Complementarity between Community and Government in Enforcing Norms and Contracts

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Introduction

"The key to successful economic exchanges here is not necessarily an impartial and efficient third-party enforcing agency, but the existence of a level of trust or other self-enforcing institutions within relevant networks of commerce, credit, wage-labor, and other contractual relations that support free market activities. In other words, the state is neither necessary nor sufficient. The simple model in which it is only the state and threat of its justice and police systems that makes people behave cooperatively seems a poor description of any known situation."

– Joel Mokyr (2008)
"The institutional origins of the industrial revolution"

Market and Communities

Market: large population, anonymous

- more efficient (economies of scope, scale ...)
- "one-shot" transactions, needs third-party enforcement (costly)

Community: limited size, non-anonymous

- less efficient
- repeated relationship, can be self-enforcing

Is it useful to use both together?

Complementarity between community and market

Reputation as good citizen in a community is valuable: provides reciprocal help

"... a social convention that defined 'gentlemanly' or 'polite' behavior and penalized serious deviations from it through irreparable damage to one's reputation, supplemented formal (legal) relations with a moral code that enabled an effective mode of transacting without relying on the State except in extremis."

– Joel Mokyr (2008)

Risk of losing reputation provides incentives:

- *not just inside community, but also outside*

Key Findings

Misbehavior on the market also hurts one in the community

Community and market are incentive complement

- both used together can be more efficient than either alone
- discountinuities: use non-trivial amounts of each, or one-or-the-other
- greater complementarity when information passes more freely between the two

Supernatural belief buttresses community and formal enforcement

- extends the range of complmentarity

Corruption erodes complementarity as community loses faith in formal enforcement - discontinuous drop in welfare

Community/reputations help enforce cooperation: Coleman88, Ostrom90, Kandori92, Greif93, Fearon-Laitin96, Aoki01, Casari07, Mokyr08, Spagnola99, Ellickson09, Acemoglu-Jackson17, Bernstein92, Tsai07, Ellickson09
Ostracism provides incentives: Ardener64, Besley-Coate-Loury93, Anderson-Baland-Moene09, Jackson-Rodriguez-Tan12, Ali-Miller16 ...
Community only works to scale: Dixit03ab, Greif-Tabellini10,17
Market/state depends on circumstances: Acemoglu-Johnson-Robinson01, Persson02, Tabellini10, Besley-Persson11, Acemoglu-Robinson12, 17 ...

Empricial evidence on formal and informal institutions
Macleod-Malcomson89, Aoki-Hayami01, Poppo-Zenger02, Lazzarini-Miller-Zenger04, Cook-Hardin-Levi05, Banerjee-Chandrasekhar-Duflo-Jackson19 ...
Contract incompleteness MacLeod-Malcomson89, Lazzarini-Miller-Zenger04; Cook-Hardin-Levi05, BodohCreed17 ...
"Crowd-out" Arnott-Stiglitz91, Kranton96, Gagnon-Goyal17 ...
Norm/culture and institutions Benabou-Tirole11, Besley-Jensen-Persson-14, Alesina-Giuliano15, acemoglu-jackson17, Bisin-Verdier17 ...
Privacy: Daughety-Reinganum10, Acquisti-Taylor-Wagman16, Ali-Benabou16
Transparency: Gavazza-Lizzeri09, Forssbaeck-Oxelheim14 ...
Religion can facilitate cooperation: Atkinson-Bourrat11, Levy-Razin12 ...
Beliefs in gods: Roes-Raymon 03, Henrich etal10, Norenzayan et al16
Guilt as motivator: Schaumberg-Flynn18 ...
Corrupt Community: Leff64, Shleifer-Vishny93, Mauro95, Sanchez delaSierra-VanDerWindt-Humphreys15, RoseAckerman-Palifka16

Outline

Model

- community and market
- complementarity between them
- effects of religion, corruption

Implications and Conclusion

Community and Market Differ in Enforcement

Large population split into many communities

Community – enforced by future reciprocation

- *small* (e.g., 100 - 150 people), non-anonymous
- immediately hears if someone does something wrong inside

Market – enforced by formal policing, courts, and fines

- *large*, anonymous
- impossible to track other people's pasts

Tasks

Each agent has one task to be done in every period
(moving, repairs, borrowing money, watching kids ...)

Some tasks done via the market, some in the community

We examine how society works depending on that mix:
q is fraction within community, $1 - q$ market

Costs and Gains from Trade

- t_s cost of doing task self
- t_c cost of doing task community
- t_o cost of doing task outside on market

- $t_s > t_c > t_o$:
  economies of scope/scale

Incentives: Carrots and Sticks

Incentives to perform a task ...

Community: *Carrots*

- Value of reciprocation (per unit task)

$$V \equiv \frac{\delta}{1-\delta}(t_s - t_c)$$

Outside: *sticks*

- ϕ probability of being found guilty/fined
- f fine
- ψ chance that community learns of guilt

Incentive Constraints: No Deviation Conditions

"Social norm" specifies which tasks done in community (fraction q), the other done outside/'market' $(1-q)$

- IC community: $\underbrace{t_c}_{\substack{\text{cost of} \\ \text{com task}}} \leq \underbrace{qV}_{\substack{\text{value of future} \\ \text{com interactions}}}$

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- IC market: $\underbrace{t_o}_{\text{cost of outside task}} \leq \underbrace{\phi(f}_{\text{fine if caught}} + \underbrace{\psi qV)}_{\text{loss if seen/ ostracized}}$

Incentive Constraints: No Deviation Conditions

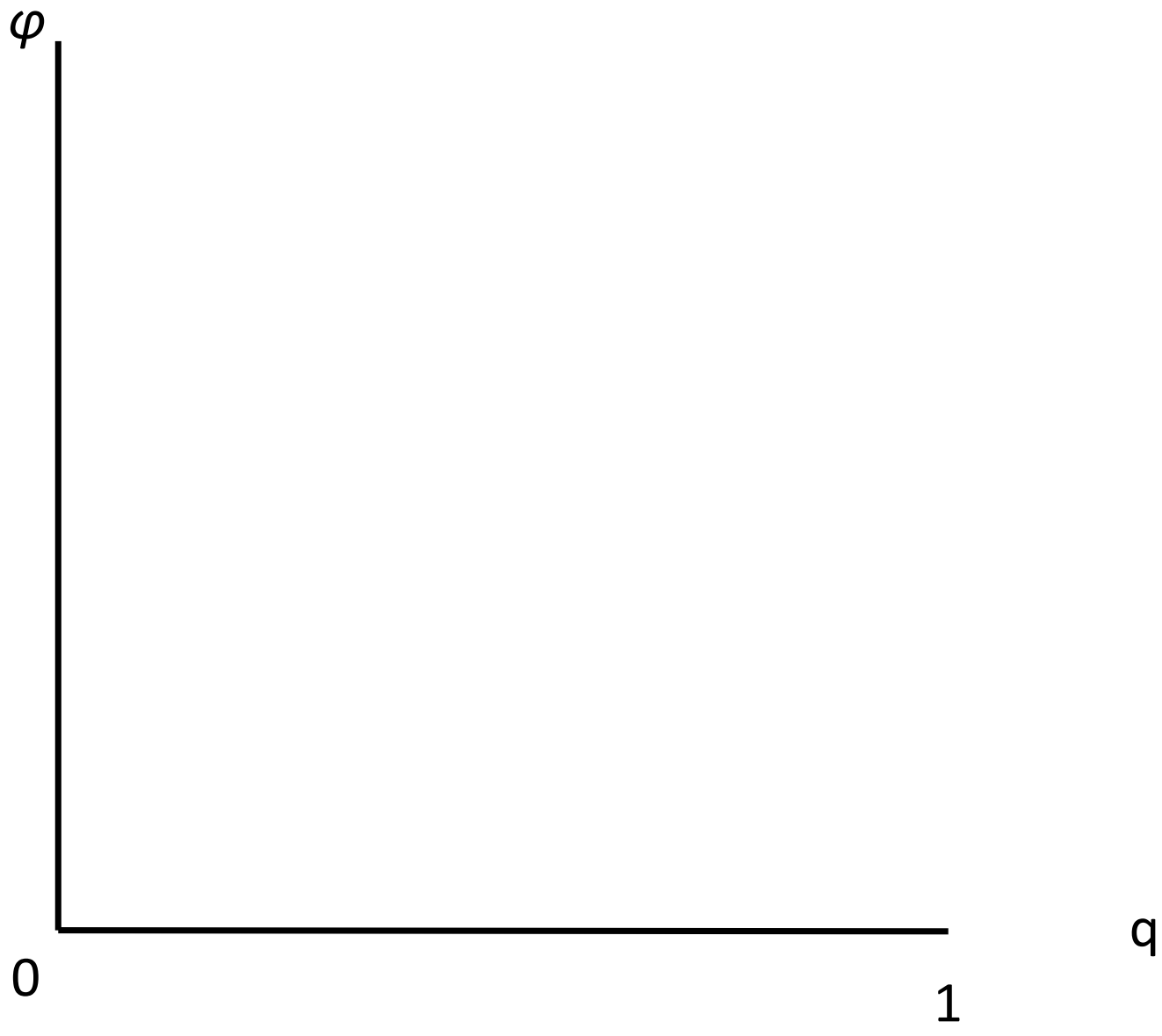
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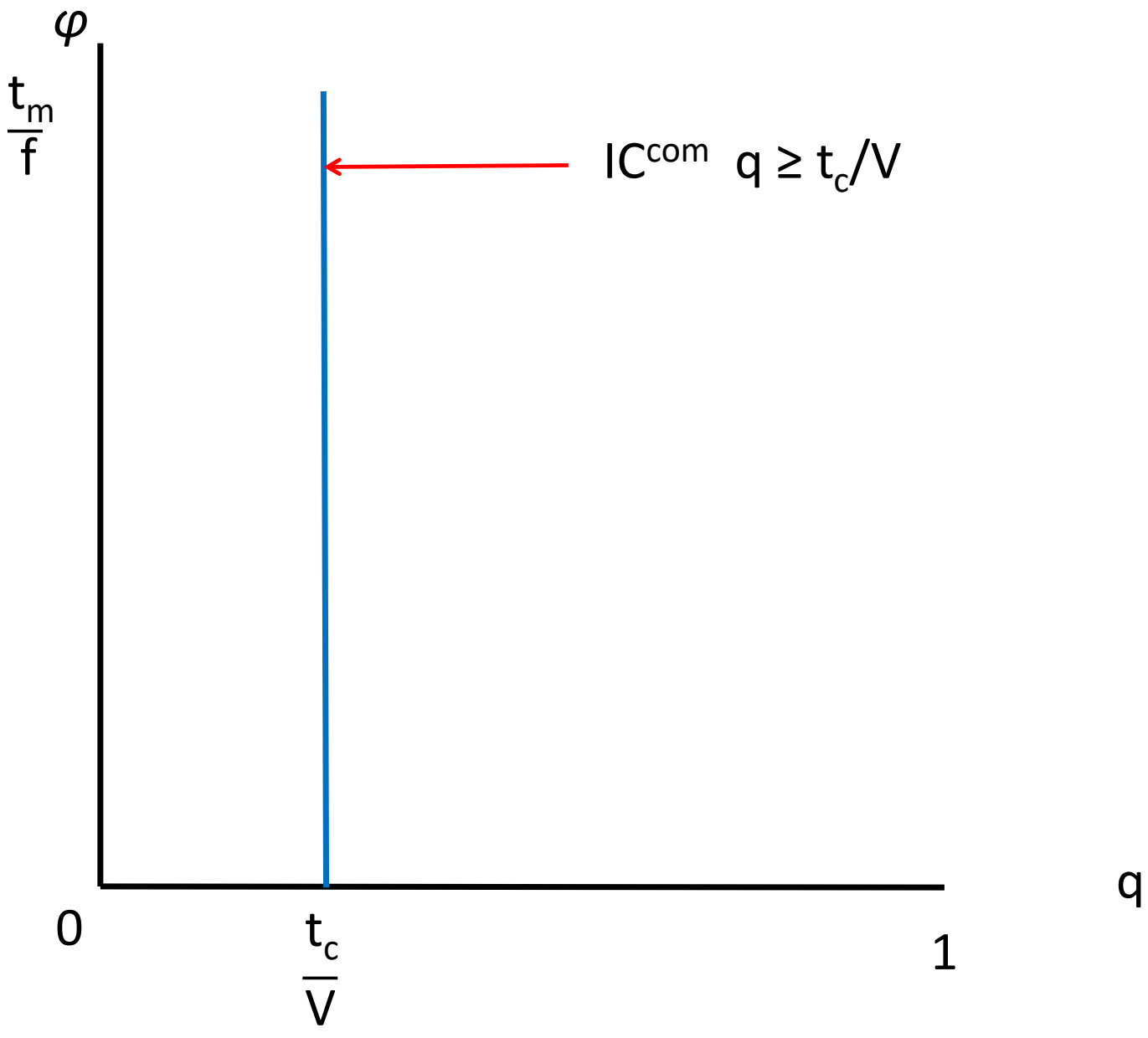
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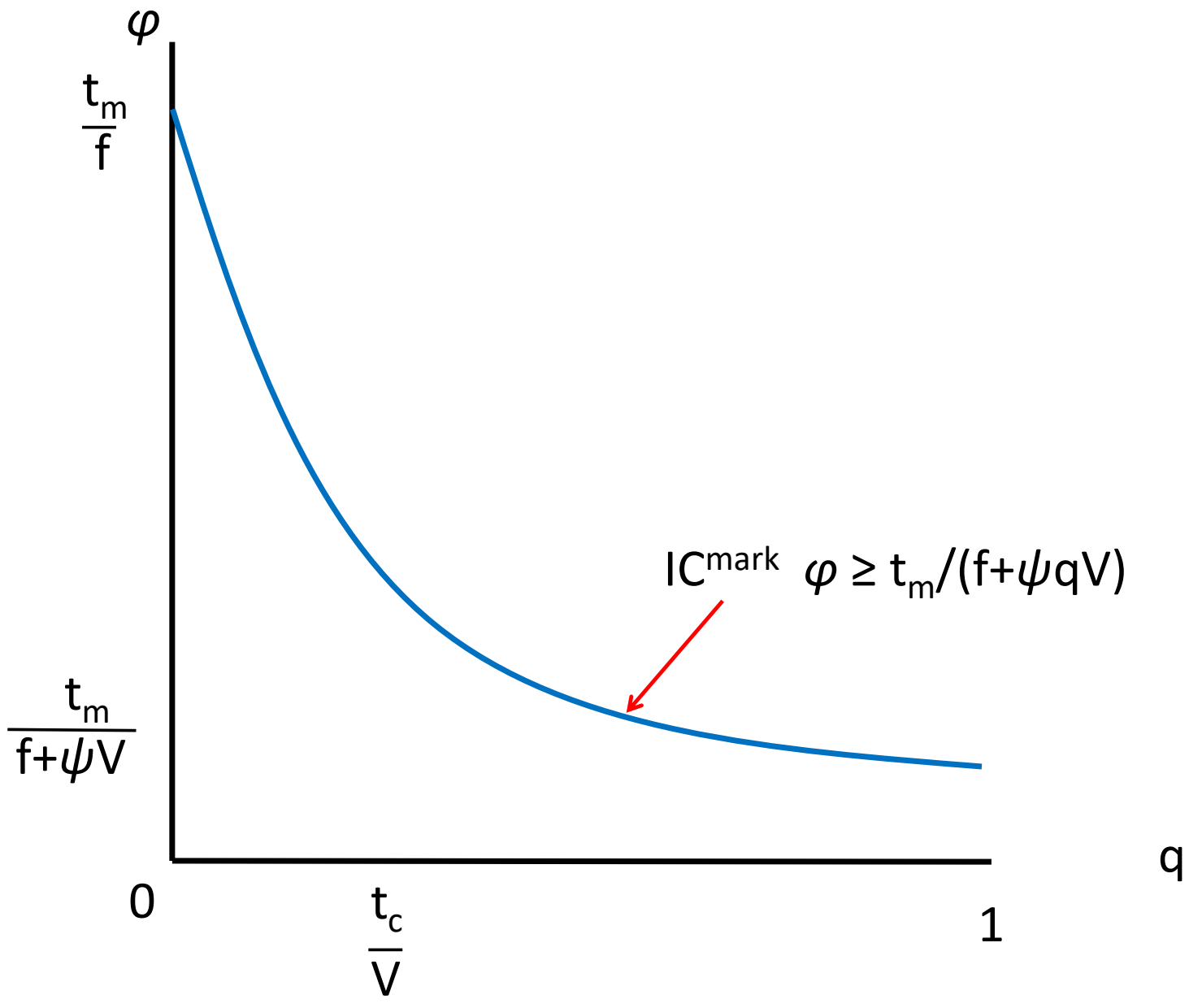
Key to Complementarity

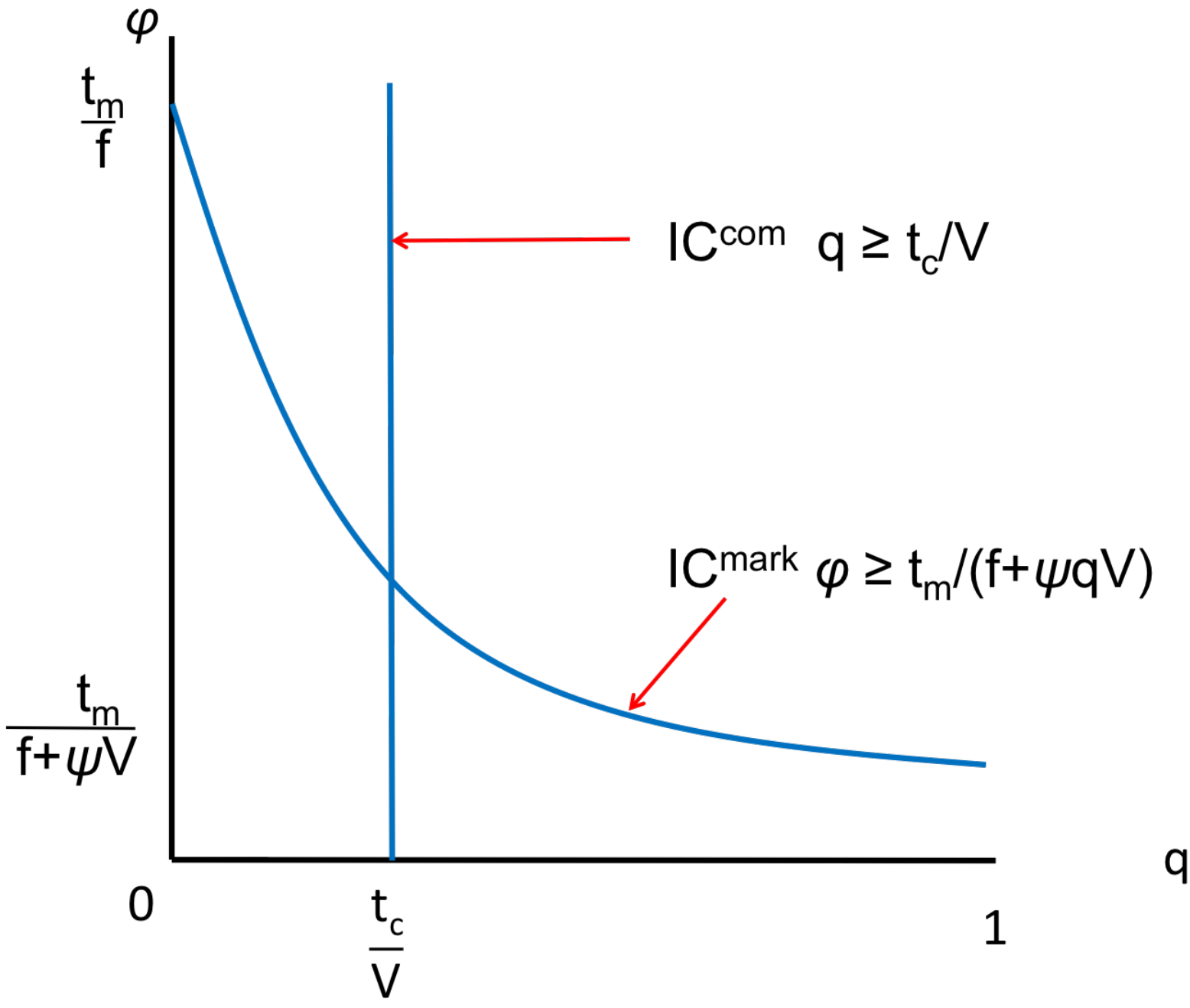
Community learns the guilt

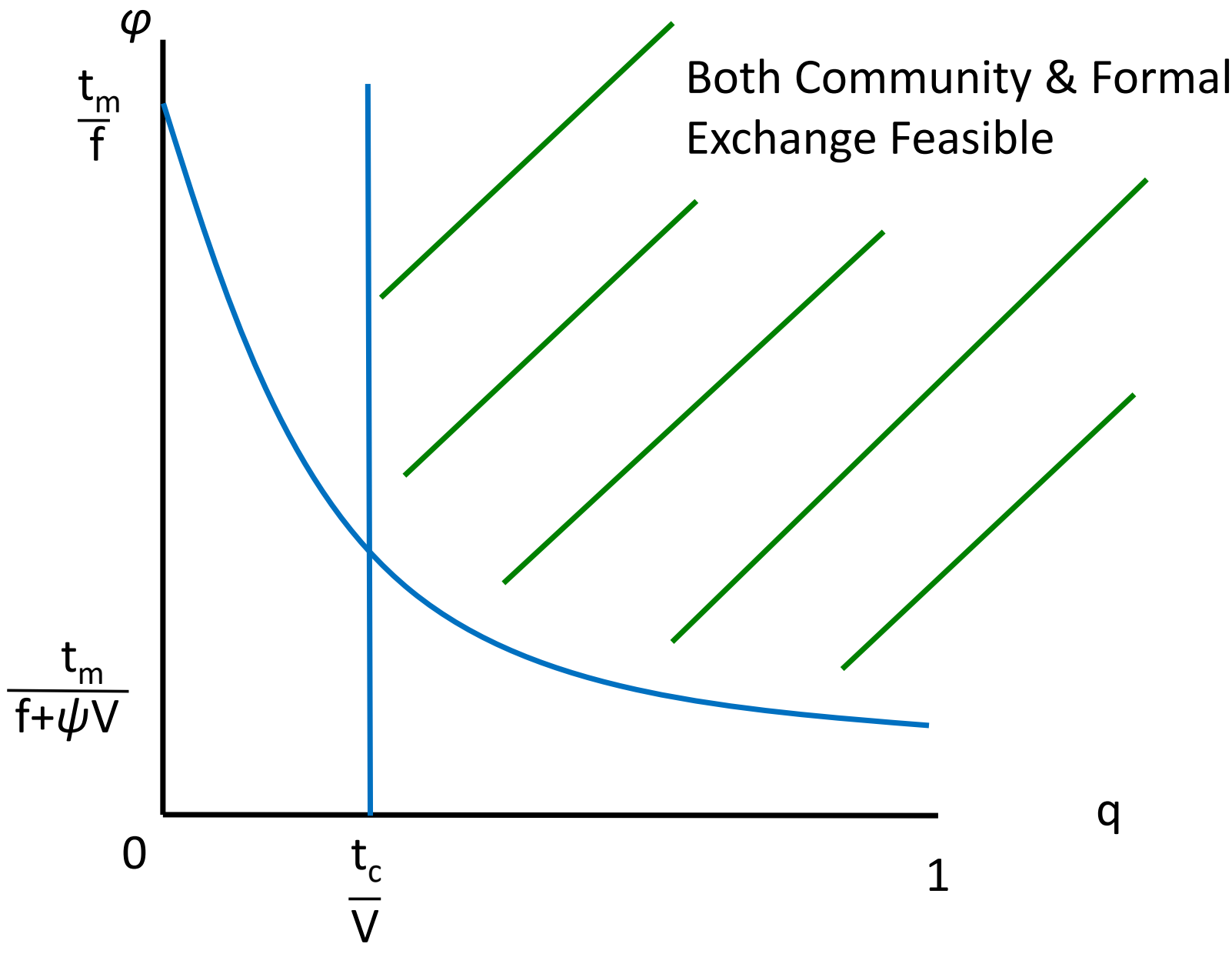
- mo, qing, tattooing face in China (five punishments)
- published police logs, malpractice suits, public lists of convicts
- auto-da-fe in Spanish/Portuguese Inquisition


φ
q
0
1


φ
$\frac{t_m}{f}$
IC^{com} $q \geq t_c/V$
0
$\frac{t_c}{V}$
1
q


φ
$\frac{t_m}{f}$
IC^{mark} $\varphi \geq t_m/(f+\psi qV)$
$\frac{t_m}{f+\psi V}$
q
0
$\frac{t_c}{V}$
1


φ
$\frac{t_m}{f}$
IC^{com} $q \geq t_c/V$
IC^{mark} $\varphi \geq t_m/(f+\psi qV)$
$\frac{t_m}{f+\psi V}$
q
0
$\frac{t_c}{V}$
1


φ
$\frac{t_m}{f}$
$\frac{t_m}{f+\psi V}$
Both Community & Formal
Exchange Feasible
0
$\frac{t_c}{V}$
1
q

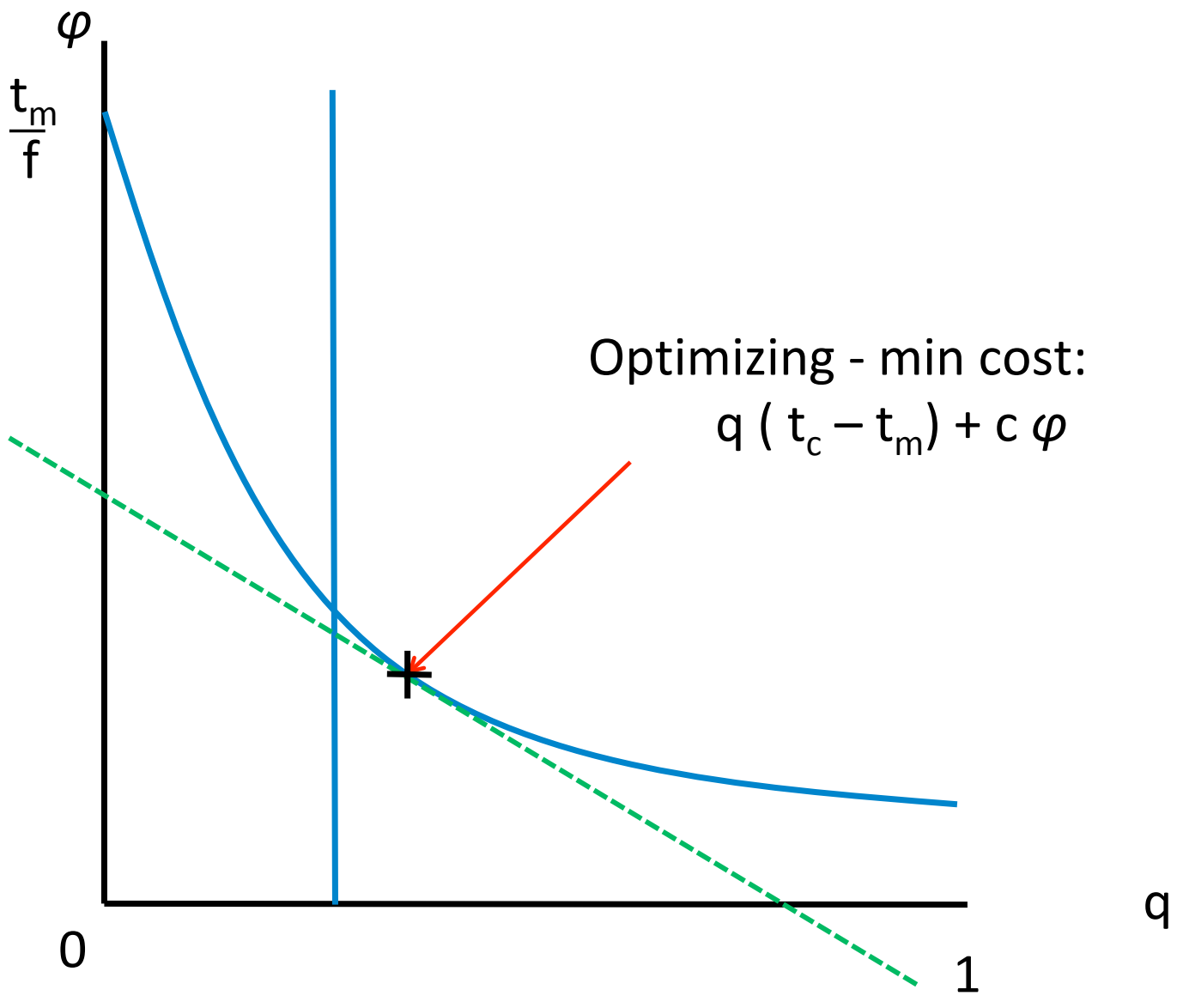
How Well does a Society Do?

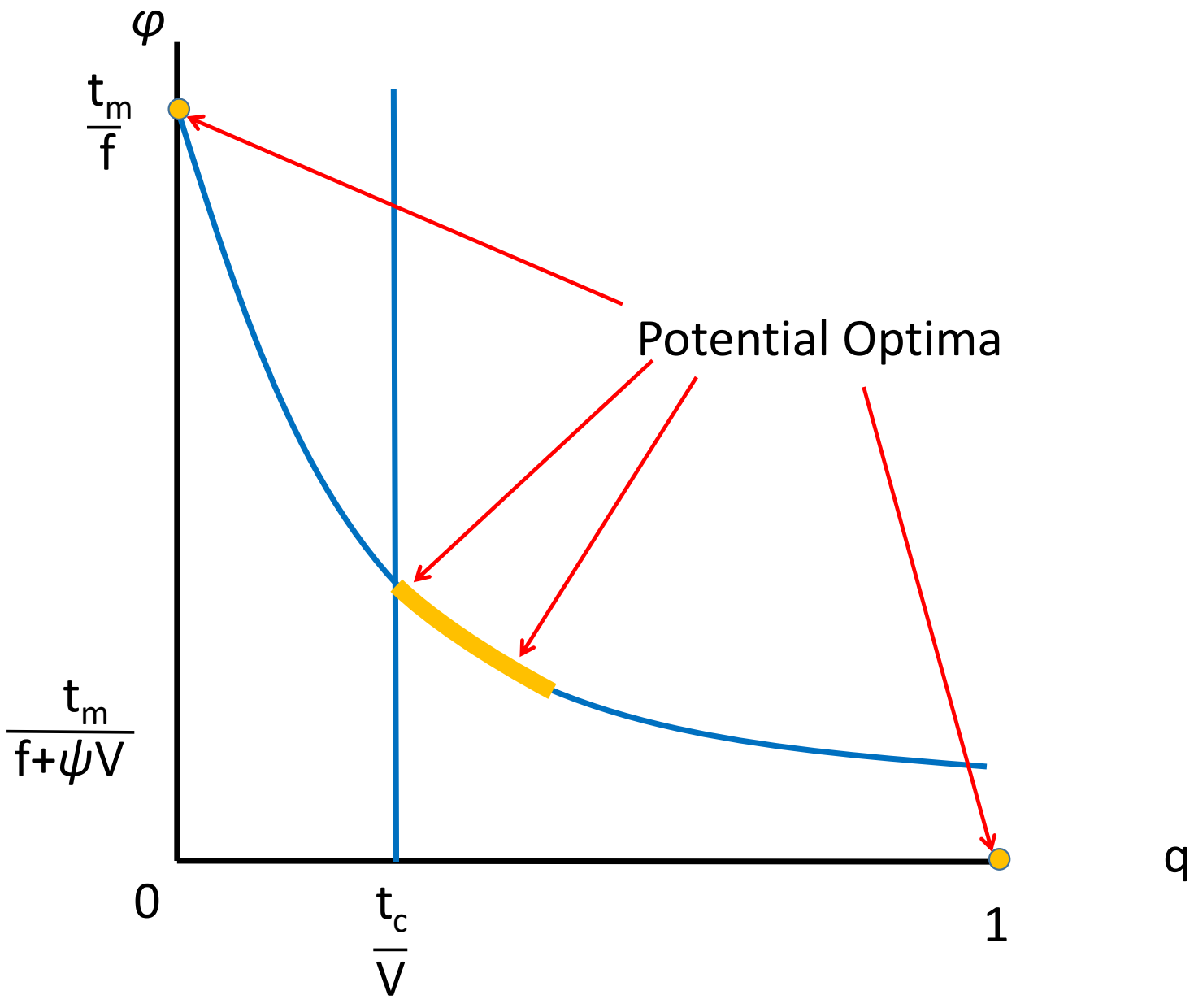
Maximizing welfare equivalent to

$$\min_{(\phi,q)} \quad \underbrace{qt_c + (1-q)t_o}_{\text{task costs}} + \underbrace{c\phi}_{\text{formal enforcement cost}}$$

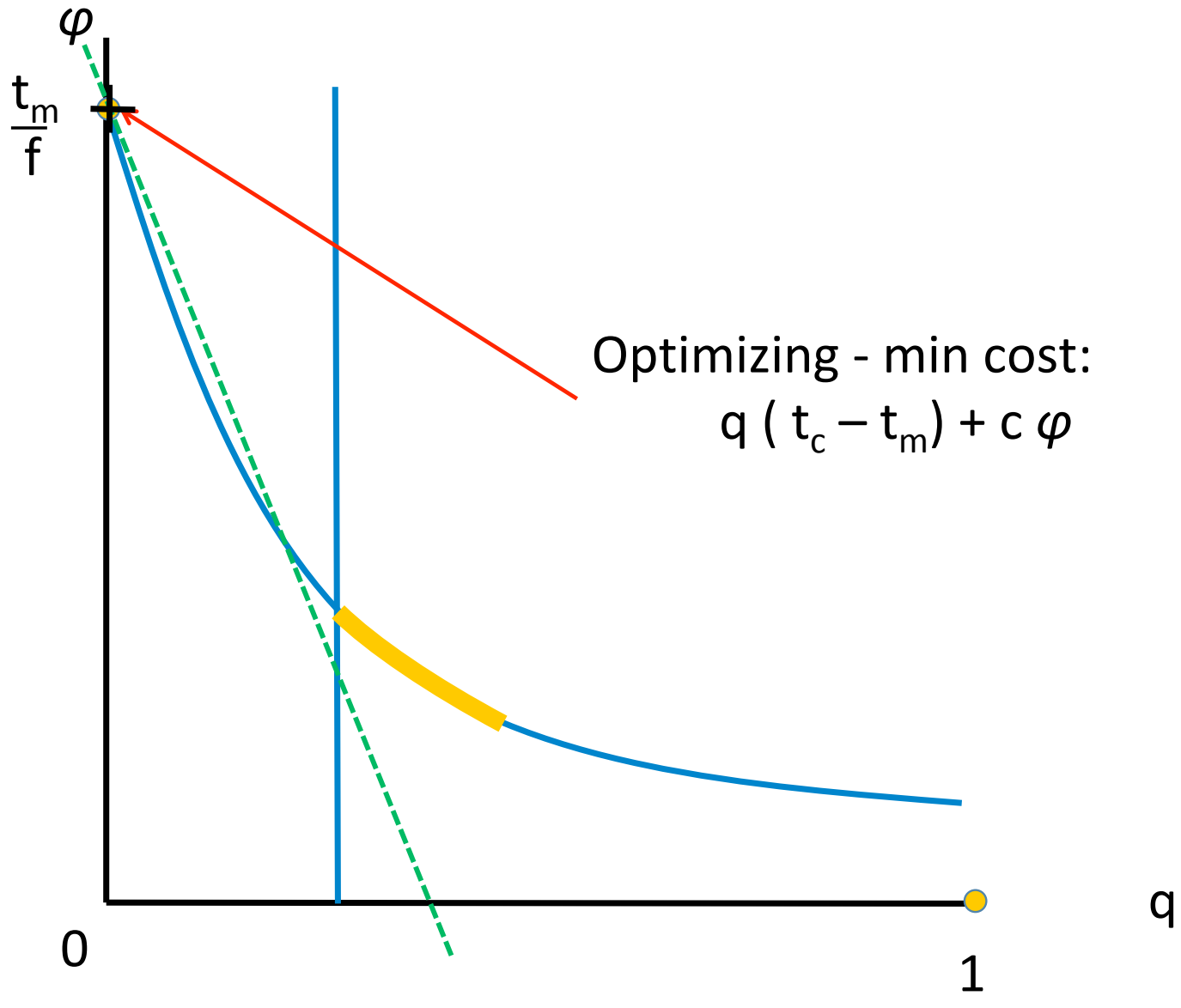
$$s.t. \qquad IC^{com} \text{ holds if } q > 0$$

$$IC^{mark} \text{ holds if } q < 1$$

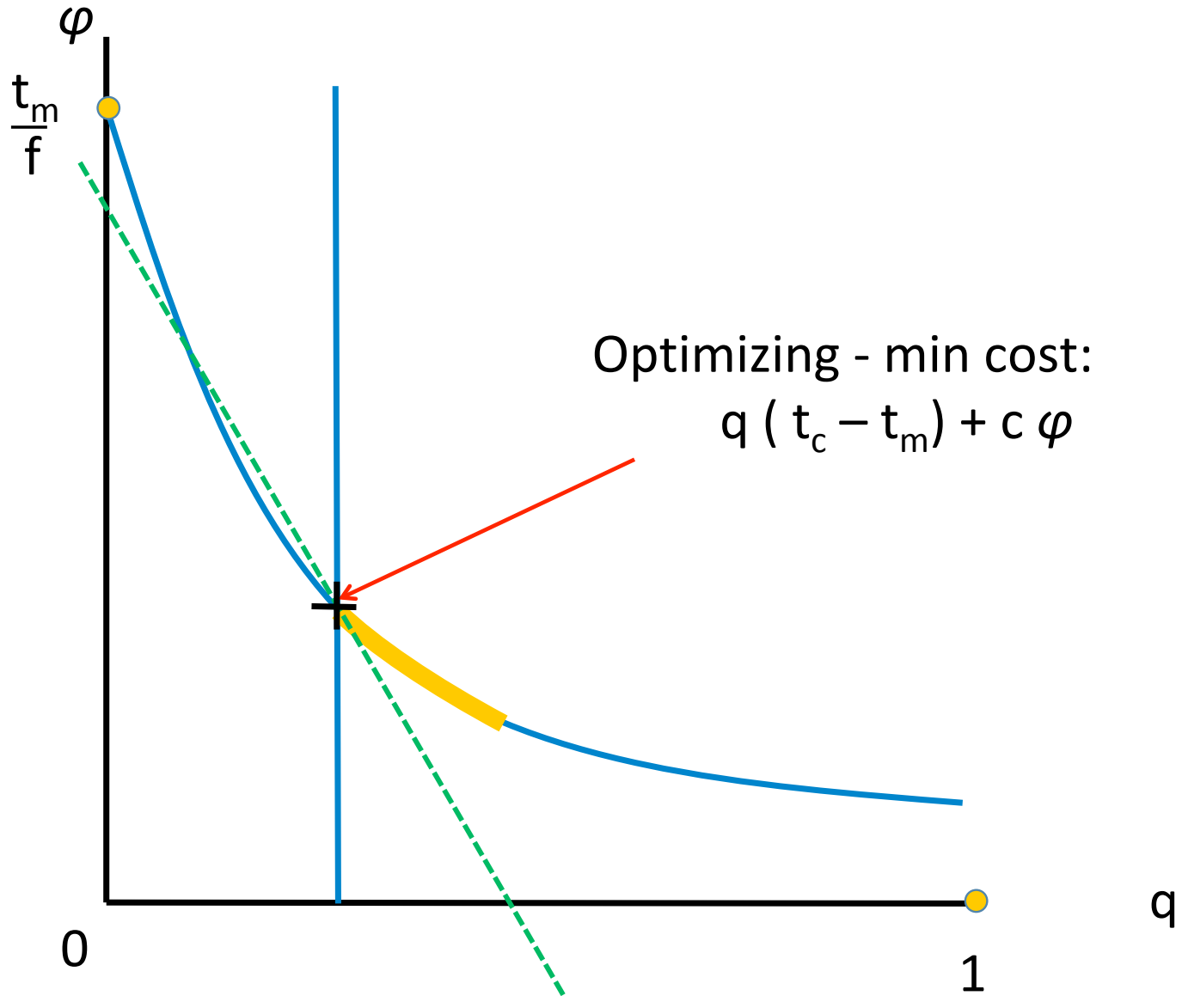

φ
$\frac{t_m}{f}$
Optimizing - min cost:
$q\,(t_c - t_m) + c\,\varphi$
0
1
q


φ
$\frac{t_m}{f}$
Potential Optima
$\frac{t_m}{f+\psi V}$
0
$\frac{t_c}{V}$
1
q

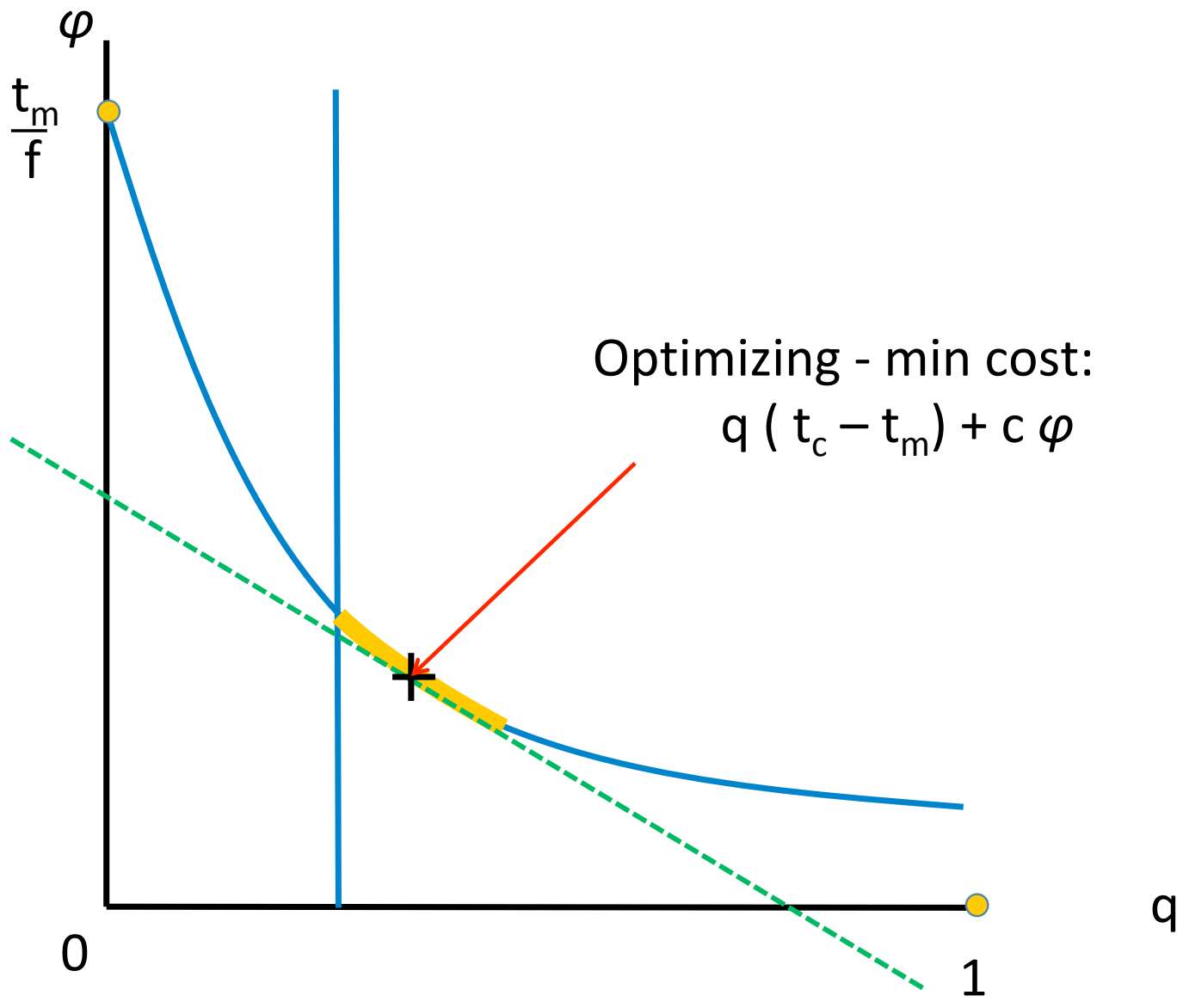
Low c: All Market



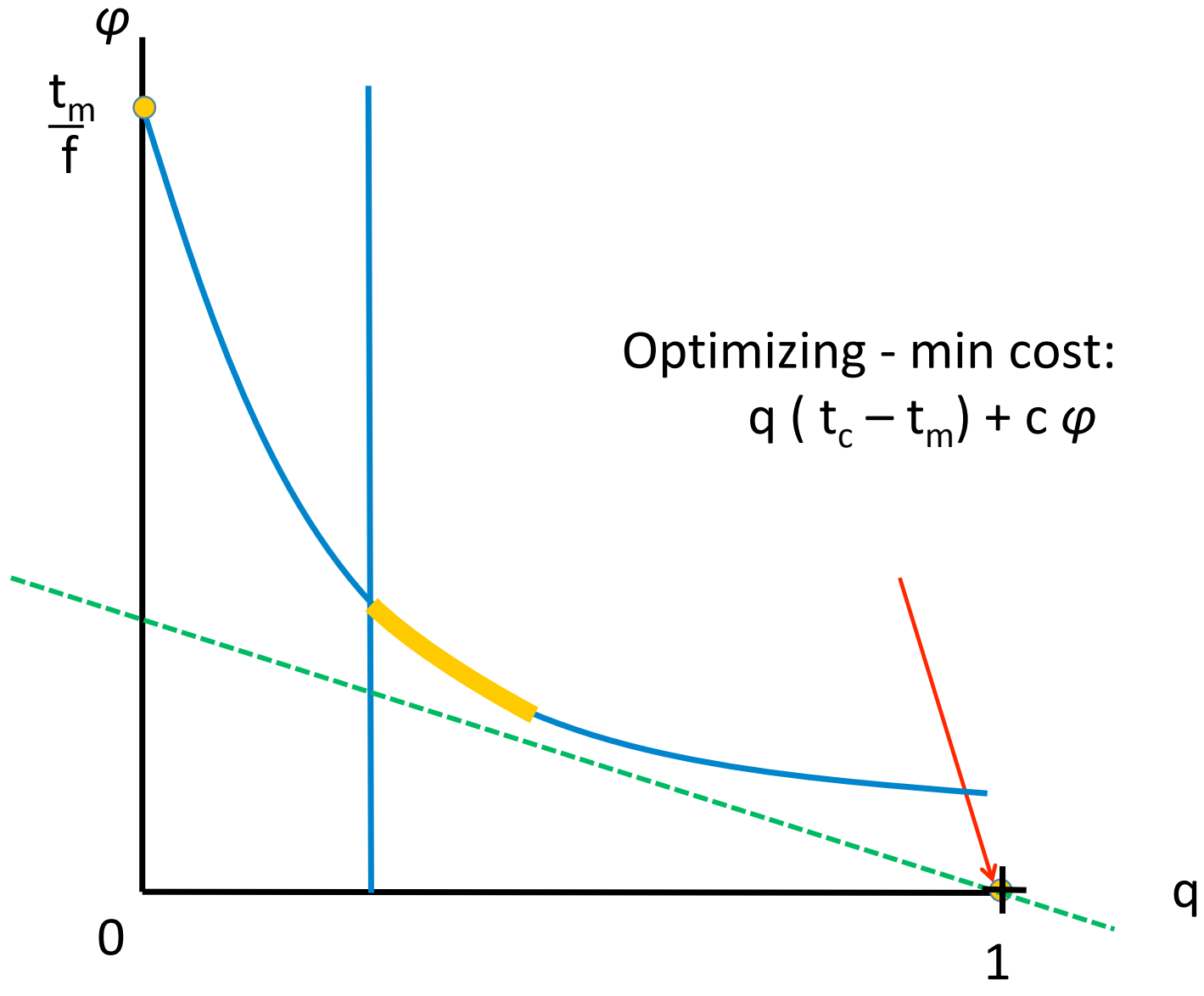
Med-Low c: Both, Minimal Amount of Community



Med-High c: Both, More Community



High c: All Community



Four Regimes

When $c/(t_c - t_m)$ is ...

- low: $q = 0$ all market
- med low: $q = t_c/V$ mix, with minimal community
- med high: $q > t_c/V$ mix, with more community
- high: $q = 1$ all community

Discontinuities

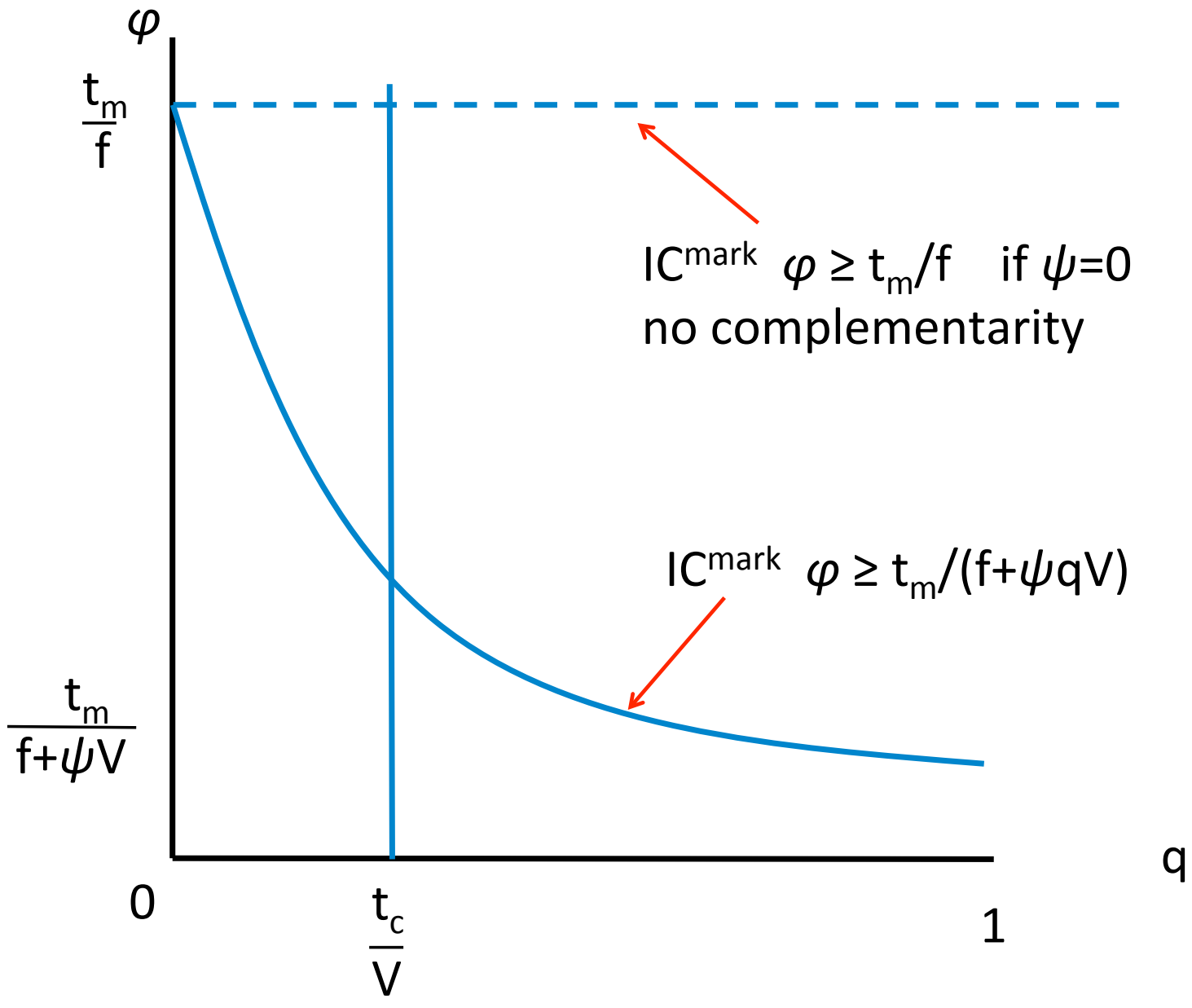
- Community only works above a minimal level,

  so either no community, or substantial community

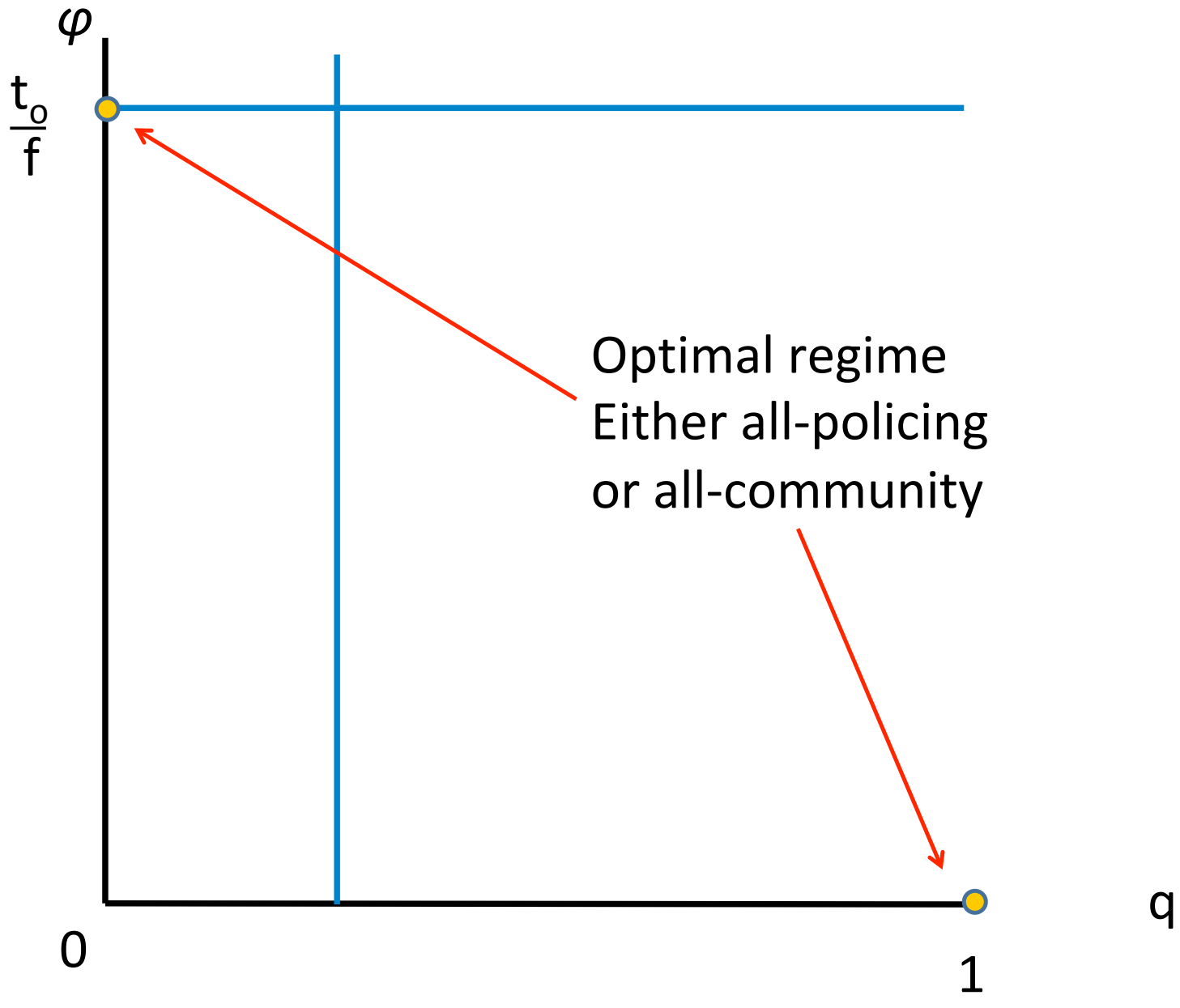
- Discontinuity also in formal institution,

  not due to fixed costs

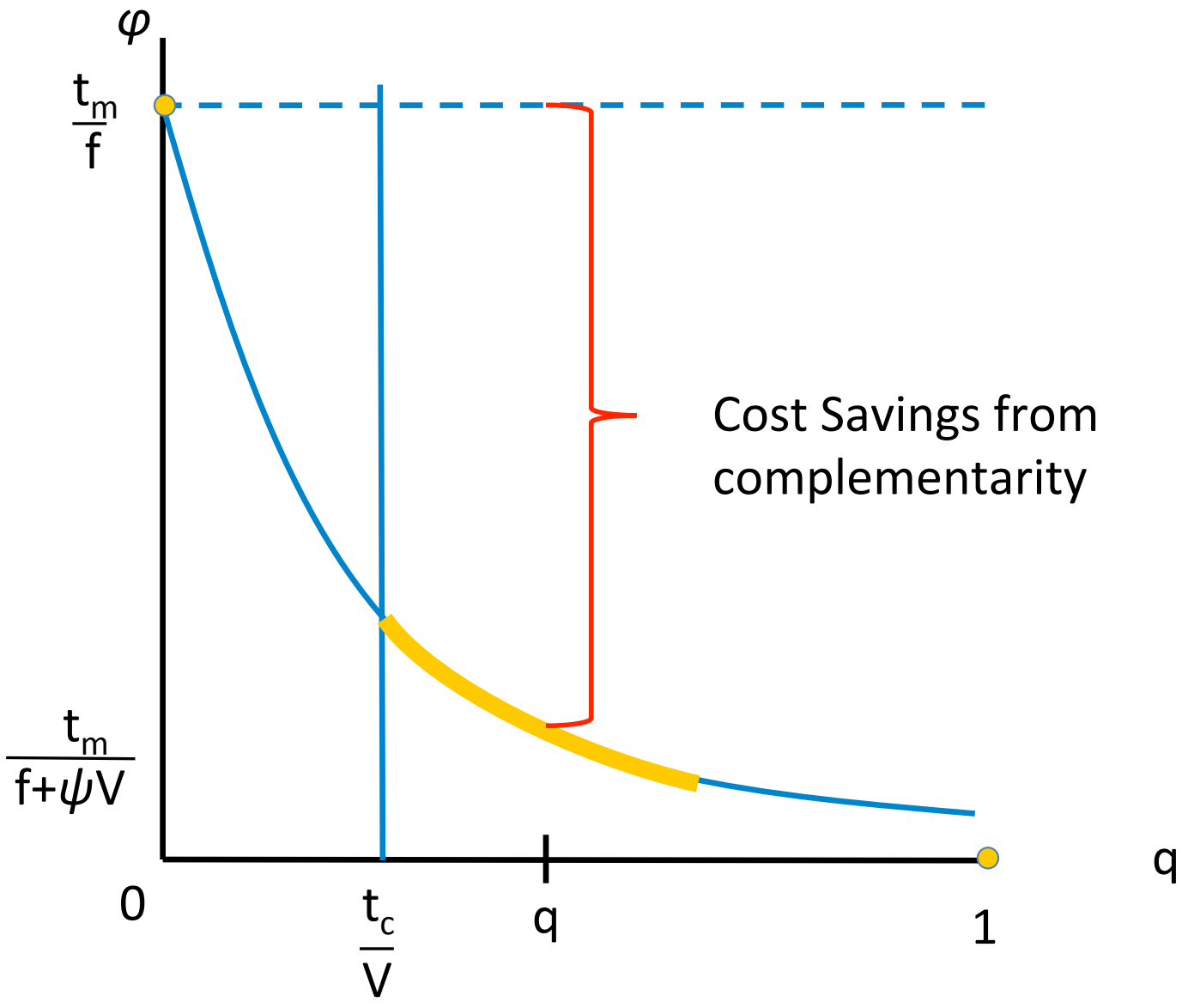
Complementarity: Compare to Benchmark ($\psi = 0$)



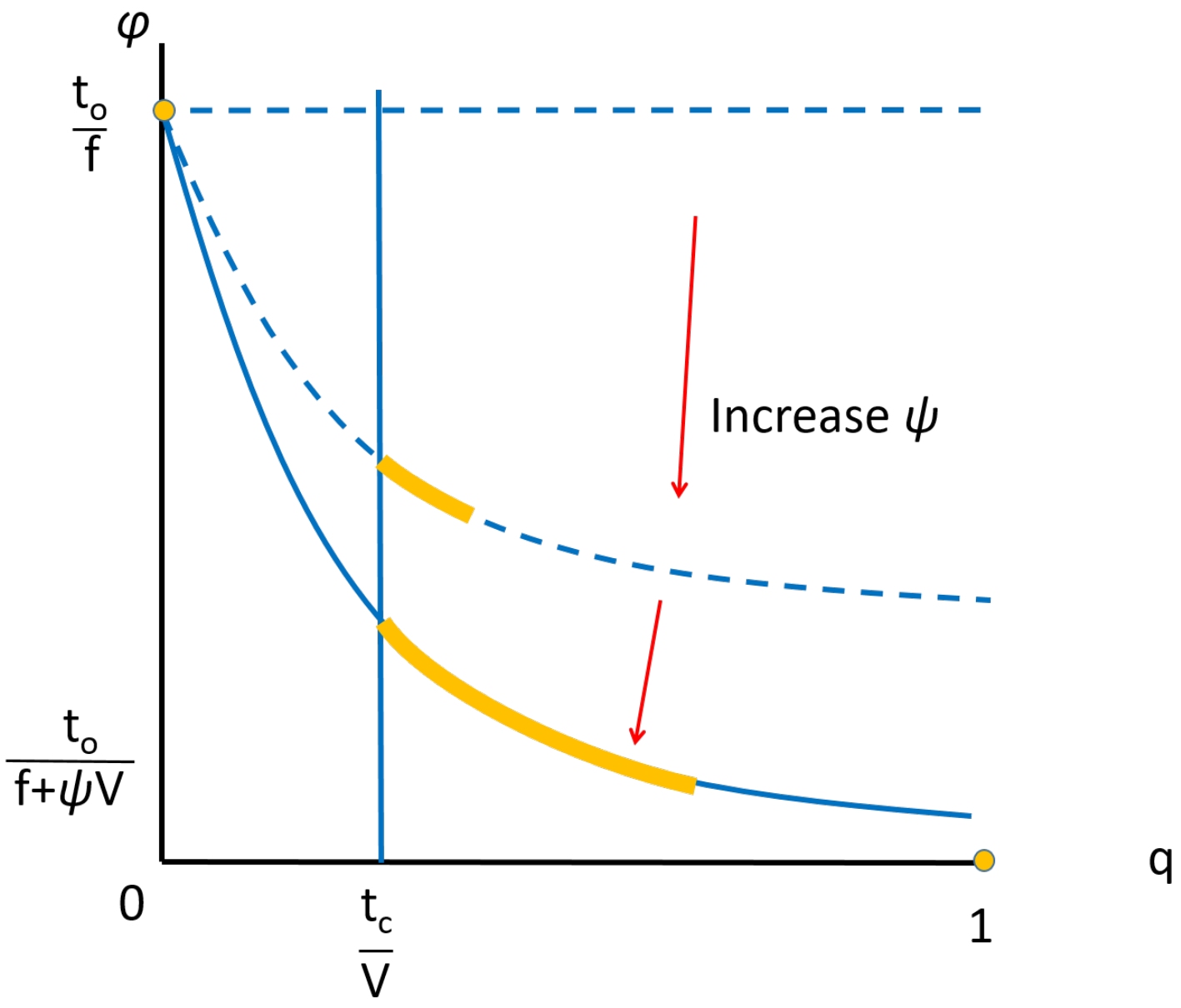
Discussion: No complements ($\psi = 0$)



Complementarity: Cost Saved



Comparative Statics in ψ



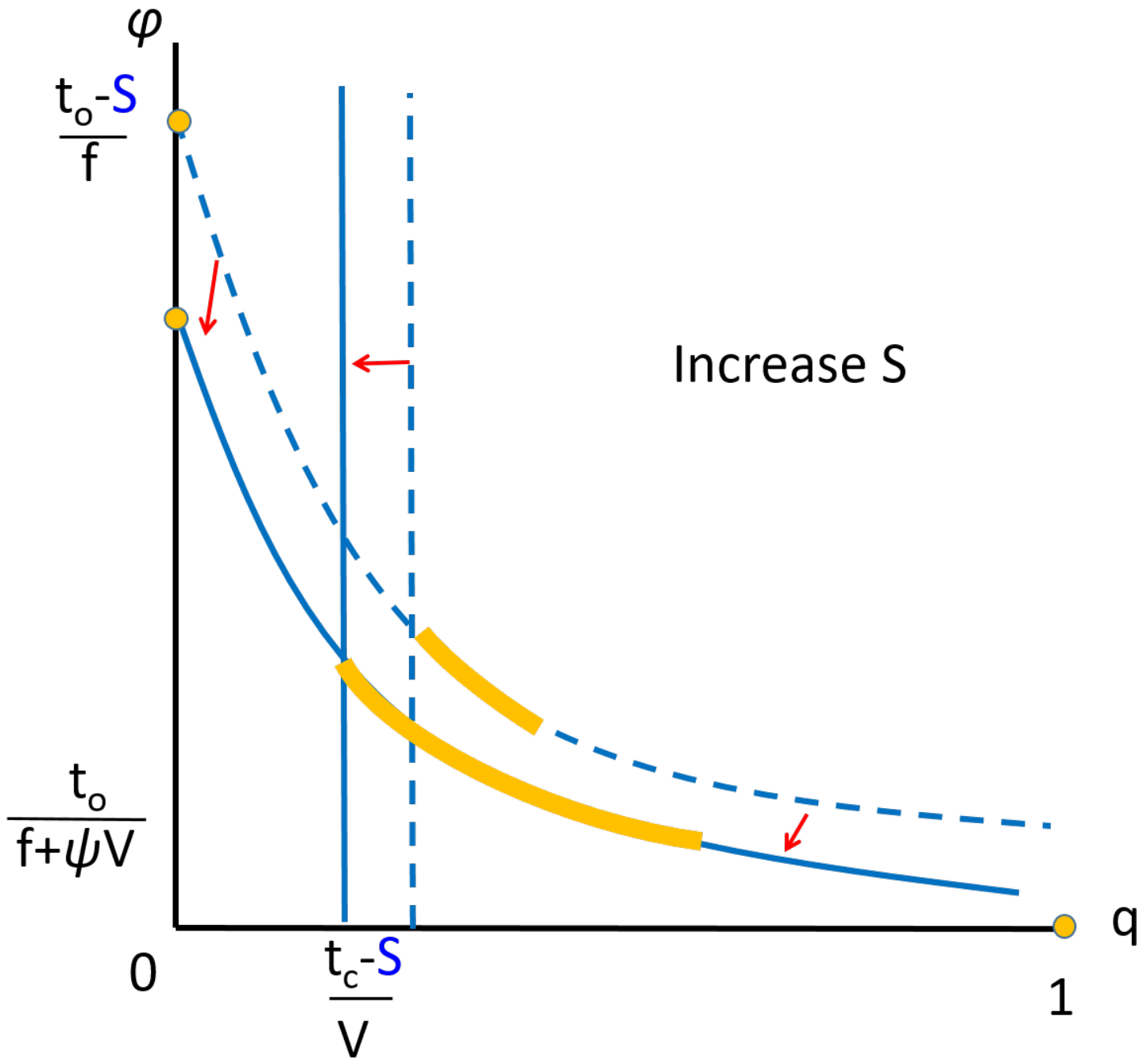
Outline

Model

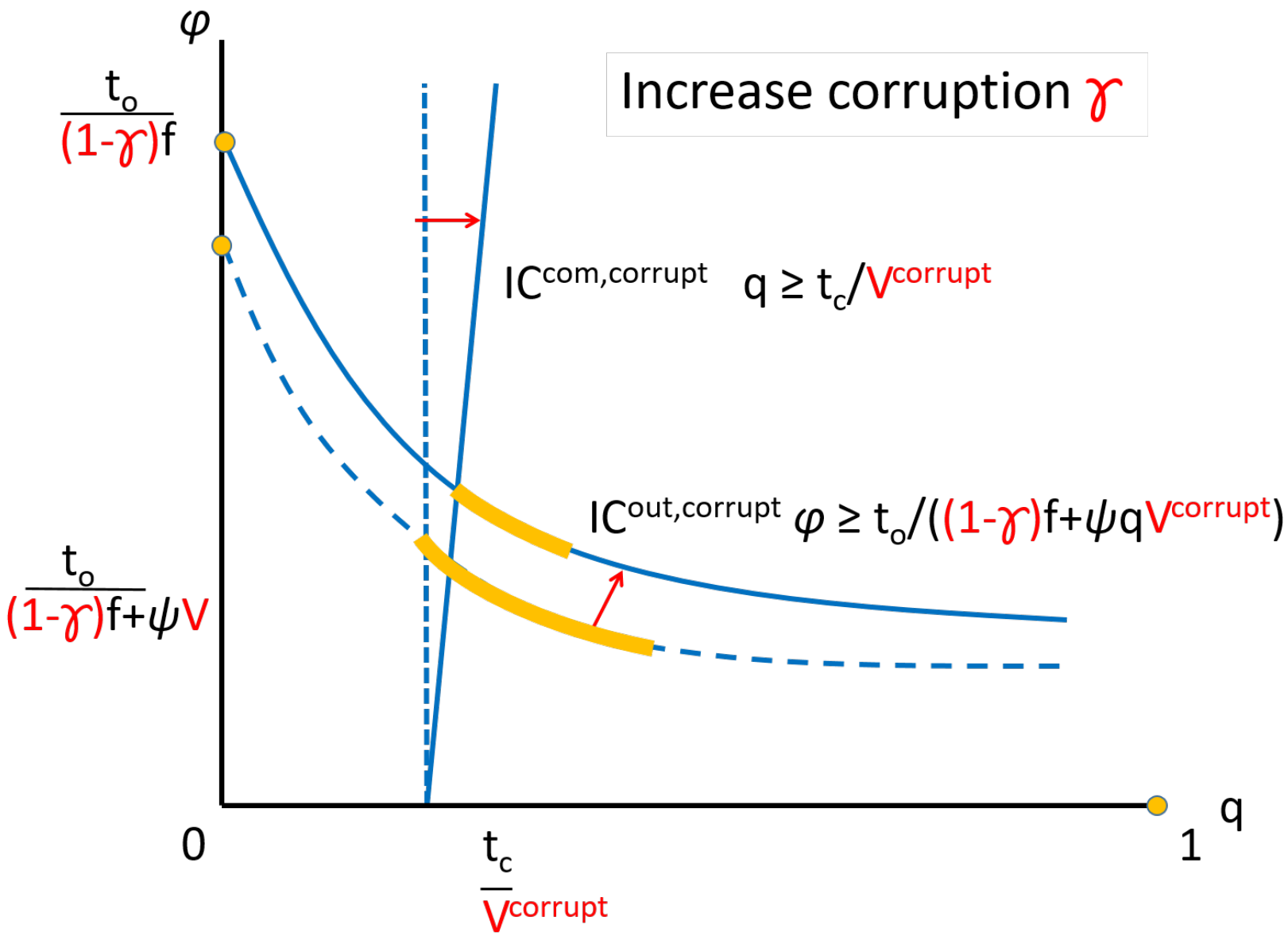
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Implications and Conclusion

Religion: Supernatural Belief S



Errors in Enforcement / Corruption



Loss of Faith in Law Enforcement: Examples

- "Black Youth Project 100" worked to undo a 'permanent exclusion' policy of the NYC Housing Authority that ostracizes criminals and does not allow them to live in or visit housing projects.

- Activists in Chicago worked to eliminate the city's gang database, arguing that criteria for inclusion were vague

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Discussion: Simultaneously Substitutes and Complements

Built-in mechanical substitutes

- each task done either on the market or by the community
- reflected by the overall decrease in q in more developed societies (smaller c)

Incentive complements

- using together can be more powerful than either alone

Substitutes in task division. Complements in incentive provision.

Implication for Developing Economies

In transition to formal institutions:

- Keeping a level of informal institutions increases the effectiveness of market - helps better establish formal institutions
- Getting rid of community and religion too quickly can lead to too costly formal enforcement, corruption, big welfare loss ...

Conclusions

Community and market are incentive complement

- both used together can be more efficient than either alone
- discountinuities: use non-trivial amounts of each, or one-or-the-other
- greater complementarity when information passes more freely between the two

Supernatural belief buttresses community and market

Errors in enforcement erode complementarity as community loses faith in formal enforcement - *discontinuous* drop in welfare