0.7142	0.6771	80.82	0	0	0	0
2013	1.7377	0.7466	0.3016	1.0481	0.6895	107.48	1.6167	1.6132	0.9752	0.6415	0.6380	74.09	0	0	0	0
2014	1.7019	0.7592	0.2954	1.0546	0.6473	108.53	1.5681	1.5694	0.9717	0.5964	0.5977	67.13	0	0	0	0
2015	1.5633	0.7661	0.2713	1.0374	0.5260	109.18	1.4319	1.3969	0.9501	0.4817	0.4467	41.09	0	0	0	0
2016	1.4770	0.7699	0.2563	1.0262	0.4508	109.53	1.3485	1.3408	0.9370	0.4115	0.4038	33.68	0	0	0	0
2017	1.5521	0.7722	0.2694	1.0416	0.5105	111.05	1.3976	1.3896	0.9379	0.4597	0.4517	41.94	0	0	0	0
2018	1.6278	0.7860	0.2825	1.0685	0.5593	112.79	1.4431	1.4611	0.9473	0.4958	0.5138	52.66	0	0	0	0

B.19 New Zealand

CY	$/l petrol	$/l excise	$/l VAT	$/l tax	$/l energy	Cpi	2010$/l petrol	2010$/l predicted	2010$/l tax	2010$/l energy	2010$/l predicted	2010$/b landed oil	dum 7475	dum 8914	dum 6514	dum 79	dum 6971
1965	0.0705	0.0226	0.0064	0.0290	0.0414	5.69	1.2381	1.2776	0.5101	0.7280	0.7675	41.69	0	0	1	0	0
1966	0.0705	0.0226	0.0064	0.0290	0.0414	5.85	1.2049	1.2562	0.4964	0.7085	0.7598	40.57	0	0	1	0	0
1967	0.0785	0.0225	0.0071	0.0297	0.0488	6.20	1.2653	1.2275	0.4783	0.7870	0.7492	39.02	0	0	1	0	0
1968	0.0795	0.0219	0.0072	0.0292	0.0503	6.47	1.2279	1.2446	0.4506	0.7773	0.7939	45.53	0	0	1	0	0
1969	0.0795	0.0327	0.0072	0.0400	0.0395	6.79	1.1703	1.1762	0.5886	0.5816	0.5876	43.39	0	0	1	0	1
1970	0.0795	0.0301	0.0072	0.0373	0.0421	7.23	1.0987	1.0899	0.5164	0.5823	0.5736	41.35	0	0	1	0	1
1971	0.0837	0.0316	0.0076	0.0392	0.0444	7.98	1.0478	1.0506	0.4914	0.5564	0.5592	39.27	0	0	1	0	1
1972	0.1085	0.0357	0.0099	0.0455	0.0629	8.54	1.2703	1.2543	0.5335	0.7368	0.7208	34.89	0	0	1	0	0
1973	0.1238	0.0407	0.0113	0.0520	0.0718	9.23	1.3404	1.2561	0.5630	0.7774	0.6931	30.88	0	0	1	0	0
1974	0.1396	0.0493	0.0127	0.0620	0.0776	10.26	1.3610	1.3659	0.6043	0.7567	0.7616	85.62	0.5	0	1	0	0
1975	0.1655	0.0936	0.0150	0.1086	0.0569	11.77	1.4068	1.4043	0.9233	0.4835	0.4810	89.61	1	0	1	0	0
1976	0.2564	0.0936	0.0233	0.1169	0.1395	13.76	1.8641	1.9998	0.8498	1.0143	1.1500	97.30	0	0	1	0	0
1977	0.3117	0.0996	0.0283	0.1279	0.1837	15.74	1.9806	1.9405	0.8130	1.1676	1.1275	94.02	0	0	1	0	0
1978	0.3057	0.1126	0.0278	0.1404	0.1653	17.62	1.7353	1.8176	0.7969	0.9384	1.0207	78.50	0	0	1	0	0
1979	0.3454	0.1496	0.0314	0.1810	0.1644	20.03	1.7244	1.7244	0.9036	0.8208	0.8208	104.68	0	0	1	1	0
1980	0.4918	0.1376	0.0447	0.1823	0.3095	23.47	2.0957	2.2745	0.7769	1.3188	1.4976	147.84	0	0	1	0	0
1981	0.5948	0.1336	0.0541	0.1877	0.4072	27.07	2.1972	2.2403	0.6932	1.5039	1.5471	155.04	0	0	1	0	0
1982	0.6850	0.1436	0.0623	0.2059	0.4791	31.45	2.1780	2.1030	0.6546	1.5234	1.4484	140.68	0	0	1	0	0
1983	0.7110	0.1686	0.0646	0.2332	0.4777	33.76	2.1061	2.0545	0.6909	1.4152	1.3636	128.36	0	0	1	0	0
1984	0.7973	0.1686	0.0725	0.2411	0.5562	35.84	2.2246	2.1189	0.6726	1.5520	1.4462	140.37	0	0	1	0	0
1985	0.9308	0.1936	0.0846	0.2782	0.6525	41.37	2.2500	2.0506	0.6726	1.5774	1.3780	130.45	0	0	1	0	0
1986	0.8265	0.3136	0.0751	0.3887	0.4378	46.83	1.7648	1.7337	0.8300	0.9347	0.9036	61.48	0	0	1	0	0
1987	0.8981	0.3536	0.0816	0.4352	0.4629	54.21	1.6568	1.6965	0.8029	0.8539	0.8936	60.02	0	0	1	0	0
1988	0.8960	0.3536	0.0815	0.4351	0.4609	57.66	1.5539	1.5260	0.7545	0.7994	0.7715	42.27	0	0	1	0	0
1989	0.9030	0.3539	0.0917	0.4455	0.4574	60.96	1.4813	1.4835	0.7309	0.7504	0.7527	53.87	0	0.4	1	0	0
1990	0.9471	0.3339	0.1052	0.4391	0.5080	64.68	1.4643	1.4983	0.6789	0.7854	0.8194	63.57	0	0.4	1	0	0
1991	0.9500	0.3484	0.1056	0.4539	0.4961	66.36	1.4316	1.4532	0.6840	0.7475	0.7691	56.27	0	0.4	1	0	0
1992	0.9681	0.3569	0.1076	0.4644	0.5037	67.03	1.4443	1.4681	0.6928	0.7514	0.7753	57.16	0	0.4	1	0	0
1993	0.9530	0.3533	0.1059	0.4591	0.4939	67.90	1.4036	1.4039	0.6762	0.7274	0.7276	50.23	0	0.4	1	0	0
1994	0.8989	0.3499	0.0999	0.4497	0.4492	69.08	1.3013	1.2973	0.6510	0.6502	0.6463	41.99	0	0.5	1	0	0
1995	0.8991	0.3479	0.0999	0.4477	0.4513	71.67	1.2544	1.2517	0.6247	0.6297	0.6270	39.18	0	0.5	1	0	0
1996	0.9049	0.3289	0.1005	0.4294	0.4755	73.31	1.2343	1.2451	0.5857	0.6486	0.6594	43.90	0	0.5	1	0	0
1997	0.9044	0.3289	0.1005	0.4293	0.4751	74.18	1.2192	1.2252	0.5788	0.6404	0.6465	42.02	0	0.5	1	0	0
1998	0.8496	0.3389	0.0944	0.4332	0.4163	75.12	1.1309	1.1315	0.5767	0.5542	0.5548	35.86	0	0.7	1	0	0
1999	0.8581	0.3499	0.0953	0.4452	0.4129	75.04	1.1436	1.1302	0.5933	0.5503	0.5369	44.02	0	1	1	0	0
2000	1.0700	0.3500	0.1189	0.4689	0.6011	77.00	1.3896	1.3858	0.6090	0.7807	0.7768	78.90	0	1	1	0	0
2001	1.0470	0.3500	0.1163	0.4663	0.5807	79.02	1.3250	1.3030	0.5901	0.7348	0.7129	69.60	0	1	1	0	0
2002	1.0290	0.3920	0.1143	0.5063	0.5227	81.14	1.2683	1.3047	0.6241	0.6442	0.6807	64.92	0	1	1	0	0
2003	1.0510	0.4060	0.1168	0.5228	0.5282	82.56	1.2730	1.2705	0.6332	0.6398	0.6373	58.61	0	1	1	0	0
2004	1.1640	0.4200	0.1293	0.5493	0.6147	84.45	1.3783	1.3276	0.6505	0.7279	0.6771	64.40	0	1	1	0	0
2005	1.3200	0.4610	0.1467	0.6077	0.7123	87.01	1.5170	1.5010	0.6984	0.8186	0.8027	82.66	0	1	1	0	0
2006	1.5540	0.4820	0.1727	0.6547	0.8993	89.94	1.7278	1.6823	0.7279	0.9999	0.9544	104.72	0	1	1	0	0
2007	1.5540	0.4960	0.1727	0.6687	0.8853	92.08	1.6877	1.6625	0.7262	0.9615	0.9363	102.08	0	1	1	0	0
2008	1.8120	0.5150	0.2013	0.7163	1.0957	95.72	1.8929	1.9480	0.7483	1.1446	1.1997	140.38	0	1	1	0	0
2009	1.6030	0.5360	0.1781	0.7141	0.8889	97.75	1.6399	1.6521	0.7306	0.9094	0.9216	99.94	0	1	1	0	0
2010	1.7670	0.5690	0.2047	0.7737	0.9933	100.00	1.7670	1.7724	0.7737	0.9933	0.9987	107.57	0	0.9	1	0	0
2011	2.0800	0.5911	0.2713	0.8624	1.2176	104.00	2.0000	2.0168	0.8292	1.1708	1.1876	129.65	0	0.75	1	0	0
2012	2.1450	0.6011	0.2798	0.8808	1.2642	105.11	2.0407	2.0629	0.8380	1.2027	1.2249	127.91	0	0.55	1	0	0
2013	2.1558	0.6261	0.2812	0.9072	1.2486	106.31	2.0279	2.0363	0.8534	1.1745	1.1829	121.80	0	0.55	1	0	0
2014	2.1667	0.6561	0.2826	0.9387	1.2280	107.59	2.0139	2.0233	0.8725	1.1414	1.1508	108.17	0	0.3	1	0	0
2015	1.9700	0.6711	0.2570	0.9280	1.0420	107.96	1.8248	1.8343	0.8596	0.9652	0.9747	66.11	0	0	0	0	0
2016	1.8825	0.6718	0.2455	0.9174	0.9651	108.69	1.7320	1.7336	0.8440	0.8880	0.8896	53.74	0	0	0	0	0
2017	2.0208	0.6681	0.2636	0.9317	1.0891	110.43	1.8300	1.8238	0.8437	0.9863	0.9801	66.90	0	0	0	0	0
2018	2.2533	0.6646	0.2939	0.9585	1.2948	112.20	2.0084	2.0035	0.8543	1.1541	1.1492	91.48	0	0	0	0	0

B.20 Norway

	Krone/l	Krone/l	Krone/l	Krone/l	Krone/l		2010K/l	2010K/l	2010K/l	2010K/l	2010K/l	2010K/b	dum	dum	dum
CY	petrol	excise	VAT	tax	energy	Cpi	petrol	predicted	tax	energy	predicted	landed oil	90	preTax	9612
1965	1.0714	0.5071	0.1786	0.6857	0.3857	10.95	9.7834	9.8488	6.2614	3.5220	3.5874	215.24	0	1	0
1966	1.2143	0.6112	0.2024	0.8136	0.4007	11.31	10.7388	10.7359	7.1950	3.5438	3.5409	208.46	0	1	0
1967	1.2143	0.5990	0.2024	0.8014	0.4129	11.83	10.2686	10.2554	6.7773	3.4913	3.4781	199.33	0	1	0
1968	1.2143	0.5626	0.2024	0.7650	0.4493	12.23	9.9263	9.6861	6.2536	3.6727	3.4325	192.69	0	1	0
1969	1.2143	0.5990	0.2024	0.8014	0.4129	12.60	9.6407	9.7572	6.3628	3.2778	3.3944	187.14	0	1	0
1970	1.4286	0.7476	0.2381	0.9857	0.4429	13.94	10.2515	10.3619	7.0735	3.1780	3.2884	171.71	0	1	0
1971	1.5492	0.8107	0.2582	1.0689	0.4802	14.80	10.4657	10.4935	7.2213	3.2444	3.2722	169.35	0	1	0
1972	1.4231	0.7305	0.2372	0.9677	0.4554	15.88	8.9630	9.2184	6.0949	2.8682	3.1235	147.72	0	1	0
1973	1.6606	0.8026	0.2768	1.0794	0.5812	17.06	9.7365	9.3362	6.3287	3.4078	3.0075	130.83	0	1	0
1974	2.0951	0.9288	0.3492	1.2780	0.8171	18.66	11.2277	11.4623	6.8489	4.3788	4.6134	364.56	0	1	0
1975	1.9570	0.8284	0.3262	1.1546	0.8024	20.84	9.3898	9.8318	5.5400	3.8498	4.2919	317.76	0	1	0
1976	2.3419	0.9914	0.3903	1.3817	0.9602	22.75	10.2938	10.3770	6.0734	4.2205	4.3036	319.46	0	1	0
1977	2.7698	1.1726	0.4616	1.6342	1.1356	24.82	11.1587	10.8083	6.5836	4.5751	4.2246	307.97	0	1	0
1978	2.6159	1.1074	0.4360	1.5434	1.0725	26.85	9.7433	9.7810	5.7486	3.9948	4.0324	280.00	0	1	0
1979	2.8308	1.1000	0.4718	1.5718	1.2590	28.12	10.0680	10.3509	5.5903	4.4777	4.7606	385.98	0	1	0
1980	3.7094	1.3000	0.6182	1.9182	1.7911	31.18	11.8949	11.9371	6.1512	5.7437	5.7859	535.19	0	1	0
1981	4.3506	1.4500	0.7251	2.1751	2.1755	35.44	12.2747	12.2965	6.1368	6.1378	6.1597	589.60	0	1	0
1982	4.6082	1.4500	0.7680	2.2180	2.3902	39.46	11.6792	11.4614	5.6215	6.0577	5.8400	543.07	0	1	0
1983	4.9251	1.6000	0.8208	2.4208	2.5042	42.78	11.5134	11.1607	5.6593	5.8542	5.5014	493.80	0	1	0
1984	5.2070	1.7500	0.8678	2.6178	2.5892	45.48	11.4501	11.3820	5.7566	5.6935	5.6254	511.84	0	1	0
1985	5.1325	1.7500	0.8554	2.6054	2.5271	48.05	10.6827	10.8105	5.4228	5.2599	5.3876	477.23	0	1	0
1986	4.7622	2.0900	0.7937	2.8837	1.8785	51.50	9.2467	9.1925	5.5992	3.6475	3.5933	216.09	0	1	0
1987	5.1003	2.2000	0.8500	3.0500	2.0502	55.99	9.1087	9.1430	5.4471	3.6615	3.6959	231.02	0	1	0
1988	5.3570	2.3800	0.8928	3.2728	2.0841	59.73	8.9679	8.7846	5.4789	3.4890	3.3057	174.23	0	1	0
1989	5.7790	2.4500	0.9632	3.4132	2.3659	62.45	9.2544	9.0663	5.4657	3.7886	3.6006	217.15	0	1	0
1990	7.2219	2.6300	1.2036	3.8336	3.3882	65.02	11.1067	11.1067	5.8959	5.2108	5.2108	236.15	1	1	0
1991	7.1384	3.2800	1.1897	4.4697	2.6686	67.25	10.6148	10.1818	6.6465	3.9683	3.5353	207.65	0	1	0
1992	6.7750	3.7200	1.1292	4.8492	1.9259	68.83	9.8434	10.4306	7.0453	2.7981	3.3853	185.82	0	1	0
1993	6.9976	3.8700	1.2619	5.1319	1.8658	70.40	9.9396	10.6740	7.2894	2.6502	3.3846	185.71	0	1	0
1994	8.2433	4.0600	1.4865	5.5465	2.6968	71.39	11.5476	11.0468	7.7698	3.7778	3.2769	170.05	0	1	0
1995	8.2123	4.4000	1.5356	5.9356	2.2766	73.13	11.2293	11.3217	8.1162	3.1130	3.2055	159.65	0	1	0
1996	8.5447	4.4900	1.5978	6.0878	2.4569	74.05	11.5398	11.2351	8.2217	3.3181	3.0134	192.68	0	1	1
1997	8.5190	4.8900	1.5930	6.4830	2.0361	75.95	11.2160	11.5436	8.5353	2.6806	3.0083	191.93	0	1	1
1998	8.4936	5.0000	1.5882	6.5882	1.9053	77.68	10.9346	11.1335	8.4816	2.4529	2.6519	140.07	0	1	1
1999	9.0881	5.1700	1.6994	6.8694	2.2187	79.49	11.4332	11.5099	8.6420	2.7912	2.8679	171.51	0	1	1
2000	10.5660	5.2800	1.9758	7.2558	3.3102	81.94	12.8945	12.5813	8.8548	4.0398	3.7265	296.47	0	1	1
2001	9.5850	4.6200	1.8552	6.4752	3.1098	84.41	11.3547	11.0523	7.6707	3.6840	3.3816	246.27	0	1	1
2002	8.9600	4.5400	1.7342	6.2742	2.6858	85.50	10.4793	10.5905	7.3381	3.1412	3.2524	227.46	0	1	1
2003	9.3720	4.6400	1.8139	6.4539	2.9181	87.62	10.6964	10.6157	7.3660	3.3304	3.2497	227.07	0	1	1
2004	9.9840	4.7200	1.9324	6.6524	3.3316	88.03	11.3421	11.1436	7.5573	3.7848	3.5863	276.06	0	1	1
2005	10.8100	4.8100	2.1620	6.9720	3.8380	89.37	12.0964	11.9996	7.8017	4.2947	4.1979	365.07	0	1	1
2006	11.4580	4.8900	2.2916	7.1816	4.2764	91.45	12.5293	12.4858	7.8530	4.6762	4.6327	428.35	0	1	1
2007	11.6830	4.9700	2.3366	7.3066	4.3764	92.12	12.6829	12.6418	7.9319	4.7509	4.7099	439.58	0	1	1
2008	12.5280	5.1000	2.5056	7.6056	4.9224	95.59	13.1066	13.4756	7.9568	5.1497	5.5187	557.30	0	1	1
2009	11.8800	5.1700	2.3760	7.5460	4.3340	97.66	12.1650	12.1181	7.7270	4.4380	4.3910	393.18	0	1	1
2010	12.6890	5.3200	2.5378	7.8578	4.8312	100.00	12.6890	12.7649	7.8578	4.8312	4.9071	468.29	0	1	1
2011	13.7059	5.4950	2.7412	8.2362	5.4697	101.30	13.5299	13.9073	8.1304	5.3995	5.7769	594.87	0	1	1
2012	14.7228	5.5800	2.9446	8.5246	6.1982	102.02	14.4314	14.3368	8.3558	6.0755	5.9810	624.57	0	1	1
2013	15.3200	5.6900	3.0640	8.7540	6.5660	104.19	14.7033	14.6110	8.4016	6.3017	6.2094	596.83	0	1	0
2014	15.6626	5.9190	3.1325	9.0515	6.6110	106.30	14.7337	14.5350	8.5147	6.2190	6.0203	569.31	0	1	0
2015	15.0446	5.8200	3.0089	8.8289	6.2157	108.61	13.8513	13.8419	8.1286	5.7227	5.7133	367.57	0	0	0
2016	14.7650	5.9600	2.9530	8.9130	5.8520	112.47	13.1279	13.1995	7.9247	5.2031	5.2748	303.76	0	0	0
2017	16.2359	6.2300	3.2472	9.4772	6.7587	114.59	14.1693	14.0625	8.2709	5.8984	5.7917	378.98	0	0	0
2018	17.4659	6.3300	3.4932	9.8232	7.6427	117.40	14.8768	14.9065	8.3670	6.5098	6.5395	487.82	0	0	0

B.21 Spain

CY	Euros/l petrol	Euros/l excise	Euros/l VAT	Euros/l tax	Euros/l energy	Cpi	2010E/l petrol	2010E/l predicted	2010E/l tax	2010E/l energy	2010E/l predicted	2010E/b landed oil	dum 8909	dum 9394	dum GFC	dum 8288	dum 7579	dum 80	dum 6574
1965	0.0499	0.0240	0.0053	0.0294	0.0205	4.01	1.2439	1.2389	0.7326	0.5112	0.5062	29.53	0	0	0	0	0	0	1
1966	0.0499	0.0240	0.0053	0.0294	0.0205	4.26	1.1708	1.1865	0.6896	0.4812	0.4969	27.80	0	0	0	0	0	0	1
1967	0.0513	0.0247	0.0055	0.0302	0.0211	4.54	1.1310	1.1581	0.6662	0.4649	0.4919	26.85	0	0	0	0	0	0	1
1968	0.0582	0.0281	0.0062	0.0343	0.0239	4.76	1.2233	1.2241	0.7205	0.5028	0.5036	29.04	0	0	0	0	0	0	1
1969	0.0582	0.0281	0.0062	0.0343	0.0239	4.86	1.1974	1.2056	0.7053	0.4921	0.5003	28.43	0	0	0	0	0	0	1
1970	0.0582	0.0281	0.0062	0.0343	0.0239	5.14	1.1325	1.1613	0.6670	0.4655	0.4943	27.29	0	0	0	0	0	0	1
1971	0.0670	0.0295	0.0072	0.0366	0.0303	5.56	1.2039	1.1492	0.6585	0.5454	0.4906	26.62	0	0	0	0	0	0	1
1972	0.0584	0.0257	0.0063	0.0319	0.0265	6.03	0.9694	1.0006	0.5302	0.4391	0.4703	22.82	0	0	0	0	0	0	1
1973	0.0672	0.0264	0.0072	0.0336	0.0336	6.71	1.0015	0.9569	0.5007	0.5007	0.4562	20.19	0	0	0	0	0	0	1
1974	0.1057	0.0447	0.0113	0.0560	0.0497	7.77	1.3617	1.3467	0.7217	0.6400	0.6250	54.83	0	0	0	0	0	0	0.5
1975	0.1211	0.0643	0.0130	0.0773	0.0438	9.08	1.3334	1.3463	0.8507	0.4827	0.4956	48.13	0	0	0	0	0.6	0	0
1976	0.1539	0.0820	0.0165	0.0985	0.0554	10.68	1.4408	1.4285	0.9221	0.5187	0.5063	50.14	0	0	0	0	0.6	0	0
1977	0.1603	0.0854	0.0172	0.1026	0.0577	13.30	1.2045	1.2213	0.7709	0.4336	0.4504	49.28	0	0	0	0	1	0	0
1978	0.2037	0.1045	0.0218	0.1263	0.0774	15.93	1.2781	1.2523	0.7924	0.4857	0.4599	41.47	0	0	0	0	0.6	0	0
1979	0.2450	0.1281	0.0262	0.1543	0.0906	18.43	1.3291	1.3264	0.8373	0.4918	0.4890	46.91	0	0	0	0	0.6	0	0
1980	0.2813	0.1471	0.0301	0.1772	0.1041	21.30	1.3208	1.3208	0.8321	0.4887	0.4887	68.37	0	0	0	0	0	1	0
1981	0.3669	0.1441	0.0393	0.1834	0.1834	24.40	1.5038	1.5101	0.7519	0.7519	0.7582	82.81	0	0	0	0	0	0	0
1982	0.4140	0.1337	0.0444	0.1780	0.2360	27.91	1.4831	1.4753	0.6377	0.8454	0.8376	78.53	0	0	0	0.45	0	0	0
1983	0.4797	0.1213	0.0514	0.1727	0.3070	31.31	1.5320	1.5204	0.5515	0.9805	0.9688	79.70	0	0	0	1	0	0	0
1984	0.4829	0.1269	0.0517	0.1787	0.3042	34.84	1.3859	1.3988	0.5128	0.8731	0.8860	79.08	0	0	0	0.65	0	0	0
1985	0.5059	0.1279	0.0542	0.1821	0.3238	37.92	1.3342	1.3278	0.4803	0.8539	0.8475	71.89	0	0	0	0.65	0	0	0
1986	0.4621	0.1570	0.0495	0.2066	0.2555	41.25	1.1202	1.1277	0.5007	0.6195	0.6270	30.71	0	0	0	0.65	0	0	0
1987	0.4848	0.1647	0.0519	0.2167	0.2681	43.42	1.1165	1.1260	0.4991	0.6174	0.6269	32.82	0	0	0	0.6	0	0	0
1988	0.4415	0.1500	0.0473	0.1973	0.2441	45.52	0.9700	0.9710	0.4336	0.5364	0.5375	24.60	0	0	0	0.4	0	0	0
1989	0.5122	0.2729	0.0549	0.3278	0.1844	48.61	1.0538	1.0687	0.6744	0.3794	0.3943	28.72	0.45	0	0	0	0	0	0
1990	0.4939	0.2878	0.0529	0.3408	0.1531	51.87	0.9520	0.9615	0.6569	0.2951	0.3046	28.97	1	0	0	0	0	0	0
1991	0.5267	0.3149	0.0564	0.3713	0.1554	54.95	0.9584	0.9562	0.6757	0.2827	0.2805	24.47	1	0	0	0	0	0	0
1992	0.5185	0.2988	0.0637	0.3625	0.1561	58.21	0.8909	0.8889	0.6227	0.2681	0.2662	21.78	1	0	0	0	0	0	0
1993	0.5550	0.1957	0.0724	0.2681	0.2869	60.87	0.9118	0.9333	0.4404	0.4714	0.4929	23.14	0.9	1	0	0	0	0	0
1994	0.6578	0.2490	0.0858	0.3348	0.3230	63.74	1.0321	1.0105	0.5253	0.5067	0.4852	21.71	0.9	1	0	0	0	0	0
1995	0.6919	0.3841	0.0954	0.4795	0.2124	66.72	1.0371	0.9955	0.7187	0.3184	0.2768	20.69	0.9	0	0	0	0	0	0
1996	0.6506	0.3592	0.0897	0.4489	0.2017	69.09	0.9417	0.9463	0.6497	0.2919	0.2965	24.36	0.9	0	0	0	0	0	0
1997	0.6715	0.3687	0.0926	0.4613	0.2102	70.45	0.9532	0.9587	0.6548	0.2983	0.3039	25.74	0.9	0	0	0	0	0	0
1998	0.6466	0.3550	0.0892	0.4442	0.2024	71.75	0.9013	0.9066	0.6192	0.2821	0.2875	18.04	0.75	0	0	0	0	0	0
1999	0.6855	0.3701	0.0946	0.4646	0.2209	73.40	0.9338	0.9435	0.6329	0.3009	0.3106	22.35	0.75	0	0	0	0	0	0
2000	0.8190	0.3720	0.1130	0.4850	0.3340	75.93	1.0787	1.0821	0.6387	0.4400	0.4434	39.45	0.5	0	0	0	0	0	0
2001	0.8070	0.3720	0.1113	0.4833	0.3237	78.65	1.0261	1.0226	0.6145	0.4116	0.4081	32.86	0.5	0	0	0	0	0	0
2002	0.8140	0.3720	0.1123	0.4843	0.3297	81.06	1.0042	1.0086	0.5974	0.4068	0.4112	31.89	0.45	0	0	0	0	0	0
2003	0.8170	0.3720	0.1127	0.4847	0.3323	83.53	0.9781	0.9802	0.5803	0.3979	0.3999	29.78	0.45	0	0	0	0	0	0
2004	0.8690	0.3720	0.1199	0.4919	0.3771	86.06	1.0097	1.0173	0.5715	0.4382	0.4458	33.71	0.3	0	0	0	0	0	0
2005	0.9550	0.3720	0.1317	0.5037	0.4513	88.96	1.0735	1.0767	0.5662	0.5073	0.5105	45.81	0.3	0	0	0	0	0	0
2006	1.0200	0.3720	0.1407	0.5127	0.5073	92.09	1.1076	1.1050	0.5567	0.5509	0.5482	52.85	0.3	0	0	0	0	0	0
2007	1.0350	0.3720	0.1428	0.5148	0.5202	94.66	1.0934	1.0945	0.5438	0.5496	0.5507	53.32	0.3	0	0	0	0	0	0
2008	1.1080	0.3720	0.1528	0.5248	0.5832	98.52	1.1247	1.1332	0.5327	0.5920	0.6004	65.45	0.3	0	0.5	0	0	0	0
2009	1.0020	0.3870	0.1382	0.5252	0.4768	98.23	1.0200	1.0090	0.5347	0.4854	0.4744	44.74	0.3	0	1	0	0	0	0
2010	1.1650	0.4010	0.1693	0.5703	0.5947	100.00	1.1650	1.1692	0.5703	0.5947	0.5990	58.76	0	0	1	0	0	0	0
2011	1.3175	0.4010	0.2010	0.6020	0.7155	103.20	1.2767	1.2818	0.5833	0.6933	0.6984	74.49	0	0	0.5	0	0	0	0
2012	1.4256	0.4010	0.2276	0.6286	0.7970	105.72	1.3485	1.3386	0.5946	0.7539	0.7440	80.15	0	0	0	0	0	0	0
2013	1.4318	0.4240	0.2485	0.6725	0.7593	107.21	1.3355	1.3398	0.6273	0.7083	0.7125	74.27	0	0	0	0	0	0	0
2014	1.3926	0.4240	0.2417	0.6657	0.7269	107.05	1.3009	1.3010	0.6218	0.6791	0.6792	68.05	0	0	0	0	0	0	0
2015	1.2318	0.4240	0.2138	0.6378	0.5940	106.52	1.1564	1.1391	0.5988	0.5576	0.5403	42.11	0	0	0	0	0	0	0
2016	1.1495	0.4240	0.1995	0.6235	0.5260	103.20	1.1139	1.1104	0.6042	0.5097	0.5062	35.75	0	0	0	0	0	0	0
2017	1.2169	0.4240	0.2112	0.6352	0.5817	105.22	1.1565	1.1555	0.6037	0.5528	0.5518	44.27	0	0	0	0	0	0	0
2018	1.2890	0.4240	0.2237	0.6477	0.6413	106.89	1.2059	1.2183	0.6060	0.5999	0.6123	55.56	0	0	0	0	0	0	0

B.22 Sweden

CY	Krona/l petrol	Krona/l excise	Krona/l VAT	Krona/l tax	Krona/l energy	Cpi	2010K/l petrol	2010K/l predicted	2010K/l tax	2010K/l energy	2010K/l predicted	2010K/b oil01on	2010K/b oil6500	dum 91	dum 0111	dum 6500	dum 8689	dum 9699	dum GFC
1965	0.731	0.365	0.110	0.475	0.256	11.01	6.6426	6.5504	4.3177	2.3249	2.2326	0.00	155.35	0	0	1	0	0	0
1966	0.7801	0.4132	0.1173	0.5305	0.2496	11.72	6.6590	6.6895	4.5281	2.1309	2.1614	0.00	146.00	0	0	1	0	0	0
1967	0.8265	0.4129	0.1243	0.5372	0.2893	12.22	6.7645	6.5095	4.3969	2.3676	2.1125	0.00	139.59	0	0	1	0	0	0
1968	0.8289	0.4141	0.1247	0.5388	0.2901	12.46	6.6549	6.4210	4.3257	2.3292	2.0953	0.00	137.33	0	0	1	0	0	0
1969	0.7786	0.4046	0.1171	0.5217	0.2569	12.79	6.0874	6.1445	4.0786	2.0089	2.0659	0.00	133.47	0	0	1	0	0	0
1970	0.9246	0.4989	0.1390	0.6380	0.2866	13.69	6.7549	6.6745	4.6609	2.0940	2.0136	0.00	126.61	0	0	1	0	0	0
1971	0.9627	0.5195	0.1448	0.6643	0.2984	14.70	6.5486	6.5116	4.5185	2.0301	1.9931	0.00	123.91	0	0	1	0	0	0
1972	0.8709	0.4874	0.1310	0.6184	0.2526	15.58	5.5886	5.8458	3.9679	1.6207	1.8779	0.00	108.79	0	0	1	0	0	0
1973	0.8874	0.4434	0.1334	0.5768	0.3106	16.63	5.3359	5.2916	3.4683	1.8676	1.8233	0.00	101.63	0	0	1	0	0	0
1974	1.3247	0.5161	0.1992	0.7153	0.6094	18.28	7.2470	7.2349	3.9134	3.3336	3.3215	0.00	298.24	0	0	1	0	0	0
1975	1.1882	0.4511	0.1787	0.6297	0.5585	20.07	5.9213	6.1849	3.1383	2.7830	3.0466	0.00	262.17	0	0	1	0	0	0
1976	1.5210	0.5926	0.2287	0.8214	0.6997	22.12	6.8752	6.7599	3.7126	3.1626	3.0473	0.00	262.26	0	0	1	0	0	0
1977	1.5814	0.5371	0.2378	0.7749	0.8065	24.65	6.4141	6.1809	3.1429	3.2712	3.0379	0.00	261.03	0	0	1	0	0	0
1978	1.7512	0.7173	0.2634	0.9807	0.7705	27.12	6.4576	6.4858	3.6162	2.8413	2.8695	0.00	238.93	0	0	1	0	0	0
1979	2.0648	0.7632	0.3105	1.0737	0.9911	29.07	7.1019	7.1497	3.6930	3.4089	3.4567	0.00	315.99	0	0	1	0	0	0
1980	2.7732	0.9696	0.4170	1.3866	1.3866	33.06	8.3886	8.5374	4.1943	4.1943	4.3431	0.00	432.31	0	0	1	0	0	0
1981	3.3200	1.0611	0.4993	1.5604	1.7596	37.06	8.9582	9.0498	4.2103	4.7478	4.8395	0.00	497.45	0	0	1	0	0	0
1982	3.7293	1.0801	0.5608	1.6409	2.0884	40.24	9.2667	9.0756	4.0773	5.1893	4.9983	0.00	518.30	0	0	1	0	0	0
1983	3.9380	1.0618	0.5922	1.6540	2.2840	43.81	8.9879	8.6840	3.7749	5.2130	4.9091	0.00	506.59	0	0	1	0	0	0
1984	3.9685	1.1890	0.5968	1.7858	2.1827	47.34	8.3830	8.6186	3.7724	4.6107	4.8462	0.00	498.34	0	0	1	0	0	0
1985	4.3868	1.3367	0.8347	2.1715	2.2153	50.83	8.6305	8.7610	4.2721	4.3584	4.4889	0.00	451.44	0	0	1	0	0	0
1986	3.9001	1.5082	0.7421	2.2504	1.6497	52.98	7.3611	7.2034	4.2474	3.1137	2.9561	0.00	202.35	0	0	1	1	0	0
1987	3.9425	1.5641	0.7502	2.3143	1.6283	55.20	7.1420	7.2870	4.1924	2.9497	3.0946	0.00	220.53	0	0	1	1	0	0
1988	4.2018	1.8056	0.7995	2.6051	1.5967	58.42	7.1928	7.1501	4.4595	2.7333	2.6905	0.00	167.50	0	0	1	1	0	0
1989	4.5242	1.8536	0.8609	2.7145	1.8097	62.18	7.2758	7.3313	4.3655	2.9103	2.9658	0.00	203.63	0	0	1	1	0	0
1990	5.5005	2.9200	1.0717	3.9917	1.5087	68.63	8.0150	8.4775	5.8166	2.1984	2.6610	0.00	211.56	0	0	1	0	0	0
1991	6.9962	2.3850	1.3992	3.7842	3.2120	75.11	9.3147	9.3147	5.0383	4.2764	4.2764	0.00	173.43	1	0	1	0	0	0
1992	5.8834	2.9500	1.1767	4.1267	1.7567	76.89	7.6514	7.6035	5.3668	2.2846	2.2366	0.00	155.87	0	0	1	0	0	0
1993	6.7208	3.8800	1.3442	5.2242	1.4966	80.53	8.3459	8.8937	6.4874	1.8585	2.4063	0.00	178.14	0	0	1	0	0	0
1994	7.3122	3.9100	1.4624	5.3724	1.9397	82.27	8.8885	8.8088	6.5306	2.3579	2.2782	0.00	161.32	0	0	1	0	0	0
1995	7.5987	4.0100	1.5197	5.5297	2.0690	84.29	9.0155	8.7982	6.5607	2.4548	2.2374	0.00	155.98	0	0	1	0	0	0
1996	7.2672	4.2200	1.4534	5.6734	1.5937	84.73	8.5764	8.4382	6.6955	1.8809	1.7427	0.00	175.06	0	0	1	0	1	0
1997	7.5145	4.3700	1.5029	5.8729	1.6416	85.29	8.8102	8.7001	6.8856	1.9246	1.8145	0.00	184.49	0	0	1	0	1	0
1998	7.0103	4.5400	1.4021	5.9421	1.0683	85.06	8.2412	8.4210	6.9853	1.2558	1.4357	0.00	134.76	0	0	1	0	1	0
1999	7.2767	4.4300	1.4553	5.8853	1.3913	85.46	8.5149	8.5834	6.8868	1.6281	1.6966	0.00	169.00	0	0	1	0	1	0
2000	9.5120	4.4700	1.9024	6.3724	3.1396	86.23	11.0314	10.6739	7.3903	3.6411	3.2836	0.00	293.27	0	0	1	0	0	0
2001	9.4500	4.5000	1.8900	6.3900	3.0600	88.30	10.7020	10.6853	7.2366	3.4654	3.4487	270.45	0.00	0	0.55	0	0	0	0
2002	9.3070	4.6200	1.8614	6.4814	2.8256	90.21	10.3174	10.4076	7.1850	3.1324	3.2226	262.95	0.00	0	1	0	0	0	0
2003	9.4040	4.7100	1.8808	6.5908	2.8132	91.94	10.2280	10.3046	7.1683	3.0597	3.1363	247.13	0.00	0	1	0	0	0	0
2004	9.9640	4.7900	1.9928	6.7828	3.1812	92.29	10.7967	10.7039	7.3496	3.4471	3.3543	287.07	0.00	0	1	0	0	0	0
2005	10.9954	4.9600	2.1991	7.1591	3.8363	92.71	11.8605	11.7381	7.7224	4.1382	4.0157	408.21	0.00	0	1	0	0	0	0
2006	11.4216	4.9900	2.2843	7.2743	4.1473	93.97	12.1550	12.1468	7.7414	4.4136	4.4054	479.60	0.00	0	1	0	0	0	0
2007	11.5094	5.0600	2.3019	7.3619	4.1475	96.05	11.9833	12.1060	7.6650	4.3183	4.4410	486.12	0.00	0	1	0	0	0	0
2008	12.6549	5.2900	2.5310	7.8210	4.8339	99.35	12.7381	12.7704	7.8724	4.8657	4.8980	626.62	0.00	0	1	0	0	0	1
2009	11.9563	5.5200	2.3913	7.9113	4.0451	98.86	12.0948	12.0608	8.0029	4.0919	4.0579	472.75	0.00	0	1	0	0	0	1
2010	12.7144	5.5000	2.5429	8.0429	4.6715	100.00	12.7144	12.7177	8.0429	4.6715	4.6749	557.35	0.00	0	1	0	0	0	0.5
2011	14.0153	5.5000	2.8031	8.3031	5.7122	102.96	13.6122	13.5536	8.0643	5.5480	5.4893	678.13	0.00	0	1	0	0	0	0
2012	14.9638	5.6500	2.9928	8.6428	6.3211	103.88	14.4055	14.4152	8.3203	6.0852	6.0949	713.69	0.00	0	0	0	0	0	0
2013	14.4683	5.6300	2.8937	8.5237	5.9446	103.83	13.9346	14.0361	8.2093	5.7254	5.8268	664.58	0.00	0	0	0	0	0	0
2014	14.2310	5.6300	2.8462	8.4762	5.7548	103.64	13.7308	13.8494	8.1782	5.5525	5.6711	636.07	0.00	0	0	0	0	0	0
2015	13.1251	5.8500	2.6250	8.4750	4.6501	103.59	12.6697	12.5809	8.1809	4.4887	4.3999	403.23	0.00	0	0	0	0	0	0
2016	13.0734	6.3100	2.6147	8.9247	4.1487	104.61	12.4967	12.5475	8.5310	3.9657	4.0165	332.99	0.00	0	0	0	0	0	0
2017	14.0252	6.5000	2.8050	9.3050	4.7201	106.49	13.1708	13.2376	8.7382	4.4326	4.4995	421.46	0.00	0	0	0	0	0	0
2018	15.6489	6.5000	3.1298	9.6298	6.0191	108.44	14.4315	14.1804	8.8806	5.5509	5.2998	568.05	0.00	0	0	0	0	0	0

B.23 Switzerland

CY	Francs/l petrol	Francs/l excise	Francs/l VAT	Francs/l tax	Francs/l energy	Cpi	2010F/l petrol	2010F/l predicted	2010F/l tax	2010F/l energy	2010F/l predicted	2010F/b landed oil	dum 6567	dum 9003	dum 6503	dum 74	dum 6971	dum GFC
1965	0.6467	0.3738	0.0343	0.4080	0.2386	28.16	2.2961	2.3312	1.4488	0.8472	0.8824	50.51	1	0	1	0	0	0
1966	0.6912	0.3995	0.0367	0.4362	0.2551	29.51	2.3424	2.3477	1.4780	0.8643	0.8697	48.31	1	0	1	0	0	0
1967	0.7341	0.4191	0.0389	0.4581	0.2760	30.69	2.3918	2.3513	1.4925	0.8993	0.8588	46.43	1	0	1	0	0	0
1968	0.6013	0.3656	0.0319	0.3975	0.2038	31.43	1.9134	1.9382	1.2648	0.6486	0.6735	45.10	0	0	1	0	0	0
1969	0.5604	0.3452	0.0297	0.3749	0.1855	32.21	1.7400	1.7457	1.1641	0.5760	0.5816	44.17	0	0	1	0	1	0
1970	0.6033	0.3812	0.0320	0.4132	0.1900	33.37	1.8076	1.8146	1.2382	0.5694	0.5763	43.25	0	0	1	0	1	0
1971	0.6931	0.4519	0.0368	0.4886	0.2045	35.57	1.9486	1.9360	1.3738	0.5748	0.5622	40.81	0	0	1	0	1	0
1972	0.6985	0.4218	0.0370	0.4589	0.2396	37.94	1.8412	1.8289	1.2096	0.6315	0.6192	35.70	0	0	1	0	0	0
1973	0.7151	0.4140	0.0379	0.4519	0.2631	41.26	1.7332	1.6784	1.0954	0.6378	0.5830	29.42	0	0	1	0	0	0
1974	1.1001	0.5951	0.0583	0.6535	0.4466	45.29	2.4292	2.4292	1.4429	0.9862	0.9862	78.87	0	0	1	1	0	0
1975	0.9387	0.5144	0.0498	0.5641	0.3745	48.32	1.9426	1.9723	1.1675	0.7751	0.8048	67.86	0	0	1	0	0	0
1976	0.9533	0.5243	0.0506	0.5748	0.3784	49.15	1.9396	1.9722	1.1696	0.7700	0.8027	67.49	0	0	1	0	0	0
1977	1.0859	0.6265	0.0576	0.6841	0.4018	49.79	2.1812	2.1805	1.3742	0.8071	0.8063	68.12	0	0	1	0	0	0
1978	0.9038	0.5290	0.0479	0.5769	0.3269	50.30	1.7969	1.8501	1.1470	0.6498	0.7031	50.23	0	0	1	0	0	0
1979	1.0582	0.5290	0.0561	0.5851	0.4731	52.13	2.0299	1.9284	1.1224	0.9075	0.8060	68.08	0	0	1	0	0	0
1980	1.1677	0.5290	0.0619	0.5909	0.5767	54.23	2.1532	2.1122	1.0897	1.0635	1.0225	105.60	0	0	1	0	0	0
1981	1.2564	0.5290	0.0666	0.5956	0.6608	57.75	2.1756	2.1599	1.0314	1.1442	1.1285	123.97	0	0	1	0	0	0
1982	1.2672	0.5290	0.0672	0.5962	0.6710	61.01	2.0769	2.0310	0.9771	1.0998	1.0539	111.04	0	0	1	0	0	0
1983	1.2284	0.5444	0.0717	0.6161	0.6123	62.81	1.9556	1.9582	0.9809	0.9747	0.9774	97.78	0	0	1	0	0	0
1984	1.2282	0.5422	0.0717	0.6139	0.6143	64.66	1.8995	1.9697	0.9495	0.9501	1.0202	105.19	0	0	1	0	0	0
1985	1.2353	0.5435	0.0721	0.6156	0.6197	66.88	1.8472	1.8878	0.9205	0.9266	0.9673	96.03	0	0	1	0	0	0
1986	0.9887	0.4830	0.0577	0.5407	0.4480	67.38	1.4675	1.4421	0.8025	0.6649	0.6396	39.23	0	0	1	0	0	0
1987	0.9755	0.4839	0.0570	0.5409	0.4347	68.35	1.4272	1.4434	0.7913	0.6359	0.6521	41.39	0	0	1	0	0	0
1988	0.9672	0.4807	0.0565	0.5372	0.4300	69.63	1.3890	1.3807	0.7715	0.6176	0.6093	33.97	0	0	1	0	0	0
1989	1.0577	0.5017	0.0617	0.5634	0.4943	71.83	1.4726	1.4552	0.7845	0.6881	0.6708	44.63	0	0	1	0	0	0
1990	1.0275	0.5047	0.0600	0.5647	0.4628	75.71	1.3572	1.3498	0.7459	0.6114	0.6039	44.36	0	0.2	1	0	0	0
1991	1.0331	0.5119	0.0603	0.5722	0.4609	80.14	1.2891	1.2861	0.7140	0.5751	0.5721	38.84	0	0.2	1	0	0	0
1992	0.9161	0.5262	0.0535	0.5797	0.3364	83.38	1.0987	1.1629	0.6952	0.4035	0.4676	34.86	0	0.45	1	0	0	0
1993	1.1332	0.6755	0.0662	0.7417	0.3916	86.12	1.3158	1.3100	0.8611	0.4546	0.4489	31.61	0	0.45	1	0	0	0
1994	1.1255	0.7367	0.0657	0.8024	0.3231	86.86	1.2958	1.2959	0.9238	0.3720	0.3721	26.78	0	0.6	1	0	0	0
1995	1.1191	0.7382	0.0683	0.8065	0.3126	88.42	1.2657	1.2708	0.9121	0.3535	0.3587	24.46	0	0.6	1	0	0	0
1996	1.0554	0.7339	0.0644	0.7983	0.2571	89.14	1.1840	1.1948	0.8956	0.2884	0.2992	31.11	0	0.9	1	0	0	0
1997	1.1155	0.7361	0.0681	0.8042	0.3113	89.60	1.2449	1.2107	0.8975	0.3474	0.3132	33.54	0	0.9	1	0	0	0
1998	1.0101	0.7420	0.0617	0.8037	0.2065	89.62	1.1271	1.1177	0.8967	0.2304	0.2210	23.20	0	1	1	0	0	0
1999	1.0594	0.7420	0.0739	0.8159	0.2434	90.34	1.1726	1.1598	0.9031	0.2695	0.2567	29.39	0	1	1	0	0	0
2000	1.4000	0.7460	0.0977	0.8437	0.5563	91.75	1.5259	1.5124	0.9195	0.6064	0.5928	50.91	0	0.35	1	0	0	0
2001	1.3510	0.7460	0.0954	0.8414	0.5096	92.66	1.4581	1.4506	0.9081	0.5500	0.5425	42.19	0	0.35	1	0	0	0
2002	1.2940	0.7460	0.0914	0.8374	0.4566	93.25	1.3876	1.4284	0.8980	0.4896	0.5304	40.08	0	0.35	1	0	0	0
2003	1.3120	0.7460	0.0927	0.8387	0.4733	93.85	1.3980	1.4235	0.8936	0.5044	0.5298	39.99	0	0.35	1	0	0	0
2004	1.4020	0.7460	0.0990	0.8450	0.5570	94.60	1.4820	1.4974	0.8933	0.5888	0.6041	47.15	0	0	0	0	0	0
2005	1.5270	0.7460	0.1079	0.8539	0.6731	95.71	1.5954	1.6045	0.8921	0.7033	0.7123	65.91	0	0	0	0	0	0
2006	1.6430	0.7460	0.1160	0.8620	0.7810	96.72	1.6987	1.6802	0.8912	0.8074	0.7889	79.18	0	0	0	0	0	0
2007	1.6840	0.7460	0.1189	0.8649	0.8191	97.43	1.7284	1.7108	0.8877	0.8406	0.8231	85.11	0	0	0	0	0	0
2008	1.7850	0.7460	0.1261	0.8721	0.9129	99.80	1.7886	1.7974	0.8739	0.9148	0.9235	102.51	0	0	0	0	0	0
2009	1.5070	0.7460	0.1064	0.8524	0.6546	99.32	1.5174	1.5223	0.8583	0.6591	0.6640	66.90	0	0	0	0	0	1
2010	1.6370	0.7460	0.1156	0.8616	0.7754	100.00	1.6370	1.6252	0.8616	0.7754	0.7635	80.40	0	0	0	0	0	0.6
2011	1.7200	0.7460	0.1274	0.8734	0.8466	100.23	1.7160	1.7162	0.8714	0.8446	0.8448	94.49	0	0	0	0	0	0.6
2012	1.7600	0.7460	0.1304	0.8764	0.8836	99.54	1.7682	1.7716	0.8804	0.8877	0.8912	102.52	0	0	0	0	0	0.6
2013	1.7500	0.7460	0.1296	0.8756	0.8744	99.32	1.7620	1.7826	0.8816	0.8803	0.9010	98.60	0	0	0	0	0	0
2014	1.7000	0.7460	0.1259	0.8719	0.8281	99.31	1.7119	1.7235	0.8780	0.8338	0.8455	88.99	0	0	0	0	0	0
2015	1.4500	0.7500	0.1074	0.8574	0.5926	98.17	1.4770	1.4857	0.8734	0.6036	0.6123	48.57	0	0	0	0	0	0
2016	1.4000	0.7500	0.1037	0.8537	0.5463	97.75	1.4323	1.4428	0.8734	0.5589	0.5694	41.14	0	0	0	0	0	0
2017	1.5000	0.7500	0.1111	0.8611	0.6389	98.26	1.5265	1.5121	0.8763	0.6502	0.6358	52.64	0	0	0	0	0	0
2018	1.6200	0.7500	0.1158	0.8658	0.7542	99.19	1.6333	1.6023	0.8729	0.7604	0.7294	68.87	0	0	0	0	0	0

B.24 United States (per gallon)

CY	c/gallon gasoline	c/gallon tax	c/gallon energy	Cpi	2010c/gal gasoline	2010c/gal predicted	2010c/gal tax	2010c/gal energy	2010c/gal predicted	2010$/b WTI oil	dum 6573	dum 0810	dum 8906
1965	31.151	10.428	20.722	14.44	215.663	219.864	72.198	143.465	147.667	22.85	1	0	0
1966	32.081	10.515	21.566	14.86	215.932	216.642	70.777	145.155	145.864	22.21	1	0	0
1967	33.161	10.604	22.557	15.32	216.519	213.214	69.239	147.280	143.975	21.55	1	0	0
1968	33.711	10.599	23.112	15.96	211.255	207.935	66.421	144.834	141.513	20.68	1	0	0
1969	34.841	11.037	23.804	16.83	207.033	203.973	65.585	141.448	138.388	19.58	1	0	0
1970	35.691	11.057	24.634	17.79	200.605	198.402	62.145	138.460	136.256	18.83	1	0	0
1971	36.431	11.213	25.218	18.57	196.170	197.602	60.379	135.791	137.223	19.17	1	0	0
1972	36.131	11.121	25.010	19.17	188.503	193.550	58.019	130.484	135.530	18.57	1	0	0
1973	38.721	10.978	27.743	20.36	190.187	190.685	53.919	136.268	136.766	19.01	1	0	0
1974	52.412	10.978	41.434	22.61	231.843	243.486	48.560	183.283	194.926	54.32	0	0	0
1975	57.222	10.978	46.244	24.68	231.842	230.922	44.478	187.364	186.444	51.33	0	0	0
1976	59.472	10.698	48.774	26.11	227.803	226.532	40.977	186.826	185.555	51.02	0	0	0
1977	62.002	11.772	50.230	27.80	223.063	229.730	42.353	180.710	187.377	51.66	0	0	0
1978	63.002	11.962	51.040	29.92	210.593	216.770	39.985	170.607	176.785	47.93	0	0	0
1979	86.003	12.113	73.889	33.28	258.398	259.912	36.395	222.003	223.517	64.39	0	0	0
1980	124.578	12.449	112.128	37.78	329.773	327.646	32.955	296.818	294.691	89.45	0	0	0
1981	137.838	12.397	125.441	41.70	330.569	318.381	29.731	300.838	288.650	87.32	0	0	0
1982	125.764	12.568	113.196	44.27	284.114	282.059	28.392	255.722	253.667	75.00	0	0	0
1983	120.543	18.430	102.112	45.66	263.979	261.069	40.361	223.618	220.708	63.40	0	0	0
1984	117.589	19.506	98.082	47.66	246.732	251.539	40.930	205.803	210.609	59.84	0	0	0
1985	116.655	19.468	97.187	49.34	236.431	233.625	39.457	196.974	194.168	54.05	0	0	0
1986	88.486	18.375	70.111	50.30	175.919	162.157	36.531	139.388	125.626	29.92	0	0	0
1987	91.248	19.924	71.324	52.10	175.144	183.557	38.243	136.901	145.314	36.85	0	0	0
1988	90.926	20.463	70.463	54.23	167.652	162.006	37.730	129.923	124.277	29.45	0	0	0
1989	98.690	22.969	75.721	56.83	173.648	171.726	40.415	133.233	131.311	34.56	0	0	0.25
1990	112.669	33.203	79.465	59.91	188.053	182.416	55.419	132.634	126.997	40.94	0	0	1
1991	110.217	30.994	79.223	62.44	176.519	173.297	49.639	126.881	123.658	34.50	0	0	0.5
1992	108.695	37.474	71.221	64.34	168.944	174.774	58.246	110.698	116.528	31.99	0	0	0.5
1993	106.722	37.967	68.755	66.25	161.092	162.000	57.310	103.783	104.691	27.82	0	0	0.5
1994	107.605	36.453	71.151	67.97	158.316	158.667	53.632	104.683	105.035	25.31	0	0	0.25
1995	111.074	37.739	73.335	69.88	158.961	162.083	54.010	104.951	108.073	26.38	0	0	0.25
1996	120.089	36.002	84.087	71.93	166.959	170.560	50.054	116.906	120.507	30.75	0	0	0.25
1997	119.897	38.341	81.556	73.61	162.885	164.773	52.088	110.797	112.685	28.00	0	0	0.25
1998	102.952	37.854	65.098	74.75	137.733	138.596	50.643	87.090	87.953	19.29	0	0	0.25
1999	113.935	37.854	76.081	76.39	149.156	154.627	49.556	99.600	105.071	25.32	0	0	0.25
2000	148.760	38.233	110.528	78.96	188.404	190.862	48.421	139.982	142.441	38.48	0	0	0.25
2001	142.527	38.233	104.294	81.18	175.564	171.148	47.095	128.469	124.053	32.00	0	0	0.25
2002	134.406	38.611	95.795	82.48	162.961	170.129	46.814	116.147	123.315	31.74	0	0	0.25
2003	155.829	37.471	118.358	84.37	184.690	182.195	44.411	140.279	137.784	36.84	0	0	0.25
2004	185.128	37.531	147.597	86.62	213.715	212.590	43.327	170.389	169.263	47.92	0	0	0.25
2005	227.088	37.651	189.437	89.54	253.619	254.874	42.050	211.569	212.825	63.26	0	0	0.25
2006	257.596	38.701	218.895	92.42	278.710	278.007	41.873	236.837	236.133	71.46	0	0	0.25
2007	280.595	37.651	242.944	95.07	295.133	296.352	39.602	255.532	256.750	76.09	0	0	0
2008	325.662	38.881	286.781	98.70	329.942	325.862	39.392	290.550	286.469	100.98	0	1	0
2009	234.941	39.181	195.760	98.38	238.808	238.828	39.826	198.982	199.002	62.97	0	0.5	0
2010	277.975	40.221	237.754	100.00	277.975	286.116	40.221	237.754	245.895	79.48	0	0.5	0
2011	352.201	39.781	312.420	103.13	341.503	340.510	38.573	302.930	301.938	92.00	0	0	0
2012	362.579	40.031	322.548	105.21	344.622	332.585	38.049	306.573	294.536	89.39	0	0	0
2013	350.624	40.299	310.324	106.70	328.614	339.229	37.769	290.845	301.459	91.83	0	0	0
2014	336.334	40.964	295.369	108.46	310.105	322.399	37.770	272.335	284.630	85.90	0	0	0
2015	242.203	43.443	198.760	108.69	222.832	207.763	39.969	182.863	167.795	44.77	0	0	0
2016	217.882	43.463	174.419	110.08	197.926	191.818	39.482	158.443	152.335	39.33	0	0	0
2017	241.762	44.277	197.485	112.43	215.038	208.361	39.383	175.655	168.978	45.18	0	0	0
2018	272.550	44.277	228.273	115.43	236.113	239.857	38.357	197.755	201.500	56.64	0	0	0

B.25 United States (per litre)

CY	c/l gasoline	c/l tax	c/l energy	Cpi	2010c/l gasoline	2010c/l predicted	2010c/l tax	2010c/l energy	2010c/l predicted	2010$/b WTI oil	dum 6573	dum 0810	dum 8906
1965	8.229	2.755	5.474	14.44	56.972	58.082	19.073	37.899	39.009	22.85	1	0	0
1966	8.475	2.778	5.697	14.86	57.043	57.231	18.697	38.346	38.533	22.21	1	0	0
1967	8.760	2.801	5.959	15.32	57.198	56.325	18.291	38.907	38.034	21.55	1	0	0
1968	8.906	2.800	6.106	15.96	55.808	54.931	17.547	38.261	37.384	20.68	1	0	0
1969	9.204	2.916	6.288	16.83	54.692	53.884	17.326	37.367	36.558	19.58	1	0	0
1970	9.429	2.921	6.508	17.79	52.994	52.412	16.417	36.577	35.995	18.83	1	0	0
1971	9.624	2.962	6.662	18.57	51.823	52.201	15.950	35.872	36.251	19.17	1	0	0
1972	9.545	2.938	6.607	19.17	49.797	51.130	15.327	34.470	35.803	18.57	1	0	0
1973	10.229	2.900	7.329	20.36	50.242	50.374	14.244	35.998	36.130	19.01	1	0	0
1974	13.846	2.900	10.946	22.61	61.247	64.322	12.828	48.418	51.494	54.32	0	0	0
1975	15.116	2.900	12.216	24.68	61.246	61.003	11.750	49.496	49.253	51.33	0	0	0
1976	15.711	2.826	12.885	26.11	60.179	59.843	10.825	49.354	49.019	51.02	0	0	0
1977	16.379	3.110	13.269	27.80	58.927	60.688	11.188	47.738	49.500	51.66	0	0	0
1978	16.643	3.160	13.483	29.92	55.633	57.265	10.563	45.070	46.702	47.93	0	0	0
1979	22.719	3.200	19.519	33.28	68.262	68.662	9.615	58.647	59.047	64.39	0	0	0
1980	32.910	3.289	29.621	37.78	87.117	86.555	8.706	78.411	77.849	89.45	0	0	0
1981	36.413	3.275	33.138	41.70	87.327	84.107	7.854	79.473	76.253	87.32	0	0	0
1982	33.223	3.320	29.903	44.27	75.055	74.512	7.500	67.555	67.012	75.00	0	0	0
1983	31.844	4.869	26.975	45.66	69.736	68.967	10.662	59.074	58.305	63.40	0	0	0
1984	31.064	5.153	25.911	47.66	65.180	66.450	10.812	54.367	55.637	59.84	0	0	0
1985	30.817	5.143	25.674	49.34	62.459	61.717	10.423	52.035	51.294	54.05	0	0	0
1986	23.375	4.854	18.521	50.30	46.473	42.837	9.651	36.823	33.187	29.92	0	0	0
1987	24.105	5.263	18.842	52.10	46.268	48.491	10.103	36.165	38.388	36.85	0	0	0
1988	24.020	5.406	18.614	54.23	44.289	42.798	9.967	34.322	32.830	29.45	0	0	0
1989	26.071	6.068	20.003	56.83	45.873	45.365	10.677	35.196	34.689	34.56	0	0	0.25
1990	29.764	8.771	20.992	59.91	49.678	48.189	14.640	35.038	33.549	40.94	0	0	1
1991	29.116	8.188	20.929	62.44	46.631	45.780	13.113	33.518	32.667	34.50	0	0	0.5
1992	28.714	9.900	18.815	64.34	44.630	46.170	15.387	29.243	30.783	31.99	0	0	0.5
1993	28.193	10.030	18.163	66.25	42.556	42.796	15.140	27.416	27.656	27.82	0	0	0.5
1994	28.426	9.630	18.796	67.97	41.823	41.915	14.168	27.654	27.747	25.31	0	0	0.25
1995	29.343	9.970	19.373	69.88	41.993	42.818	14.268	27.725	28.550	26.38	0	0	0.25
1996	31.724	9.511	22.213	71.93	44.106	45.057	13.223	30.883	31.835	30.75	0	0	0.25
1997	31.674	10.129	21.545	73.61	43.030	43.528	13.760	29.270	29.768	28.00	0	0	0.25
1998	27.197	10.000	17.197	74.75	36.385	36.613	13.378	23.007	23.235	19.29	0	0	0.25
1999	30.098	10.000	20.098	76.39	39.403	40.848	13.091	26.311	27.757	25.32	0	0	0.25
2000	39.298	10.100	29.198	78.96	49.771	50.420	12.792	36.979	37.629	38.48	0	0	0.25
2001	37.652	10.100	27.552	81.18	46.379	45.213	12.441	33.938	32.771	32.00	0	0	0.25
2002	35.506	10.200	25.306	82.48	43.050	44.943	12.367	30.683	32.576	31.74	0	0	0.25
2003	41.166	9.899	31.267	84.37	48.790	48.131	11.732	37.058	36.399	36.84	0	0	0.25
2004	48.906	9.915	38.991	86.62	56.458	56.160	11.446	45.012	44.715	47.92	0	0	0.25
2005	59.990	9.946	50.044	89.54	66.999	67.331	11.108	55.891	56.222	63.26	0	0	0.25
2006	68.050	10.224	57.826	92.42	73.627	73.442	11.062	62.566	62.380	71.46	0	0	0.25
2007	74.125	9.946	64.179	95.07	77.966	78.288	10.462	67.504	67.826	76.09	0	0	0
2008	86.031	10.271	75.760	98.70	87.161	86.084	10.406	76.755	75.677	100.98	0	1	0
2009	62.065	10.351	51.714	98.38	63.086	63.092	10.521	52.566	52.571	62.97	0	0.5	0
2010	73.433	10.625	62.808	100.00	73.433	75.584	10.625	62.808	64.959	79.48	0	0.5	0
2011	93.042	10.509	82.533	103.13	90.215	89.953	10.190	80.026	79.764	92.00	0	0	0
2012	95.783	10.575	85.208	105.21	91.040	87.860	10.051	80.988	77.808	89.39	0	0	0
2013	92.625	10.646	81.979	106.70	86.811	89.615	9.978	76.833	79.637	91.83	0	0	0
2014	88.850	10.822	78.028	108.46	81.921	85.169	9.978	71.943	75.191	85.90	0	0	0
2015	63.983	11.477	52.507	108.69	58.866	54.885	10.559	48.307	44.327	44.77	0	0	0
2016	57.558	11.482	46.077	110.08	52.287	50.673	10.430	41.856	40.243	39.33	0	0	0
2017	63.867	11.697	52.170	112.43	56.807	55.043	10.404	46.403	44.639	45.18	0	0	0
2018	72.00	11.697	60.303	115.43	62.374	63.364	10.133	52.241	53.231	56.64	0	0	0

APPENDIX C
WTI Oil Price Modelling Data

	WTI/OPEC ratio	predicted	lead production change	pipelinedum
1999	1.103	1.099	-1.4	0
2000	1.110	1.100	-1.5	0
2001	1.099	1.105	-1.8	0
2002	1.101	1.115	-2.4	0
2003	1.116	1.120	-2.8	0
2004	1.126	1.119	-2.7	0
2005	1.111	1.117	-2.6	0
2006	1.079	1.071	0.4	0
2007	1.060	1.064	0.8	0
2008	1.042	1.049	1.7	0
2009	1.035	1.004	4.6	0
2010	0.961	0.958	7.5	0
2011	0.912	0.916	10.1	0
2012	0.889	0.889	11.8	0
2013	0.915	0.937	8.8	0
2014	0.953	0.962	7.2	0
2015	0.993	0.971	6.6	0
2016	1.000	1.006	4.5	0
2017	0.976	0.980	3.1	0.5
2018	0.914	0.907	4.6	1
2019		0.95	4.3	0.55
2020		0.99	3.3	0.4
2021		1.01	2.9	0.25
2022		1.02	2.6	0.15
2023		1.04	2.2	0
2024		1.05	1.6	0
2025		1.06	0.9	0
2026		1.08	0.1	0
2027		1.09	-0.7	0
2028		1.10	-1.7	0
2029		1.12	-2.7	0
2030		1.12	-3.4	0
2031		1.12	-3.9	0
2032		1.12	-4.3	0
2033		1.12	-4.5	0
2034		1.12	-4.7	0
2035		1.12	-5.1	0
2036		1.12	-5.8	0
2037		1.12	-6.8	0
2038		1.12	-7.6	0
2039		1.12	-8.5	0
2040		1.12	-9.3	0

Abbreviations and terms

$	dollar
ACEA	European Automoblile Manufacturers Association
AEMO	Australian Energy Market Operator
APEC	Asia-Pacific Economic Cooperation
b	barrel
BEV	Battery Electric Vehicles
BITRE	Bureau of Infrastructure, Transport and Regional Economics
c	cents
CPI	Consumer Price Index
EAFO	European Alternative Fuels Observatory
EIA	Energy Information Agency
EV	Electric Vehicle (battery electric plus plug-in hybrid electric vehicles)
FFV	Fossil Fuel Vehicle
gal	gallon
GST	Goods and Services Tax
ICCT	International Council on Clean Transportation
IEA	International Energy Agency
IRF	International Road Federation
ITS UC Davis	Institute of Transport Studies, University of California, Davis
kWh	kilowatt hour
l	litre
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of Petroleum Exporting Countries
PHEV	Plug-in Hybrid Electric Vehilces
regios	new vehicle registrations
SDRs	Special Drawing Rights
US	United States
VAT	Value Added Tax
WTI	West Texas Intermediate (oil)

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