Development Economics

Slides 6

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Too Little Convergence in the Data

Too little convergence, unless we keep conditioning …

- …savings rates, human capital

- political variables such as democracy

- cultural variables such as corruption or work ethic

- religious variables …

- Insufficient emphasis on the **process:**

- endogenous variable $\longrightarrow$ economics $\longrightarrow$ endogenous variable

## Divergence, or Development Traps

Divergence:

- Past history of actions influences future outcomes

- **As opposed to convergence**, where the influence of history vanishes

- Must be careful not to swing to either extreme

- e.g., Remember leapfrogging example in problem set

- Or recent signs of unconditional convergence
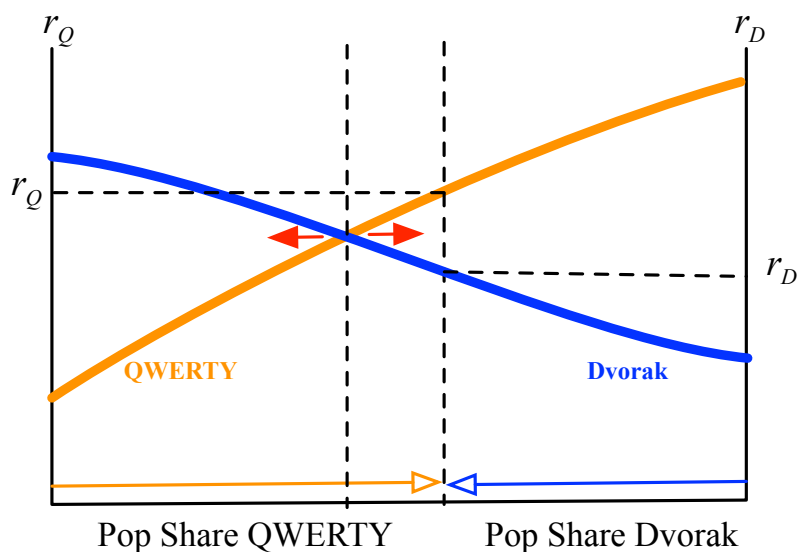

Congestion: An Example of Convergence

A Tale of Two Highways
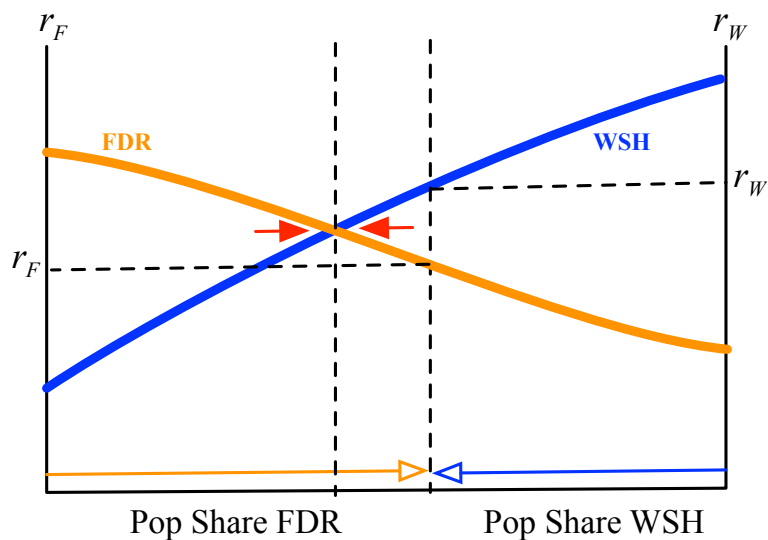
QWERTY: An Example of Divergence

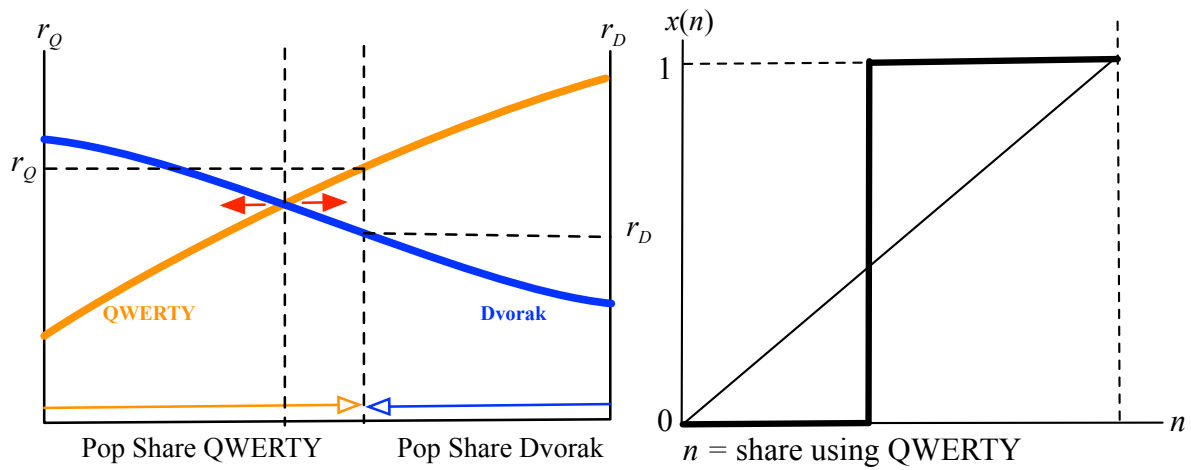**A Tale of Two Technologies**

Complementarities

Basic Setup:

- Two actions: call them **Up** and **Down**.

- $n =$ fraction of population expected to choose Up.

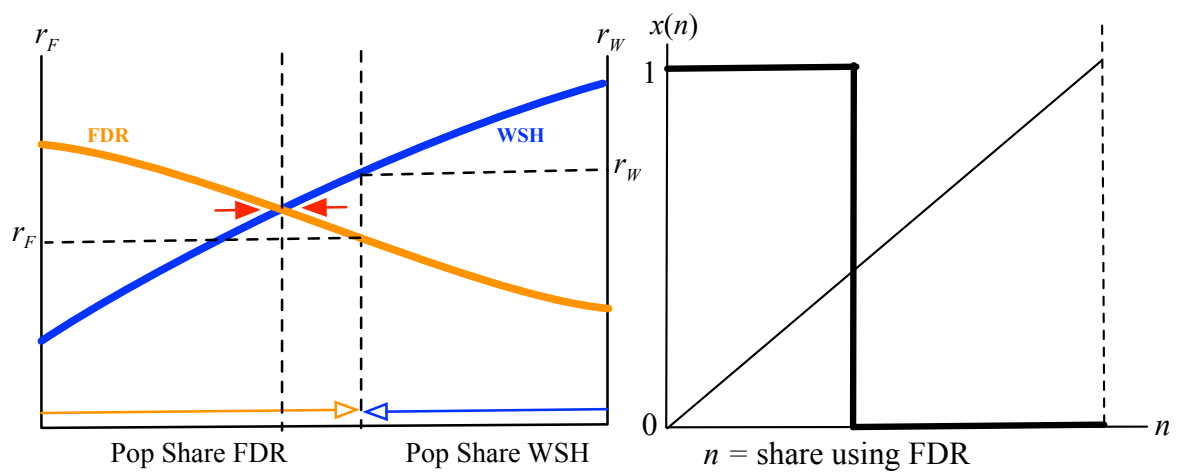- $x(n) =$ fraction of population who want to choose Up, under the expectation that n will.

Complementarity: $x(n)$ is an increasing function.

- Can generalize this idea to intensity of actions, not just binary.

QWERTY Revisited

Pop Share QWERTY   Pop Share Dvorak

n = share using QWERTY

FDR Revisited

Pop Share FDR   Pop Share WSH

n = share using FDR

Examples

Technology. Macs vs PCs, iOS vs Android, dating platforms, social media ...

- Network externalities.

Infrastructure. Public sector covers fixed and variable cost:

- $p(n) = v + (F/n)$.

Finance. Thicker financial market $\Rightarrow$ higher diversification.

- $\Rightarrow$ Easier for individual to invest $\Rightarrow$ thicker market.

Social Capital. Migration destroys traditional social networks.

- Feeds back to increase migration.

Examples

Corruption.

- More corruption means an individual less likely to be caught.

- Or think about crime and looting during public riots.

Norms.

- Throwing garbage in public spaces

- Waiting one's turn, queueing, joining a revolution

Currency Crises.

- Sell because others are selling.

Statistical Discrimination.

- Discriminated groups don't "invest", discrimination continues.

History Versus Expectations

Recall our basic setup:

- Two actions: call them **Up** and **Down**.

- $n =$ fraction of population expected to choose Up.

- $x(n) =$ fraction of population who want to choose Up, under the expectation that n will.

- Based on **expectations.**

History Versus Expectations

Recall our basic setup:

- Two actions: call them **Up** and **Down**.

- $n =$ fraction of population ~~expected to choose~~ **who chose** Up.

- $x(n) =$ fraction of population who want to choose Up, under the ~~expectation that n will~~ **observation that n did so in the past**.
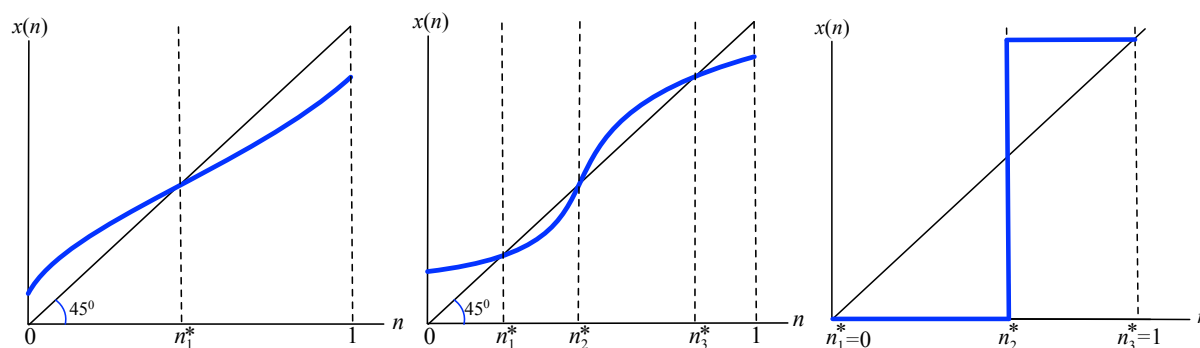
- Based on ~~expectations~~ **history.**

Examples:

- Expectations: Currency crises, sudden looting, fashion....

- History: Social capital, network externalities, discrimination...

But generally a mix of history and expectations in all examples.

The Complementarity Map

- **Maps from** n — the fraction expected (or observed) to take an action —

- **To** $x(n)$ — the fraction then incentivized to take that action.

- Upward-sloping for complementarities:

- As in all of our examples so far, except ...?

The Complementarity Map

- **Equilibria** (expectations) or **steady states** (history):

  Intersections of $x(n)$ with the 45° line.

- **Unique or multiple outcomes** possible:

  How does this relate to convergence and divergence?

Stability and Instability
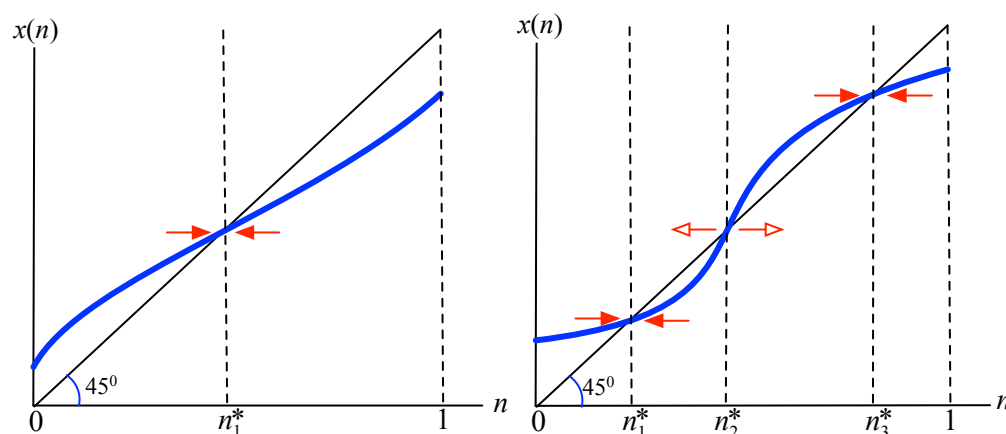
Stability: whether system moves away from steady state after perturbation:

- whether $x(n)$ crosses $45°$ from "above" (stable) or "below" (unstable).

■ Notice how **temporary policies can have permanent effects**.

Another Example: Joining the Revolution

Tahrir Square

■ **Benefits and costs:**

- Success: B to each participant. Failure: L to each participant.

- Bystander gets 0 payoff no matter what happens.

■ **Probability of success** $p(n)$, where n is # joining revolution.

- $p(n)$ is increasing, with $p(0) = 0$ and $p(1) = 1$.

Another Example: Joining the Revolution

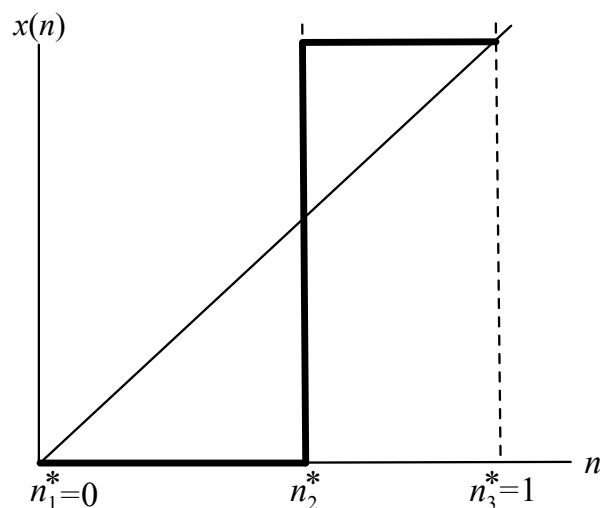■ If n people expected to join, how many **want** to join?

▪ **Join** if $p(n)B - [1 - p(n)]L > 0$, or

$$B > \frac{1 - p(n)}{p(n)}L.$$

▪ **Don't join** if the opposite inequality holds (indifferent if equality).

■ **Generates a simple complementarity map.**

Another Example: Joining the Revolution

$$B > \frac{1 - p(n)}{p(n)}L.$$

■ See book for more based on this model.