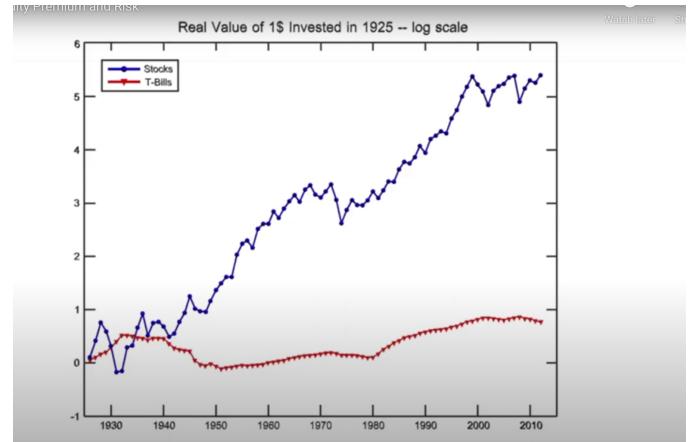


Stocks pay a lot
↓

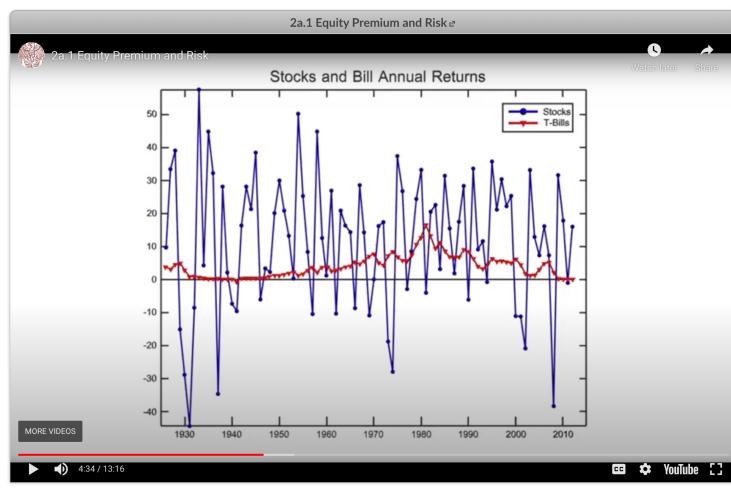
Why not always stock?
↓

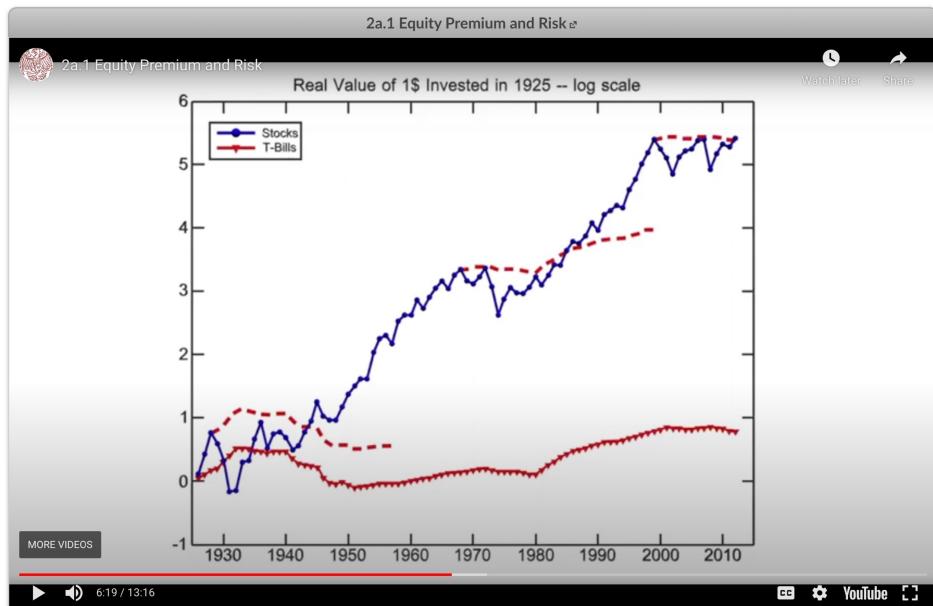


log y 展现成长

	Stock	Bond	Stock-Bond
E	8.6	1.3	7.4
6	17.6	2.6	18.1

... > Modules > PART I. Mod... > 2a.1 Equity Premium and Risk

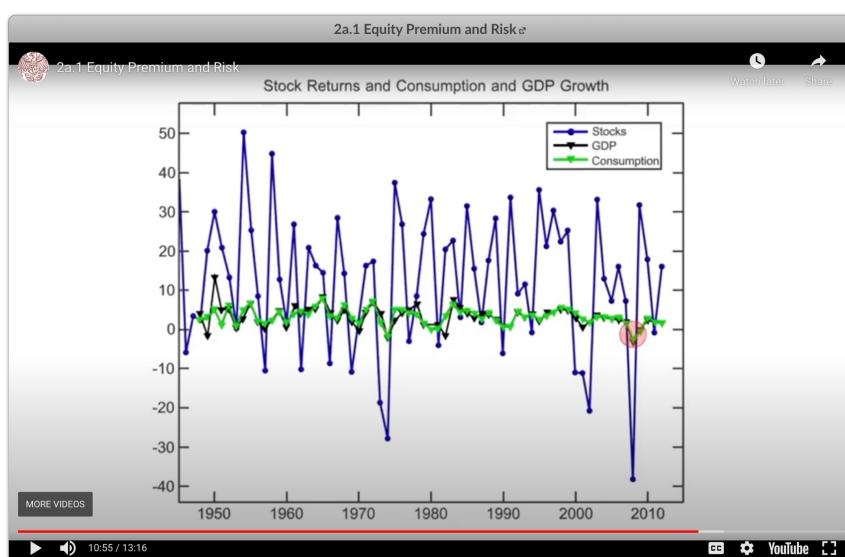




1928年买，等17年才扳平

2个问题：

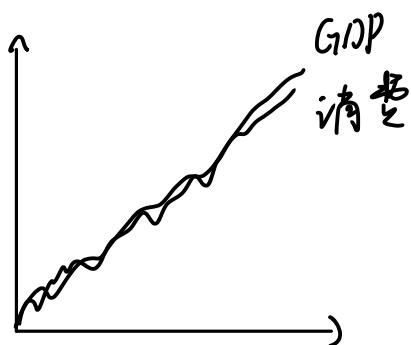
股价是否随机波动？ → 与何有关
Why stocks so volatile?



股市与经济有关

GDP

Consumption 消费



	Stock	Bond	stock-bond	GDP	Consumption
E	8.6	1.3	7.4	3.2	3.3
6	17.6	2.6	18.1	2.6	2.1

定义 Equity Premium : avg return of stocks over bond

$$E[R^{\text{stock}} - R^{\text{bond}}] \approx 7\%$$

$$S[R^{\text{stock}} - R^{\text{bond}}] \approx 18\%$$

1. 是否随机



采用 Regression 方法探究: $R_{t+1} = a + b X_t + \epsilon_{t+1}$

↑
未来回报率
此时的信息

① "Old View":
y: next year return
x: this year return

$$R_{t+1} = a + b \cdot R_t + \epsilon_{t+1}$$

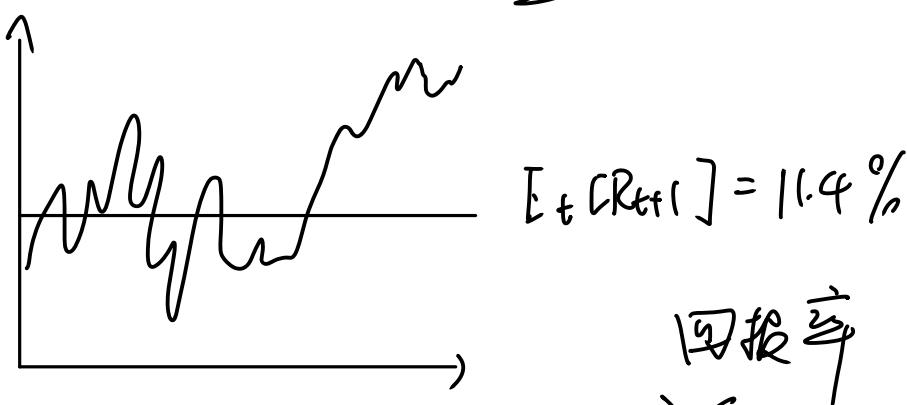
	b	$t(b)$	R^2	$E_t[R_{t+1}]$	$\sigma(E_t[R_{t+1}])$
stark	0.04	0.33	0.002	11.4	0.77

$\underbrace{\quad\quad\quad}_{\downarrow}$
没有解释力
 $b=0$

$$\hookrightarrow R_{t+1} = \alpha + \varepsilon_{t+1}$$

$$E_t[R_{t+1}] = \alpha$$

未来预期回报率是常数
且很大



以前，人们倾向于相信股价随机波动
今天的回报率不能用来预测
未来的回报率

② "New View" :

$$R_{t+k} = \alpha + b \cdot X_t + \varepsilon_{t+k}$$

where $X_t = \frac{D_t}{P_t}$ \in 股息
 $P_t \in$ 股价
 $k =$ 时间段

k	b	$t(b)$	R^2	$\sigma(E_t(R_{t+k}^e))$
1 year	3.8	2.6	9%	5.46
5 year	20.6	3.4	28%	29.3

有弱斜率
 $b \neq 0$

$$R_{t+k} = a + b \cdot X_t + \varepsilon_{t+k}$$

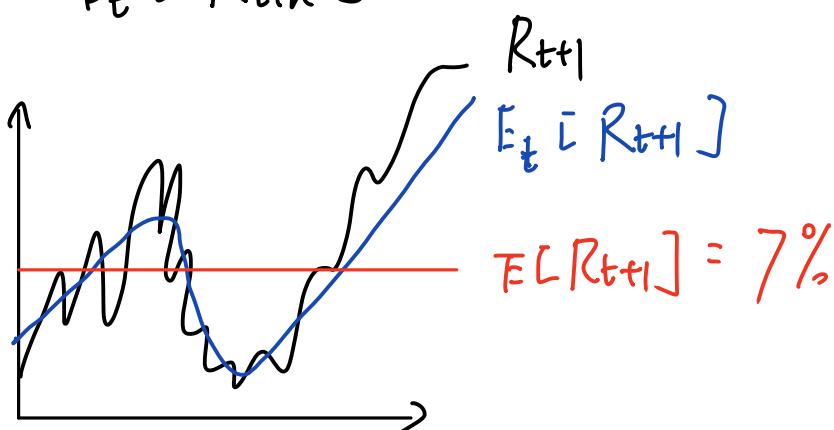
$$X_t = \frac{D_t}{P_t}, X_t \text{ 大, } D_t \text{ 大, } P_t \text{ 小}$$

相对于股票而言，股行低。

X_t 大, $b > 0 \rightarrow E_t[R_{t+k}]$ 大, 预期回报率大

\Rightarrow 股市反转, 回报越高

理解 $E_t[R_{t+k}]$



$E_t[R_{t+1}]$ 随时间波动 $\rightarrow \sigma(E_t[R_{t+1}]) \approx 5.46\%$

越来越多人接受,
 $E_t[R_{t+1}]$ 大, 且随时间波动

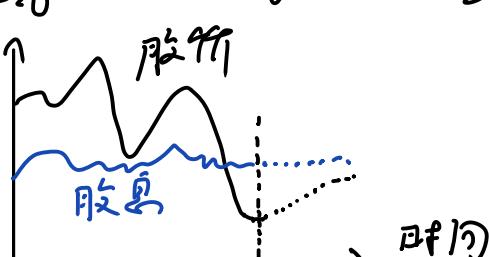
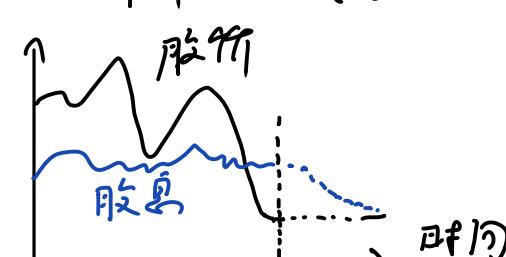
并非随机波动

- ① 股市与经济相关, 但波动更大
- ② 在 bad times, 预期回报率高

\downarrow Not willing to \uparrow
 bear risk

People believe: Poles are high because everyone expects
 a higher future growth.

Wrong!

k	$R_{t \rightarrow t+h}^e$	b	t(b)	R^2	$\frac{D_{t+h}}{D_t}$	b	t(b)	R^2
1	4.0	2.7	8		0.07	0.06	≈ 1	
2	7.9	3.0	12		-0.42	-0.22	≈ 0	
3	12.6	3.0	20		0.16	0.3	≈ 1	
4	20.6	2.6	22		2.42	1.11	≈ 0	
								

price low relative to dividend
↓

It will bounce back
↓

good return

$E_t [R_{t+n}]$ big, varies over time, big in recessions
① ② ③

$$P_t = E_t [\text{discounted} - \underbrace{\text{divi}}_{\sim}]$$

↑
stock v. bond v. economy

↓
stock之间

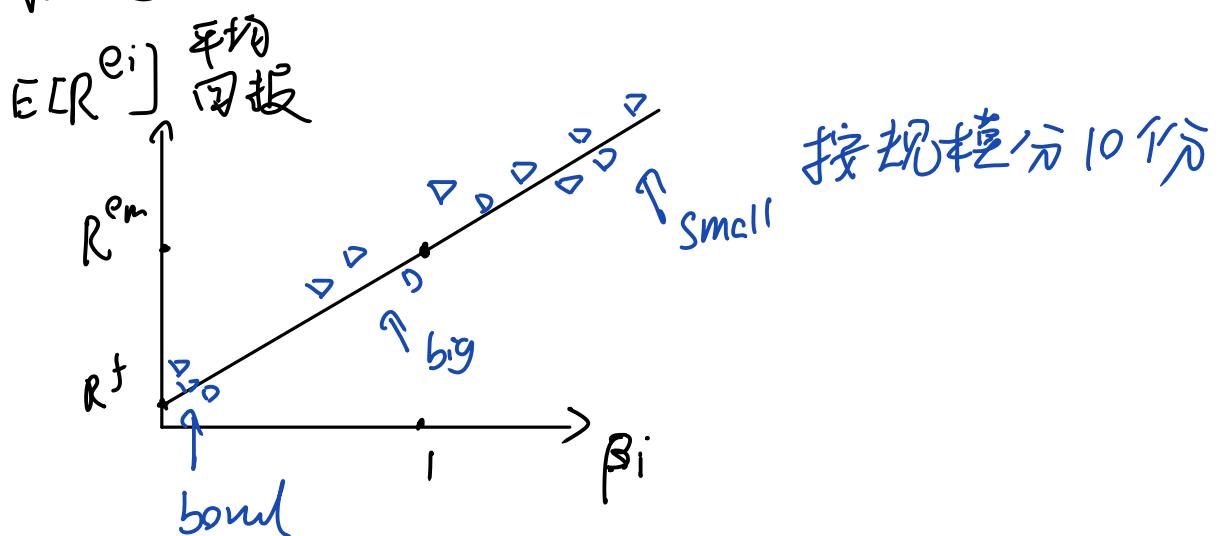
Are some stocks do better than others?

1. Market

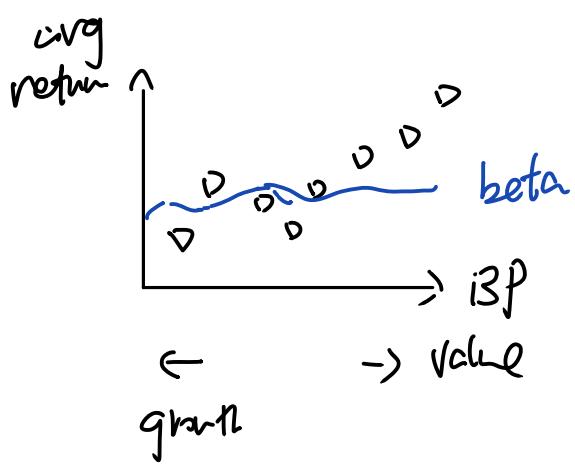
$$E[R^{e_i}] = \alpha_i + \beta_i \cdot E[R^{e_m}]$$

2. Size

3. Value.



- 小企业回报率高
- 过去投小企业？
- 借钱买1份市场组合 效果一样
- 只要在线上 没差 (SML)



按 BP 分十份
Value stocks win!
Good company → I know!
↓
Already pricy
bad stock ← Sorry too late

Anomaly 异象.

Value stock 持得久 风险没有增加

CAPM



T-F3 Beta not good enough: multi-factors

Summary:

1) $E[R^e]$ is big! (Risk Premium)

Buy? No!

$\sigma(R^e)$ is big, 18%

2) $E_t[R_{t+1}^e]$ big, varies over time,

big in recessions

TS

Time Series
Regression

3) $E_t[R_{t+1}^{e_i}]$ varies across assets.

CS

Cross
Section
Regression