Monopsony Market Structures and Primary Cost Drivers Within OECD Health Care Systems

MYLES BOUREN, ECO 410: RESEARCH METHODS IN ECONOMICS

WEDNESDAY, NOVEMBER 3, 2016

BACKGROUND: THE UNITED STATES HEALTH CARE SYSTEM

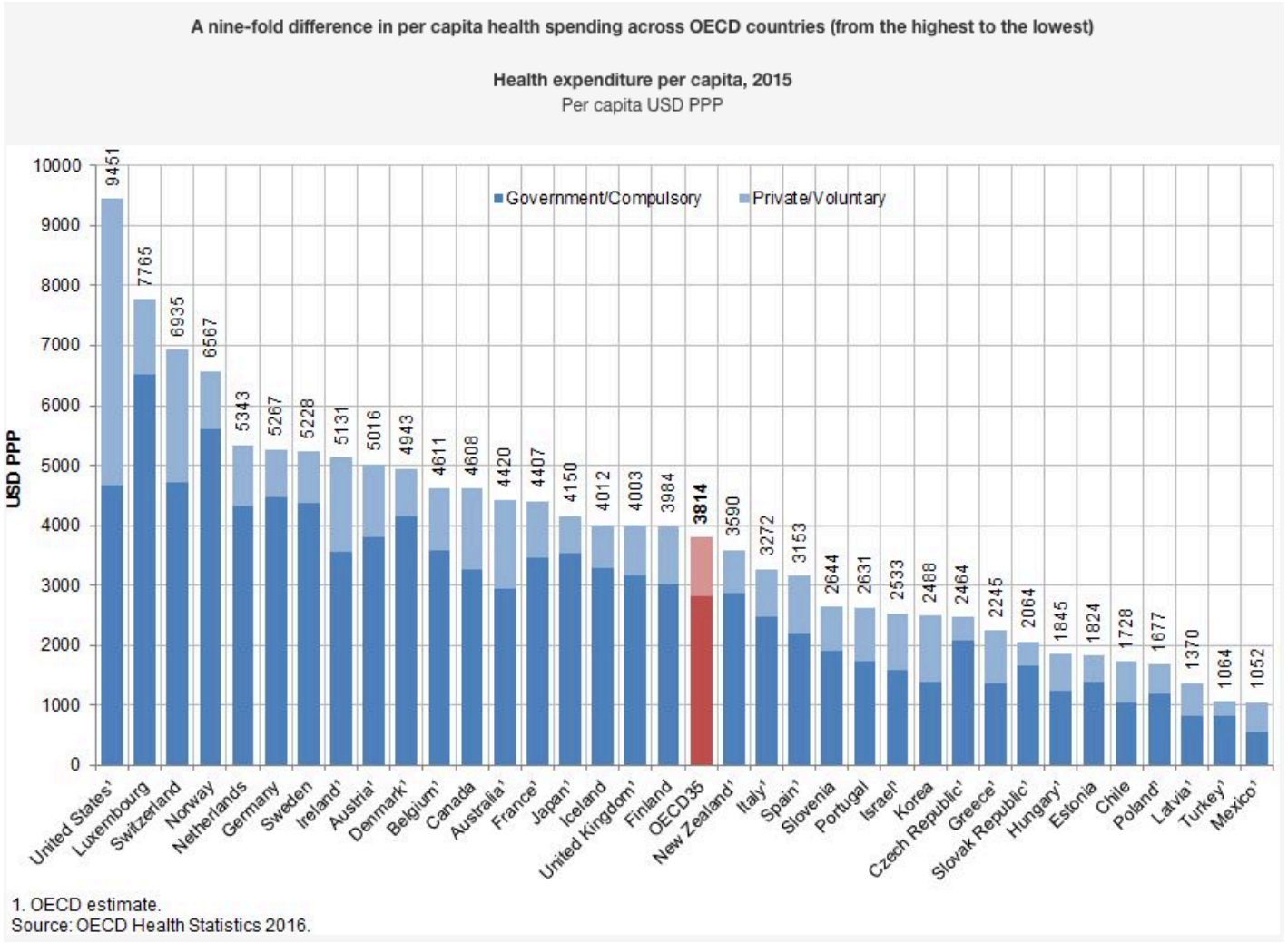
- Average individual consumer-market health insurance premiums set to rise **25 percent** from 2016-2017.
- 5 of the largest health insurers dominate a majority of the US healthcare market
- As a percent of GDP, health spending in the United States has risen from 5% in 1960 to over 17% in 2016.

Health Insurance and Managed Health Care Companies:

Company Name	Market Capitalization
United Healthcare (UNH)	$91.8 billion
Wellpoint (WLP)	$34.3 billion
Aetna (AET)	$29.8 billion
CIGNA Corp. (CI)	$26.8 billion
Humana (HUM)	$21.1 billion
Centene Corp. (CNC)	$5.7 billion
Health Net, Inc. (HNT)	$3.9 billion
WellCare Health Plans (WCG)	$3.1 billion
Healthspring (HS)	$3.7 billion
Molina Healthcare (MOH)	$2.4 billion

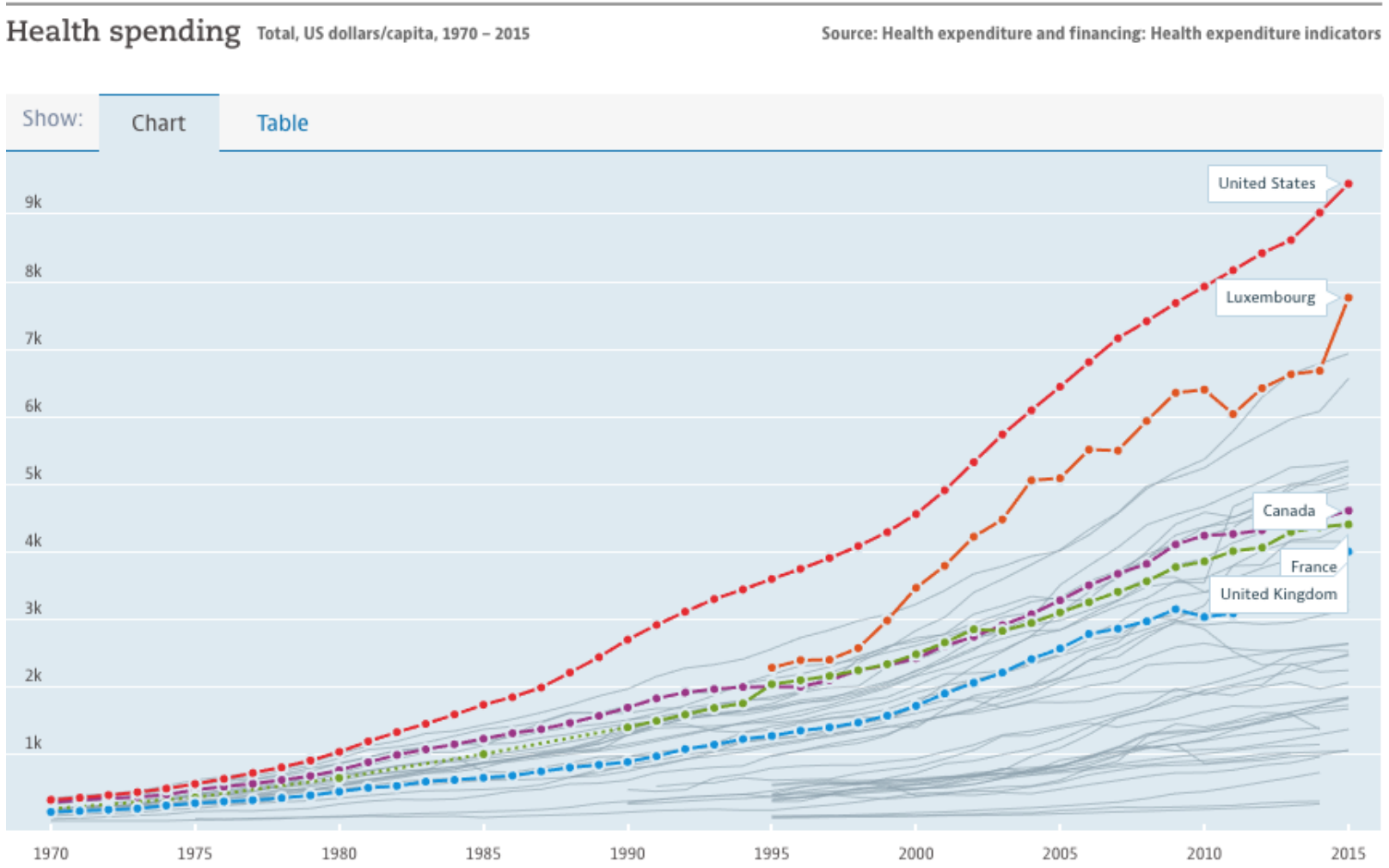
(Source: Thompson Reuters)

IS THE UNITED STATES A SPENDING OUTLIER?



IS THE UNITED STATES A SPENDING OUTLIER?

- …and it's been trending this way for a considerable amount of time.



OECD (2016), Health spending (indicator). doi: 10.1787/0191328e-en (Accessed on 02 November 2016)

IS THE UNITED STATES A SPENDING OUTLIER?

- **In 2015, the United States continued to outspend all other OECD countries by a wide margin**
- US Spends on average *$9,451* for each US resident—a level of health spending that is **two-and-a-half times the average of all OECD countries** (*USD $3,814*) and around twice as high as in some other G7 countries including Germany, Canada and France.
- Of all the OECD member states, **only in the United States does voluntary health insurance—and private funding such as households' out-of-pocket payments—account for more than 50% of the total**.[3]

HIGH COSTS: A CORRELATION WITH QUALITY?

- **Question**: Does evidence show that United States consumers pay more for health care due to better demonstrated health outcomes?
  - You answer: Out of 34 countries in the OECD, how would you guess the US Ranks in measures of **Access**…
    - Life expectancy at birth
    - Number of practicing doctors (per 1000 population)
    - Number of practicing nurses (per 1000 population)

HIGH COSTS: CORRELATION WITH QUALITY?

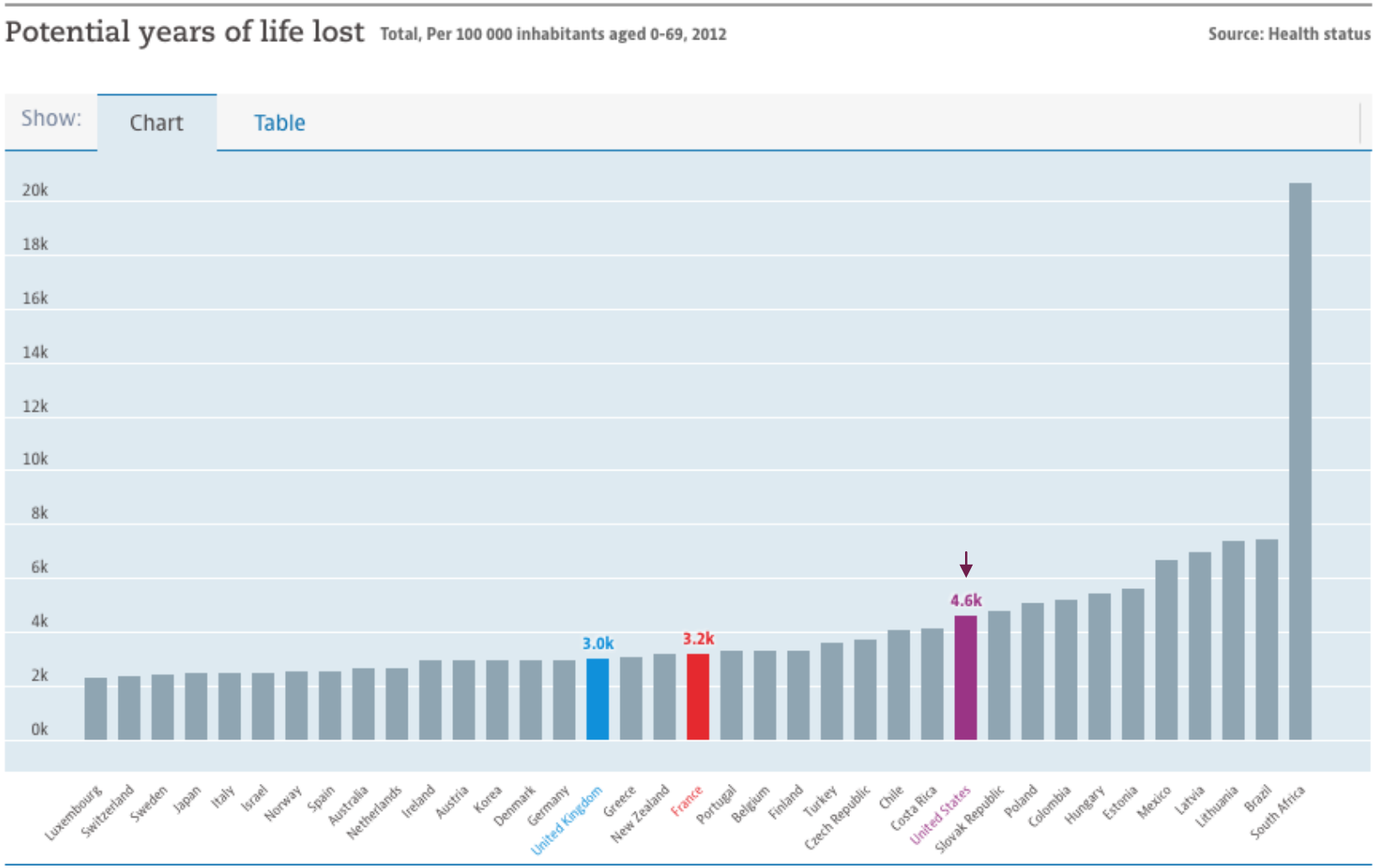
Key facts for the United States from OECD Health Statistics 2014

	United States			OECD average		Rank among OECD countries*
	2012		2000	2012	2000	
Health status						
Life expectancy at birth (years)	78.7	(2011)	76.7	80.2	77.1	27 out of 34
Life expectancy at birth, men (years)	76.3	(2011)	74.1	77.5	74.0	26 out of 34
Life expectancy at birth, women (years)	81.1	(2011)	79.3	82.8	80.2	29 out of 34
Life expectancy at 65, men (years)	17.8	(2011)	16.0	17.7	15.6	20 out of 34
Life expectancy at 65, women (years)	20.4	(2011)	19.0	20.9	19.1	25 out of 34
Mortality from cardiovascular diseases (age-standardised rates per 100 000 pop.)	261.2	(2010)	395.4	296.4	428.5	17 out of 34
Mortality from cancer (age-standardised rates per 100 000 pop.)	198.7	(2010)	236.7	213.1	242.5	25 out of 34
Risk factors to health (behavioural)						
Tobacco consumption among adults (% daily smokers)	14.2		19.1	20.7	26.0	31 out of 34
Alcohol consumption among adults (liters per capita)	8.6	(2011)	8.3	9.0	9.5	23 out of 34
Obesity rates among adults, self-reported (%)	28.6		22.8	15.4	11.9	1 out of 29
Obesity rates among adults, measured (%)	35.3		30.9	22.7	18.7	1 out of 16
Health expenditure						
Health expenditure as a % GDP	16.9		13.1	9.3	7.7	1 out of 34
Health expenditure per capita (US$ PPP)	8745		4791	3484	1888	1 out of 34
Pharmaceutical expenditure per capita (US$ PPP)	1010		540	498	300	1 out of 33
Pharmaceutical expenditure (% health expenditure)	12.0		11.8	15.9	17.9	26 out of 33
Public expenditure on health (% health expenditure)	47.6		43.0	72.3	71.4	34 out of 34
Out-of-pocket payments for health care (% health expenditure)	12.0		14.9	19.0	20.5	28 out of 34
Health care resources						
Number of doctors (per 1000 population)	2.5	(2011)	2.3	3.2	2.7	28 out of 34
Number of nurses (per 1000 population)	11.1		10.2	8.8	7.5	9 out of 34
Hospital beds (per 1000 population)	3.1	(2010)	3.5	4.8	5.6	25 out of 34

HIGH COSTS: A CORRELATION WITH QUALITY?

- **Question**: Does evidence show that United States consumers pay more for health care due to better demonstrated health outcomes?
  - You answer: Out of 34 countries in the OECD, how would you guess the US Ranks in measures of **Quality**…
    - "Potential Years of Life Lost"
    - Infant Mortality (per 1000 live births)
    - Staffed hospital beds (per 1000 population)
    - Doctors consultations (average, per citizen, per year)

HIGH COSTS: A CORRELATION WITH QUALITY?



OECD (2016), Potential years of life lost (indicator). doi: 10.1787/0191328e-en (Accessed on 02 November 2016)

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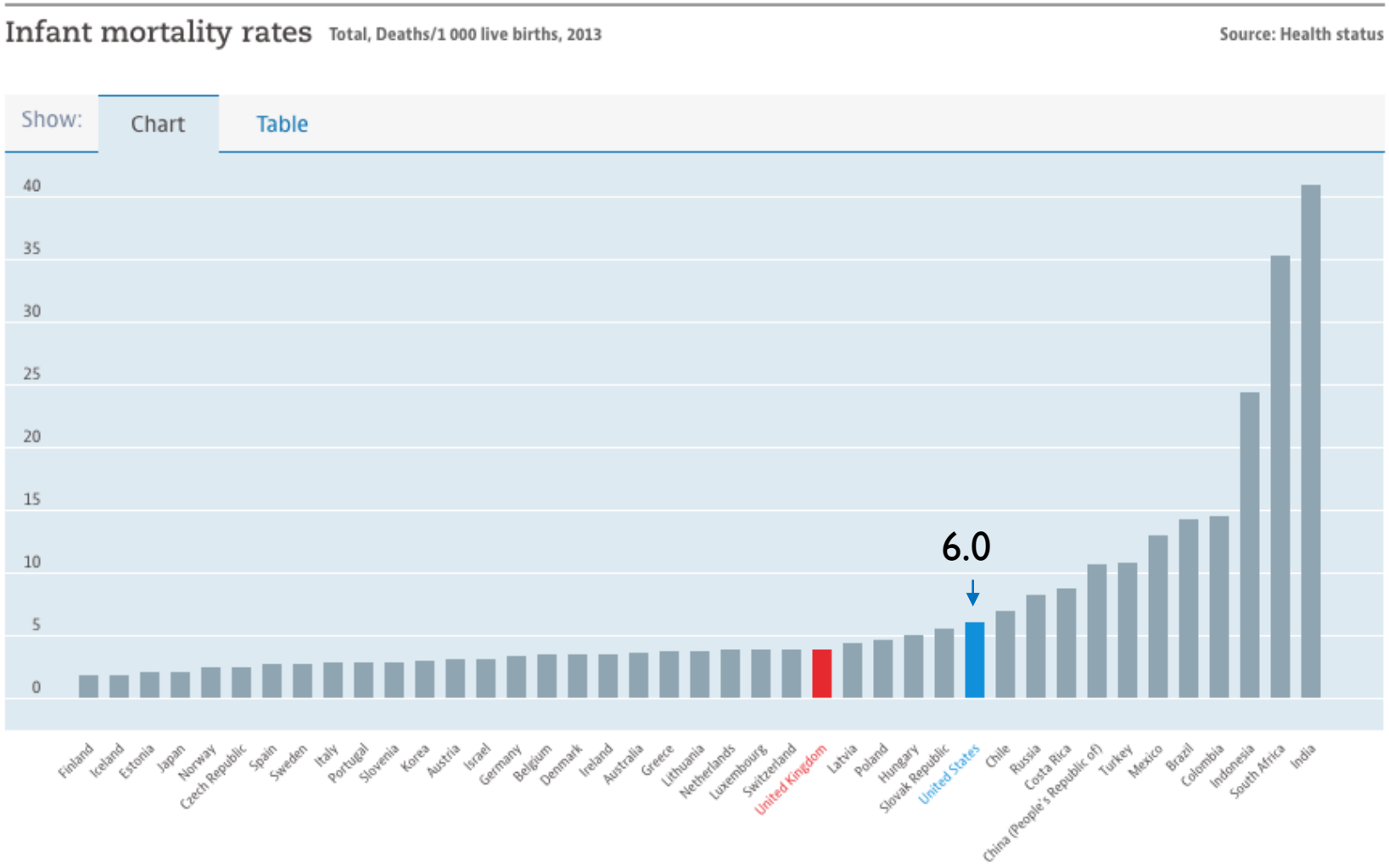

OECD (2016), Infant mortality rates (indicator). doi: 10.1787/0191328e-en (Accessed on 02 November 2016)

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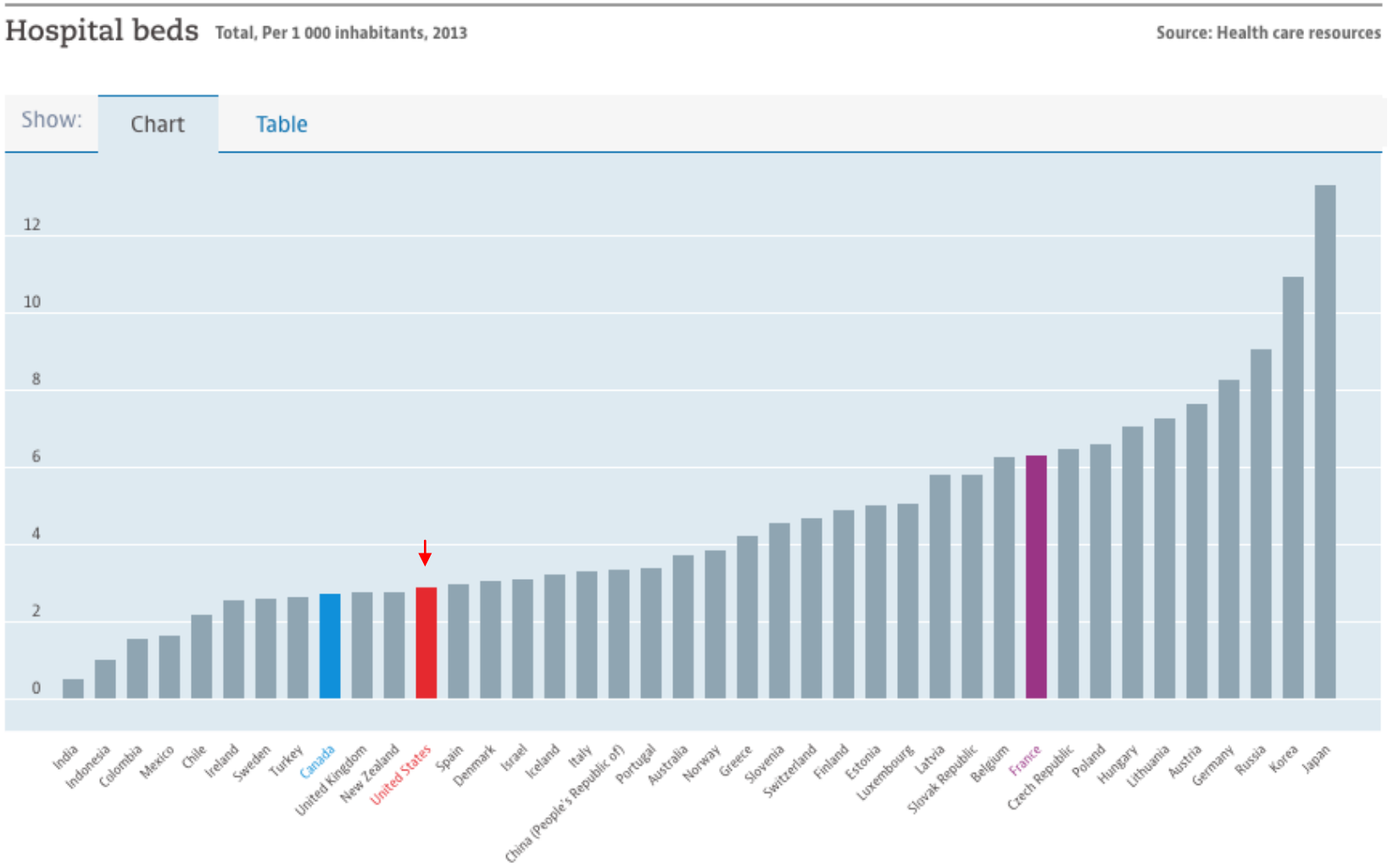
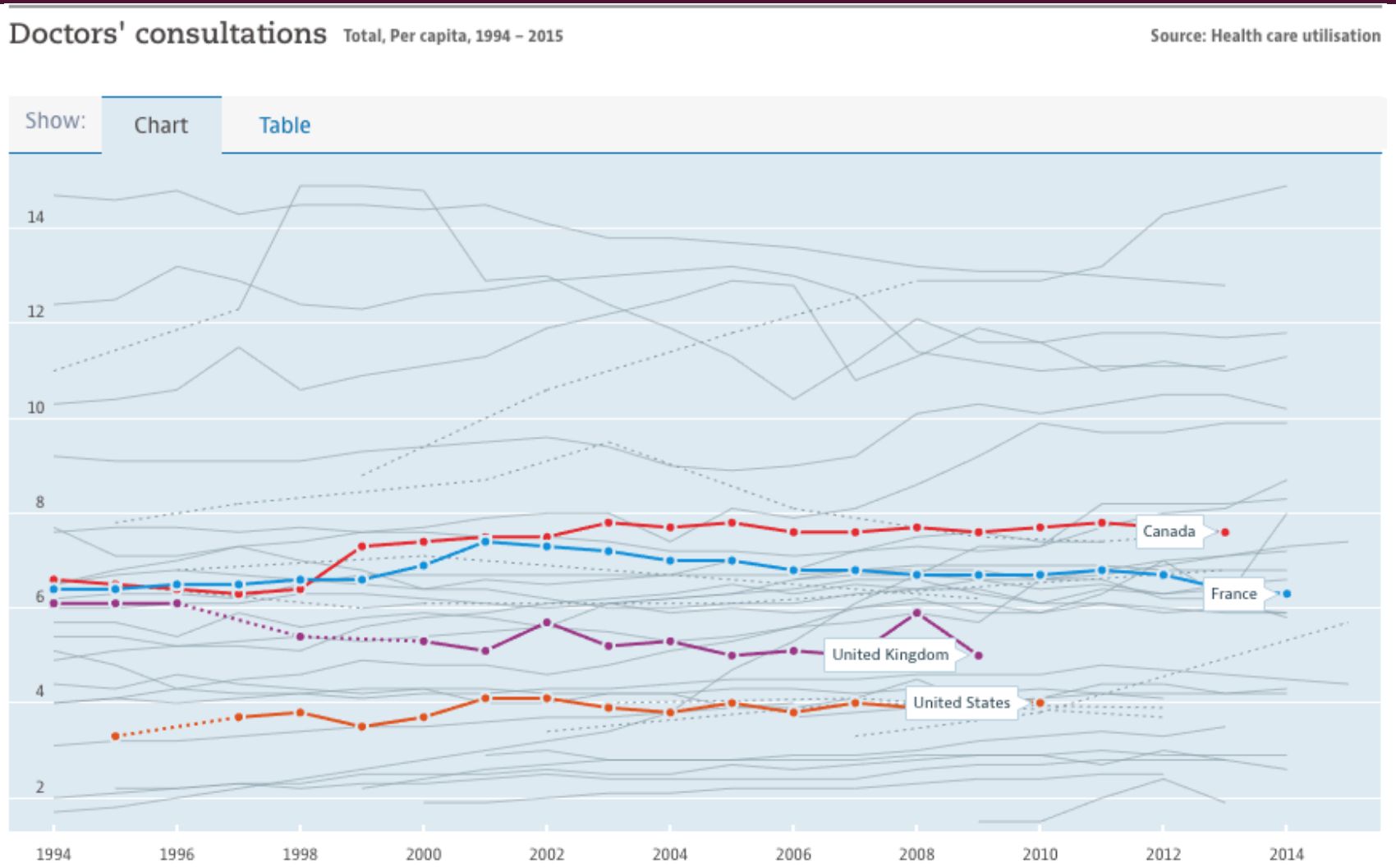


OECD (2016), Hospital beds (indicator). doi: 10.1787/0191328e-en (Accessed on 02 November 2016)

HIGH COSTS: CORRELATION WITH QUALITY?



OECD (2016), Doctors' consultations (indicator). doi: 10.1787/0191328e-en (Accessed on 02 November 2016)

THE QUESTION: WHY?

If the United States is not observing tangible benefits from increased healthcare spending, then what is driving prices higher?

A STORY OF 'ANTI-ECONOMICS?'

A

LACK

OF

- BARGAINING POWER -

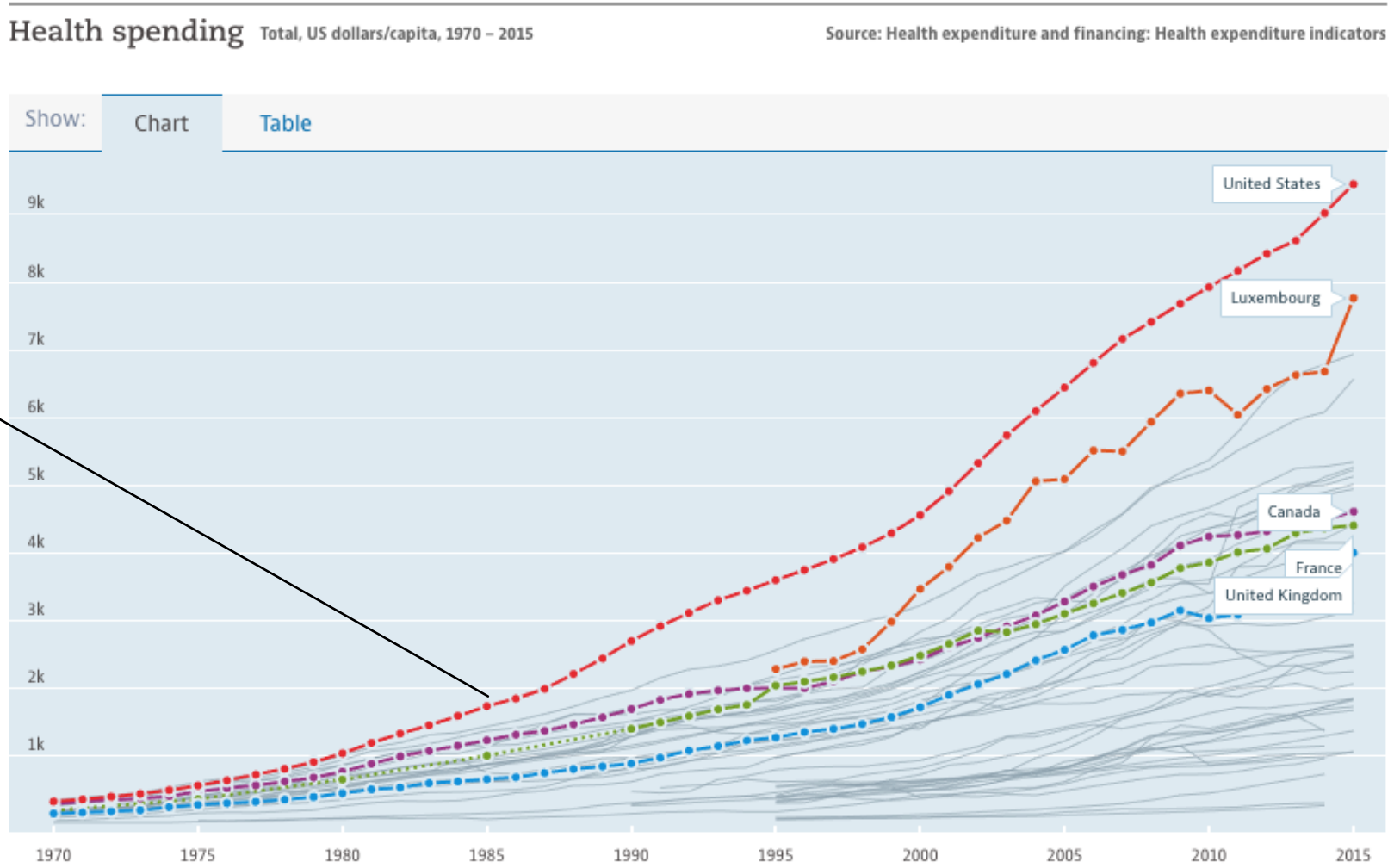
WHY ARE PRICES HIGHER IN THE UNITED STATES?

It is my hypothesis that the United States is experiencing unprecedented cost growth in the domestic healthcare sector for two main reasons:

- **1. The United States does not benefit from the creation of an artificial "single buyer," or monopsony, market structure in health care.**
  - In other OECD countries, **monopsony buying systems** force biotechnology, pharmaceutical, and provider companies wishing to enter their domestic market to negotiate prices with **one buyer**—usually a government entity—which drastically drives health service prices down.
    - Multiple buyers in the market may also provide unnecessary inefficiency and redundancy: multiple prices for multiple consumers, "frictional" uninsured costs of health care provider changes, and redundant administrative fees between insurance ("buyer") companies.[4]
  - The fractured, competitive nature of the US private health insurance market dilutes each company's bargaining power.
    - Rent-seeking patent protections given for new medications, and many "buyer" companies allow drug makers to be "price setters."
    - Drug "price setters" exacerbate this situation by advertising direct-to-consumer, while consumers have no rational price comparison measures.

REMEMBER THIS SLIDE?

1985: US FDA Allows TV Prescription Drug Advertising for First Time (Direct to Consumer)



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WHY ARE PRICES HIGHER IN THE UNITED STATES?

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- **2. United States consumers may unintentionally subsidize international pharmaceutical prices.**

  - Rent-seeking enabling patent protections, tax subsidies, and higher-than-equilibrium domestic market costs may cause US consumers to foot the "fixed" costs of initial research, allowing pharmaceutical and biotech companies to price only on "variable" costs on the international market—still profiting per unit despite international monopsony pricing.

WHY ARE PRICES HIGHER IN THE UNITED STATES?

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  - Multinational consulting firm McKinsey & Co found in 2014 that, "On average, the difference between the price of one drug in the U.S. and the same drug in France, Germany, Italy, Spain and the U.K. was **50 percent**"

WHY ARE PRICES HIGHER IN THE UNITED STATES?

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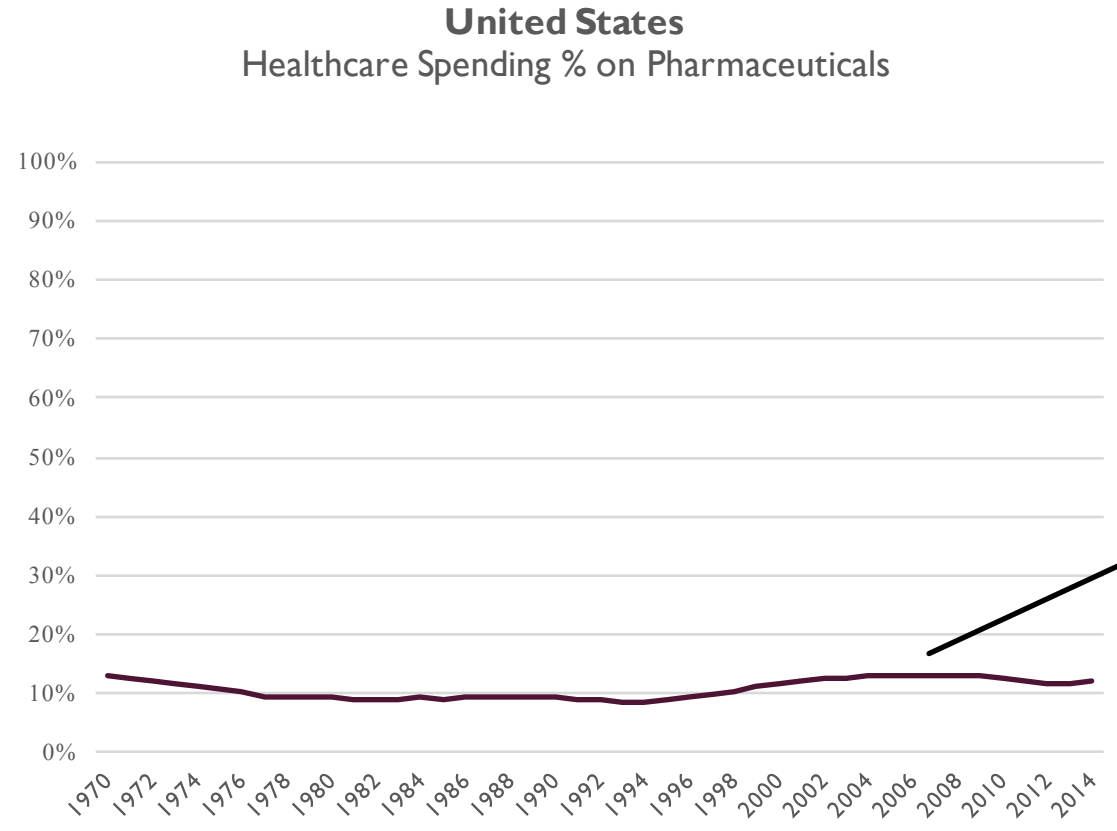
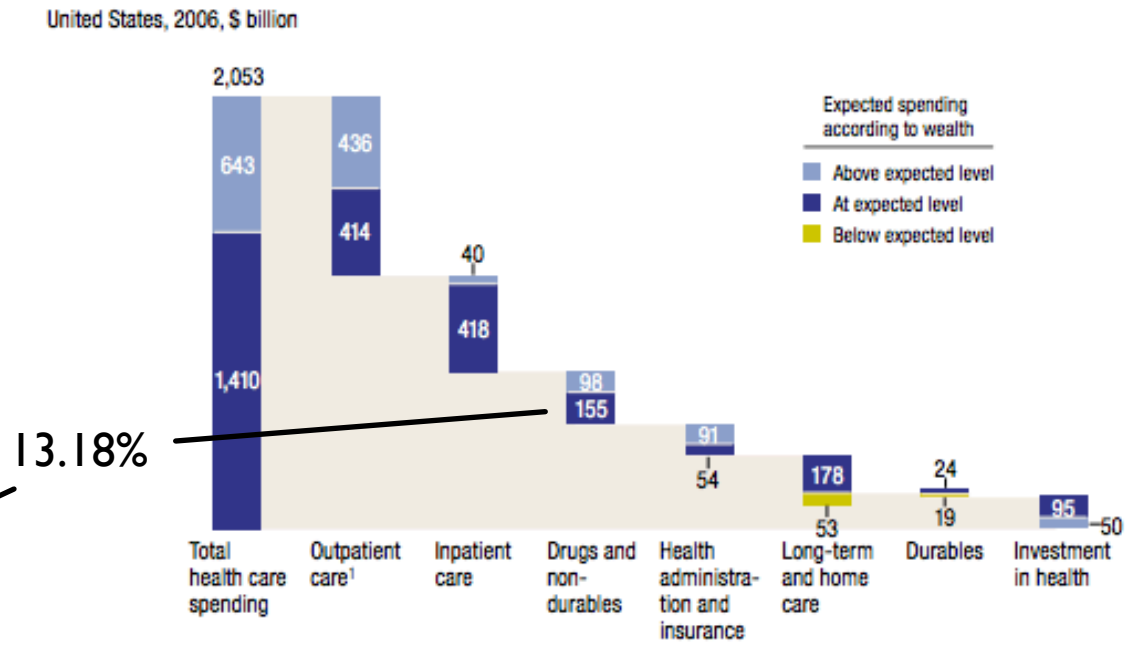
- **2. United States consumers may unintentionally subsidize international pharmaceutical prices.**

  - The U.S. (**5 percent** of global population) accounted for **46 percent** of global life sciences research and development**--**the vast majority of which is in biopharmaceuticals

CAN FOCUSING ON DRUG PRICES REALLY HELP US UNDERSTAND HEALTH SECTOR PRICES AS A WHOLE?



OECD (2016), Pharmaceutical spending (indicator). doi: 10.1787/998febf6-en (Accessed on 02 November 2016)



13.18%

[1]Outpatient care includes care in the offices of physicians and dentists, same-day visits to hospitals (including emergency departments), ambulatory surgery, diagnostic-imaging centers, and other same-day care facilities.

Source: Organisation for Economic Co-operation and Development (OECD); McKinsey Global Institute analysis

SO WHY MAY PHARMACEUTICAL PRICES HELP US LEARN ABOUT BUYING POWER?

- Drug prices are easy to pick on. Prices are easily tracked, catalogued, and recorded by international government entities
- For this reason, because drug prices remain a relatively constant percentage of healthcare spending despite constant sector spending growth, **it may be a great "instrumental variable" to help us understand how pricing trends may work across the sector**, (*i.e. costs of hospital services, operations, consultations, and billable hours industry wide).*
- Monopsony bargaining power also extends to health care services as well as goods, and prices are negotiated for each procedure in OECD countries. [5]
- Pharmaceuticals, as a good, can be exported across country lines, and its utility for every consumer is normalized.
- Service quality is variable across countries (such as the MPL per physician). Services performed by a physician with varying levels of training can not be accurately compared between countries, where an identical drug can be.

METHODOLOGY

I will run **three time series analysis regressions** to help draw inferences on what are the best predictors of total per capita healthcare spending, public + private.

34 OECD Sample Countries

Over 40 to 55 years

METHODOLOGY: THE DUMMY VARIABLE

- Countries with an established "Single Payer" system have government bargained pricing for pharmaceuticals and health care services.
- Countries with "Two Tier" exercise a system where the government provides 'catastrophic' insurance protection, and additional plans are provided. Most of these countries negotiate pricing through monopsony bargaining power as well.
- The US became an 'Insurance Mandate' country in 2014. These countries mandate the purchase of private or public health insurance to eliminate adverse selection, but may or may not negotiate prices.

List of Countries With Universal Healthcare Coverage

Country	Year of UHC Adoption	System Type
Norway	1912	Single Payer
New Zealand	1938	Two Tier
Japan	1938	Single Payer
Germany	1941	Insurance Mandate
Belgium	1945	Insurance Mandate
United Kingdom	1948	Single Payer
Kuwait	1950	Single Payer
Sweden	1955	Single Payer
Bahrain	1957	Single Payer
Bruenei	1958	Single Payer
Canada	1966	Single Payer
Netherlands	1966	Two Tier
Austria	1967	Insurance Mandate
United Arab Emirates	1971	Single Payer
Finland	1972	Single Payer
Slovenia	1972	Single Payer
Denmark	1973	Two Tier
Luxembourg	1973	Insurance Mandate
France	1974	Two Tier
Australia	1975	Two Tier
Ireland	1977	Two Tier
Italy	1978	Single Payer
Portugal	1979	Single Payer
Cyprus	1980	Single Payer
Greece	1983	Insurance Mandate
Spain	1986	Single Payer
South Korea	1988	Insurance Mandate
Iceland	1990	Single Payer
Hong Kong	1993	Two Tier
Singapore	1993	Two Tier
Switzerland	1994	Insurance Mandate
Israel	1995	Two Tier

Image source: Forbes.com[7]

METHODOLOGY: FIRST REGRESSION

- Control for **Availability of Care**.

$$\hat{y} = \beta_0 + \beta_1 P_h + \beta_2 H + \beta_3 N + \beta_4 R_x + (R_x D_1)\beta_5 + D_1$$

Y = Total per capita healthcare spending (public + private)

P_h = Doctors per capita

H = Hospital beds per capita

N = Nurses per capita

R_x = Pharmaceutical spending, per capita

D_1 = Dummy: Does country set prices with monopsony bargaining?

METHODOLOGY: SECOND REGRESSION

- Control for **Quality of Care**.

$$\hat{y} = \beta_0 + \beta_1 X_{ch} + \beta_2 L + \beta_3 A + \beta_4 M + \beta_5 C_T + D_1$$

Y = Total per capita healthcare spending (public + private)

X_{ch} = Hospital discharge rates per capita

L = Length of hospital stay (average days)

A = Doctors Consultations given, total per capita

M = MRI exams given, per capita

CT = CT exams given, per capita

D_1 = Dummy: Does country set prices with monopsony bargaining?

METHODOLOGY: THIRD REGRESSION

- Control for **Age and Wealth Demographics of Country**.

$$\hat{y} = \beta_0 + \beta_1 M + \beta_2 E + \beta_3 P_o + D_1$$

Y = Total per capita healthcare spending (public + private)

M = Young population percentage

E = Elderly population percentage

Po = Poverty Rate

D_1 = Dummy: Does country set prices with monopsony bargaining?

CONCLUSION

- The policy implications, should the data infer that monopsony market structures reduce healthcare spending, should be nearly self-evident
- If statistically significant on reducing healthcare prices, recommendations could be finding ways to keep health service sector intact, yet emulating the benefits that monopsony market structures bring, such as:
  - Advised elimination of Anti-Trust legislation, and allowing insurance "payers" to collude in order to leverage bargaining power similar to governments
  - Possibly granting the US government the authority to establish health sector price restrictions and caps, essentially doing the negotiation for the "buyer" insurance companies as a mediator between the two uneven markets

CONCLUSION

Open floor:

Questions? Comments? Objections? Ideas?

SOURCES:

[1] ACA Premiums Jump 25%;Administration Acknowledges Extended Enrollment http://www.wsj.com/articles/aca-deadline-extended-for-those-who-lost-their-health-plans-1477349583

[2] OECD Health Data, https://data.oecd.org/

[3] A nine-fold difference in per capita health spending across OECD countries (from the highest to the lowest). October 2016. http://www.oecd.org/health/health-statistics.htm

[4] Why the U.S. Pays More Than Other Countries For Drugs. Wall Street Journal. http://www.wsj.com/articles/why-the-u-s-pays-more-than-other-countries-for-drugs-1448939481

[5] United Kingdom NHS Reference Costs Guide, 2015-2016 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/497127/Reference_costs_guidance_2015-16.pdf

[6] Health Care System by Country https://truecostblog.com/2009/08/09/countries-with-universal-healthcare-by-date/

[7] Universal Coverage Is Not "Single Payer" Healthcare http://www.forbes.com/sites/danmunro/2013/12/08/universal-coverage-is-not-single-payer-healthcare/#7881b4447f5d