

New Zealand Competitiveness: The Next Agenda

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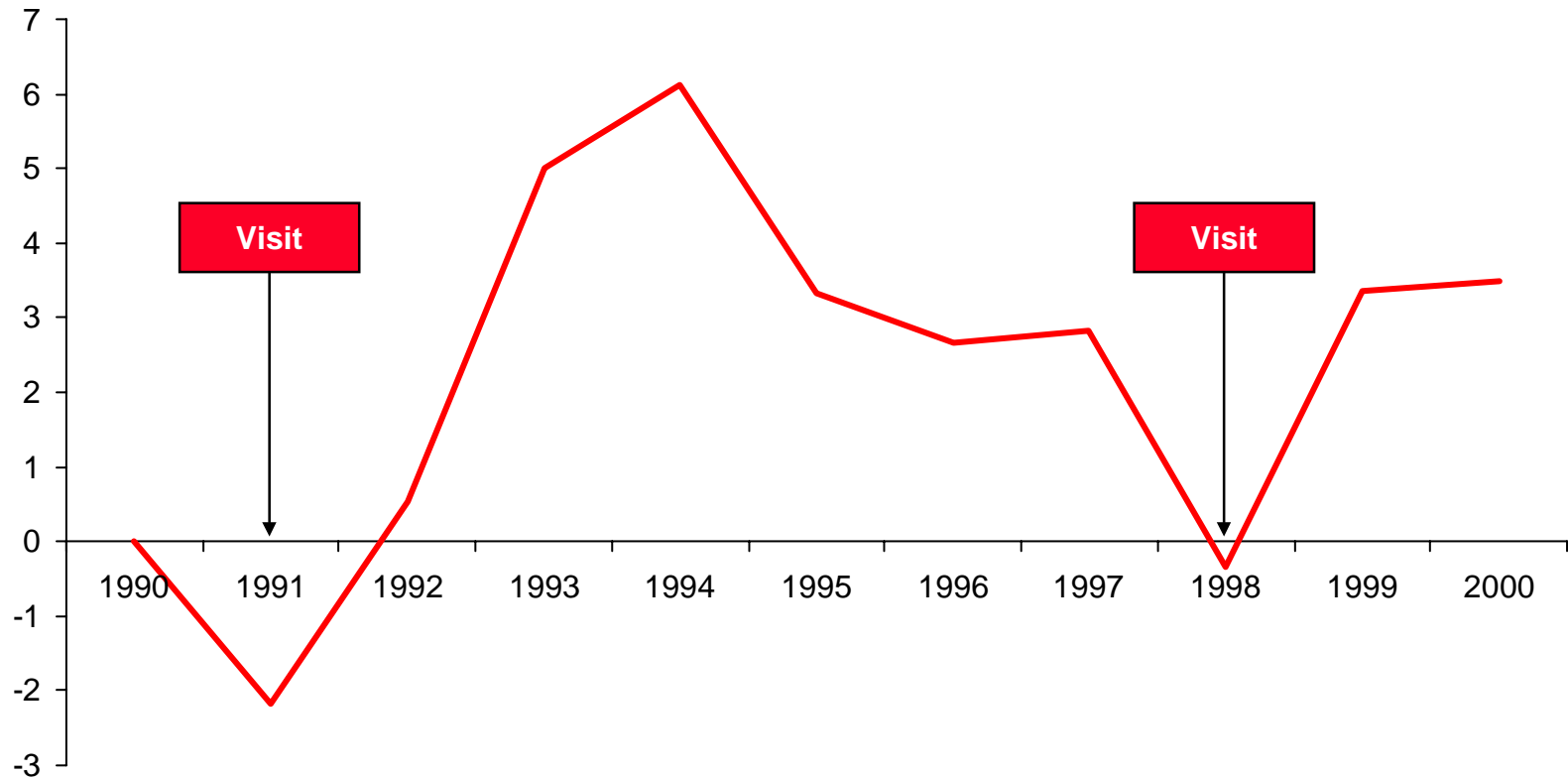
Catching the Knowledge Wave
Auckland, New Zealand
August 3th, 2001

This presentation draws on ideas from Professor Porter's articles and books, in particular, The Competitive Advantage of Nations (The Free Press, 1990), "The Microeconomic Foundations of Economic Development," in The Global Competitiveness Report 1998, (World Economic Forum, 1998), "Clusters and the New Competitive Agenda for Companies and Governments" in On Competition (Harvard Business School Press, 1998) and ongoing statistical study of clusters, Competing for Prosperity: The Microeconomic Foundations of Development, forthcoming, and "What is Strategy?" (Harvard Business Review, Nov/Dec 1996). No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means - electronic, mechanical, photocopying, recording, or otherwise - without the permission of Michael E. Porter.

New Zealand's Macroeconomic Performance

Real GDP Growth, year-by-year

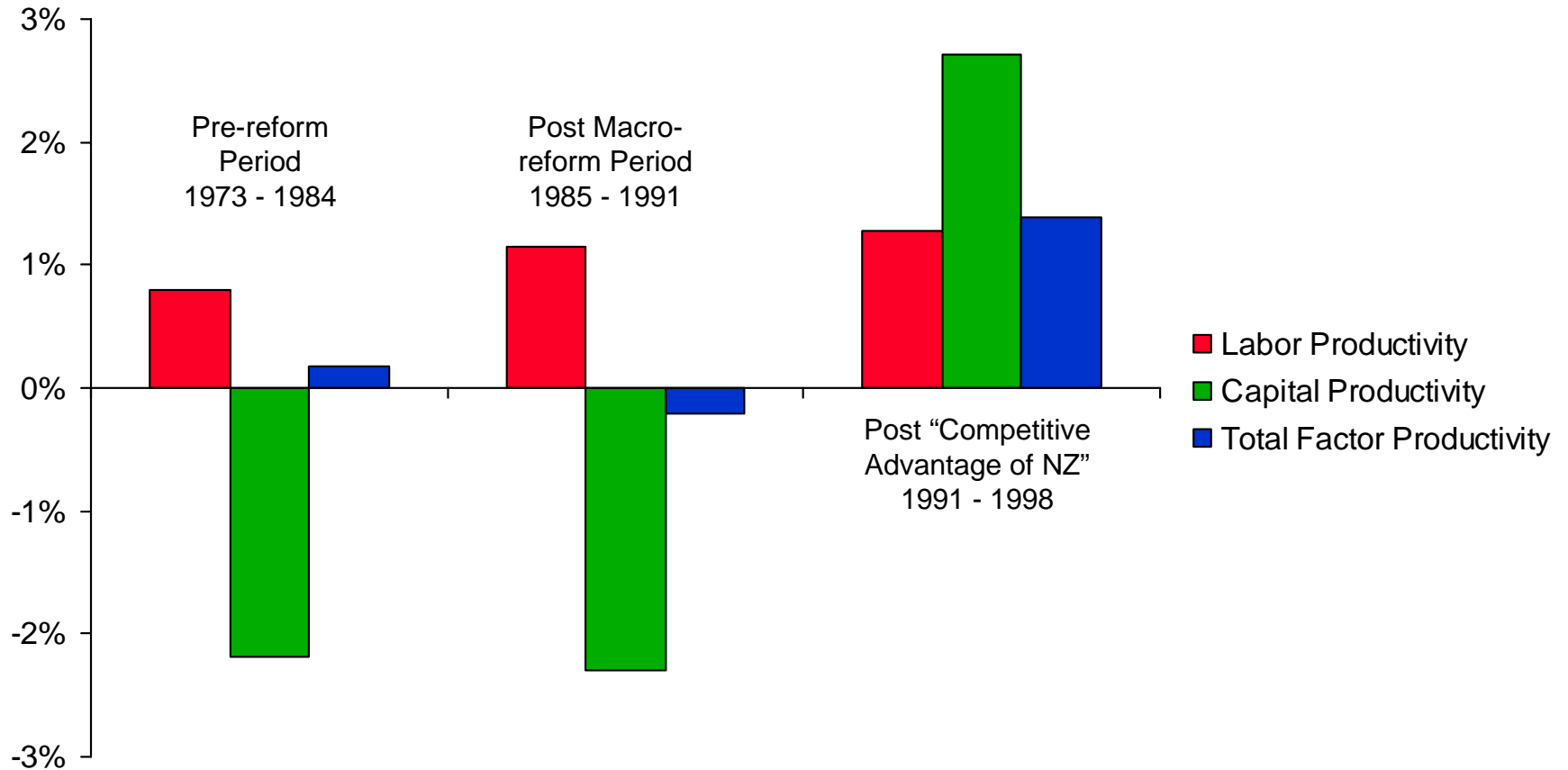
Real GDP
growth rate in
%



New Zealand 2001

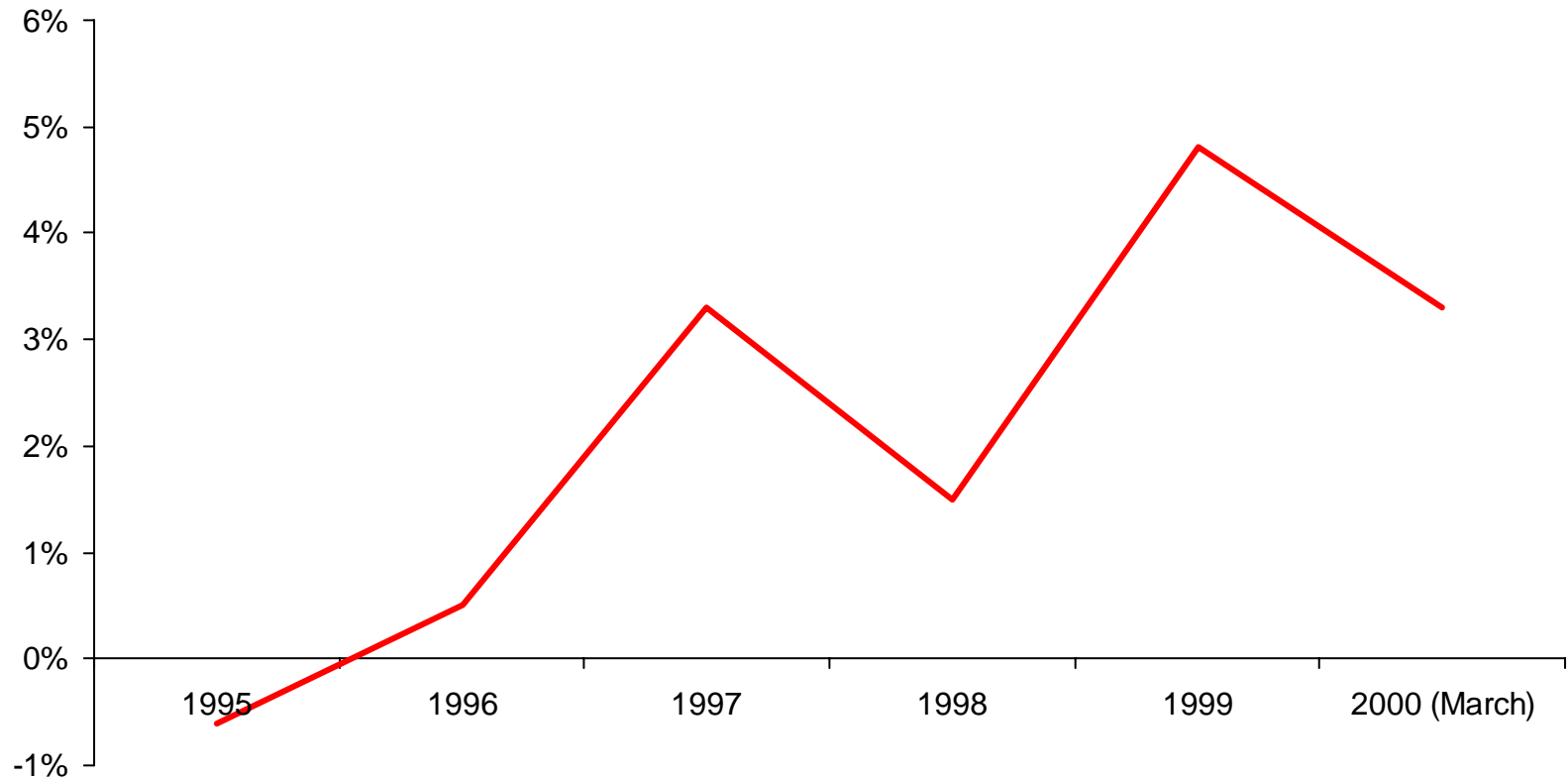
- There is a strong sense in New Zealand today that the nation is not advancing
- Some believe that the country is moving backwards

New Zealand Productivity Growth (Index 1972 = 100)

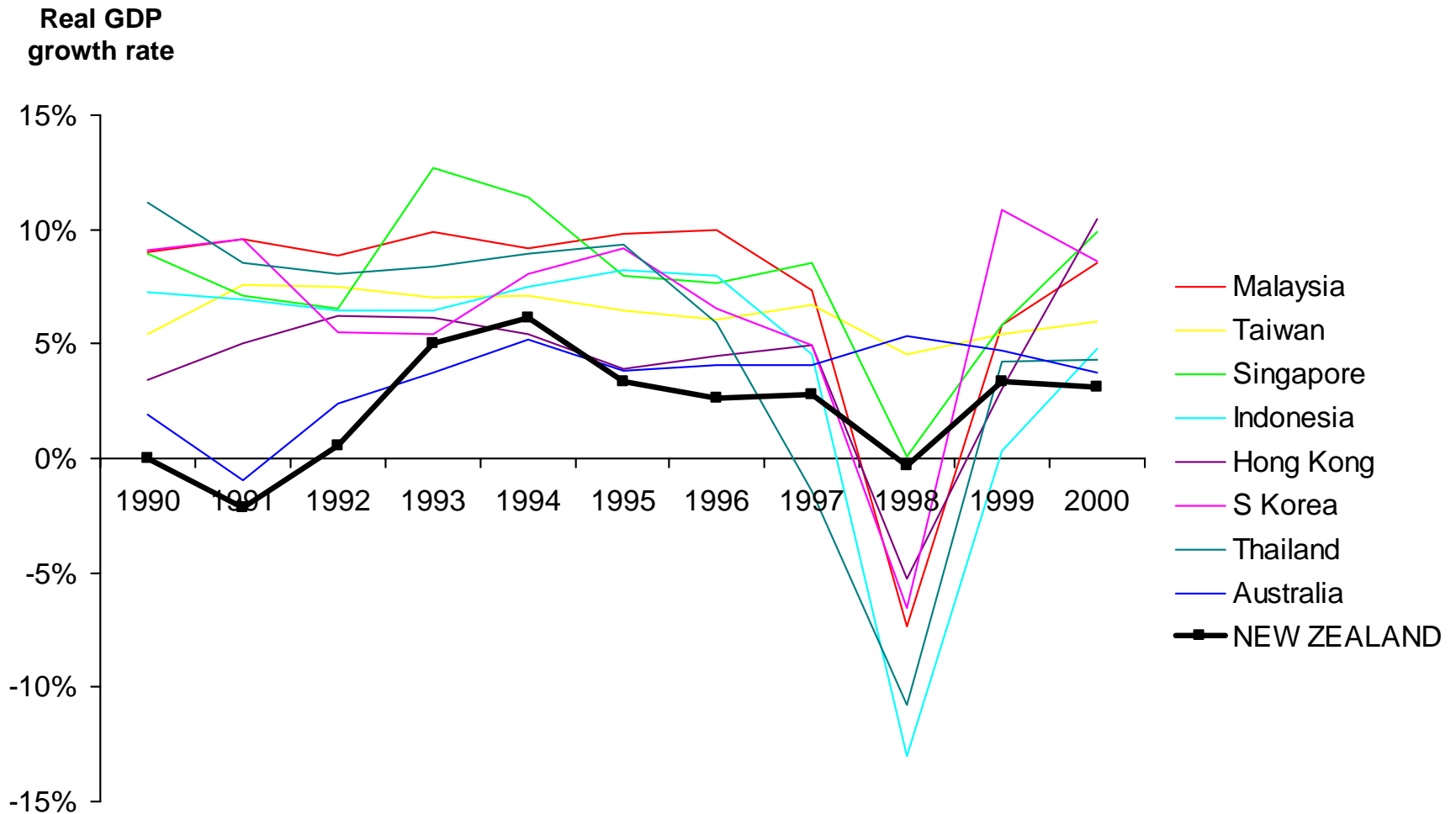


New Zealand Labor Productivity Growth, 1995 -2000

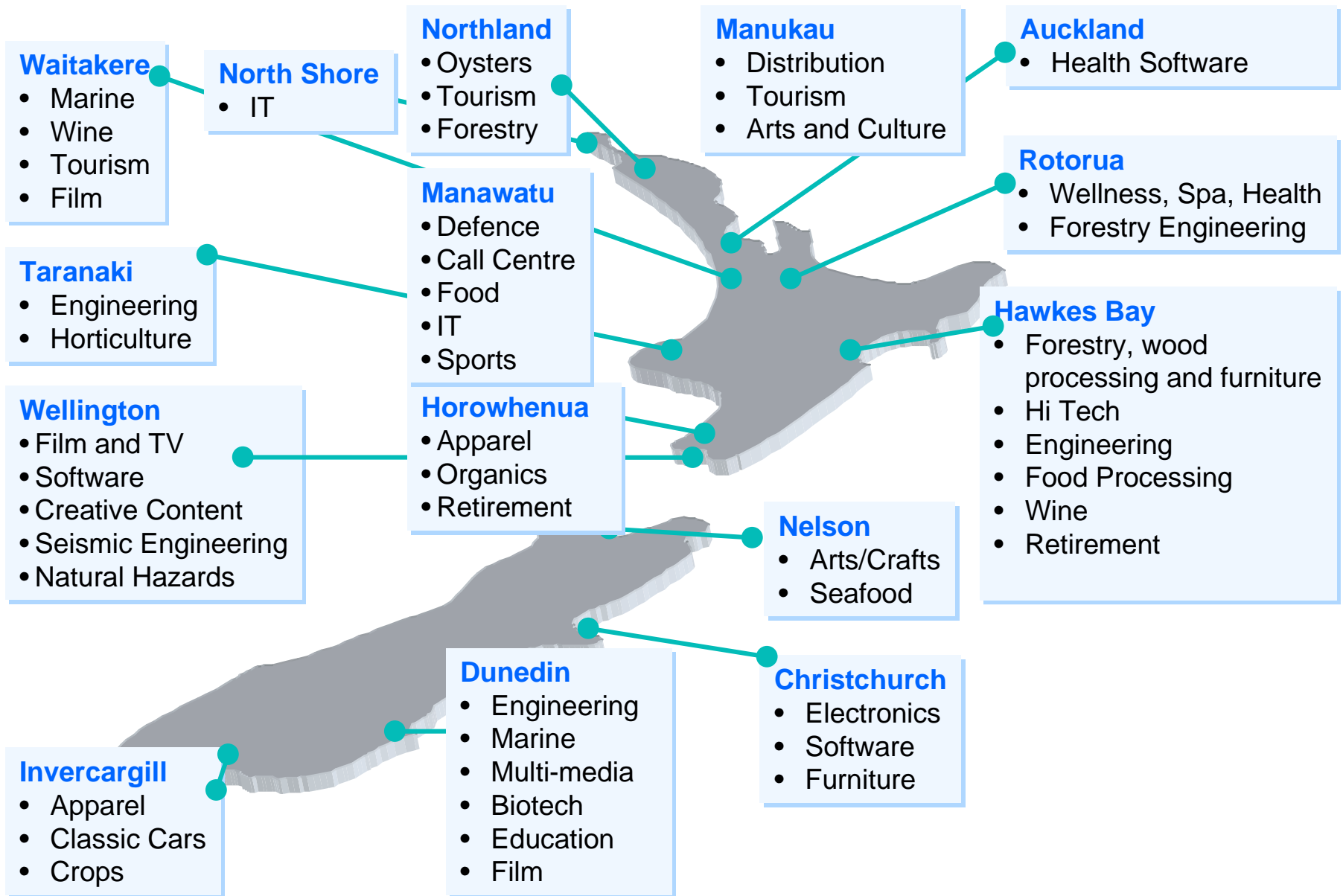
Change in
Real GDP /
Hours worked



Comparative Real Growth Rates Selected Asian Countries

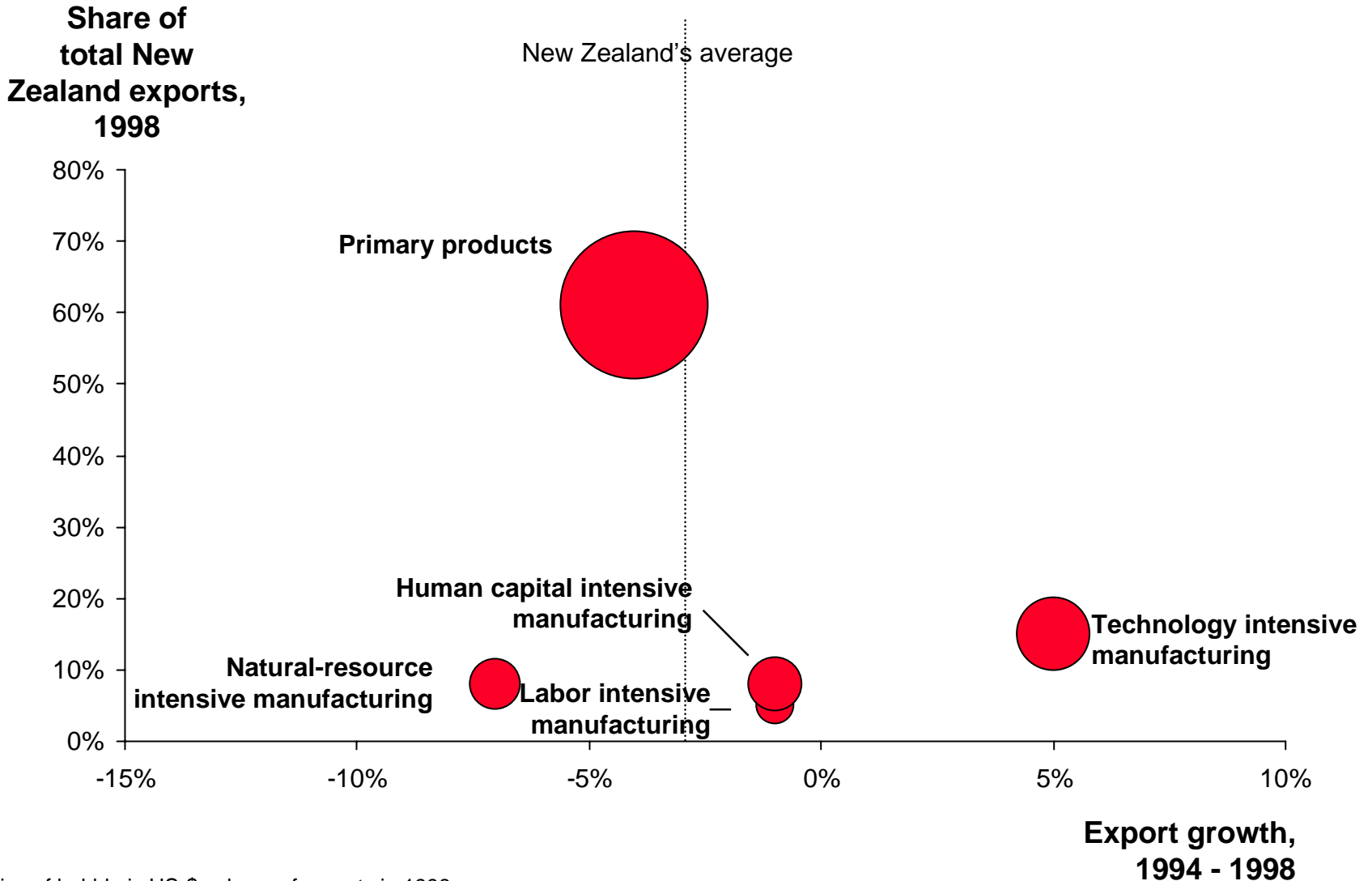


Active New Zealand Cluster Development Initiatives



New Zealand's Export Structure

Manufacturing Export Specialization: 1994 to 1998



Note: Size of bubble is US-\$ volume of exports in 1998

Source: ITC 2001

Embracing Competition

New Zealand's Relative Position

Competitive Advantages Relative to GDP per Capita

Country Ranking

| | |
|---|----|
| Absence of Distortive Government Subsidies | 4 |
| Hidden Trade Barrier Liberalization | 5 |
| Tariff Liberalization | 7 |
| Effectiveness of Antitrust Policy | 10 |

Competitive Disadvantages Relative to GDP per Capita

Country Ranking

| | |
|-------------------------------------|----|
| Extent of Locally Based Competitors | 31 |
| Intensity of Local Competition | 18 |

Note: Rank by countries; overall NZ ranks 19 (17 on Business Environment)

Source: Global Competitiveness Report 2000

Strategic Issues


- Improvements in New Zealand's business environment have been more than matched by its international competitors
- The country's dependency on natural-resource exports creates challenges
- The economy is dominated by small and medium sized companies with limited global presence
- Clusters are discussed and a significant number of cluster initiatives has been initiated but there have been limited commitment and results
- New Zealand faces stiff competition from other Asian countries in manufacturing

Strategic Issues

- Government policies are in some cases working at cross purposes
- Important elements of an action plan for New Zealand have been developed but there is no overarching strategy to integrate them
 - e.g. attract foreign direct investment
 - Improve human resources
 - Science parks
- A lack of clear vision for the country is mentioned by many New Zealanders

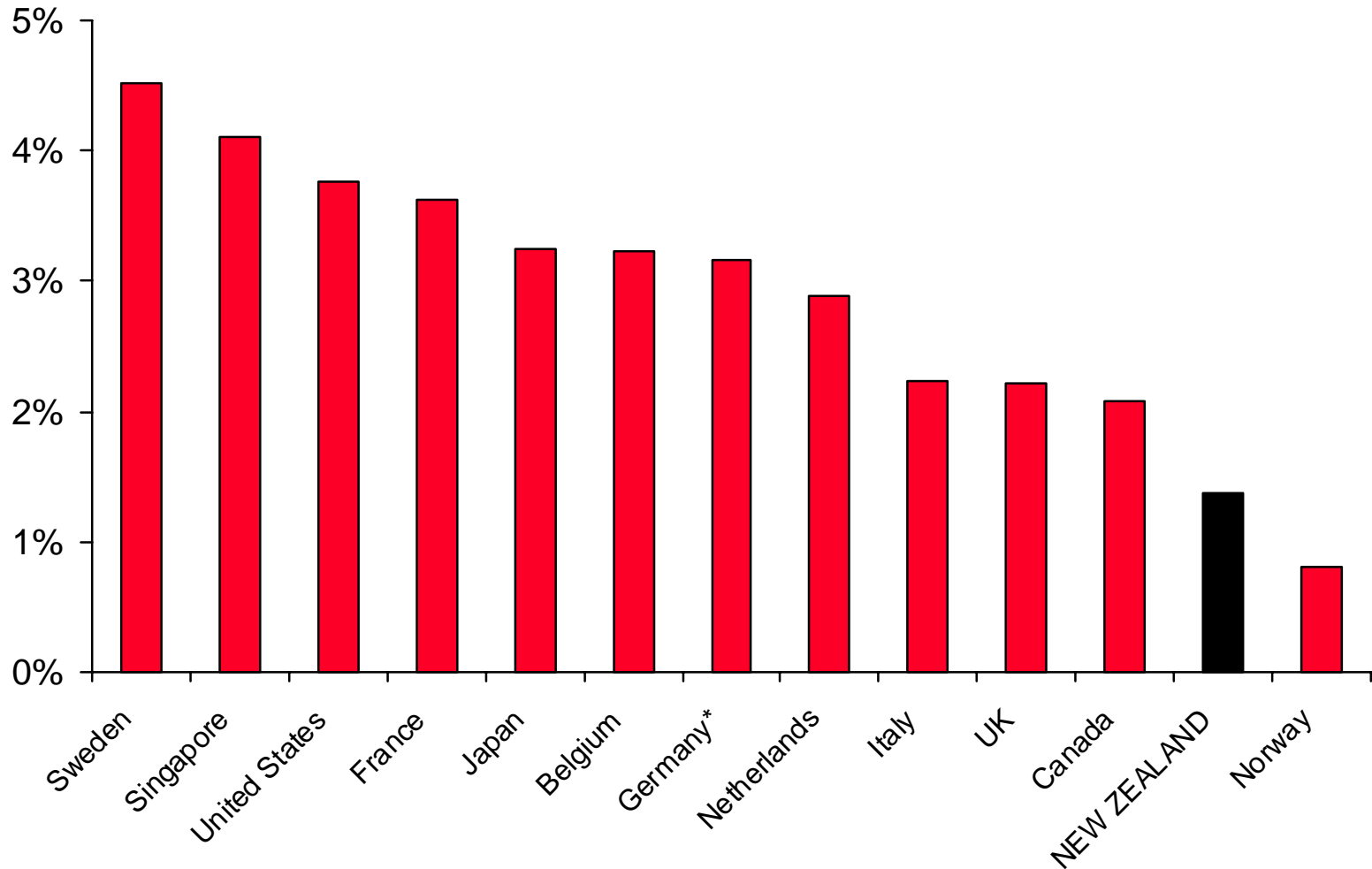
New Zealand's Relative Position

GCR Ranking Over Time

| Rank | Current Competitiveness Index | Company Strategy & Operations Index | National Business Environment Index |
|------|-------------------------------|-------------------------------------|--|
| 1 | .. | .. | .. |
| 2 | .. | .. | .. |
| 3 | .. | .. | .. |
| 4 | .. | .. | .. |
| 5 | .. | .. | .. |
| 6 | .. | .. | .. |
| 7 | .. | .. | .. |
| 8 | .. | .. | .. |
| 9 | .. | .. | .. |
| 10 | .. | .. | .. |
| 11 | .. | .. | .. |
| 12 | .. | .. | .. |
| 13 | .. | .. | .. |
| 14 | .. | .. | .. |
| 15 | .. | .. | .. |
| 16 | .. | .. | .. |
| 17 | New Zealand (1998) | .. | New Zealand (1998) |
| 18 | .. | .. | New Zealand (2000)  |
| 19 | New Zealand (2000) | New Zealand (1998) | .. |
| 20 | .. | .. | .. |
| 21 | .. | New Zealand (2000) | .. |
| 22 | .. | .. | .. |
| 23 | .. | .. | .. |
| 24 | .. | .. | .. |
| 25 | .. | .. | .. |

Comparative Labor Productivity Growth Manufacturing Sector, 1990 to 1999

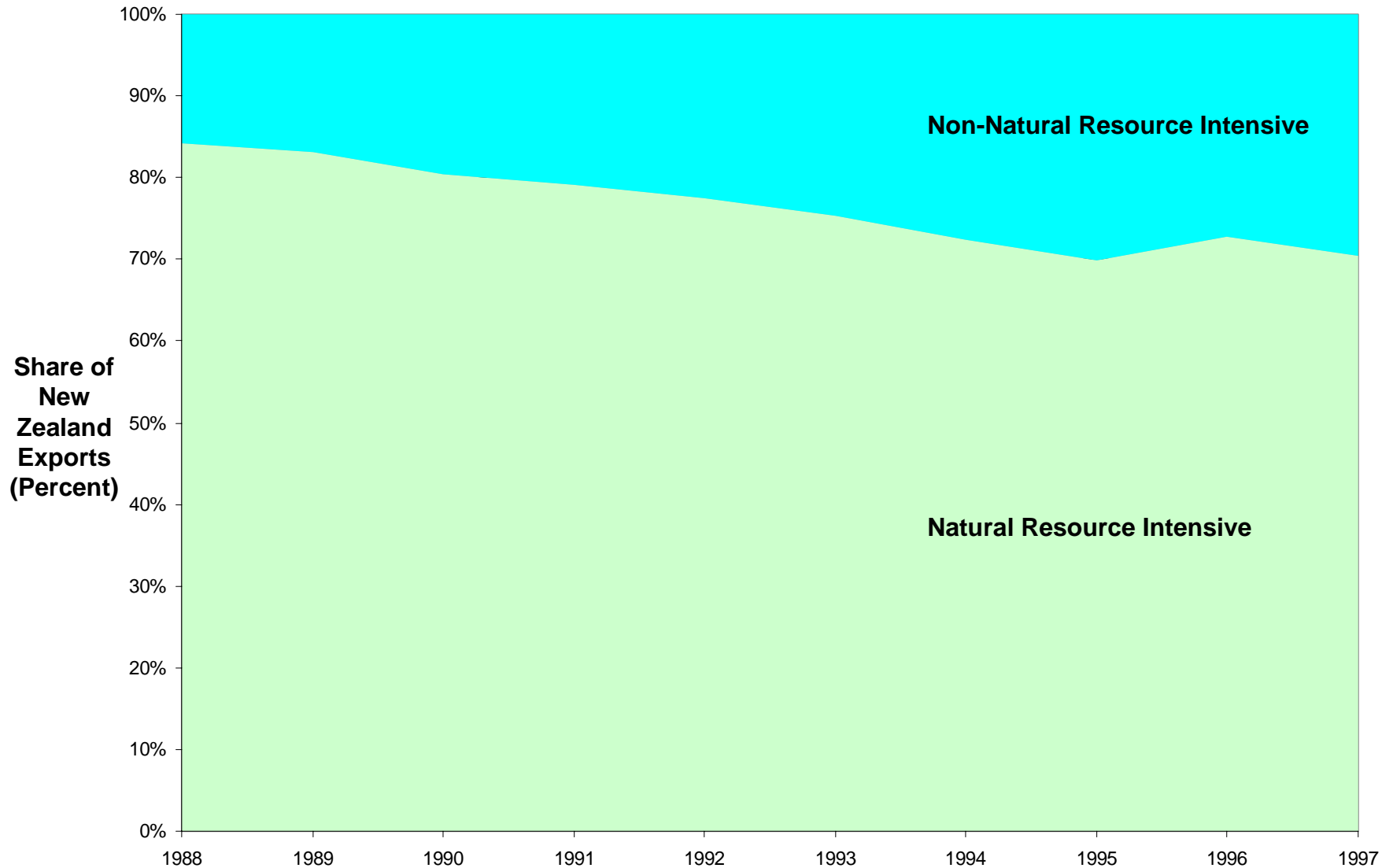
Output per Hour,
CAGR, 1990 to 1999



Note: *Germany (west) : 1990 - 1998
Source: US Bureau of Labor Statistics, EIU

New Zealand Trade, 1988-1997

Percent of Total Country Exports By Natural Resource Intensity

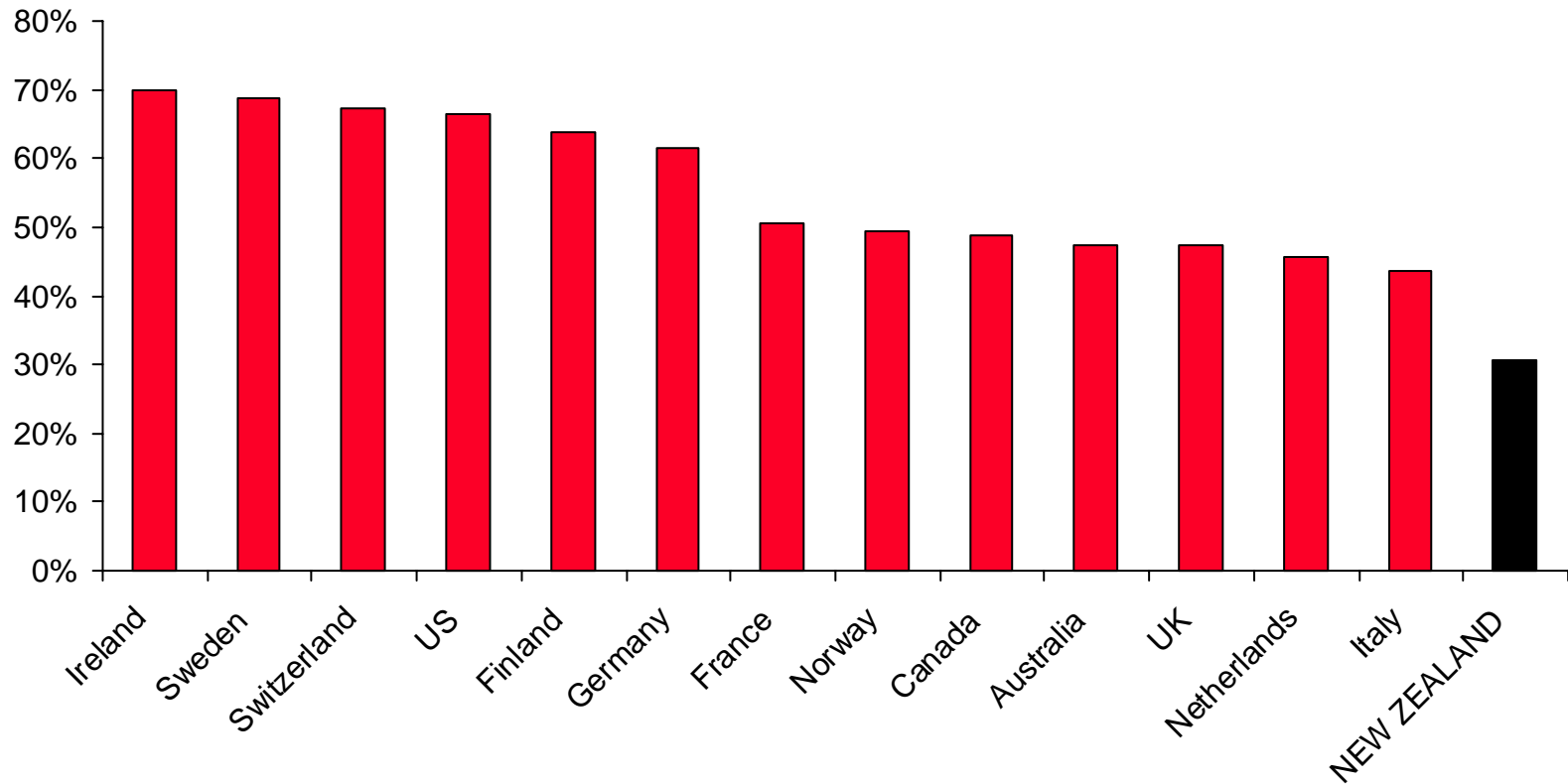


Source: UN Trade Statistics (Rev. 2), Institute for Strategy and Competitiveness, Harvard Business School.

Private Sector R&D Spending

OECD Countries

Private companies'
Share of R&D
spending, 1999



Source: OECD, 2001

Conflicting Government Policies

- New Zealand is pursuing policies that work in different directions

EXAMPLES

- Efforts to reduce compliance costs for business
- Significant investments in education
- Tightening of antitrust laws and enforcement
- Efforts to improve risk capital availability
- Plans to create R&D grants
- Policies to encourage Maori business development
- Policies that increase labor market rigidity
- Weakening of national education standards
- Creation of a government-owned bank
- Elimination of private pension system
- Lack of competitive R&D tax credits



- **Inconsistent policies suggest the lack of consensus on an economic strategy for New Zealand**

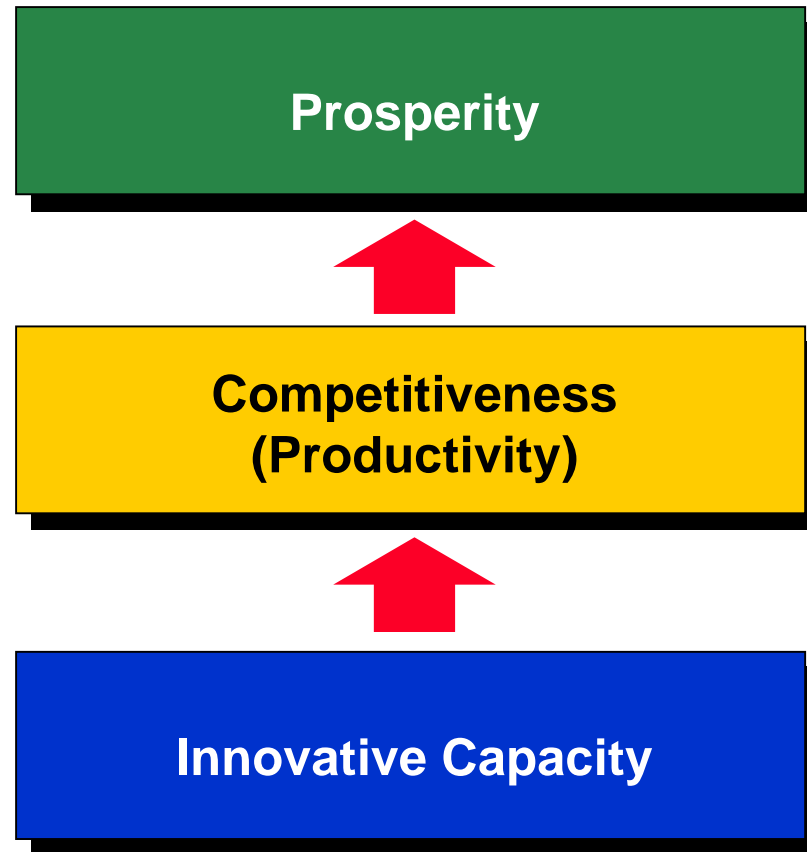
Sources of Rising Prosperity

- A nation's standard of living (wealth) is determined by the **productivity** with which it uses its human, capital, and natural resources. The appropriate definition of competitiveness is productivity.
 - Productivity depends both on the **value** of products and services (e.g. uniqueness, quality) as well as the **efficiency** with which they are produced.
 - It is not **what** industries a nation competes in that matters for prosperity, but **how** firms compete in those industries
 - Productivity in a nation is a reflection of what both domestic and foreign firms **choose to do in that location**. The location of ownership is secondary for national prosperity.
 - The productivity of **“local”** industries is of fundamental importance to competitiveness, not just that of traded industries
 - Devaluation does not make a country more “competitive”, rather it reveals a **lack of fundamental competitiveness**



- Nations compete in offering the **most productive environment** for business
- The public and private sectors play **different but interrelated roles** in creating a productive economy

Innovation and Prosperity



- For advanced economies innovation is critical to support high levels of prosperity

Determinants of Productivity and Productivity Growth

Macroeconomic, Political, and Legal Context for Development

Microeconomic Foundations of Development

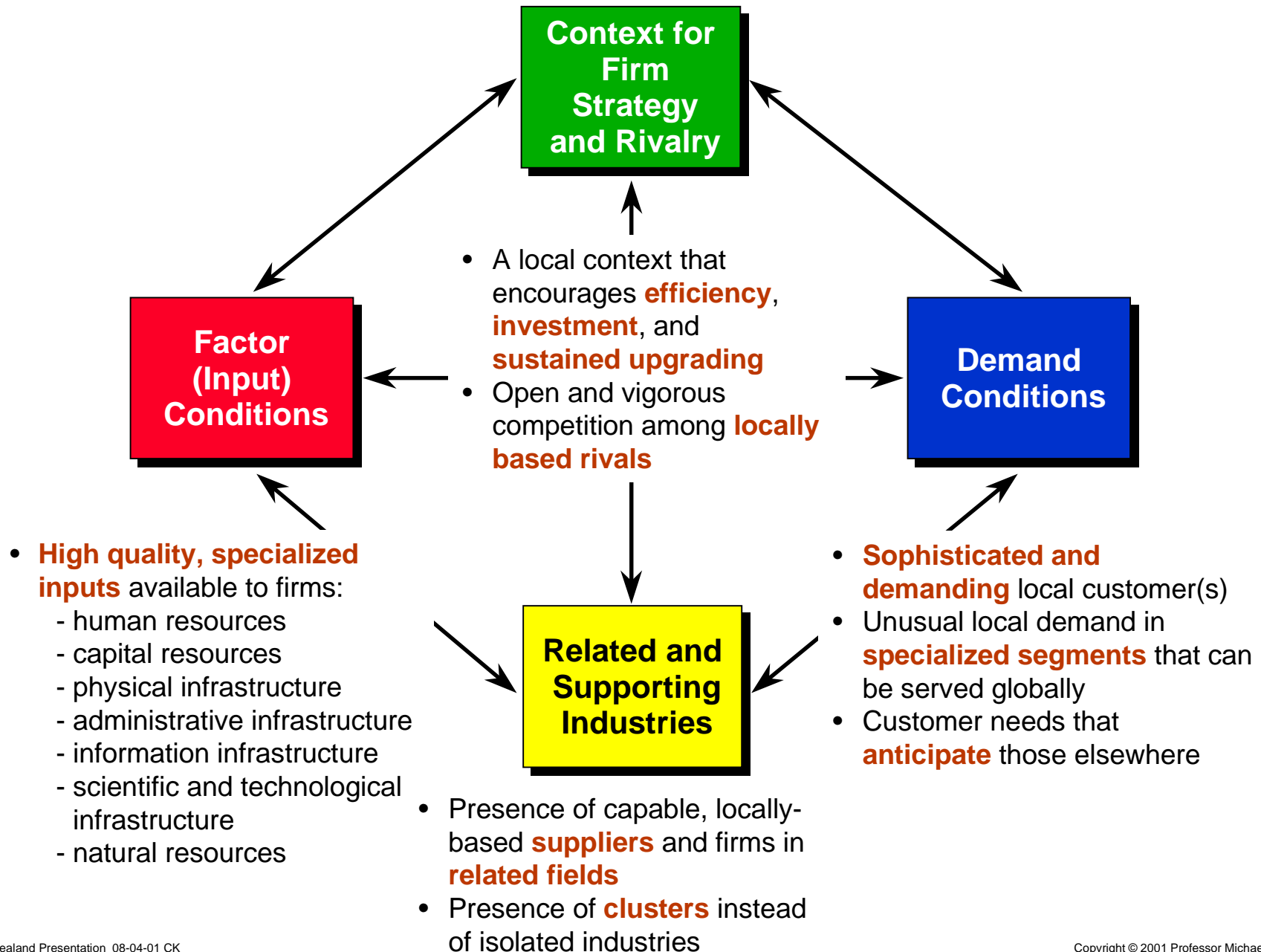
Sophistication
of Company
Operations and
Strategy



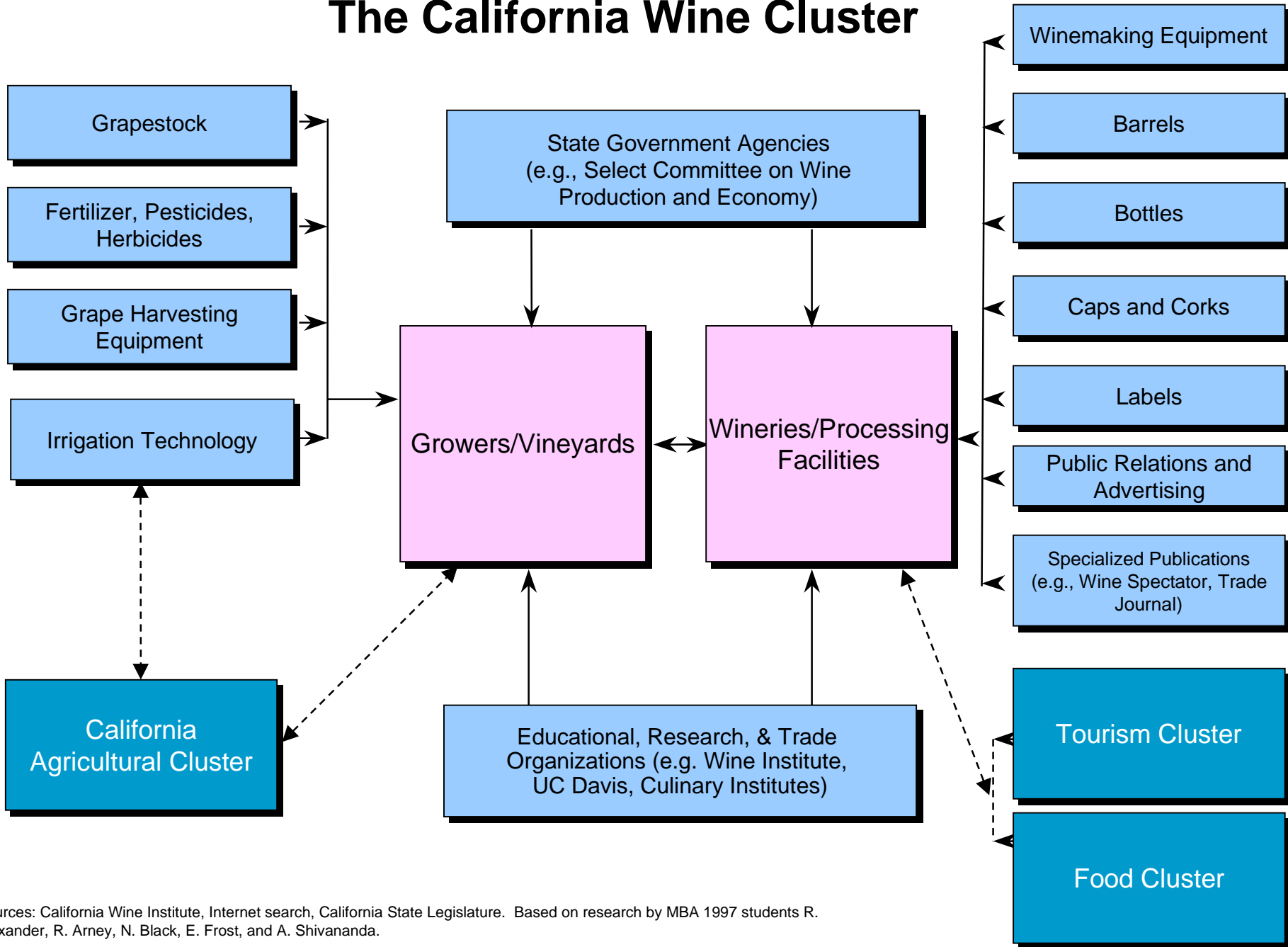
Quality of the
Microeconomic
Business
Environment

- Sound macroeconomic policies and a stable political / legal context are **necessary** to ensure a prosperous economy, **but not sufficient**
- Competitiveness ultimately depends on improving the **microeconomic foundations** of competition

Productivity and the Microeconomic Business Environment



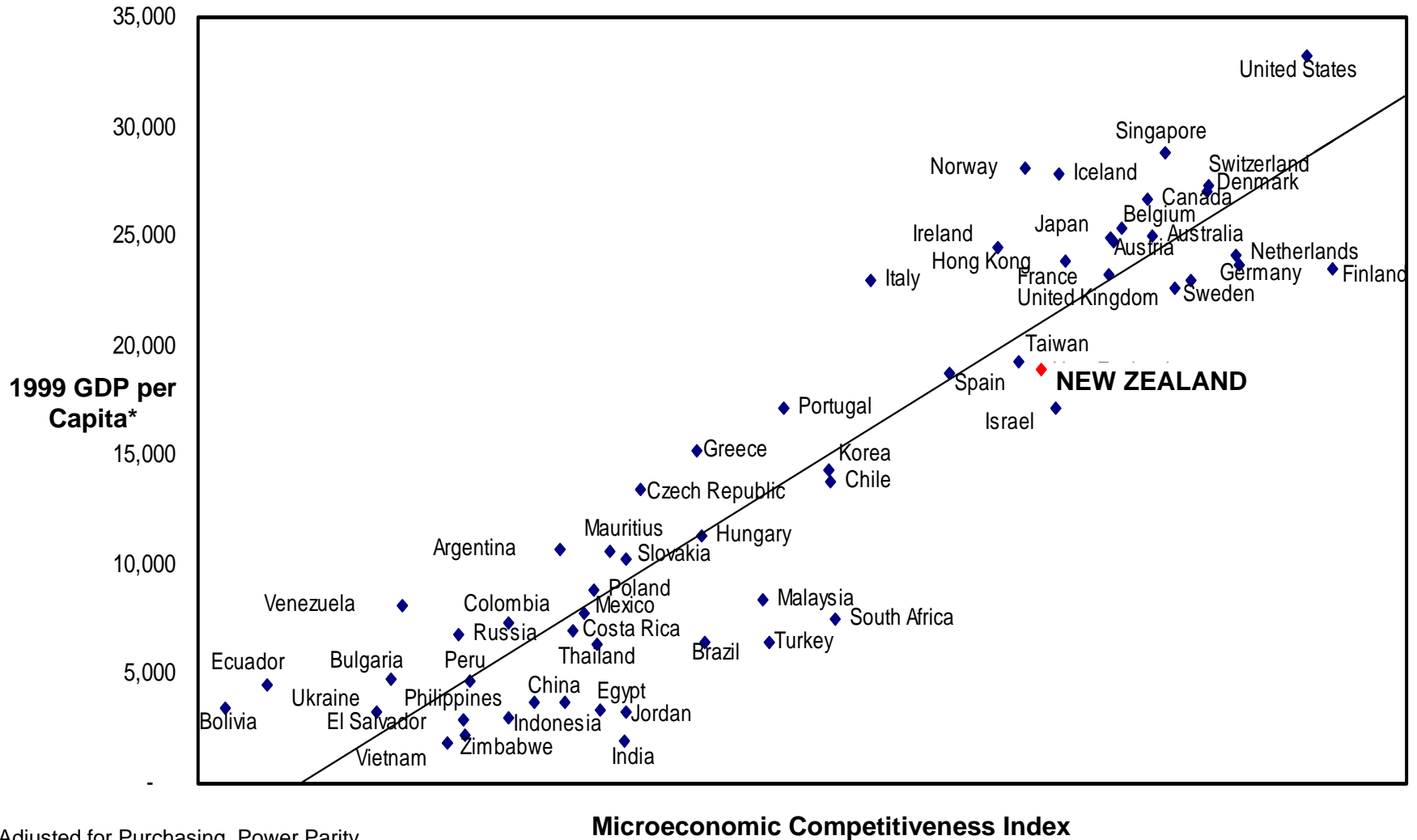
The California Wine Cluster



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.

Global Competitiveness Report 2000

The Relationship Between Microeconomic Competitiveness and GDP Per Capita, 1999 Data



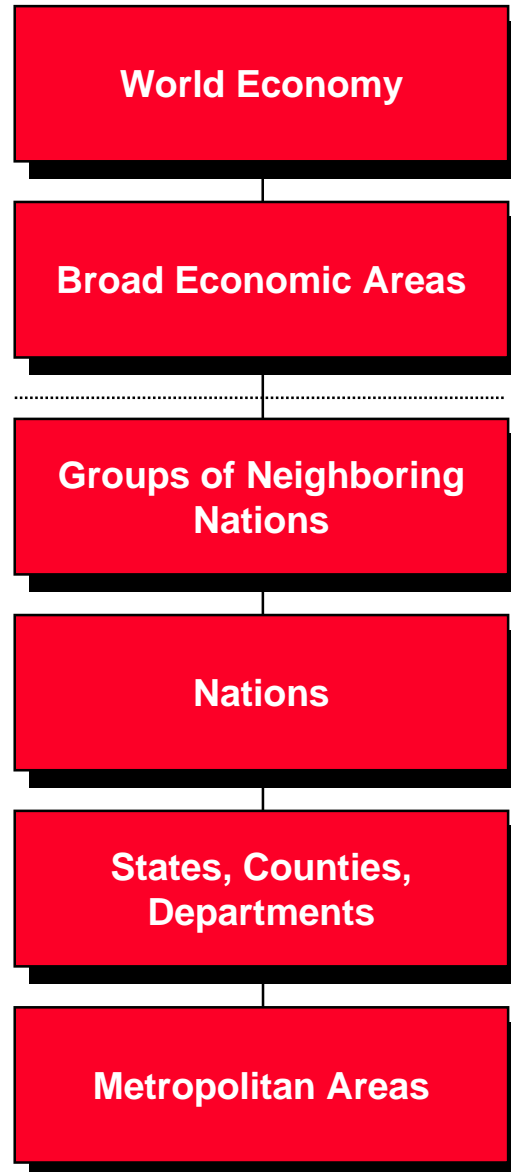
* Adjusted for Purchasing Power Parity

Source: Porter, Michael E. "The Current Competitiveness Index: Measuring the Microeconomic Foundations of Prosperity." *The Global Competitiveness Report 2000*, New York: Oxford University Press, 2000

Stages Of Competitive Development



Geographic Levels and Competitiveness



New Zealand's Economic Agenda in 2001

I. Address some chronic weaknesses

II. Make the transition to an Innovation-Driven economy based on New Zealand's unique assets

III. Better integrate economic and social policies

IV. Articulate an overall national strategy

New Zealand's Economic Agenda in 2001

I. Address some chronic weaknesses

- Upgrade domestic financial markets

Financial Markets

New Zealand's Relative Position

Competitive Advantages Relative to GDP per Capita

Country Ranking

| | |
|-----------------------------------|---|
| Financial Disclosure Requirements | 9 |
|-----------------------------------|---|

Competitive Disadvantages Relative to GDP per Capita

Country Ranking

| | |
|--------------------------------|----|
| Venture Capital Availability | 28 |
| Access to Local Equity Markets | 28 |
| Ease of Access to Loans | 25 |

Note: Rank by countries; overall NZ ranks 19 (17 on Business Environment)

Source: Global Competitiveness Report 2000

New Zealand's Economic Agenda in 2001

I. Address some chronic weaknesses

- Upgrade domestic financial markets
- **Improve the human resource development system**

Making the Transition To An Innovation-Driven Economy



- New Zealand's faces unusual challenges in moving to an Innovation-driven economy
- It cannot follow the path of countries like Taiwan or Singapore who can pass through the Investment-Driven stage
 - The level of wages exceeds that which can be supported through OEM manufacturing
 - New Zealand's resource intensive industries have not equipped the nation to compete in advanced manufacturing and services

New Zealand's Economic Agenda in 2001

I. Address some chronic weaknesses

- Upgrade domestic financial markets
- Improve the human resource development system

II. Making the transition to an Innovation-Driven economy

- Upgrade New Zealand's scientific and technological capacity in fields where it can be world class

Science and Technology System

New Zealand's Relative Position

Competitive Advantages Relative to GDP per Capita

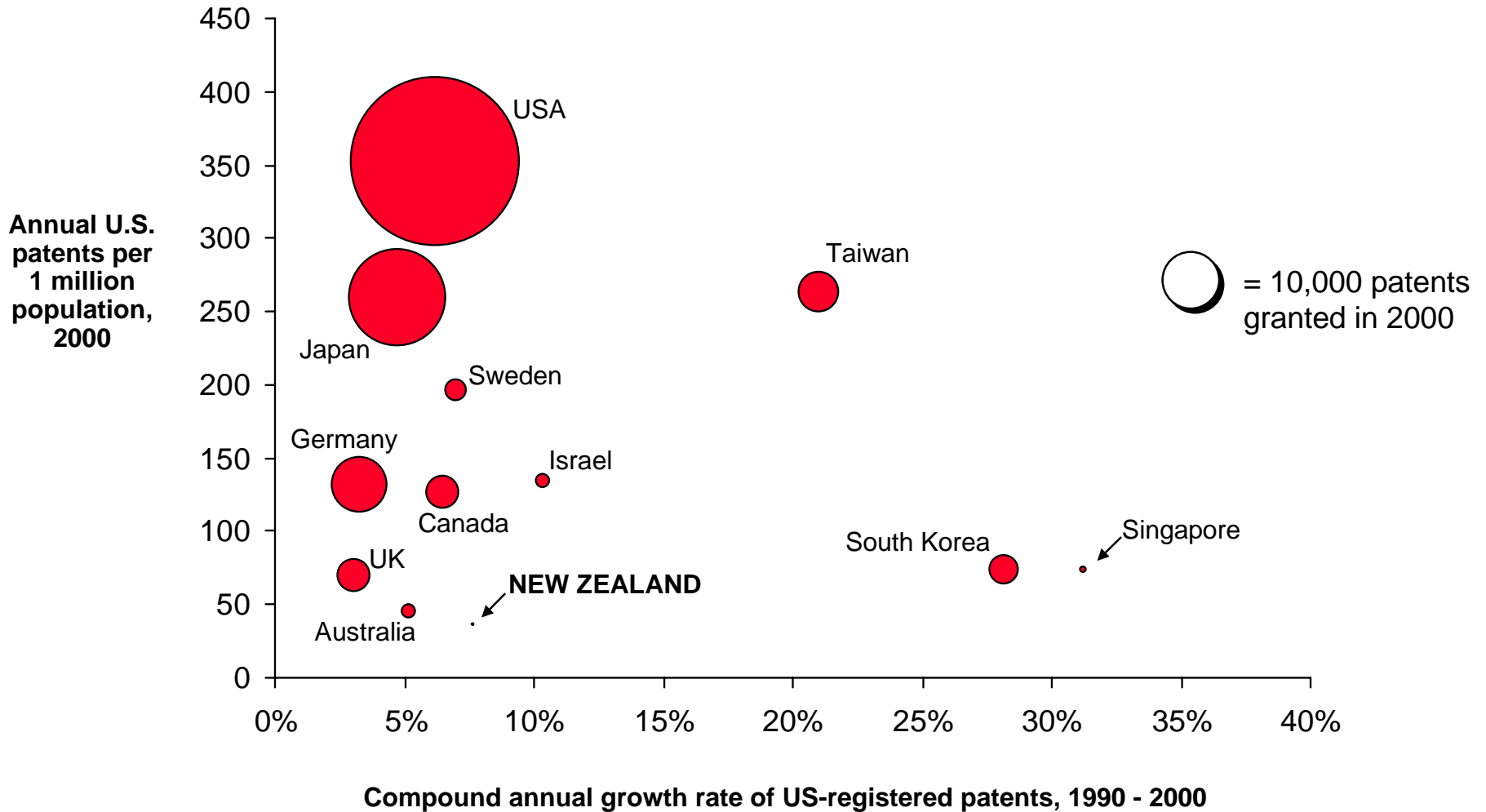
Country Ranking

Competitive Disadvantages Relative to GDP per Capita

Country Ranking

| | |
|---|----|
| University / Industry Research Collaboration | 42 |
| Company Spending on R&D | 31 |
| Patents per capita (1998) | 21 |

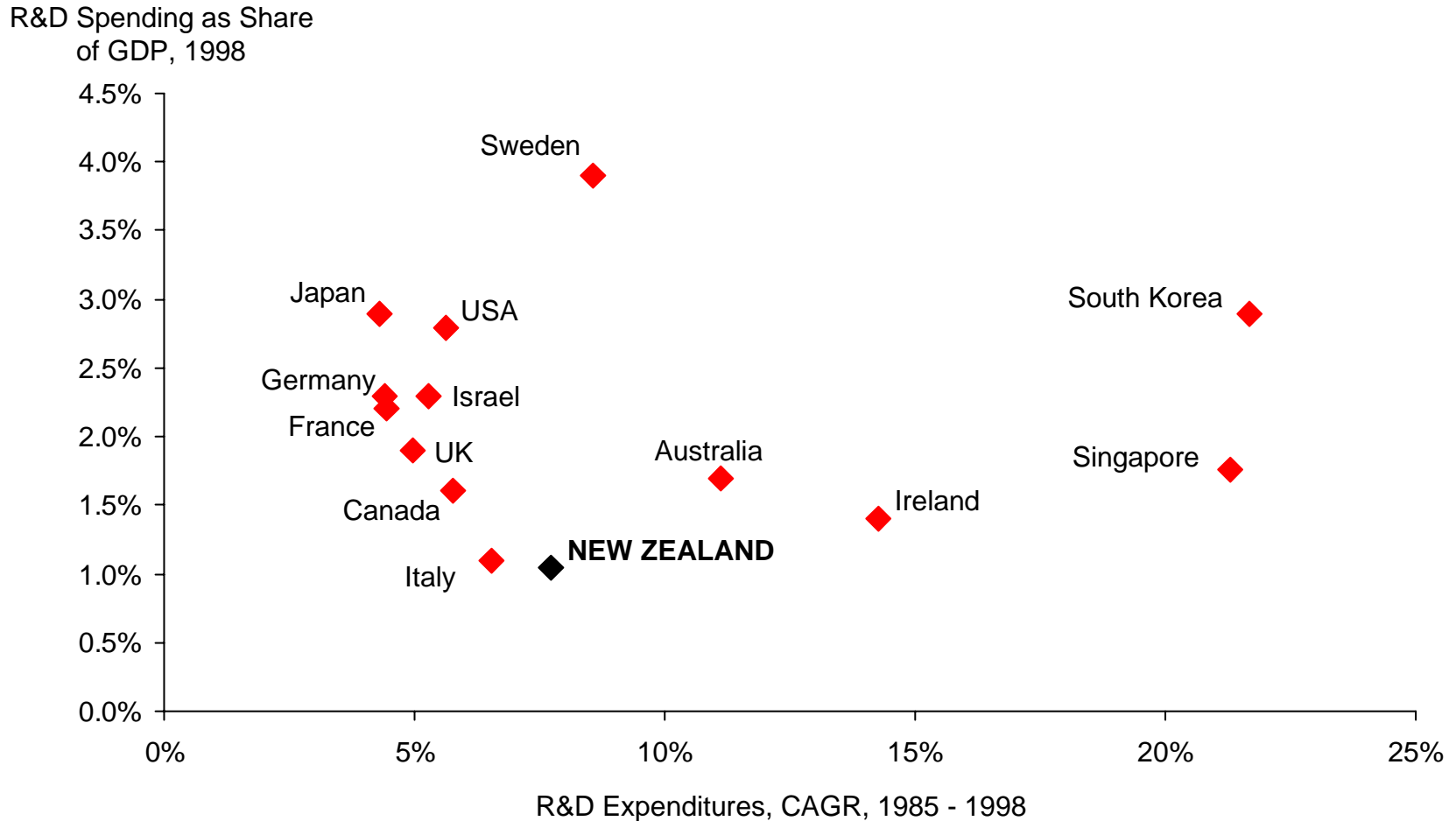
International Patenting Performance



Source: US Patent and Trademark Office (www.uspto.gov). Author's analysis.

Change in R&D Investments

Compound Annual Growth Rate in R&D Expenditures, 1985-1998

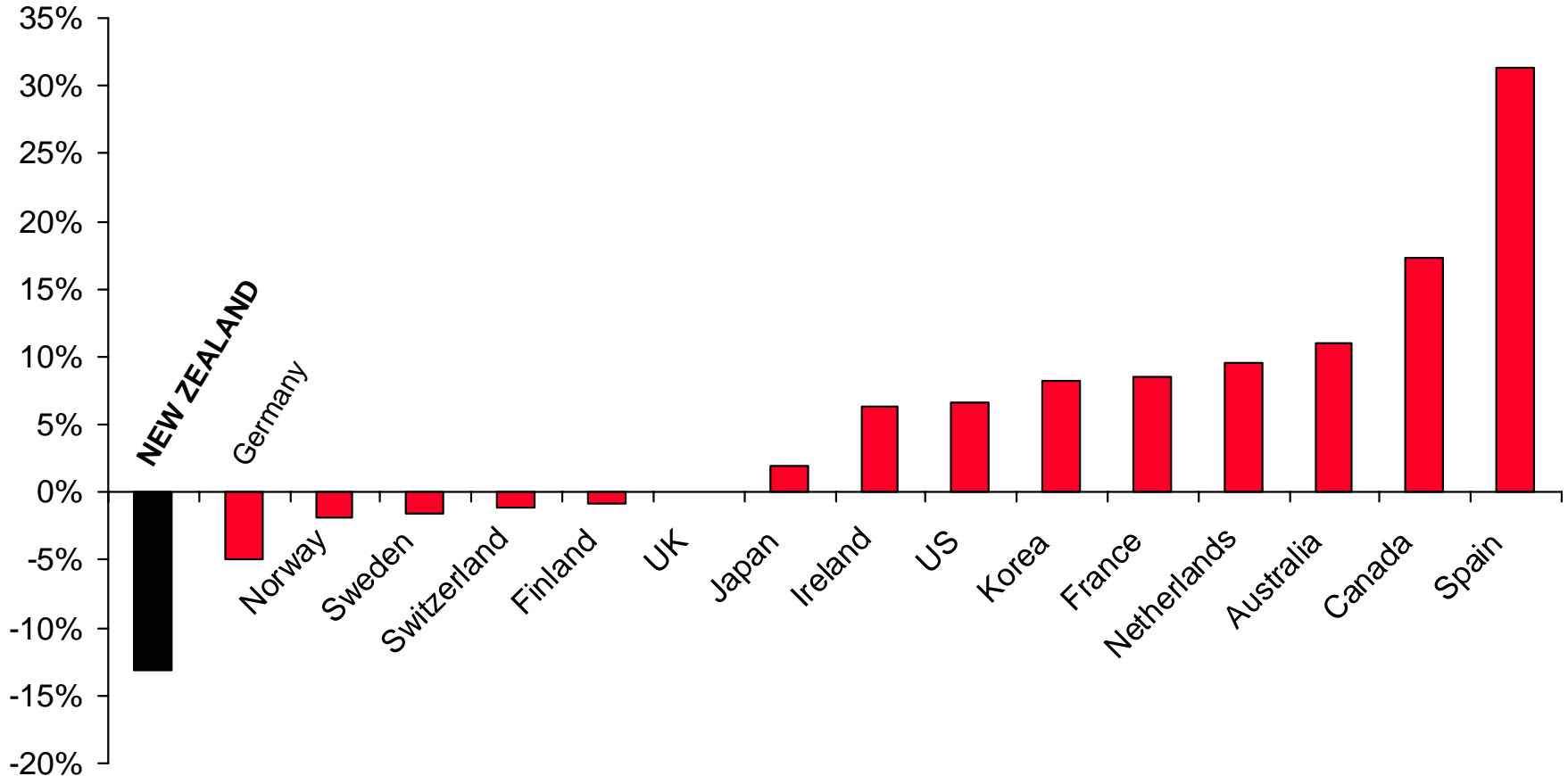


Source: US Competitiveness 2001: Strengths, Vulnerabilities, and Innovation Priorities Report; Global Competitiveness Report 2000

Tax Treatment of R&D in OECD Countries

Tax incentives for R&D Spending, Large Companies, 1999

Tax credit as share of R&D spending



Source: OECD estimates

Composition of New Zealand Patenting in the US

Top Patenting Industries and Companies, 1999

- Top 5 NZ-based companies by U.S. patents filed in 1999
 - FISHER + PAYKEL LIMITED (6 patents)
 - TRIMBLE NAVIGATION, LTD. (6)
 - AUCKLAND UNISERVICES LIMITED (5)
 - GENESIS RESEARCH & DEVELOPMENT CORPORATION, LTD. (5)
 - INTERLOCK GROUP LIMITED (4)
- U.S. patents filed in 1999 by New Zealand inventors are almost exclusively by domestic companies

Science and Technology System

New Zealand's Action Agenda

- Increase specialization of universities and research institutions around areas of existing and potential New Zealand excellence
- Promote cooperation between universities and the private sector via clusters
- Raise the proportion of R&D spending by the non-government sector
- Increase incentives for private sector R&D
- Focus on attracting foreign investment in areas of potential R&D strengths

New Zealand's Economic Agenda in 2001

- I. Address some chronic weaknesses
 - Upgrade domestic financial markets
 - Improve the human resource development system

- II. **Making the transition to an Innovation-Driven economy**
 - Upgrade New Zealand's scientific and technological capacity in fields where it can be world class
 - **Create advanced demand conditions**

Demand Conditions

New Zealand's Relative Position

Competitive Advantages Relative to GDP per Capita

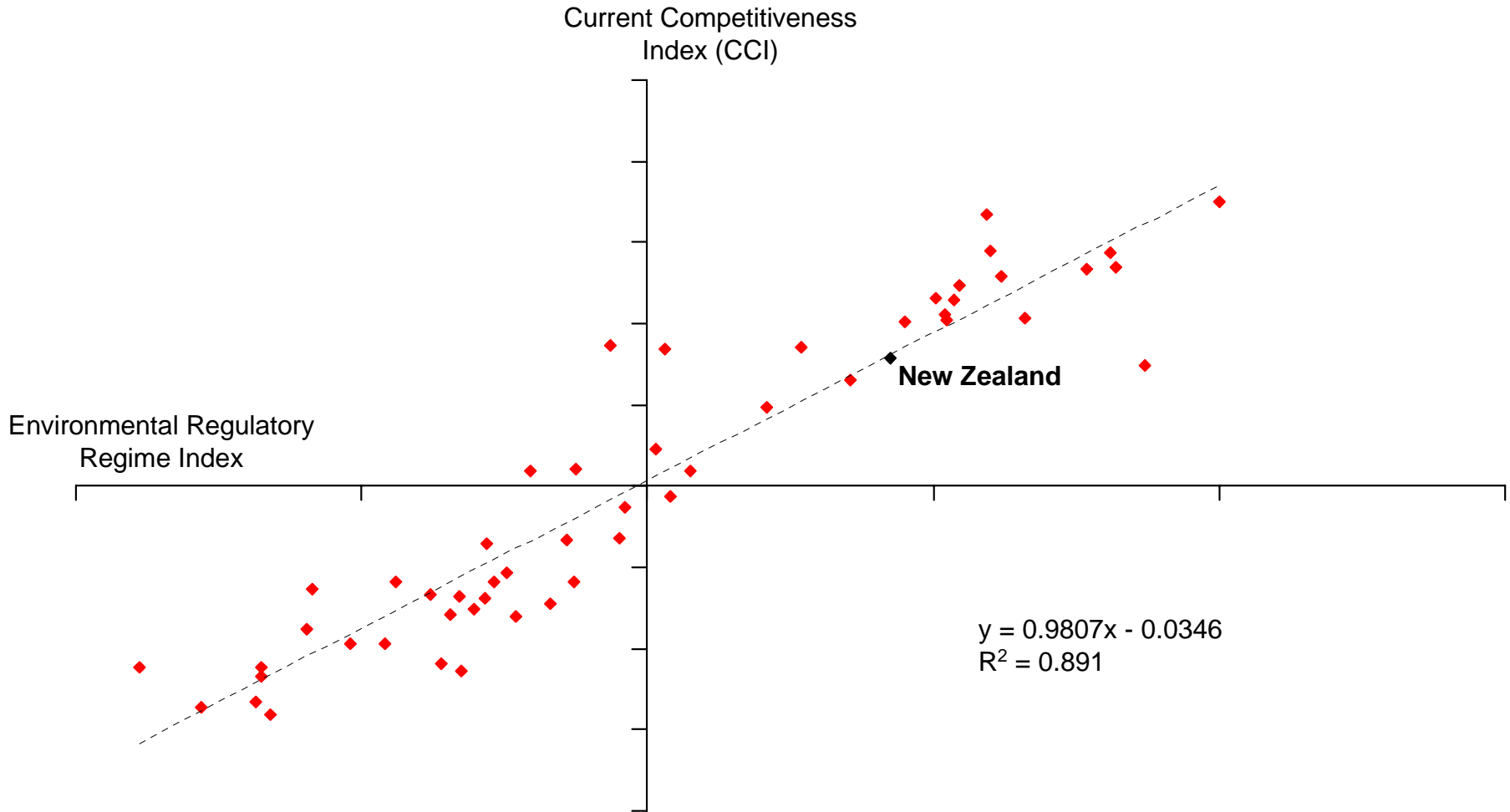
| | Country Ranking |
|---|-----------------|
| Openness of Public Sector Contracts | 3 |
| Consumer Adoption of Latest Products | 11 |

Competitive Disadvantages Relative to GDP per Capita

| | Country Ranking |
|----------------------|-----------------|
| Buyer Sophistication | 23 |

Global Competitiveness Report 2000

Environmental Regulation and Microeconomic Competitiveness



Environmental Regulation and Competitiveness

- Competing based on weak environmental standards **perpetuates low incomes**
- Corporate pollution is a sign of **inefficient and unproductive use** of resources

Firm

- Inefficient extraction of resources
- Incomplete material utilization
- Unnecessary waste products
- Unnecessary energy use
- Unproductive land use

Customer

- Usable materials in products that are discarded
- Products that use energy inefficiently
- Discarded or unnecessary packaging

- The need to control or treat pollution causes companies to perform activities that add cost but create **no customer value**
 - e.g., handling, storage, processing, disposal
- Pollution is a reflection of **unsophisticated technology** and **weak management**



- **Strict environmental regulation** stimulates the upgrading necessary to achieve advanced economic development

New Zealand's Economic Agenda in 2001

I. Address some chronic weaknesses

- Upgrade domestic financial markets
- Improve the human resource development system

II. Making the transition to an Innovation-Driven economy

- Upgrade New Zealand's scientific and technological capacity in fields where it can be world class
- Create advanced demand conditions
- **Move from networking to true cluster development**
- **Widen the base of meaningful clusters in the economy**

Related and Supporting Industries

New Zealand's Relative Position

Competitive Advantages Relative to GDP per Capita

Country Ranking

Competitive Disadvantages Relative to GDP per Capita

Country Ranking

| | |
|-------------------------------------|----|
| Cluster Presence | 35 |
| Extent of Locally Based Competitors | 31 |
| Domestic Supplier Quantity | 29 |
| Domestic Supplier Quality | 20 |
| Intensity of Local Competition | 18 |

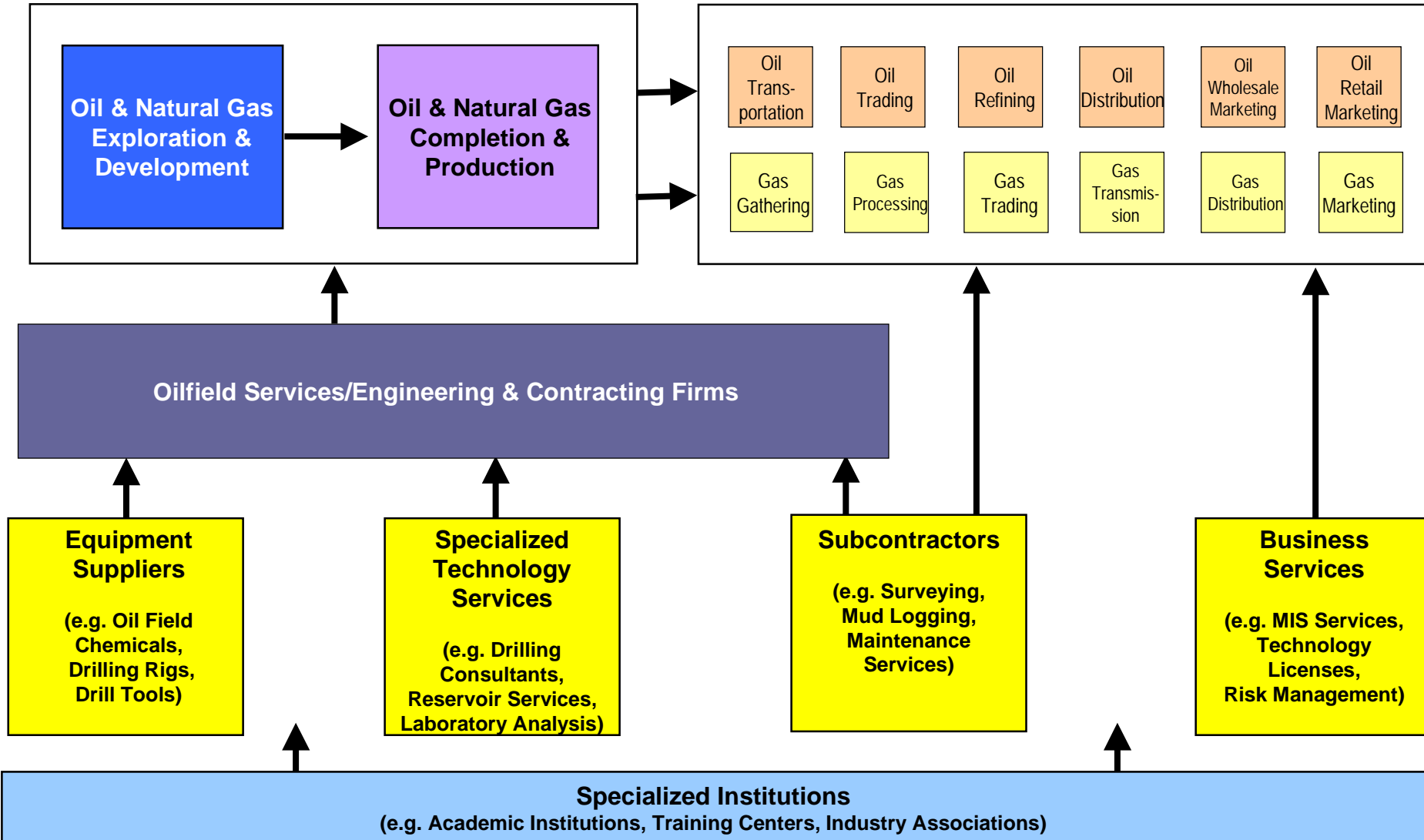
Note: Rank by countries; overall NZ ranks 19 (17 on Business Environment)

Source: Global Competitiveness Report 2000

Houston Oil and Gas Cluster

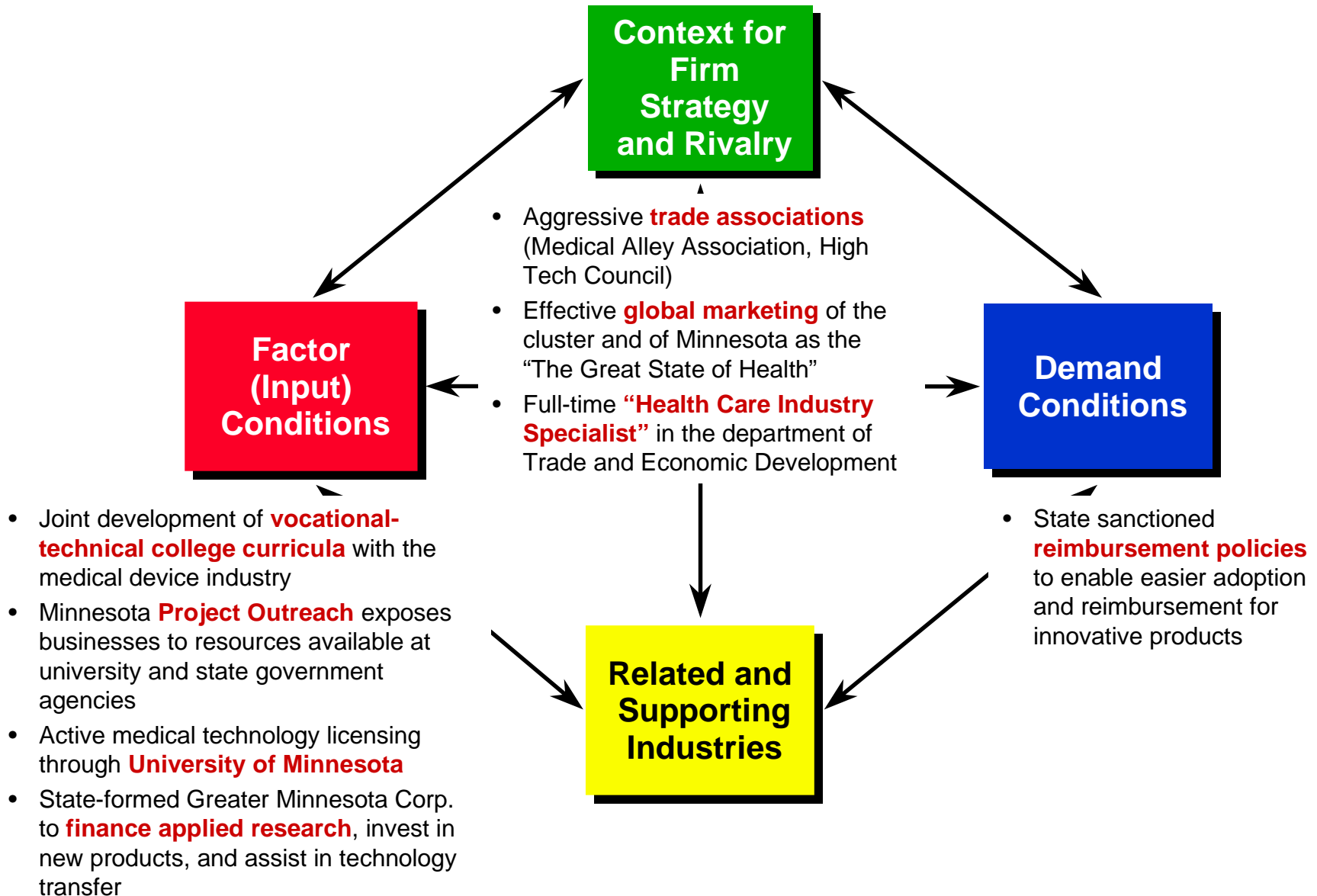
Upstream

Downstream



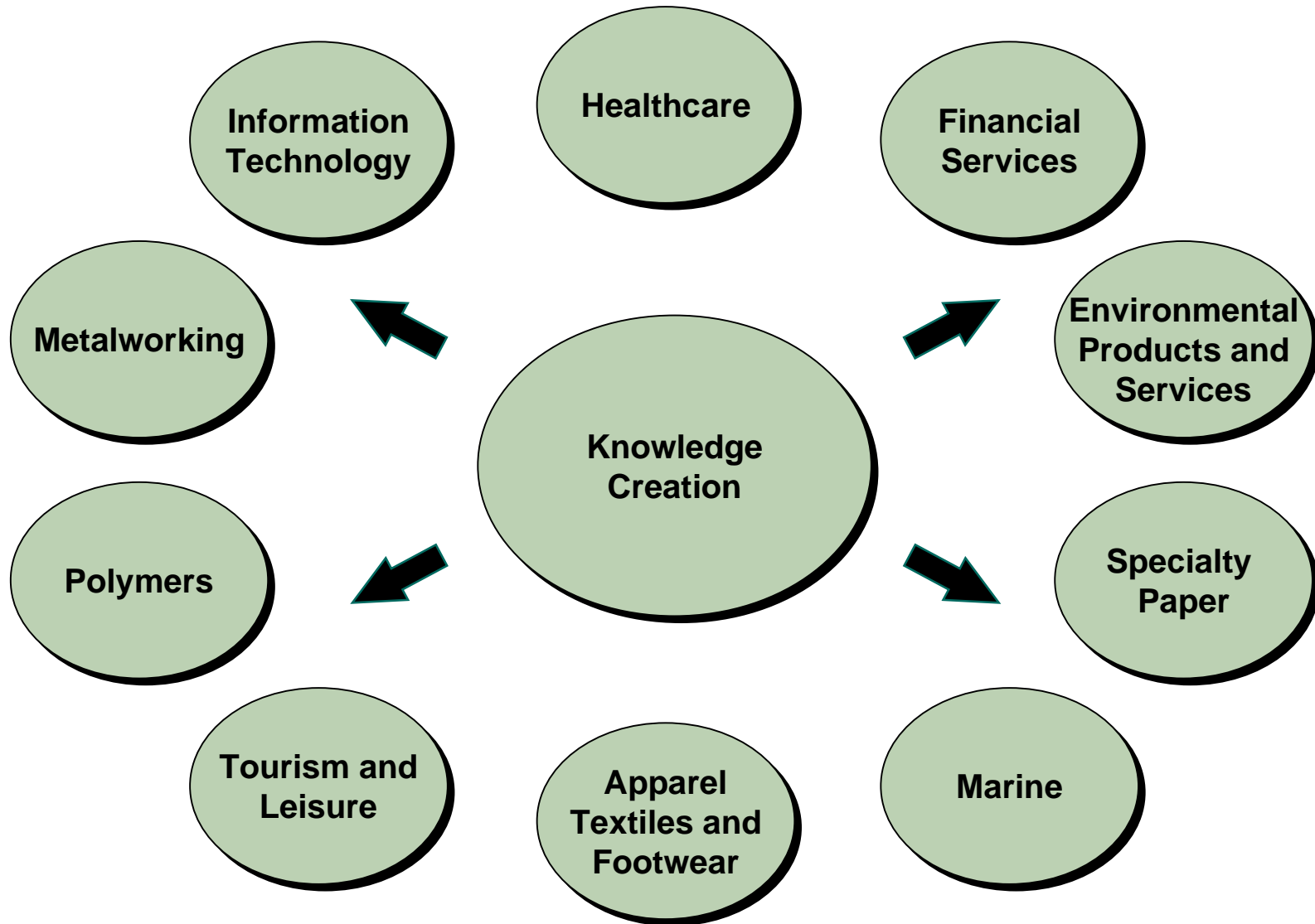
Public / Private Cooperation in Cluster Upgrading

Minnesota's Medical Device Cluster



Massachusetts Clusters

Widening the Cluster Base



Organizing for Competitiveness

Commonwealth of Massachusetts

Governor's Council on Economic Growth and Technology

Functional Task Forces

- International Trade
- Marketing Massachusetts
- Tax Policy and Capital Formation
- Technology Policy and Defense Conversion

Issue Groups

- Cost of Doing Business
- Financing of Emerging Companies
- Health Care Restructuring
- Revitalizing Western Massachusetts

Industry Cluster Working Groups

- Advanced Materials
- Biotechnology and Pharmaceuticals
- Defense
- Marine Science and Technology
- Medical Devices
- Software
- Telecommunications
- Textiles

New Zealand's Economic Agenda in 2001

I. Address some chronic weaknesses

- Upgrade domestic financial markets
- Improve the human resource development system

II. Making the transition to an Innovation-Driven economy

- Upgrade New Zealand's scientific and technological capacity in fields where it can be world class
- Create advanced demand conditions
- Move from networking to true cluster development
- Widen the base of meaningful clusters in the economy
- **Pursue focused approach to attract FDI**

New Zealand's Economic Agenda in 2001

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- Upgrade New Zealand's scientific and technological capacity in fields where it can be world class
- Create advanced demand conditions
- Move from networking to true cluster development
- Widen the base of meaningful clusters in the economy
- Pursue focused approach to attract FDI
- **Shift the role of government**

Transition To An Innovation-Driven Economy

Conflicting Government Policies

EXAMPLES

Consistent with an Innovation-driven Economy

- Efforts to reduce compliance costs for business
- Significant investments in education
- Tightening of antitrust laws and enforcement
- Efforts to improve risk capital availability
- Plans to create R&D grants
- Policies to encourage Maori business development

Inconsistent with an Innovation-driven Economy

- Policies that increase labor market rigidity
- Weakening of national education standards
- Creation of a government-owned bank
- Elimination of private pension system
- Lack of competitive R&D tax credits

Appropriate Roles of Government in Economic Development

1. Establish a **stable and predictable** macroeconomic, political, and legal environment
2. Improve the availability, quality, and efficiency of **general purpose inputs, infrastructure, and institutions**
3. Set overall **rules and incentives** governing competition that encourage productivity growth
4. Facilitate **cluster development and upgrading**
5. Create an explicit, ongoing **process of economic change** and competitive upgrading which informs citizens and mobilizes the private sector, government at all levels, educational and other institutions, and civil society.

New Zealand's Economic Agenda in 2001

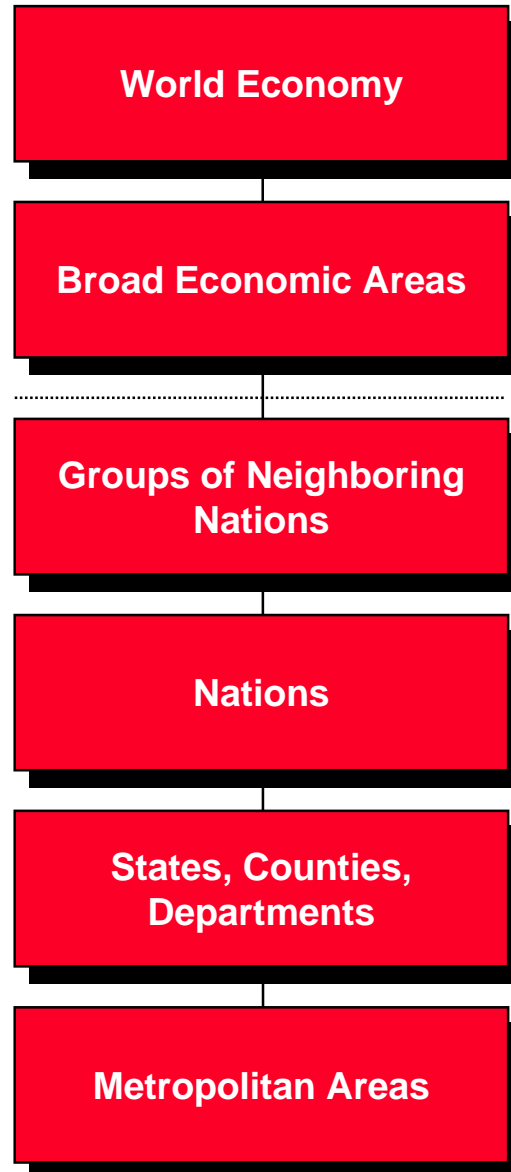
I. Address some chronic weaknesses

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II. Making the transition to an Innovation-Driven economy

- Upgrade New Zealand's scientific and technological capacity in fields where it can be world class
- Create advanced demand conditions
- Move from networking to true cluster development
- Widen the base of meaningful clusters in the economy
- Pursue focused approach to attract FDI
- Shift the role of government
- **Develop competitiveness strategy at the regional level**

Geographic Levels and Competitiveness



New Zealand's Economic Agenda in 2001

I. Address some chronic weaknesses

- Upgrade domestic financial markets
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II. Making the transition to an Innovation-Driven economy

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- Create advanced demand conditions
- Move from networking to true cluster development
- Widen the base of meaningful clusters in the economy
- Pursue focused approach to attract FDI
- Shift the role of government
- Develop competitiveness strategy at the regional level
- **Transform company strategies**

Company Operations and Strategy

New Zealand's Relative Position

Competitive Advantages Relative to GDP per Capita

Country Ranking

| | |
|-------------------------------|----|
| Senior Management Recruitment | 11 |
|-------------------------------|----|

Competitive Disadvantages Relative to GDP per Capita

Country Ranking

| | |
|---------------------------------------|----|
| Company Spending on R&D | 31 |
| Licensing of Foreign Technology | 26 |
| Nature of Competitive Advantage | 25 |
| Value Chain Presence | 24 |
| Extent of Regional Sales | 23 |
| Control of International Distribution | 23 |

Note: Rank by countries; overall NZ ranks 19 (22 on Company Operations and Strategy)

Source: Global Competitiveness Report 2000

Determinants of Relative Performance

Types of Competitive Advantage



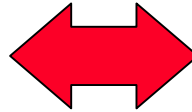
Sources of Competitive Advantage

Operational Effectiveness

- Assimilating, attaining, and extending **best practice**



Do the same thing better



Strategic Positioning

- Creating a **unique** and **sustainable** competitive position



Compete in a different way

New Zealand's Economic Agenda in 2001

- I. Address some chronic weaknesses
- II. Make the transition to an Innovation-Driven economy based on New Zealand's unique assets

III. Better integrate economic and social policies

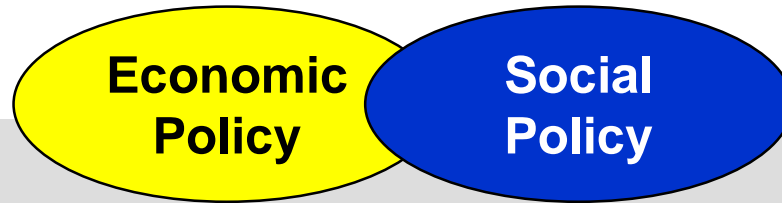
- IV. Articulate an overall national strategy

Causes of Economic Inequality

- Inadequate **education** and skill development
- Monopolies and restraints to **competition**
- **Discrimination**
- Faulty **incentives** for disadvantaged groups
- Command and control **regulation**
- **Managerial** ignorance

Integrating Economic and Social Policy

- In the new thinking on competitiveness, there is **no inherent conflict** between economic and social policy



- A **productive and growing economy** requires:
 - Rising skill levels
 - Safe working conditions
 - Healthy workers who live in decent housing in safe neighborhoods
 - A sense of equal opportunity
 - Assimilation of underemployed citizens into the productive workforce
 - Low levels of pollution (pollution is a sign of unproductive use of physical resources)
- “Social” policies must be **aligned with productivity** in the economy and prepare and motivate citizens to **succeed in the market system**
- “Economic” policies must include explicit programs to **raise human capability** and improve the lives and the **sense of opportunity** for citizens

Integrating Economic and Social Policy

Examples

Training

- Organize training investments around clusters

Housing

- Create mechanisms to encourage home ownership; provide incentives for new company formation in the construction cluster; reduce unnecessary costs of housing construction due to regulatory and approval requirement; secure property rights to residents

Health Care

- Create incentives for private health insurance; open health care delivery to competition

Social Security

- Create incentives for saving; encourage a private pension system that agglomerates investment capital

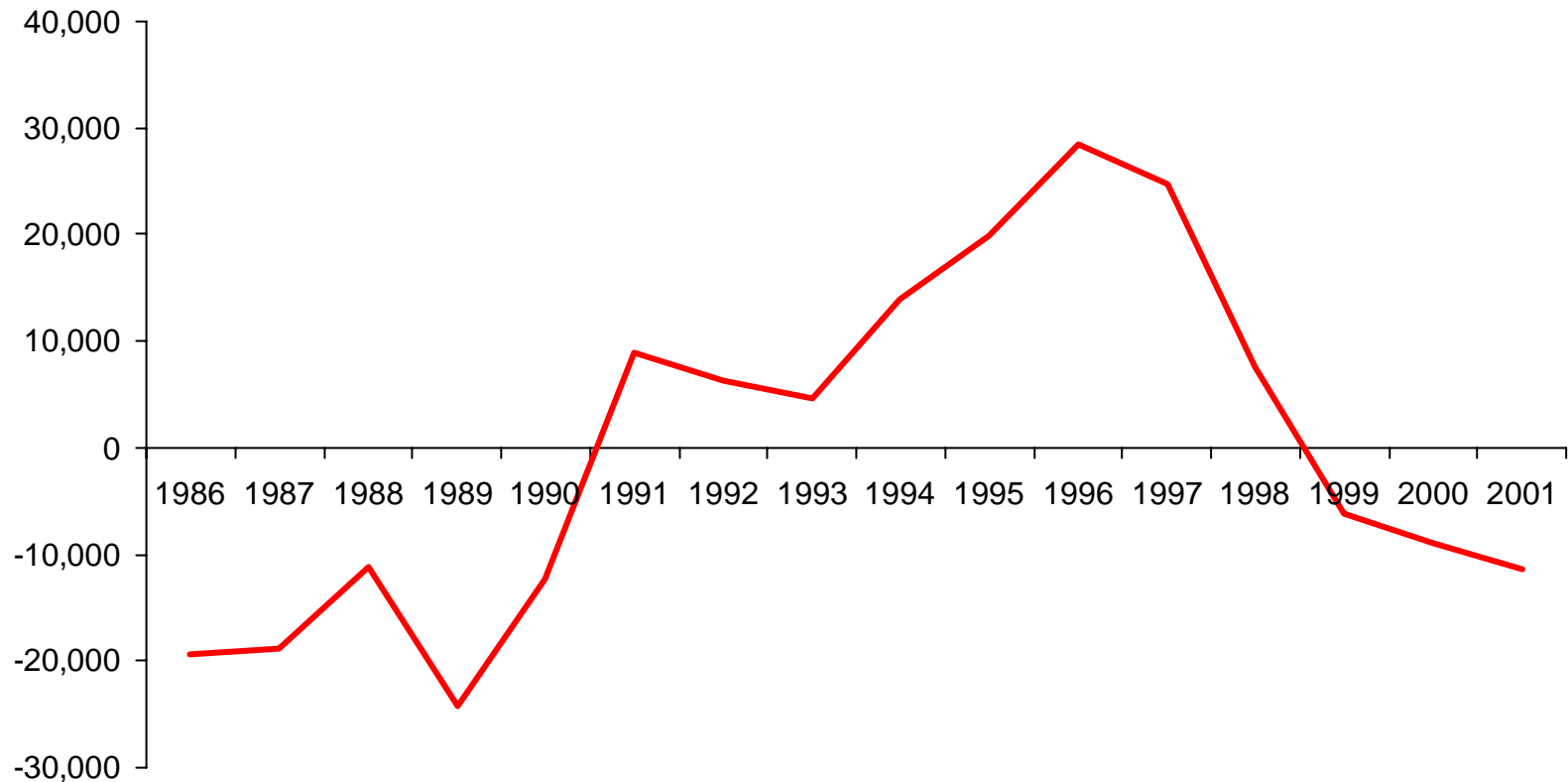
Environmental Quality

- Institute a regulatory regime that encourages movement to more environmental friendly methods; invest in technical assistance in eco-efficient processes and practices

New Zealand's Migration Balance

Net Migration Flows to/from New Zealand, 1986 - 2001

Net Migration (Arrivals -
Departures)



New Zealand's Economic Agenda in 2001

- I. Address some chronic weaknesses
- II. Make the transition to an Innovation-Driven economy based on New Zealand's unique assets
- III. Better integrate economic and social policies
- IV. Articulate an overall national strategy**

New Zealand Strategy

Elements

- What New Zealand aspires to achieve in the world economy
 - The New Zealand Scorecard is a good first step
- What field New Zealand aims to be world class in
- What New Zealand stands for the brand
 - *E.g. Clean and healthy*; in tourism, agriculture, manufacturing products and processes, ethical investment, ...
 - *Adventure*; in tourism, in sports, ...
 - *World class technology*
- Where New Zealand needs to improve
- How New Zealand will go about upgrading
 - A New Zealand Strategic Plan