Can Energy Resource Exports Propel Canada into Being a World Economic Leader?

Herb Emery

Vaughan Chair in Regional Economics

University of New Brunswick

Is there a prosperous oily future for Atlantic Canada?

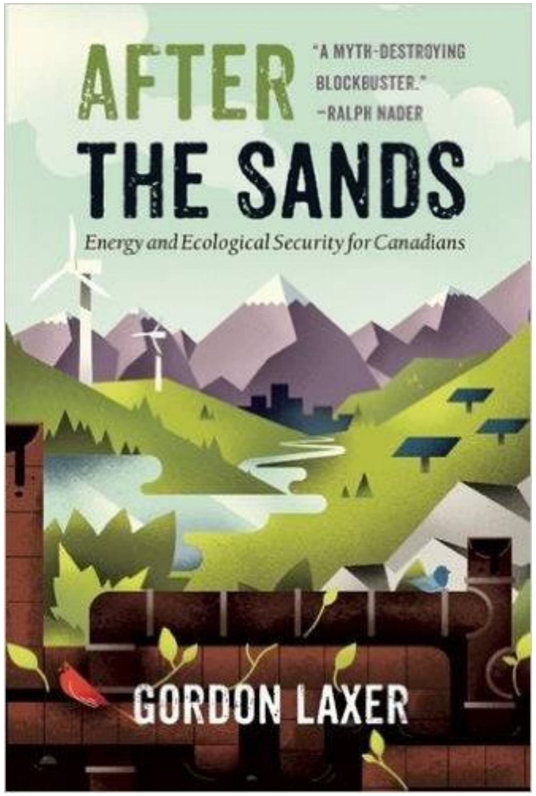
- "Atlantic Canada is at a crossroads. Should it pin its hopes on the era of oil dominance and carbon-dense resource exports continuing? Or should it play on its strengths to become a leader in the transition to a low-carbon future?"

- The proposed Energy East oil pipeline and the giant Muskrat Falls hydro dam in Labrador are the regions' biggest megaprojects. They are betting that the carbon era will persist for decades.

- What if they're wrong and the world and Ottawa get serious about climate change and refuse to buy what these projects are selling?

- They could become white elephants. If history is a guide, governments and taxpayers will be stuck with the tab."

    - https://www.localxpress.ca/opinions/opinion-atlantic-canada-forge-its-own-low-carbon-energy-destiny-445245

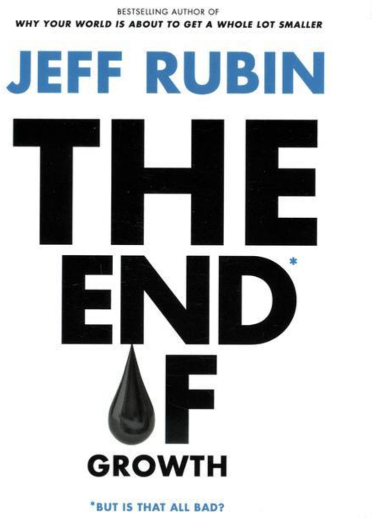


Take away points (in case I run out of time)

- The future of oil exports as an economic driver in question
  - Low prices and expectations of global glut continuing
  - Politics and policy in Canada limiting exploitation
    - Access to tidewater, de-carbonization/green economy
- But, even without those drags on resource exploitation, need to understand that:
  - The income gains are transitory and more associated with investment boom than resource production
  - Crown owner needs to capture share of resource rents
  - Those rents should be saved and invested
  - Public spending and public sector compensation should be tied to the permanent income of the resource economy not the transitory resource royalties

Remember 2006? PM Stephen Harper declared Canada an emerging energy "superpower"

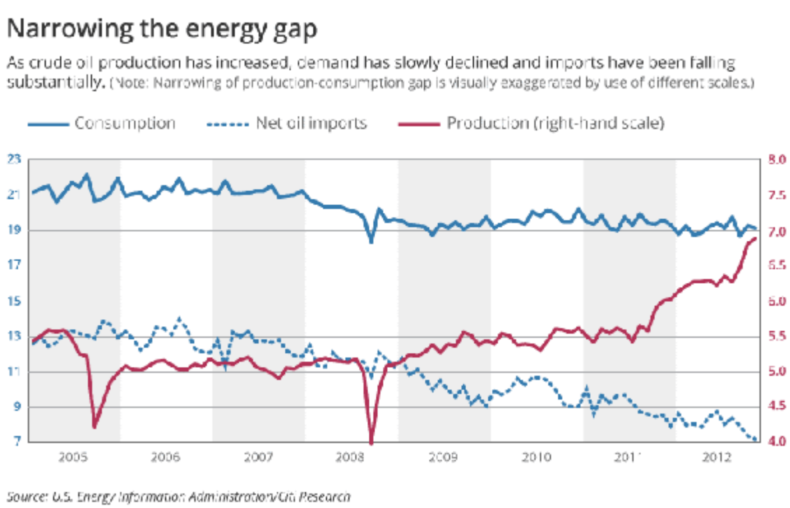
- The world was running out of oil – "Peak Oil"
  - Demand would always be high relative to supply
- The US wanted "secure sources for energy"
  - Even if they were higher cost than other sources
- High oil prices and technical change turned oilsands resource into one of the world's largest reserves
- Capital poured into Canada
  - The oilsands had environmental issues but they could be remediated
    - Wealth from oilsands exploitation can be used to spur "clean energy" alternatives
  - Manufacturing in central Canada also growing rapidly



http://www.postcarbontoronto.org/wordpress/wp-content/uploads/george200.jpg

After 2008, Canada's status as a superpower not so certain…

- Canadian growth slowing
- The world no longer running out oil
  - With shale oil, fracking and changing geo-politics
  - US to be self-sufficient by 2030, but exporting by 2015
- Demand for oil sands resource has cooled
  - Limited market and limited pipeline capacity is "shutting in production"
  - Investment in oilsands and upgrading and refining is slowing
    - Some projects are being written off



ENERGY SUPERPOWER OR SECOND-RATE SUPPLIER?

BEN BRUNNEN AND TOM KMIEC

The world is not going to wait for Canada to get its energy act together.

Far from being an energy or natural resource superpower, at this time we are at best a second-rate supplier that is unable to resolve deep-seated division about our economic future. The political class has resorted to squabbling about benefits and revenues, high-value currency and "Dutch disease."

There is a prevailing view across the country that our energy is a harbinger of great calamity — we are a one-trick pony, we're a "staple" economy, unstable, dependent, a single-resource producer. But this argument has been countered by influential thought leaders such as Bank of Canada Governor Mark Carney. In a September 2012 speech in Calgary, he stated that high commodity prices were unambiguously good for Canada and, rather than debate their utility, we should focus on minimizing the pain and maximizing the benefits of our resource economy.

2012/13, Alberta Premier Alison Redford called for "Canadian Energy Strategy" to ensure Canada becomes an energy superpower

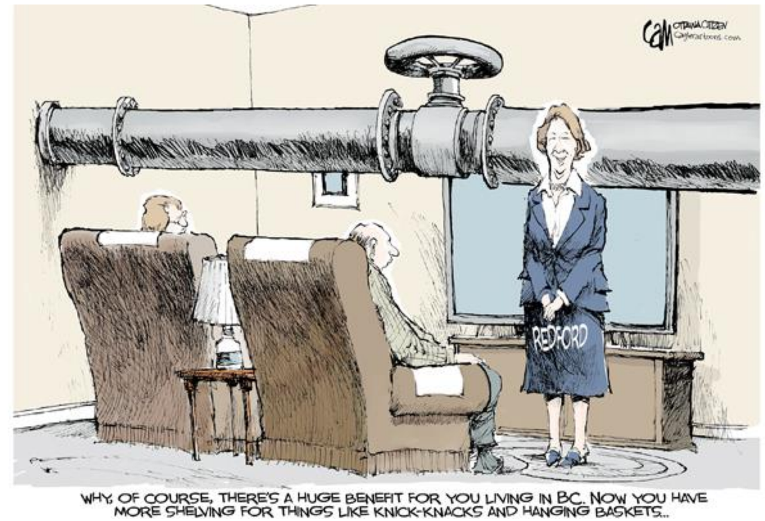
- In a glut oil market since 2008, bitumen had become "harmful to national interests"
  - It's a dirty resource
  - Energy exports harm central Canadian manufacturing
  - The economic benefits perceived as largely for Alberta
    - Everyone else gets the costs
- New proposal is to use energy resources not lead exports but to promote other industry
  - Pipeline to east was the "win-win" option
    - AB gets higher price than now for bitumen
    - ROC gets lower oil price that world price paid on imports

http://montrealsimon.blogspot.ca/2012/05/dr-mulcair-and-dutch-dise

Redford's Challenge #1: Perception that benefits of energy exports go to Alberta while the costs and environmental risks go to the Rest of Canada

- Alberta sees the benefits as spread around
  - Other provinces can invest in upgrading and refining capacity
  - Jobs for the rest of Canada
    - Central Canada supplies the oil sand with machines and workers
- BC and the Rest of Canada sees the oil sands as creating only costs and risks outside of Alberta

http://www.excellentfuture.ca/paul-summerville/smart-links-09-august-2012



http://warriorpublications.files.wordpress.com/2012/10/enbridge-christy-clark-cheque-cartoon.jpg

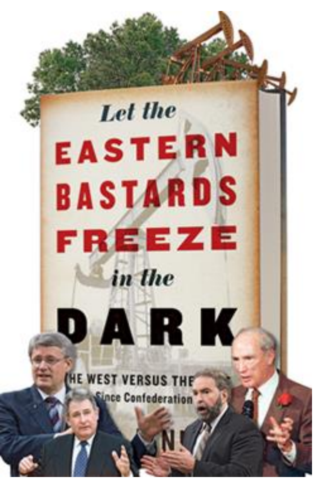
Redford's Challenge #2: energy export would potentially put Alberta in a leading role in Confederation

- "Freedom to Create, Spirit to lead."
  - Reflected Premier Ed Stelmach's assertions that Alberta is an international leader economically and environmentally
    - Focus groups liked that it spoke to Alberta's reputation for freedom, and aspirations beyond oil and gas.
- Focus groups felt the second part of the catchphrase, about leading, spoke to Canadians' instincts that the province is arrogant.
  - "They would like to be known as the best and screw the rest"
    - Carol Vincent, president of Victoria-based ad agency Redbird Communications, liked the smooth "almost feminine" look of the logo,

- Alberta's $25 million campaign to Fight Alberta's "Arrogance Rap"
  Calgary Herald, March 27, 2009

Alberta's leadership federally seen as a problem…

- "The East Wants In", or better "The East Wants the West Back Out"
  - David McGuinty, Liberal Natural Resource critic and MP, accused Conservative MPs from Alberta of being "shills" for the province's oil sands:
    - "They really should go back to Alberta and either run for municipal council in a city that's deeply affected by the oil sands business or go run for the Alberta legislature,"
      - Read more: http://www.ctvnews.ca/politics/mcguinty-resigns-critic-post-for-saying-mps-should-go-back-to-alberta-1.1047079#ixzz2OfxjN1G2



Redford's Challenge #3: Canadians have been trying for a long time to change their identity away from "Hewers of wood"

We Canadians are finding it difficult to make the transition from a resource-based, behind-tariff-walls economy to a human capital based economy (i.e. from boards and mortar to mortar-boards)

Tom Courchene, Policy Options, Jan-Feb 2000, page 102

in the world. Former industry minister, now vice-chairman of the CIBC Jim Prentice accurately sums it up: "There's no shame hewing wood and drawing water as long as you are the best in the world at it."

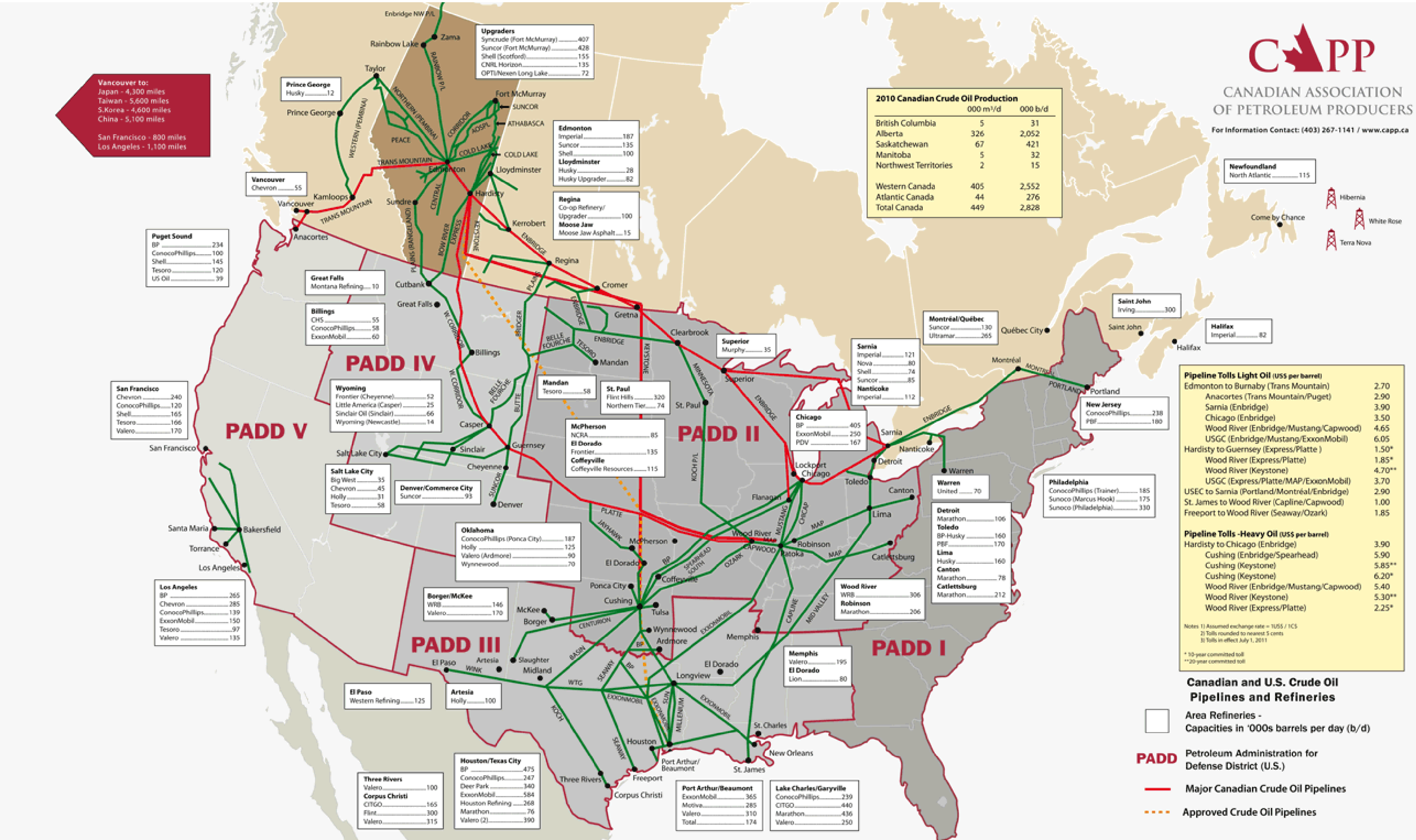
Ben Brunnen and Tom Kmiec, Policy Options March 2013, page 44

- Important economies are not natural resource exporters
  - Resource economies are the "old economies"
  - Successful development is transition away from resources

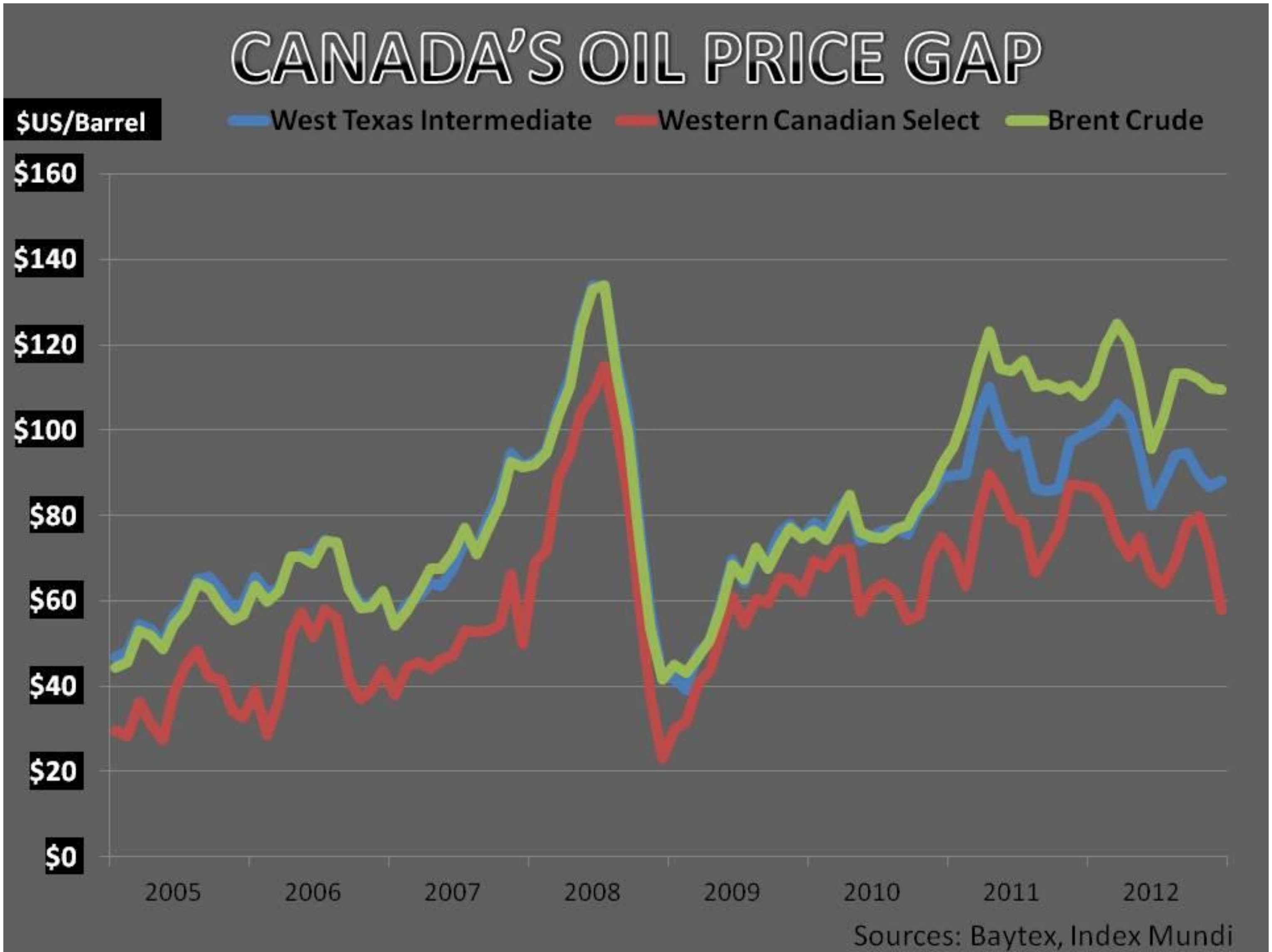
Can promoting energy exports propel Canada to world economic leadership or sink it once and for all?

- Economic Propellant
- All that's needed is access to more markets, China in particular
    - Facilitated by pipeline construction
        - Possibly rail construction
- Resource exports stimulate jobs in central Canadian manufacturing and raise incomes across Canada
- Can do better by capturing more "value added" through forward processing

Highly dependent on a single market – Almost all roads lead to the US



The costs of high dependence on a single market – The “Bitumen Bubble” (Note: The WCS price is high, just not growing)



The solution to the Bitumen Bubble…

the same as it has been since the dawn of Canada

- Find new markets to replace declining demand
- Invest in transportation mega projects to increase exports
  - New pipeline capacity
    - Or a new railway to Alaska
  - to get more oil to market
  - To get to new markets to diversify beyond the US
- Or build a new all-Canadian route pipeline to benefit eastern Canada

http://3.bp.blogspot.com/-qsF1AZT5GTg/TigE-CQUxII/AAAAAAAAC_Y/xlMeyrcf0Yk/s1600/Canada%2BDirty%2BOil%2BSuperpower.JPG

The confusion across Canada…

will promoting energy exports propel Canada to world economic leadership or sink it once and for all?

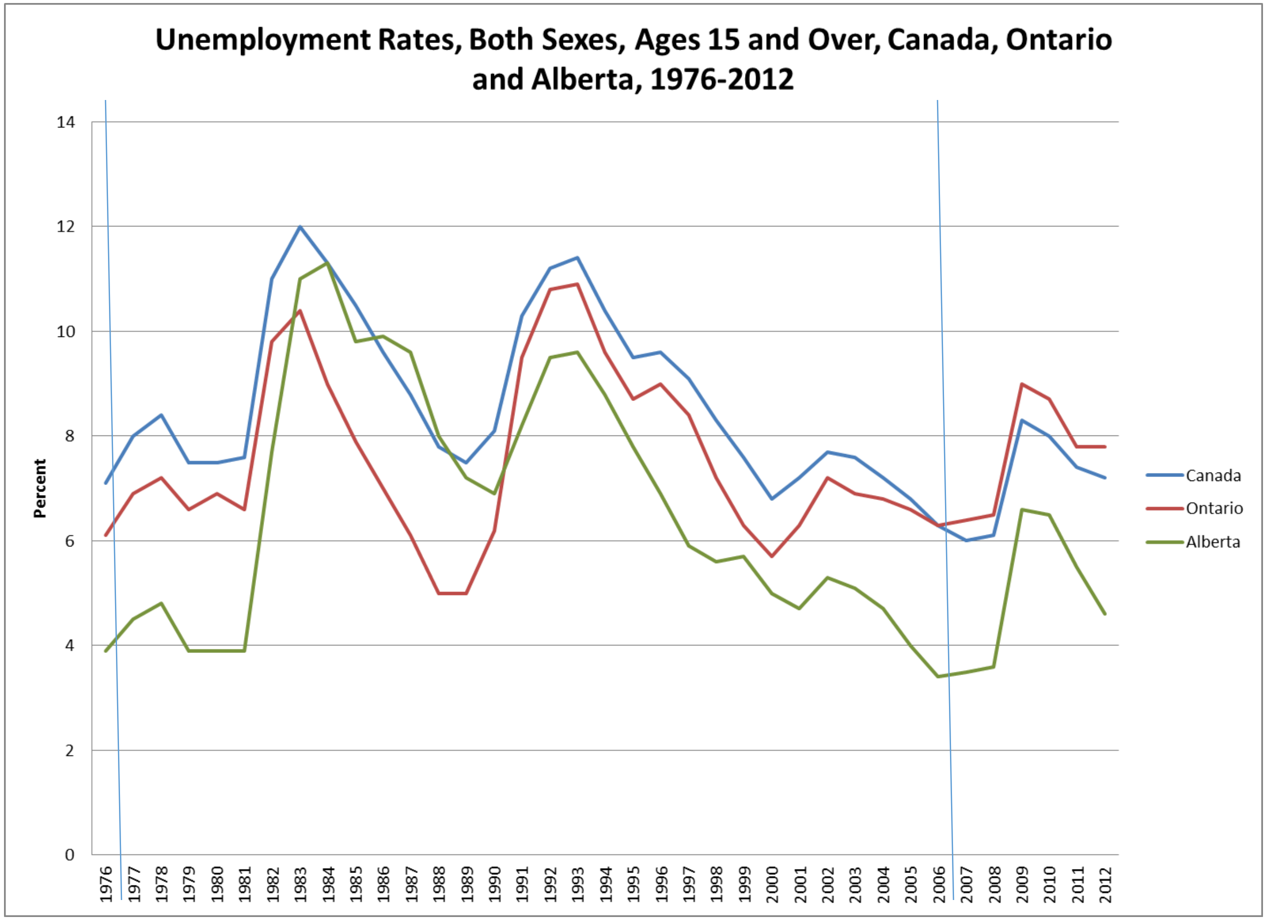
- Economic Propellant
- All that's needed is access to more markets, China in particular
    - Facilitated by pipeline construction
        - Possibly rail construction
- Resource exports stimulate jobs in central Canadian manufacturing and raise incomes across Canada
- Can do better by capturing more "value added" through forward processing

- Economic Retardant
    - Dutch Disease – resource sector "crowds out" the "dynamic sector", manufacturing
        - Alberta's gain at Ontario's expense by wage inflation and an appreciating dollar
- National interests are served by "reining in oilsands development"
    - No pipelines, carbon tax on producers
        - But how about a pipeline to eastern Canada to give some price relief?

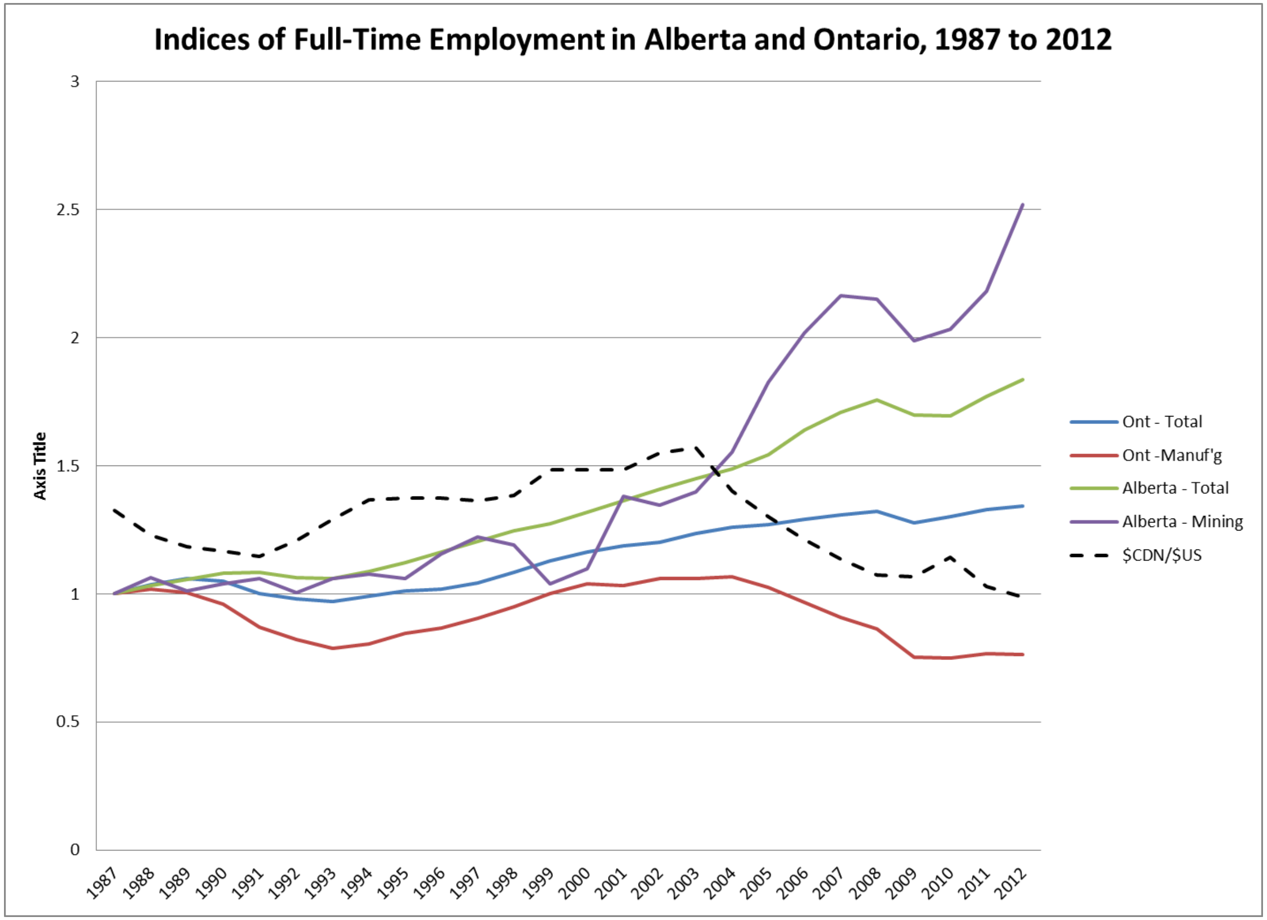
Why did central Canadians believe in the "Dutch Disease"? (energy exports harm manufacturing?)

- Because of the success of the 1980 "National Energy Program"
  - Export tax on oil, set Canadian price at half of world price
  - Courchene and Telmer (1998)
    - The NEP allowed Ont. Manuf'g to boom at a time the US sector had to restructure
    - Ontario had high manuf'g employment due to protection afforded to inefficent producers relying on low productivity labour
    - The sector was "too big"
    - Ontario to this day has a labour productivity gap with US
- It follows that high exchange rates and higher energy prices may require this to change
  - Manufacturing sector will have to adjust to efficient size and raise labour productivity

“Blame Alberta” for Ontario’s slower recovery is good politics in Central Canada



Dutch Disease or resumption of trend decline of manufacturing?



Energy resources and Canadian development since World War II

Oil 1917-25,

Oil again 1947 to 1961,

Oil again 1973-1986

Natural Gas/LNG 2012-

Oil Sands 2000-

In all cases, Canada has had episodic growth that has not been sustained beyond the autonomous shifts in demand

Can oil and gas exploitation cause sustained income growth in Alberta? In Canada?

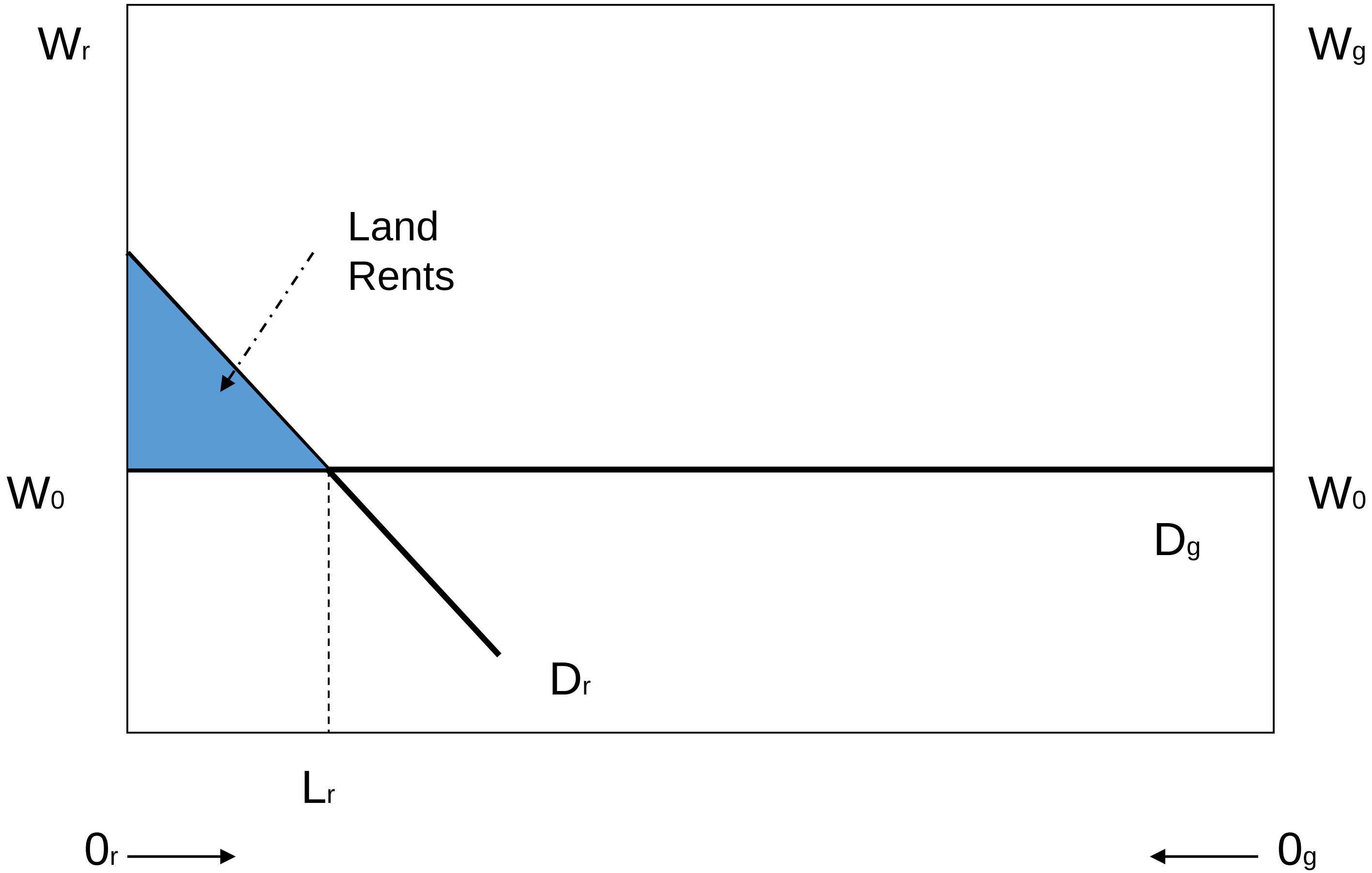
- Belief that high oil and natural gas prices result in a "higher growth path"
  - The boom need never end so long as energy prices remain high
  - In Alberta, this is a case of "hope triumphing over experience"

> "(Calgary's growth is) the kind of growth that this economy can sustain. It is a sustainable, strong, long-term economic growth."
>
> – Mario Lefebvre, director,
> The Conference Board of Canada

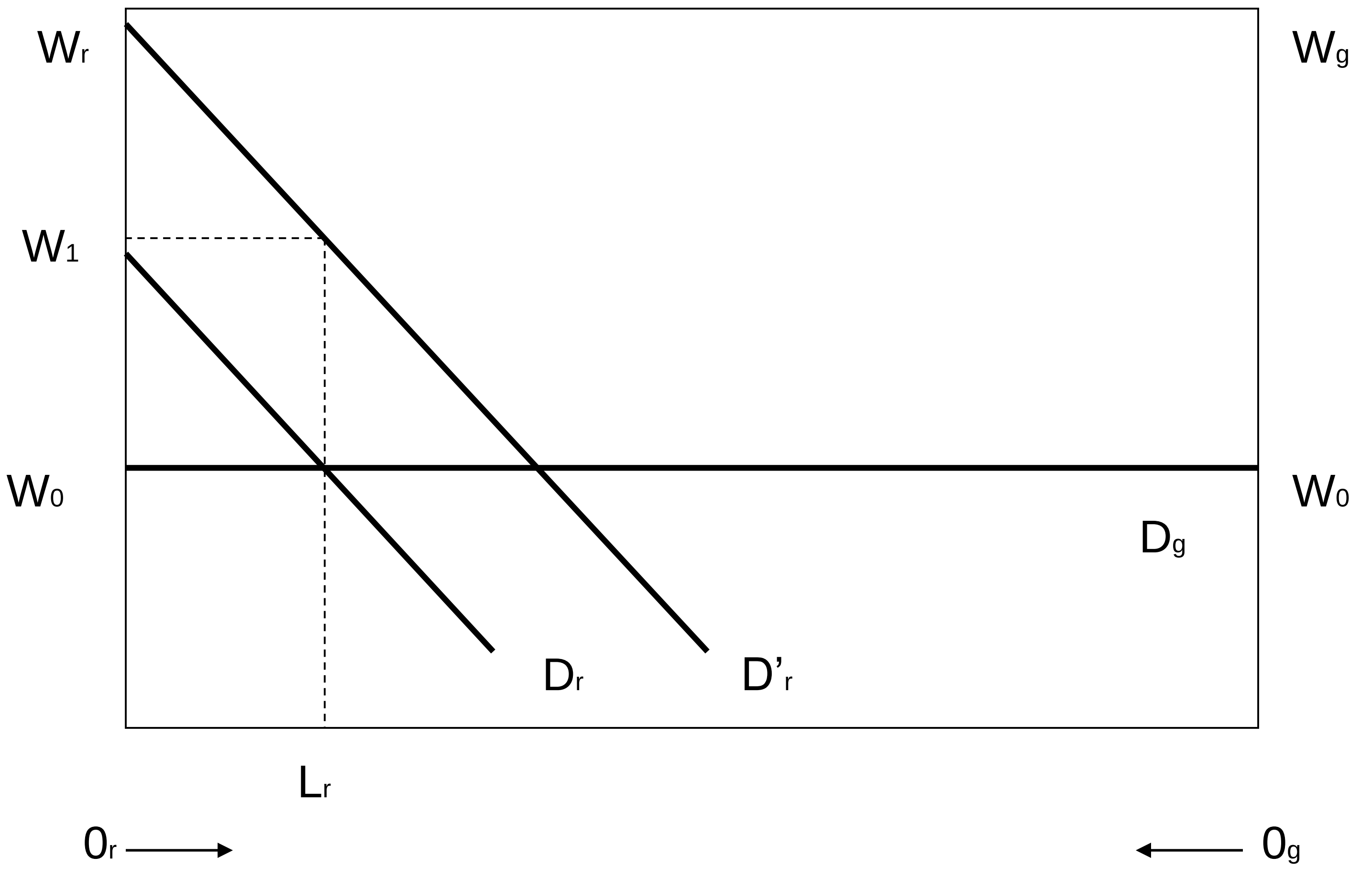
Chambers and Gordon's (1966) Model:

- Small open economy with two sectors,
  - "Resources" and "Gadgets"
      - Think of sectors as "Alberta" and "Ontario"
  - Producers are price-takers on world markets
  - Free capital mobility
    - ratio of K/L adjusts until capital earns world rate of return
      - modeling Labour demand and supply, we are actually talking about K/L
- Resources are produced with labour and land
  - Land is a fixed factor so VMP of labour is decreasing in L
  - "gadgets" are produced with only L, constant VMP of L
- Wages are set in the gadget sector
  - Demand for labour is perfectly elastic
- migration into the economy and between sectors responds to wage changes

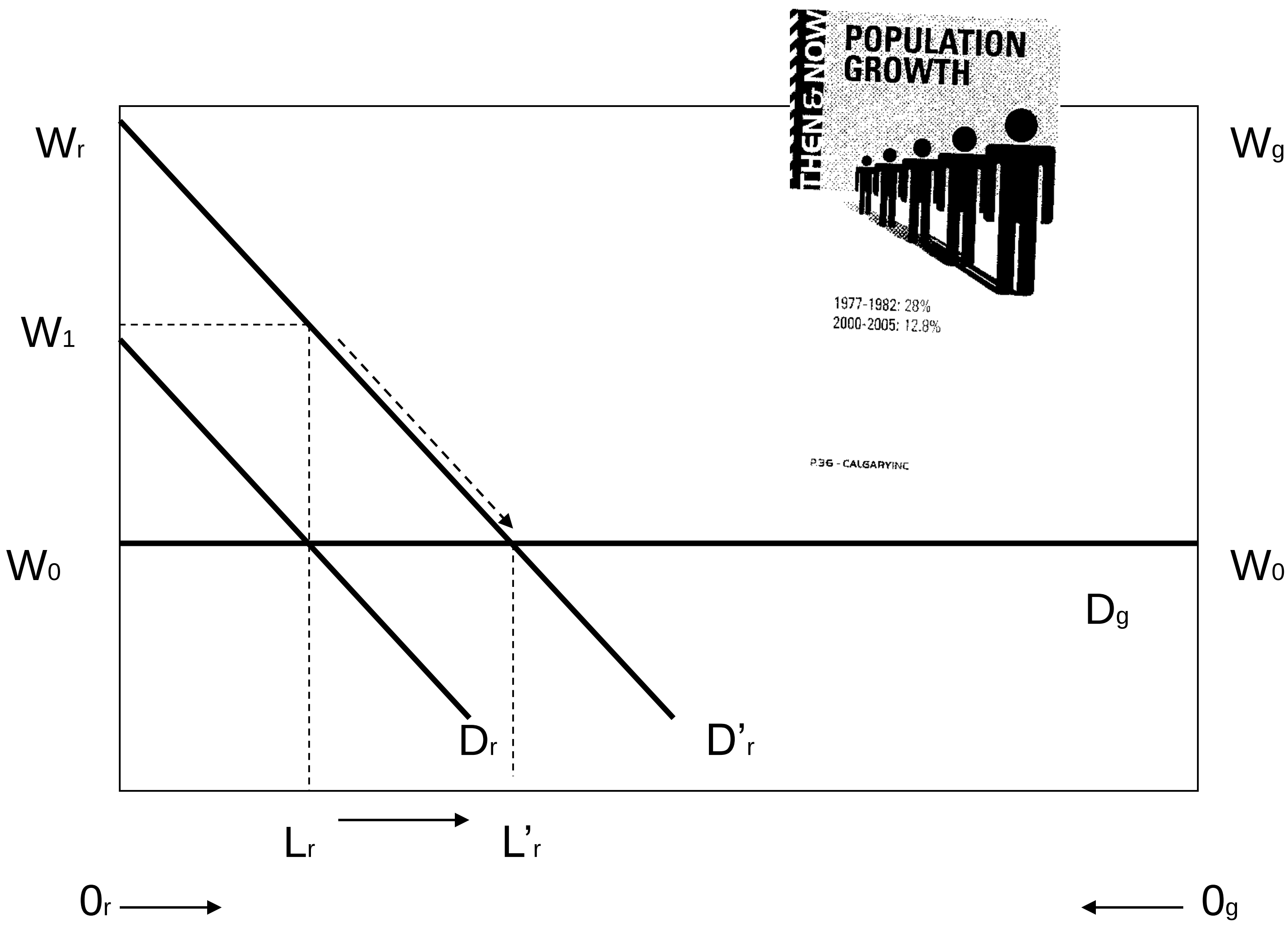
Labour Market Equilibrium between Resource (a.k.a. Alberta) Sector and Gadget Sector (a.k.a. Ontario) circa 1993



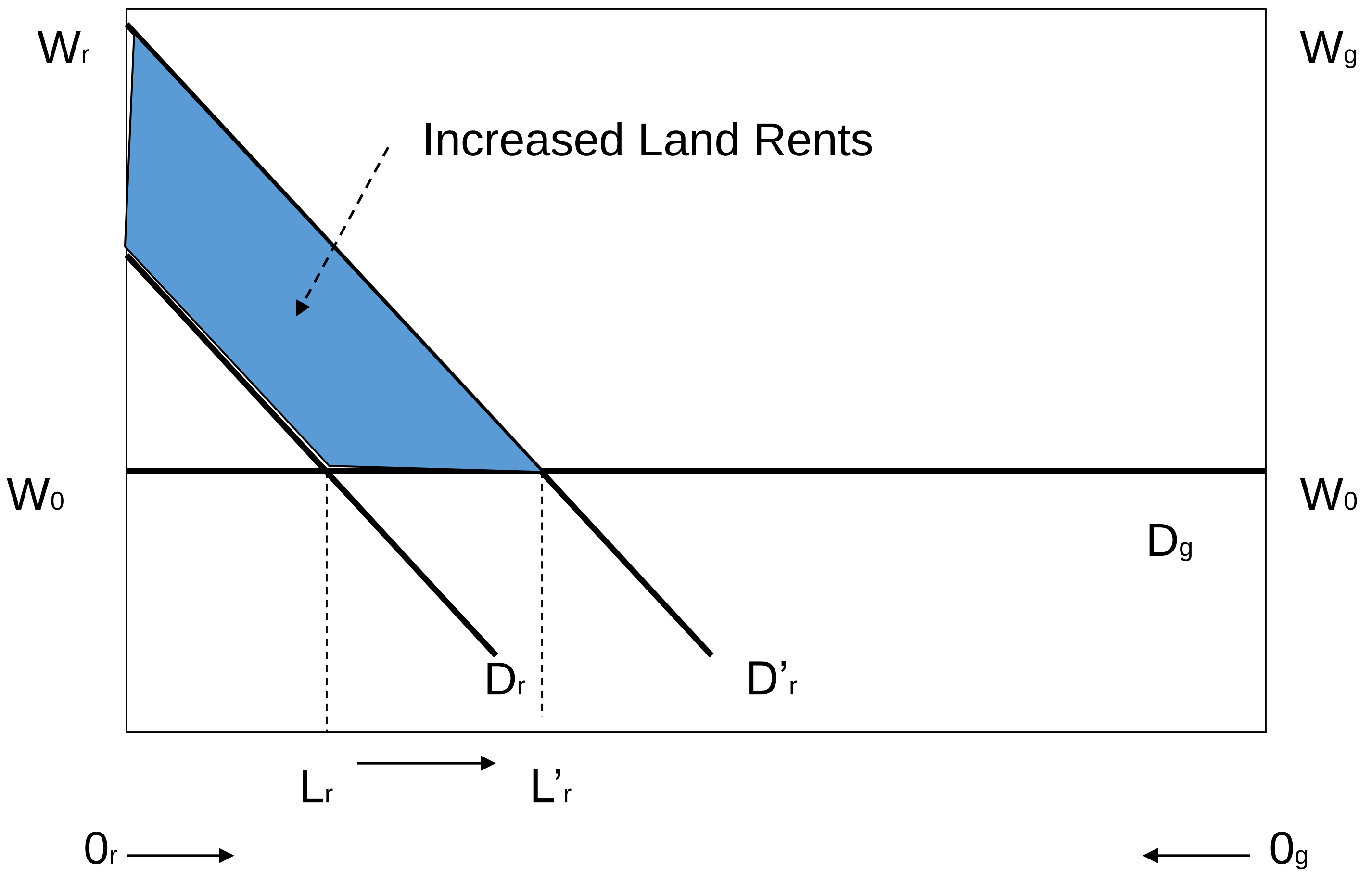
The price of oil "goes up" – short run adjustment
Dr to D'r, Real wage in Alberta goes up with labour supply fixed



The price of oil “stays high” but is not increasing – Long run adjustment
Labour leaves gadget sector for resource sector (in-migration)



Long run adjustment:
Real wage in Alberta returns to gadget sector wage
Income of Land increases – only source of real income increase



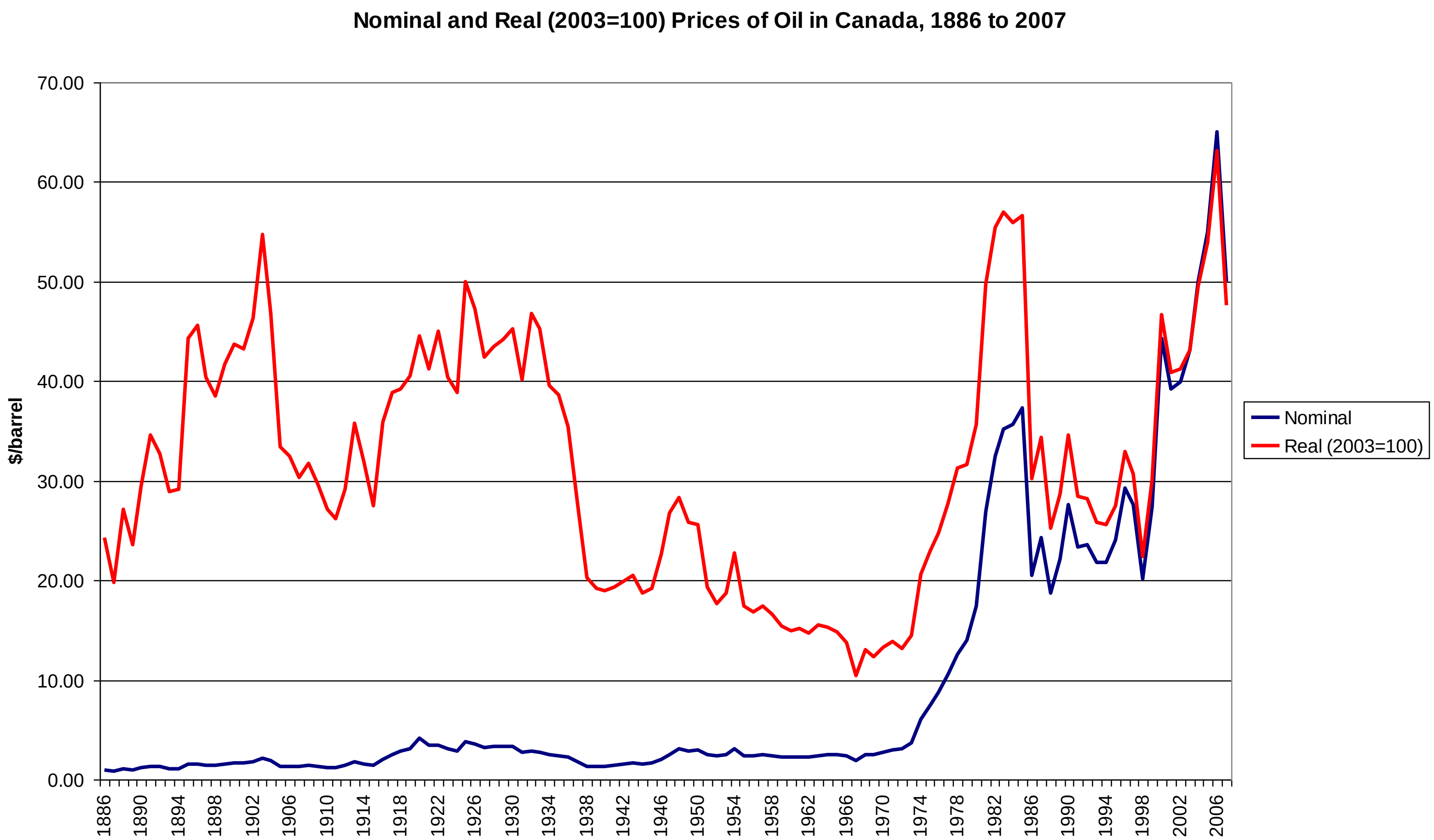
Isn’t that too simple?

- Boyce and Emery (2010) generalize Chambers and Gordon (1966) dynamic, non-renewable resource setting
  - Resource depletion – demand for labour in resources falls over time
    - Land rents fall, real wage unchanged
  - Resource prices need to rise continuously to offset depletion
    - The peak oil premise
  - Technical progress in the resource sector keeps labour demand growing as well
    - Technical change in gadgets raises wages for the resource sector and reduces its growth

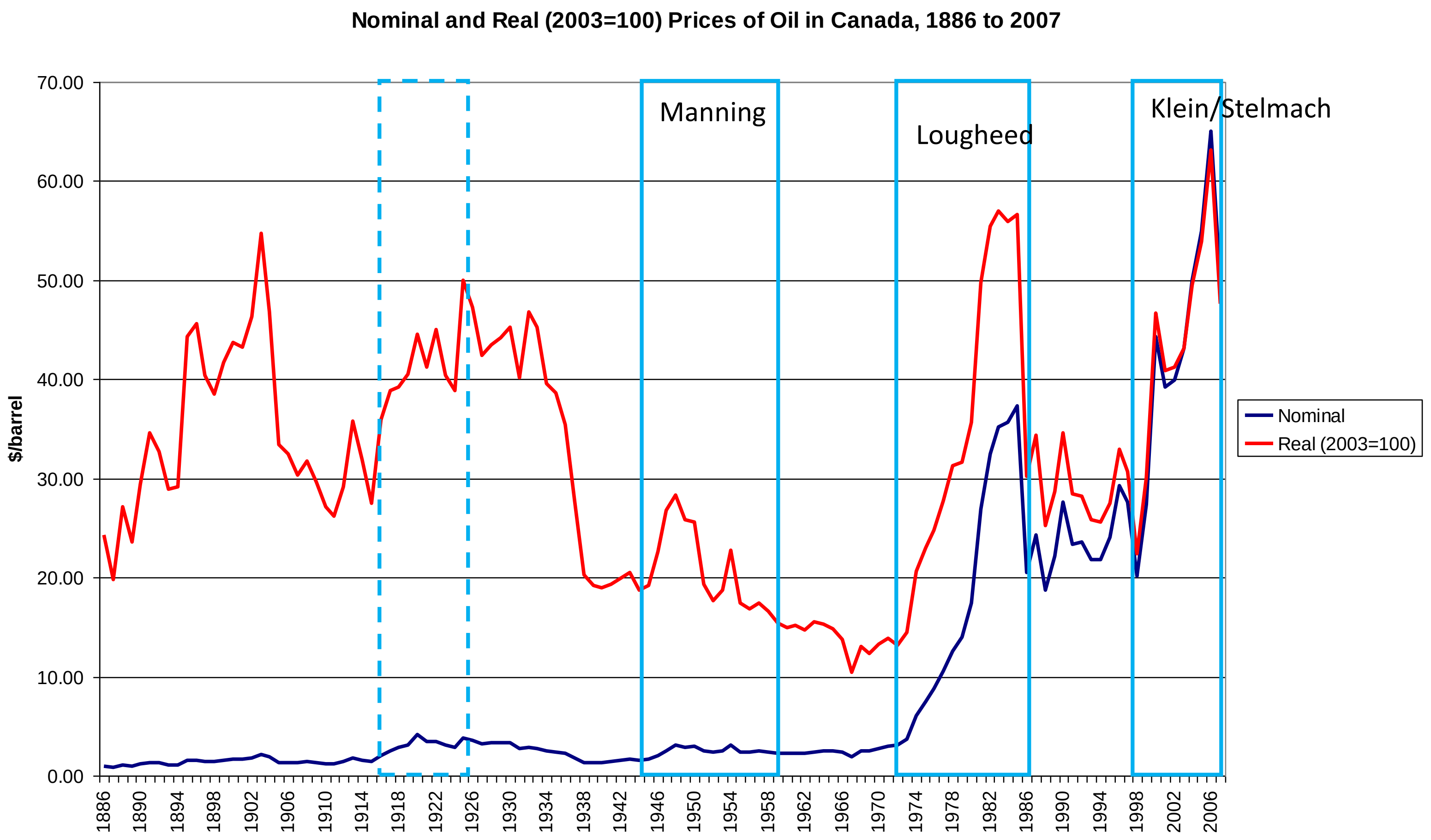
What do these models predict:

- Resource exploitation leads to
  - a bigger resource sector, a bigger economy (GDP)
  - higher "land rents" (income of fixed factor)
  - no long run increase in real wage despite "high" resource prices
  - higher income <u>levels</u> from the income due to the fixed factor (GDP/Pop)
    - Bad institutions, corruption, rent seeking, will mainly lower income levels through reduced income to the fixed factor
      - Depletion will have them fall over time as well
- Sustained growth in p.c. income requires
  - Sustained <u>increases</u> in resource prices
  - technical progress in the resource sector or

Alberta’s four oil booms based on classic Staples“autonomous demand shifts”



Price increases have not been sustained : Alberta’s four oil booms



Resource booms have been investment booms

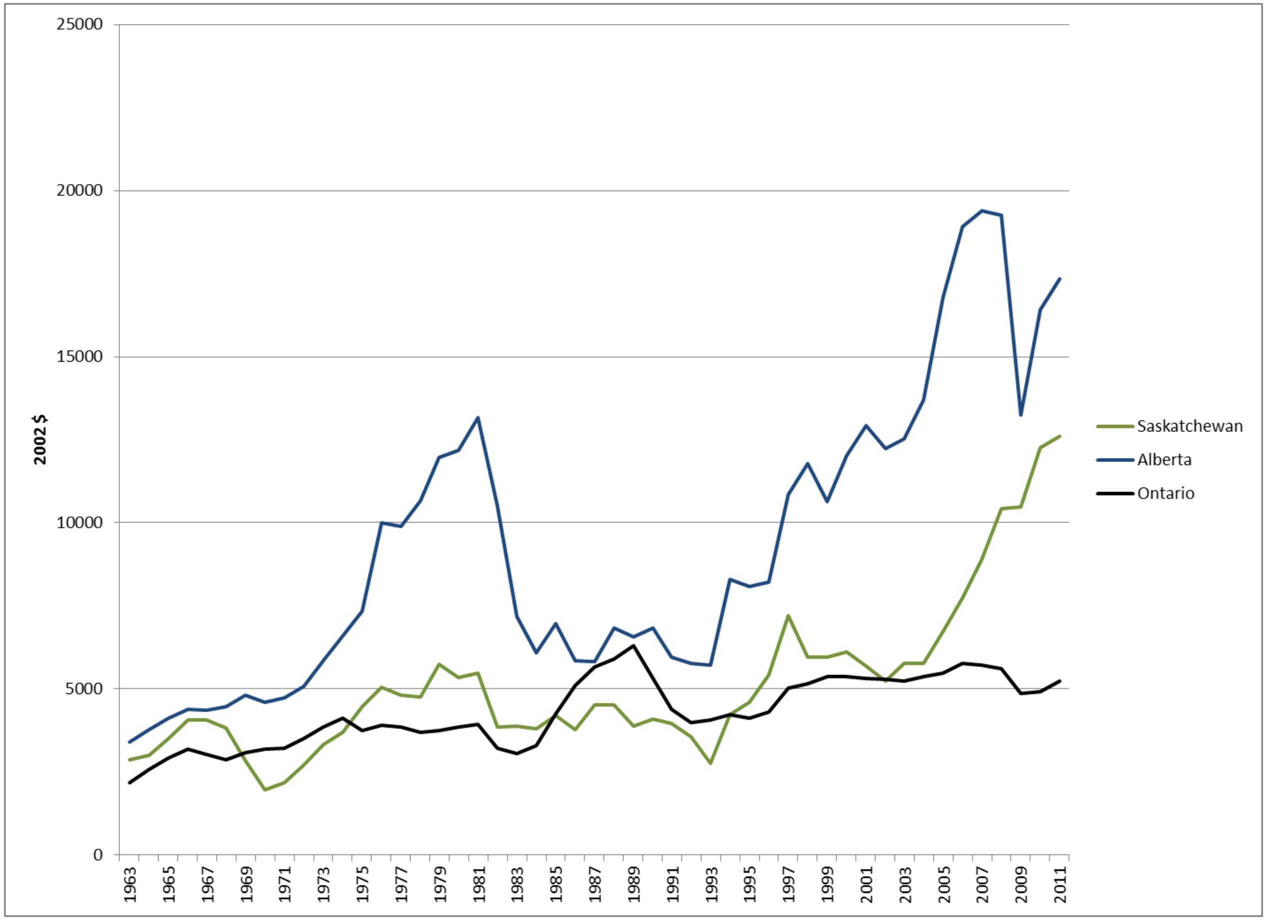
- High employment and incomes during construction phase, lower during production
  - In the absence of technical progress or continually rising oil and gas prices,
    - all natural resource booms will “bust” or at least slow down

> “The economy is different this time around. In the 1970s, most of the economic activity was in Calgary; now it’s in Fort McMurray.”
>
> – Patrick [illegible], [illegible], City of Calgary

> “Everybody is afraid of a boom because the connotation is bad here. When it fails, the economy falls hard. Everybody is firing on all cylinders now to keep up with the growth.”
>
> – [illegible], [illegible], City of Calgary

Resource Boom Growth due to Input Accumulation

Per capita investment (2002 purchasing power), Alberta, Saskatchewan and Ontario, 1963-2012



No evidence of Technical Progress in Alberta
The boom was not sustainable

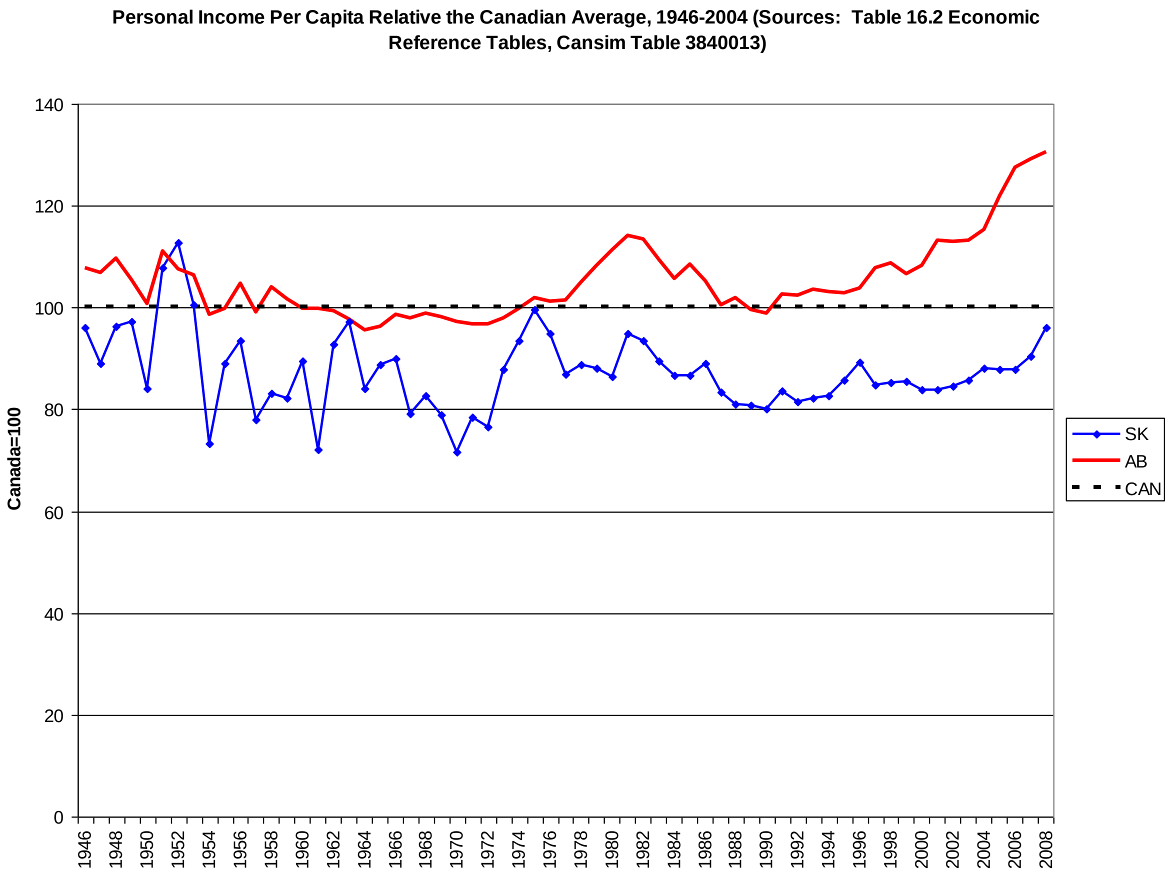
Table 3: Accounting for Growth in Alberta and Saskatchewan

	Real GDP Growth Rate	Contributions to Growth by: Labour Input	Capital Input	Technical Progress
		ALBERTA		
1962-2004	5.4%	1.7%	2.7%	1.0%
1962-1970	6.1%	1.9%	4.2%	-0.1%
1971-1985	7.9%	2.1%	3.1%	2.7%
1986-2004	3.0%	1.2%	1.8%	0.1%
		SASKATCHEWAN		
1962-2004	3.4%	0.5%	2.0%	0.9%
1962-1970	4.9%	0.7%	4.3%	-0.1%
1971-1985	4.6%	0.8%	1.4%	2.5%
1986-2004	1.6%	0.2%	1.3%	0.1%

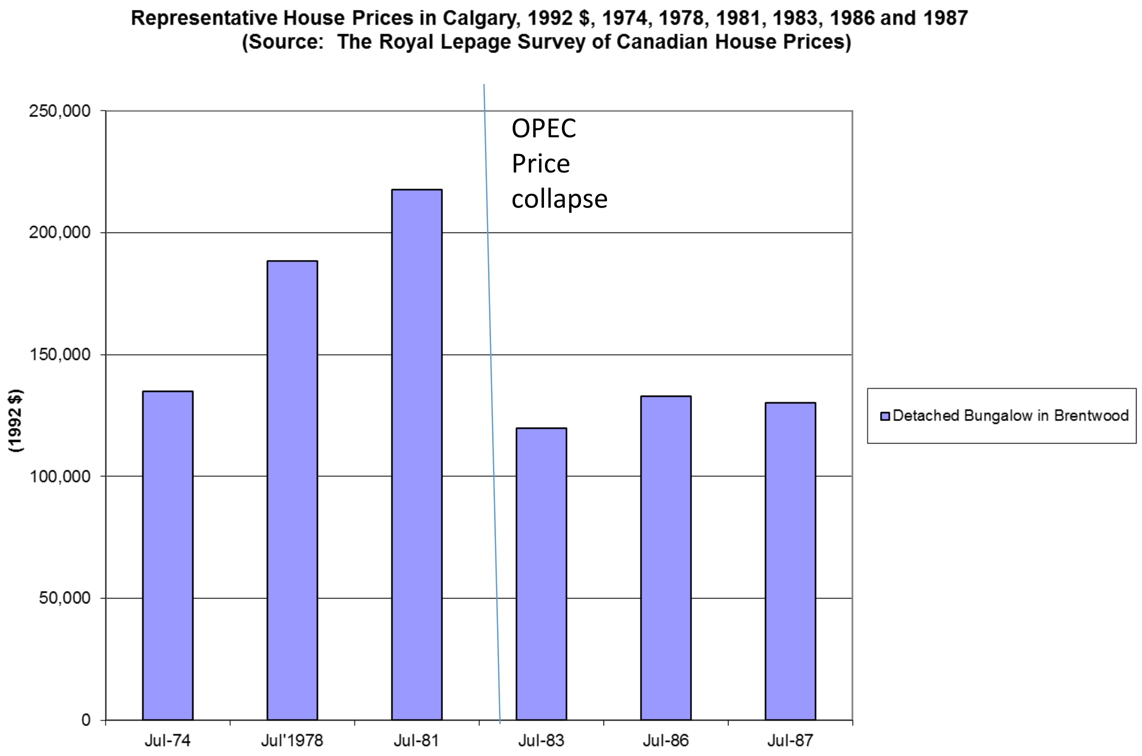
From Emery and Kneebone (2008)

In the long run, incomes in Alberta “converge” to national average

Per Capita Personal Incomes Relative to Canadian Average



Pop Quiz: What happens to land rents when oil prices fall?



I paid $135,000 for such a house in 1993. It took until 2005 for prices to reach the 1981 peak

In the end, resource exports are good for Canadians but not necessarily transformative for the economy or a propellant for sustained economic leadership…

- Ian Keay (2009) "Resource Specialization and Economic Performance: A Canadian Case Study, 1970-2005" *Canadian Public Policy 35(3), 291-313.*

> Even at the beginning of the twenty-first century, Canada's aggregate economy was still specialized to a considerable degree in resource production, particularly energy production. The resource sector as a whole, even without energy, does not appear to have been constraining per capita performance, and as long as we include energy, the natural resource industries appear to have comprised a leading sector in the domestic economy, with positive spillovers driving down domestic raw material prices and generating demand for non-resource-intensive production. In addition, we cannot find any evidence consistent with input price or currency crowding out. In total, therefore, the evidence seems to suggest that since 1970 resource specialization has been closely associated with forces that have contributed both directly and indirectly to the improvement of per capita economic performance in Canada.

For resource booms to have lasting effects ….

The rents/wealth generated in the short run must be captured, saved and invested

- Lateral linkage to other sector (finance, manufacturing)
    - Not like Alberta did in the 1970s in Alberta real estate
  - The “big push” – Sachs and Warner – rents are used to overcome the “fixed costs” of industrialization
    - Peter Lougheed’s “Province Building”
  - Infrastructure to promote non-resource economic activity
- A big mutual fund
  - Hartwick and Sachs and Rodriguez
  - Alberta Heritage Fund at $16.4 billion, about 10% of oil and gas revenues since 1976/77 (population 3.6 million)
    - Norway has reached $716 billion starting in 1990 (Population 4.9 million)
    - Alaska has $45 billion from APF started in 1976 (population 0.73 million)
- Human capital
  - Emery, Ferrer and Green (2012) – Albertans in high school in 1970s Lougheed boom achieve higher educational attainment than cohorts before and after

Lessons of history… Reliance on energy exports will not propel Canada into global economic leadership

- For a small open economy, all resource booms are transitory
  - Unless we are at the end of history, energy prices will not grow without bound or even stay “high”
    - Julian Simon-- there is no resource commodity that has had an increasing real price over the last century
    - Rosenberg (1973) --Technological change results in substitutes and promotes conservation in consumption
- Canada’s development has been a series of short lived resource booms
  - Development strategy is like surfing and waiting for waves
- Short run growth inevitably slows down and lasting benefit of boom is not guaranteed
  - there are no lasting effects of the resource boom other than a larger population and a larger economy
  - Resource booms will not raise the standard of living unless short run resource rents are capitalized into
    - financial assets, lateral linkages to other sectors of the economy, infrastructure, productive capital or human capital