

Economic Diversification and Structural Change in Kazakhstan

Opportunities and Challenges

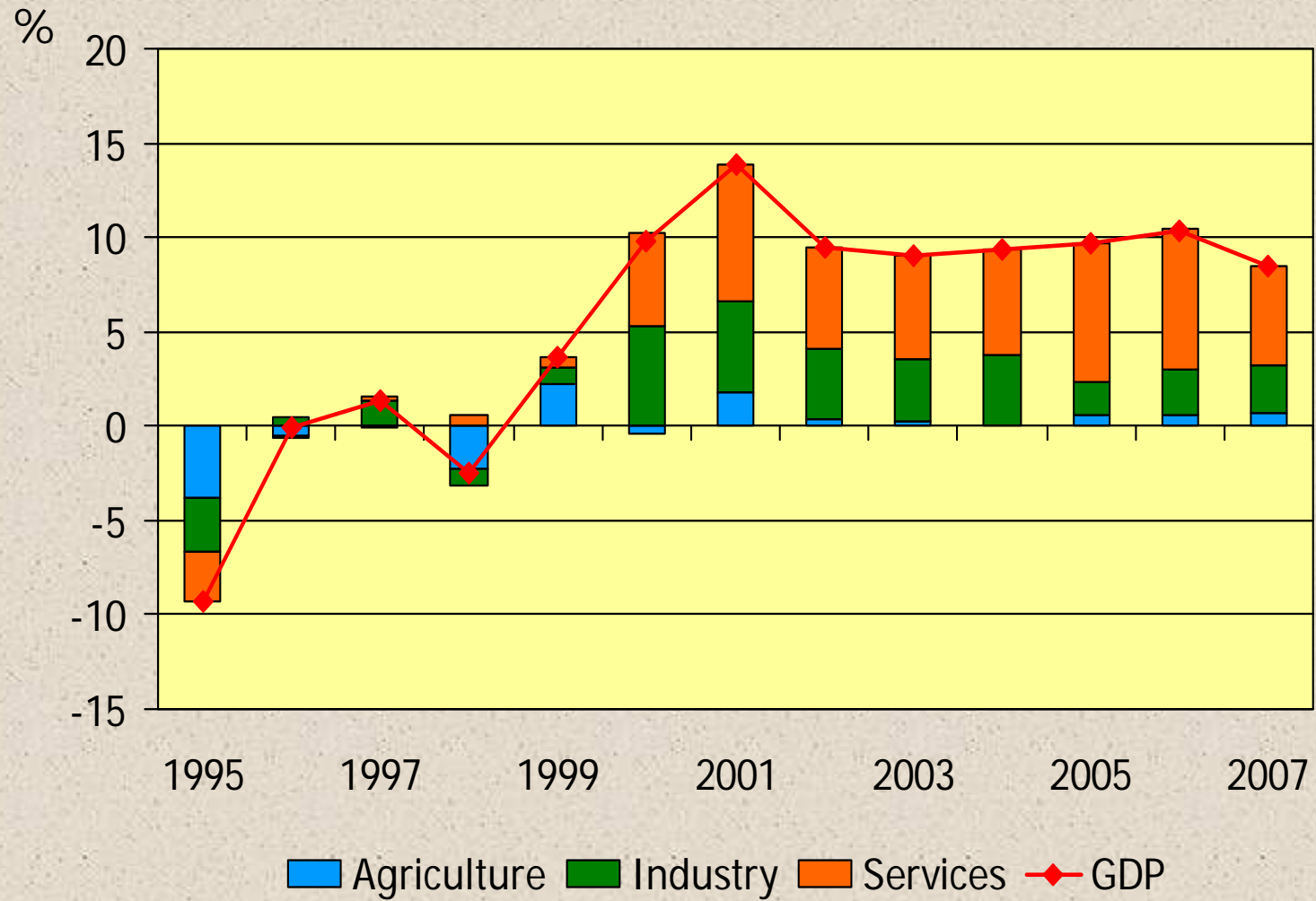
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Norio Usui**

**Central and West Asia Department
Asian Development Bank**

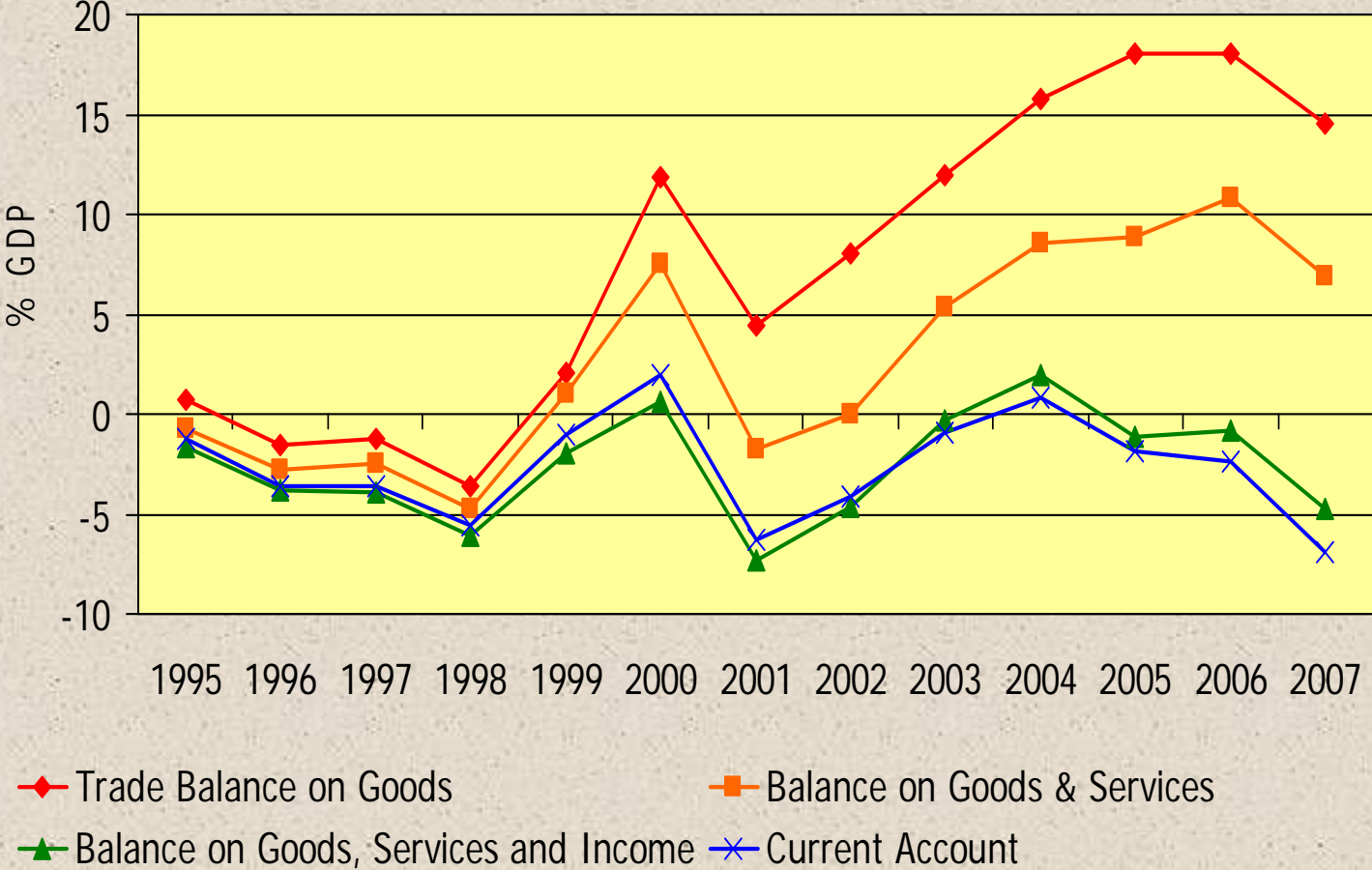
September 2008



Real GDP Growth and Contribution by Sectors

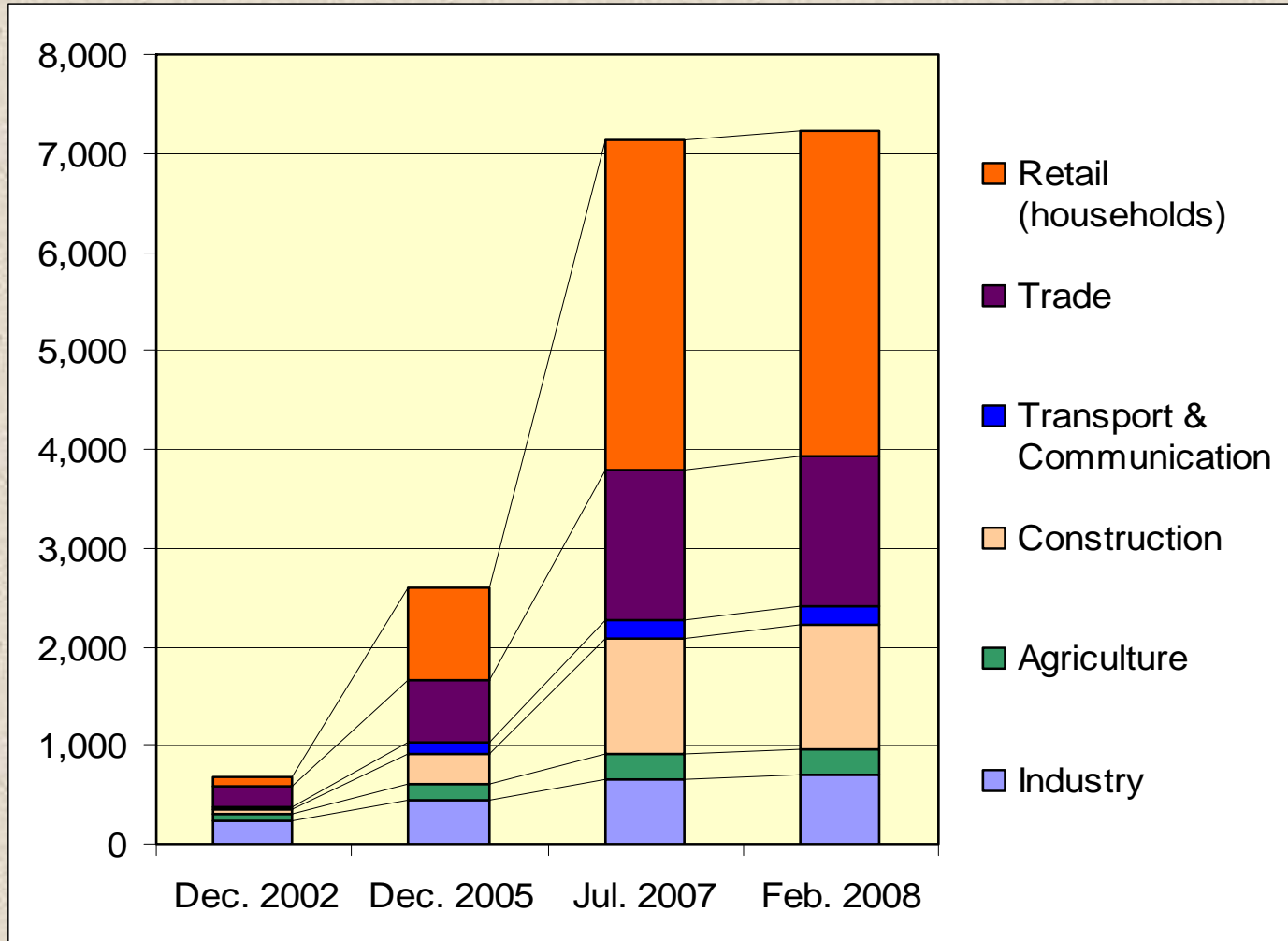


Widening Current Account Deficit

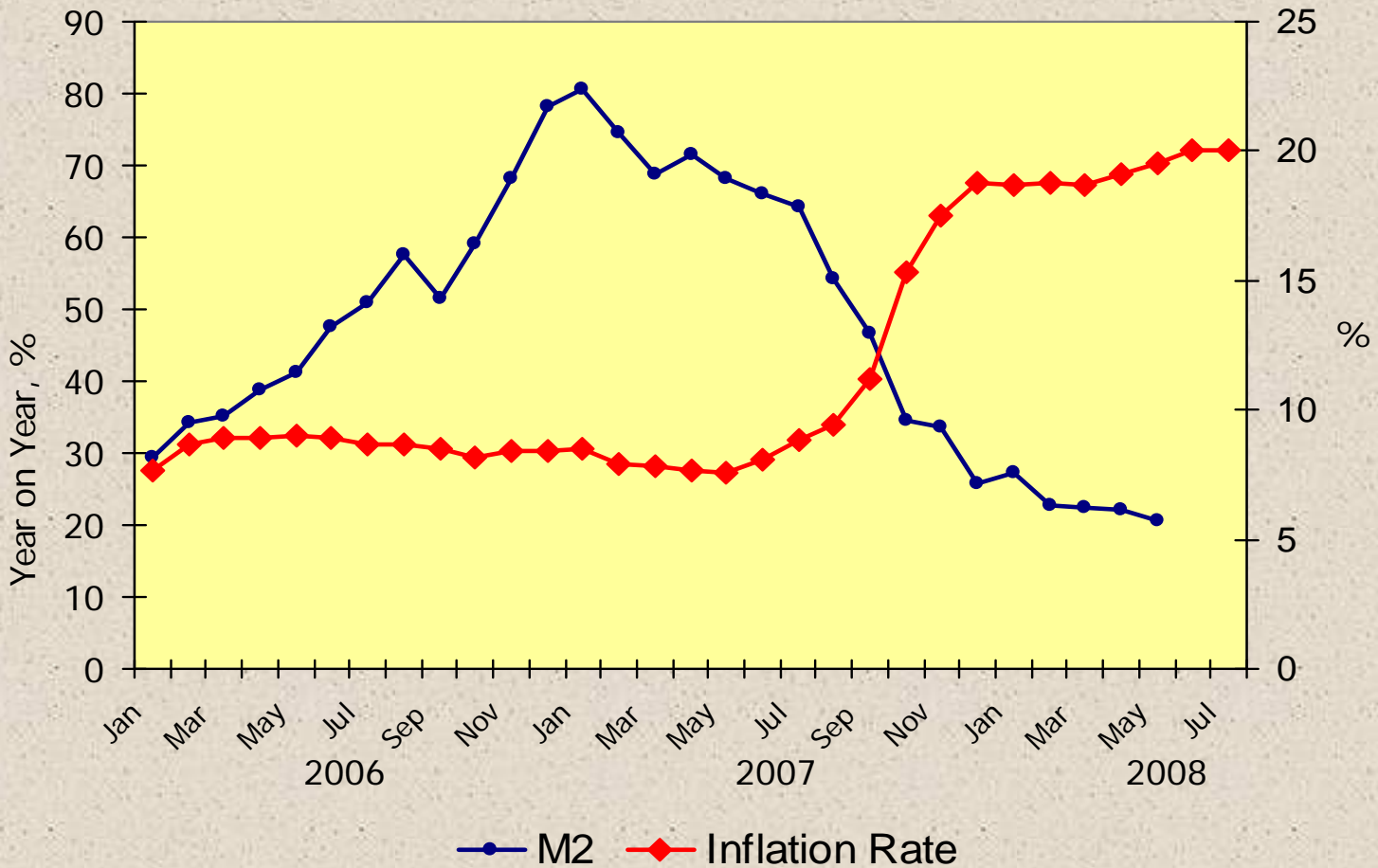


Lending by Sector

(billion tengu)



Rising Inflation



Three Key Questions

- Where do you want to be 25 years from today?
- Where is your labor force going to be employed?
- Where will Kazakhstan be positioned as part of the global production system?

Rest of the Presentation

- **What is Structural Transformation?**
- **Export Sophistication**
- **Product Space**
- **Policy Issues**

Growth and Change: The two sides of a coin

Growth is not just more of the same

“A growth miracle sustained for a period of decades ...must involve the continual introduction of new goods, not merely continual learning on a fixed set of goods” (Robert Lucas)

It occurs through change. Prosperity is the result of cumulative economic change (e.g., successful Asia)

Structural change is about the transformation of the economy by:

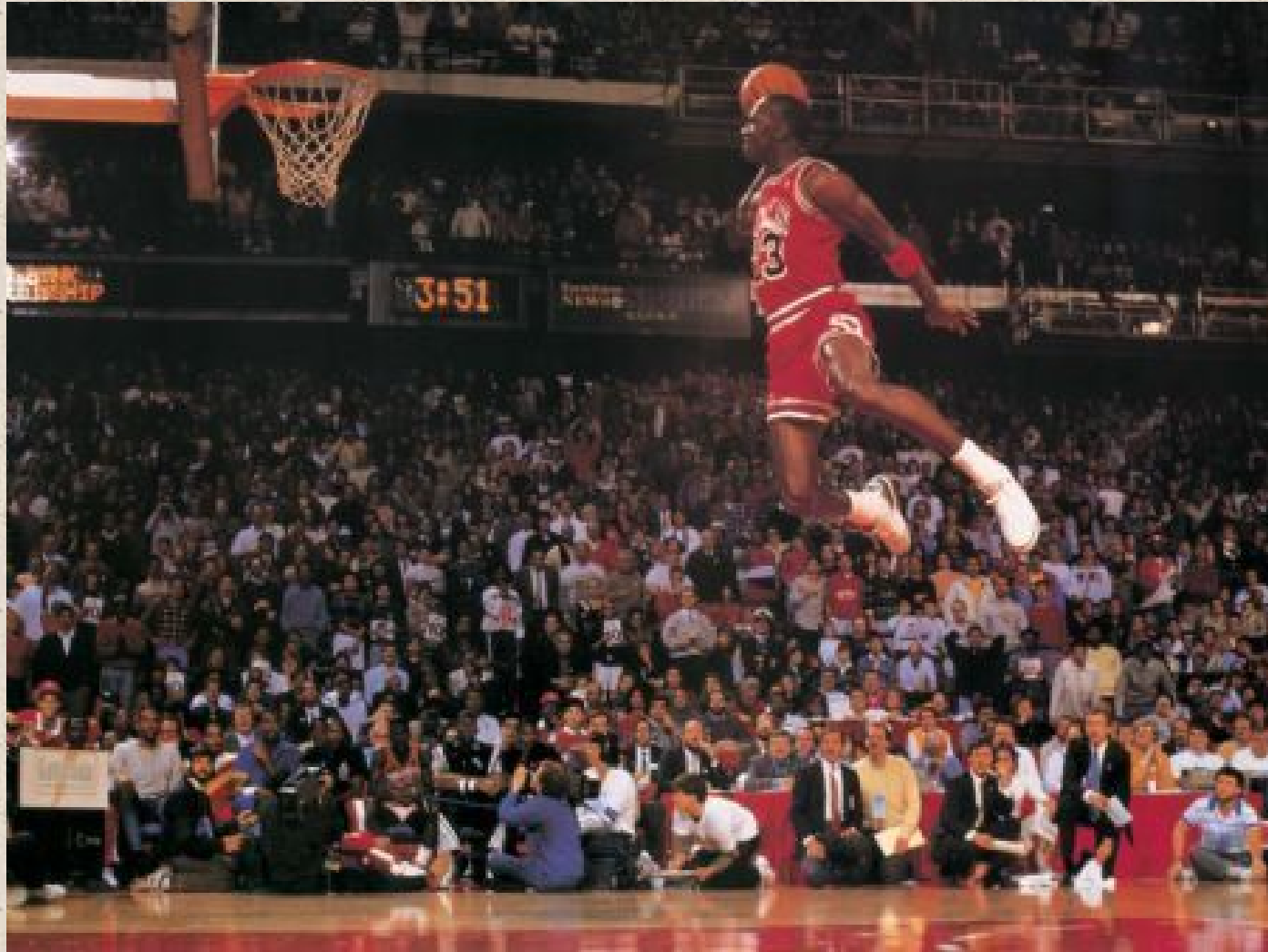
1. Transferring resources to higher productivity activities
2. Diversifying production while upgrading it
3. Producing and exporting a more sophisticated range of products
4. Increasing labor productivity

It entails:

- Identifying the products that the country can produce profitably by using its capabilities
- Using new inputs and methods of production
- Exploring new activities and developing new capabilities

Objective of developing countries: Catch up with the developed countries

Would you like to be like Michael Jordan?



Thailand, Malaysia, South Korea....China?

Stylized facts about development

Economic development requires diversification, not specialization

Rapidly growing countries are those with large manufacturing sectors

Growth accelerations are associated with structural change in the direction of manufacturing

Specialization patterns are not pinned down by factor endowments

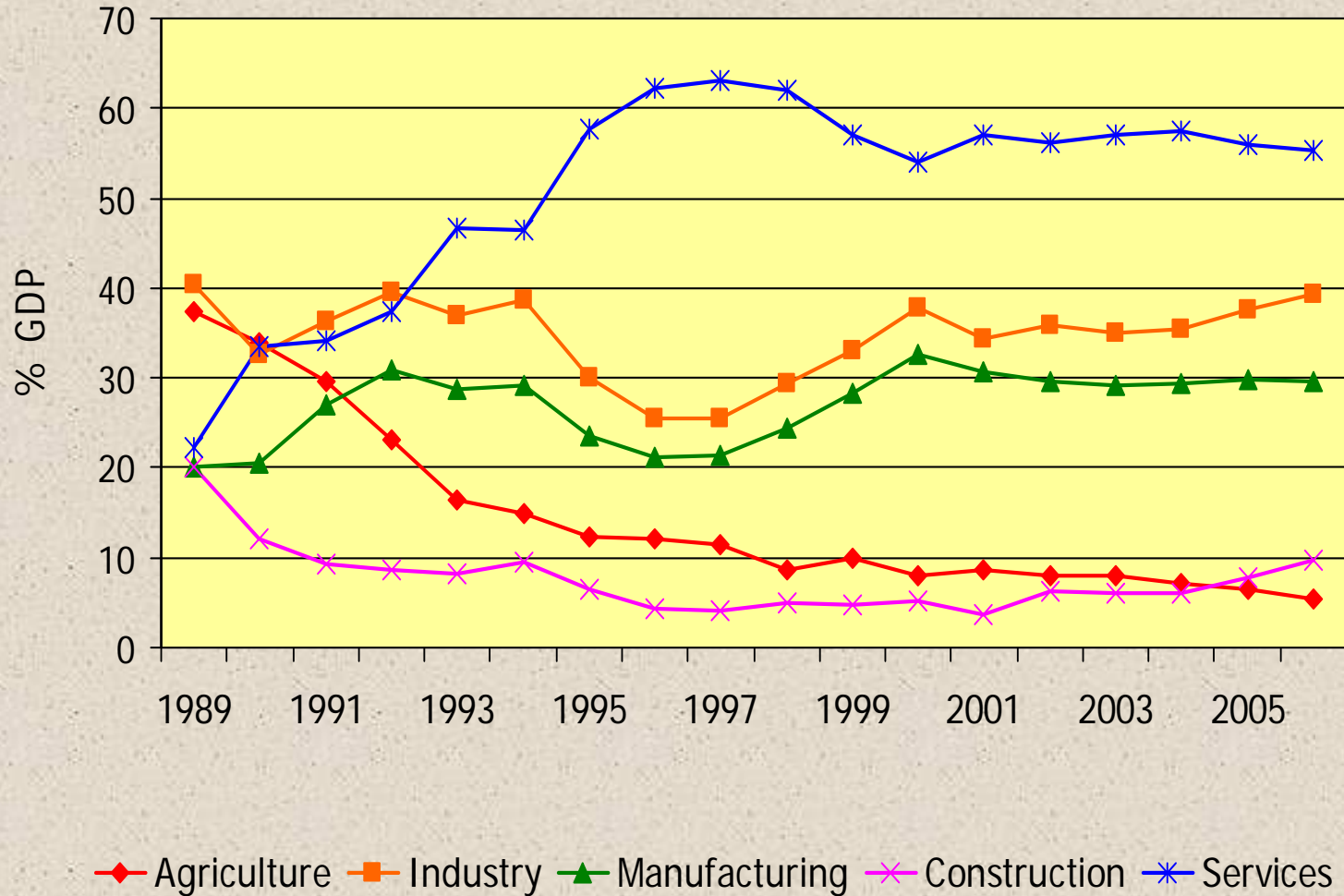
Poor countries do not become rich by exporting more of the same

Countries that export more "sophisticated" goods, given their level of income, grow faster

Long-run growth is about

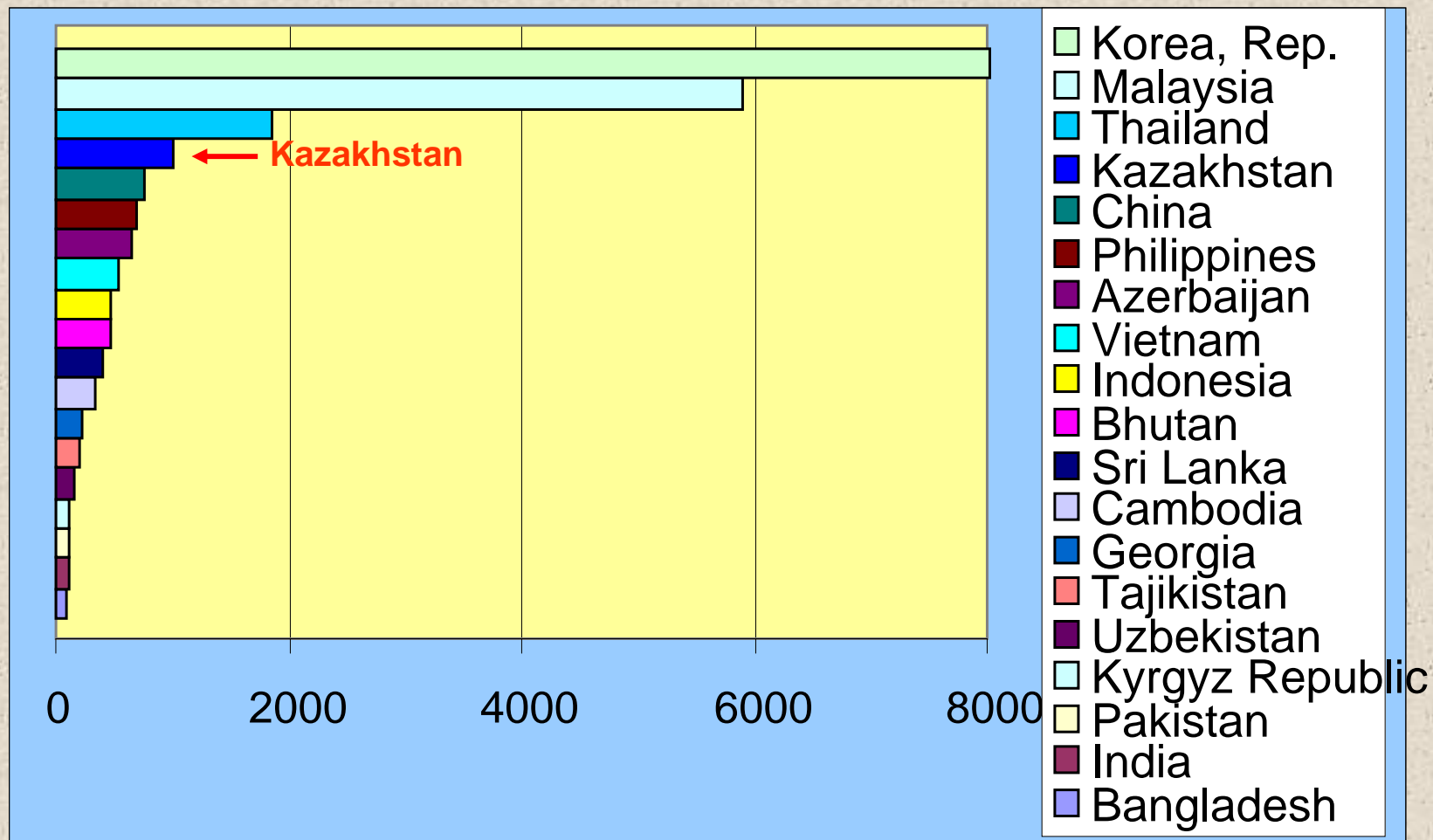
- Structural change : transformation of the production and export structures (*what* and *how*); technological upgrading
- Structural change is policy induced (comparative advantage is manufactured) and requires strategic thinking

Sector Shares in GDP

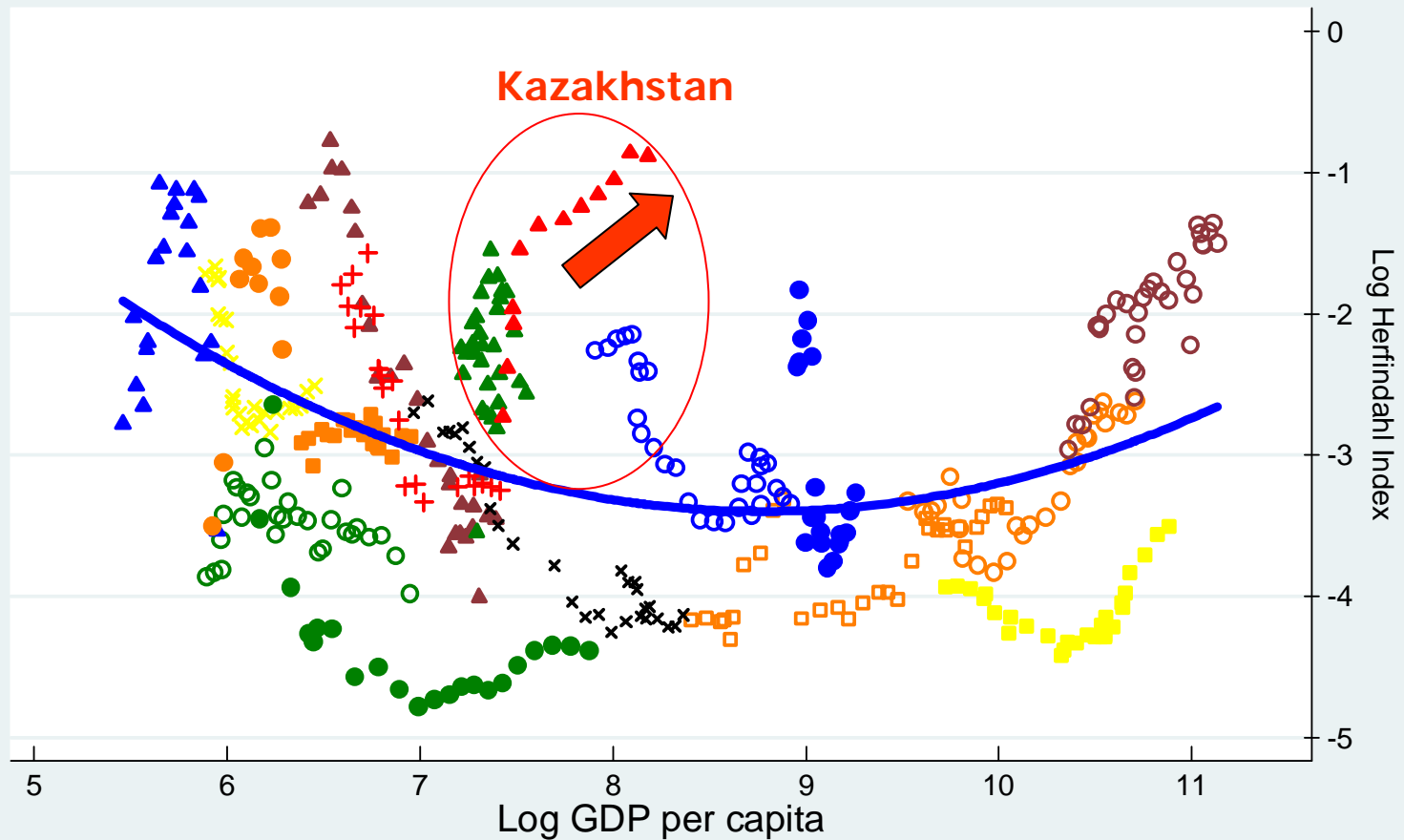


Exports per capita in 2006

Asian countries



Diversification...and...Specialization



- | | | | | | |
|--------------|--------------|--------------|---------------|-------------|----------------------|
| ✕ Bangladesh | ● China | ■ Hong Kong | ○ India | ▲ Indonesia | □ Korea, Republic of |
| ○ Malaysia | ▲ Nepal | ■ Pakistan | ▲ Philippines | ○ Singapore | + Sri Lanka |
| ✕ Thailand | ▲ Kazakhstan | ● Kyrgyzstan | ● Mexico | ○ Norway | |

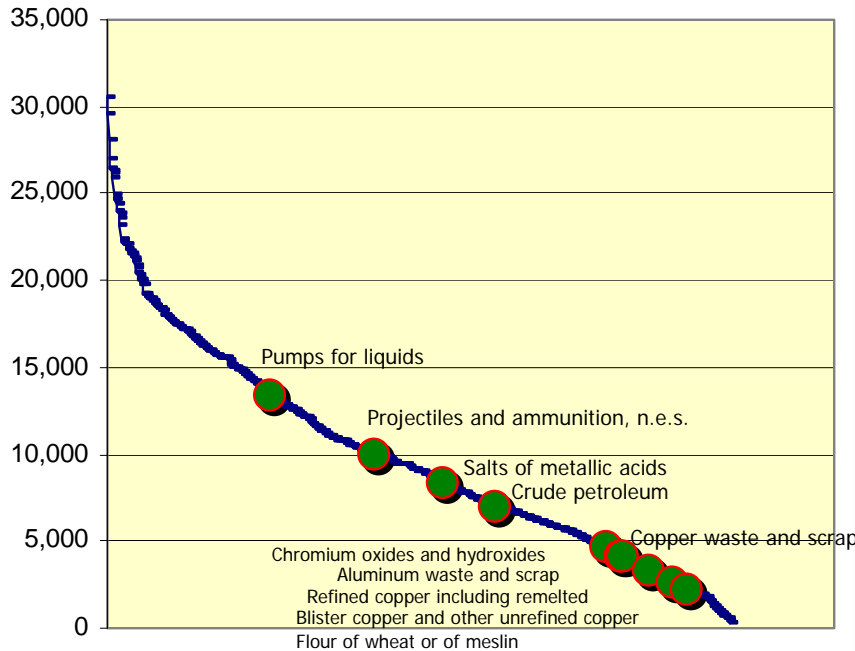
Kazakhstan's exports ranked by product sophistication

Commodity/Product	PRODY	share (%) to total exports				
		1995	1998	2001	2004	2006
Other chem.products and preparations	18,037	0.12	0.01	0.07	0.00	0.25
Anti knock preparations, etc.	15,172	0.18	0.03	0.00	0.00	0.21
Metalloids,n.e.s.	13,672			0.27	0.47	0.31
Plates under 3mm coated ex tin not h.c. or all.	10,803			2.01	2.04	1.06
Plates under 3mm uncoated not h.c. or alloy	7,682			3.42	1.90	0.80
Heavy plates etc iron steel not h.c. or alloy	6,968			0.61	0.47	0.22
Bars,rods,angles,shapes,wire of copper	6,400	1.06	0.62	0.95	0.87	0.55
Coils for rerolling iron steel not h.c. or all.	6,195			1.76	1.54	0.66
Silver,unwrought or partly worked,not rolled	6,104			2.13	1.01	0.96
Aluminium oxide and hydroxide	5,796			2.89	1.82	1.77
Special purpose vessels(e.g.light vess.dredgers	4,253			0.00	0.00	0.25
Refined copper including remelted	3,311	26.08	20.31	9.71	6.72	8.15
Ores and concentrates of copper	2,640	0.06	0.00	0.62	0.96	0.42
Blooms,billets,slab of high carbon steel	2,338			0.02	0.51	0.35
Flour of wheat or of meslin	2,111	1.46	2.06	0.43	0.63	0.58
Ores & concentrates of chromium	1,365	2.57	0.58	0.37	0.39	0.46
Crude petroleum	6,961	36.23	61.68	68.33	76.47	80.13
Export sophistication		6,534	6,297	6,643	6,687	6,660
Export sophistication (non-hydrocarbon)		6,292	5,228	5,955	5,798	5,447

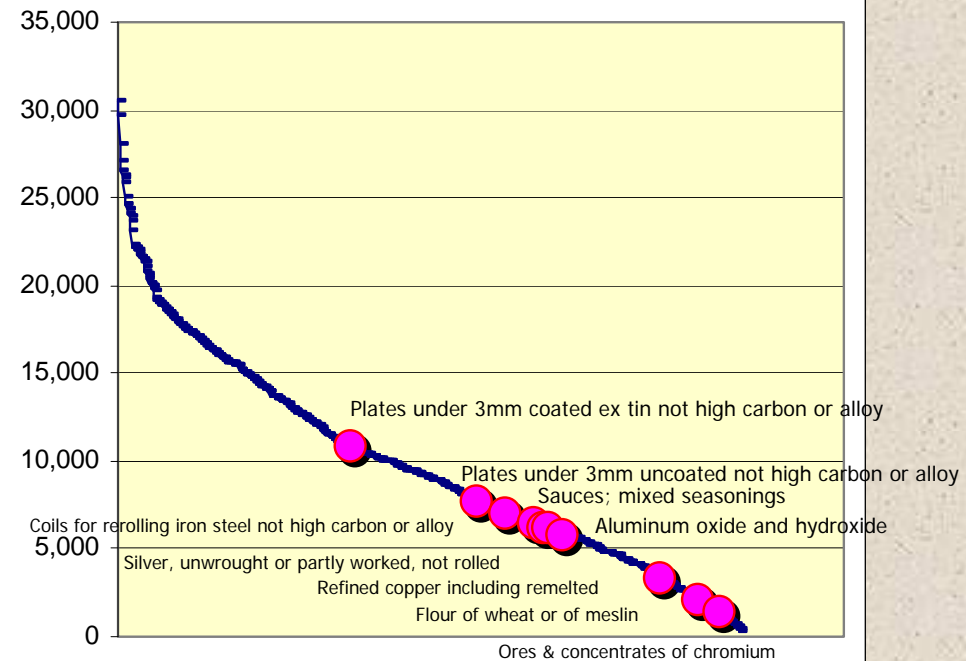
Export Sophistication

Top 10 exports

Kazakhstan 1998

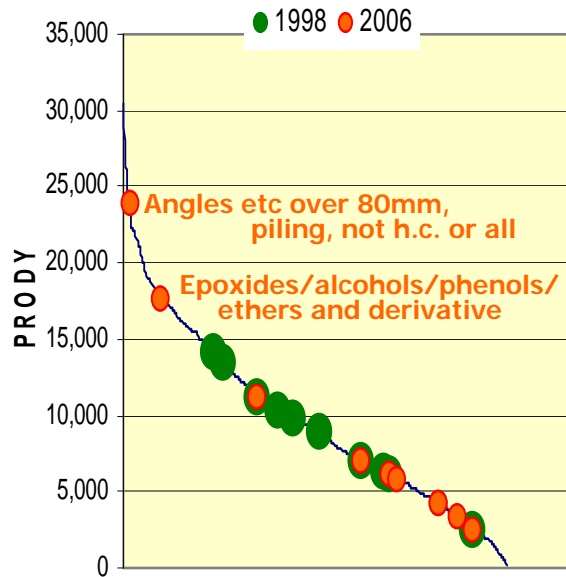


Kazakhstan 2006

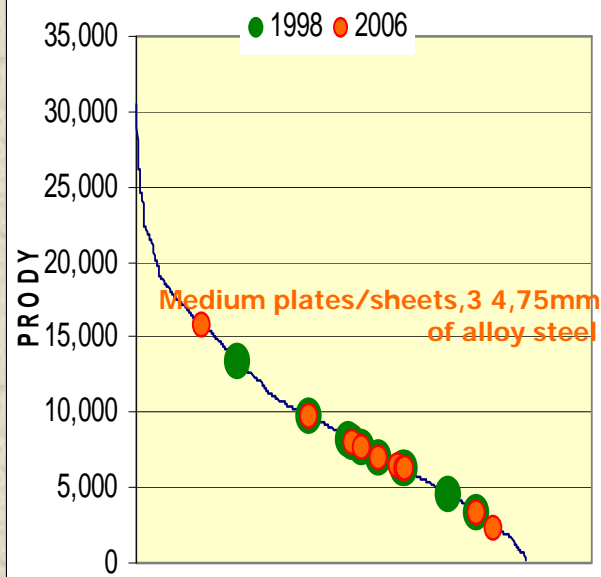


Export Sophistication Top 10 exports

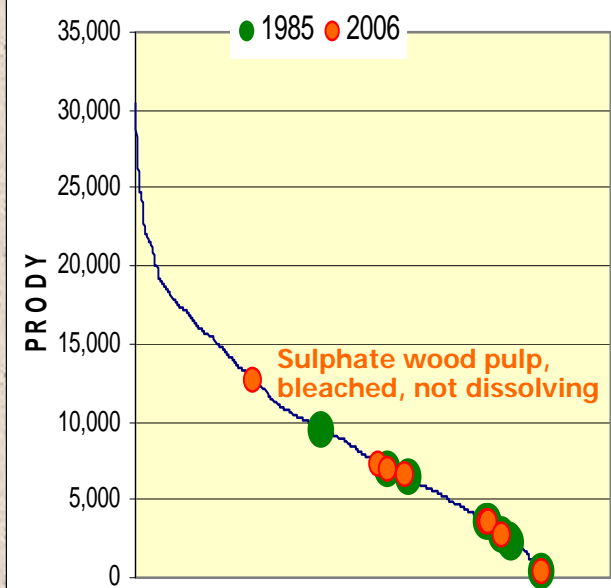
Azerbaijan



Russia



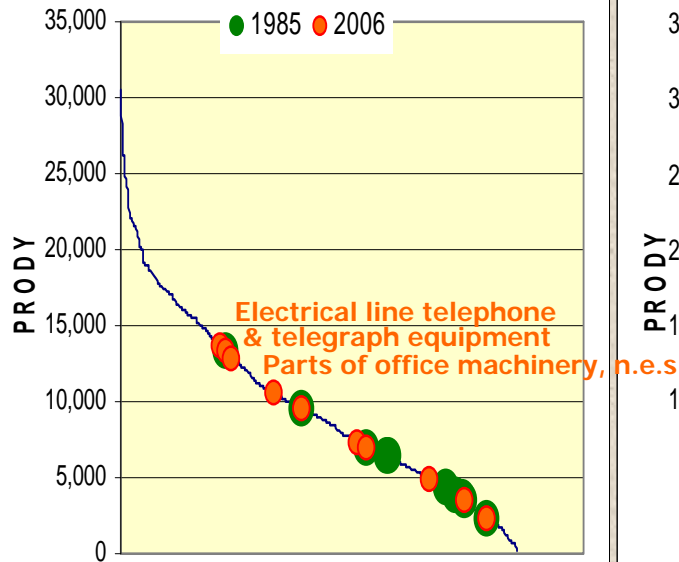
Indonesia



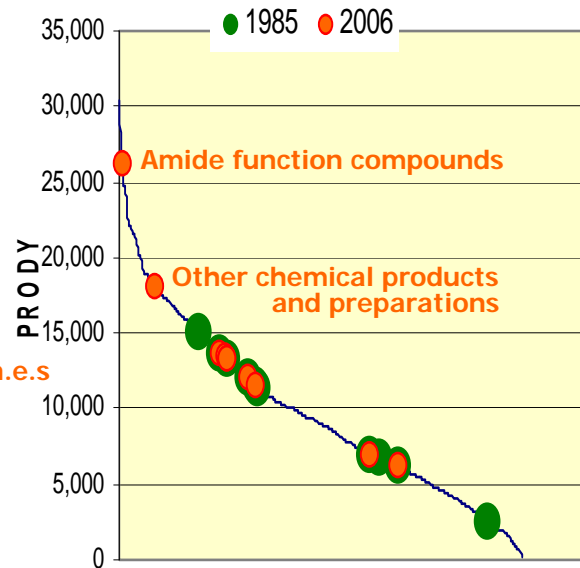
Export Sophistication

Top 10 exports

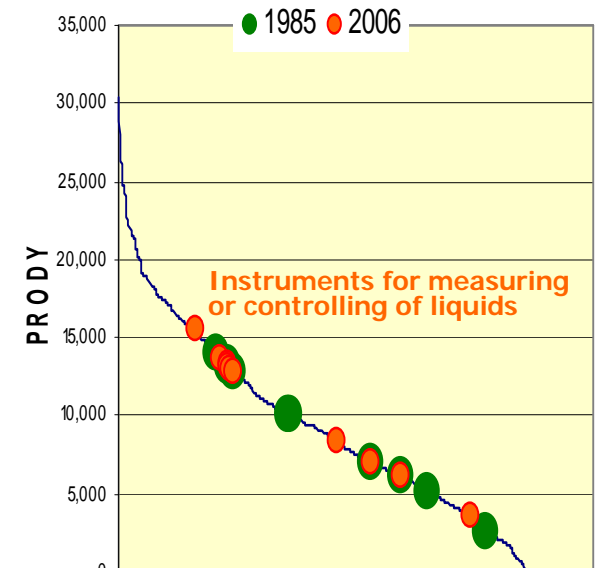
Malaysia



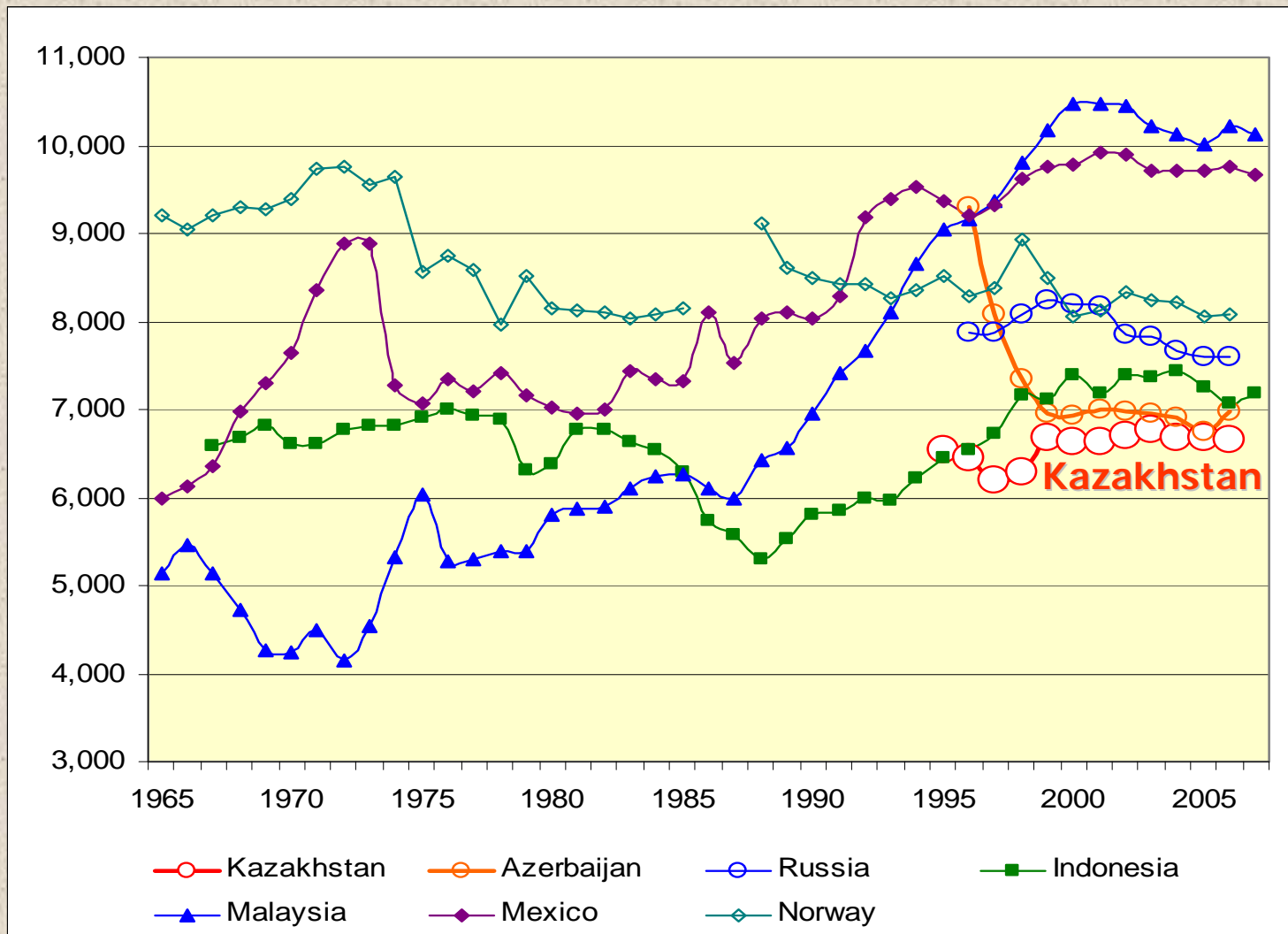
Norway



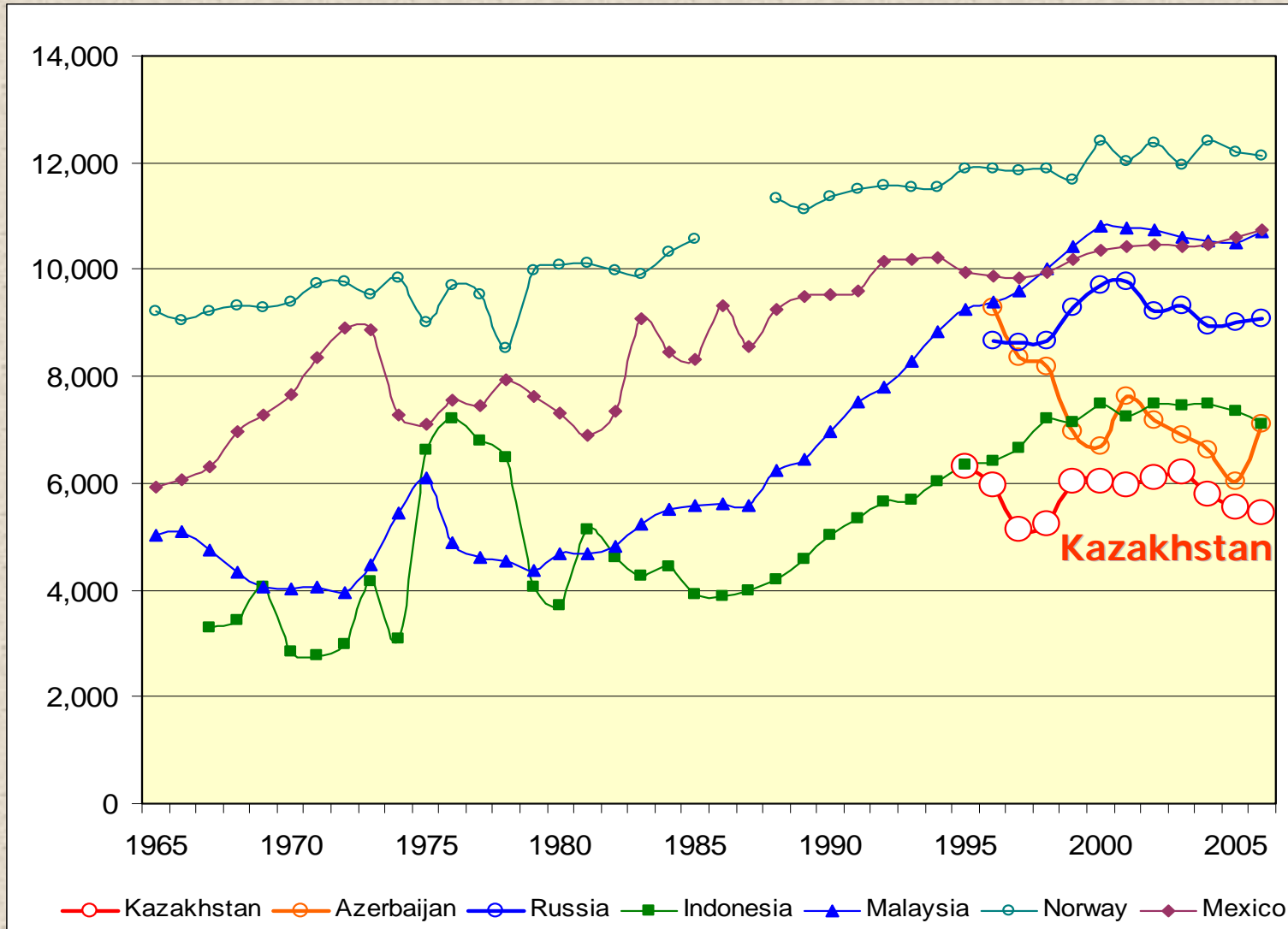
Mexico



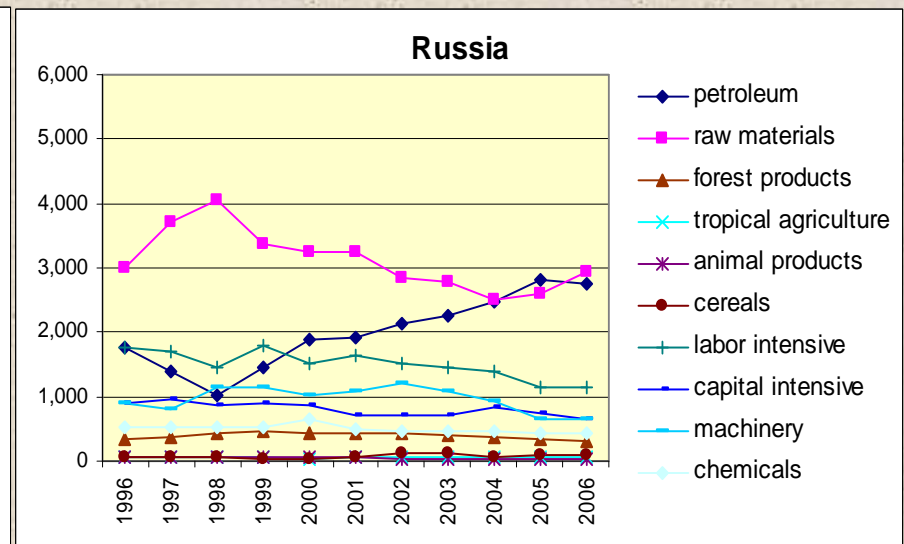
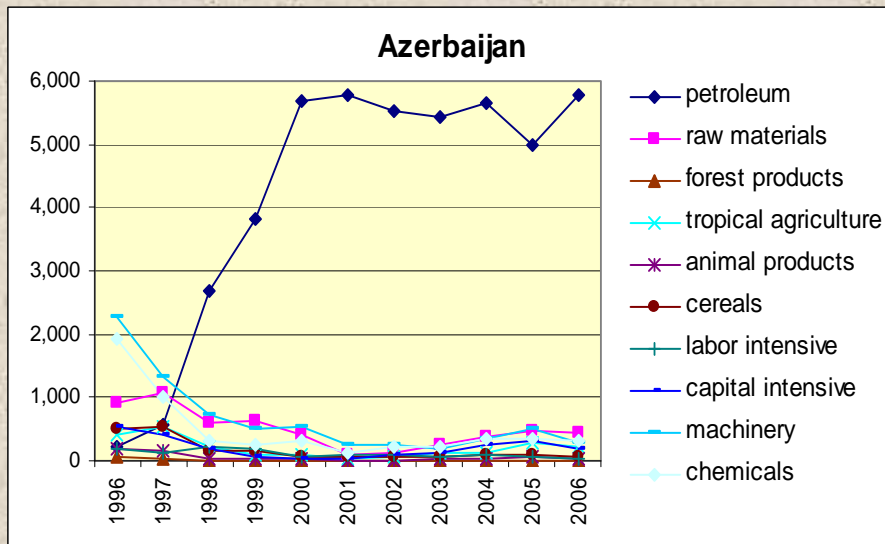
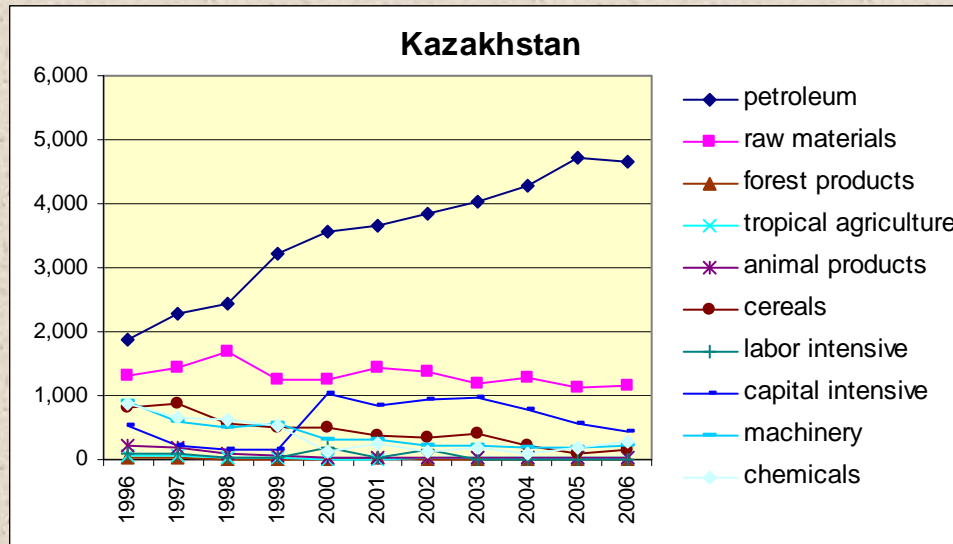
Export Sophistication (including hydrocarbon exports)



Export Sophistication (excluding hydrocarbon exports)

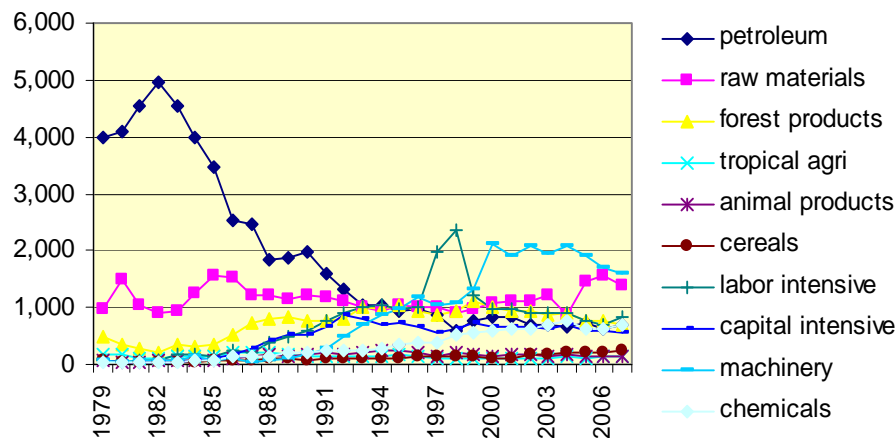


Contribution to Export Sophistication by Sector

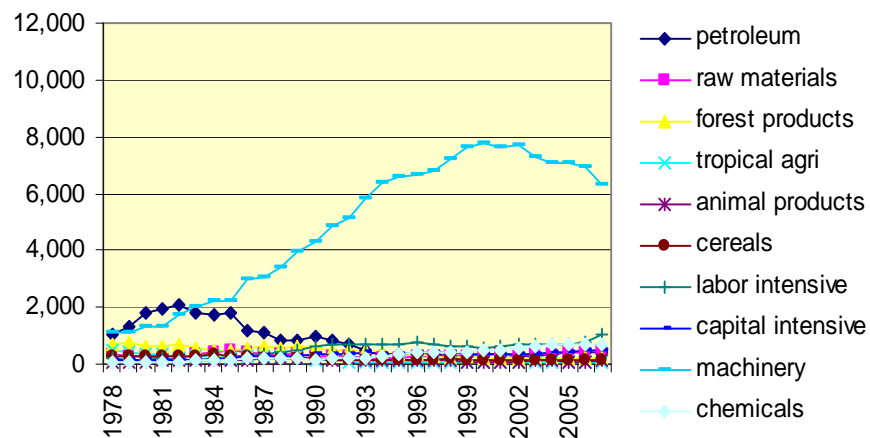


Contribution to Export Sophistication by Sector

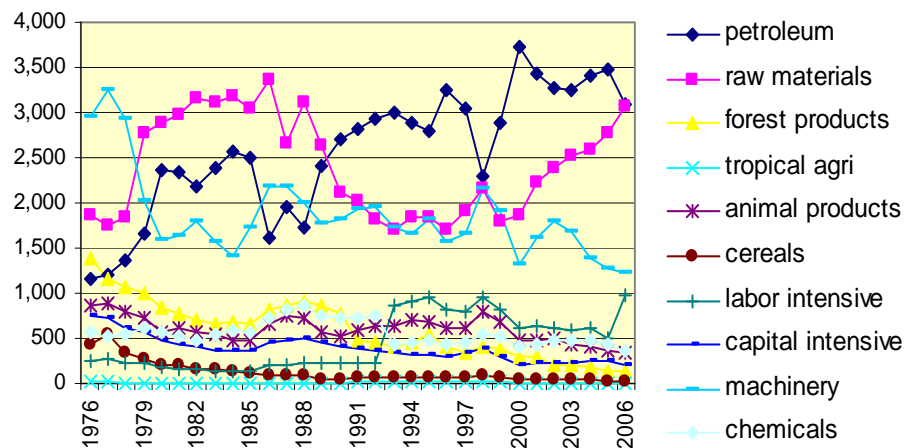
Indonesia



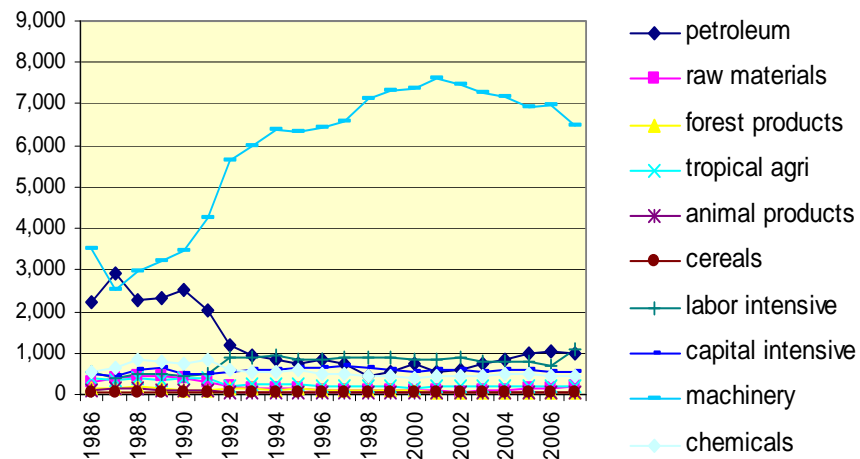
Malaysia



Norway



Mexico



How To Advance? Monkeys & Trees



Our metaphor:

- Products are like trees
- Firms are like monkeys
- Structural transformation: process whereby monkeys move from the poor part to the rich part of the forest
- Easier for monkeys to jump short distance (i.e. to change to products that use similar capabilities)

Why are some countries better able to upgrade their exports than others?

Moving to new products is difficult...

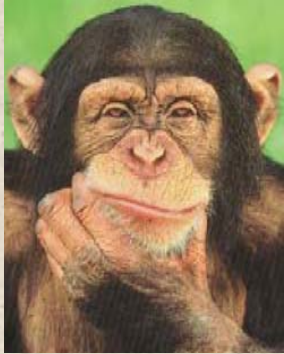


New products face a chicken and egg problem:

- Why create inputs for an industry that does not exist?
- How can the industry exist, if the inputs are not there?

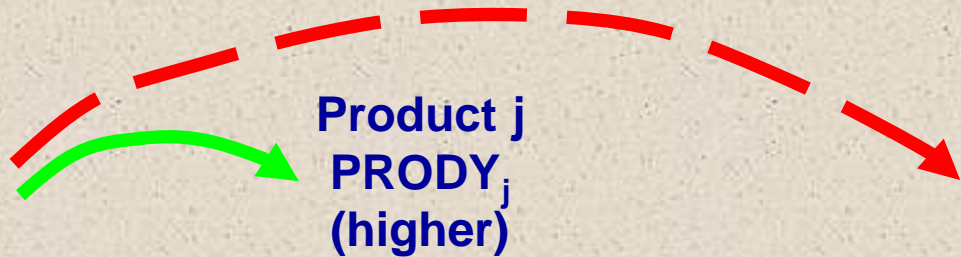
In practice, new products use inputs that have been accumulated to serve other "nearby" products

- This creates very strong path dependence

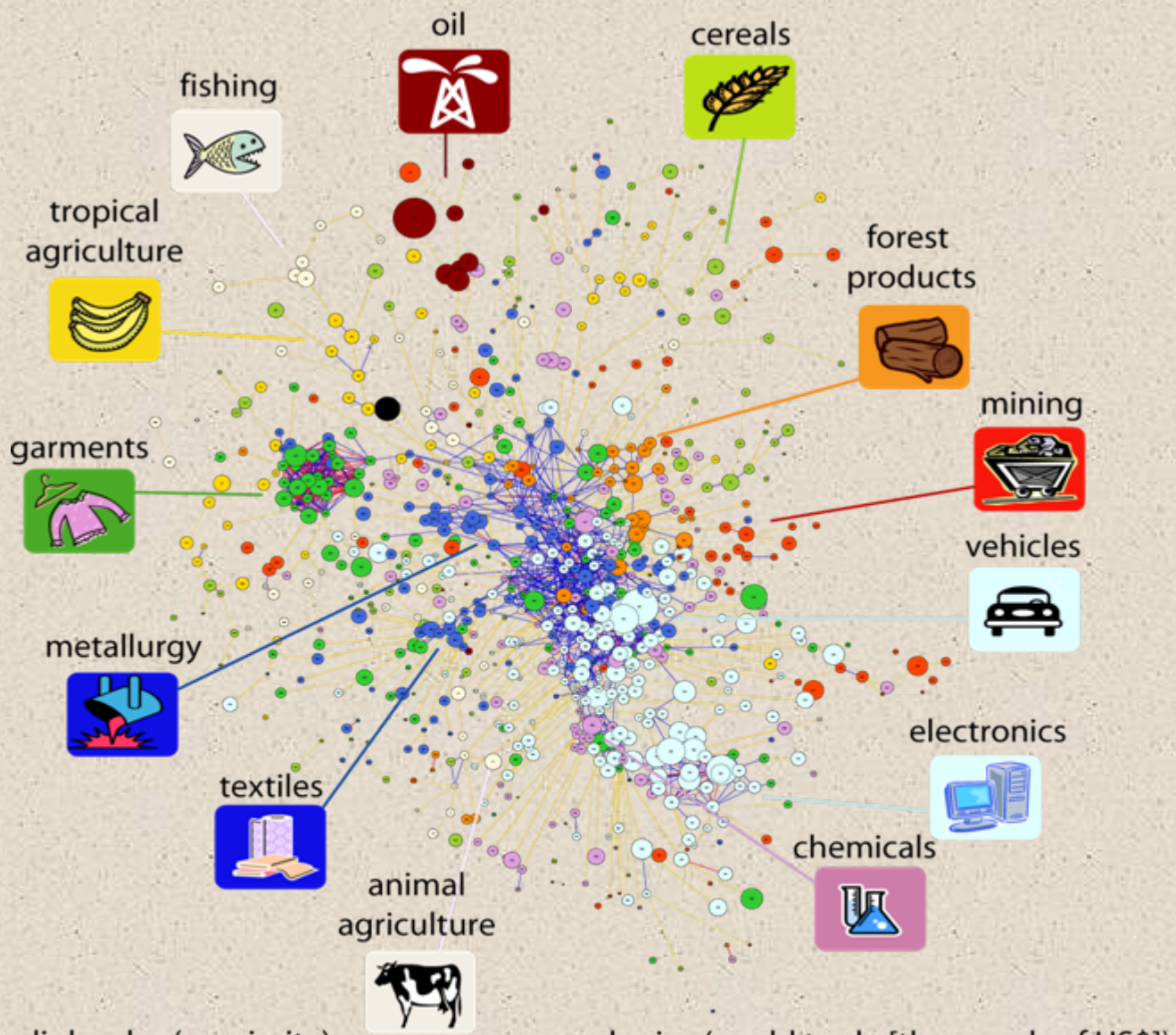


Product i
 $PRODY_i$

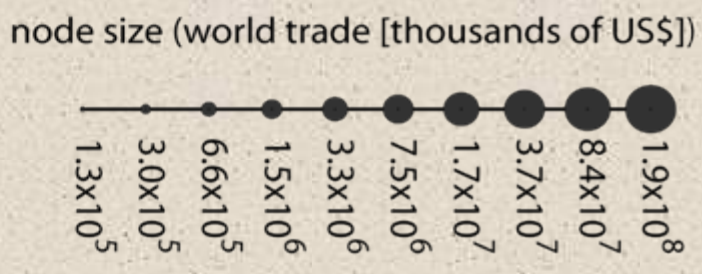
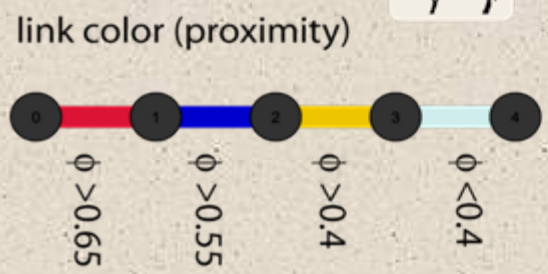
Can I jump to the distant tree (k)?...No!
But, I can jump to the near one (j).



Proximity with i

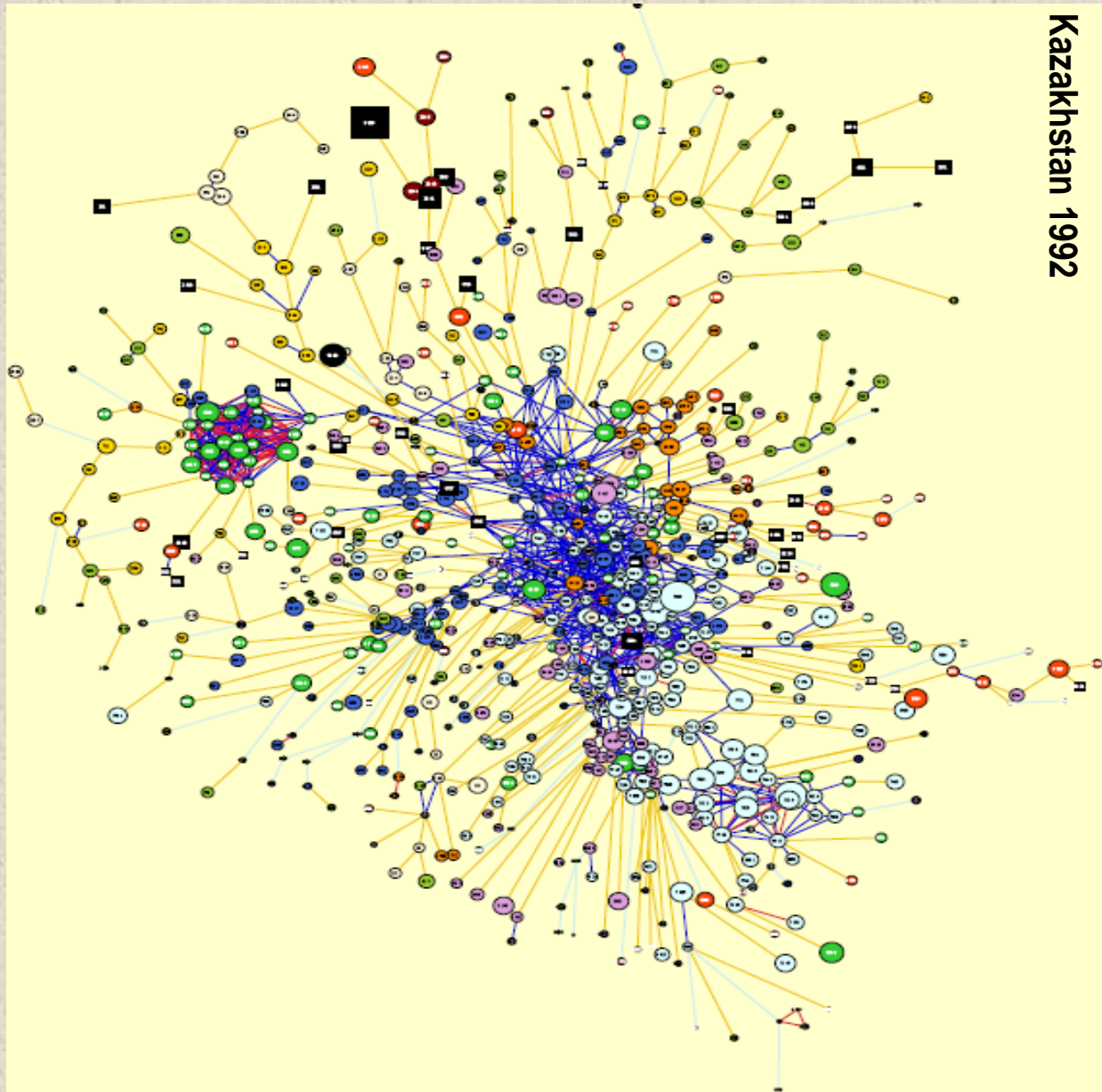


- node color (Leamer Classification)
- 10 Chemicals
 - 9 Machinery
 - 8 Capital Intensive
 - 7 Labor Intensive
 - 6 Cereals
 - 5 Animal Agriculture
 - 4 Tropical Agriculture
 - 3 Forest Products
 - 2 Raw Materials
 - 1 Petroleum



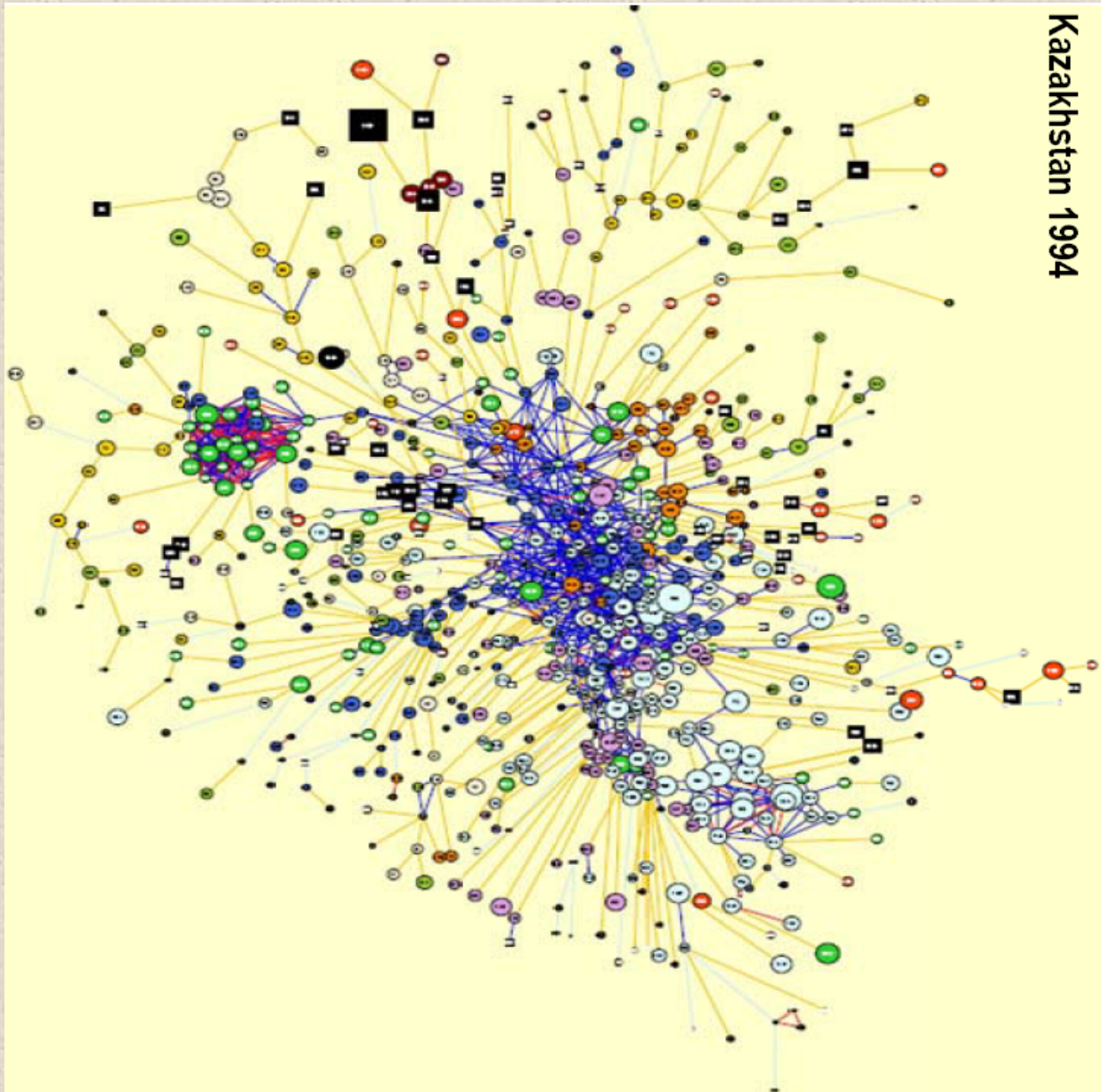
Kazakhstan's forest

1992



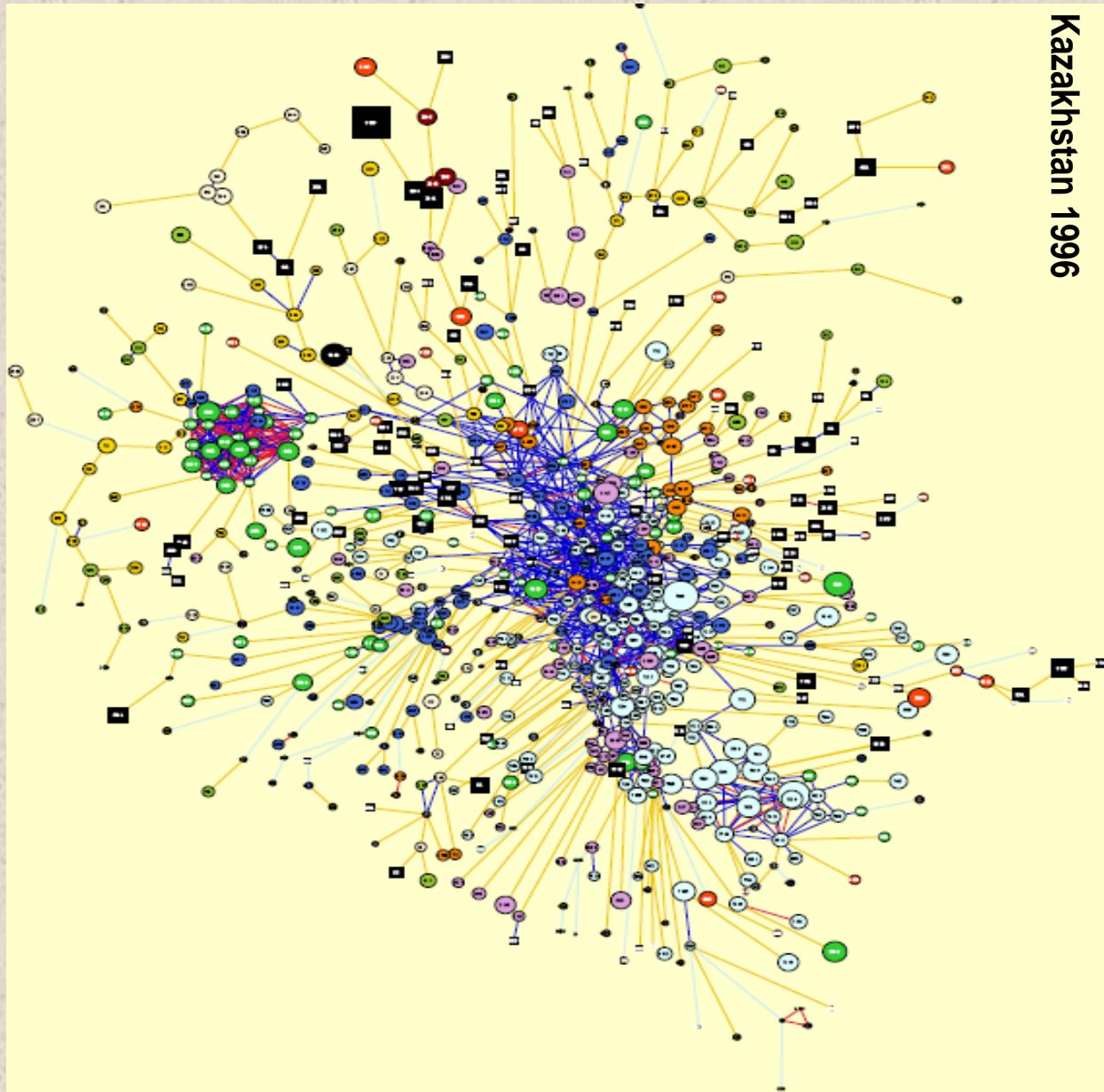
Kazakhstan's forest

1994



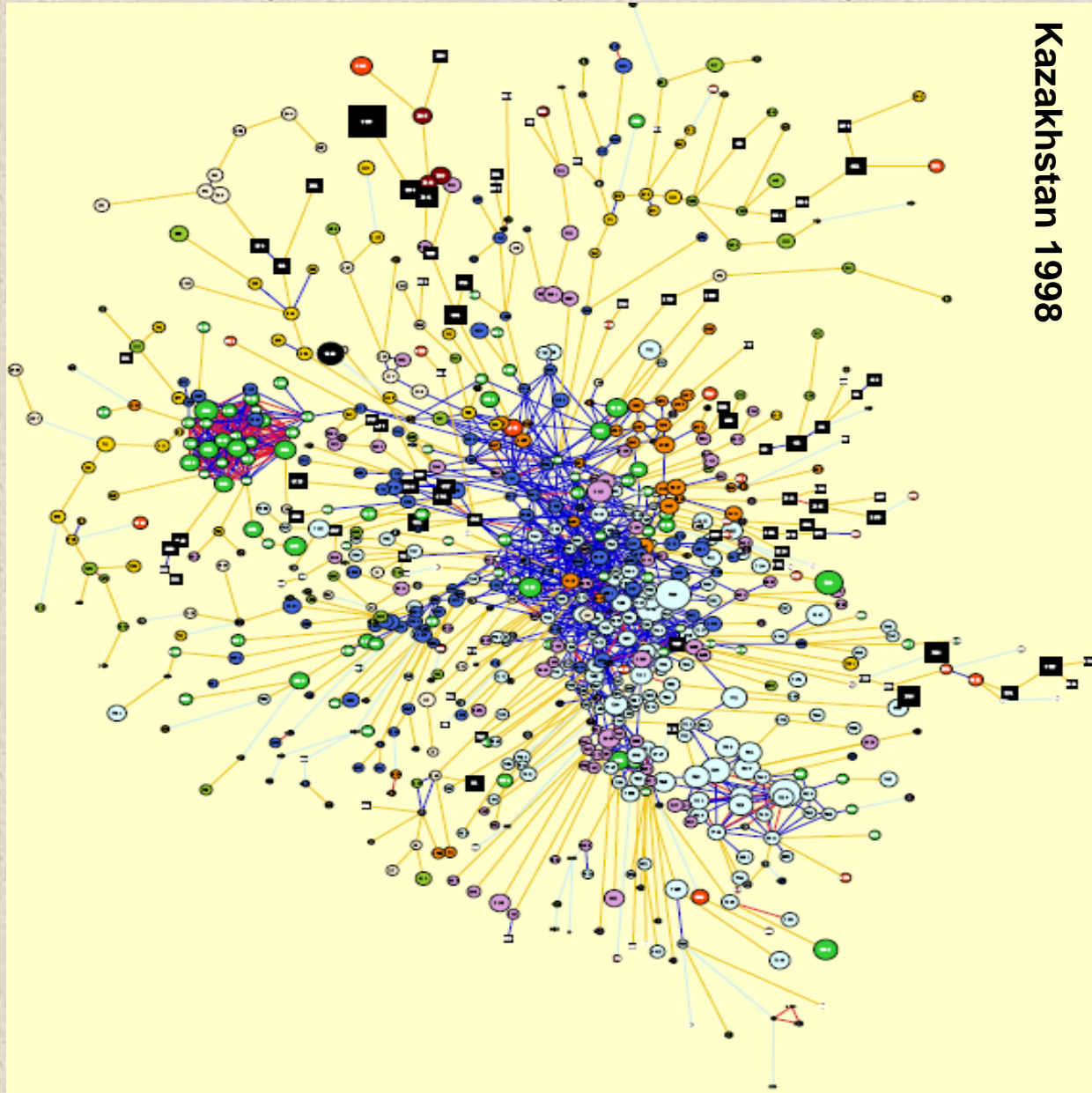
Kazakhstan's forest

1996



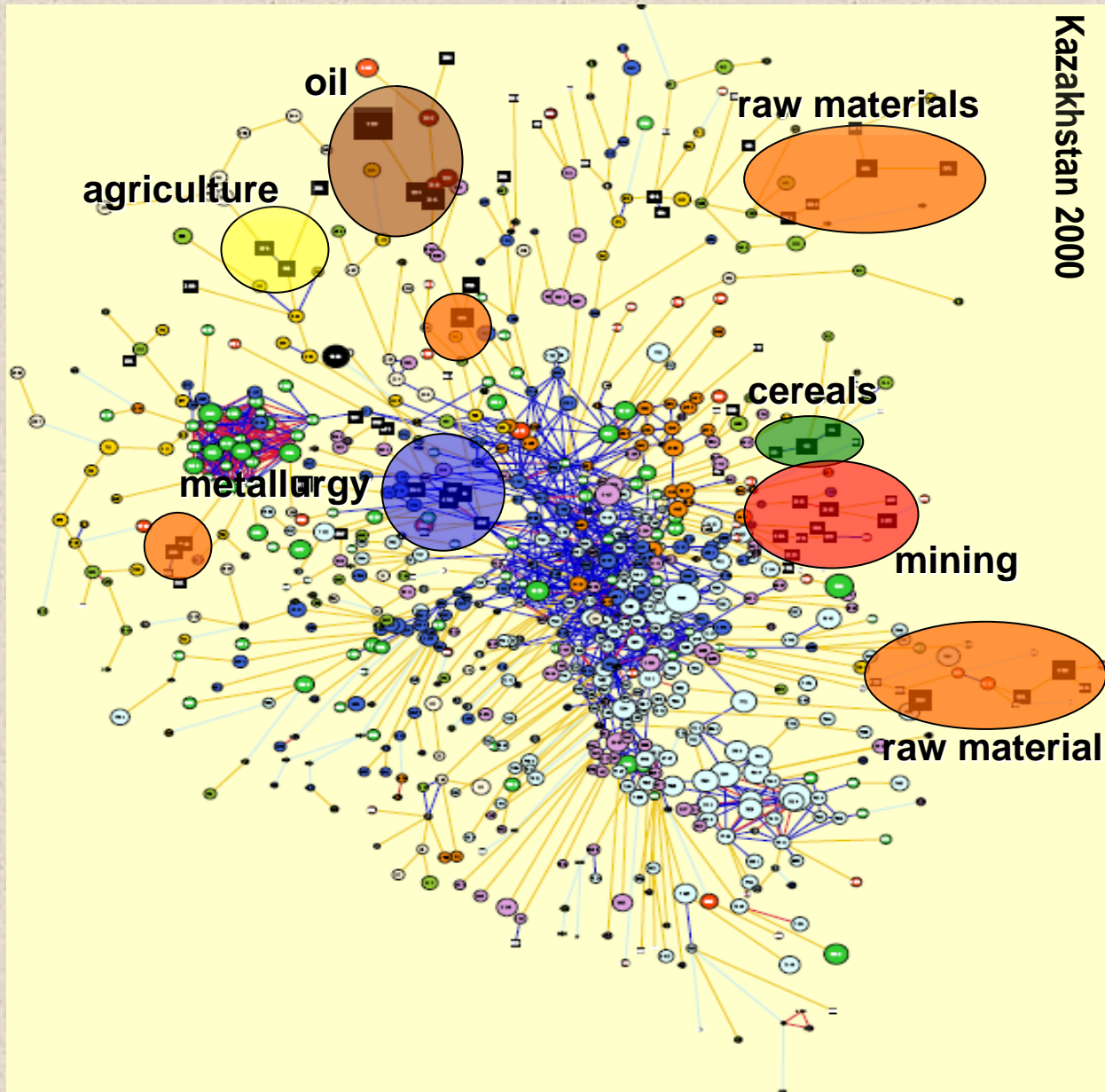
Kazakhstan's forest

1998



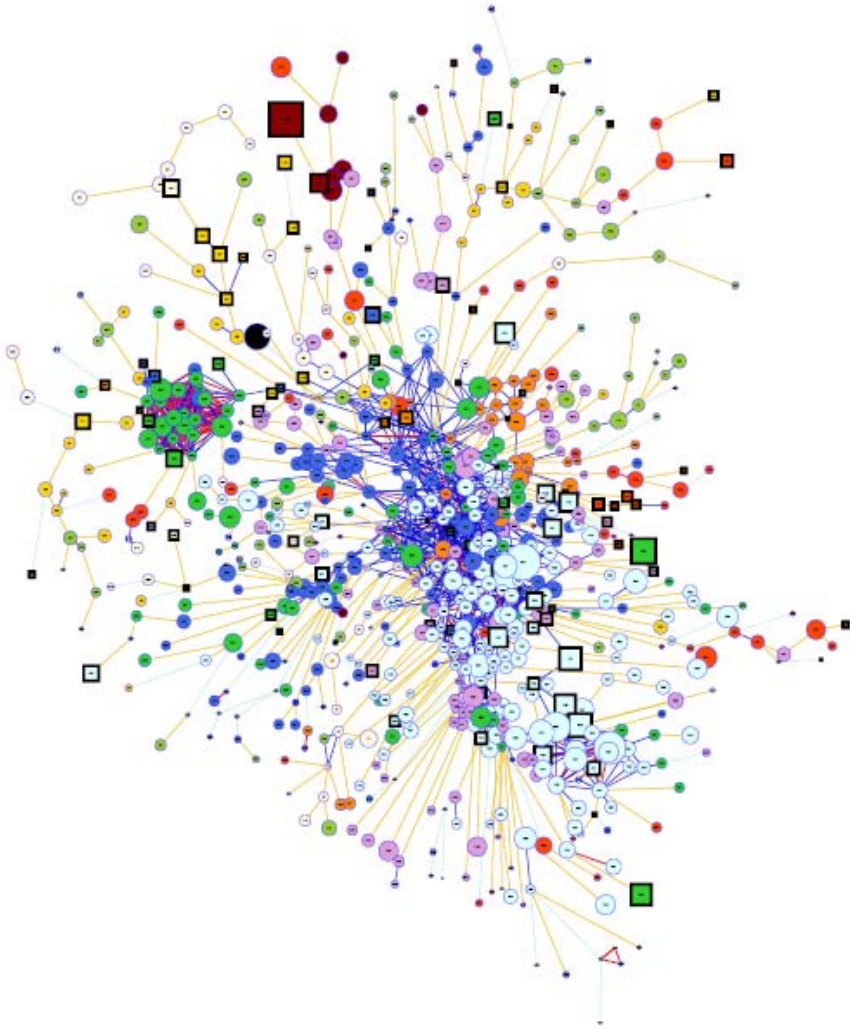
Kazakhstan's forest

2000

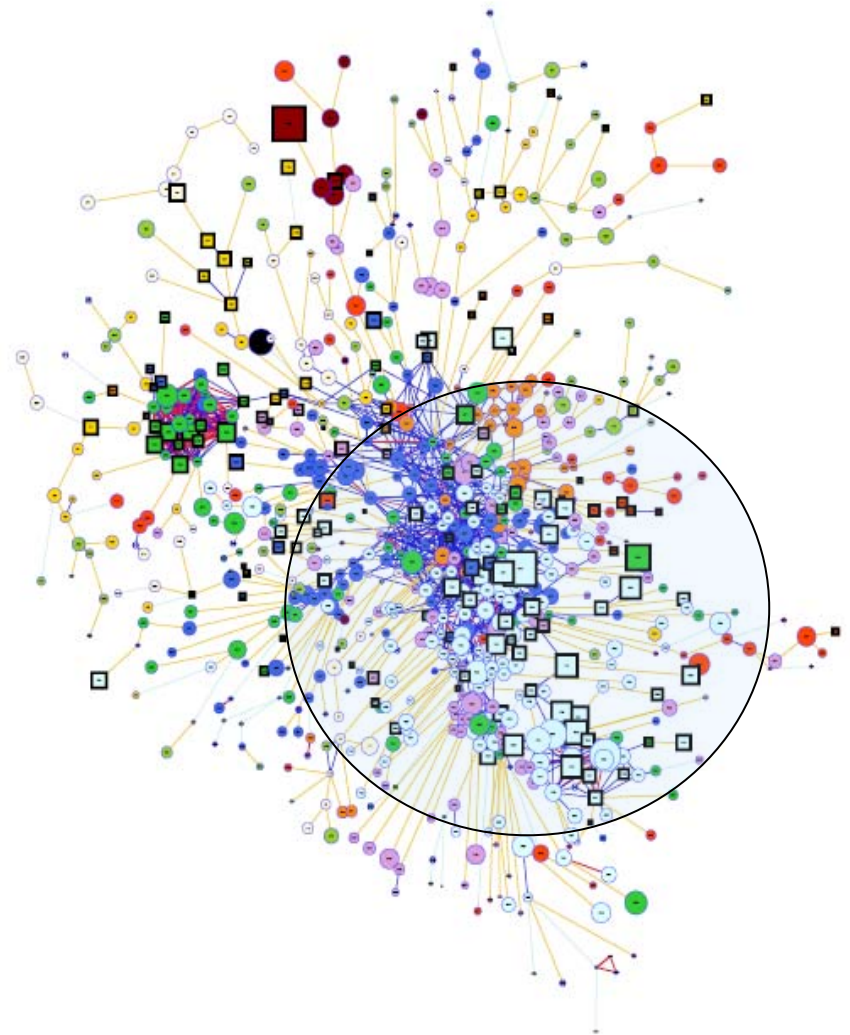


Mexico's forest

1985

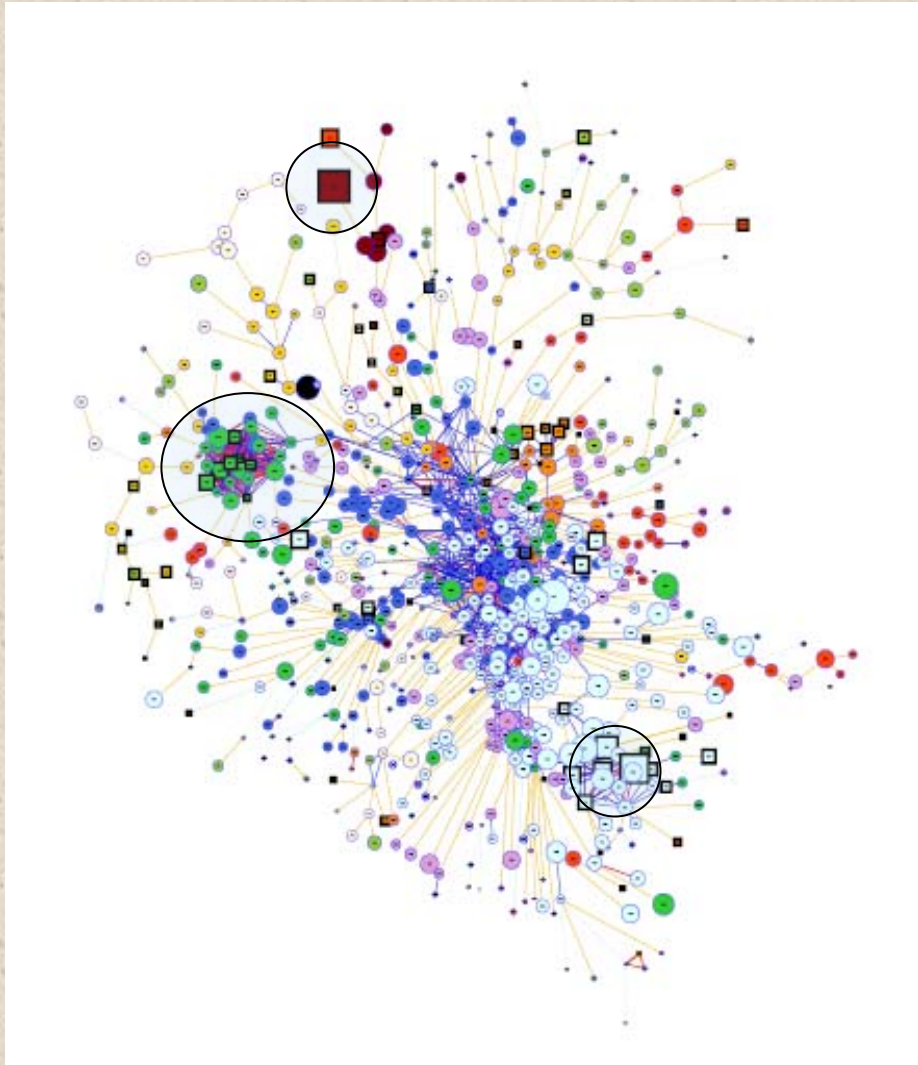


2000

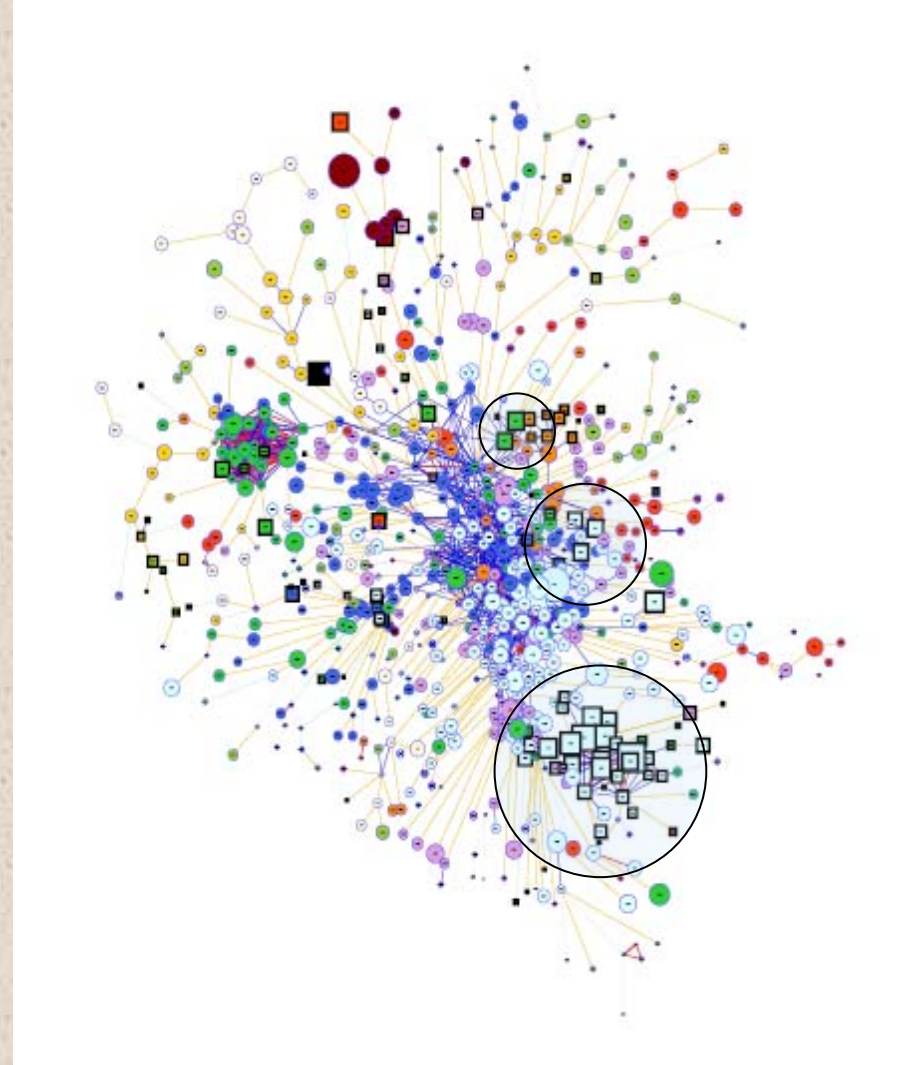


Malaysia's forest

1985

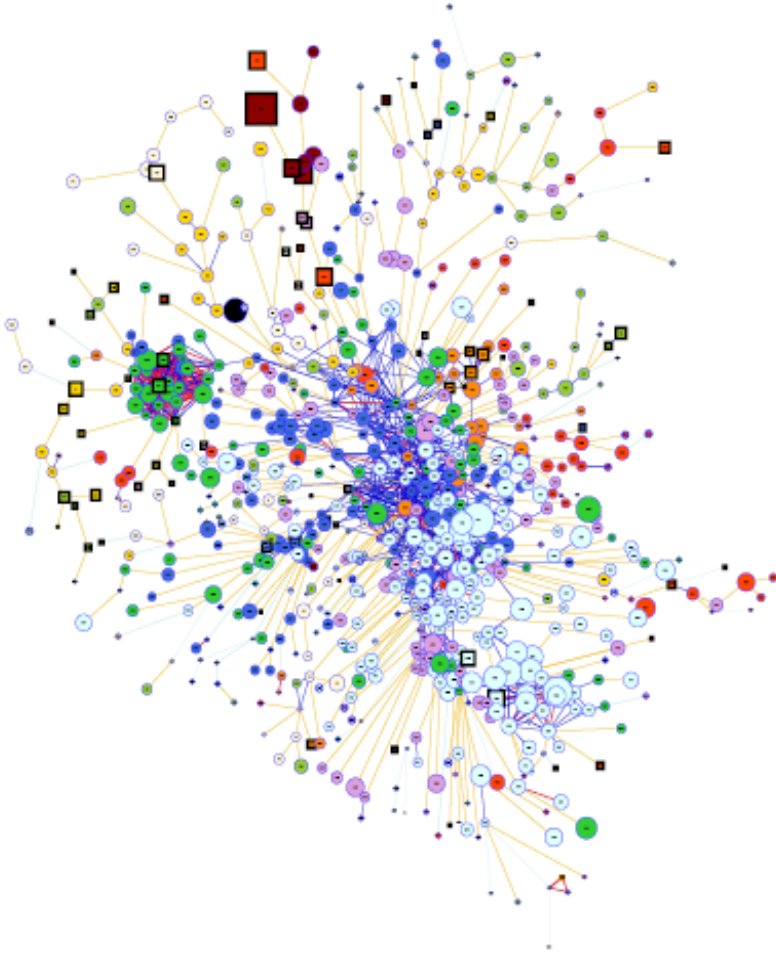


2000

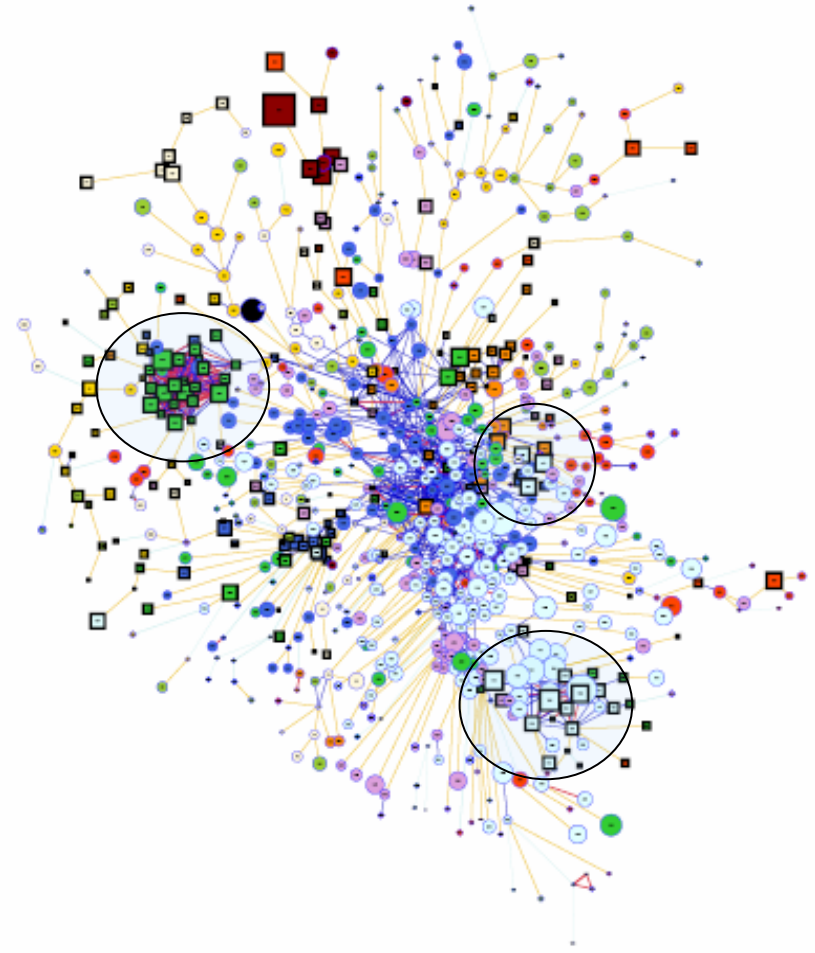


Indonesia's forest

1985



2000



Use and Interpretation of The Product Space

1. It is a tool to guide decision-making, not to “pick winners” (especially in the *old* sense of the term)
2. It helps public and private sectors to think outside the box
3. Solve problems and relax constraints...then “choose less”

Summing Up

- High dependence on hydrocarbon exports
- Concentration on products with a low level of sophistication
- Worrisome: Shift to products with lower sophistication
- Level of export sophistication (country as a whole) is explained by crude petroleum
- No “monkey” in the dense area of the forest. They are only in the periphery (e.g., petroleum, cereals, mining, raw materials, and metallurgy)
- Few nearby trees monkeys can jump to

What Strategies are open to Kazakhstan?



Three Strategies

- **More and better of the same: Deal with existing sectors**
 - Cereals, Metallurgy
 - Focus on productivity and quality interventions
- **Nearby products**
- **Strategic bets: A bit farther away**

The Big Questions

- Where do you want to be 25 years from today?
- Where is your labor force going to be employed?
- Where will Kazakhstan be positioned as part of the global production system?
- What is policy making about?
- What is the role of public and private sectors?



**What limits the capacity
of monkeys to jump
longer distances in
Kazakhstan?**

Hypothesis:

**Lack of (or poor)
Public/Private
Cooperation and
Dialogue**

Transformation Requires Public/Private Cooperation

How to provide highly specific, high dimensional public inputs that are complements in private production?

Private inputs:

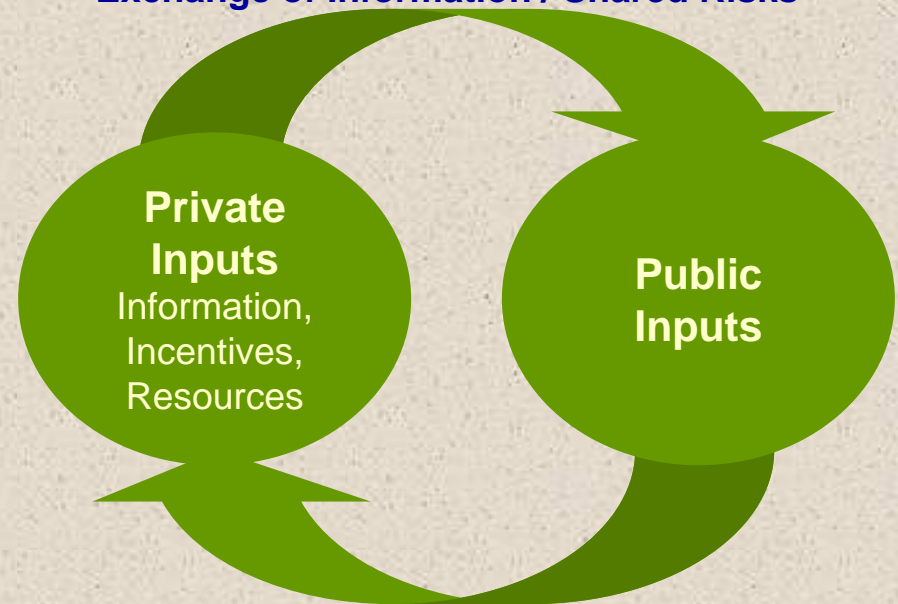
- Prices: information
- Profit-motivated firms: incentives
- Capital markets: move resources

Public inputs:

- No price: where to get the information?
- What are the incentives? Political?
- Even with incentives, how would resources move?

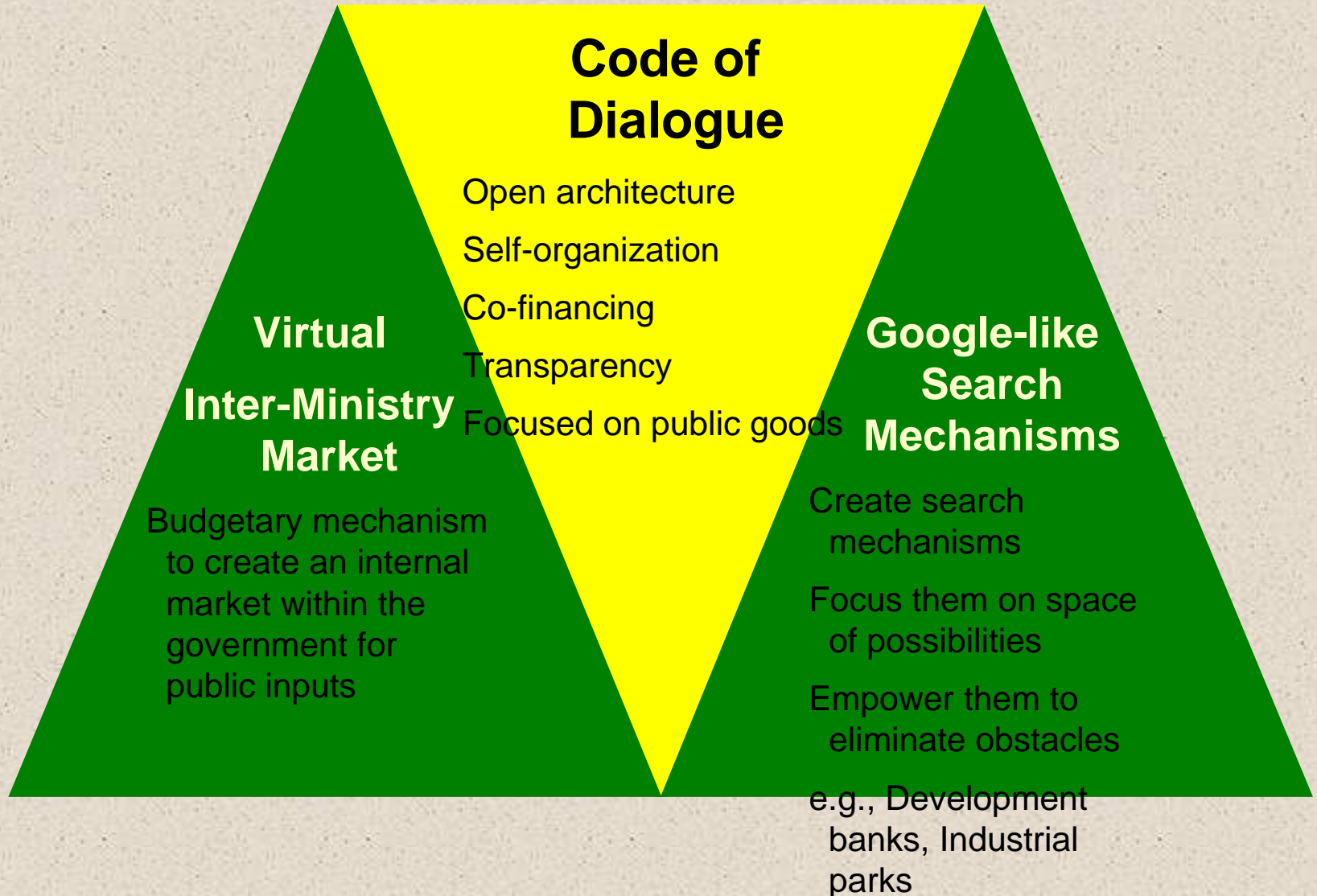
Public / Private Cooperation

Exchange of Information / Shared Risks



In the absence of coordination, monkeys can only jump to trees that require inputs that are already present

Some Policy Initiatives



Two Policy Dilemmas

- Few versus Many Sectors
- Horizontal versus Specific Policies

Dilemma 1

Few vs. Many Sectors

- Choose few sectors and give ample support
- Consider more sectors and focus assistance on public inputs

We believe that the second option promises higher returns because there are many activities that are impeded by poor provision of public inputs which are not costly to fix

Dilemma 2

Horizontal vs. Specific Policies

- The 1990s were focused on horizontal policies
 - Inflation, deficits, trade liberalization, financial reform
- These are still important
 - High transportation costs prevent development of international trade
- But many policies are much more specific and cannot be identified unless the dialogue takes place at the right level

Some Proposals

- Increase the dialogue with the private sector: number of sectors that get attention and the level of detail
- Identifying and strengthen the clusters
- Focus the attention on public inputs that increase productivity, not private subsidies (e.g., tariffs, credits, etc.)

Some Proposals

Balance the support for existing activities with strategic bets

- Stop focusing your industries on the processing of your own raw materials
- Follow the capabilities, not the products
- Role of Foreign Direct Investment and its promotion
- Role of Industrial Parks

Summing Up

Kazakhstan is positioned in the periphery of the product space...

Key to successful development:

- Answer the key questions
- Increase diversification and sophistication of the economic base (identify strengths and new niches)
- Introduce institutional improvements to increase the quality of the public/private dialogue

Further Work

- More detailed look at Kazakhstan's current capabilities
- Evaluation of the Government's priority sectors
 - "Top 30 Corporate Leaders"
 - Modernizing the economy and supporting Kazakh companies to enter international markets through offering competitive products.
 - State provides investors with high allocations, state guarantees and tax incentives
- How can you achieve the targets?

Thank you