



Long-term Energy Market Outlook

Mark Illing

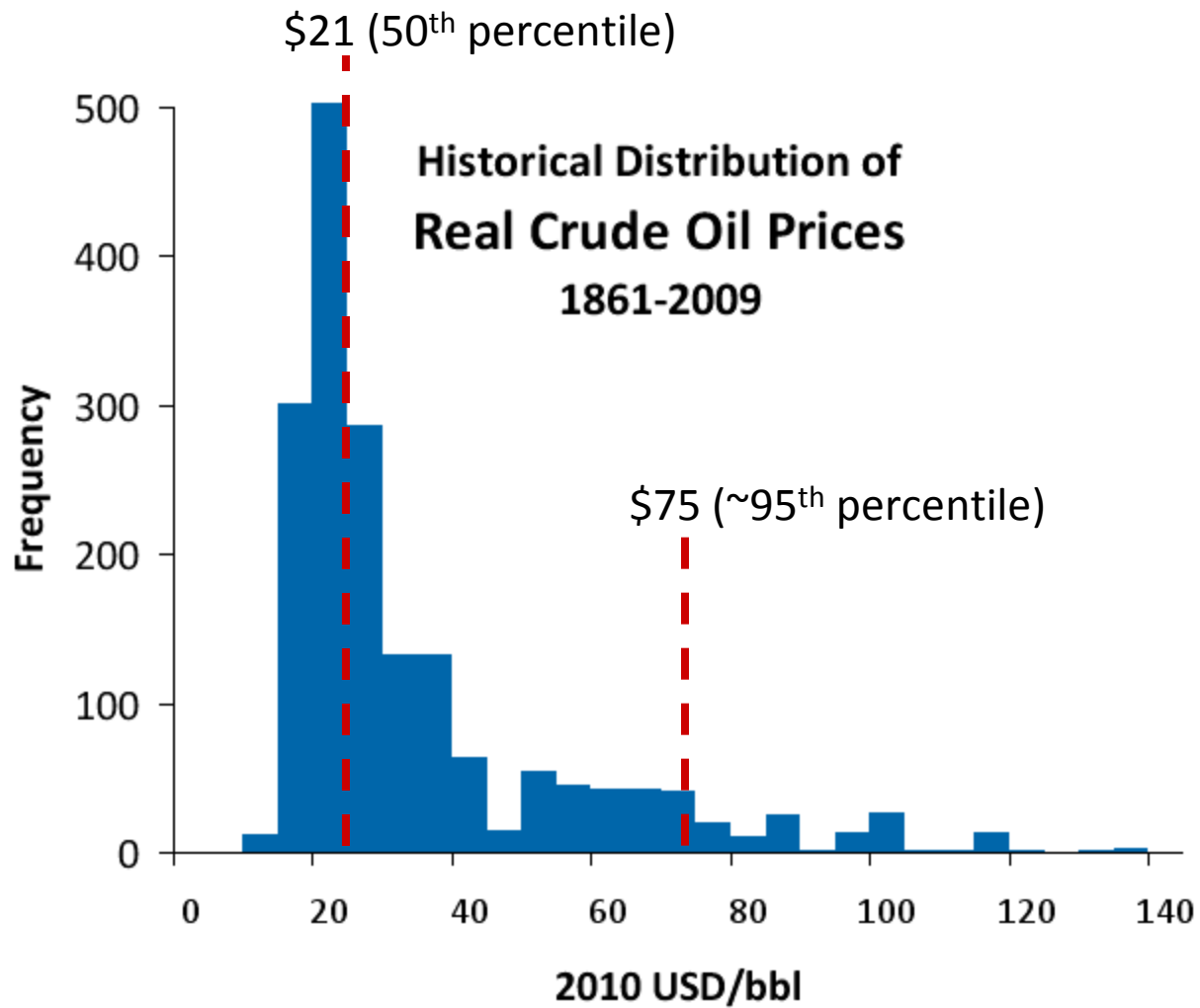
Chief Economist

February 18, 2010

The views expressed in this presentation are for discussion purposes and do not represent the official business planning assumptions used by Suncor Energy.



History is History

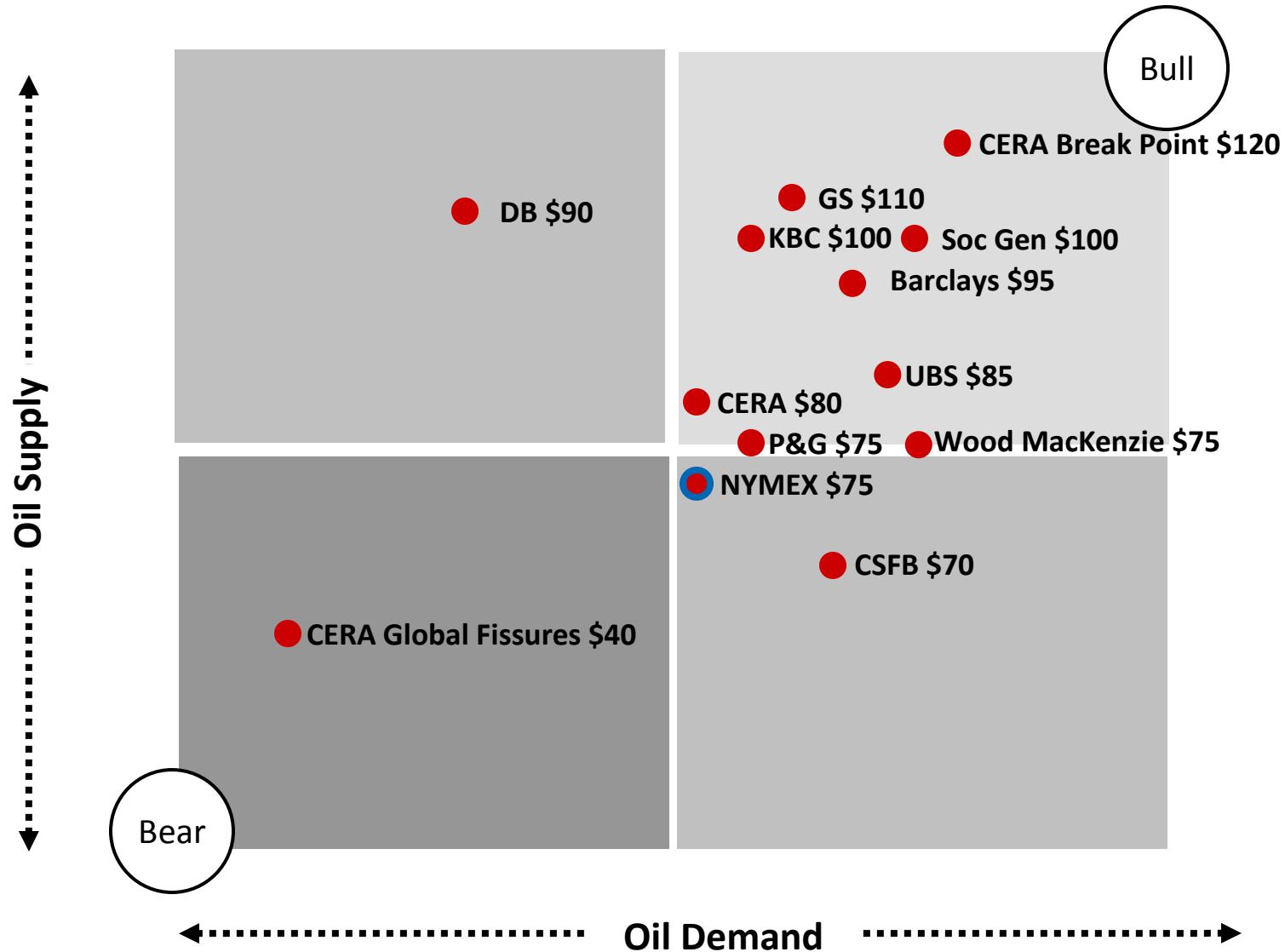


Source: Calculations based on EIA and BEA data

Long-run oil price forecasts

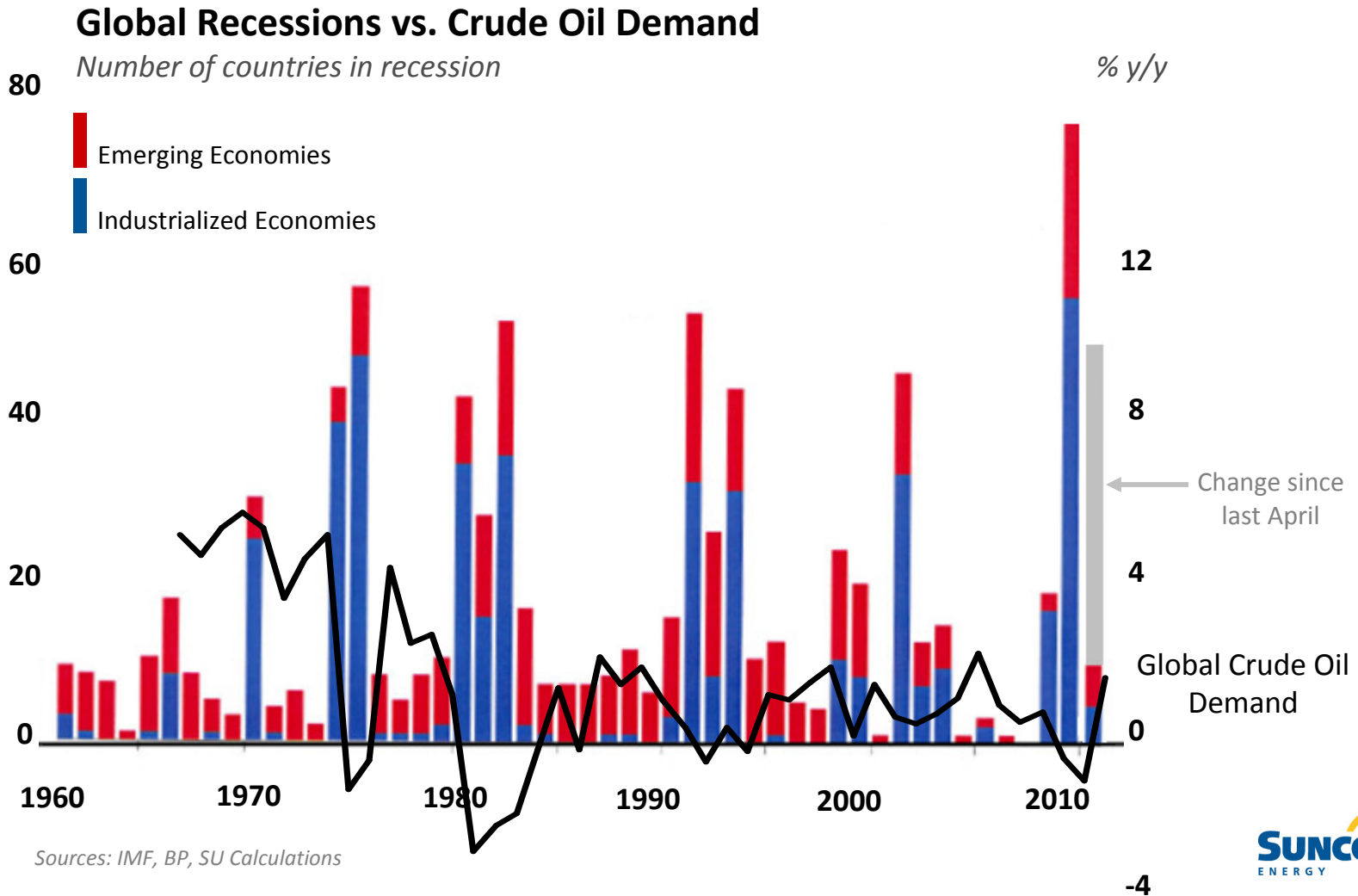
Oil price forecasts are skewed toward the bullish region.

(approximate long-run WTI price in 2010 USD/bbl)



Extraordinary fiscal and monetary stimulus will support growth in 2010

2004—2007 saw the greatest synchronized global economic expansion since WWII. 2008—2009 saw the exact opposite. Sentiment has improved dramatically over the past 6 months, and next year most countries will be out of recession resulting in a resumption of crude oil demand growth.

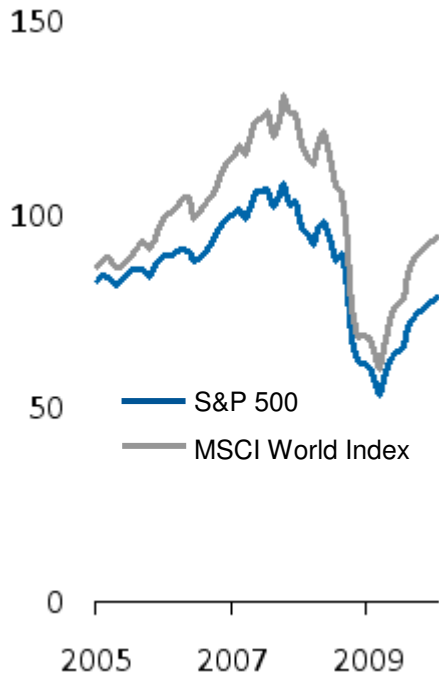


Leading indicators are positive

Market sentiment and forward-looking expectations have improved, suggesting a solid recovery in growth in 2010.

Stock markets are pricing in positive earnings growth...

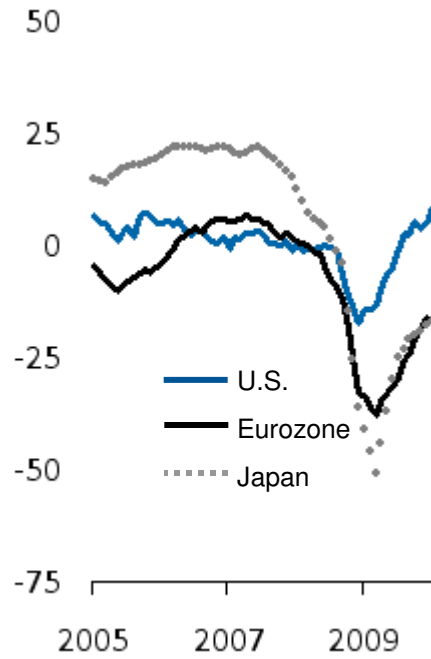
Index, 2000=100



Source: Bloomberg
(January 2009)

Business sentiment is improving on new orders...

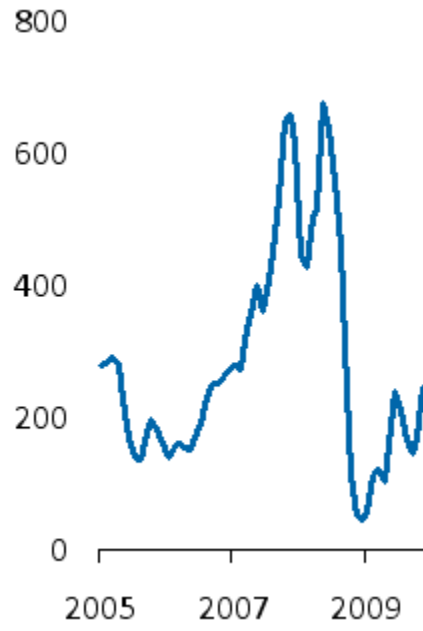
*Purchasing Managers' Index
(>0 = expect expansion)*



Source: Bloomberg
(January 2009)

Global shipping rates have started to firm as goods are being moved from factories...

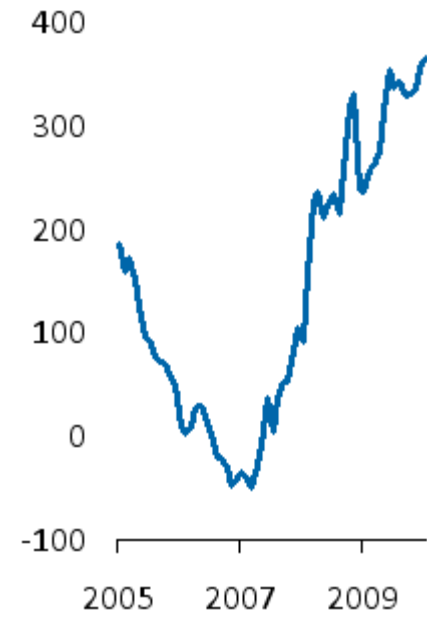
Baltic Dry Index, 2000=100



*Weighted average of four main shipping routes for dry bulk goods
Source: Bloomberg
(January 2009)

Bond markets are pricing in an economic rebound...

Slope of yield curve: 10-year minus 3-month Treasury Yields (bps)

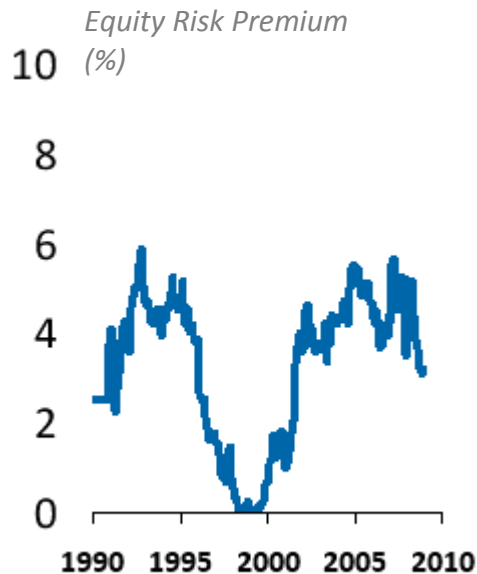


Source: Bloomberg
(February 2009)

Financial crisis has crimped investment

The price of risk has fallen from extreme levels, but remains elevated. This has exacerbated underinvestment in upstream oil supply.

The equity risk premium¹ (the excess return that shareholders expect over and above bond yields) remains elevated...

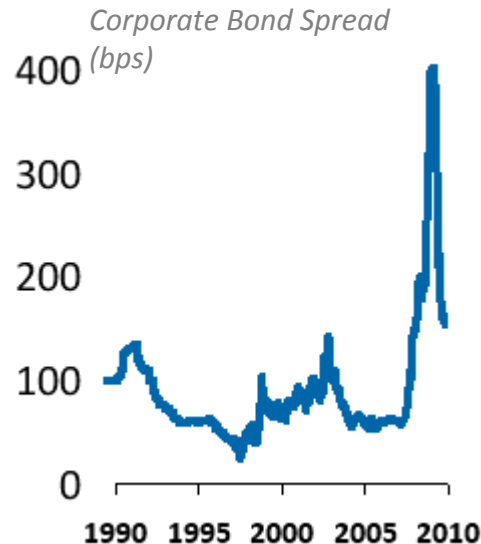


¹ Real 10-year trailing P/E ratio minus real long-run bond yield.

Sources: SU Calculations, Federal Reserve, S&P 500

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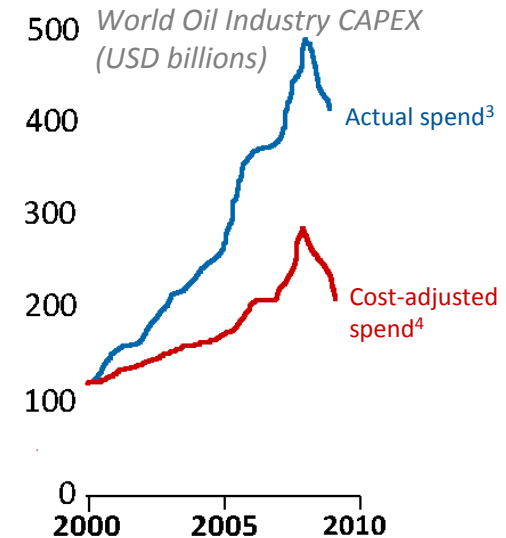
...as do risk spreads on corporate debt². This means that companies require a higher break-even price for investing in projects...



² Average option-adjusted corporate bond yield spread for Canadian issuers.

Source: Merrill Lynch

...leading to a retrenchment in upstream investment, which was already under pressure from rising costs.



³ Includes IOCs and NOCs. Source: Deutsche Bank.

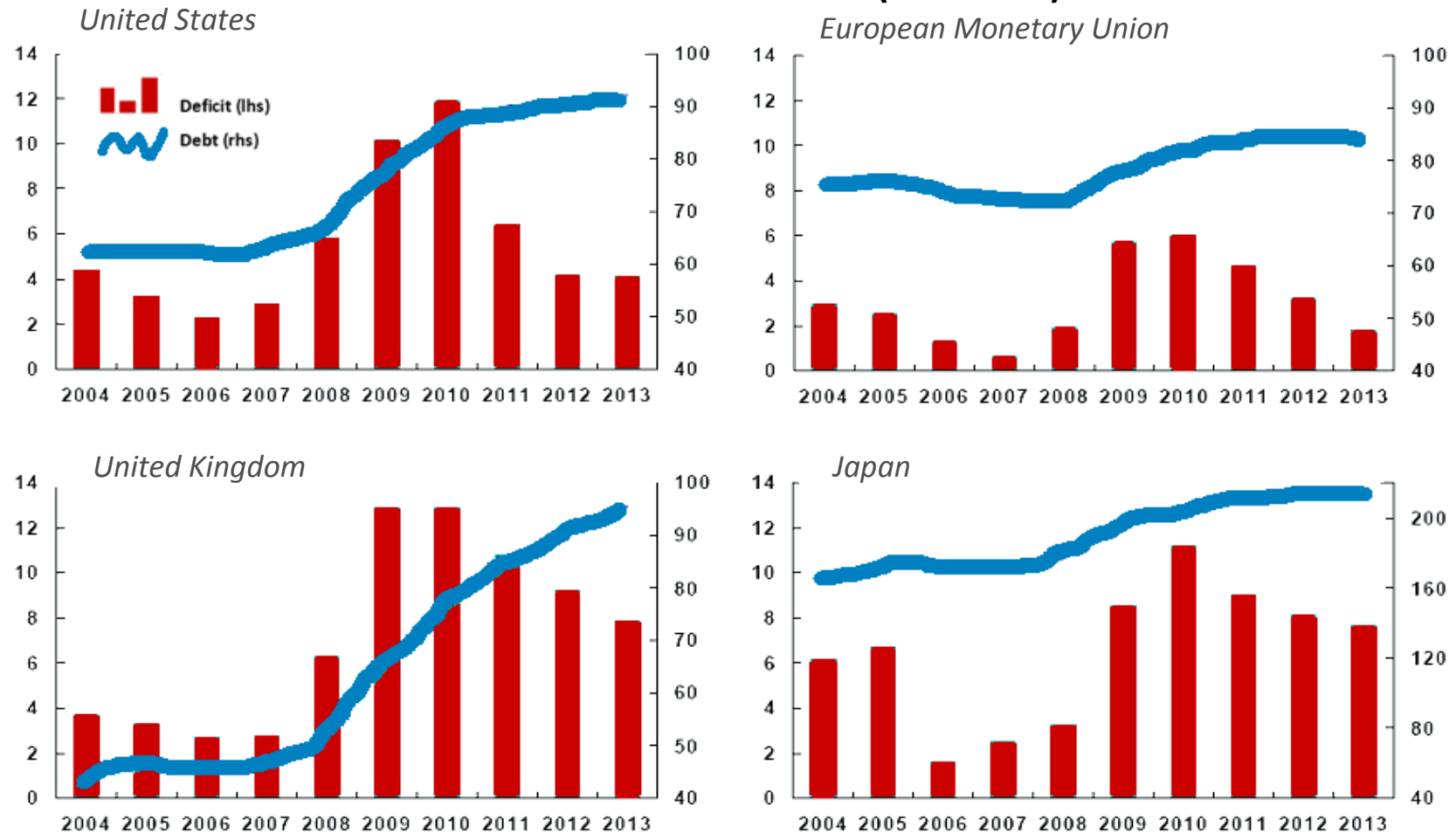
⁴ Adjusted by CERA's upstream capital cost index.



Battle of the Bulge

The fiscal response to this crisis will weaken government finances going forward. This will lead to higher taxes and fiscal retrenchment starting in 2011, which will put downward pressure on global growth.

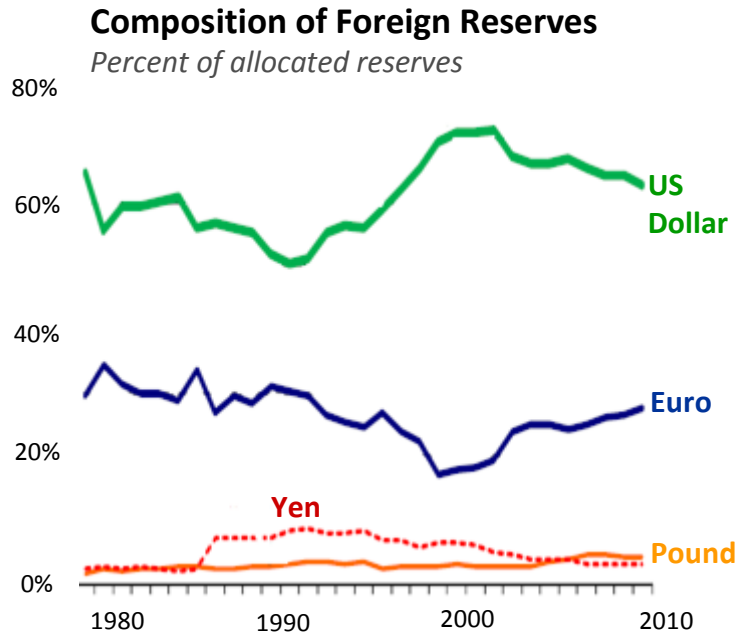
General Government Deficit (% of GDP)



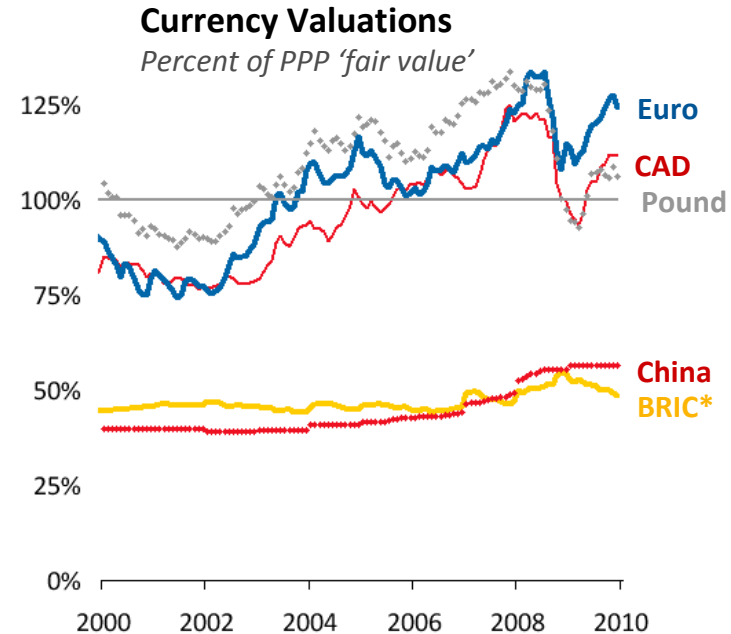
Sources: U.S. CBO, Japan MITI, JP Morgan.

Dollar down but not out

The U.S. dollar is in a secular decline against non-OECD currencies, but only a cyclical decline versus those of the OECD.



* Prior to 1999 data for the euro are the sum of reserves held in legacy currencies
Source: United States Department of the Treasury (October 2009)



*Weighted average of Brazil, Russia, India and China
Source: SU Calculations using IMF PPP estimates. (January 2009)

USD to remain global reserve currency

Underpins over 40% of FX transactions
Settles most international trade in goods
Largest and most liquid money market

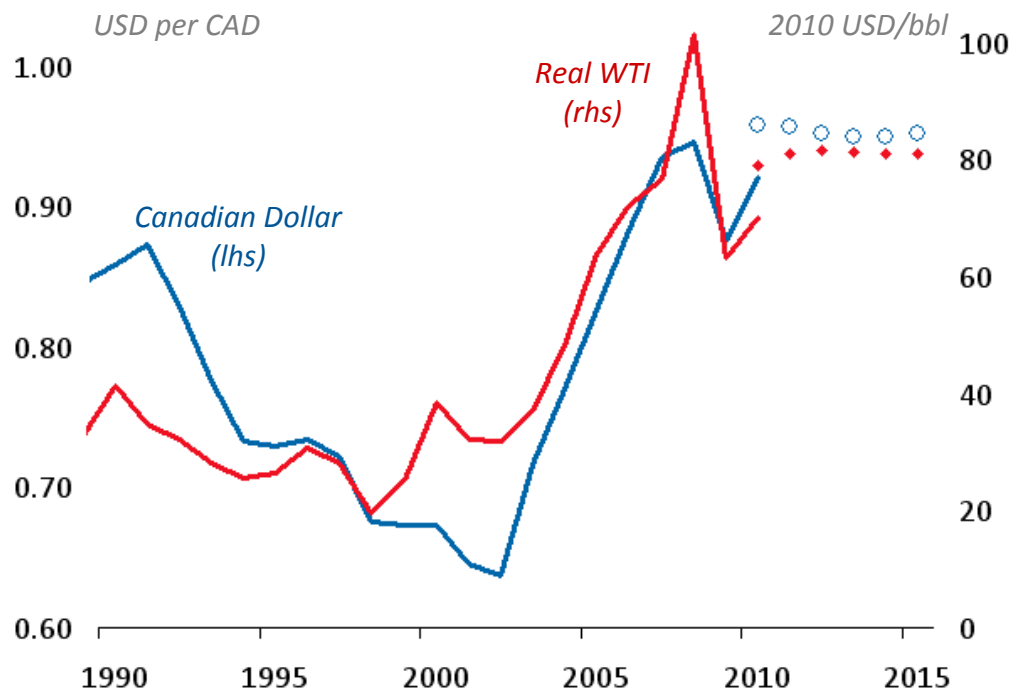
Other options not viable

Euro debt market is too fractured to absorb more reserves
Commodities are risky assets, not transactional
Nobody buys and sells goods with currency 'baskets' like SDRs

Petro-Dollar

Since emerging as a significant net oil exporter in the early 1990s the Canadian dollar has become increasingly tied to real oil prices.

Canadian Dollar vs Oil Prices



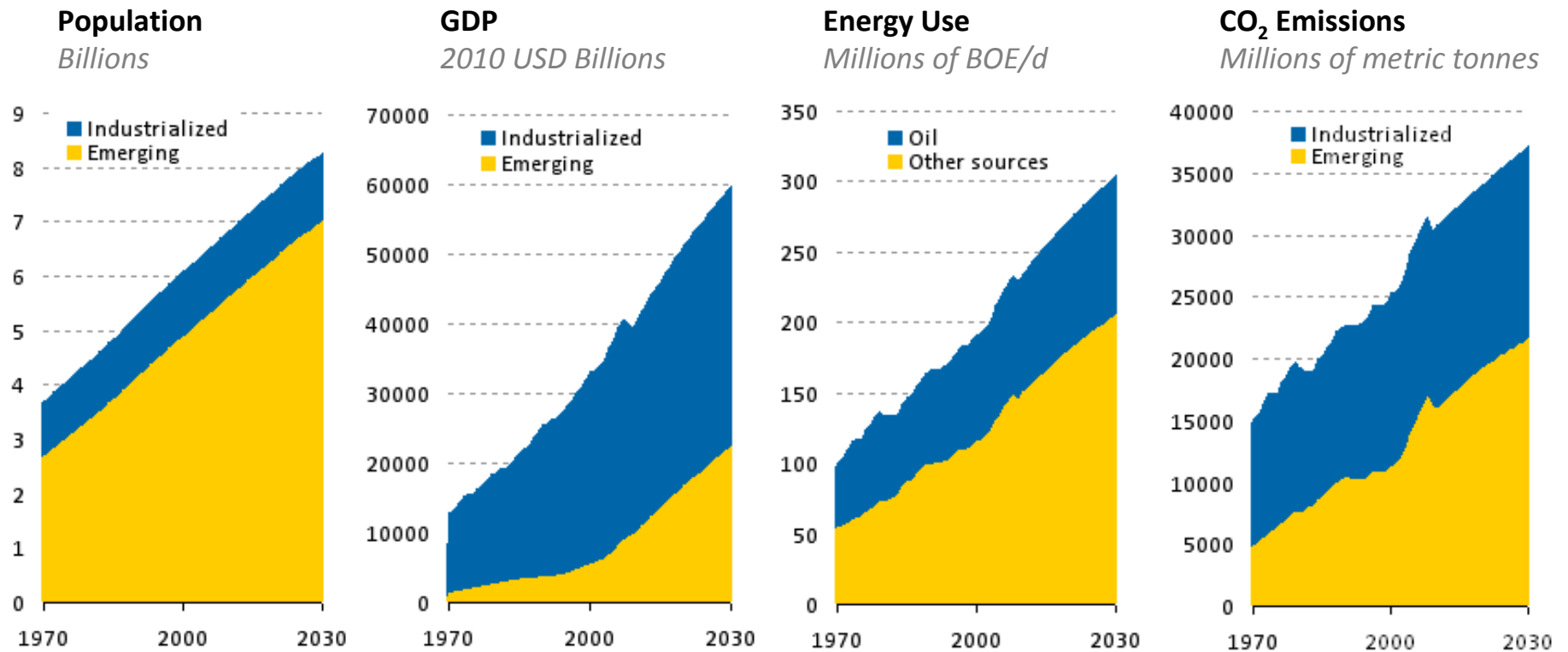
Other primary determinants of the exchange rate are fairly neutral on balance:

- Canada's positive **interest rate differential** with the U.S. has narrowed in recent years, suggesting less pressure on the currency to depreciate over time.
- Canada's **inflation rate differential** has also narrowed and is somewhat more favourable to a stronger Canadian dollar.
- Canada's **productivity growth** has greatly lagged that of the U.S., putting downward pressure on the Canadian dollar going forward.

Long-run structural pull

Demographic growth is a certainty. Economic growth typically outpaces population. Energy use increases with wealth.

Global Projections



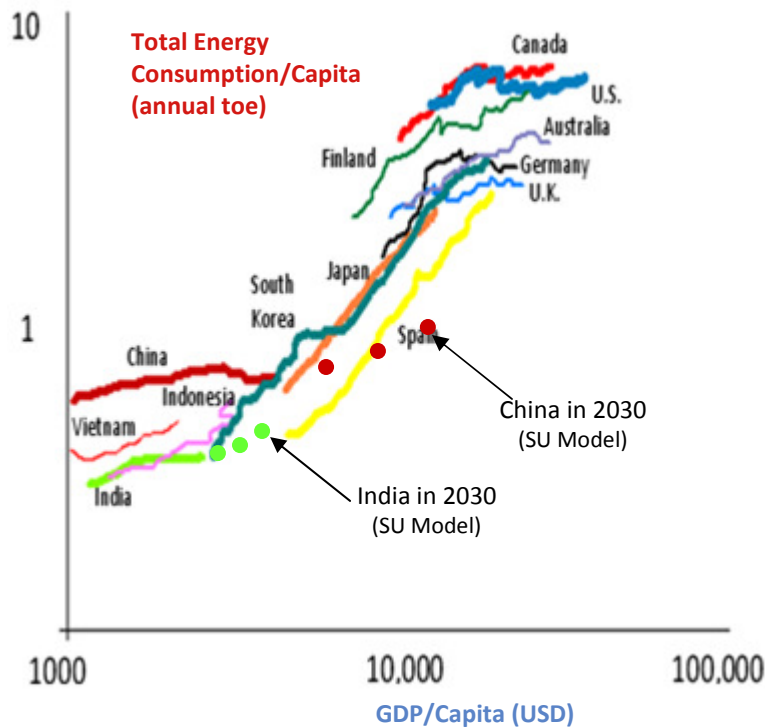
Source: SU model

Meeting demand

Hydrocarbons currently provide 88% of the world's energy¹. The ratio will slip slightly to just below 80% over the next 20 years, even with aggressive energy conservation targets, nuclear and renewable expansions and CO₂ penalties.

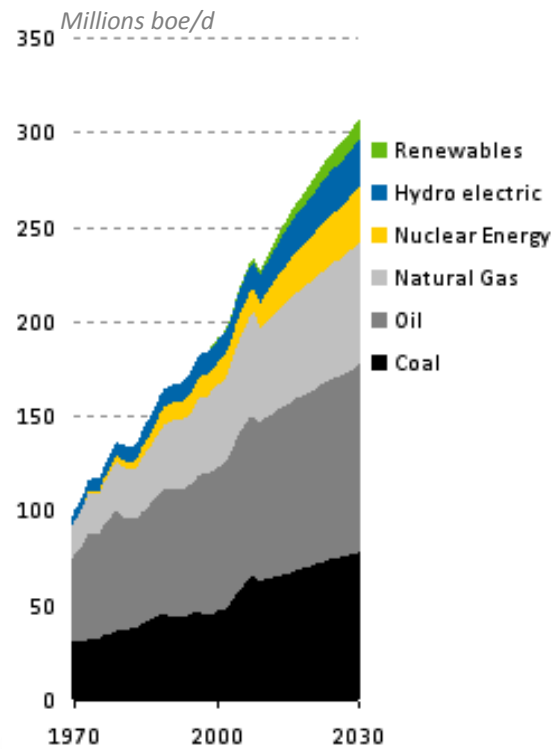
Energy consumption rises with income

Per capita total final energy consumption plotted against per capita income (logarithmic scales)



Source: Benthem, A. and M. Romani. (July 2009) "Fuelling Growth: What Drives Energy Demand in Developing Countries?" *The Energy Journal*, Vol. 30, No. 3, 2009.

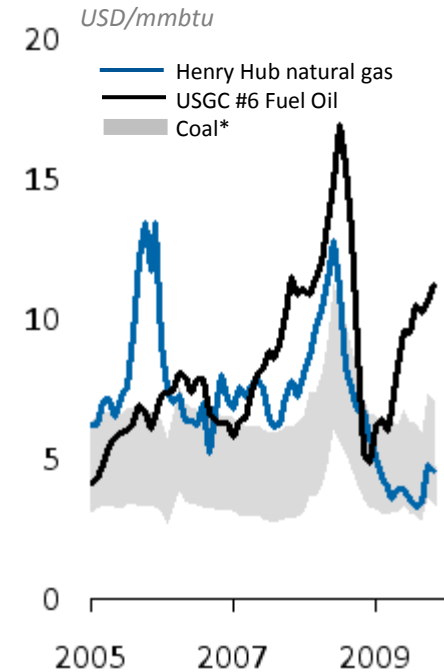
The world will continue to rely heavily on fossil fuels to meet energy needs



¹Excluding wood and other combusted biomass sources.

Source: SU model

Natural gas has become the cheapest fossil fuel for power generators



*The bottom of the range is the price of coal at the minemouth in West Virginia. The top of the range includes average transportation costs, SO₂ and NO_x emissions costs, and an adjustment for burner tip efficiency.

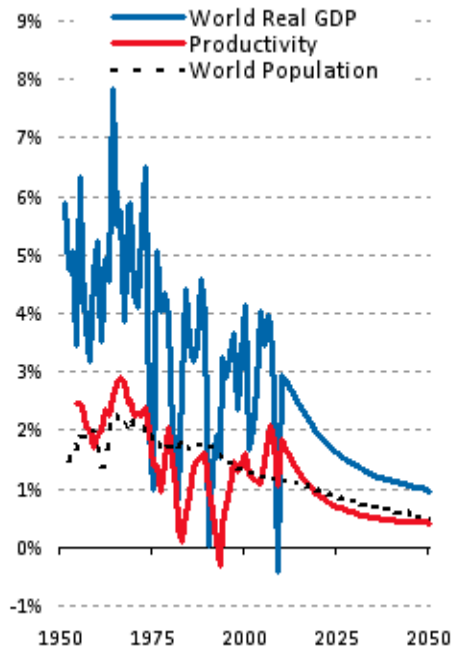
Source: SU model

Long-run structural push

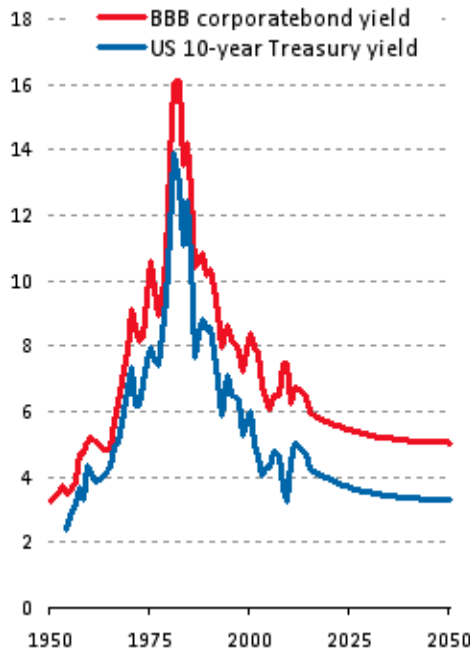
While the level of world GDP continues to rise, there are several factors that will slow the long-run trend in its rate of growth. Continued improvement in energy efficiency should also moderate the rate of growth in energy demand.

A gradual deceleration in global population and trend productivity puts downward pressure on economic growth

Annual growth rates

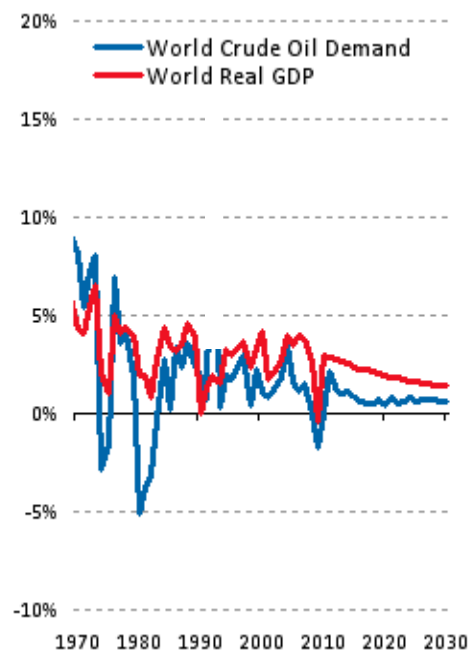


The downward trend in real growth plus contained inflation expectations reduces long-run borrowing costs



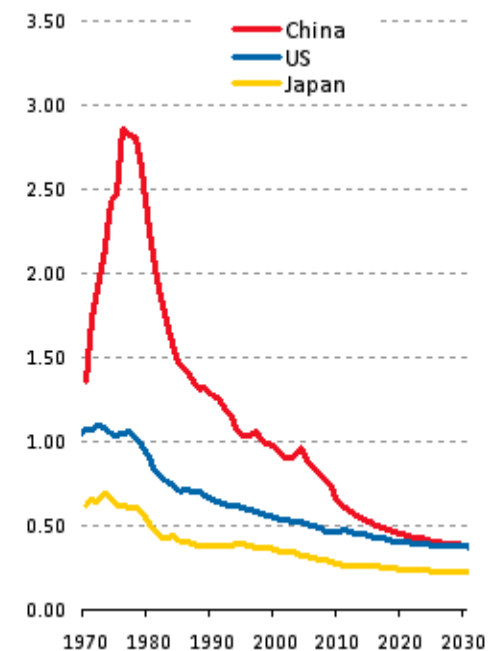
The downward trend in economic growth also results in slower world oil demand growth

Annual growth rates



Productivity growth reduces the oil intensity of economic growth

Barrels of oil per unit of real GDP



Real GDP is a function of population growth and improvements in total factor productivity.

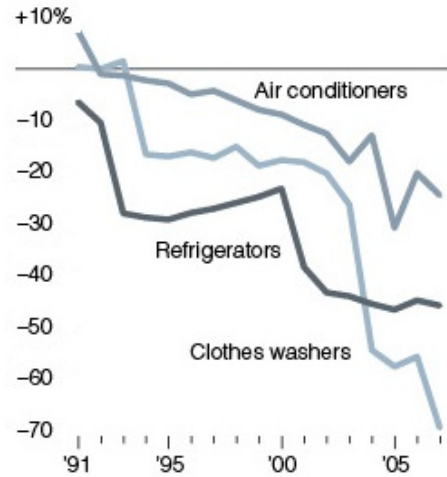
Source: SU model

The paradox of energy efficiency

As living standards have risen so to has overall energy consumption, despite dramatic gains in energy efficiency.

Appliances are more efficient ...

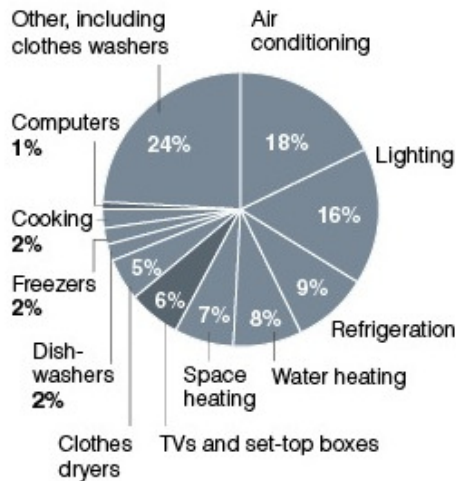
Change in energy consumption since 1990



Source: Association of Home Appliance Manufacturers

... but households have more gadgets ...

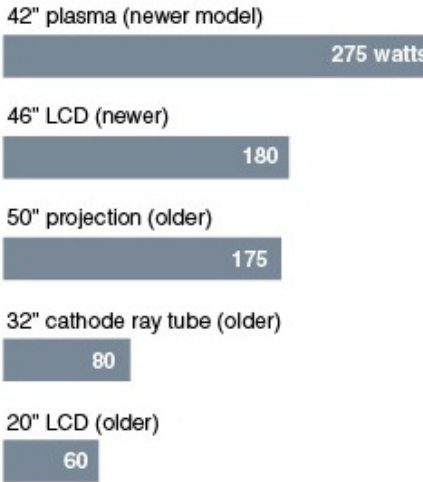
Average U.S. residential consumption



Source: International Energy Agency

... and new TVs are bigger energy hogs ...

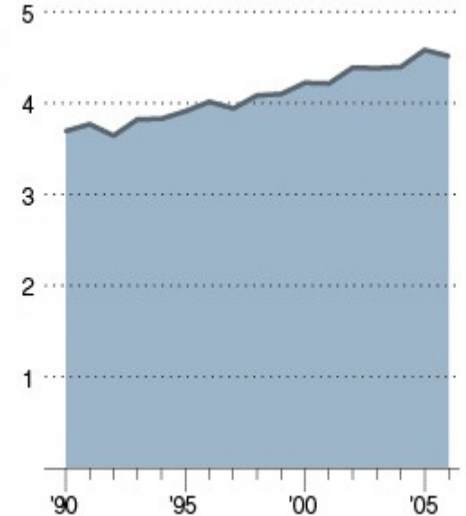
Average power usage for different TV models



Source: Ecos

... so consumption rises.

U.S. per capita electricity consumption (thousands kWh)



Source: International Energy Agency

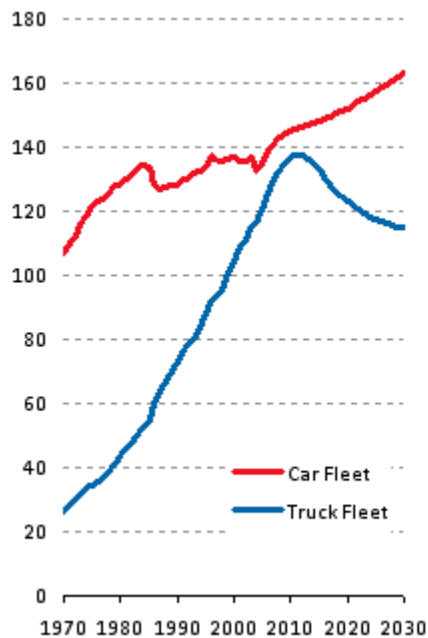
*Charts reproduced from the New York Times (September 19, 2009).

United States Oil Demand Outlook

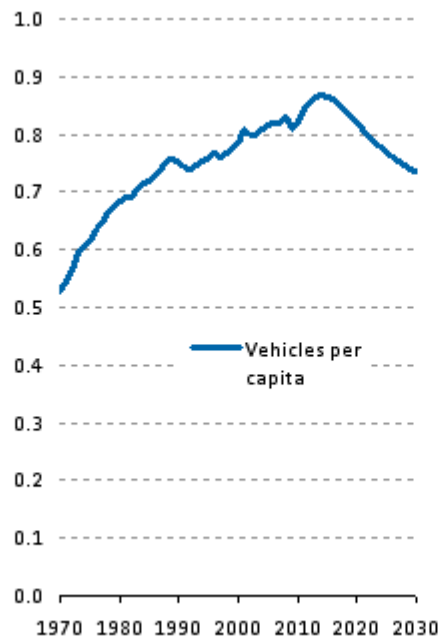
A combination of rising fuel prices, an aging population, and higher fuel efficiency standards (i.e. higher vehicle purchase prices) result in more cars, fewer trucks, and somewhat slower growth in total miles driven in the U.S.

Higher prices result in fewer light trucks in U.S.

Millions

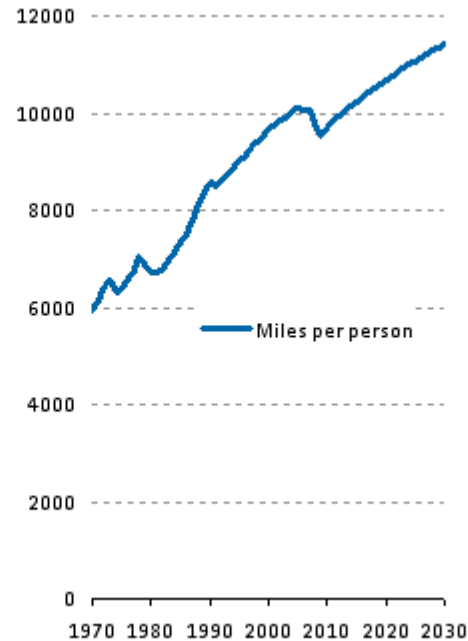


Higher purchase and operating costs result in few vehicles per person



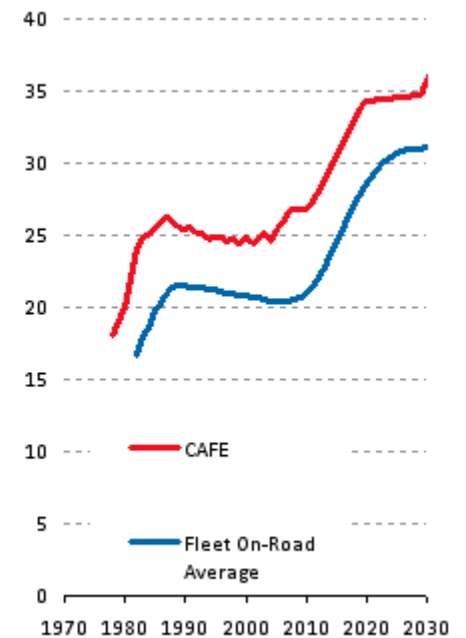
Miles driven don't grow as fast due to demographics

Millions of miles per year



More stringent CAFE standards raise vehicle costs but dramatically improve fuel efficiency

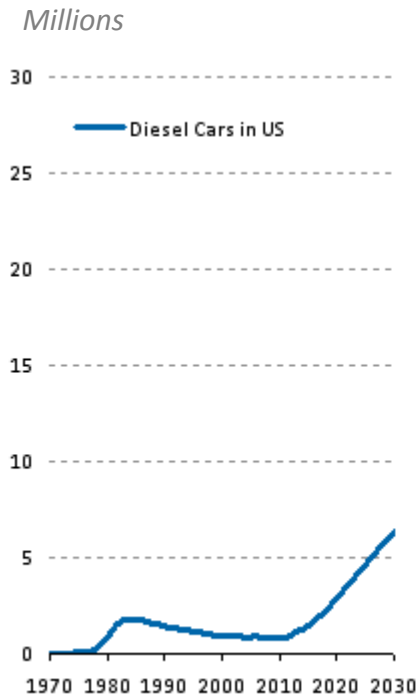
Millions per gallon



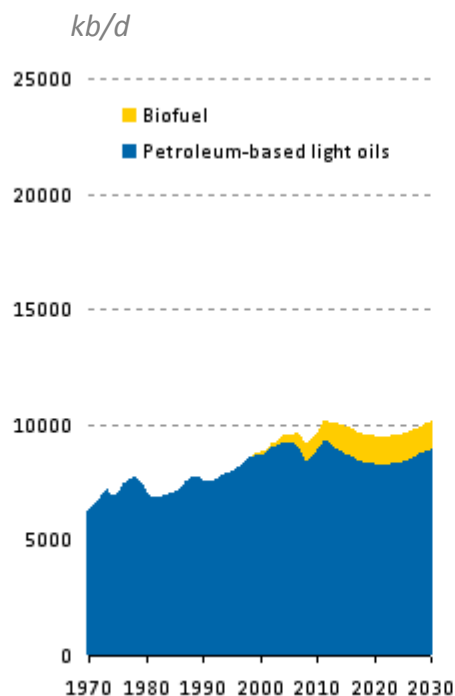
United States Oil Demand Outlook

The improved fuel efficiency, partly from dieselization of the fleet, combined with growing biofuel supply results in lower gasoline demand but higher diesel consumption. Overall U.S. petroleum demand is flat until 2020 as a result.

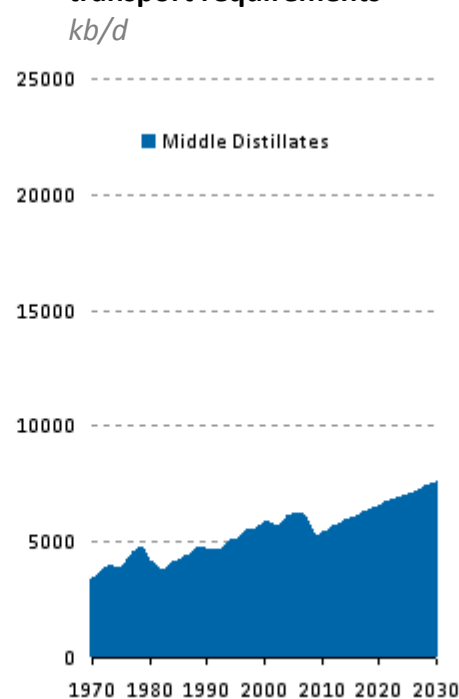
Partial dieselization of the U.S. fleet is required to meet CAFE standards



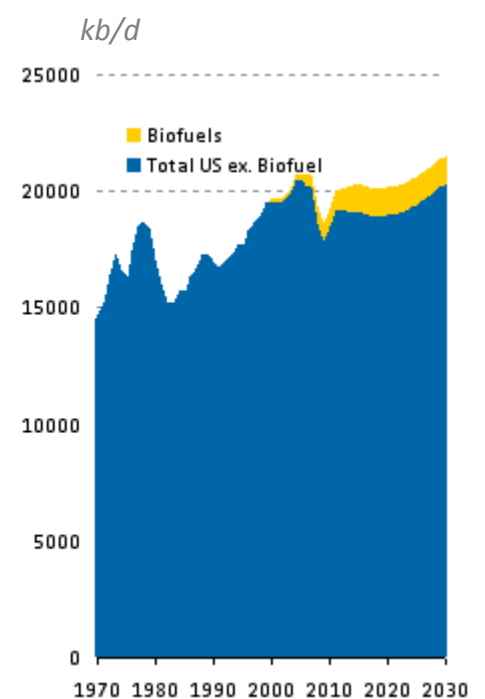
U.S. petroleum-based light oil demand peaks in 2011



Middle distillate demand continues to grow due to dieselization and freight transport requirements



The combined effect is that total U.S. oil + biofuel demand is flat to 2020

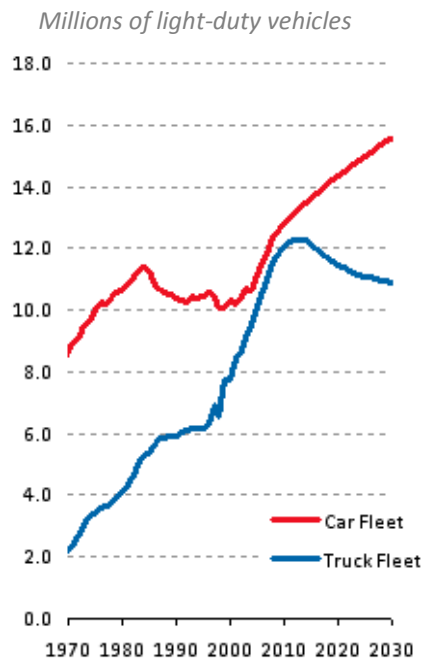


Source: SU model

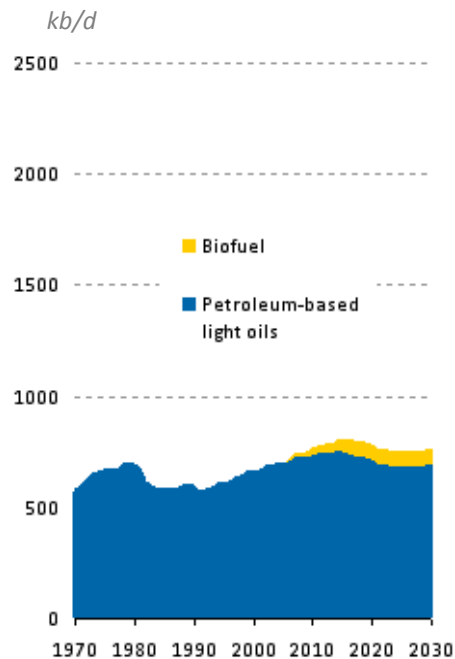
Canadian Oil Demand Outlook

A similar confluence of factors results in lower gasoline demand in Canada, although weaker population growth exacerbates it.

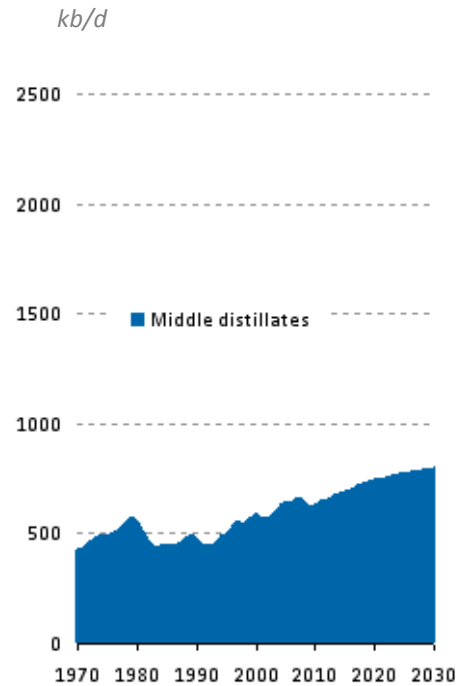
The Canadian car fleet expands at the expense of light trucks



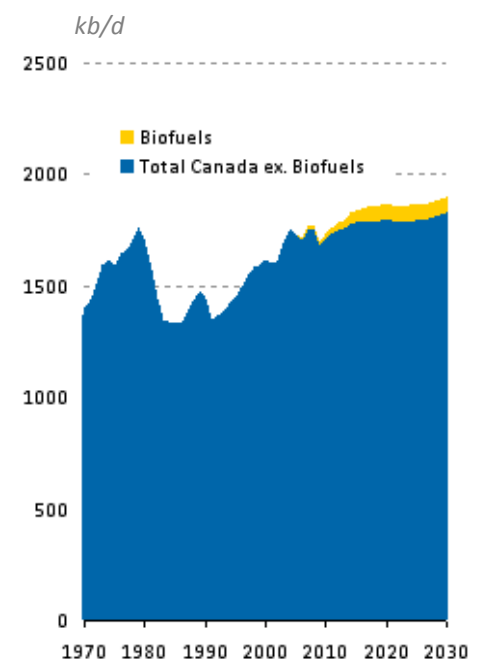
Petroleum-based light oil demand peaks in 2011



Middle distillate demand continues to grow due to dieselization, freight and resource sector requirements



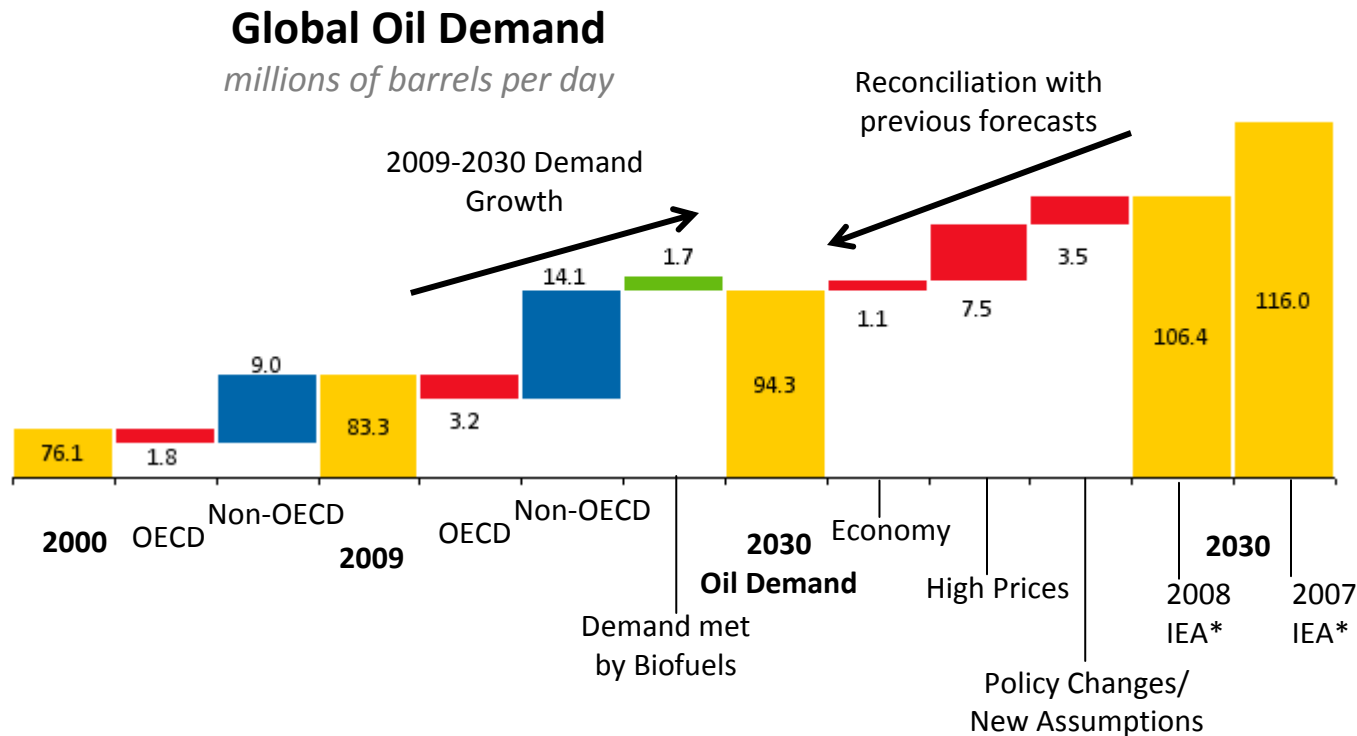
The combined effect is that total Canadian oil + biofuel demand is flat to 2020



Source: SU model

World Oil Demand Outlook

- World oil demand falls in the OECD but continues to grow in emerging economies
- Biofuels take away only a small share of the market, but combined with lower OECD demand this has very negative implications for Atlantic Basin refiners
- Demand in 2030 has been revised down substantially over the past two years* due to much higher oil prices, slightly lower long-run economic growth, and new assumptions about government policies to support alternatives and lower GHG emissions



Budget Constraints on Oil Demand

Oil price forecasts have to be grounded in reality. There is no demand without consumers.

Cost of a 50 L Fill-Up Per Week

Full-time workers

Oil Price	Share of After-Tax Earnings			
	Bottom 20% earners		Top 20% earners	
	Canada	US	Canada	US
29	8.7%	5.7%	4.9%	2.8%
75	9.4%	9.0%	5.4%	4.4%
100	12.5%	12.0%	7.1%	5.9%
125	15.8%	15.0%	9.0%	7.4%
150	18.9%	18.1%	10.8%	8.9%
200	25.2%	24.0%	14.4%	11.8%
225	28.3%	27.1%	16.1%	13.3%
250	31.5%	30.1%	17.9%	14.8%
275	34.6%	33.1%	19.7%	16.3%
300	37.7%	36.0%	21.5%	17.7%

Cost of a 10 L Fill-Up Per Week

Full-time workers

Oil Price	Share of Minimum-Wage Earnings				
	China (Interior)	China (Guangzhou)	Mexico	Eastern Europe	Korea
29	32%	13%	14%	6%	3%
75	83%	35%	35%	16%	8%
100	--	46%	47%	21%	10%
125	--	58%	59%	26%	13%
150	--	69%	71%	31%	15%
200	--	92%	94%	42%	20%
225	--	--	--	47%	23%
250	--	--	--	52%	25%
275	--	--	--	58%	28%
300	--	--	--	63%	30%

Taxes vary by country, income, and retail price level.

Sources: SU Calculations based on OECD and Reuters data (as of October 2009)

Risks: Electric Vehicles

GM plans to start selling the Chevy Volt in 2010, Nissan plans to bring the Leaf to North America in 2011. How could the adoption of electric vehicles alter the outlook for gasoline demand?

- The math for electric vehicles doesn't add up:
- The Volt's target price is US\$40,000, but GM says they will be making a loss at this price
- The cars are small with fewer mechanical parts, so the manufacturing cost (excluding batteries) should be no higher than those for similarly sized small cars
- Using this logic, the Volt's batteries will cost over US\$25,000, which is in line with current Lithium-ion prices
- GM has insisted that battery costs will be "hundreds of dollars per kWh of storage lower" than this amount
- This implies that the cost of manufacturing the car excluding the battery will be over US\$32,000 per vehicle
- GM is therefore counting on massive economies of scale once production ramps up in the future

Volt Target Price	40,000 US\$
US Federal Subsidy	<u>7,500</u>
Consumer pays	32,500
Cost of manufacturing a Volt	>40,000
Cost of manufacturing a Civic	<u>15,000 (max)</u>
Implied battery cost	>25,000
Stated battery cost for Volt	<8,000
Implied manufacturing cost of Volt excluding battery	>32,000

Risks: Electric Vehicles (2)

With subsidies, the retail price of the Volt would be about the same as an equivalently sized Civic with an in-line 4 cylinder combustion engine, but running costs including battery depreciation will be much higher.

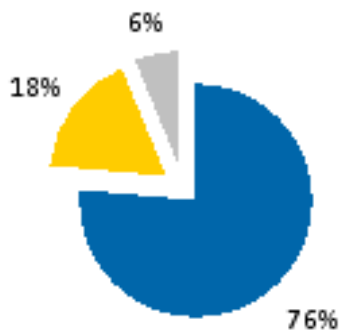
URBAN COUPLE		CHEVROLET VOLT				
		Lead Acid	Nickel metal	Lithium-ion	Advanced Li-on	
BASE PRICE		27,250	29,500	33,000	31,000	US\$
BASE PRICE (EXCL. BATTERY)		25,000	25,000	25,000	25,000	US\$
US FEDERAL SUBSIDY		7,500	7,500	7,500	7,500	US\$
NET US PRICE (EXCL. BATTERY)		17,500	17,500	17,500	17,500	US\$
ONTARIO SUBSIDY		10,000	10,000	10,000	10,000	C\$
NET CANADIAN PRICE (EXCL. BATTERY)		17,778	17,778	17,778	17,778	C\$
Driver Profile	DISTANCE DRIVEN / YEAR	15000	15000	15000	15000	KM/YR
	DISTANCE PER SHORT TRIP	20	20	20	20	KM
	DISTANCE PER LONG TRIP	125	125	125	125	KM
Car Metrics	ELECTRIC ONLY RANGE	47	80	64	120	KM
	ELECTRIC ONLY TRIPS / YEAR	600	600	600	600	#
	A/C & HEATING REQUIREMENTS	188	188	188	188	kWh
	FUEL-ASSISTED TRIPS / YEAR	24	24	24	24	#
	FUEL-ASSISTED DISTANCE / LONG TRIP	78	45	61	5	KM
Battery Metrics	BATTERY RECHARGES / YEAR	278	174	212	124	#
	BATTERY LIFE	200	300	800	1000	MAX. # OF RECHARGES
	BATTERY EFFICIENCY	8.0	8.0	8.0	8.0	KM/kWh
	BATTERY CAPACITY	6	10	8	15	kWh
	CELL ENERGY DENSITY (USABLE)	10	20	47	150	Wh/kg
	BATTERY WEIGHT	590	500	170	100	KG
	BATTERY COST	2250	4500	8000	6000	C\$/BATTERY ARRAY (INCLUDES DISPOSAL)
Operating Costs	ELECTRICITY / YEAR	1829	1928	1880	2048	kWh
	ELECTRICITY COST / YEAR	146	154	150	164	C\$/kWh
	BATTERY COST / YEAR	3130	2610	2115	744	C\$
	FUEL ECON	6.0	5.6	4.9	4.7	L/100 KM
	FUEL CONSUMPTION / YEAR	311	193	299	26	L/YR
	FUEL COST / YEAR	311	193	299	26	C\$
	TOTAL OPERATING COSTS / YEAR	3588	2957	2564	933	C\$
EV BATTERY + ENERGY COST		0.24	0.20	0.17	0.06	C\$/KM
BREAKEVEN GASOLINE PRICE		3.74	3.08	2.67	0.97	C\$/L
ICE FUEL COST					0.06	C\$/KM
					1.00	C\$/L

You have to make very aggressive assumptions about improvements in battery technology and costs before you get a reasonable break-even price

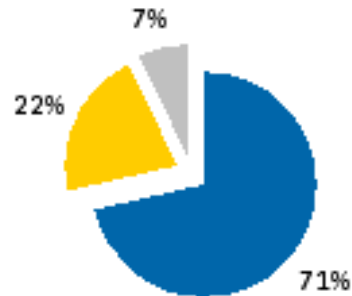
Restricted access to most remaining reserves

International Oil Companies have partial or full access to just 24% of global proven oil reserves*. Canadian oil sands make up over 40% of these reserves (70% of the fully accessible reserves, of which 13% are held by Suncor).

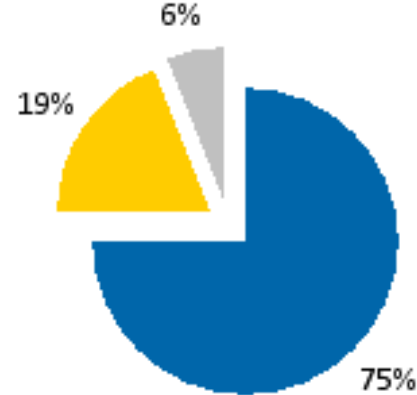
Global Crude Oil Reserves
1.4 Trillion barrels



Global Natural Gas Reserves
1.1 Trillion boe



Global Oil & Gas Reserves
2.5 Trillion boe

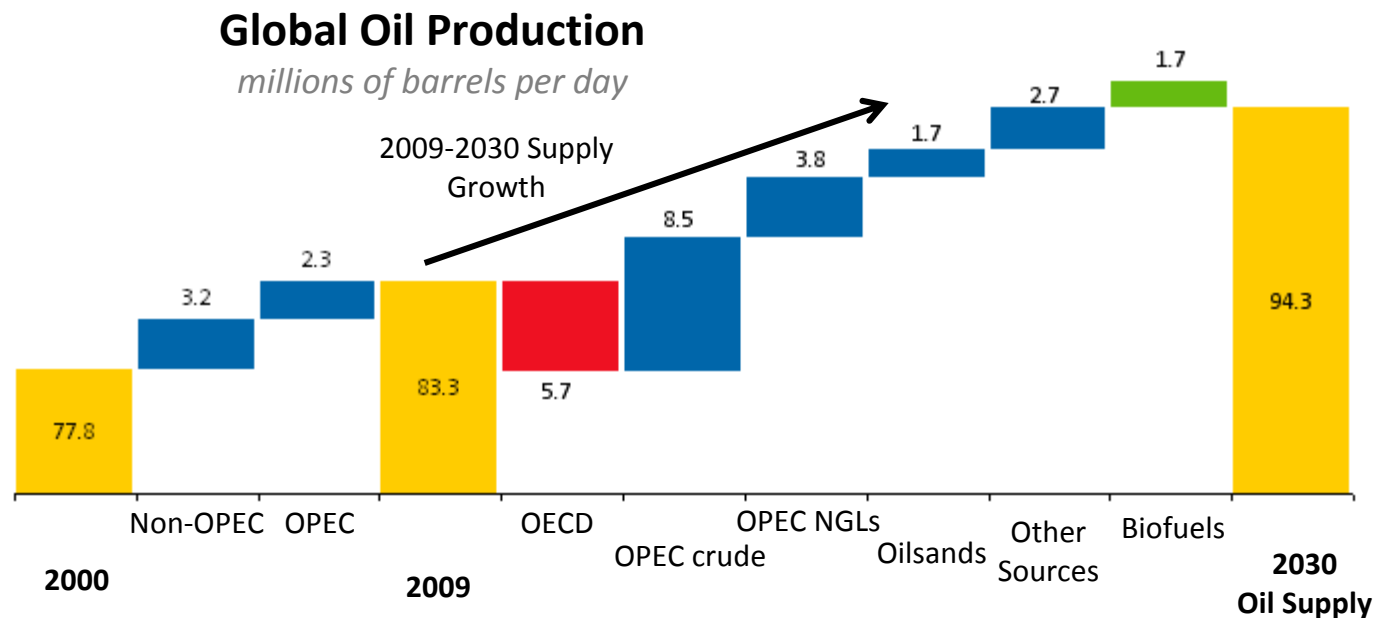


**on an accessibility-weighted basis.*

Source: SU calculations based on BP world reserves tables. Chart is reproduced from GlobalData (September 2009)

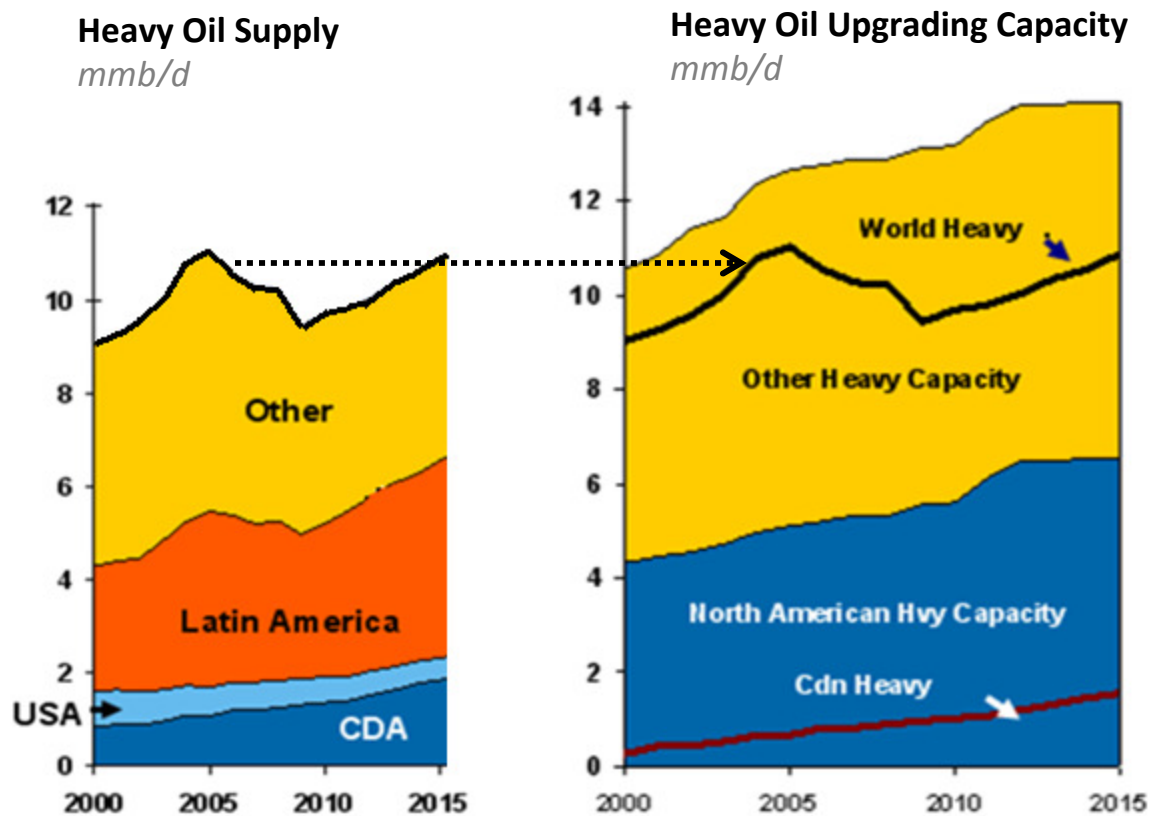
Limited supply potential

- Continued declines in conventional oil production will remove approximately 28 million barrels per day of supply
- Net contributions to supply will come from OPEC and, on the margin, oil sands producers and deepwater / offshore
- There is significant uncertainty about the outlook for crude oil prices; however, historical pricing of ~\$40/bbl appears to be too low to support investment in supply
- Prices over \$100/bbl will start to have adverse impact on demand



Heavy oil is in demand

Heavy crude supplies will remain tight until 2017, even while heavy crude conversion capacity is increasing → narrow light-heavy differential and poor coking economics.

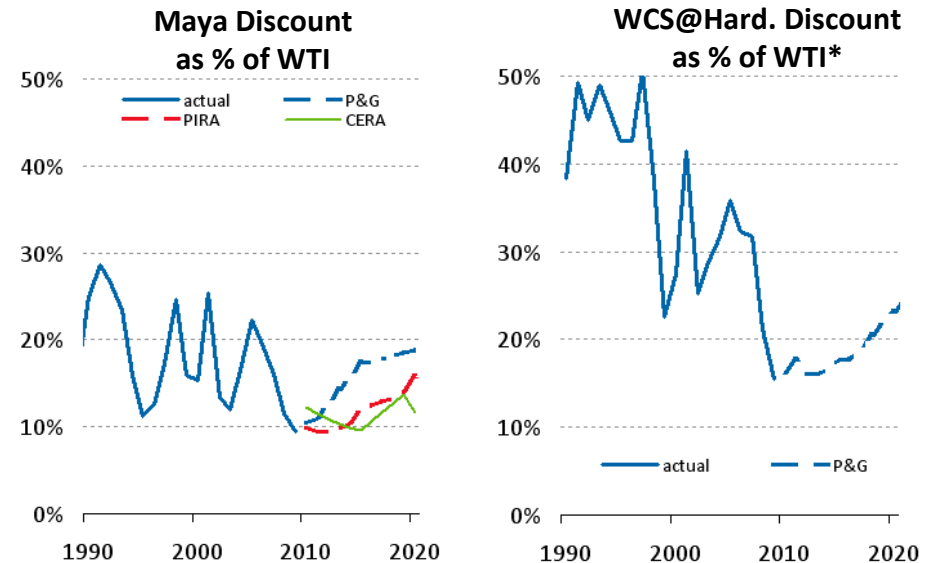


Sources: P&G GPMO 2009, PIRA, CERA, KBC

Canadian heavy will cycle from over to under supply

Supply growth will put downward pressure on differentials in 2010/11

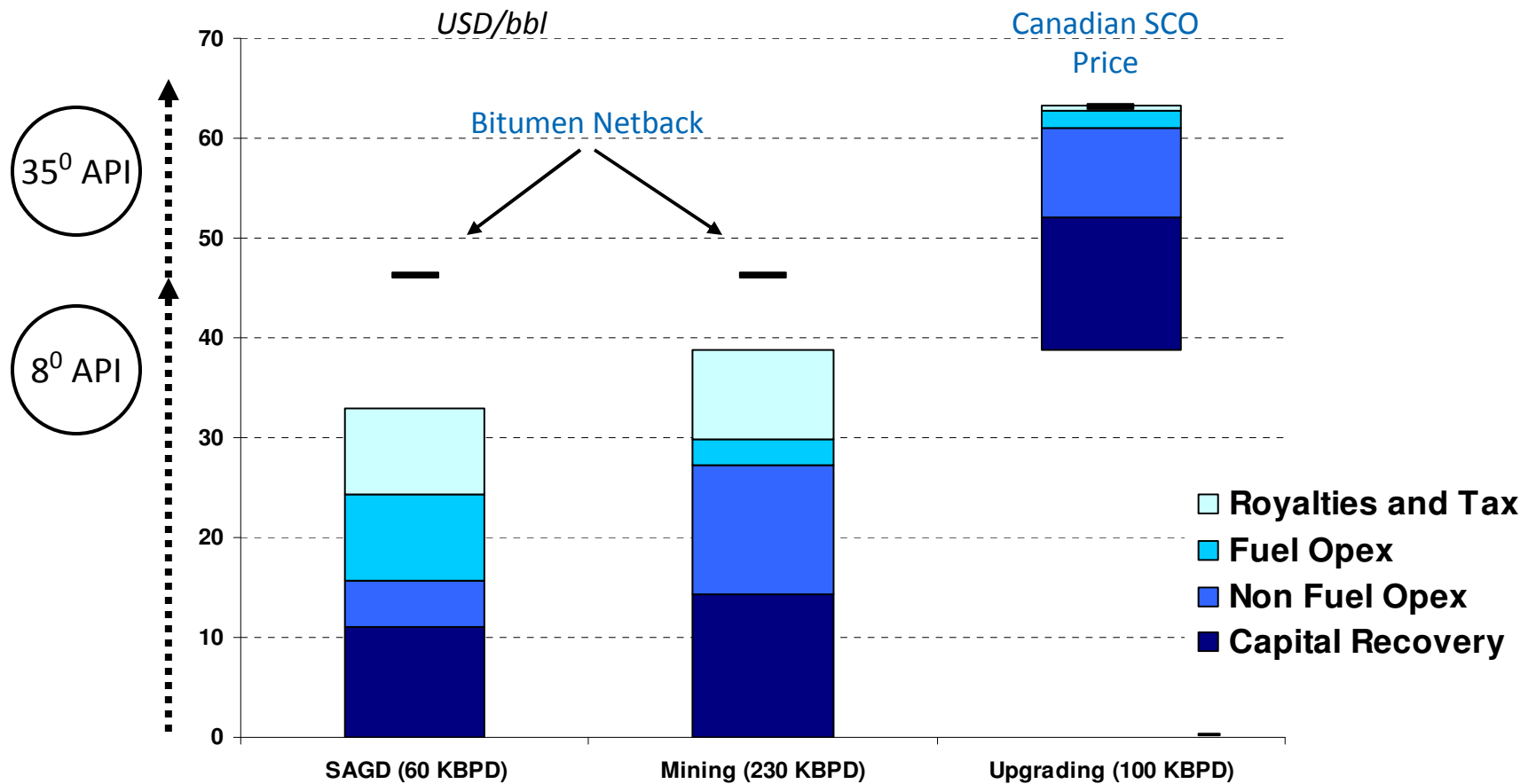
- Cold Lake projects to add 50 kbd bitumen supply in 2010-11 (Cenovus/COP, CNRL)
- Firebag stages 3 and 4 will begin ramping up to 68 kbd of bitumen each in 2011 and 2012
- **Wood River coker project will add 130 kbd of PADD II heavy demand, stabilizing price spreads in 2012**
- **640 kbd of new demand for Canadian heavy in 2013, heavy becomes undersupplied**
 - BP Whiting conversion will increase PADD II heavy demand by up to 260 kbd
 - Keystone XL will be completed to the USGC adding 380 kbd of contracted Canadian heavy demand (Q4 2012)
- **2013-15 prices are expected to cycle between USGC and Chicago clearing economics varying on:**
 - Supply growth, asphalt seasonality, refinery operations and timing of projects
- **Continued supply growth will push differentials to USGC clearing between 2016 and 2018**



* LLB used as a proxy for WCS pre-2004
Sources: P&G, PIRA, CERA

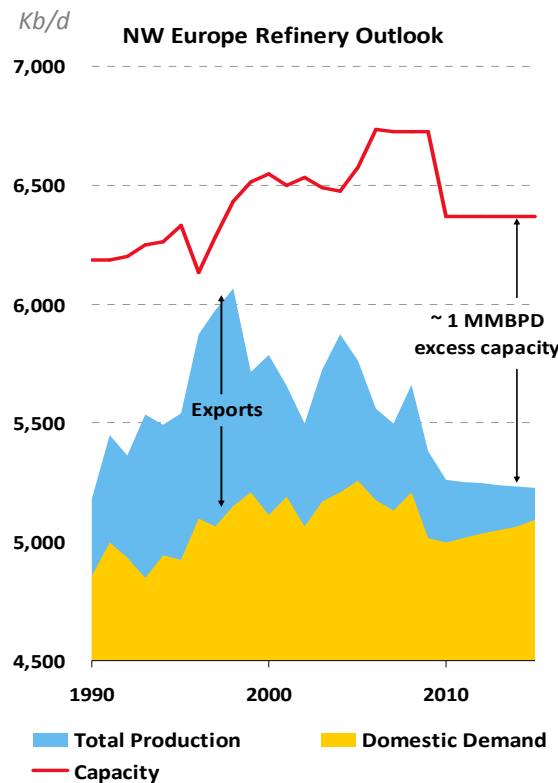
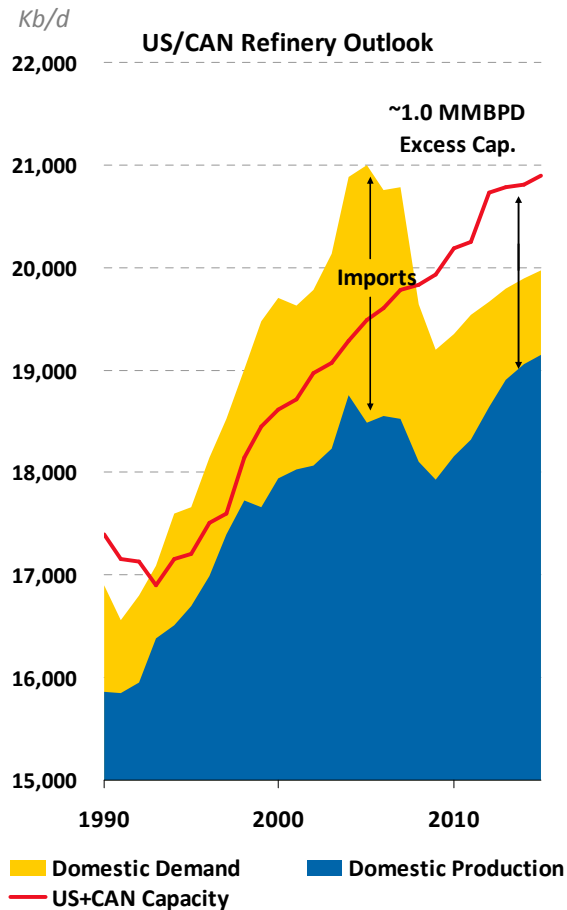
Generic Oil Sands Economics

Recently it has been relatively more profitable to produce raw bitumen. There will be little incentive to build upgrading capacity to produce synthetic light crude oil over the next five years.



Refining Rationalization

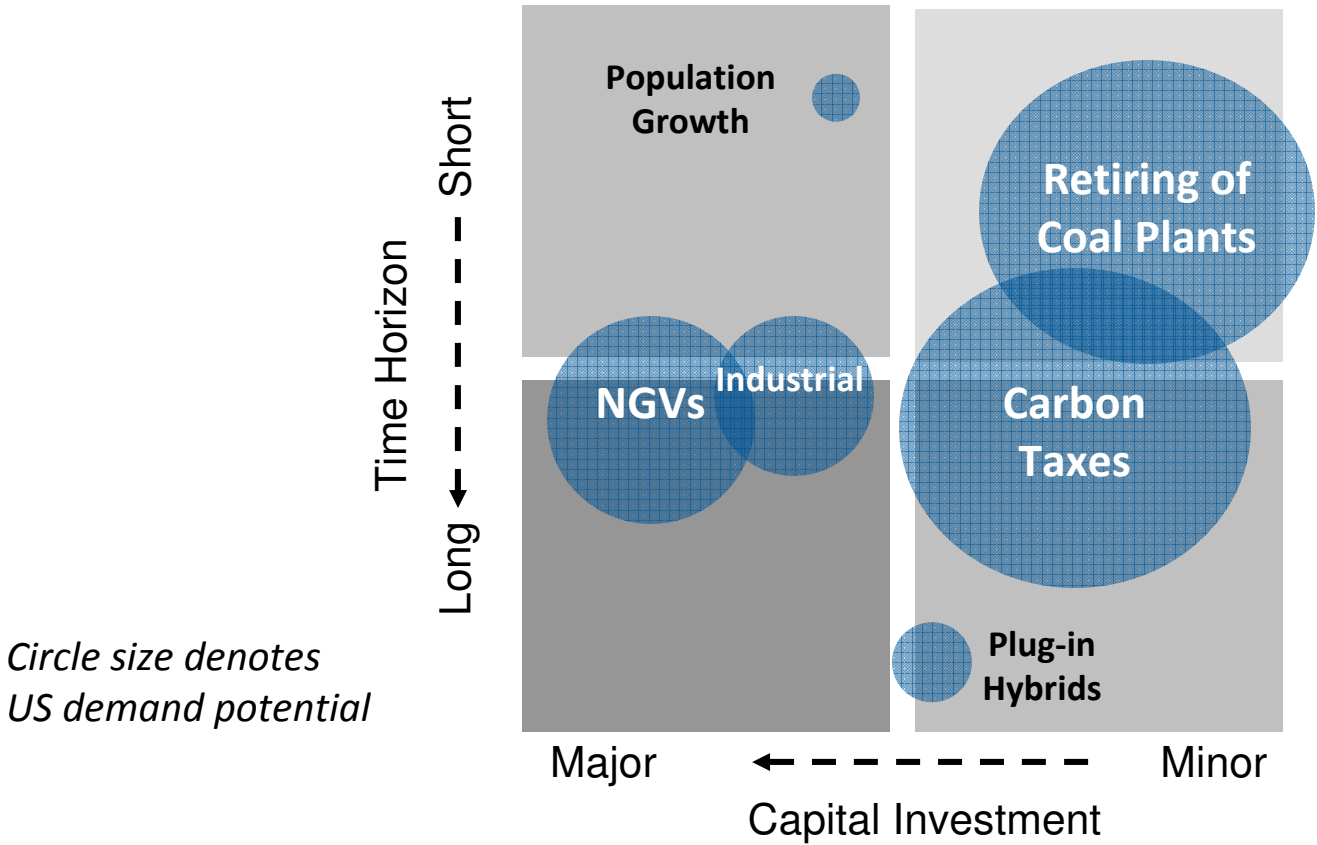
Atlantic Basin Refining Capacity - estimated to be 2+ million bpd long



- Petroleum demand growth flattening in North America and Europe
 - Mandated Biofuels/Alt Fuels
 - American CAFE regulations increasing fuel efficiency
 - Aging population (lowers miles driven)
- Recent + planned capacity additions will further lower utilization and keep margins low
- Historically refinery closures are triggered as utilizations fall towards the 80% level
- Europe and North America are both expected to close up to 1 Million bpd of capacity (total 2 Million)

Plots do not show refinery closures in 2009 onward

Long-run support for natural gas prices



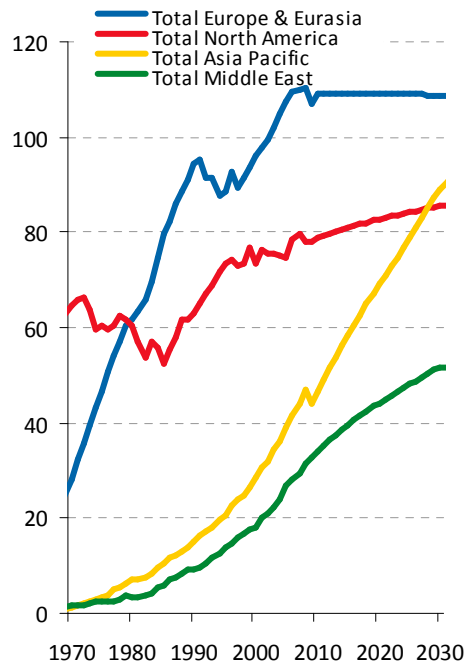
Source: Modification of analysis by Wood MacKenzie

An emerging global commodity

Fewer supply constraints for natural gas means more favorable pricing on an energy equivalent basis, which will translate into somewhat greater demand growth.

While European gas demand has likely peaked due to demographics, growth will continue in other regions

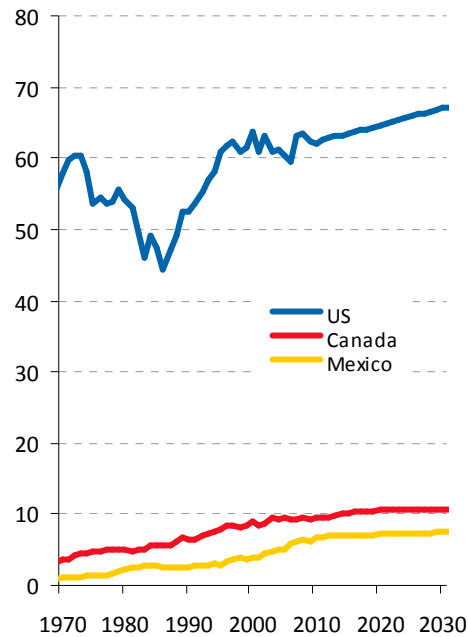
BCF/d



Source: SU model

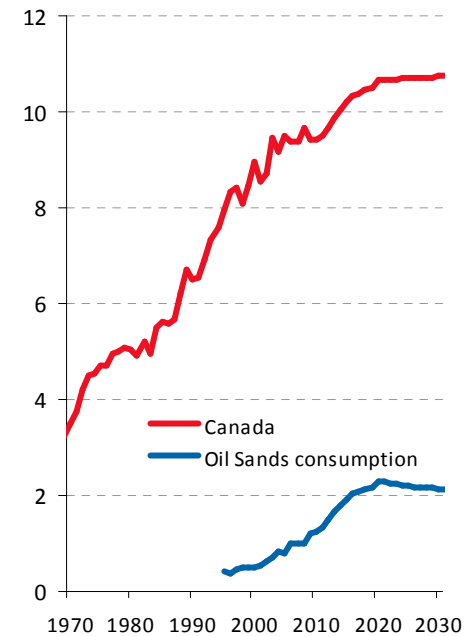
North American gas demand grows to meet power generation needs

BCF/d



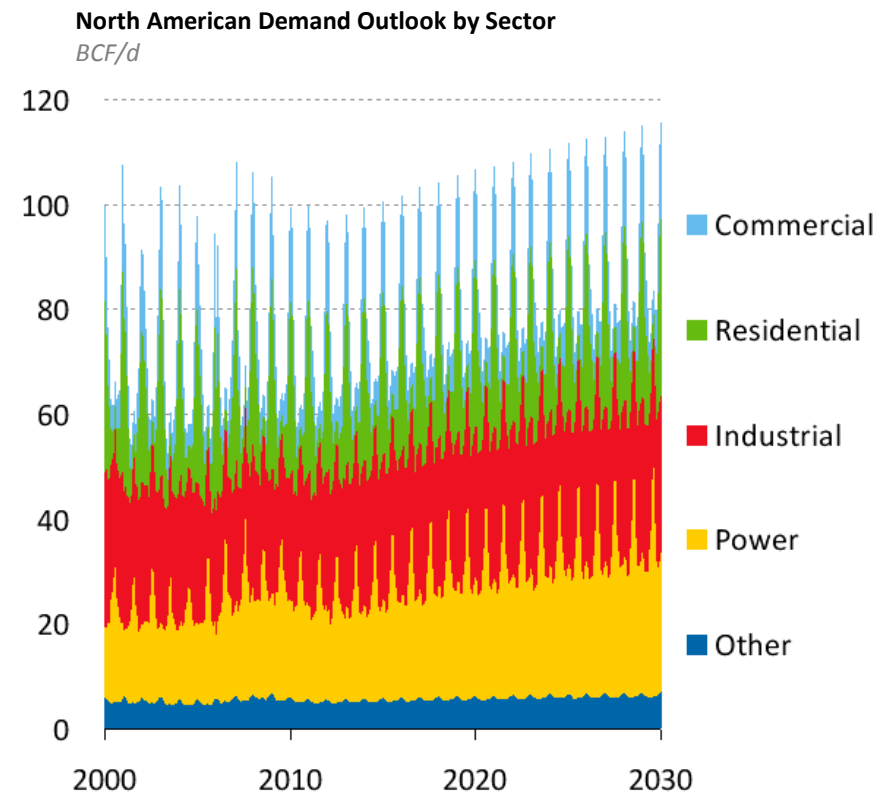
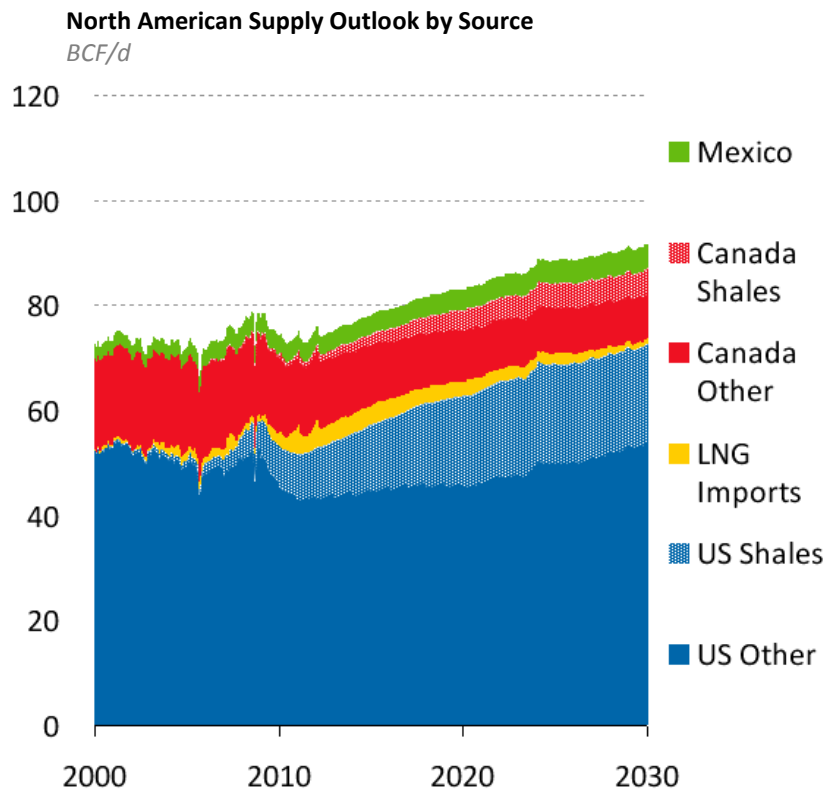
Oil sands production is also a significant contributor to the growth

BCF/d



Supply creates demand

Domestic natural gas supply experiences renewed growth from further development of shale opportunities backing out LNG supply. Fewer supply constraints leads to more favorable pricing and somewhat greater demand growth, particularly in the power sector.



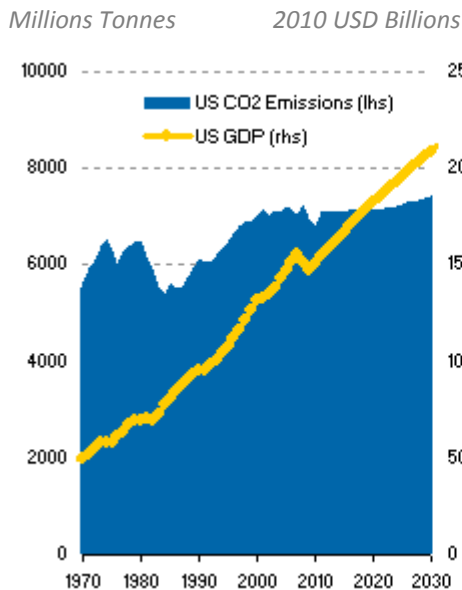
Source: SU Model

CO₂ is a great unknown

There is still a large amount of uncertainty around the outlook for CO₂ prices as legislation has yet to be passed. Ultimately the price will be dictated by the economy's capacity to absorb the added costs.

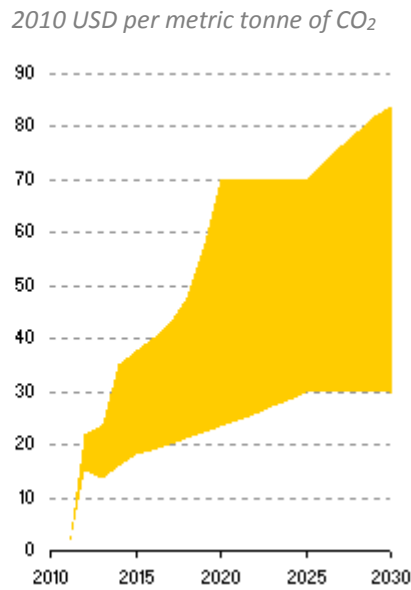
GDP vs. CO₂ Emissions

Rising fuel efficiency and a shift toward more gas-fired and less coal-fired power will result in slower (but still rising) CO₂ emissions growth in the U.S.



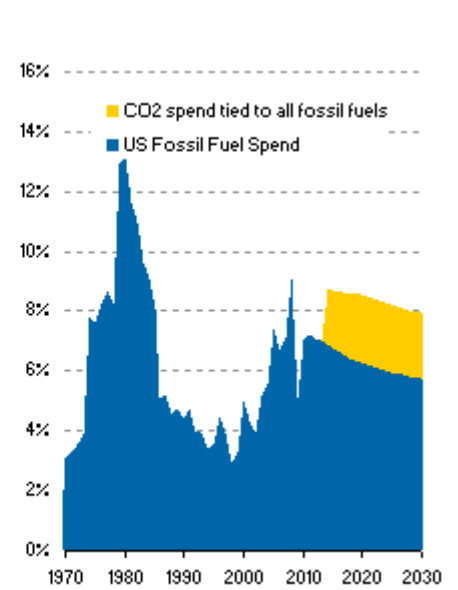
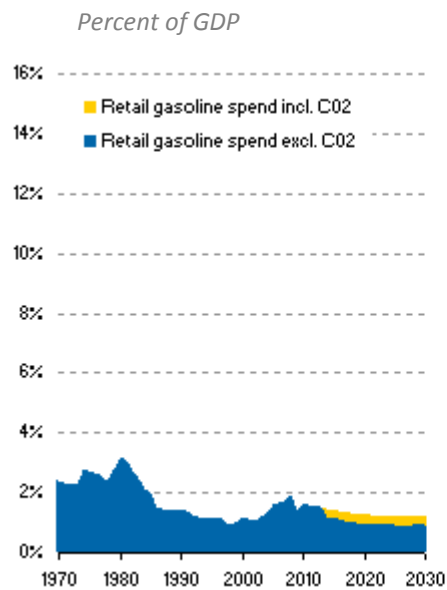
Range of CO₂ Price Forecasts*

CO₂ prices increase sharply post-2015 as rising emissions exceed allowances and the supply of cheap credits is quickly exhausted. There is still a lot of uncertainty about the magnitude of these factors and their impact on prices



Impact of CO₂ Prices as a Share of GDP

CO₂ costs are significant as a percentage of U.S. GDP. The indirect tax on consumers amounts to \$0.75/g, which would be an important inhibitor of gasoline consumption. Total expenditures on fossil fuels and CO₂ would exceed 8% of U.S. GDP, more than double the average of the 1990s.



*The range is based on forecasts from CERA, PIRA, Wood MacKenzie, and the EIA assuming that the U.S. adopts a cap-and-trade system similar to current proposals in the Congress and Senate.
Source: SU model

Summary

- Economic recovery has solid underpinnings
... but a number of factors will moderate long-run growth
- High real prices are affecting demand dynamics
... but bullish structural factors will dominate
- Oil supply costs remain high and OPEC will determine incremental supply
- Excess upgrading and refining capacity will support heavy oil prices but impair the downstream industry
- Don't count natural gas out ... consumers love cheap energy
- CO₂ costs are a huge uncertainty