



# Module 0: Introduction

Basics of supply-side health and this class

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Econ 372

# Health and Health Care



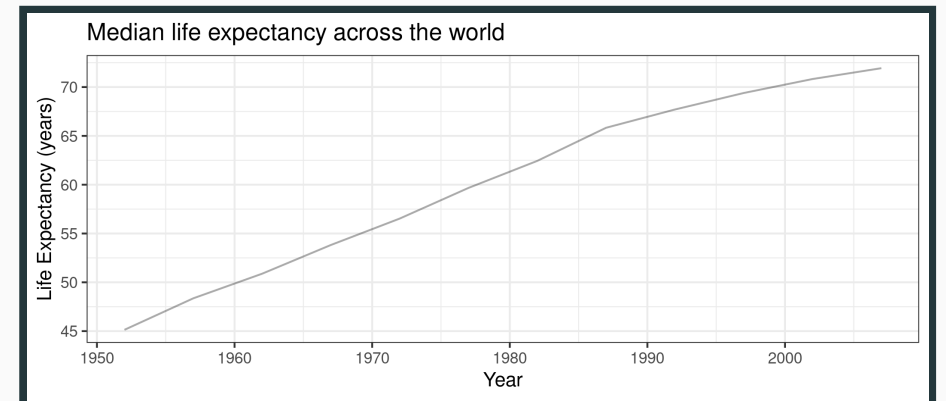
# Health and Health Care

We've made *major* improvements in life expectancy (and many other measures of health) across the world

- Poverty reduction
- Technology development and innovation
- Technology diffusion and adoption
- Access to better services, including health care

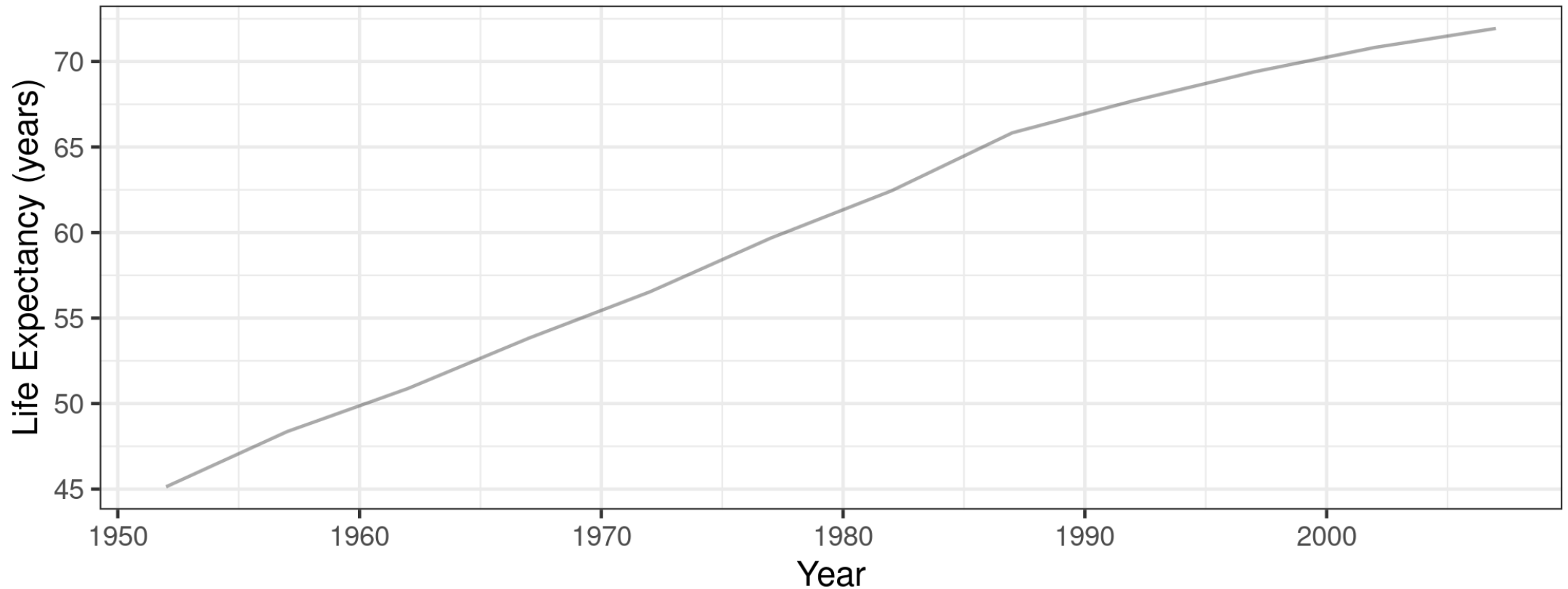
# Evidence of better health

```
library(gapminder)
gapminder %>%
  group_by(year) %>%
  summarize(lifeExp = median(lifeExp),
            gdpMed = median(gdpPercap)) %>%
  ggplot(aes(year, lifeExp)) + geom_line(alpha = 1/3) + theme_bw() +
  labs(x = "Year",
       y = "Life Expectancy (years)",
       title = "Median life expectancy across the world")
```



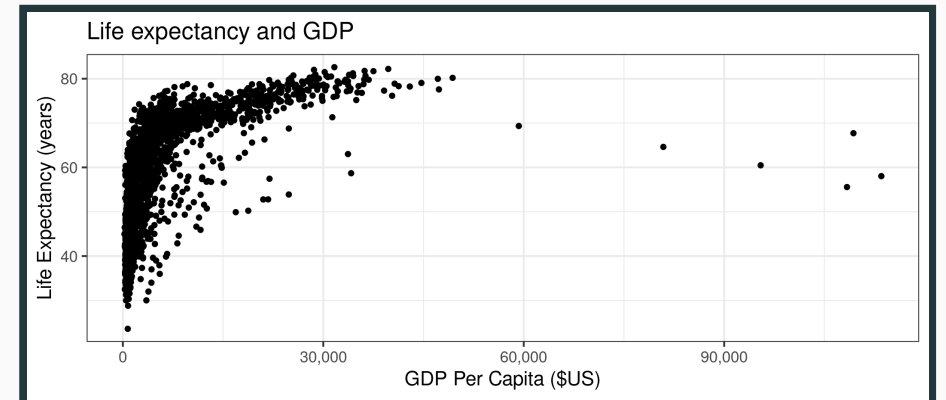
# Evidence of better health

Median life expectancy across the world

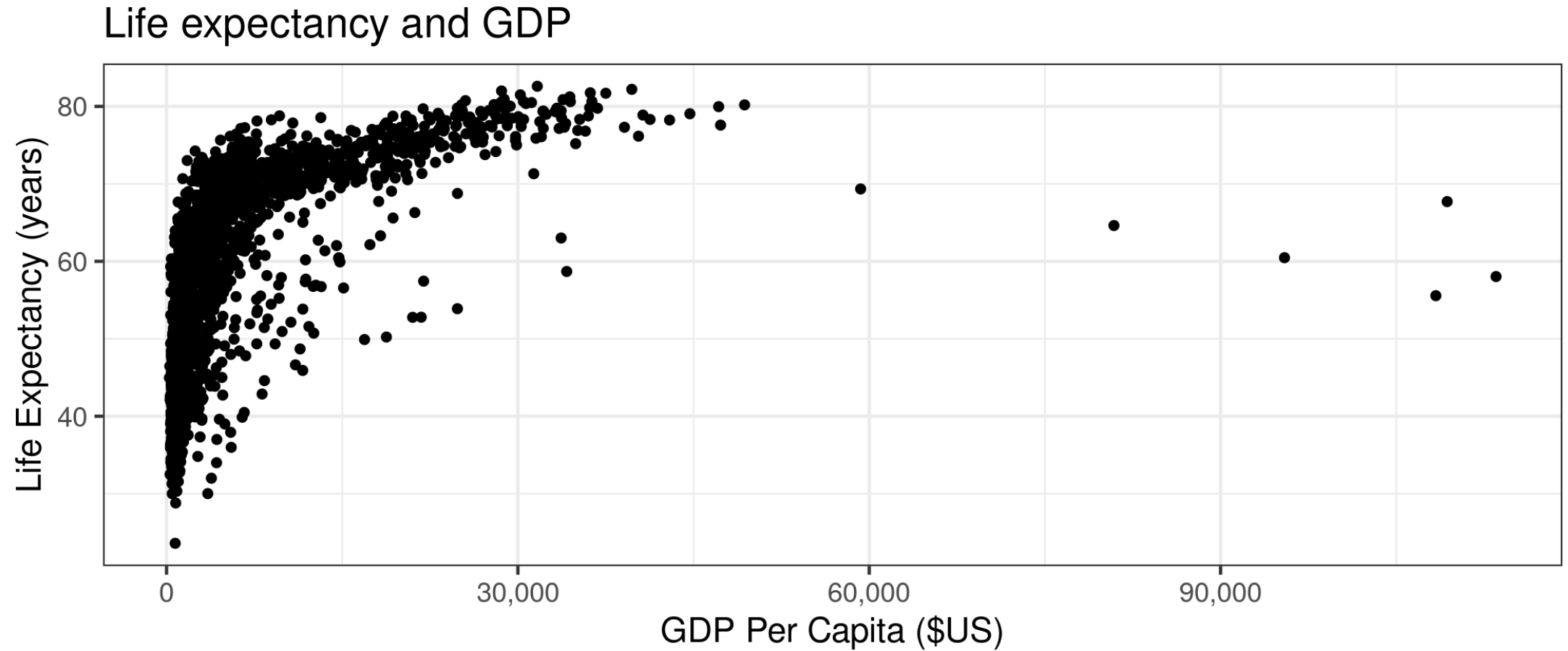


# GDP and Health

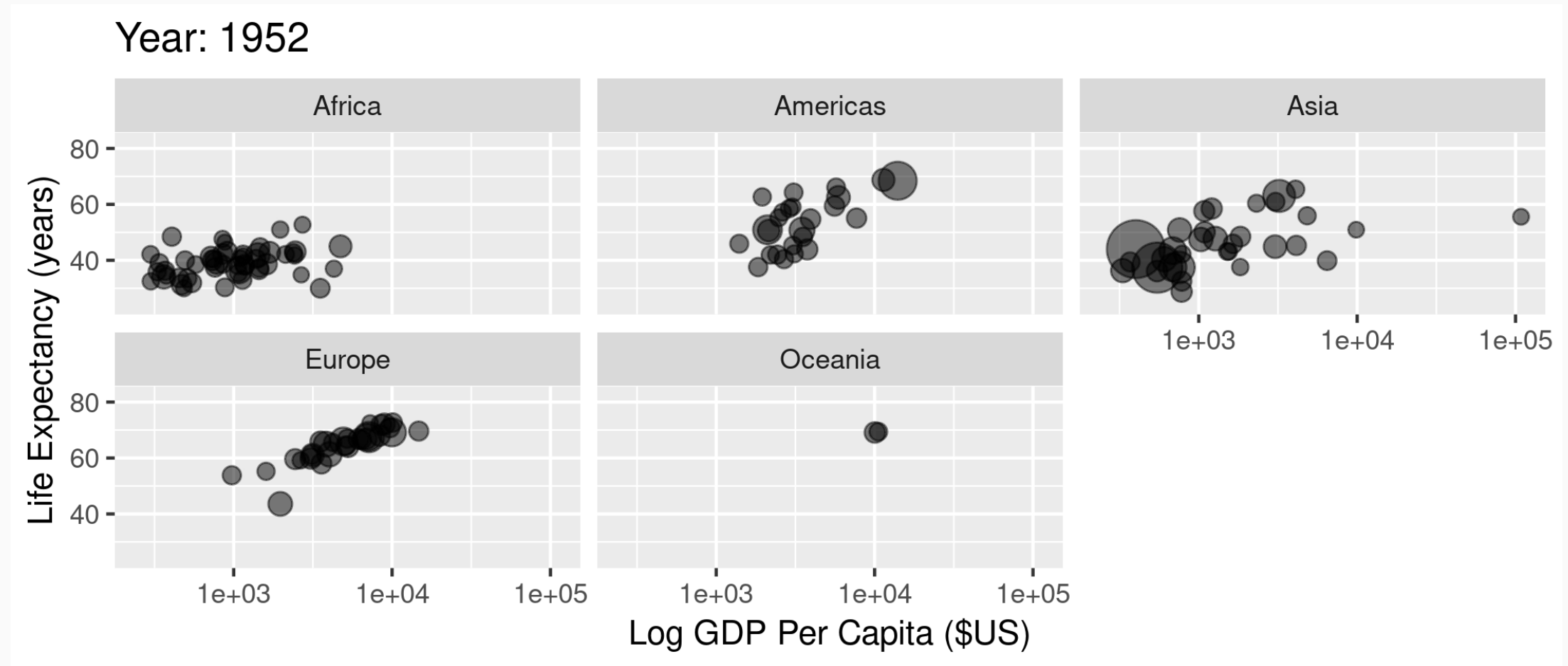
```
library(gapminder)
ggplot(data = gapminder, mapping = aes(x = gdpPercap, y = lifeExp)) +
  geom_point(size = 1) + theme_bw() + scale_x_continuous(label = comma) +
  labs(x = "GDP Per Capita ($US)",
       y = "Life Expectancy (years)",
       title = "Life expectancy and GDP")
```



# GDP and Health

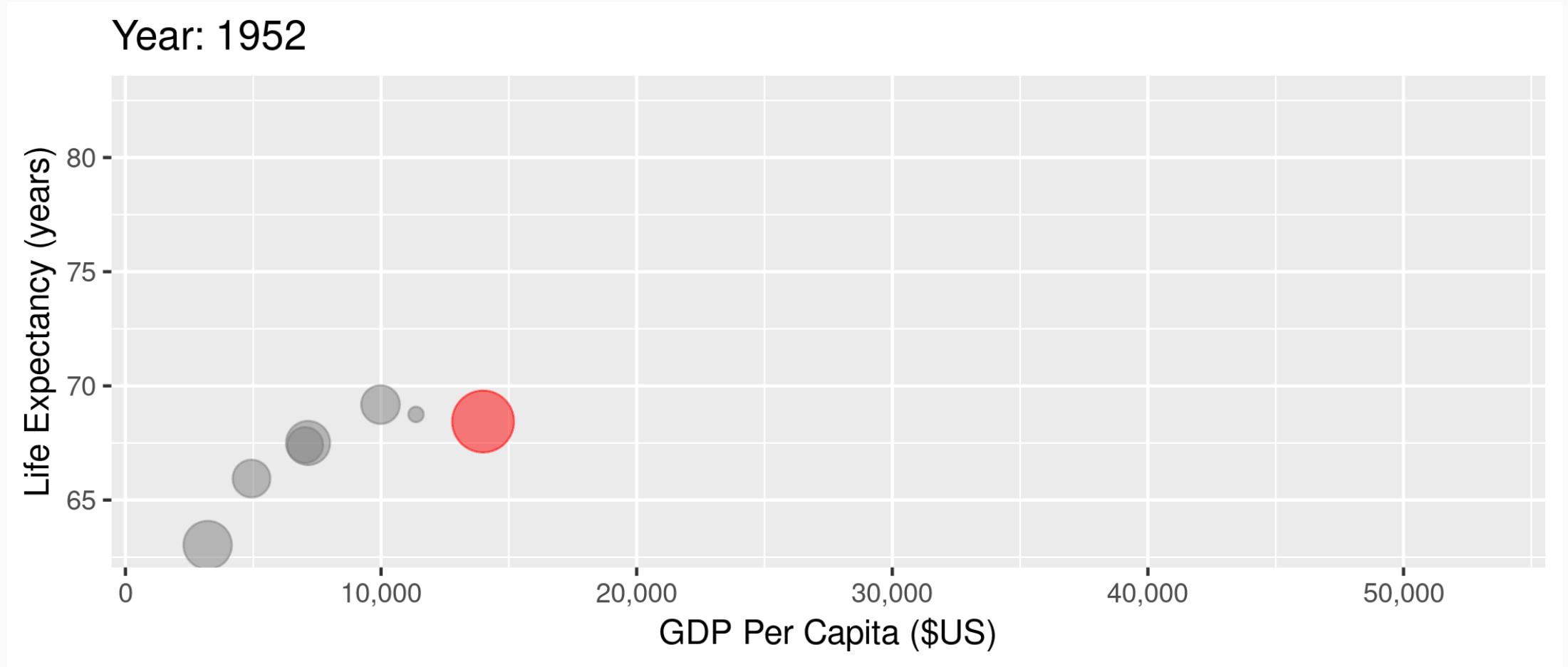


# GDP and Health over Time

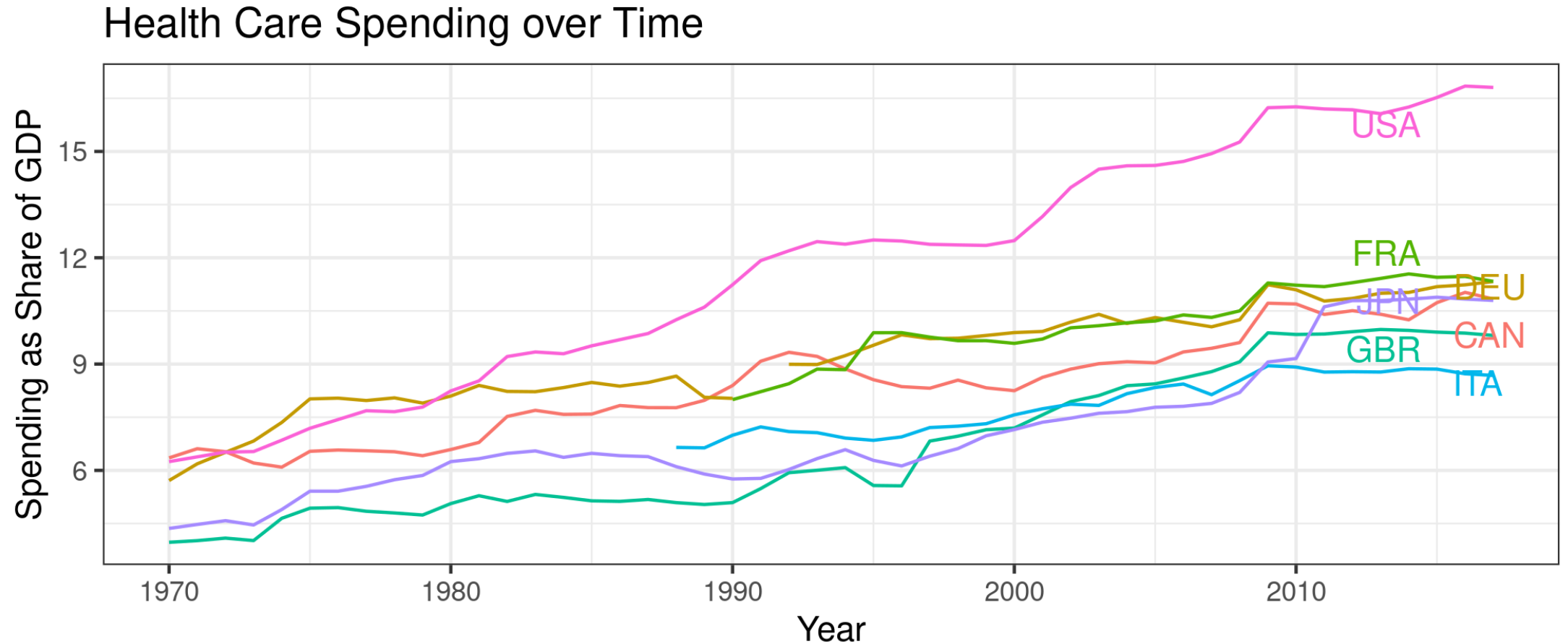




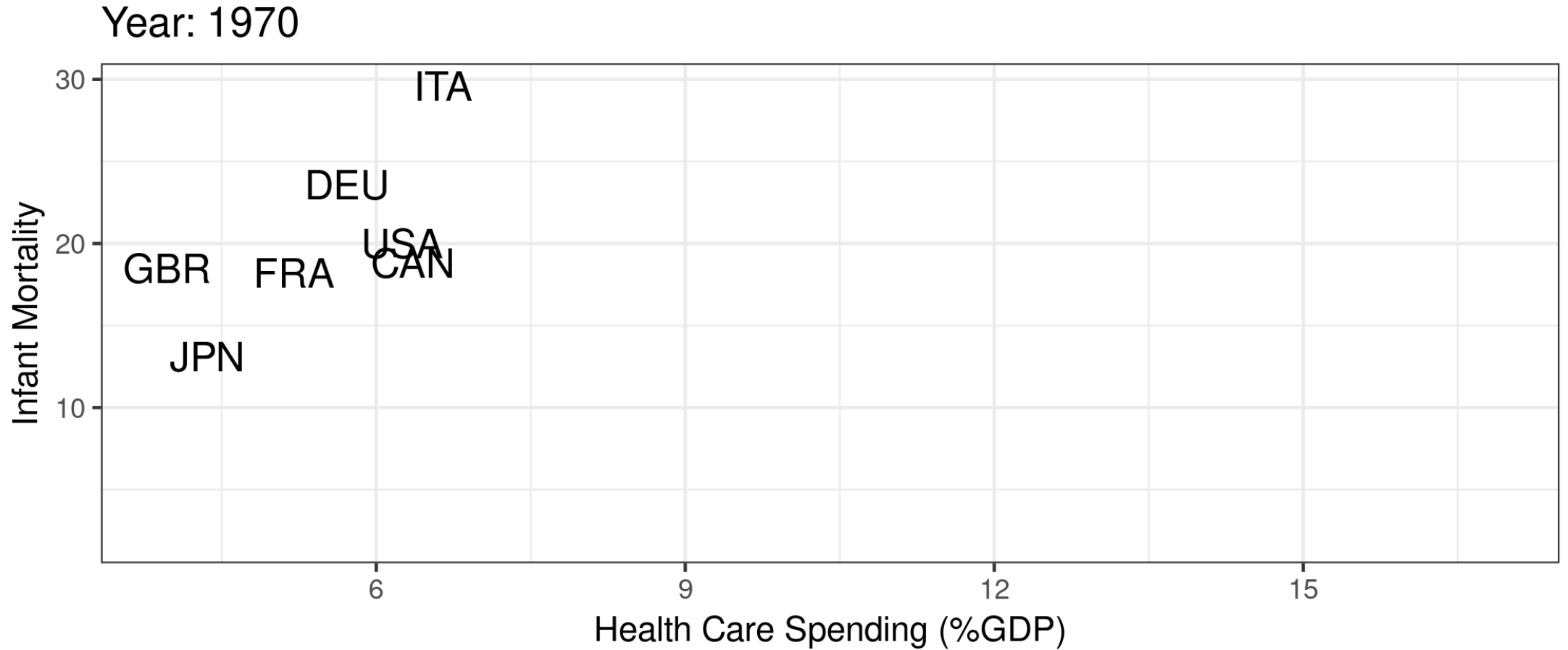
# But the US is unique



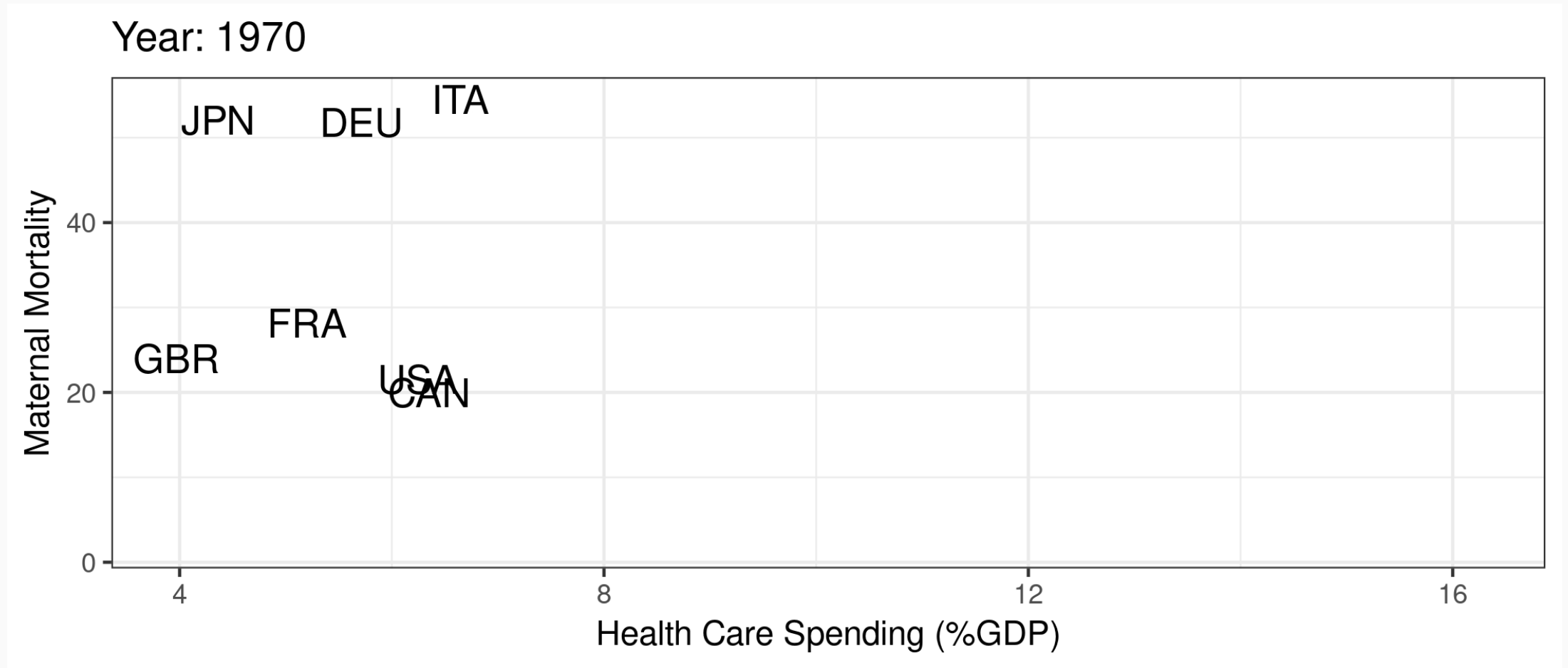
# Health care spending



# Spending and infant mortality



# Spending and maternal mortality



# What does that mean?

- Are we just woefully inefficient?
- The right answer is probably more complicated
  - U.S. very good in some areas (breast cancer treatment, interventional cardiology)
  - Let's look at some more graphs from the [Commonwealth Fund](#)

# Why study U.S. health care

1. Health and health care are constantly changing
2. Health expenditures in 2019: \$3.8 trillion, 17.7% of GDP, \$11,582 per person (from [NHE Fact Sheet](#))
3. U.S. health care is uniquely inefficient in many ways

*"Nobody knew health care could be so complicated"*

-- Donald Trump

# Health Care and Economics (in General)

Lots of interesting economic issues in health care (not all unique to the U.S.):

1. Extremely heterogeneous products
2. Asymmetric information between patients and physicians
3. Unobservable quality (experience good)
4. Unpredictable need (inability to shop in many cases)
5. Distortion of incentives due to insurance
6. Adverse selection (asymmetric information between patients and insurers)

# How is the U.S. unique

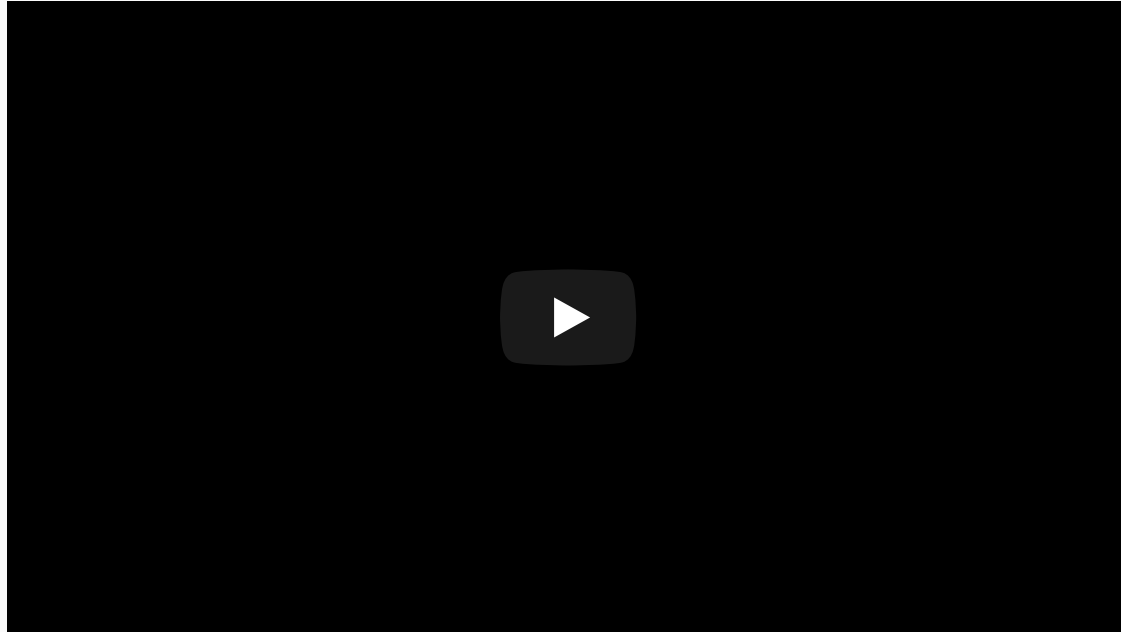
- These factors exist in other markets and in other countries, but...
- Health care is unique in the combination of these issues
- U.S. is unique in the extent of these issues in health care (policy problems)



# Why?

Can you identify one or two reasons for our high prices/expenditures? Keep in mind we don't have a particularly strong quality advantage either.

# Why is spending so high?



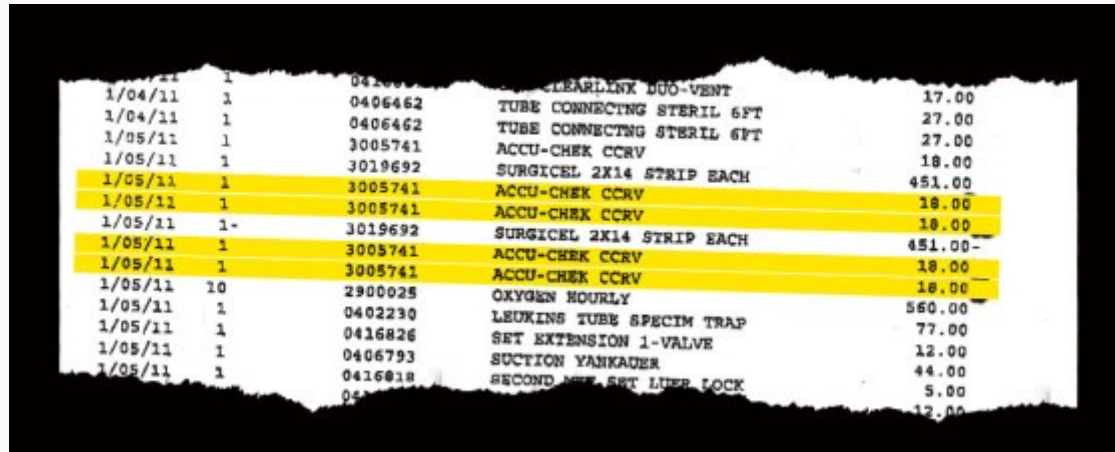
# Fragmentation

A common criticism of U.S. health care is that it is extremely fragmented:

- different ways to get insurance
- mix of providers and reliance on referrals
- separate billing (for the most part)

# Complicated bills

Our fragmented system has led to a ridiculously complex and convoluted billing process



1/04/11	1	0416000	CLARILINK DUO-VENT	17.00
1/04/11	1	0406462	TUBE CONNECTING STERIL 6FT	27.00
1/05/11	1	0406462	TUBE CONNECTING STERIL 6FT	27.00
1/05/11	1	3005741	ACCU-CHEK CCRV	18.00
1/05/11	1	3019692	SURGICEL 2X14 STRIP EACH	451.00
1/05/11	1	3005741	ACCU-CHEK CCRV	18.00
1/05/11	1	3005741	ACCU-CHEK CCRV	18.00
1/05/11	1	3019692	SURGICEL 2X14 STRIP EACH	451.00
1/05/11	1	3005741	ACCU-CHEK CCRV	18.00
1/05/11	1	3005741	ACCU-CHEK CCRV	18.00
1/05/11	10	2900025	OXYGEN HOURLY	560.00
1/05/11	1	0402230	LEUKINS TUBE SPECIM TRAP	77.00
1/05/11	1	0416826	SET EXTENSION 1-VALVE	12.00
1/05/11	1	0406793	SUCTION YANKAER	44.00
1/05/11	1	0416818	SECOND SET LUER LOCK	5.00
		0416818		12.00

Brill, Steven. 2013. "Bitter Pill: Why Medical Bills are Killing Us." \*Time Magazine\*.

# Complicated bills

- \$18 for accu-chek test strip (in 2011)
- Can get 50 for \$11.44 on Amazon

Note: this \$18 is a charge, which is different from price or cost...much more on this later

# What did we learn?

1. We spend *LOTS* on health care, the most in the world by far
2. Definitely not the highest quality health care system in the world
3. Many reasons:
  - Standard health economics issues
  - Fragmented system
  - Market-based system but without real competition
  - Policy failures
4. What's the solution?

Take this class!!

# "What" and "How"

Now, let's go into more detail on "what" specifically we'll try to learn this semester, and "how" we'll try to learn it.

# Goals of this course

1. Explain the structure of the U.S. health care system, its main components, and its history
2. Model adverse selection in health insurance, examine its effects on health insurance markets, and support your arguments with existing data
3. Explain the physician agency problem, use a model of physician agency to examine financial incentives in health care, and summarize empirical evidence on the presence of physician agency
4. Describe hospital pricing, negotiation with insurers, and explain (qualitatively and quantitatively) the differences between charges and prices
5. Analyze hospital data in a real-life setting and predict effects of real-life policies



# Structure

Course designed to follow someone through our health care system.

1. Choose an insurance plan (so we'll study insurance and insurance markets)
2. Select a physician (so we'll study physician agency and financial incentives)
3. Receive hospital care (so we'll study hospital behaviors, pricing, and competition)

# Materials

- Check the website!
- I'll reference a couple of textbooks, but they aren't required
- All readings and supplemental materials listed on the content page of our class website

# Assignments

Assessment in 4 different ways:

1. Homework (3 assignments, 1 for each module)
2. Mid-term exam (covers modules 1-2)
3. Project (relates mainly to module 3 but is semester long)
4. Participation

# Grading

Component	Points	Weight
Homework (x3)	180	45%
Mid-term	60	15%
Project	140	35%
Participation	20	5%

# Office hours

- **Official** office hours are Monday and Wednesday, 2:30 to 3:30
- PAIS 573, but Zoom is an option
- **Unofficial** office hours (nearly) anytime!
- Just book a time on my appointments page on our website

# Contact me

- Drop by during office hours
- Schedule a quick chat
- Email (usually respond within 24 hours)
- Happy to grab a coffee and meet in person

# Expectations

- This is an **economics** class first
- Need some calculus to think things through formally
  - Nothing more than derivatives
  - For review, see the practice problems on the class resources page
  - If you can do those reviews, you're in good shape
- This is a challenging class, but we will do it and we'll learn a lot along the way!

