

Chapter 20

Optimal Currency Areas

1961: Mundell posed the question which is equivalent to asking under what conditions will a particular region(s) be best off with a single currency or set of exchange rates between those same regions?

1999: The EU adopted the Euro and dismissed the DM, FF, Lira, etc.

There were both political + economic objectives

- (1) Political: continue economic integration begun in the aftermath of WWII to prevent a recurrence of war among the European powers:
- (2) Economic: foster greater trade and factor mobility leading to greater economic integration
 - (a) Some fiscal harmonization, but generally independent levels of debt and some taxes & social policies (eg. retirement ages, social welfare spending, etc.)
 - (b) Expand the economic influence of the EU countries ... (and potentially political influence.)

- There is a monetary efficiency gain from having a single currency. More simple calculations, no forward issues with each currency, \therefore lower transactions costs (see 2a)
- Suppose you have 3 currencies and each party must hold their own currency according to our $\sqrt{\quad}$ rule. Say income is 100 and all other values are the same.

$$R_1 + R_2 + R_3 = \sqrt{100} + \sqrt{100} + \sqrt{100} = 3\sqrt{100} = \underline{\underline{300}}$$

3 · 10

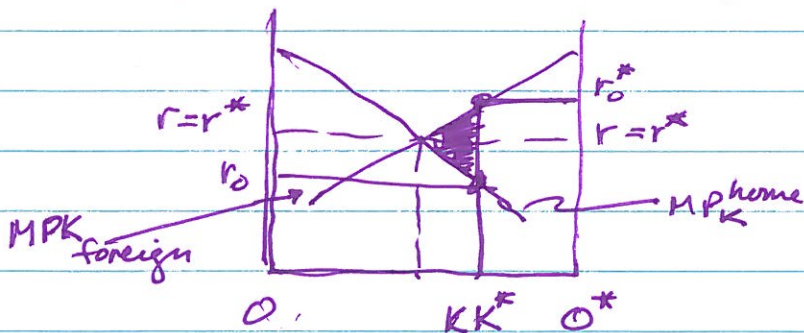
Now suppose you need only a single currency: ~~and~~

$$\sqrt{300} = \sqrt{3 \cdot 100} = \sqrt{3} \cdot \sqrt{100} = \sqrt{3} \cdot 10$$

1.7 · 10

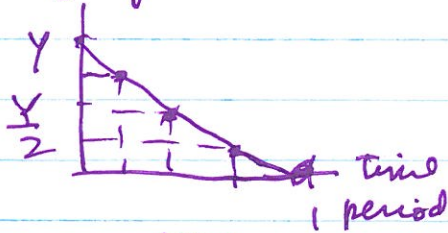
Clearly there is an efficiency gain from the single unit proportional to the number of countries \sqrt{n} vs. n !

- Interest rates will be similar throughout the region with capital mobility
- Wages will tend toward equality as labour can migrate



The shaded area is the efficiency gain.

- (1) Suppose you earn Y each year.
 (2) " " " spend it all evenly. Then the average you have in the bank is $Y/2$



- (3) Suppose you withdraw money Q times during the year. Then average holdings are $(\frac{Y}{2})/2$. If you make N withdrawals then average holdings are $\frac{Y}{2N}$.

- (4) If for each withdrawal you pay: b , then the cost of N transactions is $b \cdot N$

- (5) If you receive interest on your account, then the opportunity cost of your money holdings are

$$\text{Cost of Trans.} = bN + i \frac{Y}{2N}$$

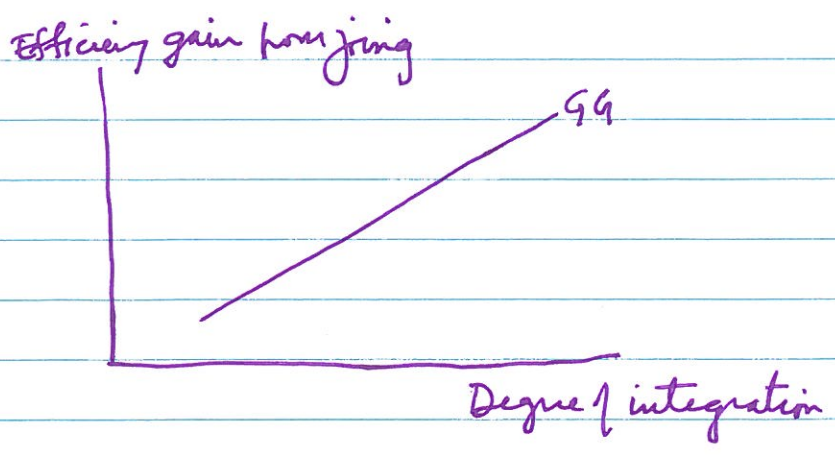
Minimize your costs by choosing transactions, N :

$$\frac{dC}{dN} = b - \frac{iY}{2N^2} = 0$$

$$\text{Cost} \left| \frac{Y}{2N} \right|$$

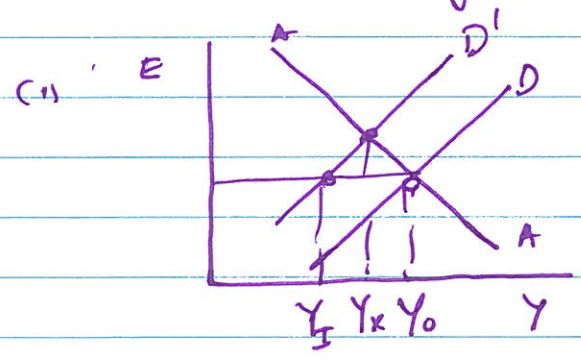
$$N = \sqrt{\frac{Yi}{2b}} \Rightarrow \text{Average holdings are } \frac{Y}{2N}$$

$$\frac{Y}{2N} = \frac{Y}{2 \left(\frac{Yi}{2b} \right)^{1/2}} = Y^{1-1/2} Y^{-1/2} i^{-1/2} 2^{-1/2} b^{1/2} = \sqrt{\frac{bY}{2i}}$$



Costs of Monetary Union

Give up exchange rate for stabilization
 " " monetary policy for "



Shift in $D \rightarrow D'$
 Y_f associated w/ fixed
 Y_x " w/ flexible

Greece ?

- * by allowing home goods to become cheaper relative to foreign goods
- * otherwise wages have to fall!

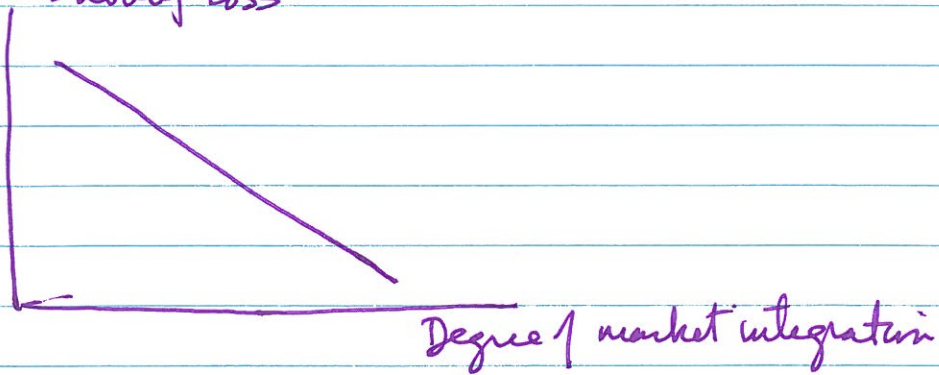
In general if want to use monetary policy, then the costs of stabilization increases.

Now what about integration? (1) IF the shocks are to distinct regions, then the costs are high.

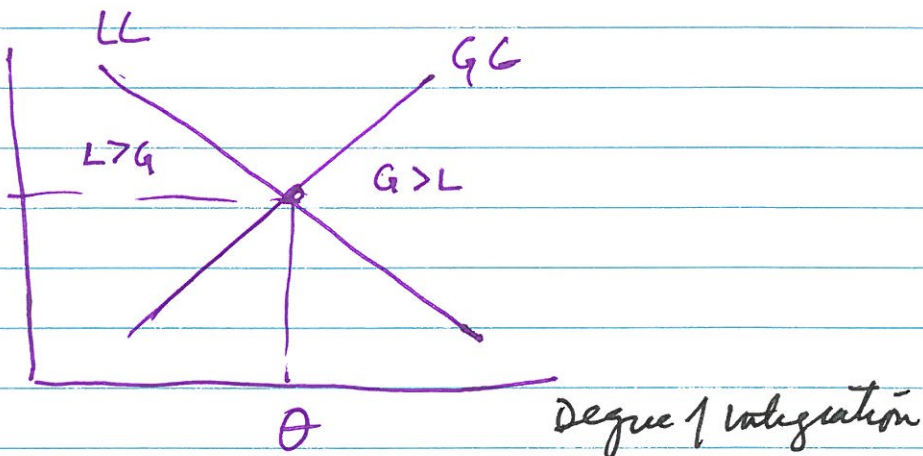
(2) As several regional markets look more like a single market, then policy that is good for one is good for all.

(3) Factors flow easily to adjust wages + prices.

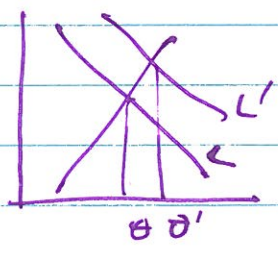
Economic Stability Loss



Combined



Increase in the shocks hitting export demand — their variability



Europe & the Euro

- (1) Not a fiscally unified region
- (2) This is 12 years later, maybe there are kinks in the system: a work in progress?
 - (*) Think of the US
 - (*) Articles of Confed
 - (*) Constitution: a decade - no a century or two centuries to get current levels of economic integration.
- (3) Europe is not as integrated (now).
 - * Labour mobility is not as great
- (4) There were significant differences among countries. Costs of borrowing were lower and Greece, Portugal, Italy, ^{Ireland} Spain ran up their debts

Greek options (and others)

Return to own currency

- owe Euro's → still a crisis for bondholders
- relative prices will adjust through E.

Keep Euro

- Wages will have to fall to adjust
⇒ labour will emigrate
- No new debt and some fraction of old has to be paid (But this is a political negotiations) as there is no default mechanism or rule like Chapter 11 or 9.

Who will bear the costs of adjustment

(1) Owners of Greek debt

- reduced if bailed out by Euro-area taxpayers

- Helps ~~to~~ Greece w/ lower debt repayments
- Hurts taxpayers

(2) Contagion as banks become less stable & are bailed out by taxpayer, but if they can't do it; banking crisis.

(3) Does Euro banking authority become a lender of last resort & print money like the US Fed has done?

(Expansion of European ^{Financial} Stability Facility)

(4) Greece out of EU? So what? The losses have already been incurred.

Basic problem of sovereign debt. Can't appropriate assets. That is, no collateral.