Morris & Shin (AER, 1998)

- MS show that the existence of multiple equilibria in 2nd generation currency crisis models depends crucially on the assumption of Common Knowledge - you Know what other speculators are going to do. If instead speculators have "imperfect common knowledge", arising from idiosyncratic private information, then multiple equilibria disappear, and a unique equilibrium is generated.

- MS show that an important aspect of currency crises is the "quality" of information conveyed to the market (i.e., to what extent it is Common Knowledge).

Assumptions

1.) A continuum of speculators on the interval [0,1] must decide whether to attack a pegged exchange rate. There are only 2 possible actions "attack" or "don't attack".

2.) Each speculator has one unit of domestic currency.

3.) The state of fundamentals is described by a parameter θ, uniformly distributed on $[0, 1]$. A high value of θ represents "strong fundamentals".

4.) The shadow floating ex. rate is defined as $f(\theta)$ [where the ex. rate is defined as the value of domestic currency]. $f' > 0$

5.) The ex. rate is pegged at a value $\bar{e} > f(\theta)$, $\forall \theta$. Therefore, $\bar{e} - f(\theta)$ is the profit to speculators from a devaluation.

6.) However, speculators must pay a fixed cost, t, to take a position. Net profits are therefore $\bar{e} - f(\theta) - t = D(\theta) - t$. $D' < 0$ and $D(1) < t$ [if fundamentals are really strong, then it doesn't pay to attack, even if everyone does].

The payoff matrix to a speculator is therefore

	"success"	"failure"
Attack	$D(\theta) - t$	$-t$
Don't Attack	0	0

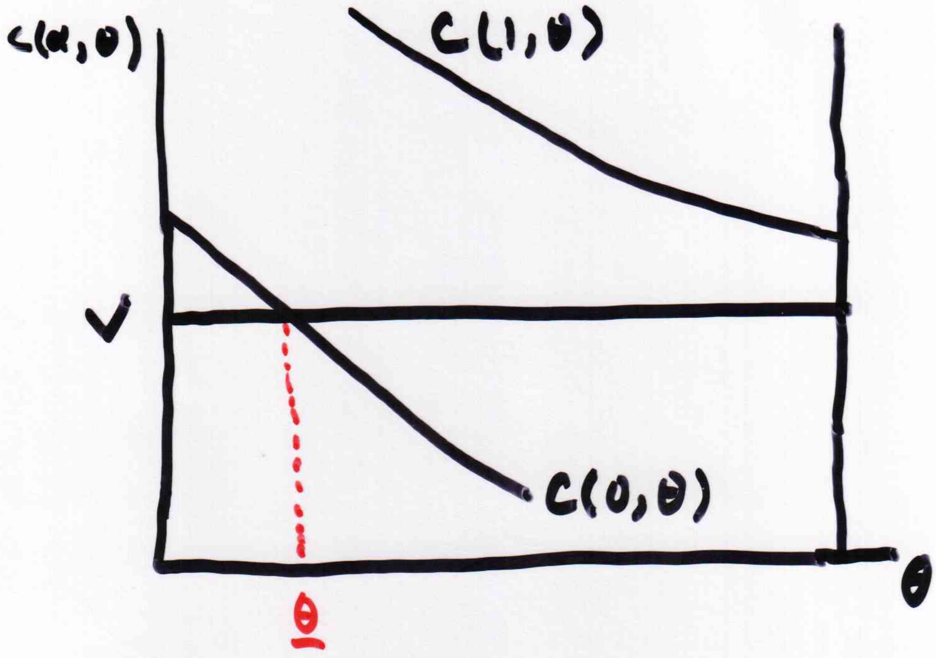
Unfortunately, speculators don't know θ, nor do they know whether an attack will succeed.

7.) The Central Bank derives a payoff of V from maintaining the peg. It faces a cost, C, of defending the peg. C decreases with θ, and increases with the proportion, α, of speculators who attack the peg, i.e.,

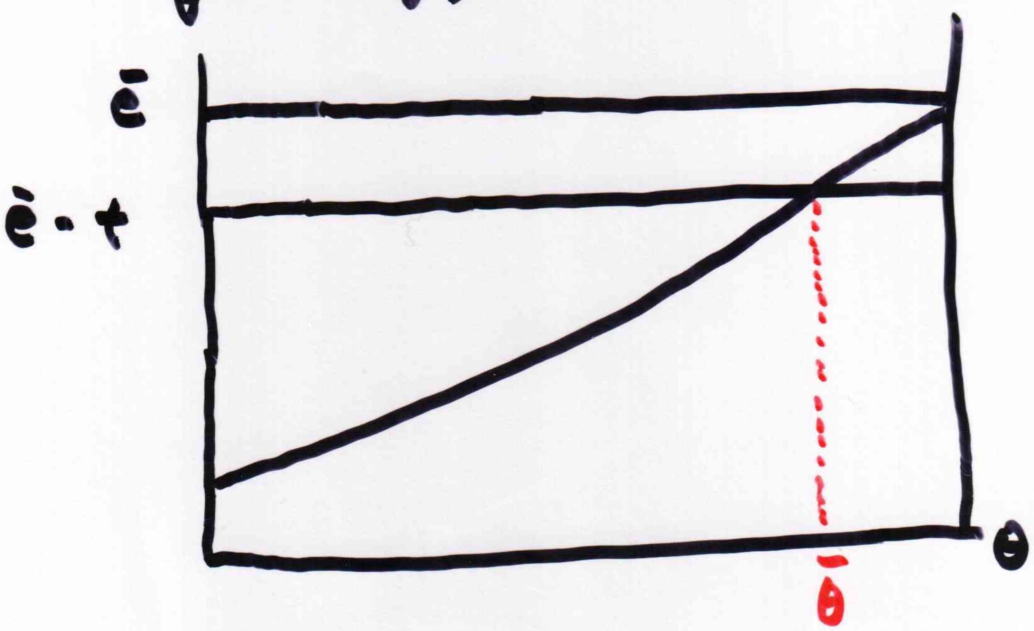
$$C = C(\overset{+}{\alpha}, \overset{-}{\theta})$$

Assume $C(0,0) > V$ [when fundamentals are really bad, the CB abandons the peg no matter what], and $C(1,1) > V$ [when everybody attacks, the CB abandons the peg, no matter how strong fundamentals are].

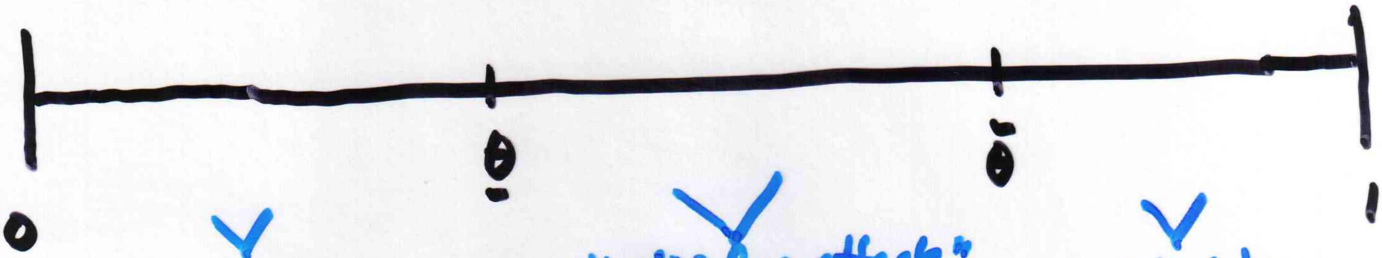
The following graph depicts these assumptions



8.) $\bar{e} - f(1) < t$ [when fundamentals are really strong, it doesn't pay to attack].



These assumptions divide the space of fundamentals into 3 regions:



Unstable
CB devalues no matter what
Unique Equil.

"ripe for attack"
CB decision depends on how many attack
Multiple Equil.

Stable
Dominant action is not to attack
Unique Equil.

9.) Speculators do not observe θ. Each receives an independent noisy signal, x_i, of θ. x_i is uniformly distributed around θ, $x_i \in [\theta - \varepsilon, \theta + \varepsilon]$.

<u>Note</u>: Signals are correlated. Your signal tells about θ <u>and</u> other people's signals

Timing

1.) Nature draws θ

2.) Traders observe signals, x_i, and simultaneously decide whether to attack.

3.) CB observes θ and the number of attackers, and then decides whether to hang on or devalue.

Theorem: There is a unique θ^* such that, in any equilibrium the CB abandons the peg if and only if $\theta \leq \theta^*$