The Why and How of Growth Diagnostics

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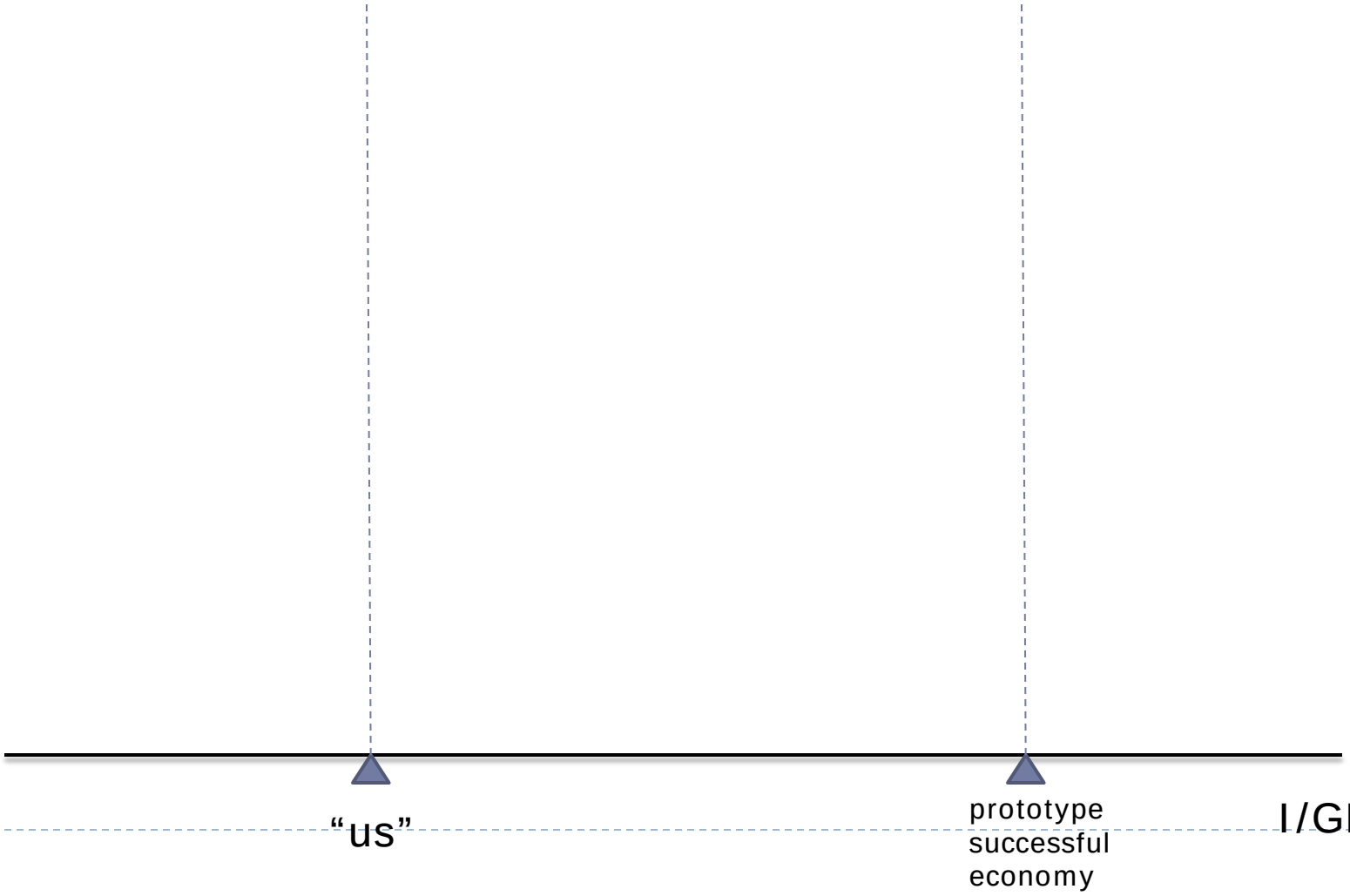
What is Growth Diagnostics good for?

- Identifying policy priorities
  - what should we fix first?
- Exposing assumptions behind different reform strategies
  - If you think we should do this, your model of the economy must be that …
- Allowing the systematic use of economic theory and evidence
  - if this is the relevant model, these are what the evidence must show…

Outline

- A stylized example to illustrate the issues
- Growth diagnostics as an application of the economics of second-best
- Practical issues in the application of GD

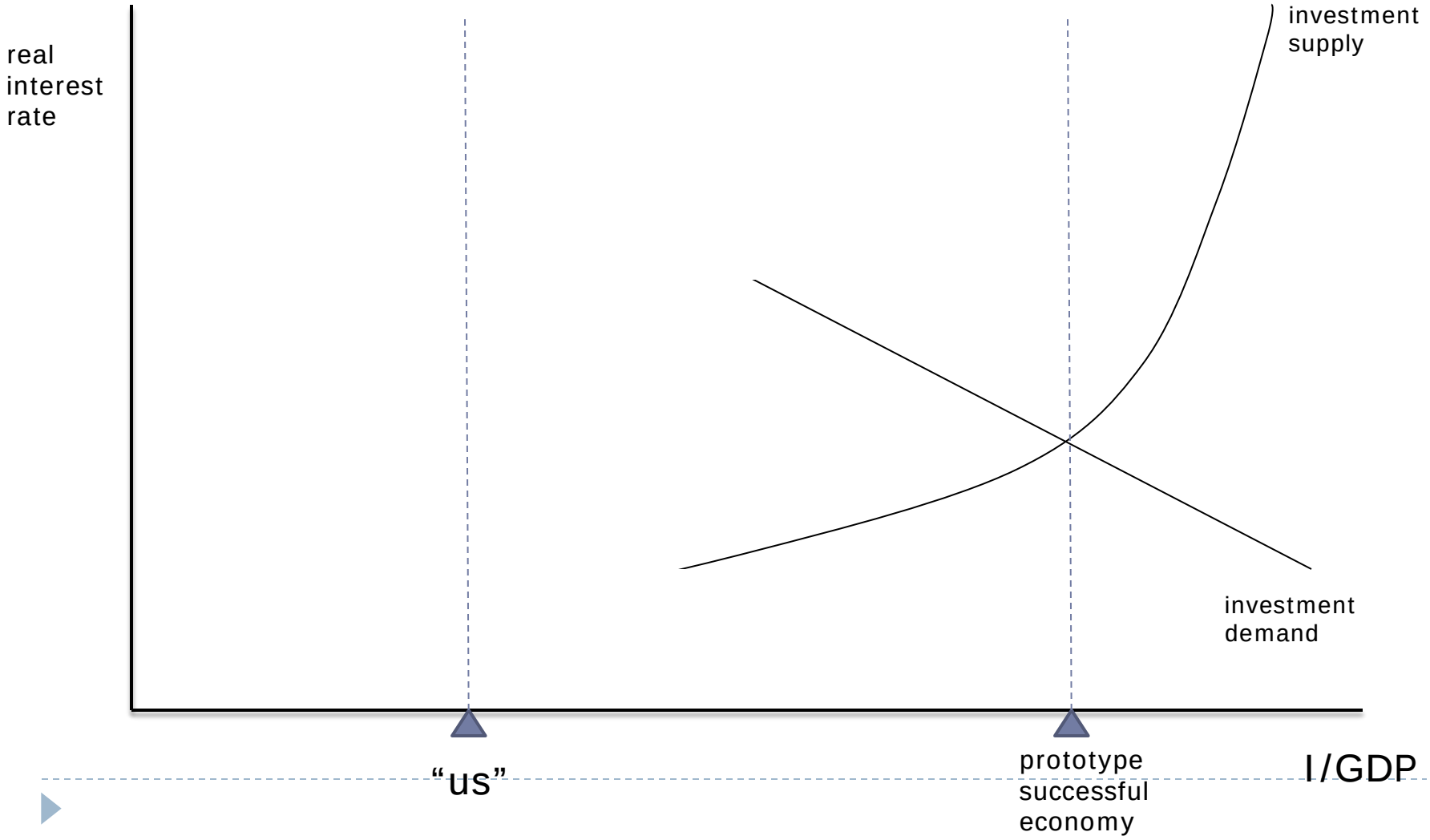
A problem of low private investment…



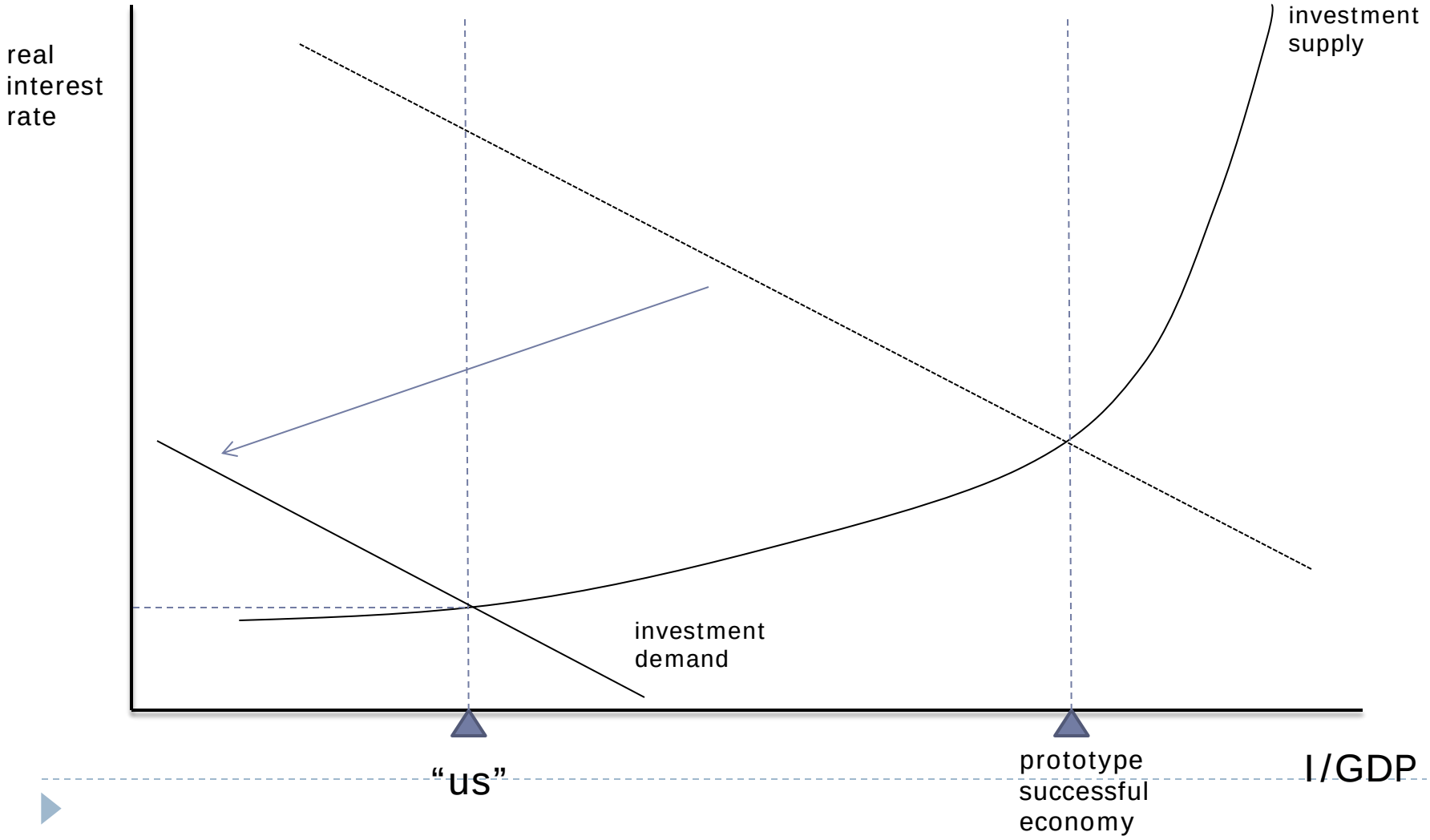
What might account for this problem?

- corruption
- high taxes
- macroeconomic instability
- poor infrastructure
- bad geography
- lack of human resources
- bad institutions
- low domestic saving
- inadequate access to credit/finance
- poor financial intermediation
- …

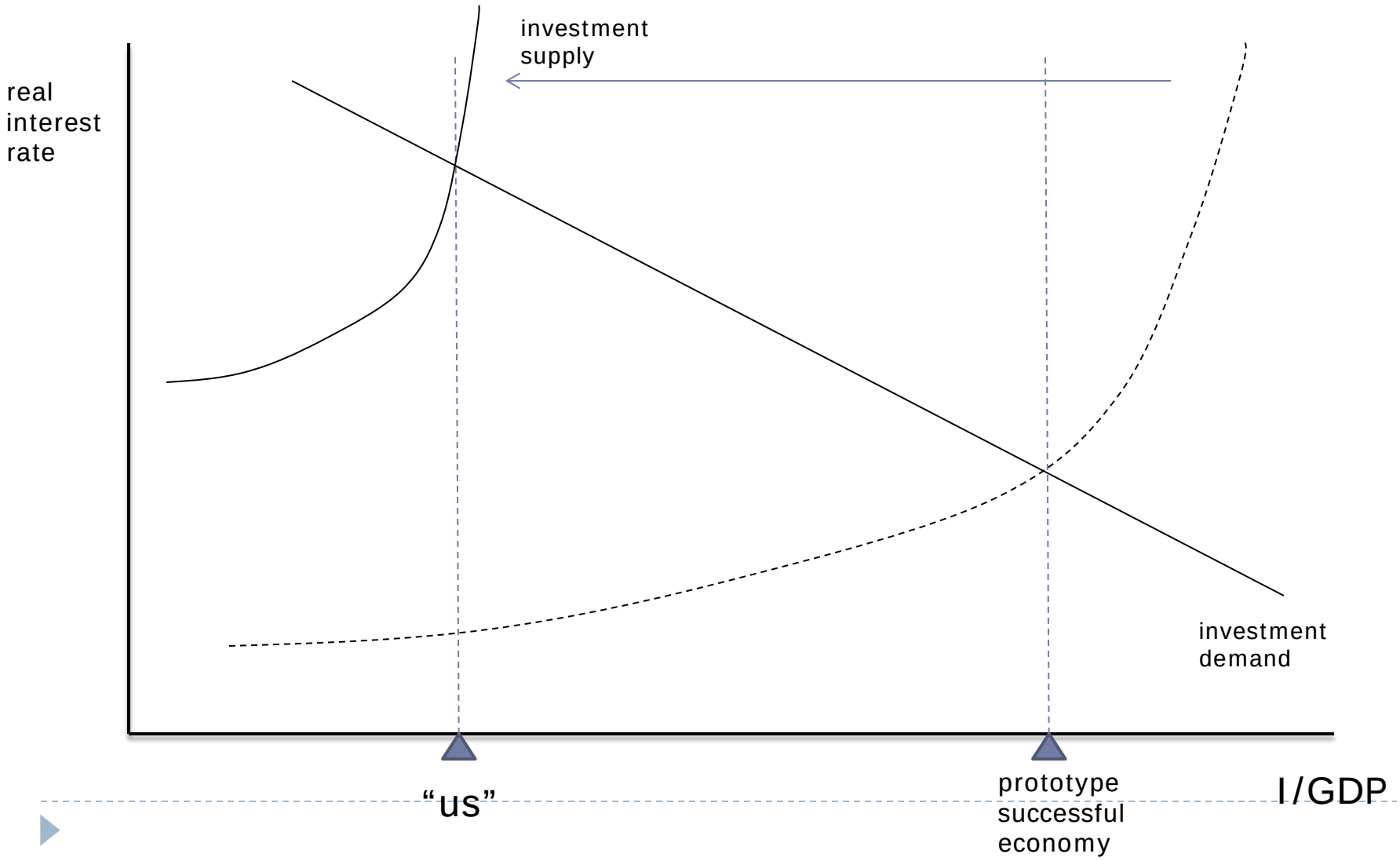
Using simple theory: a demand- or supply-side problem?



Demand-side problem



Supply-side problem



Are the previously listed causes demand- or supply-side problems?

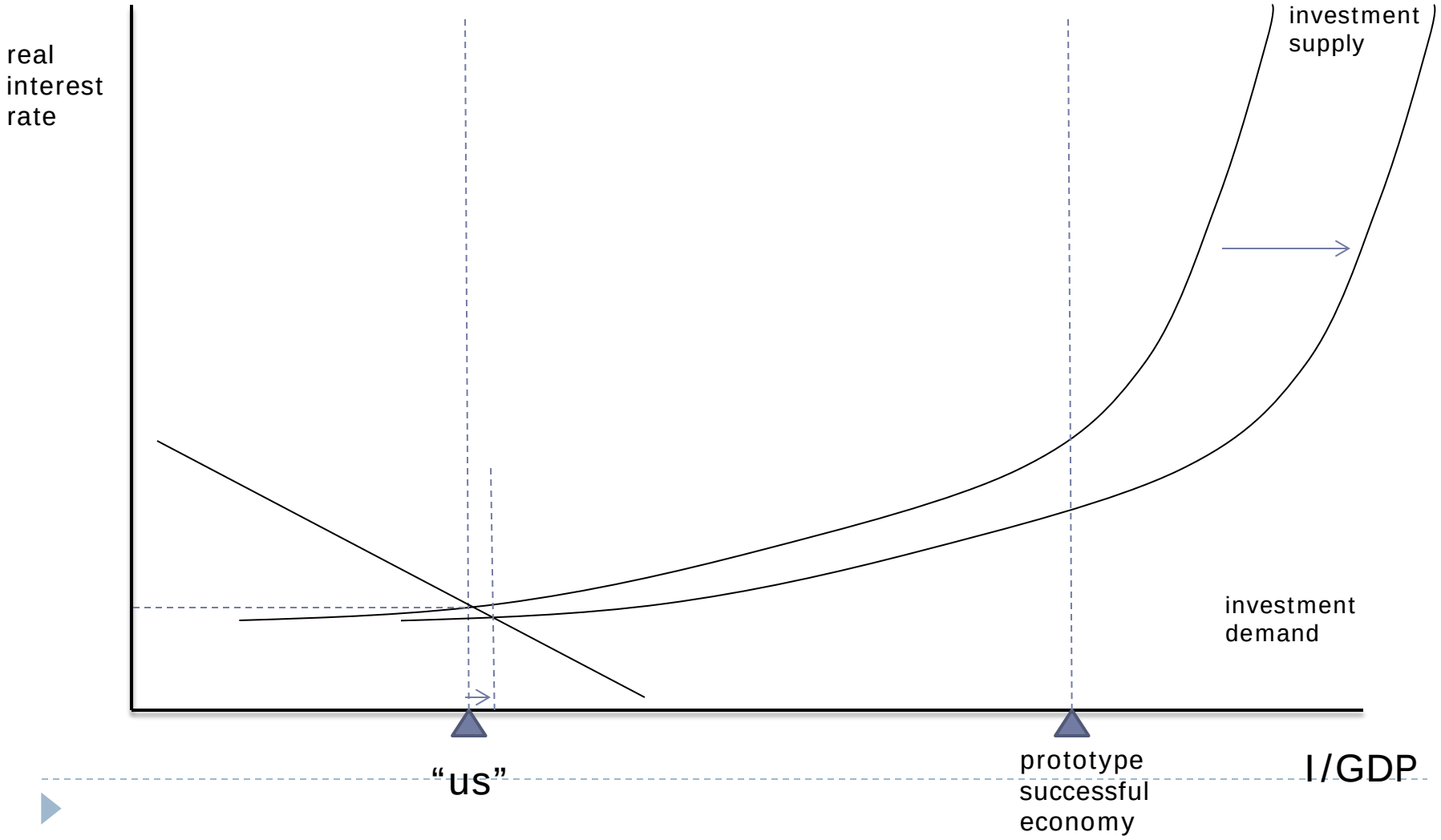
- Do they work through investment demand?
  - corruption, high taxes, macroeconomic instability, poor infrastructure, lack of entrepreneurs, bad geography, lack of human resources, bad institutions
- Or through investment supply
  - low domestic saving, inadequate access to credit/finance, poor financial intermediation, macroeconomic instability, bad institutions

How can we tell these stories apart?

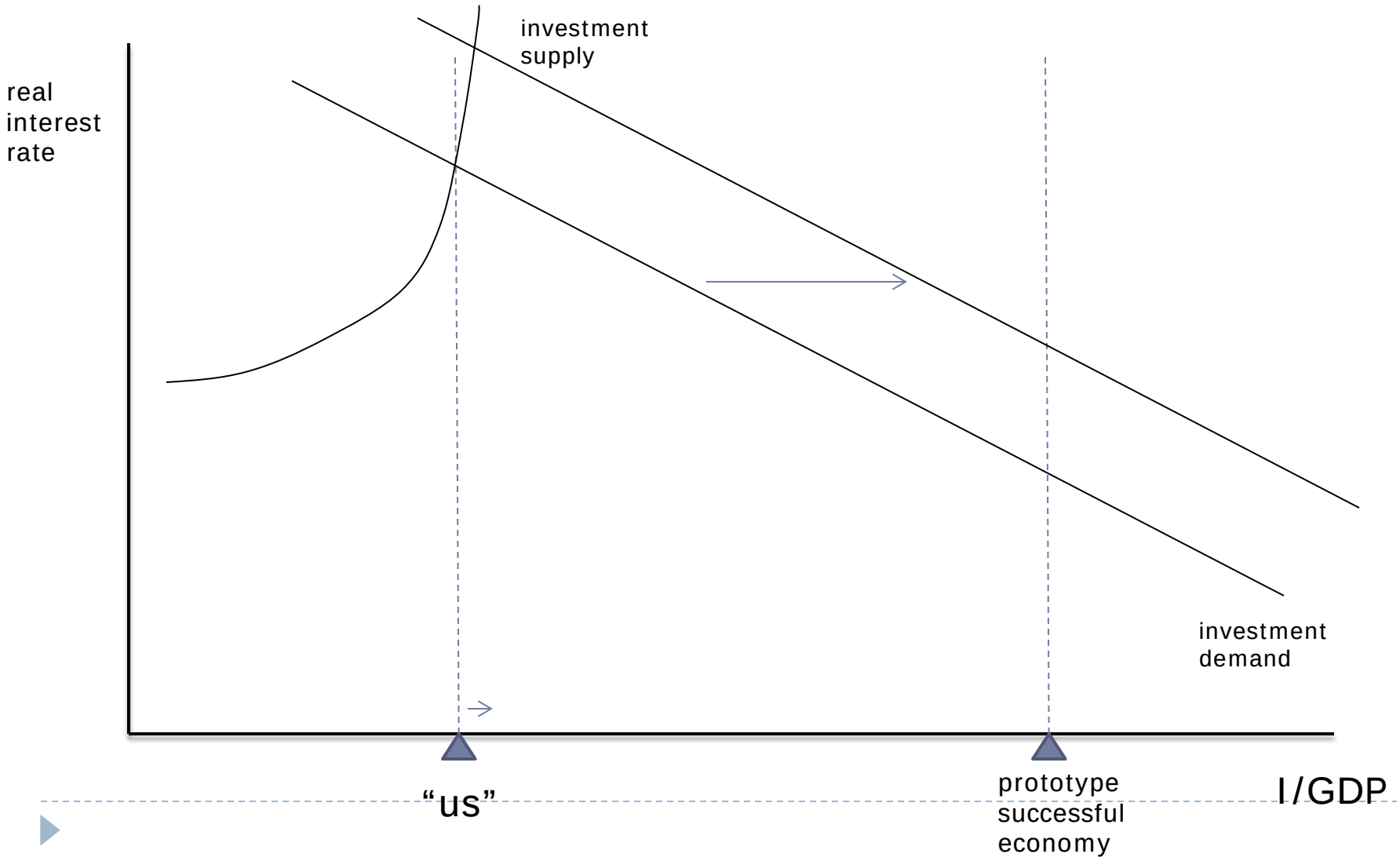
- Prices
  - levels of prices as "diagnostic signals"
- "Comparative statics"
  - How do quantities and prices change in response to exogenous shocks to supply and demand, under each story?
    - e.g., exogenous increase in remittances
- In other words, use the predictions of each hypothesis/model to test it against the evidence

What's the cost of getting the diagnosis wrong?

Treating demand problem with supply remedy



Treating supply problem with demand remedy



What's the cost of getting the diagnosis wrong?

- small response
- unintended adverse consequences
  - When investment is constrained by saving, increasing investment demand (through reforms that improve "business environment," for example) will raise interest rates even further, harming fiscal sustainability
  - When investment is demand constrained, allowing more foreign savings (foreign finance) will appreciate the currency, harming tradables
- political economy
  - ratio of redistribution to net gains
  - "reform fatigue"

Economic reform in second-best context

- General idea
  - developing countries suffer from multitudes of problems ("distortions" or violations of conditions for social optimality)
  - these distortions interact in potentially complicated ways, resulting in unanticipated consequences
  - we need a reform strategy that is cognizant of the economics of the second-best
- Application to growth strategy
  - How does Growth Diagnostics relate to economics of second best?
  - practical aspects of the GD

Analytics of Reform

- Suppose an economy starts out with *n* distortions, $\boldsymbol{\tau}=\{\tau_1,\tau_2,\ldots,\tau_n\}$, with marginal social valuations of activities diverging from marginal private valuations:

$$\frac{\partial u(\boldsymbol{X})}{\partial X_j}-\frac{\partial u^p(\boldsymbol{X})}{\partial X_j}-\tau_j=0$$

- What is interpretation of τ_j ?
- What is the effect on growth (or welfare) of removing one distortion leaving the other *n*-1 unchanged?

$$\frac{du}{d\tau_i}=\tau_i\frac{\partial X_i}{\partial \tau_i}+\sum_{j\neq i}\tau_j\frac{\partial X_j}{\partial \tau_i}$$

Total effect = direct effect (positive)
+ sum of all other indirect effects
(positive or negative)

Where do indirect effects come from?

- Lowering one distortion can have good or bad effects, depending on which way other distorted quantities move
  - Example from agriculture: export liberalization under weak property rights and over-exploitation of common property resource
  - Example from trade: liberalizing intermediate inputs
  - Example from macro: relaxing borrowing restrictions under moral hazard
  - Example from institutional reform: privatization under monopoly conditions
  - Two sort of "budget" constraints
    - Fiscal revenue constraint: reducing one tax requires a rise in another
    - Political budget constraint: may need to compensate for loss of rents
- Key point: Undertaking partial reform while leaving other distortions in place can have large, small or even negative effects on growth and welfare
- We can envisage 5 alternative reform strategies in these circumstances

Strategy 1: Wholesale reform

- Eliminate all distortions at once
- Sure to raise welfare
- Problem: impossible to do
  - Full list not knowable
  - Remember that the τ_j refer not just to explicit taxes but anything that drives a wedge between private and social optimality
    - Some "invisible" wedges: lack of credibility, externalities, coordination failures, absent markets, institutional failures…
  - Administrative, political, human-resource constraints

Strategy 2: Do as much as you can, as best as you can

- Implicitly assumes:
  - Any reform is good
  - The more areas reformed, the better
  - The deeper the reform in any area, the better
- Trouble is, none of these assumptions holds under second-best environments
  - see earlier examples

Strategy 3: Sophisticated second-best reform

- Start from wherever you can, but take into account all possible indirect effects
- Problem: quite difficult, even if administratively feasible
  - Most of these second-best interactions are very difficult to figure out and quantify *ex ante*
  - Some distortions are not even observable, as noted
    - Many distortions take the form of implicit taxes
      - E.g., imperfect credibility of government
- Besides, no guarantee that payoffs to such reform will be large
  - Especially when the investment in addressing second-best issues is taken into account

Strategy 4: Target the largest distortion(s)

- Find the *k* with the largest "tax" τ_k
- Under certain assumptions* (unlikely to hold in practice), can be guaranteed to raise welfare
- But:
  - It does require us to have a complete list of distortions
  - It does not guarantee that a big welfare bang is achieved
  - Note that direct effect can also be written

$$\tau_k \frac{\partial X_k}{\partial \tau_k} = \tau_k X_k \frac{\partial X_k / X_k}{\partial \tau_k}$$

    - So impact depends on the size of the affected economic activity as well as the response elasticity
      - Think of huge tax on aircraft industry in a poor country

* The (sufficient) condition is that the activity whose tax is being reduced be a net substitute (in general equilibrium) to all the other goods.

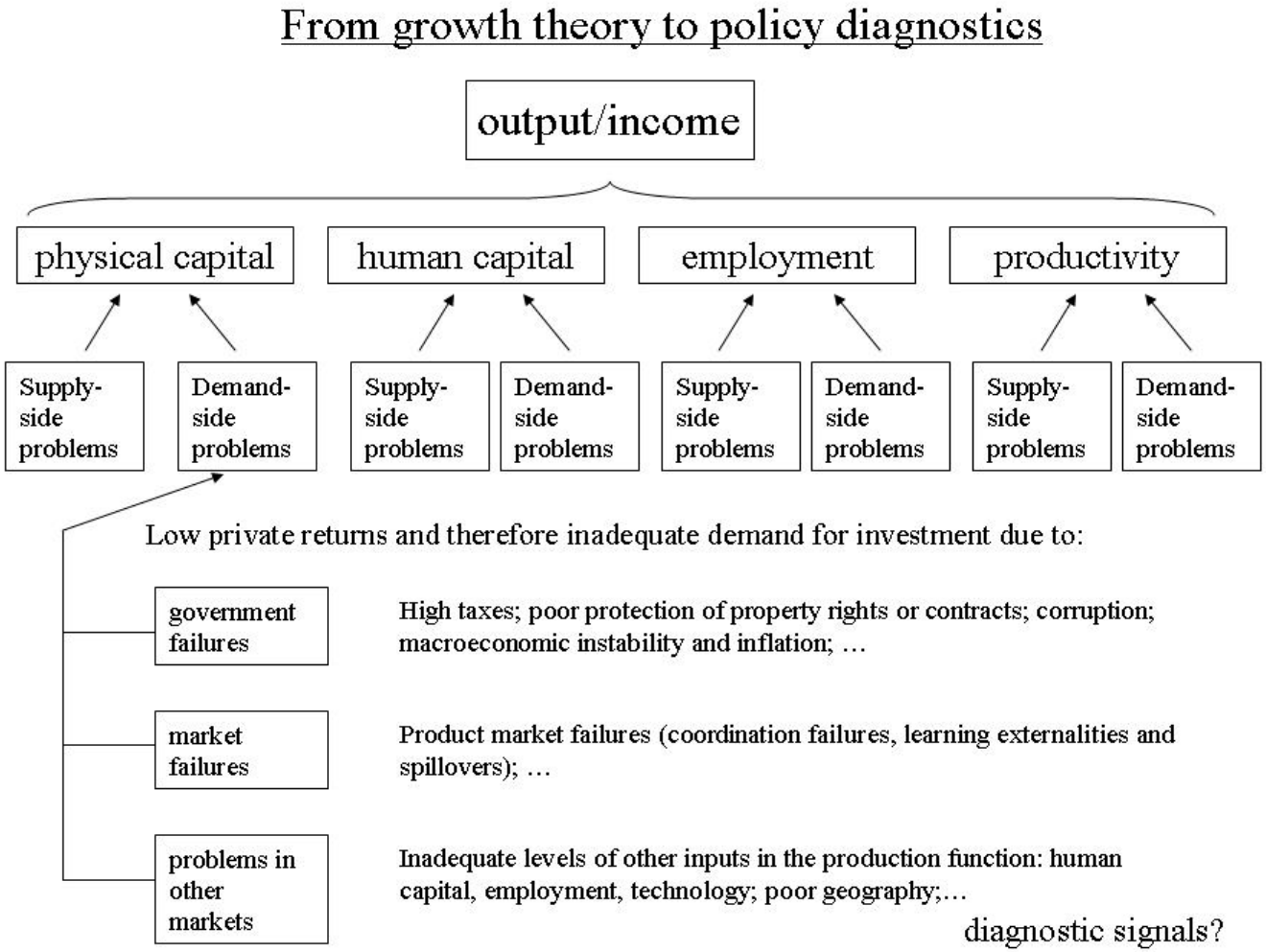
Strategy 5: Focus on the "most binding constraints"

- Pursue those reforms where direct beneficial effect is largest
  - Identify *k* such that $\tau_k \frac{\partial X_k}{\partial \tau_k} = X_k \left(\frac{\partial X_k / X_k}{\partial \tau_k / \tau_k} \right)$ is large(st)
- … and choose policy instruments in a manner that is cognizant of second-best interactions
- Advantages
  - economic theory provides some guidance as to which *X's* to look at
  - more likely to result in big welfare bang
- Disadvantages
  - need to rely on theory and empirics to guide us
  - still need to check on key likely indirect effects

Applying the framework: growth diagnostics

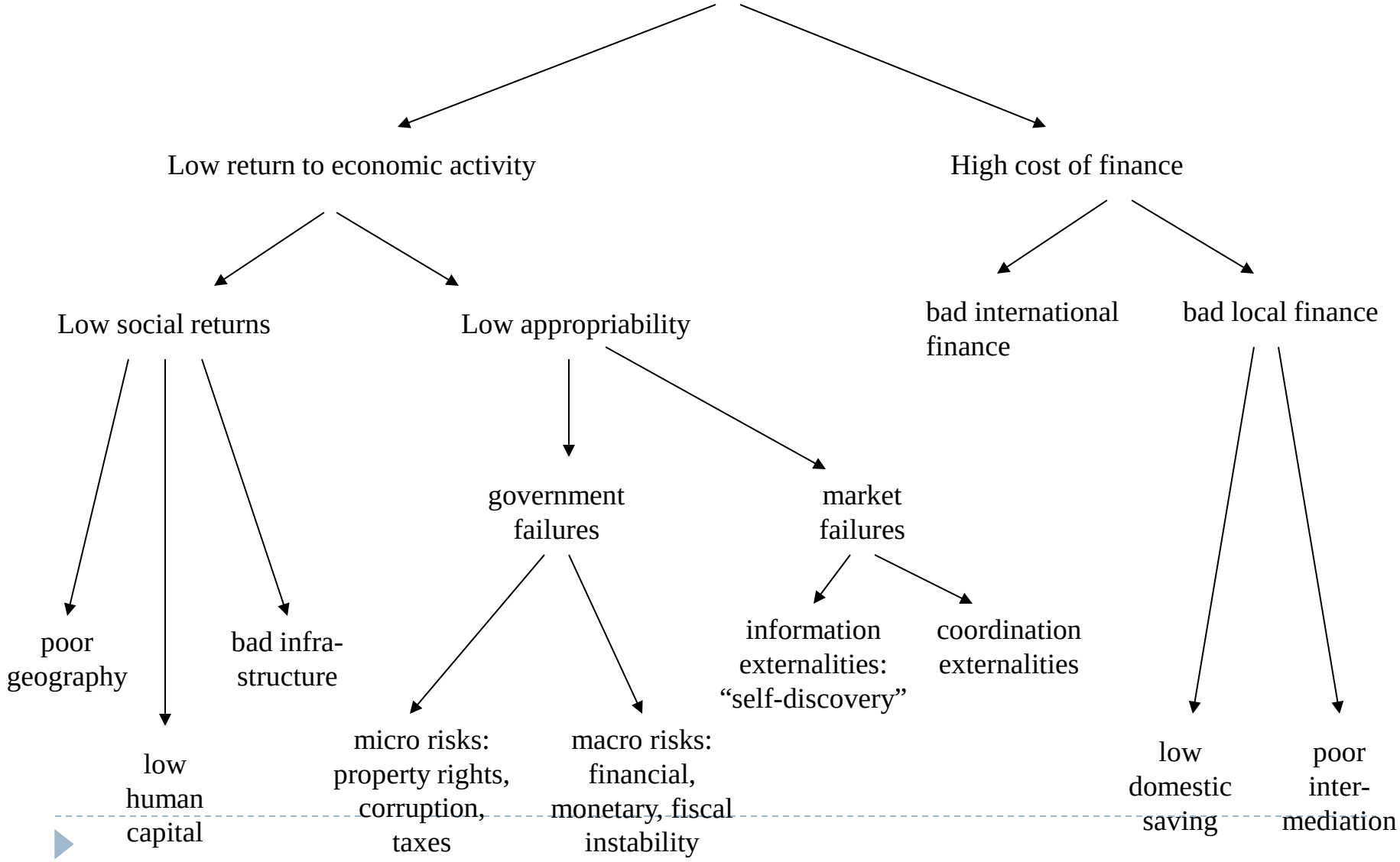
- What we need is method for identifying the most binding constraints on economic growth
- A heuristic strategy
  - Start from activities that are the proximate determinants of growth, *Xi*
  - Use theory to identify potential list of constraints
  - Use empirics to narrow the list
  - For each constraint, identify the specific distortion(s) that lie behind it (tau's)
  - Come up with policies that target these distortions as closely as possible, while bearing in mind potential interactions with distortions in other, related areas
    - If second-best interactions are severe/adverse, look for less direct policies that overcome those interactions

Growth theory and policy diagnostics



Growth Diagnostics

Reasons for low private investment



An empirical diagnostic framework

- Explicit search for "diagnostic signals":
  - "If story A is correct, signals x, y, z must be present…"
- Direct evidence
  - "shadow" prices: returns to education, real interest rates, cost of transport,…
  - benchmarking potentially helpful
- Indirect evidence
  - if a constraint binds, effects must show up in differential outcomes for activities that differ in their intensiveness in that constraint
    - informality, internalization of finance, self-enforcement of contracts
  - elimination of other plausible constraints
- A constant cannot explain a change
  - high growth episodes of the past cause us to ask what has changed

A policy reform agenda that is consistent with a country's recent growth history

- Episodes of high or low growth provide evidence on necessary and sufficient conditions for growth in a given setting
- Reforms under consideration must be consistent with this evidence
- What to do:
  - Develop internally consistent "stories" about the causal mechanisms underlying recent growth history

Illustrations

- El Salvador: low investment demand due to low incentives for "self-discovery"
  - Need to find new high-return investment opportunities
  - Solution: industrial policy?
  - What will not work: Improving "institutional environment" will not be very effective when constraint is low appropriability due to "cost discovery" and coordination externalities
- Brazil: low investment due to high cost of capital
  - Need to increase domestic savings and enhance access to foreign savings
  - Solution: adjust fiscal policy?
  - What will not work: improving "business climate" not very effective when problem does not lie with low investment demand

Step 2: Policy design

- First-best logic sometimes not helpful
  - targeting policy on relevant distortion may not work due to second-best interactions and political-economy or administrative constraints
- Requires instead creative solutions that overcome these complications
  - policies that can *decouple* complementary areas of reform often work best, even if heterodox (e.g. China)
  - Taking advantage of multiplicity of institutional solutions:
    - the functions that good institutional arrangements perform (protect property rights, ensure macro stability, internalize externalities, etc.) do not map into unique institutional forms
  - local contingencies require local solutions
- Policy solutions may lie in areas that did not appear to be the binding constraint
  - E.g. may recommend saving-augmenting strategy even if an economy is not saving constrained, if that enables a depreciated currency that increases tradables profitability
- Experimentation and learning are necessary components of reform
- Implication for government-business relations
  - government needs to be close enough to business to elicit information, far enough not to be captured

Step 3: Institutionalizing the diagnostic process

- Nature of binding constraints change over time

- Growth will slow down if diagnostic process not ongoing
  - Argentina, Indonesia, Cote d'Ivoire,..
  - China's future challenges

- Sustaining growth requires ongoing institutional reform to
  - Maintain productive dynamism
    - "industrial policy" institutions?
  - Increase resilience of economy to external shocks
    - "institutions of conflict management"
      - democracy, rule of law, social pacts, social safety nets

How diagnostic analysis differs: traditional approaches …

- A big idea: development is held back by
  - too little government
  - too much government
  - too little credit
  - absence of property rights
  - …
- A big fix
  - ISI/Washington Consensus/Big Push
  - public health/microcredit/property rights
- A bias towards universal recipes, "best-practices," and rules of thumb

…versus diagnostic strategies

- Contextual policy analysis
  - We do not know ex ante what works and what doesn't
  - Need to look for binding constraints
    - Which tend to be context-specific
  - Experimentation central part of discovery
  - Monitoring and evaluation equally central
- Focus on selective, narrowly targeted reforms
- Based on the idea that there exists lots of slack
  - Well targeted reforms can produce a big bang
- Suspicious of "best-practice," universal remedies
  - Looking for policy innovations that unlock local second-best/political complications

Arguments against GD

- Poor nations suffer from many constraints
  - Of course
  - But this is no argument against the need to prioritize
    - GD is a way of thinking about how to prioritize
- Diagnostic "signals" are model-specific
  - Yes, the GD framework does place a premium on being explicit about the underlying model of the economy one has in mind
  - But that is probably an advantage, not a disadvantage
- Can never be sure you have identified binding constraint(s) correctly
  - Yes
  - But even then, it provides a useful way of framing the debate and conversation over different recommendations
    - "Since you recommend *a*, you must presume the binding constraint is *x;* what evidence can you adduce for it?"
- It is hard
  - Yes!

General lessons

- Binding constraints to growth differ across countries and over time
  - clear evidence that growth is unlocked in a large variety of ways
  - different strokes for different folks: CHN was constrained by poor supply incentives in agriculture; BRA is constrained by inadequate supply of credit, SLV by inadequate production incentives in tradables, ZAF by inadequate employment incentives in manufacturing, ZWE by poor governance …
- Relaxing binding constraints requires well-targeted reforms that are cognizant of prevailing second-best and political complications
  - selectivity instead of a laundry list
  - pragmatism in lieu of "best practice" and rules of thumb
- Over time, strengthening institutional underpinnings is critical
  - institutionalizing "diagnostics"
  - building resilience to external shocks
  - institutional reform is key, but to *sustain* rather than *ignite* economic growth