Valuing Bond

債券評價

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Introduction-Bond

What is bond ?

債券是一種能「穩定領利息」的投資工具

How to buy ?

債券種類-公司/政府/金融

Where to buy ?

銀行/投顧公司

Can I buy ?

6.1 Bond Cash Flows,Price,and Yields

債券的現金流量、價格與殖利率

Bond Terminology

- Bond債券-企業或政府向大眾募集資金，並承諾給予利息與本金的長期金融工具。
- Bond certificate債券憑證-描述債券將要支付的利息，這些利息將會支付到債券的到期日(maturity date)

- Coupons息票-債券的一種模式，約定好要定期支付利息(ex半年付息一次)直至到期日。
- Face value面值-債券到期時企業要償還債券持有人之金額，也是我們用來計算利息時的名目金額。*美國的債券面值通常為1000美元，台灣為10萬元

- Coupon rate息票利率-發行者每一次支付利息時所依據的利率。
- CPN-the amount of each coupon payment

$$\text{CPN}=\frac{\text{息票利率*面值}}{\text{每年要付息的期數}}$$

- EX: 一張$1000的債券附有10%的利率，並且每半年付息一次。
- Ans:1000*0.1/2=50。也就是每半年可以拿到50元的利息。

Zero-Coupon Bonds

- Zero-Coupon Bonds零息債券-一種比較簡單的債券模式，僅只要在到期日支付面值金額給予持有人。*ex:美國所發行的國庫券

- 零息債券也被稱作Pure disaount bonds

  → 透過購買折價的該債券來補償時金錢的時間價值

- Yield To Maturity到期殖利率(YTM)-投資者在買入債券後，將債券持有至到期日，所獲的的報酬率。

$$96{,}618.36 = \frac{100{,}000}{1+YTM}$$

$$1+YTM = \frac{100{,}000}{96{,}618.36} = 1.035$$

Ans: 3.5% (Risk-free)

N年零息債券的YTM公式

$$P=\frac{FV}{(1+YTM_n)^n} \Rightarrow YTM_n=\left(\frac{FV}{P}\right)^{1/n}-1$$

n=期數
P=現值
FV=面值

在競爭市場下因為價格單一定律，所以無風險利率會等於YTM

$$r_n=YTM_n$$

EXAMPLE 6.1 Yields for Different Maturities

Problem

Suppose the following zero-coupon bonds are trading at the prices shown below per $100 face value. Determine the corresponding spot interest rates that determine the zero coupon yield curve.

Maturity	1 Year	2 Years	3 Years	4 Years
Price	$96.62	$92.45	$87.63	$83.06

Solution

Using Eq. 6.3, we have

$$r_1 = YTM_1 = (100/96.62) - 1 \quad = 3.50\%$$
$$r_2 = YTM_2 = (100/92.45)^{1/2} - 1 = 4.00\%$$
$$r_3 = YTM_3 = (100/87.63)^{1/3} - 1 = 4.50\%$$
$$r_4 = YTM_4 = (100/83.06)^{1/4} - 1 = 4.75\%$$

Coupon Bonds

- 目前在美國金融市場上有兩種型態的國庫債券:

1. Treasury notes-maturities from one to ten years.

2. Treasury bonds- notes-maturities of more than ten tears.

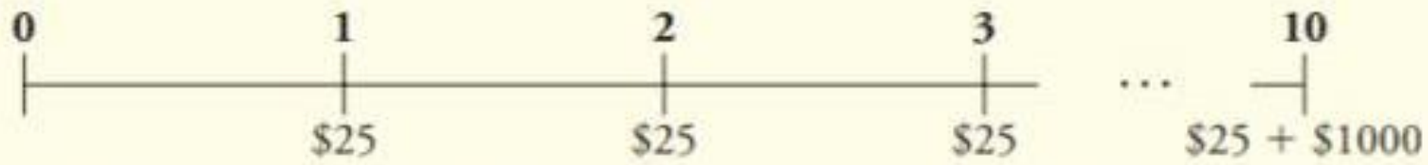
EXAMPLE 6.2 The Cash Flows of a Coupon Bond

Problem

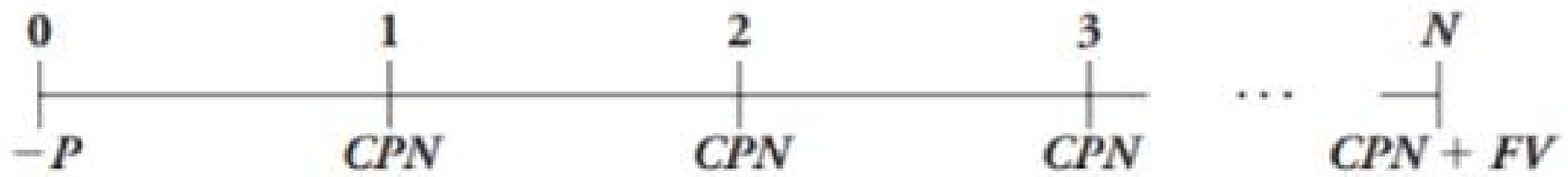
The U.S. Treasury has just issued a five-year, $1000 bond with a 5% coupon rate and semiannual coupons. What cash flows will you receive if you hold this bond until maturity?

Solution

The face value of this bond is $1000. Because this bond pays coupons semiannually, from Eq. 6.1, you will receive a coupon payment every six months of CPN = $1000 × 5%/2 = $25. Here is the timeline, based on a six-month period:



Note that the last payment occurs five years (10 six-month periods) from now and is composed of both a coupon payment of $25 and the face value payment of $1000.



附息債券的YTM公式:

$$P = CPN * \frac{1}{YTM}\left(1 - \frac{1}{(1+YTM)^N}\right) + \frac{FV}{(1+YTM)^N}$$

N=期數
P=市場的成交價(現值)
FV=面值
CPN=每期獲得的利息
YTM=利率

EXAMPLE 6.3 Computing the Yield to Maturity of a Coupon Bond

Problem

Consider the five-year, $1000 bond with a 5% coupon rate and semiannual coupons described in Example 6.2. If this bond is currently trading for a price of $957.35, what is the bond's yield to maturity?

Solution

Because the bond has 10 remaining coupon payments, we compute its yield y by solving:

$$957.35 = 25 \times \frac{1}{y}\left(1 - \frac{1}{(1+y)^{10}}\right) + \frac{1000}{(1+y)^{10}}$$

We can solve it by trial-and-error or by using the annuity spreadsheet:

	NPER	RATE	PV	PMT	FV	Excel Formula
Given	10		−957.35	25	1,000	
Solve for PV		**3.00%**				=RATE(10,25,−957.35,1000)

Therefore, $y = 3\%$. Because the bond pays coupons semiannually, this yield is for a six-month period. We convert it to an APR by multiplying by the number of coupon payments per year. Thus the bond has a yield to maturity equal to a 6% APR with semiannual compounding.

Ans:這張票券到期殖利率=6%

EXAMPLE 6.4 Computing a Bond Price from Its Yield to Maturity

Problem

Consider again the five-year, $1000 bond with a 5% coupon rate and semiannual coupons presented in Example 6.3. Suppose you are told that its yield to maturity has increased to 6.30% (expressed as an APR with semiannual compounding). What price is the bond trading for now?

Solution

Given the yield, we can compute the price using Eq. 6.5. First, note that a 6.30% APR is equivalent to a semiannual rate of 3.15%. Therefore, the bond price is

$$P = 25 \times \frac{1}{0.0315}\left(1 - \frac{1}{1.0315^{10}}\right) + \frac{1000}{1.0315^{10}} = \$944.98$$

We can also use the annuity spreadsheet:

	NPER	RATE	PV	PMT	FV	Excel Formula
Given	10	3.15%		25	1,000	
Solve for PV			**−944.98**			=PV(0.0315,10,25,1000)

Ans:這張票券目前交易價格=994.98

6.2

Dynamic Behavior of Bond Prices

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Bond price

- Discount(折價) - Bond price < face value, Coupon Rate < YTM
  -> Earns Coupon + (Face Value-Bond Price)
- Premium(溢價) - Bond price (債券價格) > face value (面額)
  Coupon Rate(票面利率) > Yield to Maturity(殖利率)
- Par(平價) - Bond price = face value, Coupon Rate = YTM

Recall (Bond Price Calculation)

- To find a bond's present value, we discount its future cash flows (coupon & par value) by the rate of interest (YTM).

$$\text{Bond value} = \sum_{t=1}^{T} \frac{coupon}{(1+r)^t} + \frac{par\ value}{(1+r)^T} = coupon \times \frac{1}{r}\left[1 - \frac{1}{(1+r)^T}\right] + par\ value \times \frac{1}{(1+r)^T}$$

- The following expression is the T-period *annuity factor* for an interest rate of *r*

$$\sum_{t=1}^{T} \frac{1}{(1+r)^t} = \frac{1}{(1+r)} + \frac{1}{(1+r)^2} + \ldots + \frac{1}{(1+r)^T} = \frac{1}{r}\left[1 - \frac{1}{(1+r)^T}\right]$$

Example 1:

- An 8% coupon, 2-year maturity bond with par value of $1,000 paying 4 semiannual coupon payments of $40 each. YTM of this bond is 10% (i.e. 5% per half-year).

$$\textbf{\textit{Price}} = \$40 \times \sum_{t=1}^{4} \frac{1}{(1+5\%)^{t}} + \$1{,}000 \times \frac{1}{(1+5\%)^{4}}$$

$$= \frac{\$40}{(1+5\%)^{1}} + \frac{\$40}{(1+5\%)^{2}} + \frac{\$40}{(1+5\%)^{3}} + \frac{\$40}{(1+5\%)^{4}} + \frac{\$1{,}000}{(1+5\%)^{4}}$$

$$= \$964.54$$

Example 6.5 (PV of different coupon rates)

Problem

Consider three 30-year bonds with annual coupon payments. One bond has a 10% coupon rate, one has a 5% coupon rate, and one has a 3% coupon rate. If the yield to maturity of each bond is 5%, what is the price of each bond per $100 face value? Which bond trades at a premium, which trades at a discount, and which trades at par?

Solution

We can compute the price of each bond using Eq. 6.5. Therefore, the bond prices are

$$P(\text{10\% coupon}) = 10 \times \frac{1}{0.05}\left(1 - \frac{1}{1.05^{30}}\right) + \frac{100}{1.05^{30}} = \$176.86 \quad \text{(trades at a premium)}$$

$$P(\text{5\% coupon}) = 5 \times \frac{1}{0.05}\left(1 - \frac{1}{1.05^{30}}\right) + \frac{100}{1.05^{30}} = \$100.00 \quad \text{(trades at par)}$$

$$P(\text{3\% coupon}) = 3 \times \frac{1}{0.05}\left(1 - \frac{1}{1.05^{30}}\right) + \frac{100}{1.05^{30}} = \$69.26 \quad \text{(trades at a discount)}$$

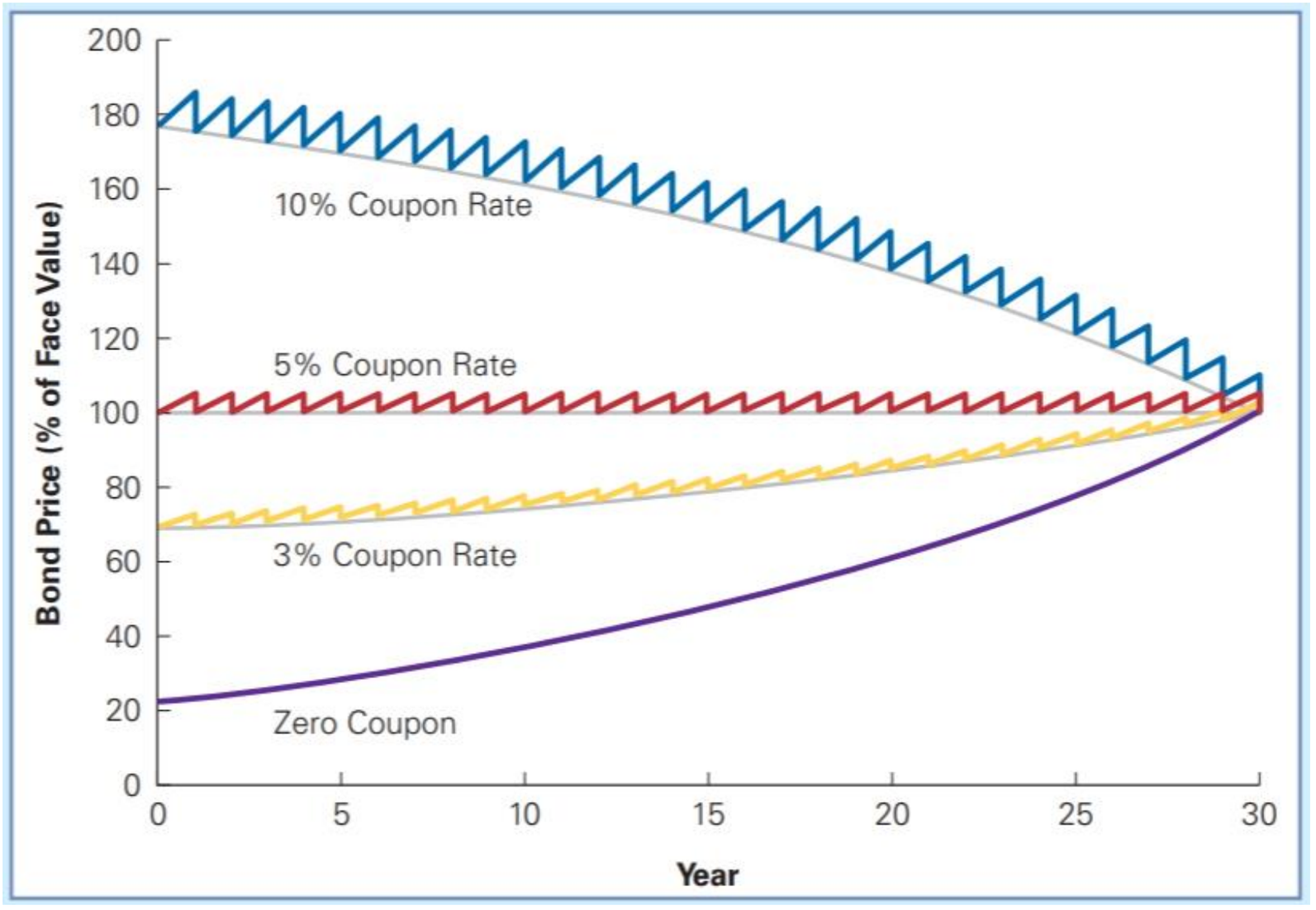
Effect of Time on Bond Prices

- For bonds sold at par value, investors receive fair compensation for the time value of money in the form of interest payments.
- For bonds with coupon rate < market interest rate, the coupon payments will not provide investors the amount of return as they could earn elsewhere in the market. The bonds have to be priced below par value to provide an internal capital gain on the investment.
- For bonds with coupon rate > market interest rate, the coupon income itself is greater than others in the market. Investors will bid up the price of these bonds above their par values. As these bonds approach maturity, they will fall in value because fewer of these above-market coupon payments remain. The resulting capital losses offset the large coupon payments so the bondholder again receives only a fair rate of return.

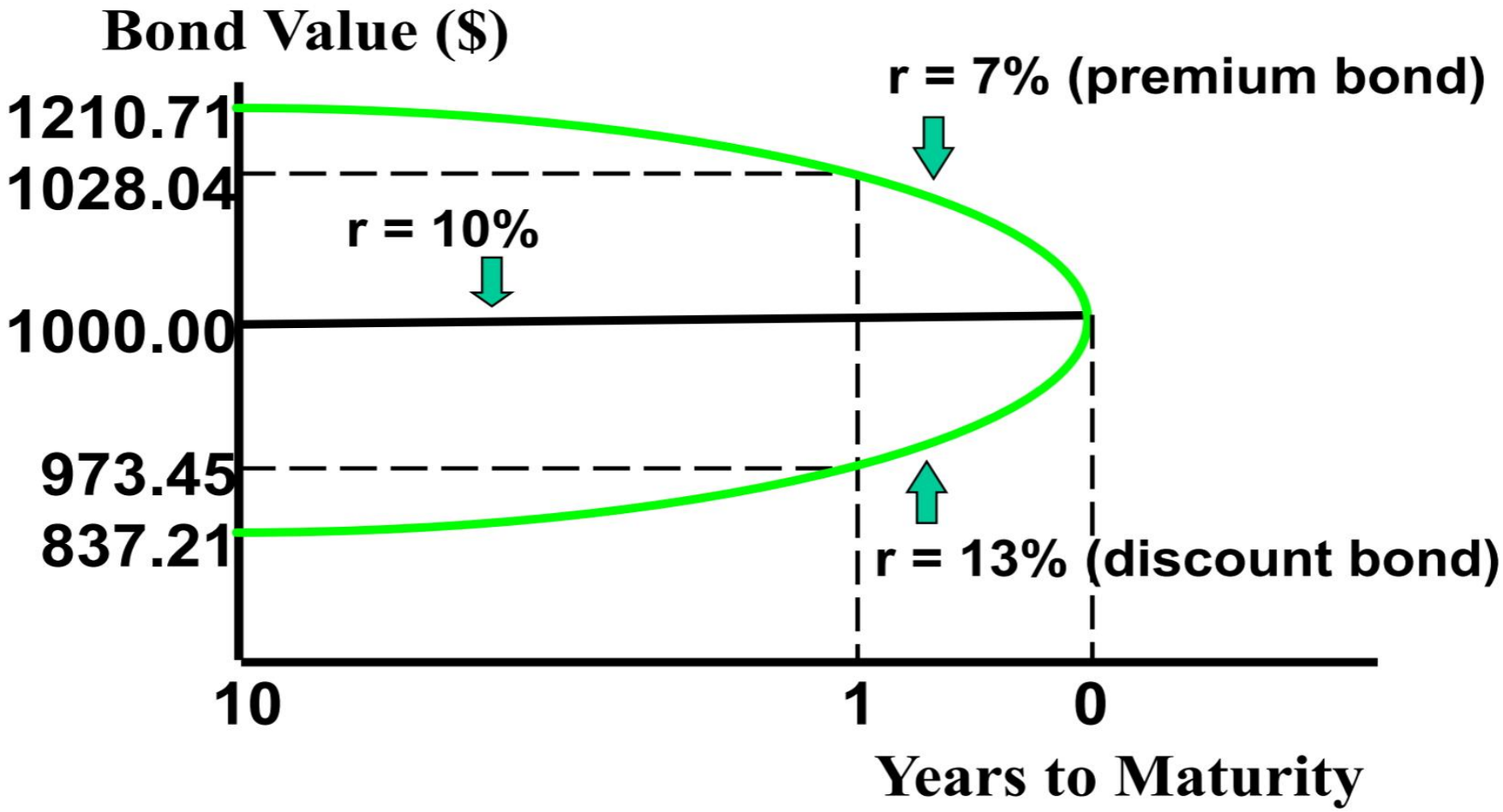
Effect of Time on Bond Prices (Cont.)

- Zero-coupon bonds provide all its return in one cash flow at maturity
- The current price is the discount from par value because of the time value of money.
- A 30 year zero coupon bond with YTM of 10%.
- The price of the bond today: $1,000/(1.10)30 = $57.31.
- Next year, with only 29 years until maturity, if YTM remains 10%, the price: $1,000/(1.10)29 = $63.04, its price has increased by the one year discount factor of 10%.

Effect of Time on Bond Prices (YTM fixed)



Effect of Time on Bond Prices (Coupon fixed)



Interest Rate Change

- An 8% coupon, 30-year maturity bond with par value of $1,000 paying 60 semiannual coupon payments of $40 each. The interest rate is 8% annually. -> (r = 4% per six-month period)

$$Price = \$40 \times \sum_{t=1}^{60} \frac{1}{(1+4\%)^t} + \$1{,}000 \times \frac{1}{(1+4\%)^{60}}$$

$$= \$40 \times \frac{1}{4\%}\left[1 - \frac{1}{(1+4\%)^{60}}\right] + \$1{,}000 \times \frac{1}{(1+4\%)^{60}}$$

$$= \$904.94 + \$95.06 = \$1{,}000$$

Interest Rate Change (Cont.)

- The interest rate rise to 10% -> (5% per 6 months)

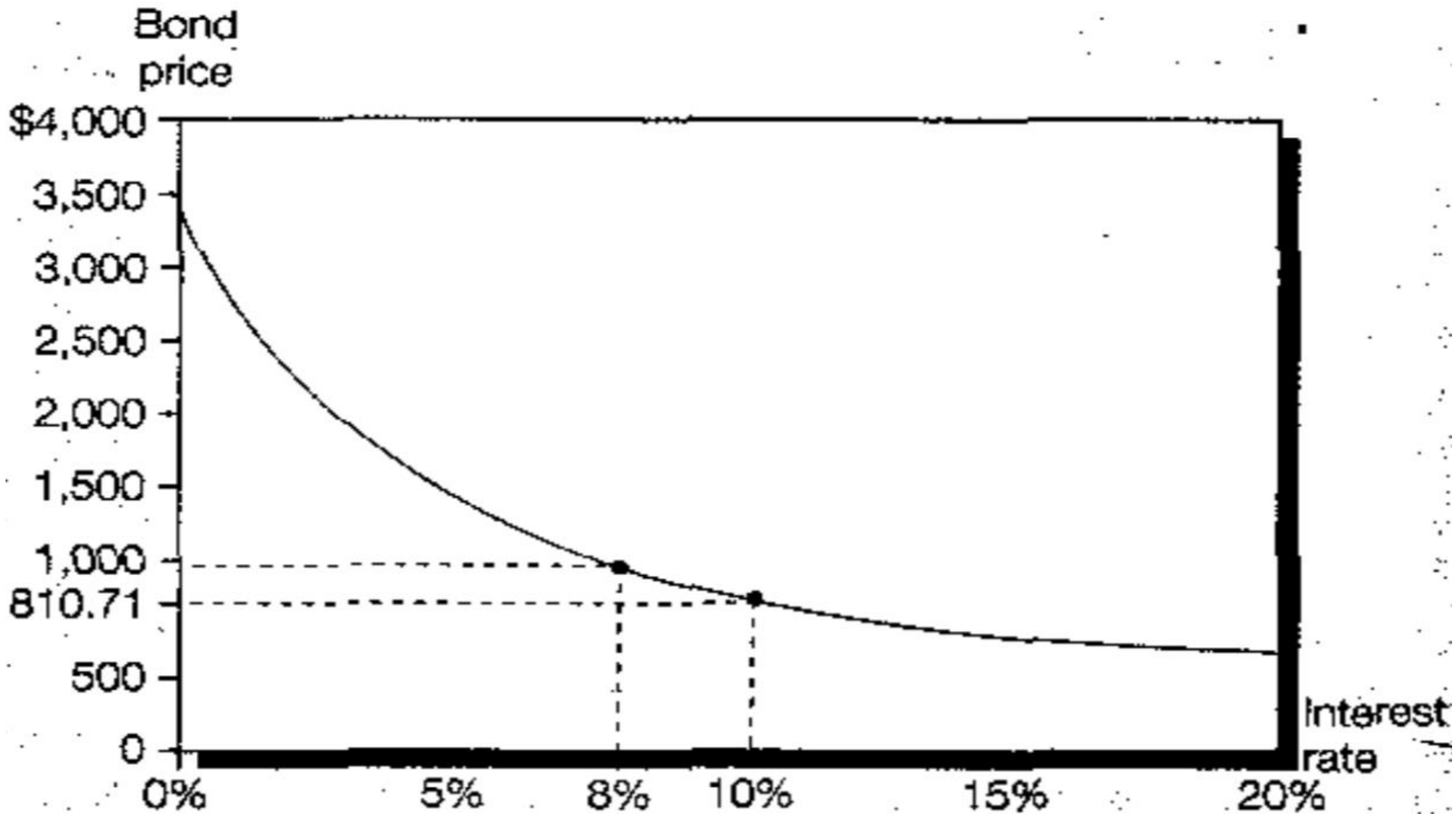
$$Price = \$40 \times \sum_{t=1}^{60} \frac{1}{(1+5\%)^t} + \$1{,}000 \times \frac{1}{(1+5\%)^{60}}$$

$$= \$40 \times \frac{1}{5\%}\left[1 - \frac{1}{(1+5\%)^{60}}\right] + \$1{,}000 \times \frac{1}{(1+5\%)^{60}}$$

$$= \$757.17 + \$53.54 = \$810.71$$

- At higher interest rate, the present value of payments to be received by the bondholder is lower. ⇒bond price *fall* as interest rate *rise*.

Interest Rate Change (Cont.)



Interest rate risk
(“bond price would fall if interest rate rises”)

- Bond prices and interest rates are *inversely-related*. As interest rates rise and fall, investors experience capital losses and gains. This makes fixed-income investments risky.
- When other factors remain unchanged, the longer a bond’s maturity, the greater the sensitivity of price to interest rate fluctuations.
- Result: Short-term Treasury securities like T-bills (短期國庫券, <1yr) are considered to be the safest. They are less prone to price risk due to interest rate volatility.

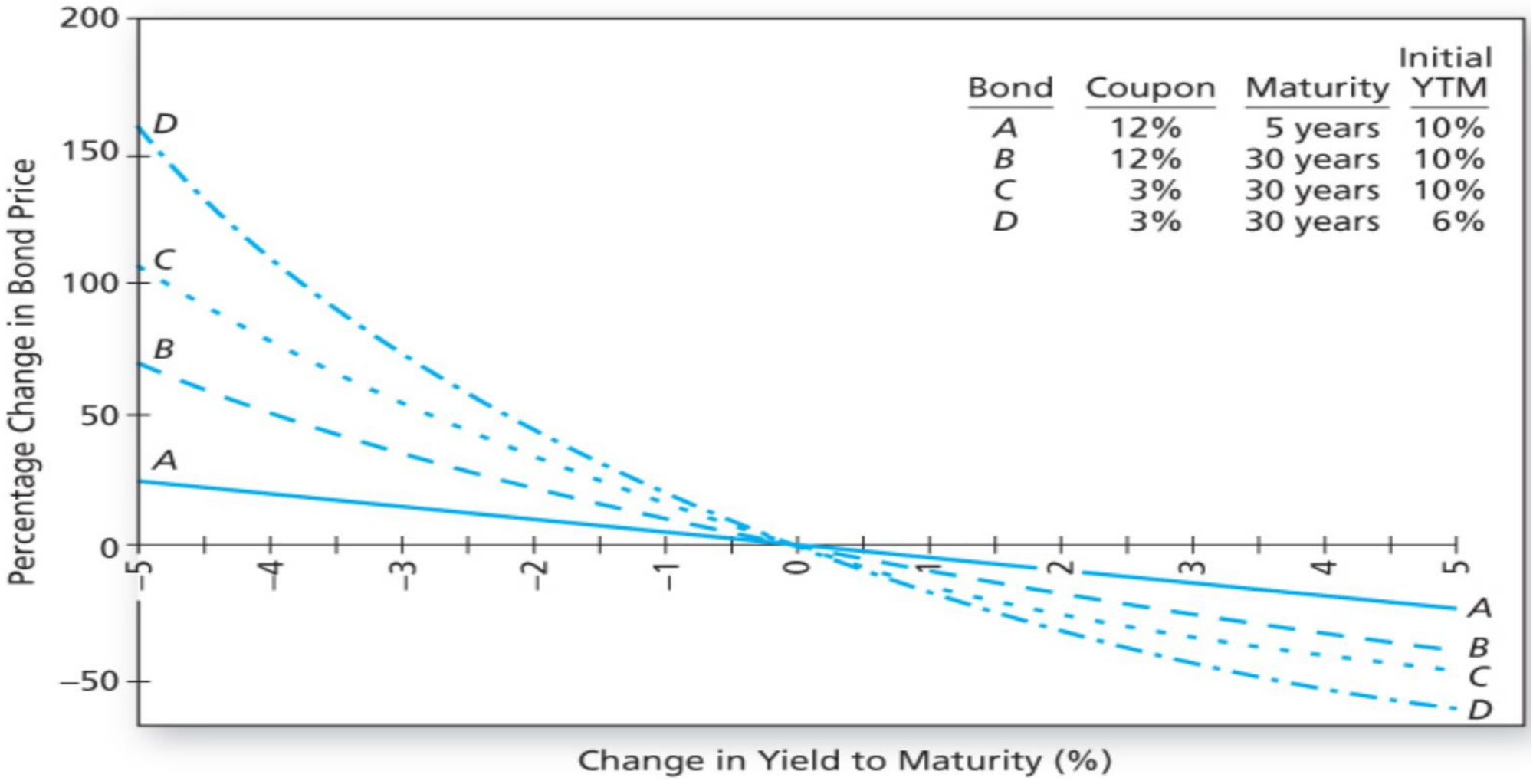
- 8% Coupon Bond (Paid Semiannually)

Yield to Maturity (APR)	T = 1 Year	T = 10 Years	T = 20 Years
8%	1,000.00	1,000.00	1,000.00
9%	990.64	934.96	907.99
Fall in price (%)*	0.94%	6.50%	9.20%

- Zero-Coupon Bond

Yield to Maturity (APR)	T = 1 Year	T = 10 Years	T = 20 Years
8%	924.56	456.39	208.29
9%	915.73	414.64	171.93
Fall in price (%)*	0.96%	9.15%	17.46%

Interest rate risk (Cont.)



Bond	Coupon	Maturity	Initial YTM
A	12%	5 years	10%
B	12%	30 years	10%
C	3%	30 years	10%
D	3%	30 years	6%

Duration

- Time to maturity of a bond is not a perfect measure of the long- or short-term nature of the bond. We need a measure of the average maturity of the bond's cash flows to serve as a useful summary statistic of the effective maturity of the bond. We would like also to use the measure of as a guide to the sensitivity of a bond to interest rate changes, because we know that price sensitivity depends on time to maturity.

- Each payment may be considered to have its own "maturity date," and the effective maturity of the bond is thus some sort of average of the maturities of all the cash flows paid out by the bond.

Macaulay's duration

- The weighted average of the times to each coupon or principal payment made by the bond. The weight associated with each payment time clearly should be related to the "importance" of that payment to the value of the bond.
- Thus, the weight applied to each payment time should be the proportion of the total value of the bond accounted for by that payment. This proportion is just the present value of the payment divided by the bond price.
- Zero-Coupon bonds' duration equals time to maturity.

- An 8% coupon, 2-year maturity bond with par value of $1,000 paying 4 semiannual coupon payments of $40 each. YTM is 10%.
- -> Price=$964.54

$$D = 0.5 \times \frac{40/(1+5\%)}{964.54} + 1 \times \frac{40/(1+5\%)^2}{964.54}$$

$$+1.5 \times \frac{40/(1+5\%)^3}{964.54} + 2 \times \frac{1{,}040/(1+5\%)^4}{964.54}$$

$$= 1.8852 \ years$$

which is *less than* time to maturity's 2 years.

The Yield Curve and Arbitrage

殖利率曲線 與 套利

債券的價值

prices of zero-coupon bonds. For example, we can replicate a three-year, $1000 bond that pays 10% annual coupons using three zero-coupon bonds as follows:

TABLE 6.2 Yields and Prices (per $100 Face Value) for Zero-Coupon Bonds

Maturity	1 year	2 years	3 years	4 years
YTM	3.50%	4.00%	4.50%	4.75%
Price	$96.62	$92.45	$87.63	$83.06

To illustrate, assume that current zero-coupon bond yields and prices are as shown in Table 6.2 (they are the same as in Example 6.1). We can calculate the cost of the zero-coupon bond portfolio that replicates the three-year coupon bond as follows:

Zero-Coupon Bond	Face Value Required	Cost
1 year	100	96.62
2 years	100	92.45
3 years	1100	$11 \times 87.63 = 963.93$
	Total Cost:	$1153.00

- **我4公式:** $P = \frac{C_1}{(1+YTM1)} + \frac{C_2}{(1+YTM2)^2} + \frac{C_3}{(1+YTM3)^3} + \cdots + \frac{C_n + F}{(1+YTMN)^n}$

- P=價格(Price) C=利息(bond coupon payment) F=債券面額(Face value)(本金)
- YTM=到期殖利率(Yield to Maturity) n= 年 (year)

來源：**Corporate Finance(**JONATHAN BERK, PETER DEMARZO,p.182,2013)

例子-Table 6.2

1						
2	par value	1000				
3	rate	10%				
4	C	100				
5						
6		year	YTM	C	COST	FORMULA
7		1	3.50%	100	96.62	100/(1+0.035)^1
8		2	4%	100	92.456	100/(1+0.04)^2
9		3	4.50%	1100	963.926	1100/(1+0.045)^3
10						
11					1153.00	Sum Of

prices of zero-coupon bonds. For example, we can replicate a three-year, $1000 bond that pays 10% annual coupons using three zero-coupon bonds as follows:

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可以購買的狀況

因為，當Coupon bond < Zero bond 就可以 “套利” 藉由 賣掉 Zero bond 然後 購買Coupon Bond

反之，當Coupon bond > Zero bond 就可以 “套利” 藉由 賣掉 Coupon bond 然後 購買Zero bond

來源：**Corporate Finance(**JONATHAN BERK, PETER DEMARZO,p.182,2013)

比較債券／無息債券－相同到期日

Consider again the three-year, $1000 bond with 10% annual coupons. Given the zero-coupon yields in Table 6.2, we calculate a price for this bond of $1153. From Eq. 6.5, the yield to maturity of this bond is the rate y that satisfies

$$P = 1153 = \frac{100}{(1+y)} + \frac{100}{(1+y)^2} + \frac{100+1000}{(1+y)^3}$$

We can solve for the yield by using the annuity spreadsheet:

	NPER	RATE	PV	PMT	FV	Excel Formula
Given	3		−1,153	100	1,000	
Solve for Rate		4.44%				=RATE(3,100,−1153,1000)

Therefore, the yield to maturity of the bond is 4.44%. We can check this result directly as follows:

$$P = \frac{100}{1.0444} + \frac{100}{1.0444^2} + \frac{100+1000}{1.0444^3} = \$1153$$

To summarize, for the three-year bonds considered

Coupon rate	0%	4%	10%
YTM	4.50%	4.47%	4.44%

在相同的到期限之下，到期殖利率會被債券利率影響。

來源：**Corporate Finance(**JONATHAN BERK, PETER DEMARZO,p.182.,183,2013)

Problem

Given the following zero-coupon yields, compare the yield to maturity for a three-year, zero-coupon bond; a three-year coupon bond with 4% annual coupons; and a three-year coupon bond with 10% annual coupons. All of these bonds are default free.

Maturity	1 year	2 years	3 years	4 years
Zero-coupon YTM	3.50%	4.00%	4.50%	4.75%

Solution

From the information provided, the yield to maturity of the three-year, zero-coupon bond is 4.50%. Also, because the yields match those in Table 6.2, we already calculated the yield to maturity for the 10% coupon bond as 4.44%. To compute the yield for the 4% coupon bond, we first need to calculate its price. Using Eq. 6.6, we have

$$P = \frac{40}{1.035} + \frac{40}{1.04^2} + \frac{40+1000}{1.045^3} = \$986.98$$

The price of the bond with a 4% coupon is $986.98. From Eq. 6.5, its yield to maturity solves the following equation:

$$\$986.98 = \frac{40}{(1+y)} + \frac{40}{(1+y)^2} + \frac{40+1000}{(1+y)^3}$$

We can calculate the yield to maturity using the annuity spreadsheet:

	NPER	RATE	PV	PMT	FV	Excel Formula
Given	3		−986.98	40	1,000	
Solve for Rate		4.47%				=RATE(3,40,−986.98,1000)

殖利率曲線－代表的市場訊息

●何謂殖利率曲線反轉（inverted）？

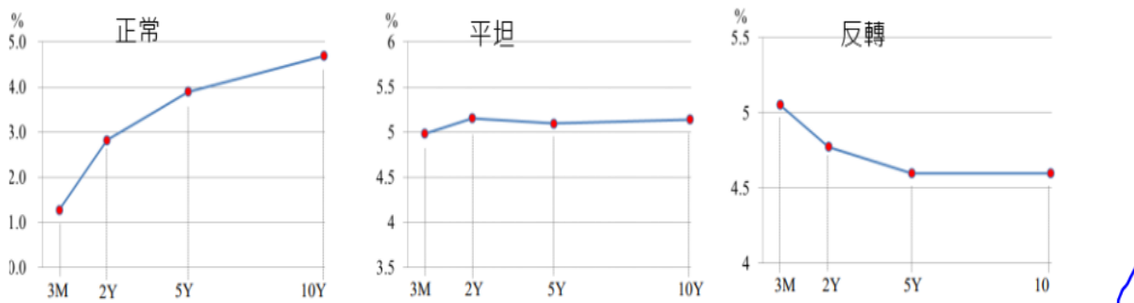
殖利率曲線主要有三種型態：正常、反轉、平坦（flat）。正常的殖利率曲線，債券殖利率隨期限拉長而上升，因為債務年期愈長，風險愈高。反轉的曲線則相反。

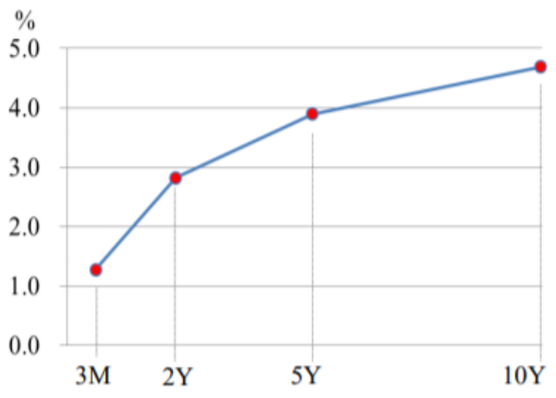
●為何市場高度關注殖利率曲線反轉？

經濟學家與聯準會（Fed）常以美債長短天期利差（10年期與2年期公債利差、或10年期公債與3個月國庫券利差），作為判斷經濟是否陷入衰退的先行指標。若長債的殖利率低於短債，反映投資人較不看好近期的經濟榮景，轉而增持長期公債，使得長期公債殖利率下滑。

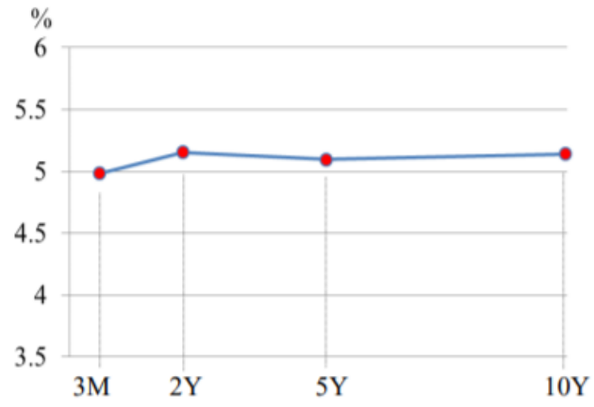
●殖利率曲線反轉，經濟必將陷入衰退？

不見得。Fed前主席葉倫就說，美國經濟有足夠的力量來避免衰退。美國長期公債殖利率下滑的因素很多，以之來預測未來的經濟活動，不一定正確。

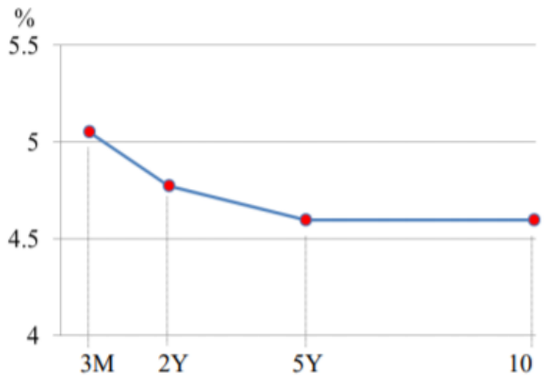




正常-經濟”成長階段”



正常-經濟”成熟階段”



正常-經濟”衰退階段”

難道
單純圖表的解讀，
可以
代表未來的經濟預測嗎？

來源：天下雜誌

此事具有重大意義。短期利率高於長期債券殖利率，稱作殖利率曲線反轉。今年春季，與十年期美國公債相比，3月期公債的殖利率曲線已呈現反轉。

殖利率曲線反轉通常會在衰退前夕現身，也代表投資人對眼前的經濟前景十分不安，對短期借款要求較高利率；這並不是常態。

一般來說，較長期的放款，風險也比較高，因此投資人會要求較高的報酬率。

> 投資研究公司The Sevens Report創辦人伊薩耶（Tom Essaye），在客戶通知中寫道，「由歷史來看，基準殖利率曲線反轉，代表我們現在必須準備好在6-18個月內面對衰退。」

30年期等長期公債的殖利率下滑，也是投資人焦慮的癥象。債券殖利率與債券價格的走向相反，也就是說，投資人大量買進債券之時，殖利率就會下跌。

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不過，有些人認為，殖利率曲線反轉引發的恐懼並不合理。

分享文章

安聯（Allianz）首席經濟顧問伊爾艾朗（Mohamed El-Erian）表示，「我們得保持謹慎，不要過度解讀美國經濟的訊號。扭曲殖利率曲線的，是各國央行的做為以及對歐洲的疑慮。」

Fisher Investments資深副總安德森（Aaron Anderson）認為，利率已經下滑好一段時間，曲線反轉不該如此令人意外。

安德森補充道，市場目前的負面氣氛終將消退，信心也會再次上升；他認為，這可能比較像是市場修正、類似2011和2015的短暫拉回，而非2008年那樣的全面熊市。

來源：天下雜誌

債券評等

信用公司會透過 調查與分析 製作出該公司的 債券信用－For 投資者

發行者到期不能償還本息，投資者就會蒙受損失，這種風險稱為信用風險。
所以，信用公司　會　**評估** 該公司的風險償還能力。

＊債券信用評估，可以　降低 ↓ 信譽高的發行單位　的　籌資成本。

想想看，有道理yo~

a.信用等級高的債券，越容易得到投資者的信任，能夠以較低的利率出售；

b.信用等級低的債券，風險較大，只能以較高的利率發行。(老師有說過)

債券信用評等公司

標普國際

穆迪

中華信用評等

我是某公司的子公司

但公司總部在**101**

惠譽國際

晨星

股東結構：

本公司資本額新台幣七千萬，總發行股數為七、○○○、○○○股，分別由八個法人股東持有，各股東持股比率列表如下：

股東名稱	持有股數	持股比率%
美商標準普爾國際評等公司	3,569,999	51%
臺灣證券交易所股份有限公司	1,399,300	19.99%
臺灣集中保管結算所股份有限公司	1,330,000	19%
財團法人金融聯合徵信中心	350,000	5%
中華徵信所企業股份有限公司	350,000	5%
臺灣期貨交易所股份有限公司	350	0.005%
臺灣網路認證股份有限公司	350	0.005%
新加坡商S&P Global Asian Holdings Pte. Ltd.	1	0.000%

董事及監察人名錄：

董事	
臺灣證券交易所股份有限公司代表人	簡立忠
臺灣集中保管結算所股份有限公司代表人	孟慶蓀
美商標準普爾國際評等公司代表人	歐愛麗娜
美商標準普爾國際評等公司代表人	馬賀瑞
美商標準普爾國際評等公司代表人	陳志強

中華信用評等
Taiwan Ratings
An S&P Global Company

來源:中華信用評等

各家信評公司的定義方式

Good-正向的評比

各信評公司評等定義

S&P 主要等級分類	Moody's 主要等級分類	Fitch 主要等級分類	評等定義
AAA	Aaa	AAA	最高信用品質。 'AAA'評等意指最低的預期信用風險。本評等代表受評者具備最爲強健的財務承諾償付能力。此能力受到可預期之事件負面影響可能性極低。
AA (含 AA+/AA/AA-)	Aa (含 Aa1/Aa2/Aa3)	AA (含 AA+/AA/AA-)	極高的信用品質。 'AA'評等意指極低預期信用風險。本評等代表受評者具備極強的財務承諾償付能力。此能力受到可預期之事件負面影響的可能性不大。
A (含 A+/A/A-)	A (含 A1/A2/A3)	A (含 A+/A/A-)	高的信用品質。 'A'評等意指低的預期信用風險。本評等代表受評者具備強健的財務承諾償付能力。但相較與評等等級較高之受評者，此能力可能更容易因爲環境或經濟狀況變動而受到影響。
BBB (含 BBB+/BBB/BBB-)	Baa (含 Baa1/Baa2/Baa3)	BBB (含 BBB+/BBB/BBB-)	良好的信用品質。 'BBB'評等代表目前低的預期信用風險。受評者具備允當的財務承諾償付能力，但此能力較容易因爲環境及經濟狀況發生負面變動而受到影響。本評等爲投資等級評等中的最低評等等級。

Bad-負面的評比

BB (含 BB+/BB/BB-)	Ba (含 Ba1/Ba2/Ba3)	BB (含 BB+/BB/BB-)	投機級。 'BB'評等代表信用風險有可能正在形成，尤其是因爲負面經濟變化導致；但受評者可能以變通的業務或財務方式，履行其財務承諾。獲授予本評等等級之有價證券並非屬於投資等級。
B (含 B+/B/B-)	B (含 B1/B2/B3)	B (含 B+/B/B-)	高度投機。 對發行人及履約中的債務而言，'B'評等等級代表受評者的信用風險水準極高，但仍具備某些的安全性。財務承諾目前仍在履行中，但繼續償付的能力則須視營運及經濟環境是否穩定、良好而定。
CCC (含 CCC+ /CCC/ CCC-)	Caa (含 Caa1/Caa2/Caa3)	CCC (含 CCC+ /CCC/ CCC-)	對發行人及履約中的債務而言，'CCC'評等等級代表受評者發生違約的可能性極高。繼續履行財務承諾的能力完全須視營運及經濟環境是否穩定、良好而定。
CC	Ca	CC	對發行人及履約中的債務而言，'CC'評等等級代表有可能發生某種形式的違約。
C	C	C	對發行人及履約中的債務而言，'C'評等等級代表違約在即。

來源：CTBCLIFE

EXAMPLE-債券

標的名稱	發行機構	債信評等 MOODY's/FITCH/S&P	配息率	到期日	參考申購價格	參考贖回價格
美國電話電報美元債券	美國電話電報	Baa2/A-/BBB	4.1000%	2028/02/15	111.66% 2019/09/20	107.54% 2019/09/20
豐田汽車公司美元債券	豐田汽車公司	Aa3/A+/AA-	2.7600%	2029/07/02	106.67% 2019/09/20	102.44% 2019/09/20
印尼國營電力２０２９美元債券	印尼國營電力公司	Baa2/BBB/BBB	5.3750%	2029/01/25	120.16% 2019/09/20	115.88% 2019/09/20
聯合健康集團２０２７美元債券	聯合健康集團	A3/A/A+	3.3750%	2027/04/15	110.45% 2019/09/20	106.32% 2019/09/20
聯合健康集團２０２７美元債券	聯合健康集團	A3/A/A+	3.4500%	2027/01/15	110.01% 2019/09/20	106.01% 2019/09/20
聯合健康集團２０２６美元債券	聯合健康集團	A3/A/A+	3.1000%	2026/03/15	107.09% 2019/09/20	103.22% 2019/09/20
ＩＢＭ公司２０２７美元債	國際商業機器公司	A2/-/A	3.3000%	2027/01/27	109.26% 2019/09/20	105.53% 2019/09/20

來源：CTBC

降評

2018/08

代碼	債券名稱	債券信評			發行機構信評		
		穆迪	標普	惠譽	穆迪	標普	惠譽
B061	澳洲航空公司債券	Baa2	NR	-	Baa2	NR	-
		2017/5/15	2019/1/8	-	2017/5/15	2019/1/8	-
B062	阿聯酋杜拜國家銀行債券	A3	-	A+	A3	-	A+
		2016/6/16	-	2015/2/18	2016/6/16	-	2009/11/23
B063	高通公司債券	A2	A-	-	A2	A-	-
		2018/7/26	2018/7/30	-	2018/7/26	2018/7/30	-
B064	墨西哥石油公司債券	Baa3	BBB+	BBB-	Baa3	BBB+	BBB-
		2016/3/31	2014/10/14	2019/1/29	2018/4/12	2013/12/20	2019/1/29
B066	高盛集團公司債券	Baa2	BBB-	A-	A3	BBB+	A
		2013/11/14	2015/12/2	2011/12/15	2015/5/28	2015/12/2	2011/12/15
B067、B078	美國電信公司債券	Baa2	BBB	A-	Baa2	BBB	A-
		2018/6/15	2018/6/15	2018/6/18	2018/6/15	2018/6/15	2018/6/18
B068	花旗集團公司債券	A3	BBB+	A	-	BBB+	A
		2019/2/21	2015/12/2	2012/1/26	-	2015/12/2	2011/12/15
B069	法國興業銀行債券	Baa3	BBB	A-	A1	A	A
		2015/11/18	2015/11/17	2015/12/3	2018/4/11	2012/1/23	2013/7/17
B071	世紀電信公司債券	B2	B+	BB	Ba3	BB	BB
		2017/10/31	2017/11/1	2017/11/1	2017/10/31	2011/4/1	2017/11/1
B072	土耳其實業銀行債券	B2	-	B+	B2	B+	B+
		2018/8/28	-	2018/10/1	2018/8/28	2018/8/17	2018/10/1
B074		A3	A-	A-	A3	A-	A-

2019/06

代碼	債券名稱	穆迪	標普	惠譽
B061	澳洲航空公司債券	Baa2	NR	-
		2017/5/15	2019/1/8	-
B062	阿聯酋杜拜國家銀行債券	A3	-	A+
		2016/6/16	-	2015/2/18
B063	高通公司債券	A2	A-	-
		2018/7/26	2018/7/30	-
B064	墨西哥石油公司債券	Baa3	BBB+	BB+
		2016/3/31	2014/10/14	2019/6/6
B066	高盛集團公司債券	Baa2	BBB-	A-
		2013/11/14	2015/12/2	2011/12/15
3067、B078	美國電信公司債券	Baa2	BBB	A-
		2018/6/15	2018/6/15	2018/6/18
B068	花旗集團公司債券	A3	BBB+	A
		2019/2/21	2015/12/2	2012/1/26
B069	法國興業銀行債券	Baa3	BBB	A-
		2015/11/18	2015/11/17	2015/12/3
B071	世紀電信公司債券	B2	B+	BB
		2017/10/31	2017/11/1	2017/11/1
B072	土耳其實業銀行債券	B3	-	B+
		2019/6/18	-	2018/10/1
B074	法國電力公司債券	A3	A-	A-
		2016/9/28	2016/9/21	2016/6/7

來源：聯邦銀行財富管理

穆迪調降土耳其主權債信評級，使其更深陷「垃圾」級別

穆迪指出，土耳其「制度實力和提振投資信心的政策有效性持續受到侵蝕」，其影響超越經濟多樣化和維持政府債務處在低水平等正向因素。當局沒有能力執行計畫以支持經濟，仍然是關鍵問題。

由於土耳其結構性地高度依賴外部資本流入，對於它能否持續吸引每年償債所需並且可以維持經濟成長的大筆資金，穆迪對此日益失去信心。

穆迪認為，土耳其仍然高度脆弱，容易蒙受經濟和金融上更長期的劇烈波動。加上外匯存底不充分，對比整體經濟當中的短期債務，穆迪預期外匯存底這項緩充在未來兩年還會進一步不足。

來源:中央通訊社

6-5 Sovereign bonds

主權債券

108AB8401 - 黃氏映雪

主權債券

主權債券由各國政府發行。

承認政府對債券持有人的債務義務。

債務以具有指定期限（通常為5年，7年，10年……）

和固定收益的債券的面值表示。

優點

極低的風險: 由於是債務證券，因此當企業破產或解散時，政府債券的所有者將優先於股票優先償還債務。

此外，由政府發行的債券，投資者的安全水平很高，另外，政府可以藉由發行債券達到。

A. 提高稅收、 B. 穩定市場、 C. 平衡財政收支...等

＊因為政府發行的債券，

較企業能有更多資金，支付到期債券。

固定收益:

利息是債券持有人的穩定收益，通常在發行時設定，

因此，投資者可以 **A. 收取收益**

還獲得 **B.指定的年收益**，到期時償還原始資本。

高流動性：

政府債券是由該國家政府發起，因此高安全性導致政府債券的高流動性。

與其他形式的證券相比，投資者可以出售債券以迅速收取現金。

風險

政府債券通常被認為是無風險的，

因為政府可以透過政策稅收或發行更多現金來支付到期債券。

在美國，以美元計價的政府債券是最安全的貨幣投資形式。

大多數主權債務都是有風險

例如匯率風險，等其他風險仍然存在-

如：信用風險，匯率風險，政策風險...等

當本幣兌其他貨幣貶值時，接著第二個風險可能是

通貨膨脹

通貨膨脹超出預期，當到期價值下降時，本金會被收回。

政府債券 與 公司債券不同

一個難以履行其財務義務的國家通常可以選擇印製貨幣以償還債務。

當然，這樣做的代價

很可能導致高通膨　和　貨幣急劇貶值。

結論-Conclusion

債券總類多樣性，風險與利率介於存款與股票之間

債券計價方式，可以透過機構的資料分析，金融模組計算

研究員的專業意見，提供市場投資者一個穩當且安全的投資環境

對於發行債券方也能維持帳務收益平衡，公司營運甚至政府營運。

最後，影響債券價格的方式多樣，最主要的概念還是來自於：

政府央行利率的調降　與　該國經濟市場的變化。

The End

感謝聆聽

請問各位看官們有任何疑問嗎?

我們必將絞盡腦汁的回答