

CH(9) : Forecasting exchange rate.

* why firms forecast exchange rates :-

① hedging decisions.

working capital - A/R
- A/P

تحوط على مخاطر العملة

على الشركة ببطء مصاري يتأخذهم (A/R) عندما يكون سعر العملة عالي
بينما على الشركة ببطء تدفع المصاريف (A/P) عندما يكون العملة
منخفضة حتى لا يخسر.

② Short term investment decisions.

- interest rate عند الاستثمار فنظر إلى مستقبلية بها

- Currency rate

فمن هذا الأمر يعني أن يكون سعر الفائدة مرتفع والعملة منخفضة وذلك
لأنه كلما استقبل الفائدة منخفضة والعملة ترتفع وهذا القيد.

③ Capital budgeting decisions.

عند تأسيس شركة. أو مشروع معين يجب أن يكون العملة منخفضة حتى ترتفع الاستثمار

④ Earning assessment.

عند الاستثمار في بلد معين نحدد عاليا. منخفضة لأنه كلما يزداد في بلد معين يكون العملة القوي.

⑤ long-term financing decision. على المدى الطويل
 سنوات تكون العلاقة متغيرة ولا يمكن وضع الاستمارة والاستمارة
 من رصدها تكون العلاقة متغيرة

* Forecasting techniques :-

① Technical forecasting : historical data
 ما ذا حدث data

تاريخيا

الحاضر

→ the use of historical exchange rate data
 to predict future value. (Moving average)
 توقعات future

→ limitation for technical forecasting :-

المعاشرة
 short-term

- ① it focuses of the near future not helpful for long-term period
- ② are useful for forecasting exchange rate in distant future.
- ③ may not be suitable for firms that need to forecast exchange rate in ~~the distant future~~ distant future.

② Fundamental forecasting : economic variables, test the relationship between economic variables and

يكون معطينا الـ
بالسؤال
من الرطب
Price.

$$P_t = b_0 + (b_1 \times \text{Net inflation rate}) + b_2 \times \text{income} + \text{error}$$

$\downarrow$ Constant $\downarrow$ inflation $\downarrow$ income $\downarrow$ error

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Q9

* assume that the follow regression... ? if I will use water... ?

$$C_i = a_0 + a_1 \text{ interest} + a_2 \text{ inflation} + \mu$$

Interest

$a_0 = 0$
$a_1 = 0.9$
$a_2 = 0.8$

Inflation = 0.03%

$$\begin{aligned}
 0 &= 0 + 0.9(0) + (0.8)(0.03) + 0 = 2.4\% \\
 1\% &= 0 + 0.9(0.01) + (0.8)(0.03) + 0 = 3.3\% \\
 2\% &= 0 + 0.9(0.02) + (0.8)(0.03) + 0 = 4.2\%
 \end{aligned}$$

b_0 b_1 b_2 inflation μ

PR → interest 0 = 30%

أف الجواب

→ interest 1% = 60% → 3.3% ✓

→ interest 2% = 10% ✓

* use of purchasing power parity for fundamental forecasting:-

The US inflation rate is expected to be 1% over the next year, while the Australian inflation is expected to be 6%. If the existing spot rate of the Australian dollar 0.50, what is the expected spot rate at the end year?

$$* \text{ ef} = \frac{1 + ih}{1 + if} - 1 \rightarrow [P]$$

$$= \frac{1 + 0.01}{1 + 0.06} - 1 = \frac{1.01}{1.06} - 1 = -0.047\%$$

$$F = S(1 + p)$$

$$= 0.50(1 + -0.047) = 0.4765$$

→ limitation for fundamental ^{forecasting} techniques:

- ① The precise timing of sum factor in currency values it not known.
- ② Some factor expect and immediate impact on exchange rate.
- ③ Some factor that's effect ^{consideration} in fundamental forecasting process cannot be easily quantified.
- ④ Coefficient derived from the regression analysis will not necessarily remain constant over time.

③ Market based forecasting: the process of developing ~~the~~ forecast the market indicators:-

- Spot rate. التي صارت اليوم
- forward rate. التي صارت بعد يومين

$$E_e = \frac{F}{S} - 1 \quad F = S(1 + p)$$

expected ← forward ← spot
forigner

* if one year forward rate of the Australian dollar is 0.63, while spot rate is 0.60. what is the expected percent in the Australian dollar change?

Q5
Q4
Q3

$$P = \frac{0.63}{0.60} - 1 = 0.05 \rightarrow E_e$$

* Rational for using the forward Rate?

the forward rate should serve as a reasonable forecast for the future spot rate.

* long-term forecasting with forward rate?

long-term exchange rate forecast can be derived from long term forward rate.

④ Mixed forecasting ليس التنبؤ بالعملة الأجنبية فقط
بل يجمع بين عدة طرق

↳ Sum multinational corp. preferred used combination of forecasting techniques.

الملاحظات

* guide lines for implementing a forecast:-

- ① all managers of multinational corp. should rely on the same exchange rate forecast.
- ② the key decisions by multinational corp. are highly influence by the forecasting technique that is applied.

مقياس الخطأ

* Forecasting error :- مقياس الخطأ كالتنبؤ بالعملة الأجنبية

Measurement:-

وهو مقياس لمدى دقة التنبؤ بالعملة الأجنبية

القيمة

Absolute forecast error

% of realize value =

بالنسبة للبيانات السابقة

-20 / 9 البيانات
من 20

Forward

$$\frac{\text{Forecasted Value} - \text{Realized Value}}{\text{Realized Value}}$$

80%

Value

Realized Value

* Consider the following for casting realized value by new competition?

$$\Delta_s = 1.35 - 1.50 = 10\%$$

← أكبر فائز

كل ما كان أكبر كان ذلك أفضل

$$\Delta_{ps} = 0.12 - 0.10 = 20\%$$

← الأصغر

لذلك العام

القالت أن بها رقيقة

$$\text{error} \Delta_s \Delta_{ps}$$

Karmel

- * Methods of forecasting exchange rate volatility:
- ① Use of the recent volatility level: use standard deviation to forecast the future.
 - ② Use of Best better of volatility. (daily, monthly, quarterly, trially)
 - ③ Employed standard deviation / variance to determine the exchange rate.

Major Currency $\rightarrow$ US, Yen

* Forecasting biases:

- ① Underestimated: (Negative errors)
 $\rightarrow$ Forecasting ~~value~~ $\times$ realized value $\rightarrow$ overestimated
- ② Forecasting value $-$ realize $\rightarrow$ overestimated (Positive error)
 $\rightarrow$ Forecast $\times$ realize $\rightarrow$ actual

* Forecasting efficiency

- ① Weak-form efficient. (technical forecasting, historical + current information)
 - ② Semi Strong form efficient. (all relevant public information)
 - ③ Strong-form efficient (all relevant public & private information)
- $\rightarrow$ ② US will be ③ for yen, etc.