Thailand's Competitiveness: Key Issues in Five Clusters

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Thailand's Competitiveness Agenda
The Role of Clusters

- Thailand's future **competitiveness** depends on progress in two dimensions
  - Cross-cluster issues affecting the whole economy
  - Clusters

- Clusters provide the opportunity to move to a new level of **private-public partnership**. They can also be a **test-ground** for developing solutions to economy wide problems

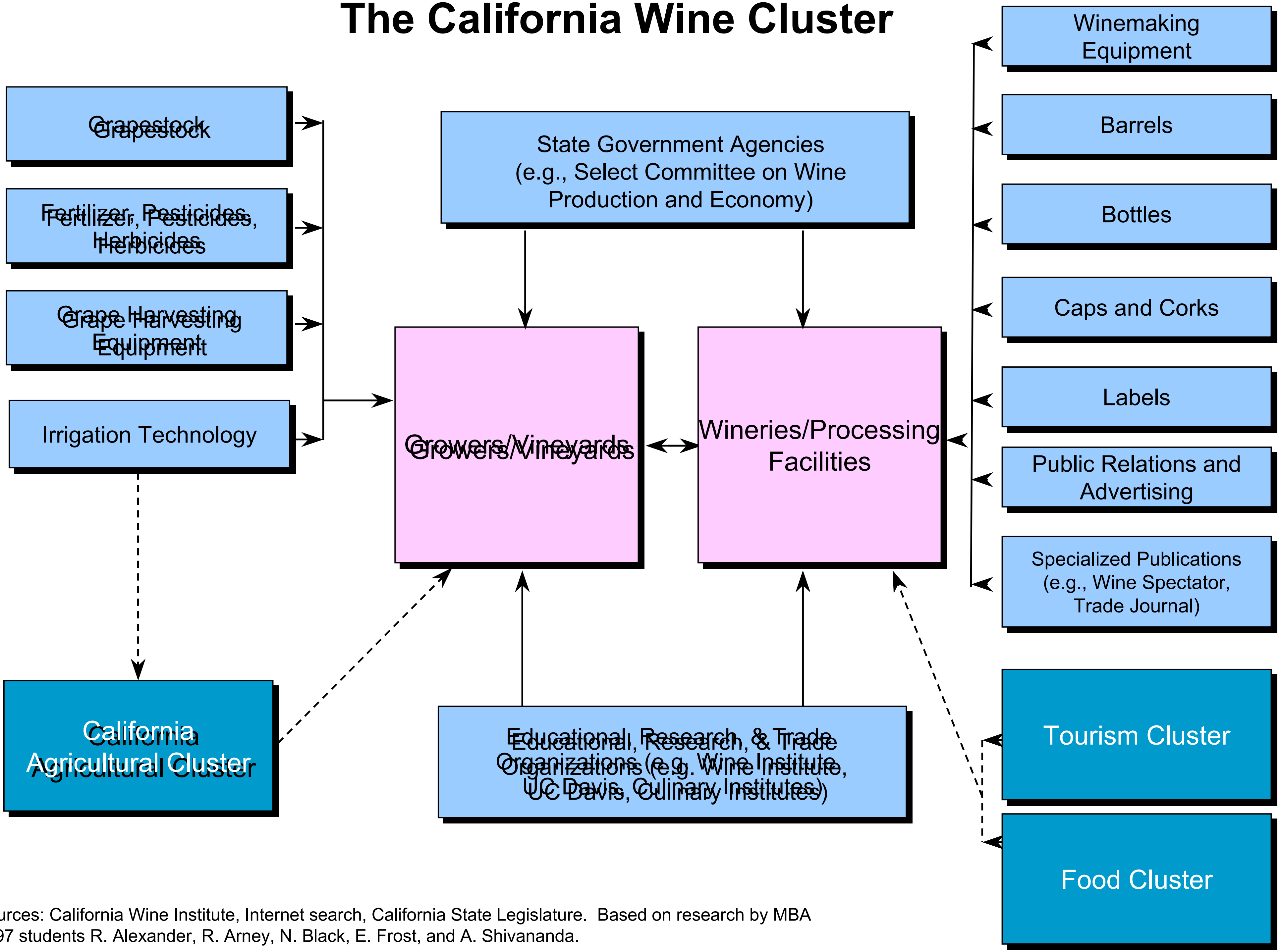
However

- Cluster initiatives alone are less effective, if they are not part of a **overarching approach** to improve competitiveness on the national and regional level

Topics

- **The Concept of Clusters**
- Key Issues in Five Thai Clusters
- From Analysis to Action

The California Wine Cluster



Sources: California Wine Institute, Internet search, California State Legislature. Based on research by MBA 1997 students R. Alexander, R. Arney, N. Black, E. Frost, and A. Shivananda.

Clusters and Competitiveness

Clusters increase productivity and efficiency

- Efficient **access** to specialized inputs, services, employees, information, institutions, and "public goods" (e.g. training programs)
- Ease of **coordination** and transactions across firms
- Rapid **diffusion** of best practices
- Ongoing, visible **performance comparisons** and strong incentives to improve vs. local rivals

Clusters stimulate and enable innovation

- Enhanced ability to **perceive innovation opportunities**
- Presence of multiple suppliers and institutions to assist in **knowledge creation**
- Ease of **experimentation** given locally available resources

Clusters facilitate commercialization

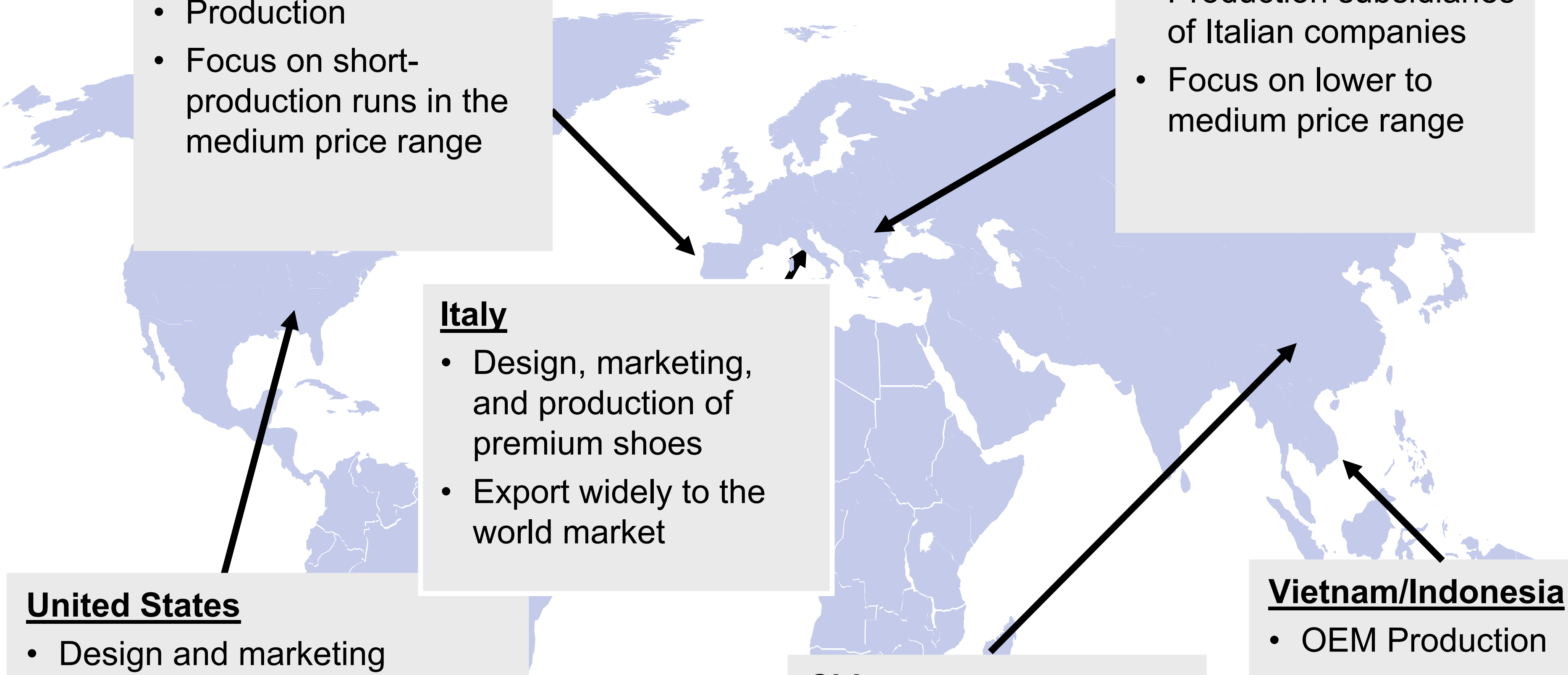
- Opportunities for **new companies** and **new lines of established business** are more apparent
- **Commercializing** new products and starting new companies is easier because of available skills, suppliers, etc.

Clusters reflect the fundamental influence of **externalities / linkages** across firms and associated institutions in competition

Levels of Clusters

- There is often an **array of clusters** in a given field in different locations, each with different levels of specialization and sophistication
- Global **innovation centers**, such as Silicon Valley in semiconductors, are few in number. If there are multiple innovation centers, they normally **specialize** in different market segments
- Other clusters focus on **manufacturing,** outsourced **service functions,** or play the role of **regional** assembly or service centers
- Firms based in the most advanced clusters often **seed or enhance clusters** in other locations in order to reduce the risk of a single site, access lower cost inputs, or better serve particular regional markets
- The challenge for an economy is to move from **isolated firms** to an array of **clusters**, and then to **upgrade the breadth and sophistication** of clusters to more advanced activities

Leading Footwear Clusters



Portugal

- Production
- Focus on short-production runs in the medium price range

Romania

- Production subsidiaries of Italian companies
- Focus on lower to medium price range

Italy

- Design, marketing, and production of premium shoes
- Export widely to the world market

United States

- Design and marketing
- Focus on specific market segments like sport and recreational shoes and boots
- Manufacturing only in selected lines such as hand-sewn casual shoes and boots

China

- OEM Production
- Focus on low cost segment mainly for the US market

Vietnam/Indonesia

- OEM Production
- Focus on the low cost segment mainly for the European market

Source: Research by HBS student teams in 2002

Institutions for Collaboration

General

- Chambers of Commerce
- Professional associations
- School networks
- University partner groups
- Religious networks
- Joint private/public advisory councils
- Competitiveness councils

Cluster-specific

- Industry associations
- Specialized professional associations and societies
- Alumni groups of core cluster companies
- Incubators

- Institutions for collaboration (IFC) are **formal and informal organizations** that
  - facilitate the exchange of information and technology
  - conduct joint activities
  - foster coordination among firms
- IFCs can improve the business environment by
  - creating **relationships** and level of trust that make them more effective
  - defining of **common standards**
  - conducting or facilitating the organization of **collective action** in areas such as procurement, information gathering, or international marketing
  - defining and communicating common **beliefs and attitudes**
  - providing mechanisms to develop a common economic or **cluster agenda**

Clusters as a Tool For Economic Policy

Overview

- A **new way of thinking** about an economy and organizing economic development efforts
- Better aligned with the **nature of competition and sources of competitive advantage**. Clusters capture important **linkages** in terms of technology, skills, information, marketing and customer needs that cut across firms and industries. Such linkages are fundamental to competition and, especially, to the **direction and pace of innovation**
- **Recast the role** of the private sector, government, trade associations and educational or research institutions
- Brings together **firms of all sizes**
- Creates a **forum** for constructive business-government dialog
- A means to identify **common opportunities, not just common problems**
- Provides guidance for both **economic and social policies**

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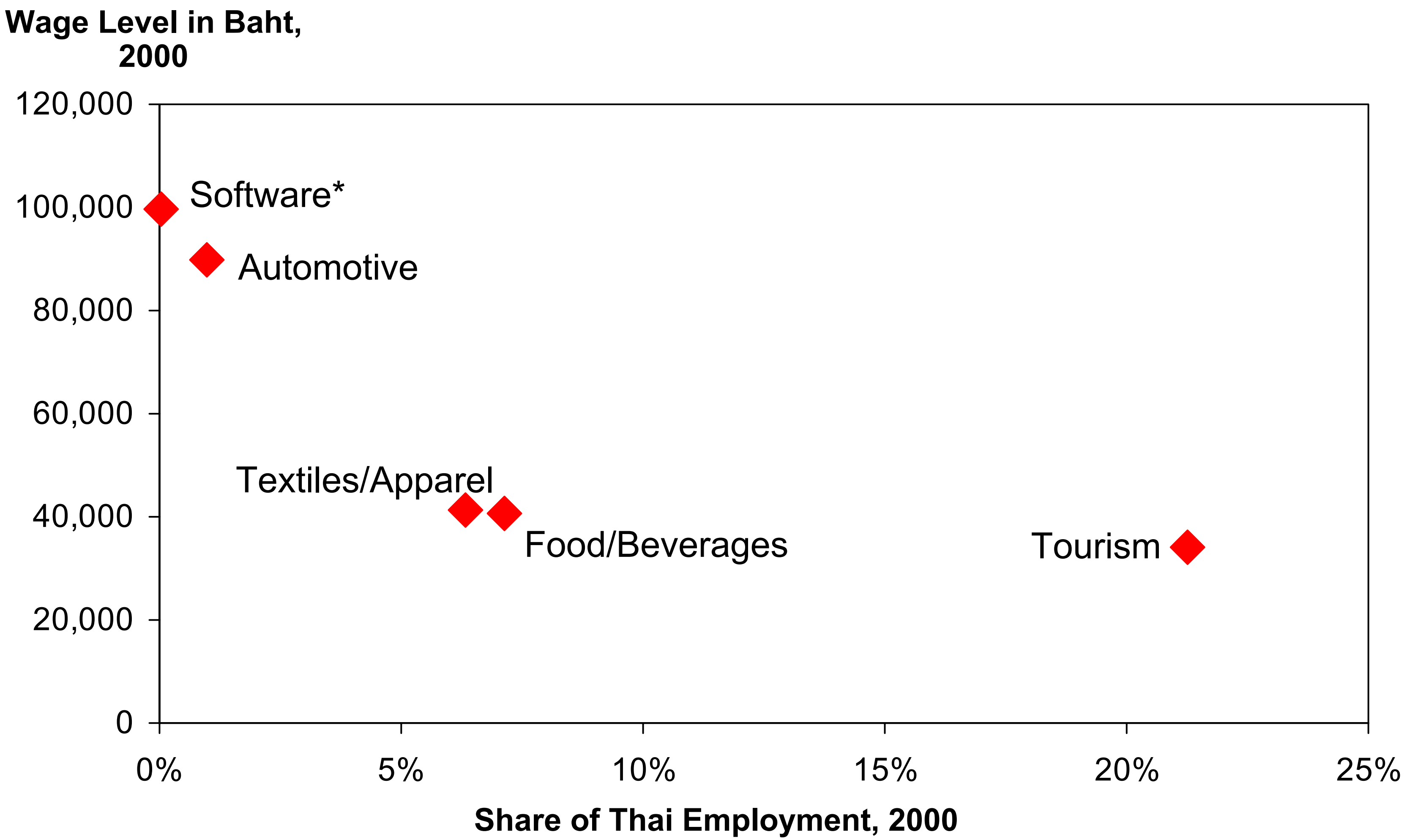
- **Key Issues in Five Thai Clusters**
- From Analysis to Action

Five Clusters in the Thai Economy

Employment and Wages

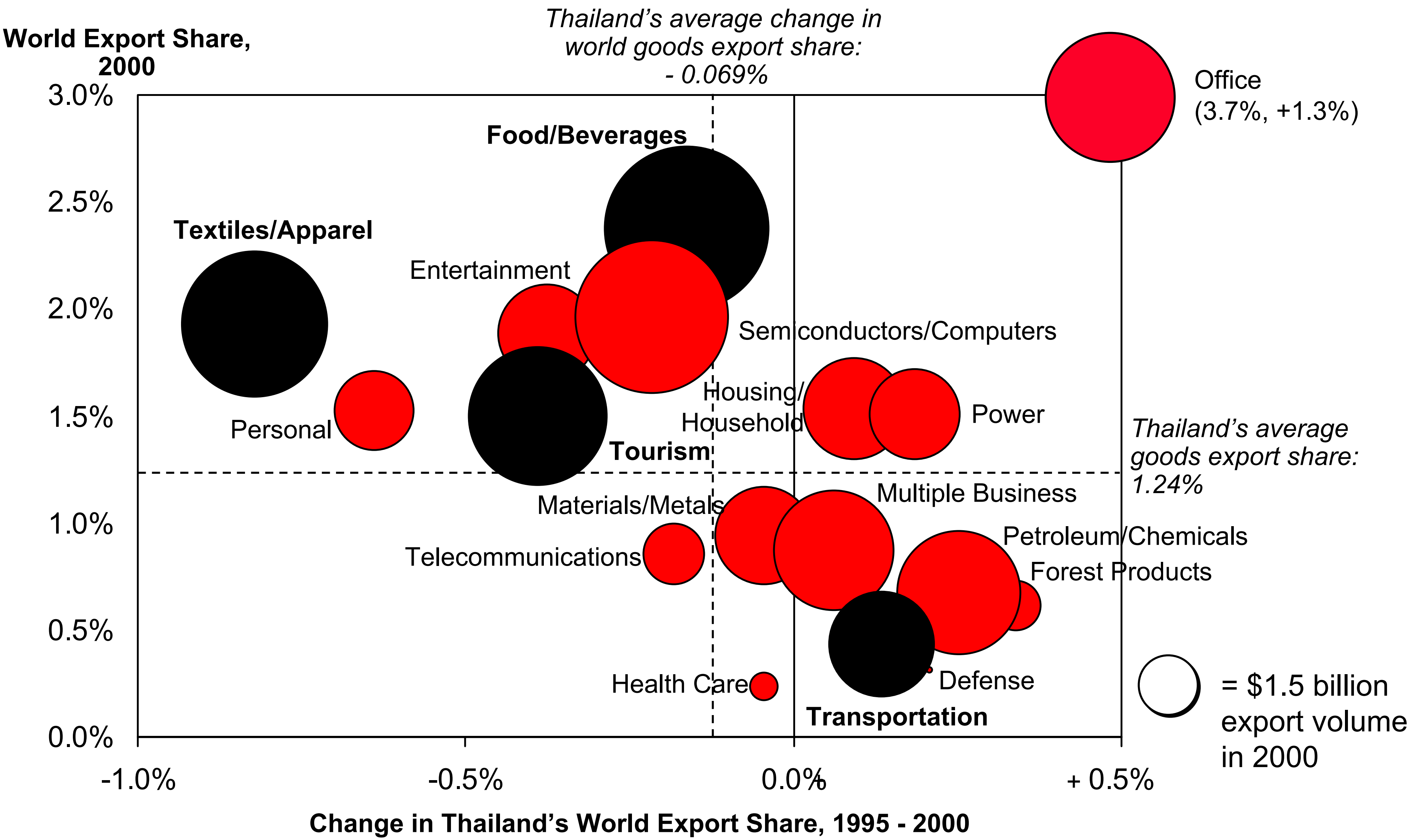


- The five clusters account for roughly 1/3 of Thai employment, with wages more than twice the national average

Note: Software industry data is for 2001
Source: NESDB Data. Author's analysis.

Thailand's Export Performance By Broad Sector

1995-2000



- Thailand is losing position in areas of traditional strengths, and grows in others

Source: UNCTAD Trade Data, World Tourism Organization, Author's analysis.

Clusters

- **Automotive**
- Fashion
- Food
- Tourism
- Software

Automotive Cluster
Overview

- The Thai automotive cluster has the **opportunity** to leverage the existing breadth of activities to become a significant regional production hub. However, **success is far from automatic** and requires determined action

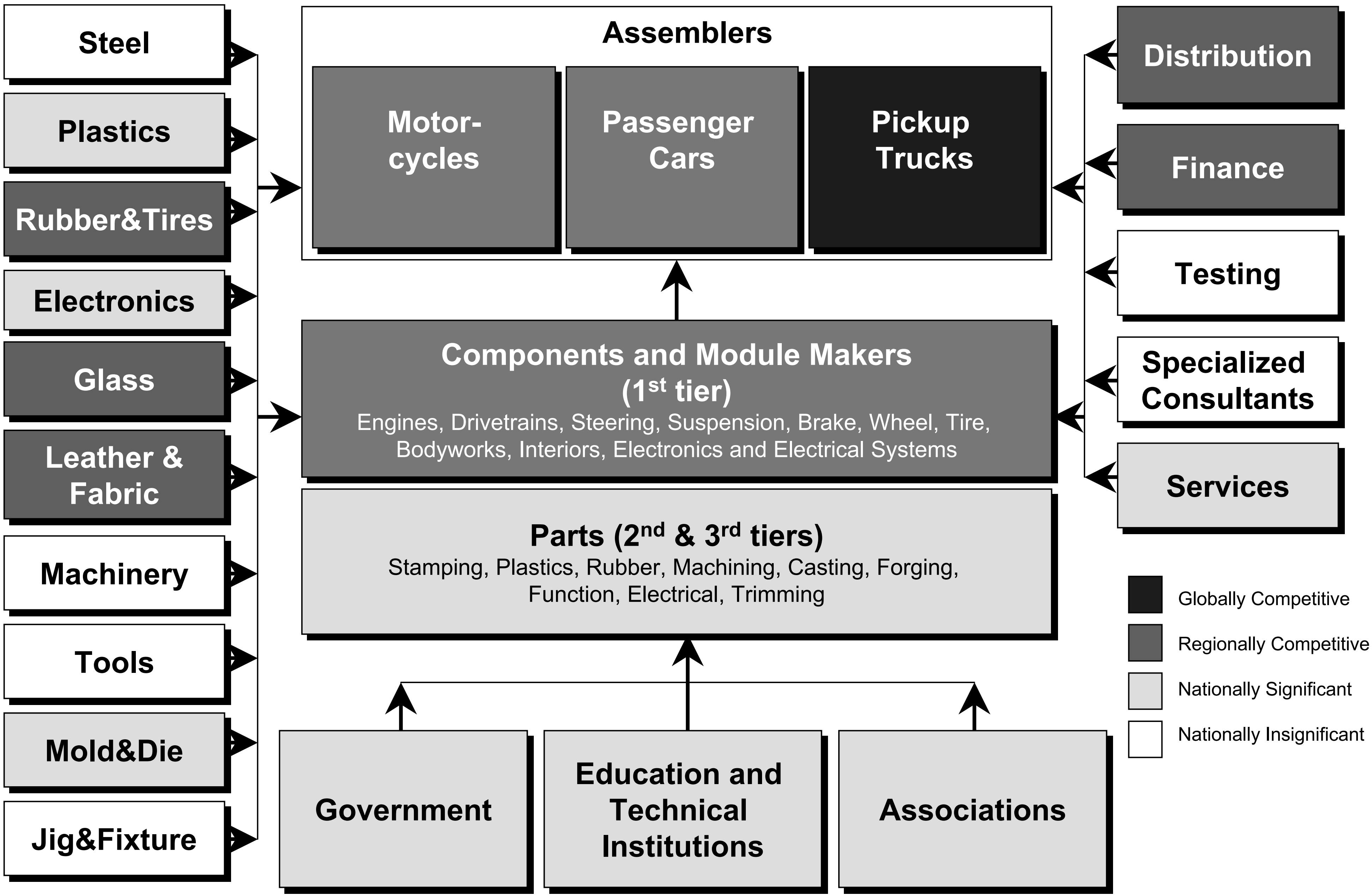
- The cluster includes a **wide breadth** of foreign and domestic assemblers, part producers, and specialized suppliers. It is significant in the Thai economy, but has a **weak world market position** despite recent growth. Its **productivity level is low**; cost competitiveness is based on low factor input costs

- The strength of the cluster business environment lies in the strong presence of **locally-based suppliers**, the strong **physical infrastructure**, and the access to the skills of **foreign assemblers**
- Its weaknesses are the mismatch between available **work force skills** and company needs, the lack of **innovative capacity**, and the **distortions to competition** from tariffs and complex tax rates

- Key action areas include the improvement of the **cluster business environment** in education, institutions for technology assimilation, and the tariff/tax structures, the closing of **gaps in the cluster**, for example production machinery, and the creation of more effective **private sector-led cluster institutions**

Source: Based on Sasin-team analysis

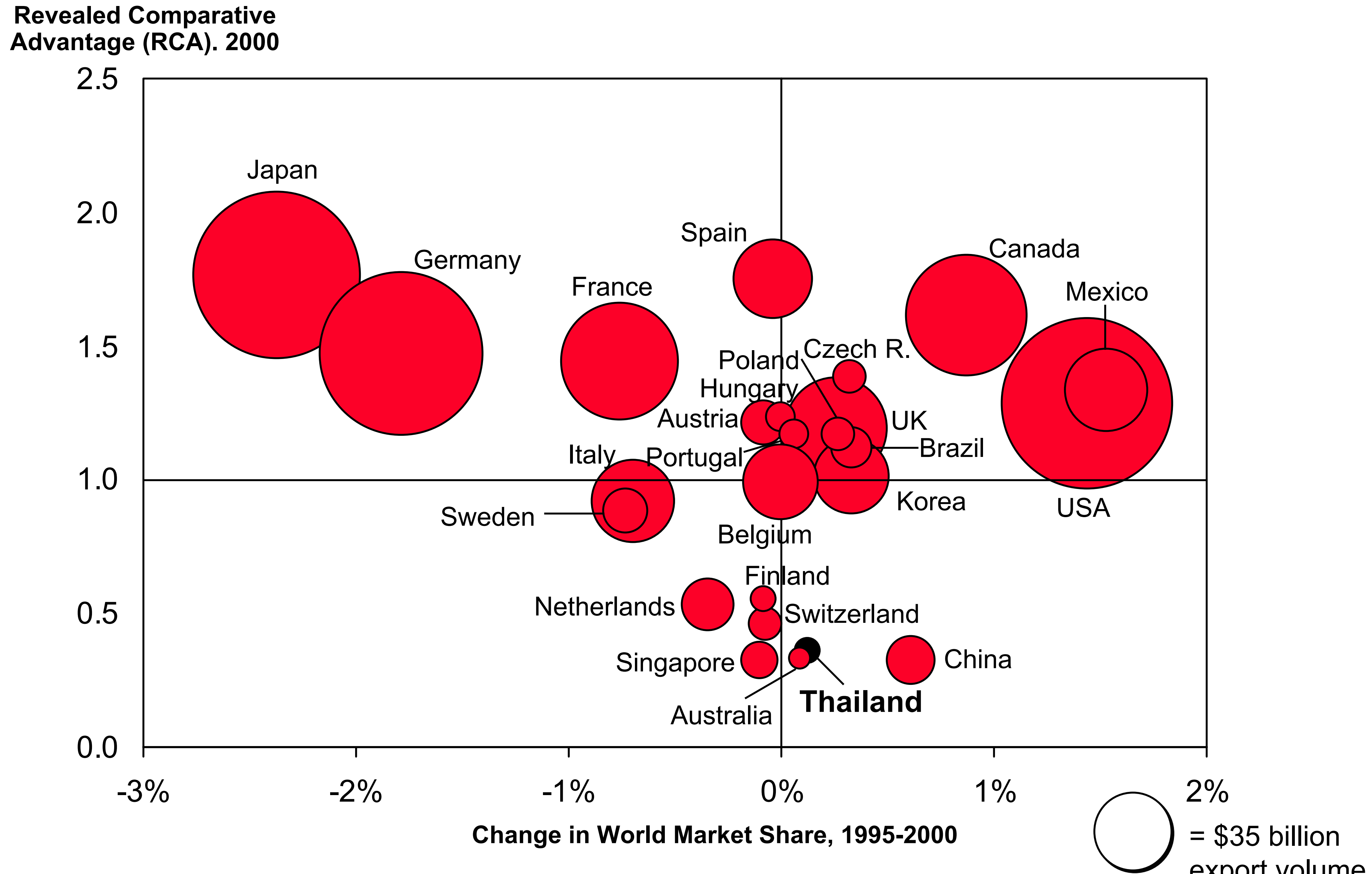
The Thai Automotive Cluster



Source: Sasin-team analysis

Automotive Clusters in the World Economy

Top 25 Exporting Countries by Export Value, 2000



Note: RCA is defined as a country's market share in the cluster divided by the country world market share across all exports
Source: UNCTAD Trade Data. Author's analysis.

Pick-up Trucks

The Role of Demand Conditions

- Thai consumers predominantly buy pick-up trucks that can be used for **many different commercial and private uses**
- Manufacturers react to the demand by offering **more varieties of pick-up truck models** in Thailand than in any other national market
- Thailand has a **strong and growing position** in the world export market for pick-up trucks
  - This is the only segment (apart from tires and rubber-related products) in the automotive industry in which Thailand has a revealed comparative advantage
  - Thailand is the largest producer of pick-up trucks worldwide behind the United States

- An **opportunity for Thai companies** to extend their capabilities in the value chain and compete successfully on world markets

Source: Based on Sasin-team analysis

Action Areas

- Upgrade the **cluster business environment**
  - E.g., Education
  - E.g., Technology assimilation
  - E.g., Tariff and taxation structure

- Fill **gaps in the cluster**
  - E.g., Production machinery
  - E.g., Specialized services in testing and certification

- Create **private sector-led cluster institutions** for collaboration
  - Collective action of the private sector requires effective supporting institutional structures

- Cluster participants need to **rethink competitiveness**
  - Real competitiveness is productivity, not "competitive" low wages
  - Current thinking accepts a low productivity, low wage equilibrium that will be unsustainable as the economy progresses

Source: Based on Sasin-team analysis

Clusters

- Automotive
- **Fashion**
- Food
- Tourism
- Software

Fashion Cluster
Overview

- Thailand is home to clusters in textiles/apparels, jewellery/gems, and leather products. These clusters face **similar challenges** in moving away from being no-brand suppliers to foreign producers, but they are **not one cluster**

- The three clusters are important in the Thai economy, but are all losing **world market position** from still high levels. The cluster is shallow, concentrating on the **labor-intensive stages** of production, often using foreign inputs

- The strength of the cluster business environment lies in the availability of an experienced low- to medium skill **work force,** the high level of **competition** between domestic companies, and in the strong **physical infrastructure**
- Its weaknesses are the focus on competition based on **low factor input costs**, the low level of **cooperation** within the clusters' different production stages, and the distortions from government **trade policy**

- Key action areas include the development of **capabilities in the value chain,** especially in marketing, distribution, and branding, the creation of **cluster-wide institutions**, the upgrading of **government policies** in trade protection and export promotion, and the improvement of **cluster business environment** conditions in, for example, education and the availability of machinery

Source: Based on Sasin-team analysis

Thai Fashion Clusters

Business Environment Assessment

Context for Firm Strategy and Rivalry

- High degree of **competition**, especially among small- and medium sized producers
- Competition based on **price**; **subcontracting** with foreign companies
- Comparatively high tariffs for **imported raw materials**

Factor (Input) Conditions

- Availability of **specialized skills** in specific activities based on old traditions
- Sufficient **transportation infrastructure**
- Lack of competent **designers**
- Lack of adequate domestic **research and development** institutions

Demand Conditions

- **Unsophisticated** home demand
  - Sophisticated demand for **traditional Thai designs**

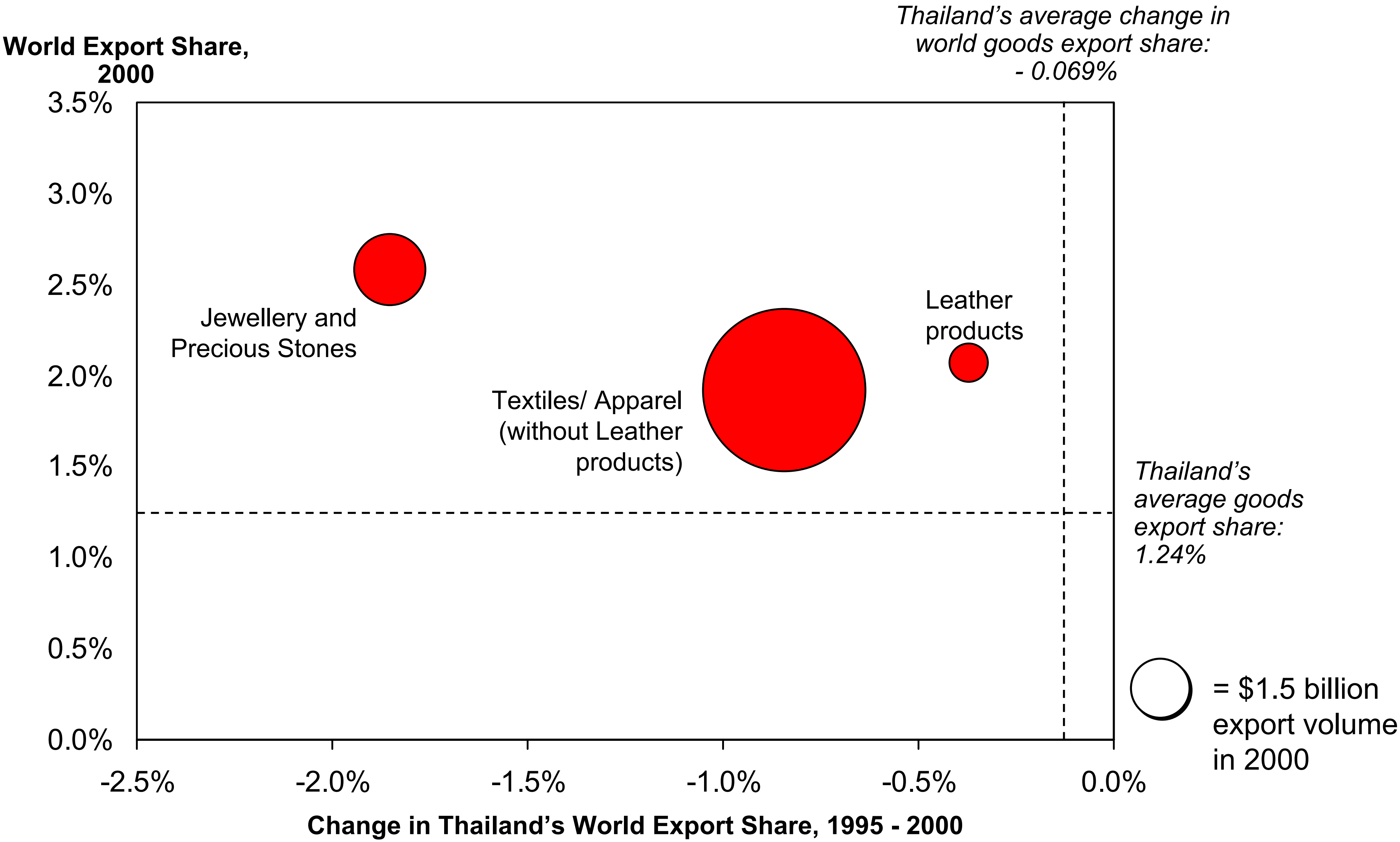
Related and Supporting Industries

- **Weak linkages** between production stages within the clusters
- Reliance on imported **production machinery**
- Dependence on **foreign designs**

Source: Based on Sasin-team analysis

Thailand's Export Performance in "Fashion" Clusters

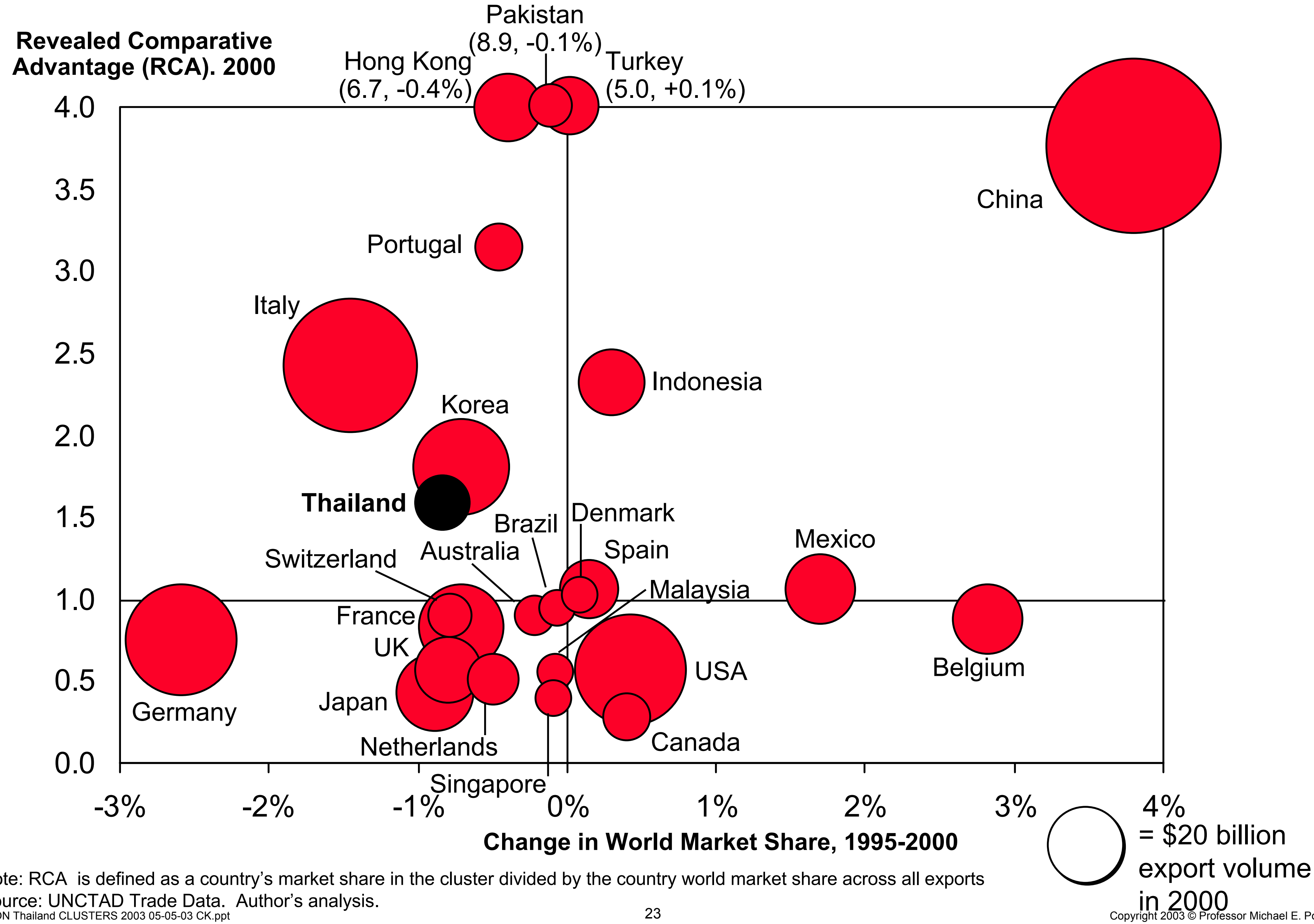
1995-2000



Source: UNCTAD Trade Data. Author's analysis.

Textiles/Apparel Clusters in the World Economy

Top 25 Exporting Countries by Export Value, 2000

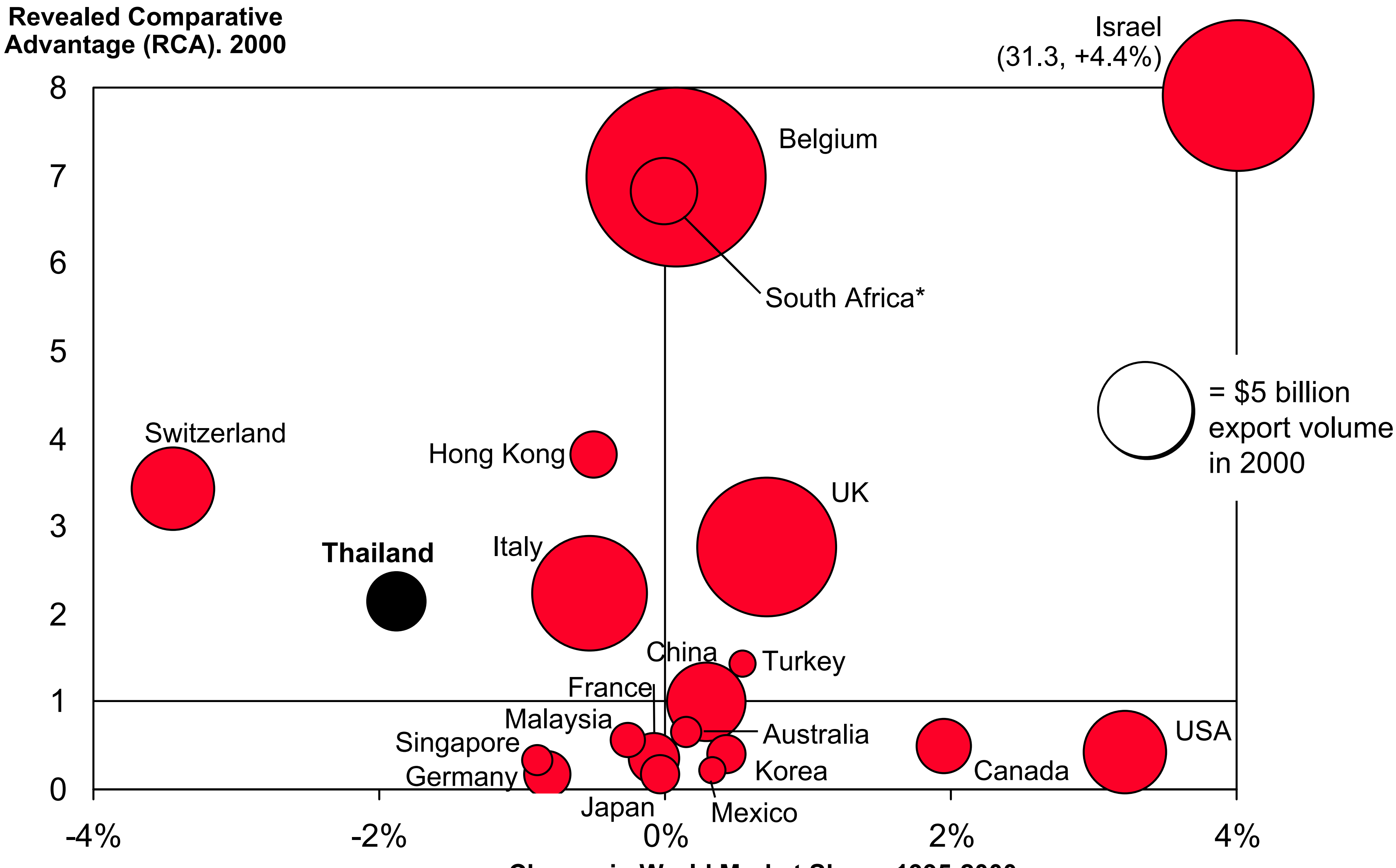


Note: RCA is defined as a country's market share in the cluster divided by the country world market share across all exports

Source: UNCTAD Trade Data. Author's analysis.

Jewelry/Diamonds Sub-Clusters in the World Economy

Top 25 Exporting Countries by Export Value, 2000



*Only 2000 data available

Note: RCA is defined as a country's market share in the cluster divided by the country world market share across all exports

Source: UNCTAD Trade Data. Author's analysis.

Action Areas

- Increase **capabilities in the value chain**
  - E.g., Design
  - E.g., Distribution
  - E.g., Marketing

- Create **cluster-wide institutions** to create linkages between currently antagonistic stages in the value chain

- Upgrade the **cluster business environment**
  - E.g., Education
  - E.g., Presence of machinery suppliers
  - E.g., Tariff structure
  - E.g., Export promotion

- Despite sharing similar challenges for upgrading competitiveness, a **case-by-case approach** will be necessary to develop cluster specific action plans

Source: Based on Sasin-team analysis

Clusters

- Automotive
- Fashion
- **Food**
- Tourism
- Software

Food Cluster

Overview

- The Thai food cluster faces the **challenge** to move from being a supplier of commodity food products to distant foreign markets to become a provider of distinct food products with own brands, access to distribution channels, and direct understanding of customer needs

- The cluster is important in the Thai economy, but is losing **world market position** from a still high level. Its **productivity level is low**; companies compete based on low factor input costs. The cluster is shallow, concentrating on the **labor-intensive stages** of food processing using both domestic and foreign raw materials

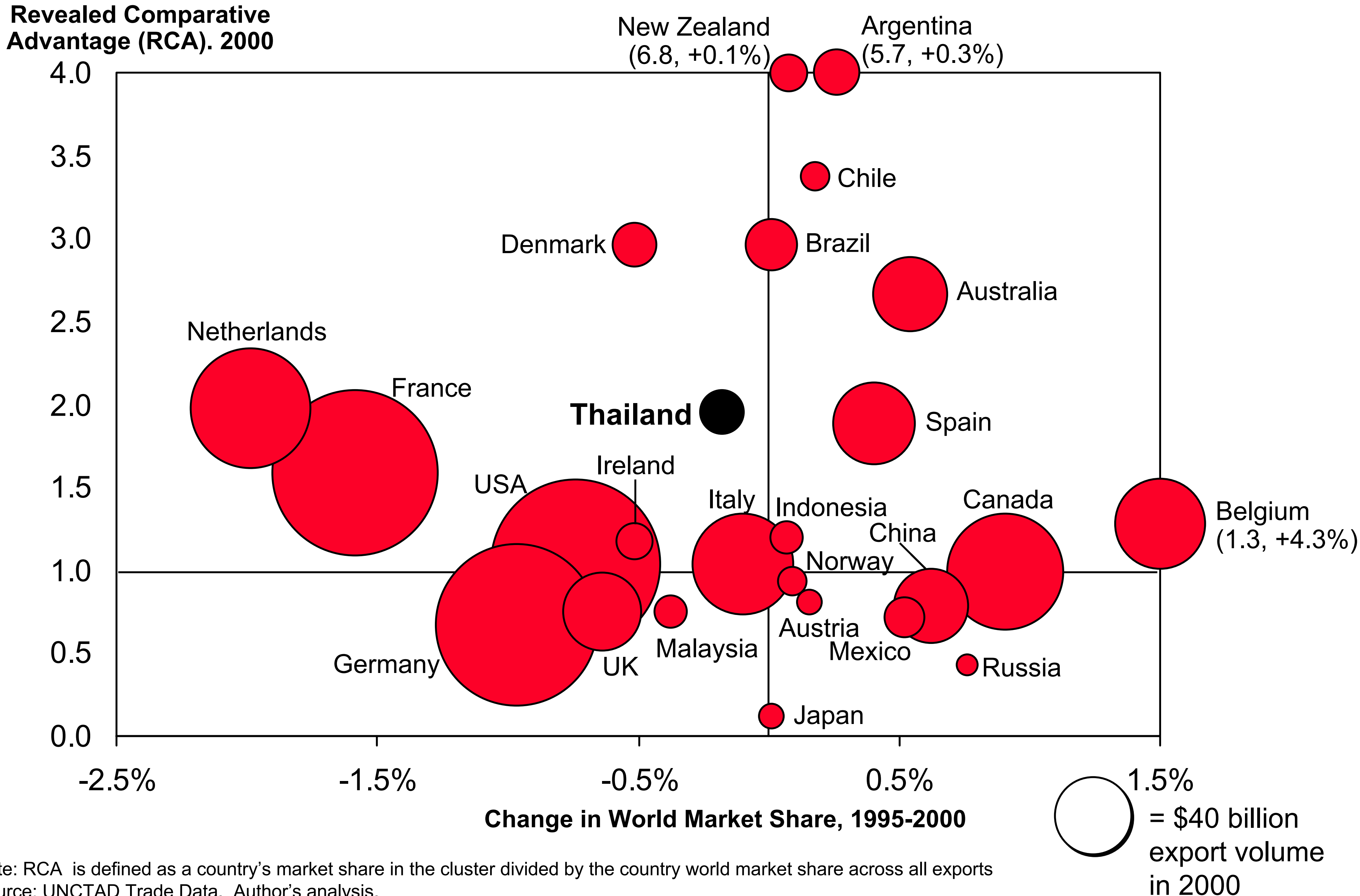
- The strength of the cluster business environment is the strong **physical infrastructure** and the availability of an **experienced** low- to medium skill work force
- Its weakness is the focus on competition based on **low factor input costs**, the lack of **innovative product development capacity** and control of **distribution channels** in distant global export markets, and the low level of **coordination across the cluster**

- Key action areas include **streamlining government policy** towards the cluster, upgrading the **business environment**, e.g. education and assimilation capability of modern machinery, and developing **capabilities in the value chain**

Source: Based on Sasin-team analysis

Food/Beverages Clusters in the World Economy

Top 25 Exporting Countries by Export Value, 2000

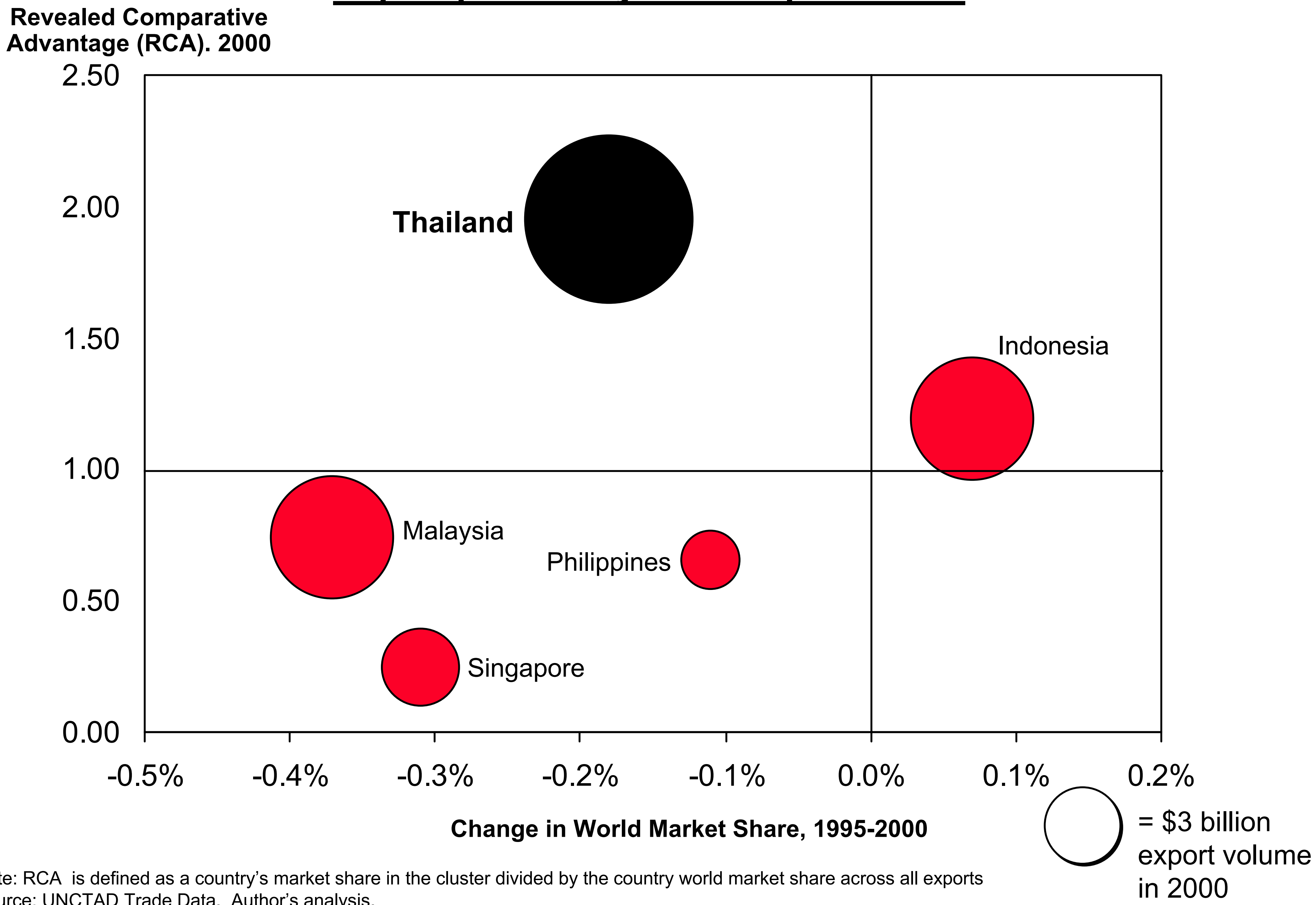


Note: RCA is defined as a country's market share in the cluster divided by the country world market share across all exports

Source: UNCTAD Trade Data. Author's analysis.

Food/Beverages Clusters in South East Asia

Top Exporters by 2000 Export Value



Note: RCA is defined as a country's market share in the cluster divided by the country world market share across all exports
Source: UNCTAD Trade Data. Author's analysis.

Thai Food Export, 2000

Subcluster	World Market Share	Change in Share 1995 - 2000	Value (in $1,000)
Vegetables, Prepared	21.64%	-9.42%	$4,044
Fish, Processed	18.48%	2.63%	$2,091,233
Rice, Cereals, Prepared	16.94%	-3.46%	$1,667,088
Molasses	15.94%	1.07%	$38,723
Shell Fish, Fresh/Chilled/Frozen	13.83%	-3.88%	$1,865,019
Fruit,Preserved,Prepared	12.24%	-1.63%	$322,397
Rice, Cereals	9.50%	-0.36%	$83,258
Sugar	9.29%	-1.54%	$640,107
Vegetables, Processed	7.87%	-5.20%	$23,689
Meats, Processed	4.87%	2.97%	$349,391
Other Animal Food	3.26%	0.67%	$290,093
Starches,Sugars	3.20%	-0.67%	$134,215
Fruit, Preserved, Prepared	3.10%	-0.47%	$66,200
Vegetables, Preserved	2.68%	-0.70%	$130,211
Crude Vegetable Materials	2.33%	0.31%	$16,727
Food Preparation Products	2.19%	0.36%	$324,241
Fish, Fresh/Chilled/Frozen	2.04%	-0.48%	$379,540
Fruit Juice	1.82%	-0.50%	$109,842
Vegetables	1.56%	-1.18%	$261,082
Other Beverages	1.44%	-0.23%	$72,358
Spices	1.25%	0.42%	$23,674
Meats, Fresh/Chilled/Frozen	1.20%	0.09%	$427,738
Other Fruits	1.16%	0.34%	$196,749
Fats	1.14%	0.84%	$31,924
Sugar, Processed	1.04%	0.12%	$50,397

Note: Line indicates benchmark for revealed comparative advantage
Source: UNCTAD Trade Data. Author's analysis.

Action Areas

- Increase **capabilities in the value chain** by, for example, internationalizing in new markets
  - E.g., Product Development
  - E.g., Marketing and Branding
  - E.g., Distribution

- Streamline **government policy** towards the cluster
  - Coordination unit for policies of the wide range of government agencies affecting the food cluster
  - Concerted strategy for food cluster in international trade talks

- Upgrade the **cluster business environment**
  - E.g., Education
  - E.g., Presence of machinery suppliers
  - E.g., Tariff structure
  - E.g., Export promotion

- The food cluster covers many different product groups that will often require specific action, not unlike the different fashion clusters

Source: Based on Sasin-team analysis

Clusters

- Automotive
- Fashion
- Food
- **Tourism**
- Software

Tourism Cluster

Overview

- Thailand's tourism cluster has grown successfully, but is now facing the **challenge** of securing past success and moving to the next stage. The cluster needs to move from competing on **assets endowed by nature to assets created by the cluster**

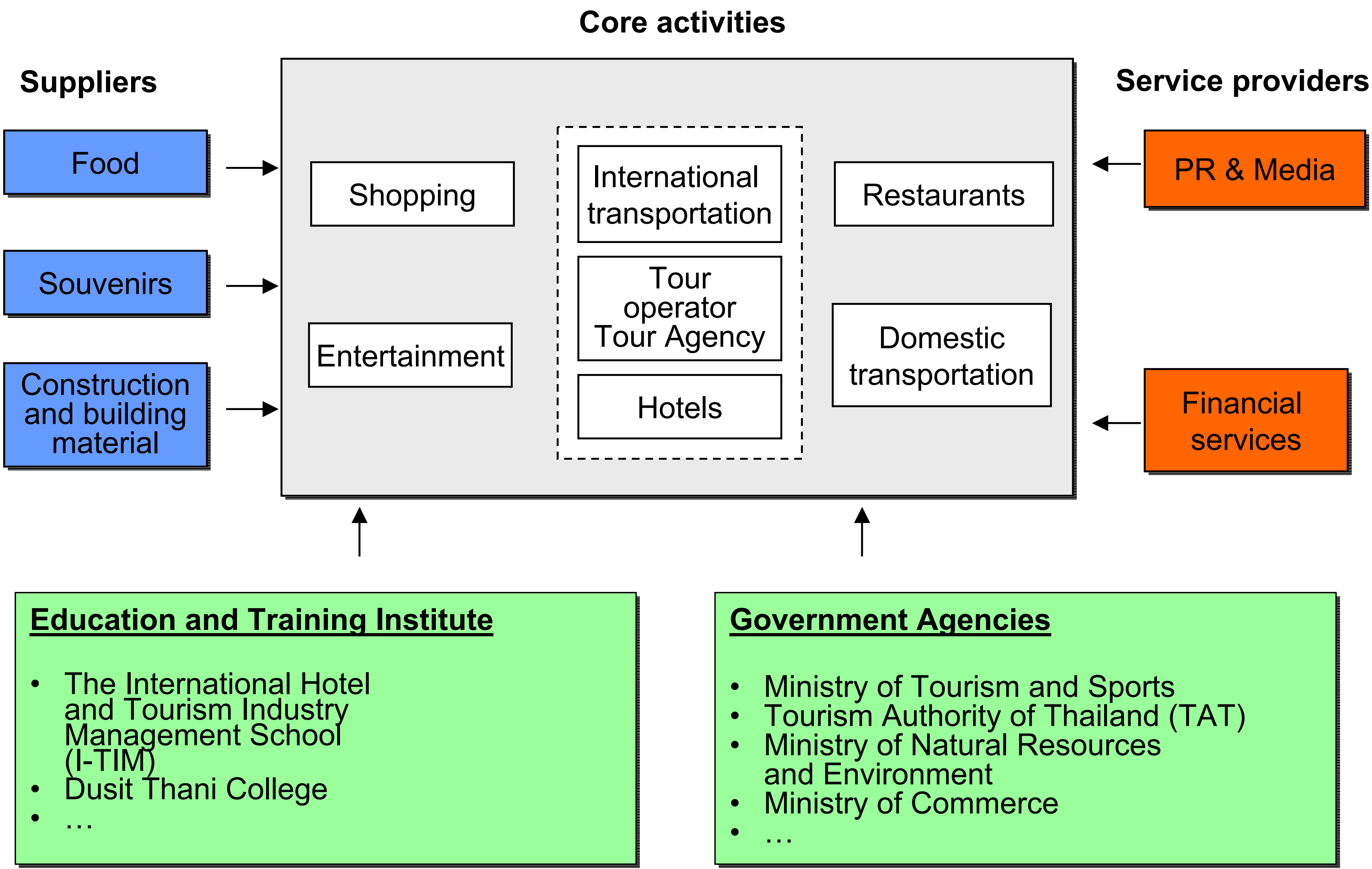
- Tourism is one of the most important clusters in the **Thai economy**. It is significant internationally, but has lost position recently. The cluster has a **broad range of tourism related activities**, but lacks effective cooperation across the cluster

- The strength of the cluster business environment lies in the access to **beautiful locations** and a **rich culture**, the stiff **competition** between local tourist agencies, a generally good **physical infrastructure**, and a broad range of **related services** in most tourism locations
- Its weaknesses are the focus on **price-based competition**, the mismatch between **workforce skills** and the needs of companies, the lack of **common quality standards** and marketing efforts, and selected problems in physical infrastructure

- Key action areas include creating **effective service standards**, aligning **educational programs** with cluster needs, providing more **value-added attractions**, and **unifying the cluster's many institutions** to develop a shared strategic vision

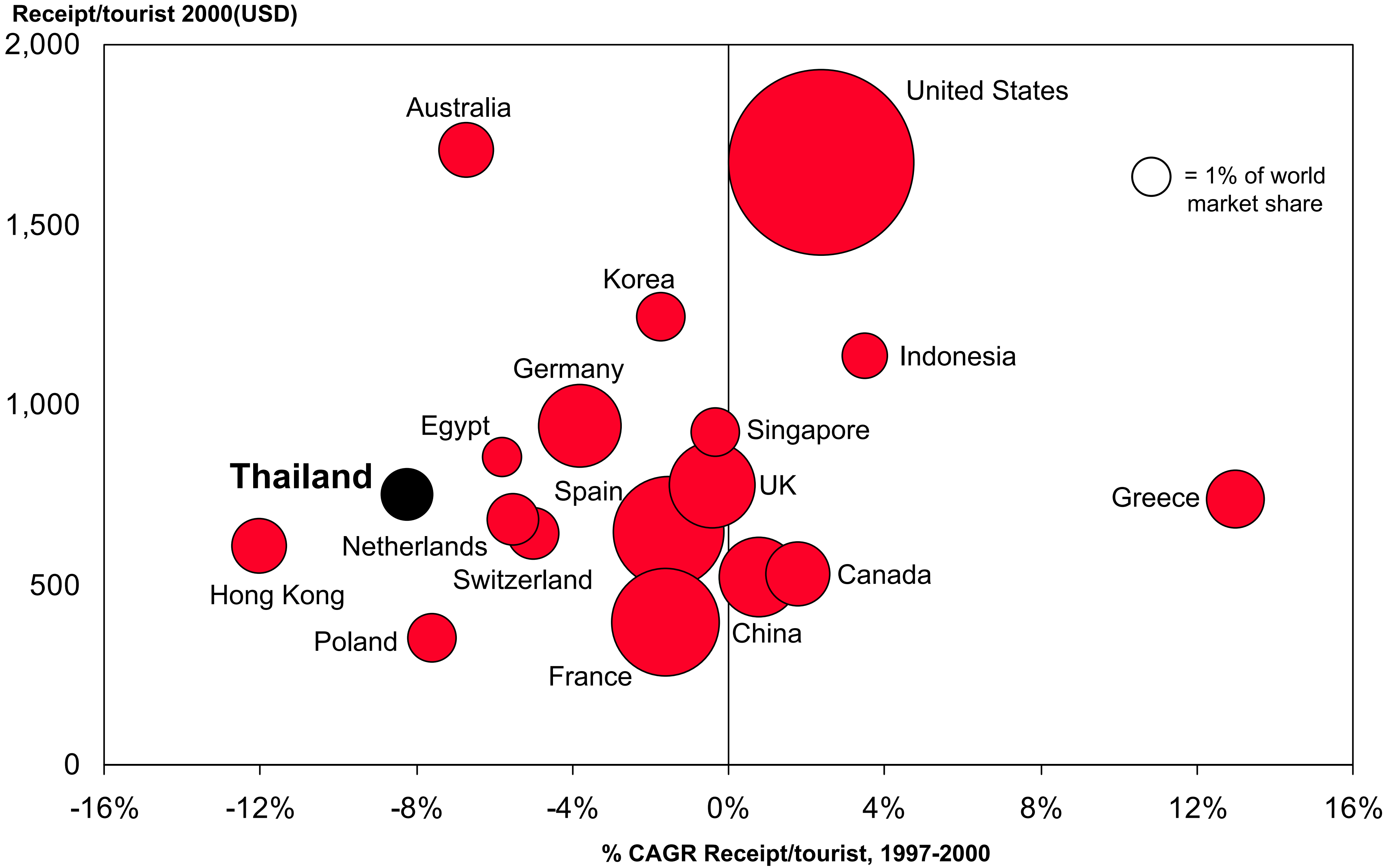
Source: Based on Sasin-team analysis

Thai Tourism Cluster



Source: Sasin-team analysis

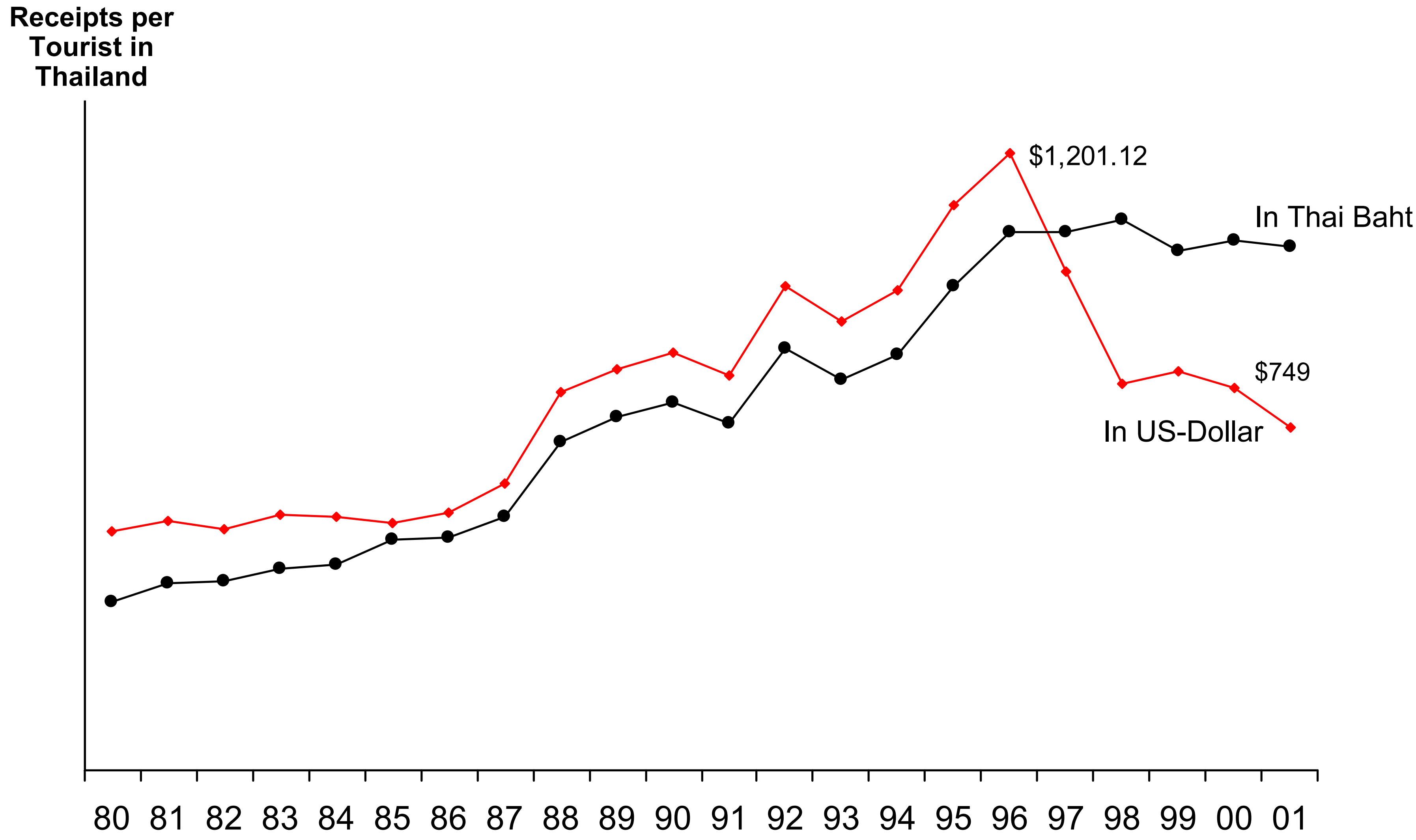
Tourism Clusters in the World Economy



Source: World Tourism Organization (WTO), Sasin team analysis

Economic Performance of the Thai Tourism Cluster

Revenue per Tourist over Time



Source: TAT, World Tourism Organization

Action Areas

- Create effective **service standards** that reflect the goals of Thai tourism

- Upgrade the **cluster business environment**
  - E.g., Education
  - E.g., Value-added attractions
  - E.g., Accessibility (airline market regulation, cruise ship facilities, …)

- **Unifying the cluster's many institutions** to develop a shared strategic vision

- The **reaction to SARS** exemplifies the lack of long-term strategic direction
  - Developing **domestic demand** is important, but will require a more long-term approach
  - **Reducing prices** does not alleviate international tourists' concerns but erodes the clusters pricing position in the long term

Source: Based on Sasin-team analysis

Clusters

- Automotive
- Fashion
- Food
- Tourism
- **Software**

Software Cluster
Overview

- Thailand’s software cluster is **small** and has no significant position on world markets, although some companies are successful in niches like graphic design. The potential for Thai software is as a **cross-cluster resource** for the domestic economy and in services related to other strong Thai clusters,

- Thai software companies pay high wages, but employee few people and have insignificant exports. Rather than functioning as a cluster, Thai software companies operate as **suppliers** to many different Thai industries and clusters

- The companies’ business environment has **few clear strengths**. Companies have access to software parks, pockets of specialized skills, and an advantageous geographic location between India and Japan
- Its weaknesses are the low availability of **specialized skills**, the weak information technology **infrastructure**, the weak **science and technology system** (universities, IPR protection), and unsophisticated **local demand**

Source: Based on Sasin-team analysis

The Role of Software for the Thai Economy

Export Cluster

- Niches
- Related to other, stronger clusters

- Need for upgrading the currently unfavorable cluster business environment

Cross-Cluster Resource

- Enable more effective IT use in all sectors of the economy

- Need for upgrading the IT absorption capability of Thai companies

Action Agenda

- **Consolidation of government policies** related to software in ministry for ICT
- Liberalization of the **telecommunications markets**
- Implementation of **IT legislation**, especially on IPR protection

- Cross-cluster resource
  - Initiatives with other industry associations to identify barriers for IT use
  - Inclusion of IT education in vocational training programs

- Export cluster
  - Further investments in educational programs for programmers and other specialized employees
  - Concerted effort to certify software companies
  - Build relations with strong export clusters
  - Strengthening of the cluster association

Source: Based on Sasin-team analysis

Thailand's Vision: World Leader in Niche Markets

Selected Niches

Vision communicates feasible and ambitious goal	*Vision is removed from clusters' current challenges*	*Vision fails to set the right direction for the cluster*
Automotive: *Detroit of Asia*	**Fashion:** *Asia Tropical Fashion*	**Software:** *World Graphic Design Center*
Tourism: *Asia Tourism Capital*	**Food:** *Kitchen of the World*	

Topics

- The Concept of Clusters
- Key Issues in Five Thai Clusters
- **From Analysis to Action**

Shifting Responsibilities for Economic Development

Old Model	New Model
• **Government** drives economic development through policy decisions and incentives	• Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration

Appropriate Roles of Government in Cluster Development

- A successful cluster policy builds on **sound overall economic policies**
- Government should support the development of **all clusters**, not choose among them
- Government policy should **reinforce established and emerging clusters** rather than attempt to create entirely new ones
- Government's role in cluster initiatives is as **facilitator** and **participant.** The most successful cluster initiatives are a public-private partnership

The Role of Government in Cluster Development:

Illustrative Cluster-Specific Policies

Context for Firm Strategy and Rivalry

- Eliminate barriers to local **competition**
- Focus efforts to **attract foreign investment around clusters**
- Focus **export promotion around clusters**
- Organize relevant **government departments** around clusters

Factor (Input) Conditions

- Create **specialized education and training** programs
- Establish local **university research efforts in cluster-related** technologies
- Support cluster-specific **information gathering** and compilation
- Improve specialized transportation,communications, and other **infrastructure** required by cluster

Demand Conditions

- Create streamlined, **pro-innovation** regulatory standards affecting the cluster to
  - reduce regulatory uncertainty
  - stimulate early adoption
  - encourage innovation or new products and processes
- Sponsor **independent testing, product certification, and rating services** for cluster products/services
- Act as **sophisticated buyer** of the cluster's products / services

Related and Supporting Industries

- Sponsor **forums** to bring together cluster participant
- Cluster-specific efforts to attract **suppliers and service providers** from other locations
- Establish cluster-oriented **free trade zones, industrial parks, or supplier parks**

Cluster Policy versus Industrial Policy

Industrial Policy	Cluster-based Policy
• Target desirable industries / sectors	• **All** clusters can contribute to prosperity
• Focus on domestic companies	• Domestic and foreign companies both enhance productivity
• Intervene in competition (e.g., protection, industry promotion, subsidies)	• Relax impediments and constraints to productivity
	• Emphasize cross-industry linkages / complementarities
• Centralizes decisions at the national level	• Encourage initiative at the state and local level
Distort competition	**Enhance competition**

Company Attitudes Towards Clusters

- Create more competition
- Lose employees to spinoffs
- Bid up costs

- Increase efficiency
- Increase flexibility
- Increase information
- Foster innovation
- Most cluster participants are **not** direct competitors

Role of the Private Sector in Economic Development

- A company's competitive advantage is partly the result of the **local environment**
- Company membership in a cluster offers **collective benefits**
- Private investment in **"public goods"** is justified

- Take an **active role** in upgrading the local infrastructure
- Nurture **local suppliers** and attract new supplier investments
- Work closely with local **educational and research institutions** to upgrade **quality and create specialized programs addressing cluster needs**
- Provide government with **information** and **substantive input** on regulatory issues and constraints bearing on cluster development
- Focus **corporate philanthropy** on enhancing the local business environment

- An important role for **trade associations**
  - Greater influence
  - Cost sharing

Private Sector Influences on Cluster Upgrading

Context for Firm Strategy and Rivalry

- Market jointly through trade fairs and delegations
- Collaborate with government export promotion efforts
- Create directories of cluster participants

Factor (Input) Conditions

- Jointly develop specialized vocational, technical, college and university curricula
- Sponsor specialized university research centers
- Collect cluster information through trade associations
- Maintain close liaison with infrastructure providers to address specialized cluster needs (e.g., data communications, logistics)
- Develop courses for managers on regulatory, quality, and managerial issues

Demand Conditions

- Work with government to streamline regulations and modify them to encourage innovation
- Establish local testing and standards organizations

Related and Supporting Industries

- Establish a cluster-based trade association
- Encourage local supplier formation and attract local investments by suppliers based elsewhere through individual and collective efforts

New Roles of Industry Associations

Traditional Roles	New Roles

• Lobby government
  - Trade and regulations
• Convene meetings for networking
	• Negotiate with government
	  - Trade and regulations
	• Information collection and dissemination
	  - E.g. regular benchmarking
	• Joint marketing
	  - E.g. trade fairs, missions
	• Training
	  - E.g. curriculum for managers
	  - Close collaboration with outside educational institutions
	  - Sponsoring of targeted scholarships
	• Research
	  - E.g university partnerships
	  - Standard setting and testing
	  - Specialized research institutes
	• Procurement
	  - E.g. joint purchasing programs
	• Environmental
	  - E.g. demonstration projects
	  - Research sponsorship

Cluster activation and enabling

Cluster Activation

Getting Started

- Bring together cluster companies, trade associations, educational institutions, and government agencies
- Discuss the present analysis of the clusters
  - Identify need for further analysis
  - Prioritize critical issues for action
- Organize working groups to develop action plans to address the critical issues identified

- While the government and outside agencies can provide start-up support and facilitation, successful cluster efforts tend to be driven by private sector leaders