



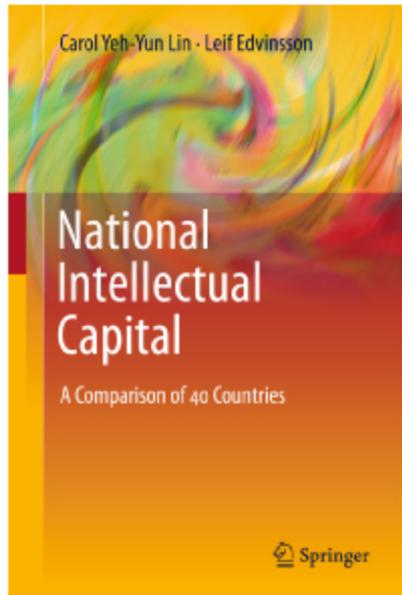
Intellectual Capital for Communities  
In the Knowledge Economy

# National Intellectual Capital: Eight Countries Comparison

Carol Y.Y. Lin  
Leif Edvinsson  
May 26, 2011



World Conference on Intellectual Capital for Communities  
- Seventh Edition -



Dr. Carol Yeh-Yun Lin, National Chengchi University, Taipei, Taiwan; Prof. Leif Edvinsson, Universal Networking, Intellectual Capital, Norrtälje, Sweden

## National Intellectual Capital

### A Comparison of 40 Countries

Over the past decade a new economic landscape is emerging based on intangibles, or an evolution toward Knowledge. Knowledge assets and intellectual capital are attracting the attention of all aspects of governance in the public and private sectors. To date, most studies of intellectual capital have focused at the organizational level, with an emphasis on explaining the role of “intangible assets” as a differentiator between accounting value and market value as a possible source of corporate competitive advantage.

More recently, pioneers in the field, including the authors of this book, have begun to apply these methodologies to a broader scope, with the objective of comparing the intellectual capital indices at the national or regional level. As a result, an increasing number of world organizations and researchers are commissioned to investigate this future-oriented crucial national issue. Yet, the linkage between the value of intangible assets and how to quantify or benchmark it is still tenuous, not to mention easily misunderstood by a layman for guiding better decision making.

With the belief that numbers talk and statistics hide valuable information, this book serves to present the authors’ research findings, covering 14 years (1995-2008) of intellectual capital information.

National Intellectual Capital:

- ▶ Gives statistically validated reports on intellectual capital indicators for 40 countries, over a 14 year period.
- ▶ Identifies three major types of intellectual growth patterns.
- ▶ Details the impact and implications of three major types of intellectual capital growth patterns for innovation, business creation, competitiveness, growth, and development

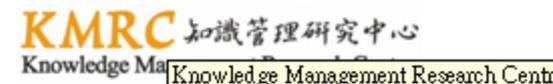
2011. XVII, 392 p. 120 illus. Hardcover

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- ▶ \$139.00
- ▶ SFr. 143.50
- ▶ £90.00

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## Variables in each type of capital

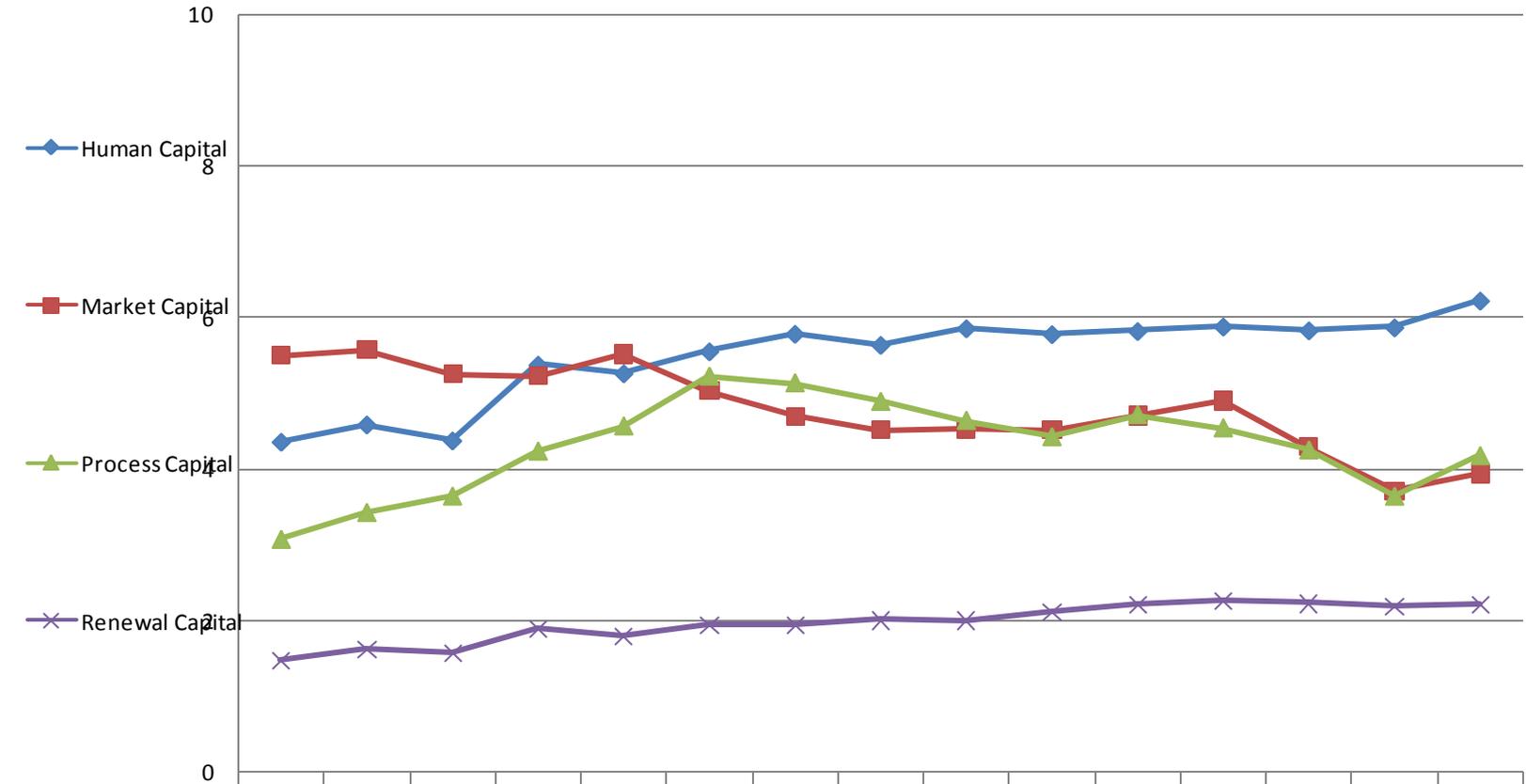
| <b>Human Capital index</b>  | <b>Market capital index</b>  |
|---|--|
| <ul style="list-style-type: none"> <li>•Skilled labor*</li> <li>•Employee training*</li> <li>•Literacy rate</li> <li>•Higher education enrollment</li> <li>•Pupil-teacher ratio</li> <li>•Internet subscribers</li> </ul>   | <ul style="list-style-type: none"> <li>•Corporate tax*</li> <li>•Cross-border venture*</li> <li>•Openness of culture*</li> <li>•Globalization*</li> <li>•Transparency*</li> <li>•Image of country*</li> <li>•Exports of goods</li> </ul>   |
| <ul style="list-style-type: none"> <li>•Public expenditure on education</li> </ul>  |  |
| <b>Process capital index</b>  | <b>Renewal capital index</b>   |
| <ul style="list-style-type: none"> <li>•Business competition environment*</li> <li>•Government efficiency*</li> <li>•Intellectual property rights protection*</li> <li>•Capital availability*</li> <li>•Computers in use per capita</li> <li>•Convenience of establishing new firms*</li> </ul> | <ul style="list-style-type: none"> <li>•Business R&amp;D spending</li> <li>•Basic research*</li> <li>•R&amp;D spending/GDP</li> <li>•R&amp;D researchers</li> <li>•Cooperation between universities and enterprises*</li> <li>•Scientific articles</li> <li>•Patents per capita (USPTO + EPO)</li> </ul> |
| <ul style="list-style-type: none"> <li>•Mobile phone subscribers</li> </ul>   |  |

Remarks:

Financial capital is the logarithm of GDP per capita adjusted by purchasing power parity.

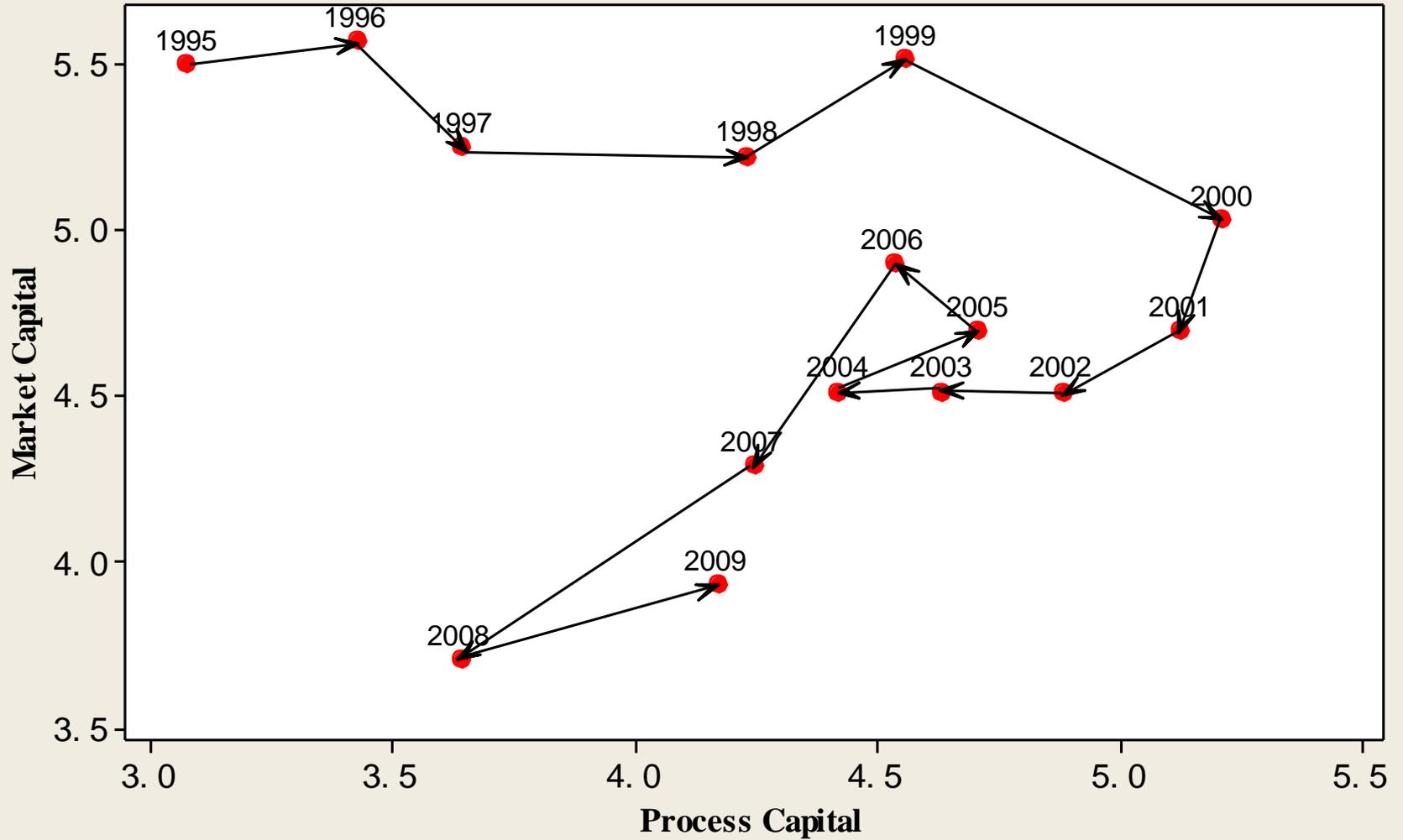
Variables marked with an asterisk are rated qualitatively using a scale of 1–10.

# Greece

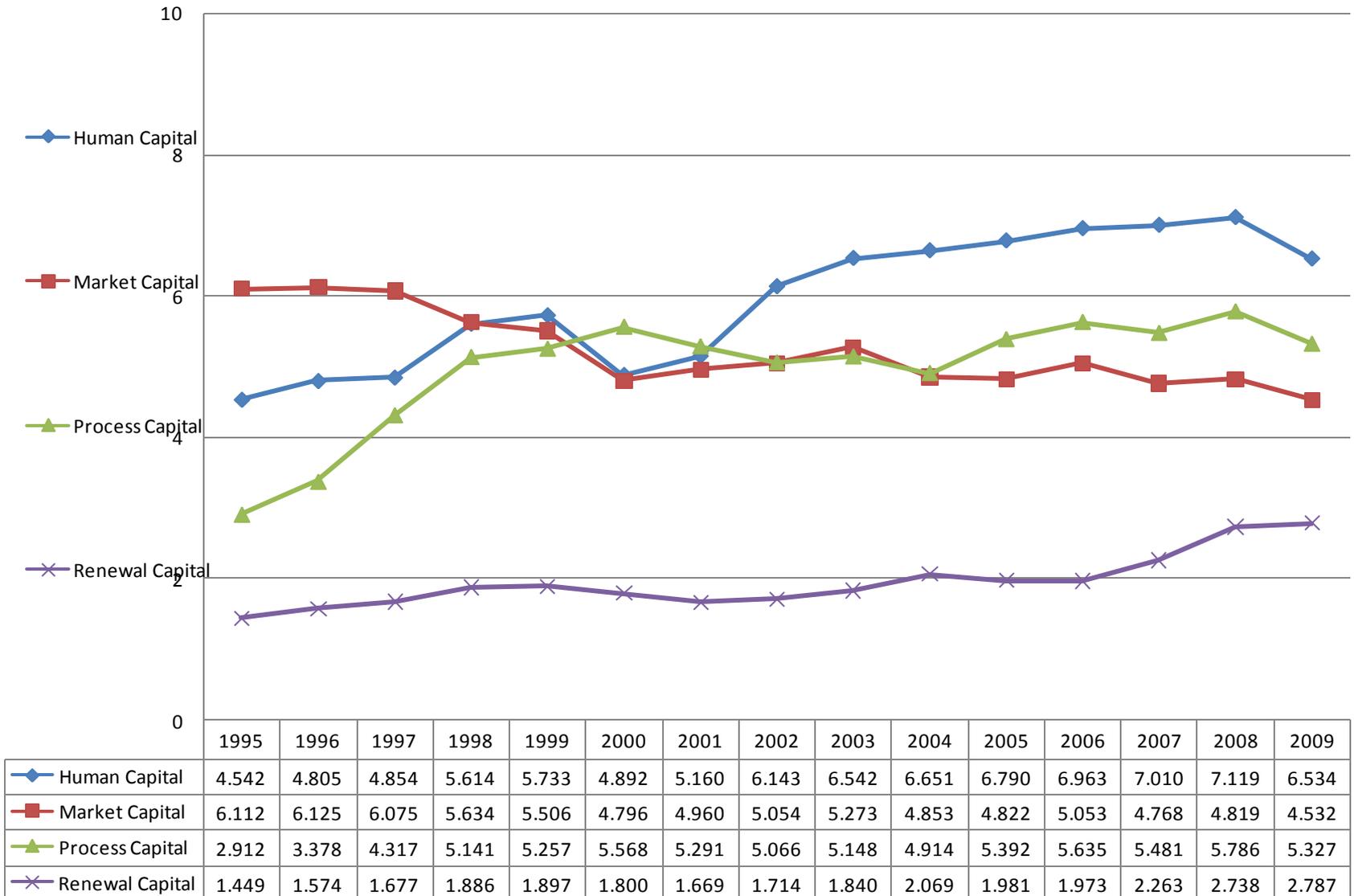


|                 | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Human Capital   | 4.350 | 4.579 | 4.367 | 5.371 | 5.258 | 5.548 | 5.781 | 5.634 | 5.854 | 5.776 | 5.817 | 5.877 | 5.827 | 5.866 | 6.220 |
| Market Capital  | 5.496 | 5.563 | 5.244 | 5.217 | 5.509 | 5.029 | 4.691 | 4.509 | 4.510 | 4.509 | 4.695 | 4.893 | 4.285 | 3.705 | 3.929 |
| Process Capital | 3.077 | 3.428 | 3.643 | 4.231 | 4.561 | 5.213 | 5.126 | 4.882 | 4.634 | 4.420 | 4.710 | 4.536 | 4.247 | 3.642 | 4.171 |
| Renewal Capital | 1.475 | 1.614 | 1.565 | 1.893 | 1.790 | 1.941 | 1.944 | 2.003 | 1.995 | 2.117 | 2.211 | 2.254 | 2.218 | 2.191 | 2.215 |

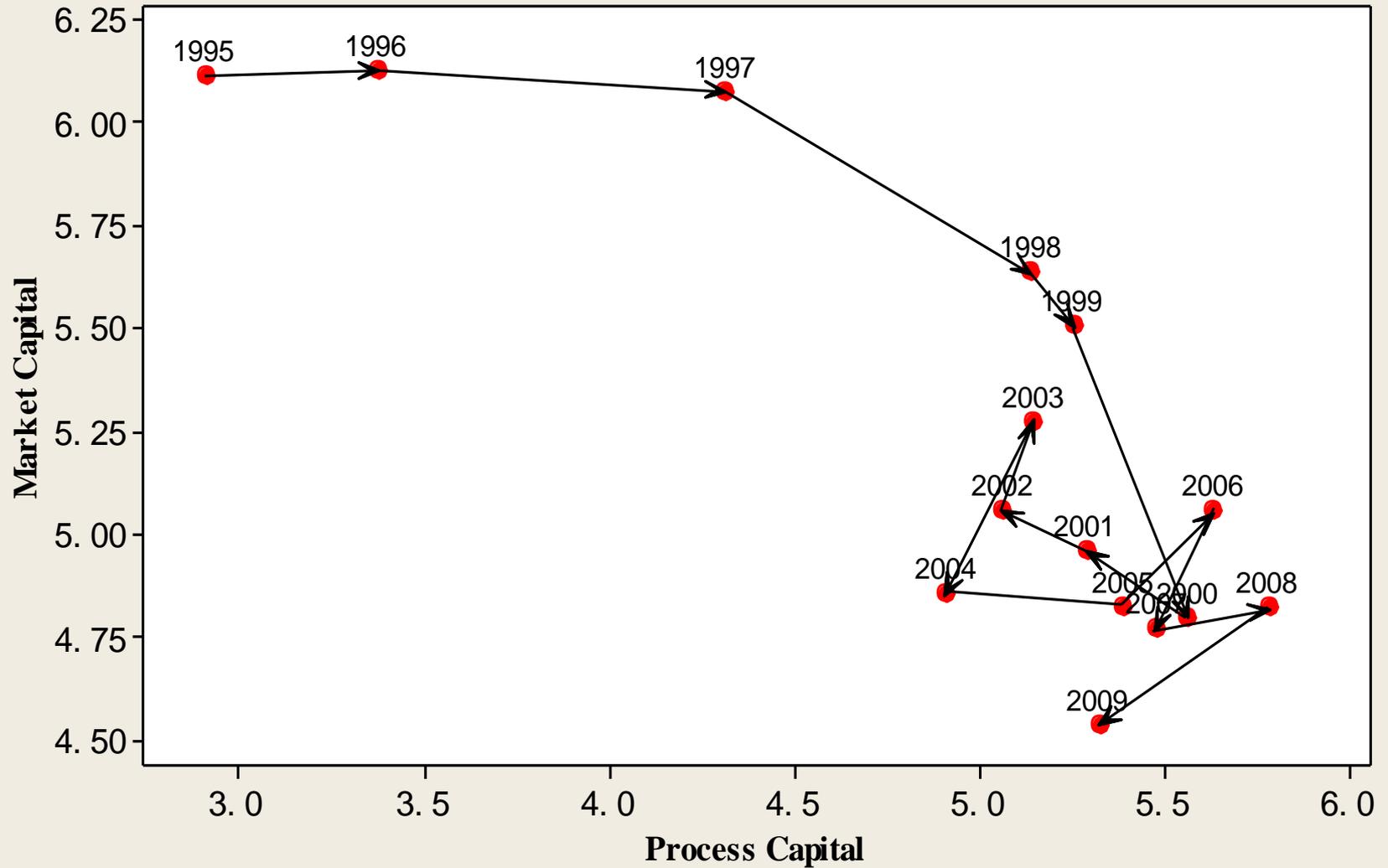
# Scatterplot of Market Capital vs. Process Capital of Greece



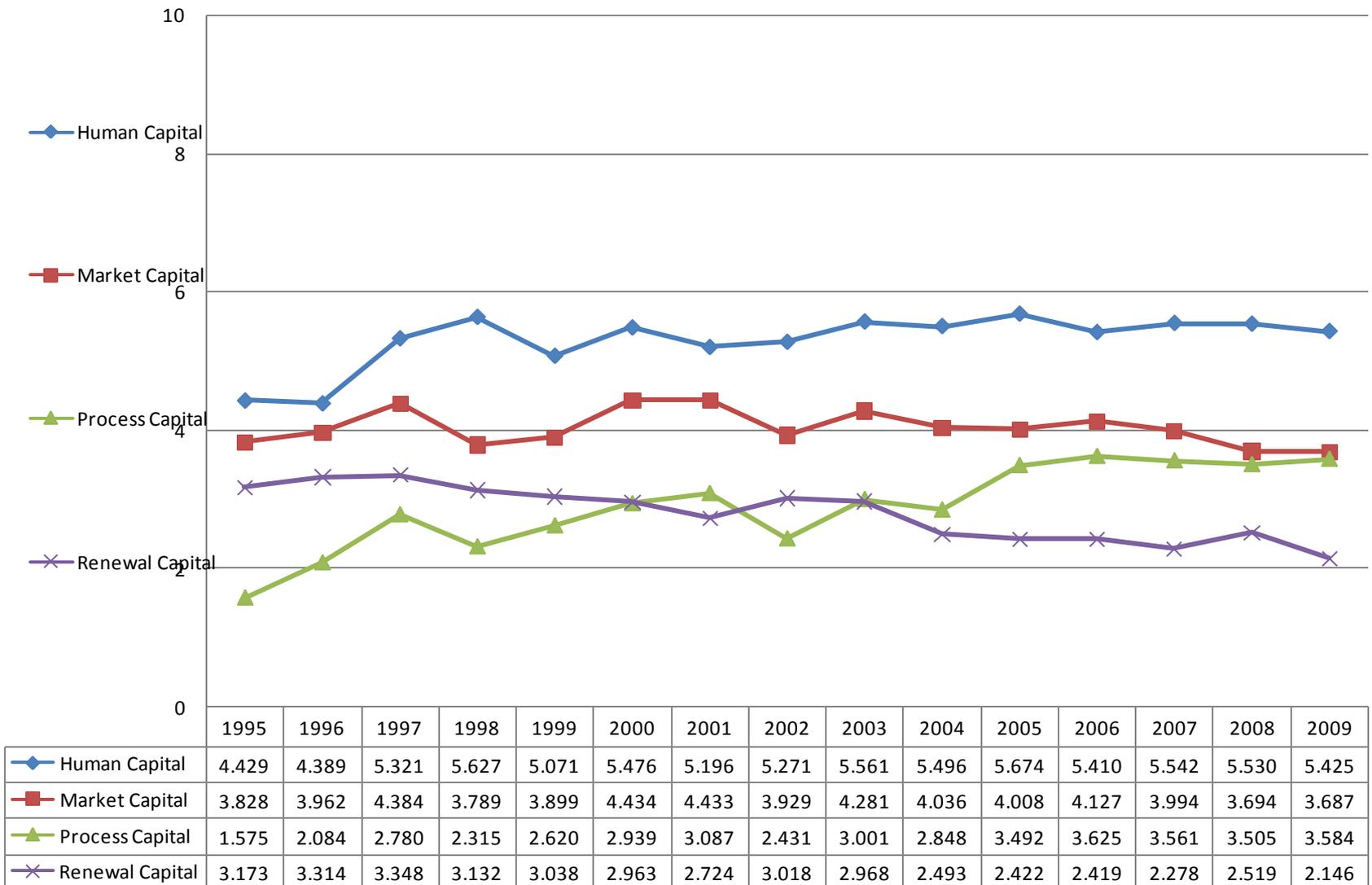
# Portugal



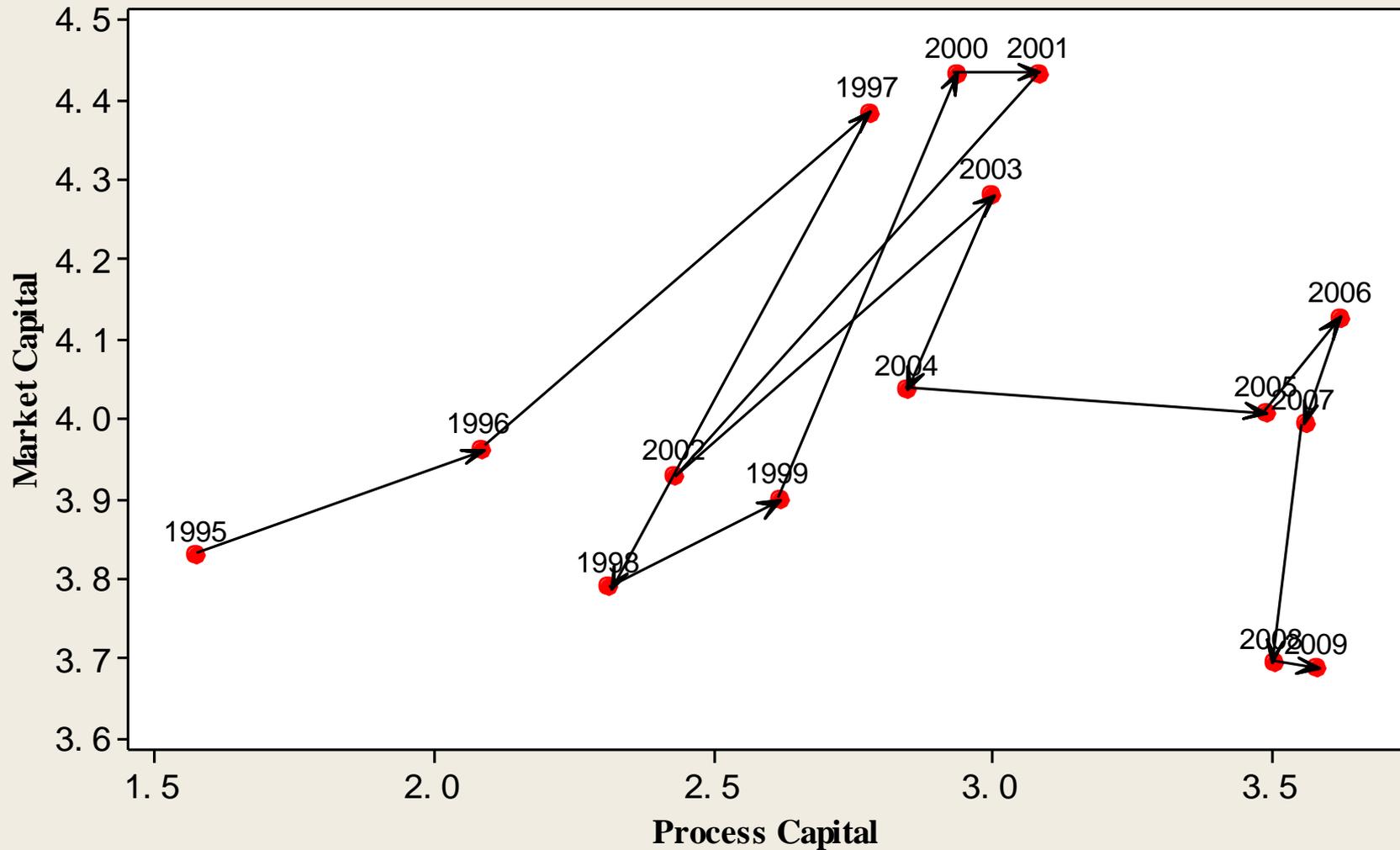
# Scatterplot of Market Capital vs. Process Capital of Portugal



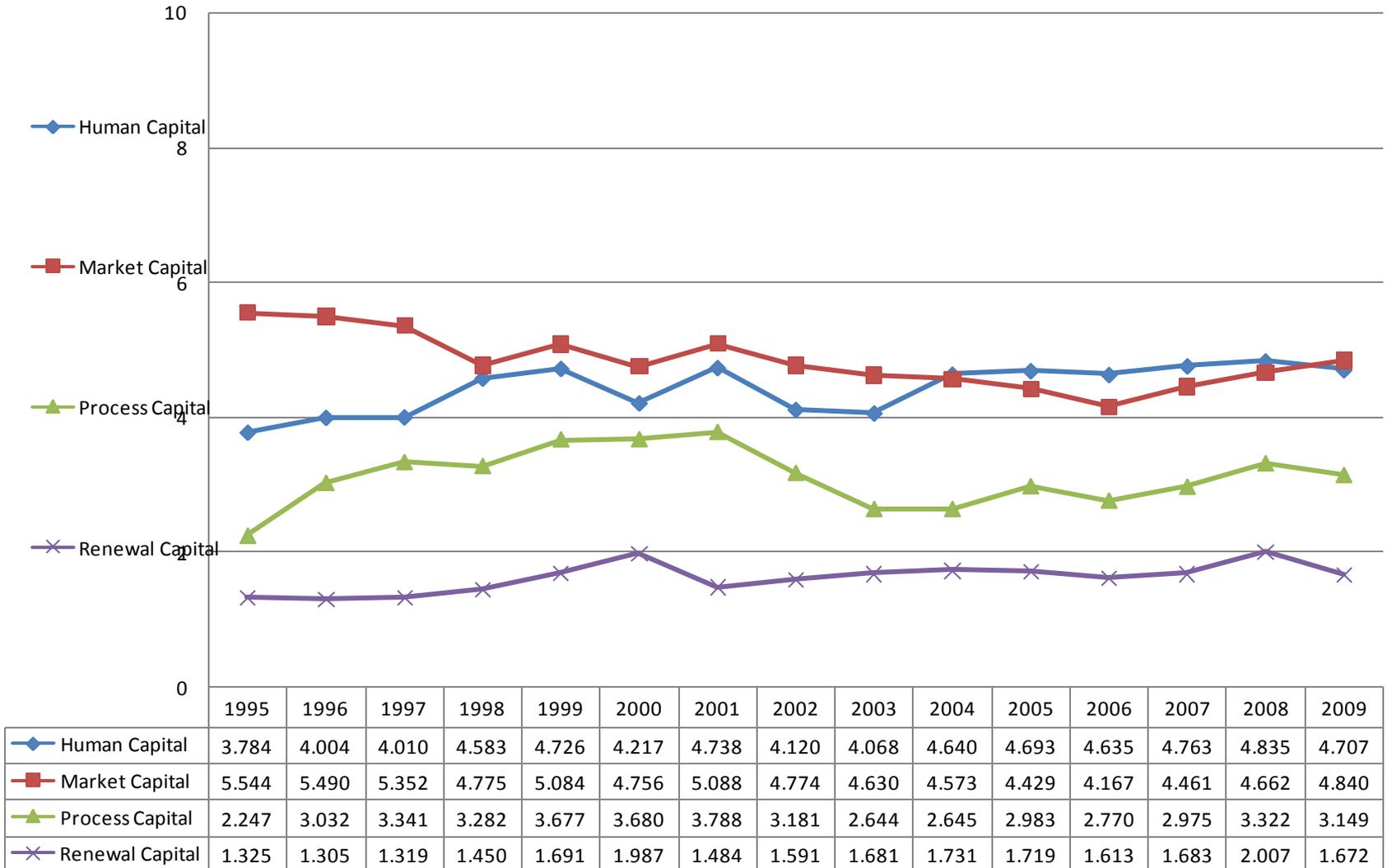
# Russia



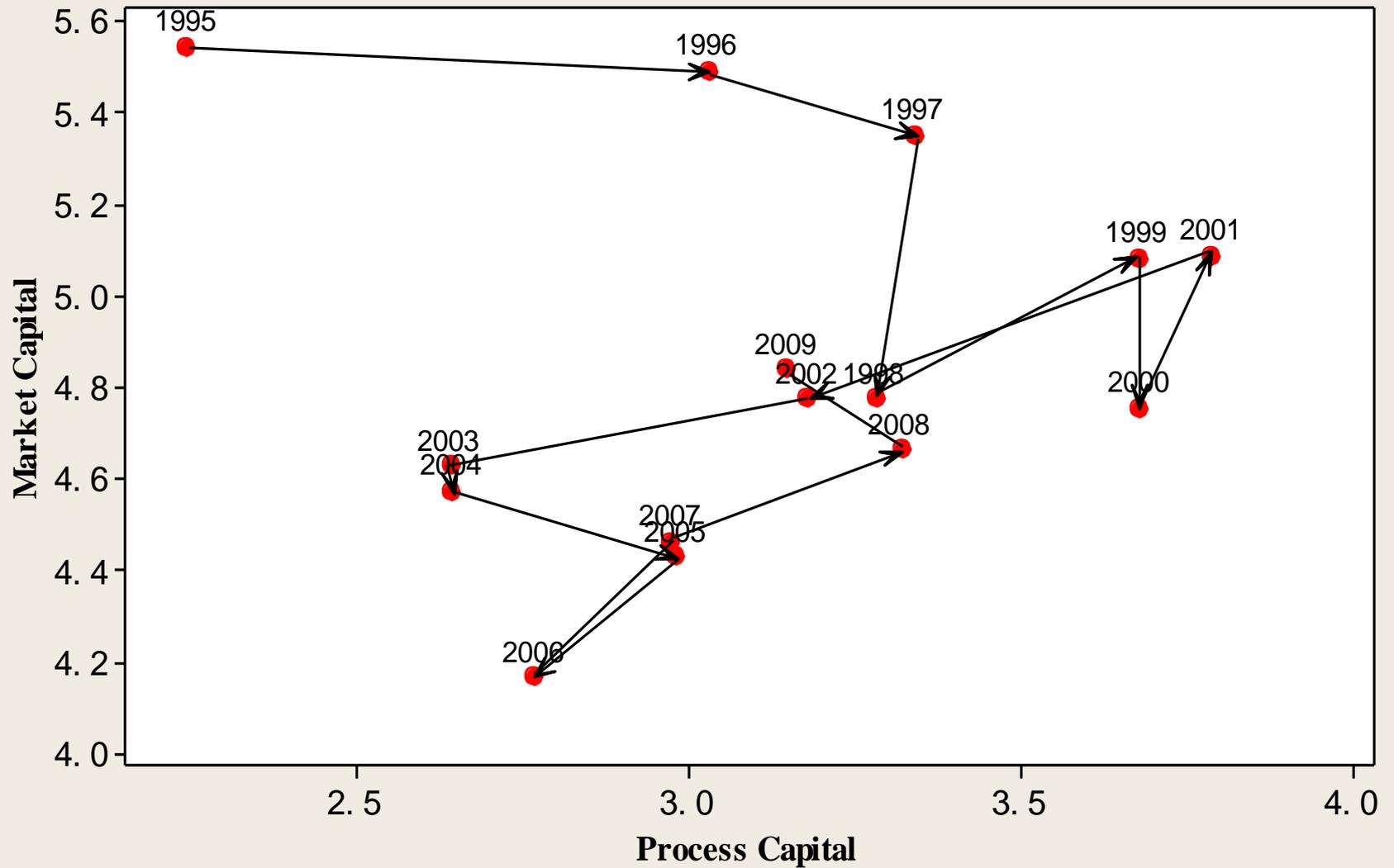
### Scatterplot of Market Capital vs. Process Capital of Russia



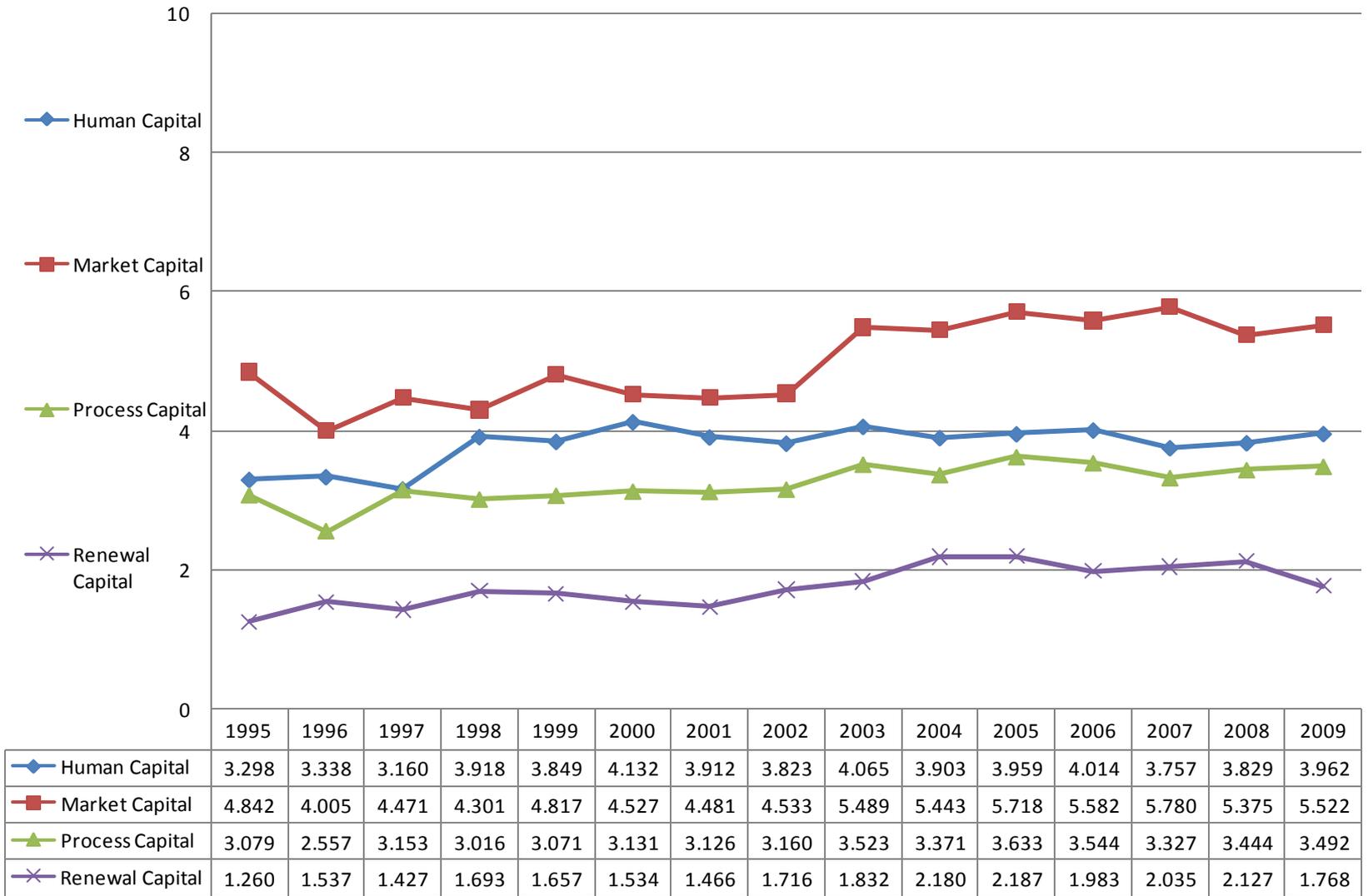
# Brazil



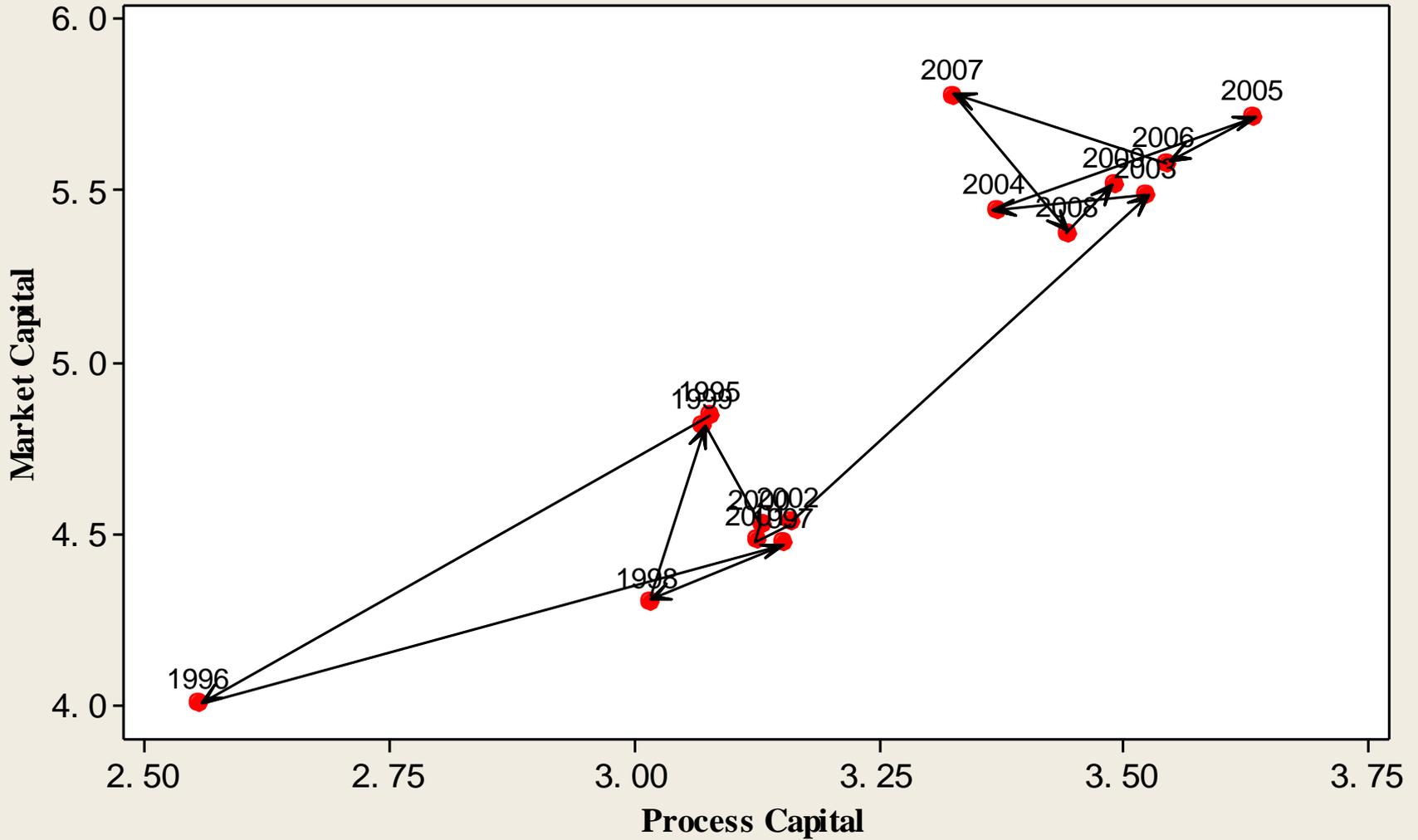
# Scatterplot of Market Capital vs. Process Capital of Brazil



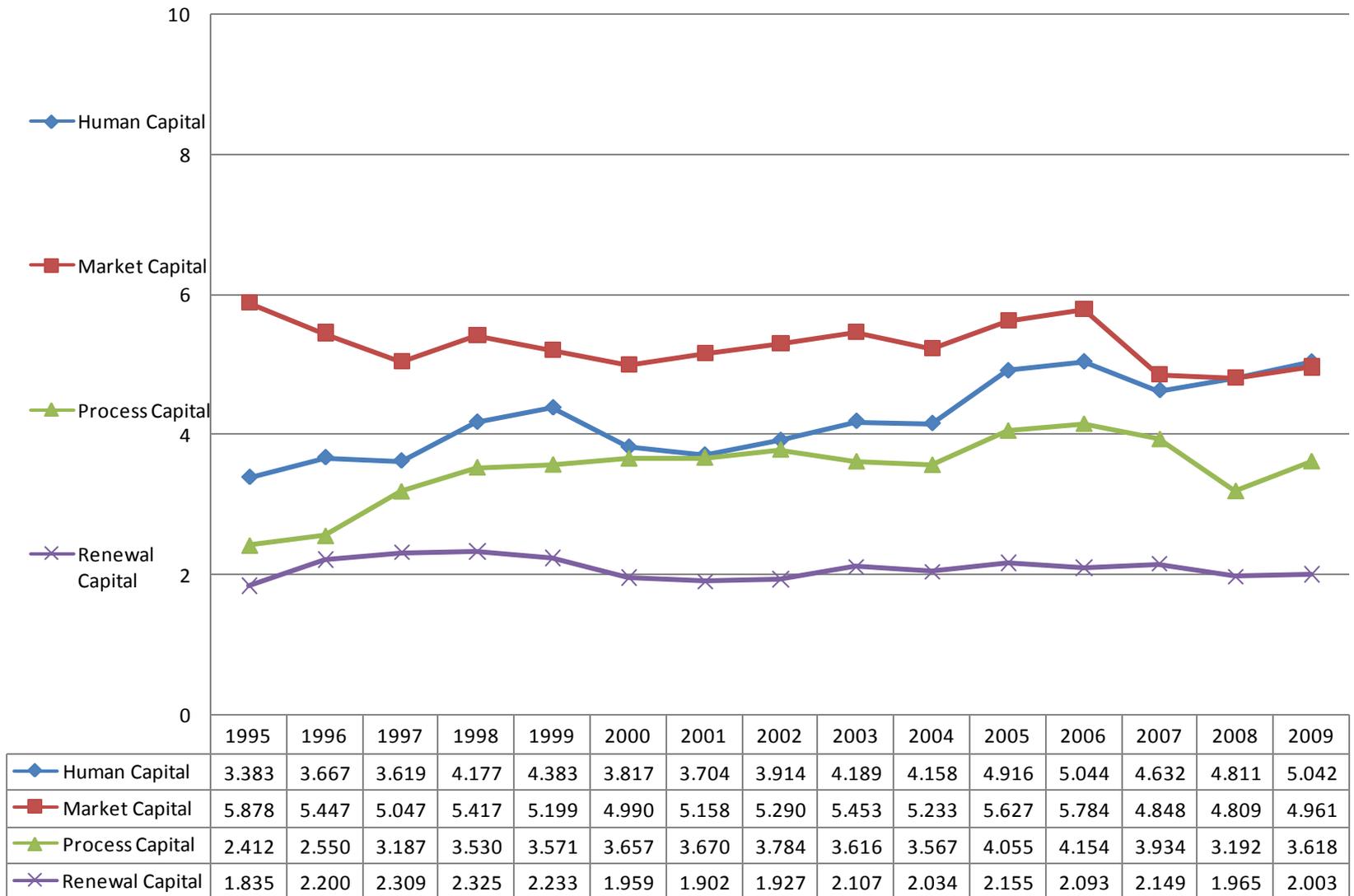
# India



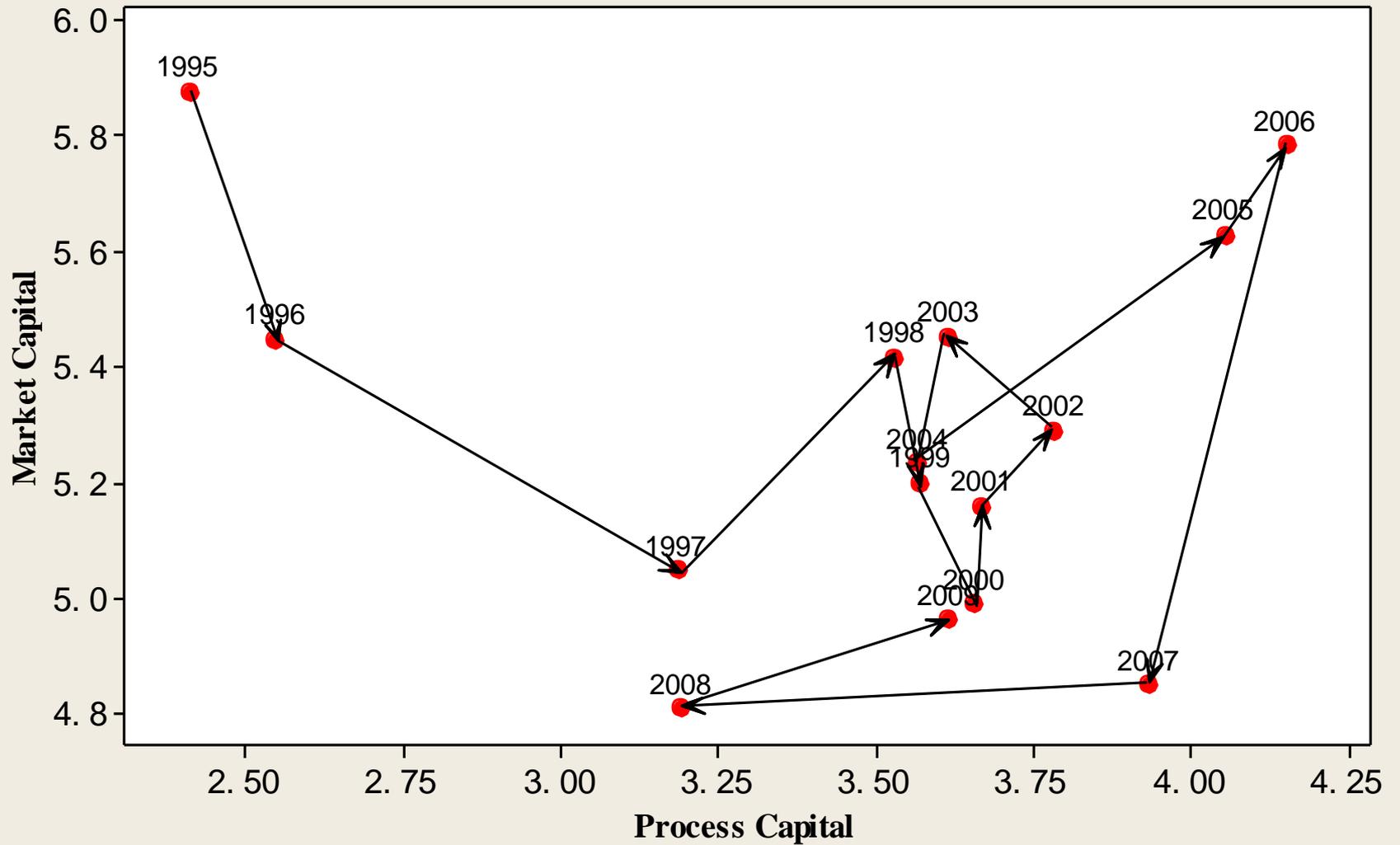
### Scatterplot of Market Capital vs. Process Capital of India



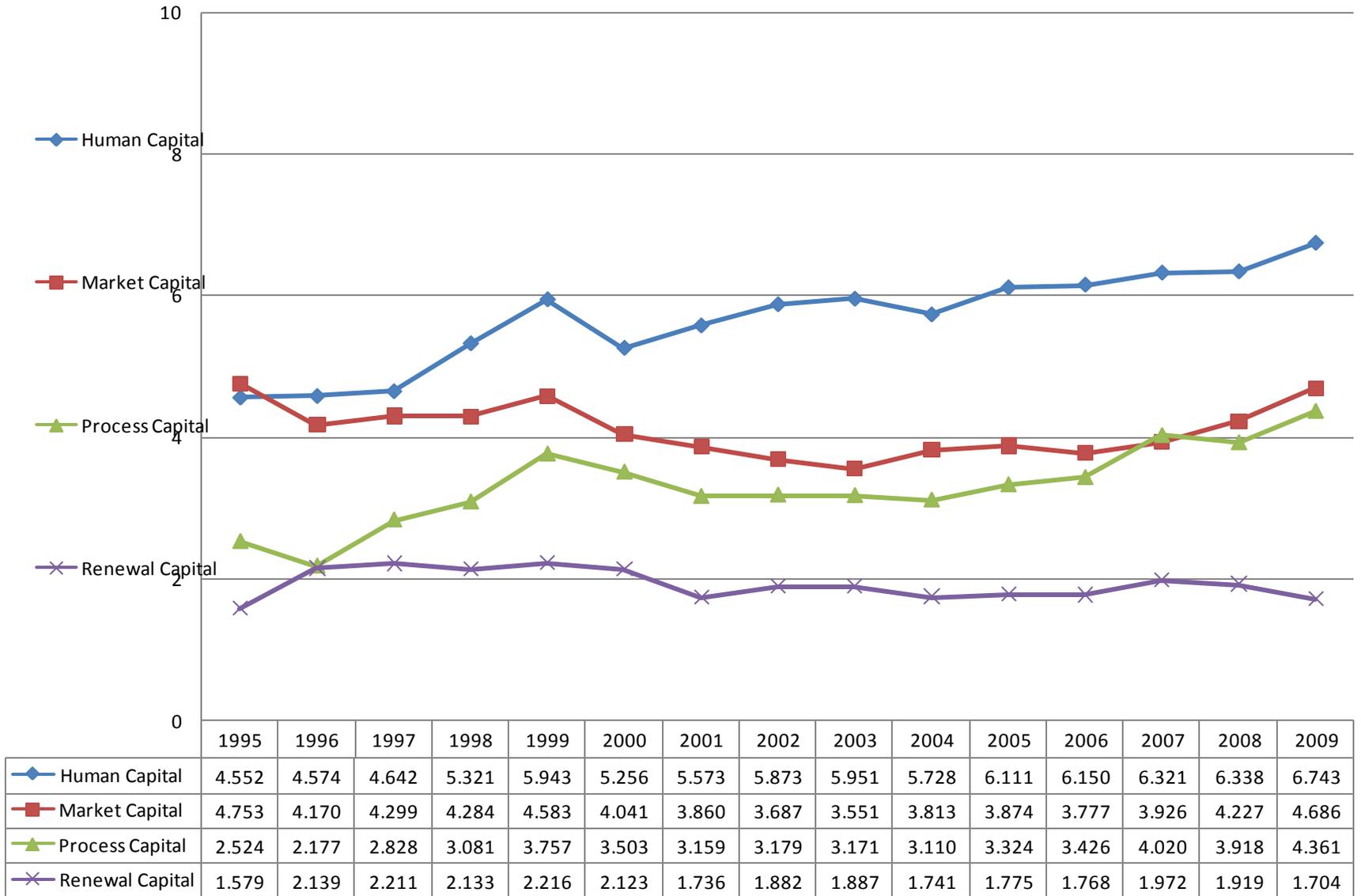
# China



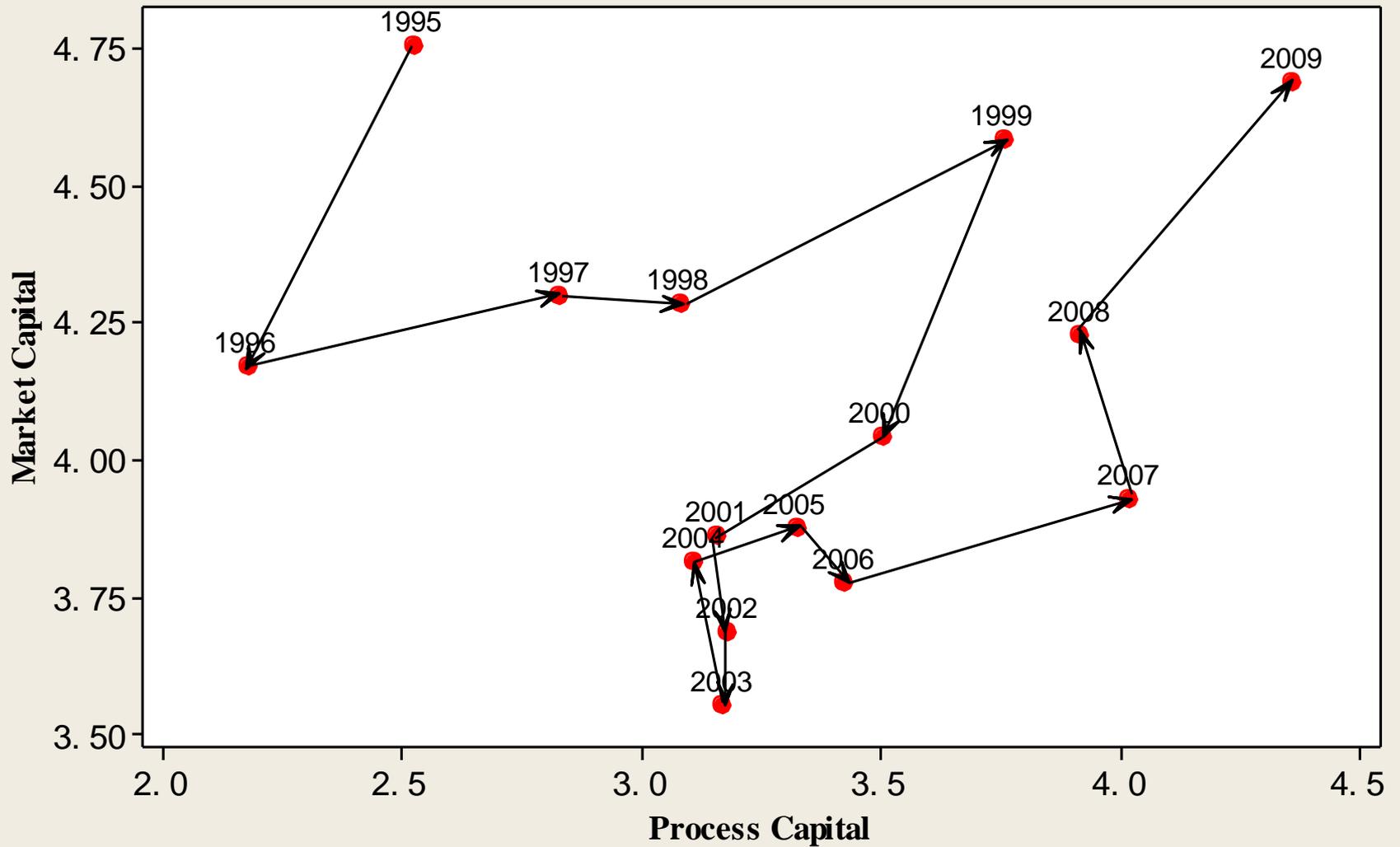
### Scatterplot of Market Capital vs. Process Capital of China



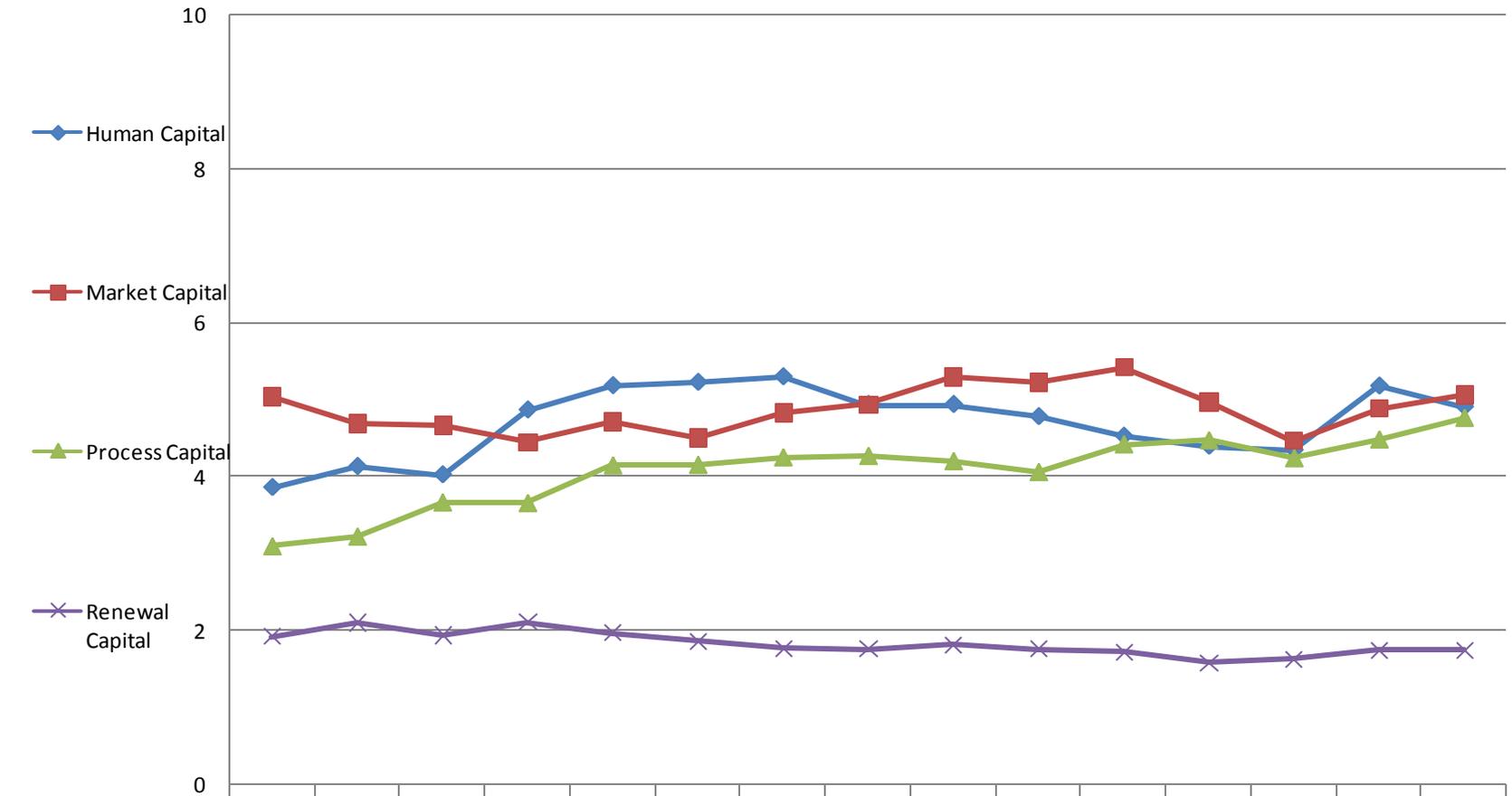
# Poland



### Scatterplot of Market Capital vs. Process Capital of Poland

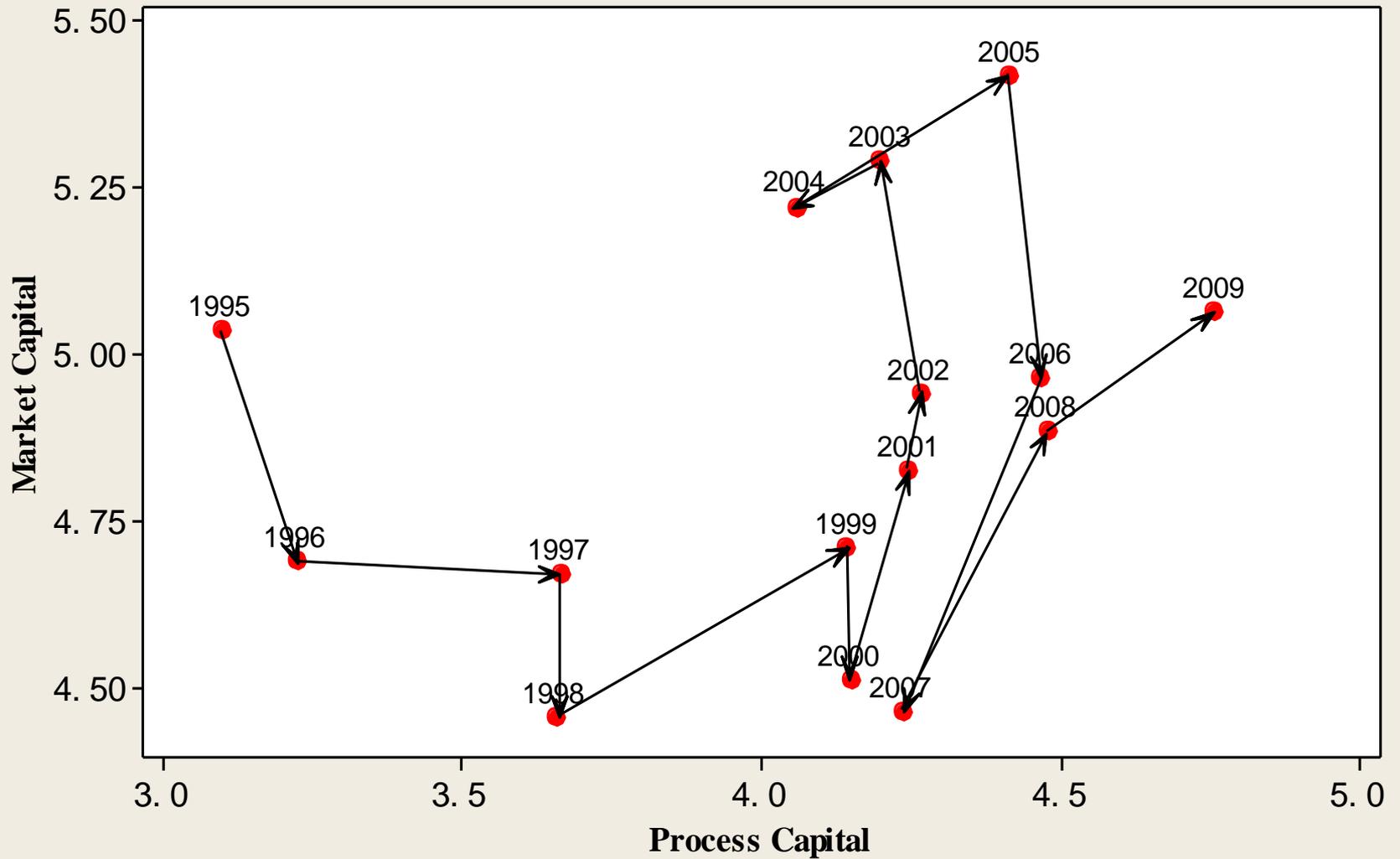


# South Africa

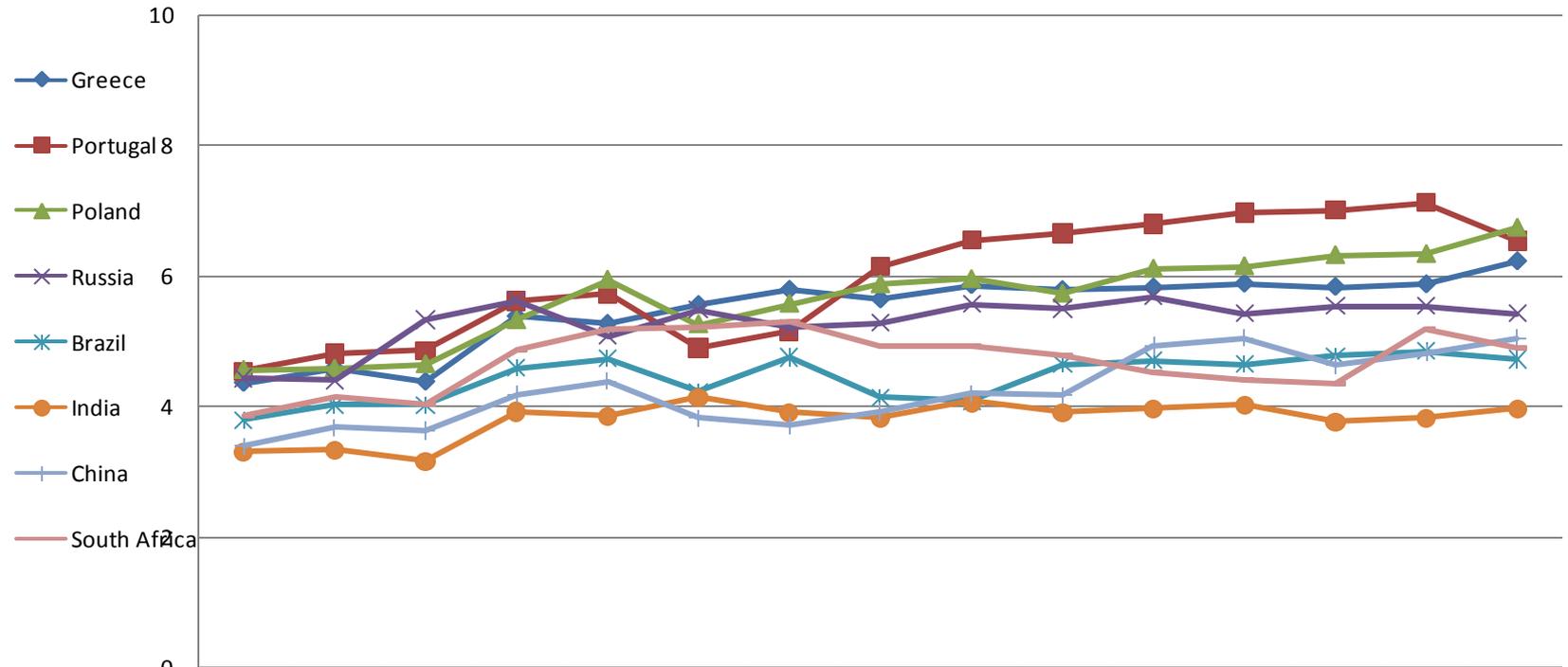


|                 | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Human Capital   | 3.852 | 4.127 | 4.018 | 4.866 | 5.184 | 5.227 | 5.301 | 4.938 | 4.938 | 4.779 | 4.523 | 4.392 | 4.339 | 5.179 | 4.906 |
| Market Capital  | 5.034 | 4.687 | 4.668 | 4.451 | 4.709 | 4.508 | 4.824 | 4.938 | 5.287 | 5.219 | 5.414 | 4.963 | 4.463 | 4.882 | 5.062 |
| Process Capital | 3.100 | 3.224 | 3.665 | 3.658 | 4.144 | 4.150 | 4.248 | 4.266 | 4.199 | 4.058 | 4.416 | 4.468 | 4.237 | 4.479 | 4.758 |
| Renewal Capital | 1.916 | 2.096 | 1.927 | 2.102 | 1.968 | 1.853 | 1.760 | 1.750 | 1.807 | 1.751 | 1.715 | 1.571 | 1.613 | 1.733 | 1.728 |

### Scatterplot of Market Capital vs. Process Capital of South Africa

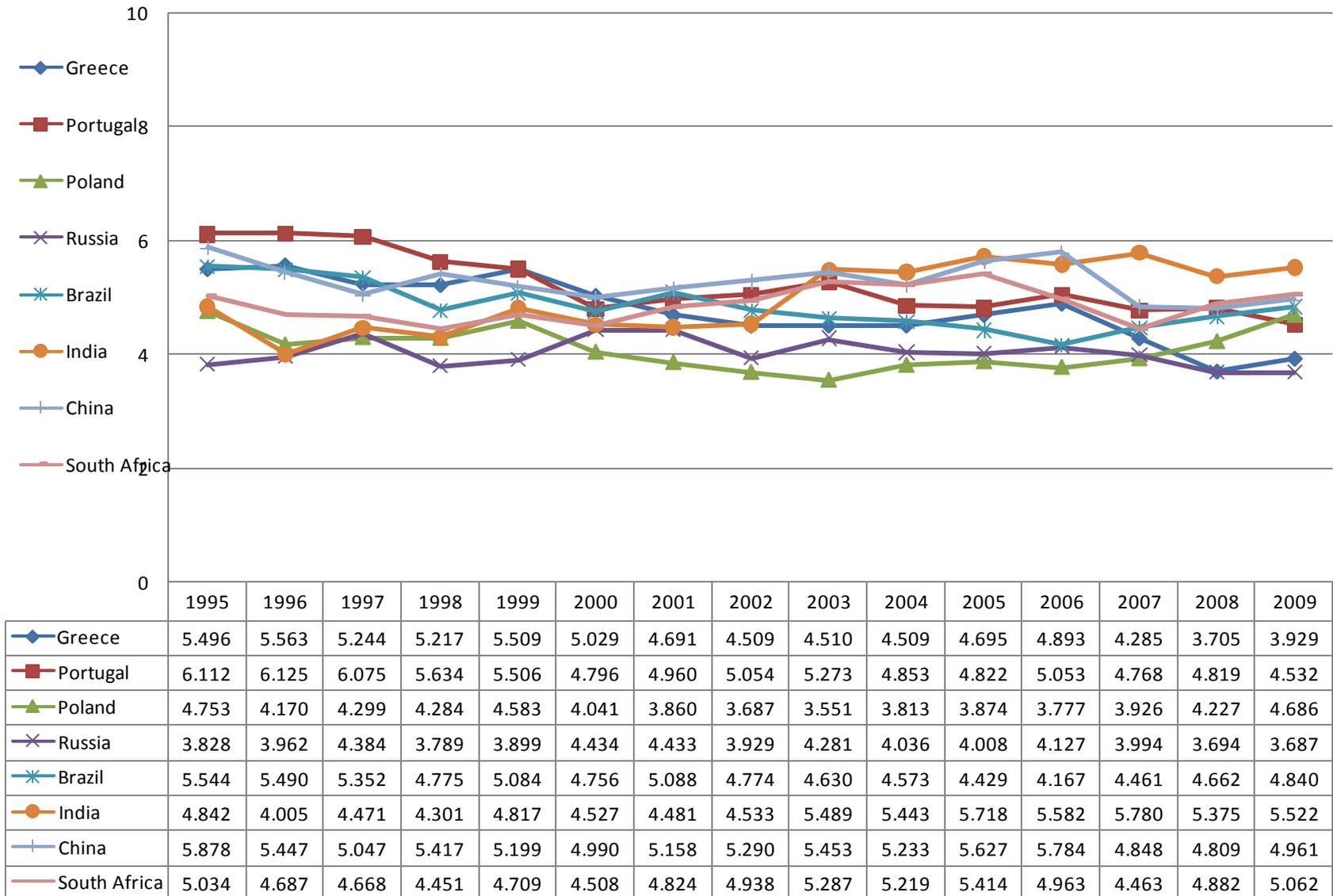


# Human Capital

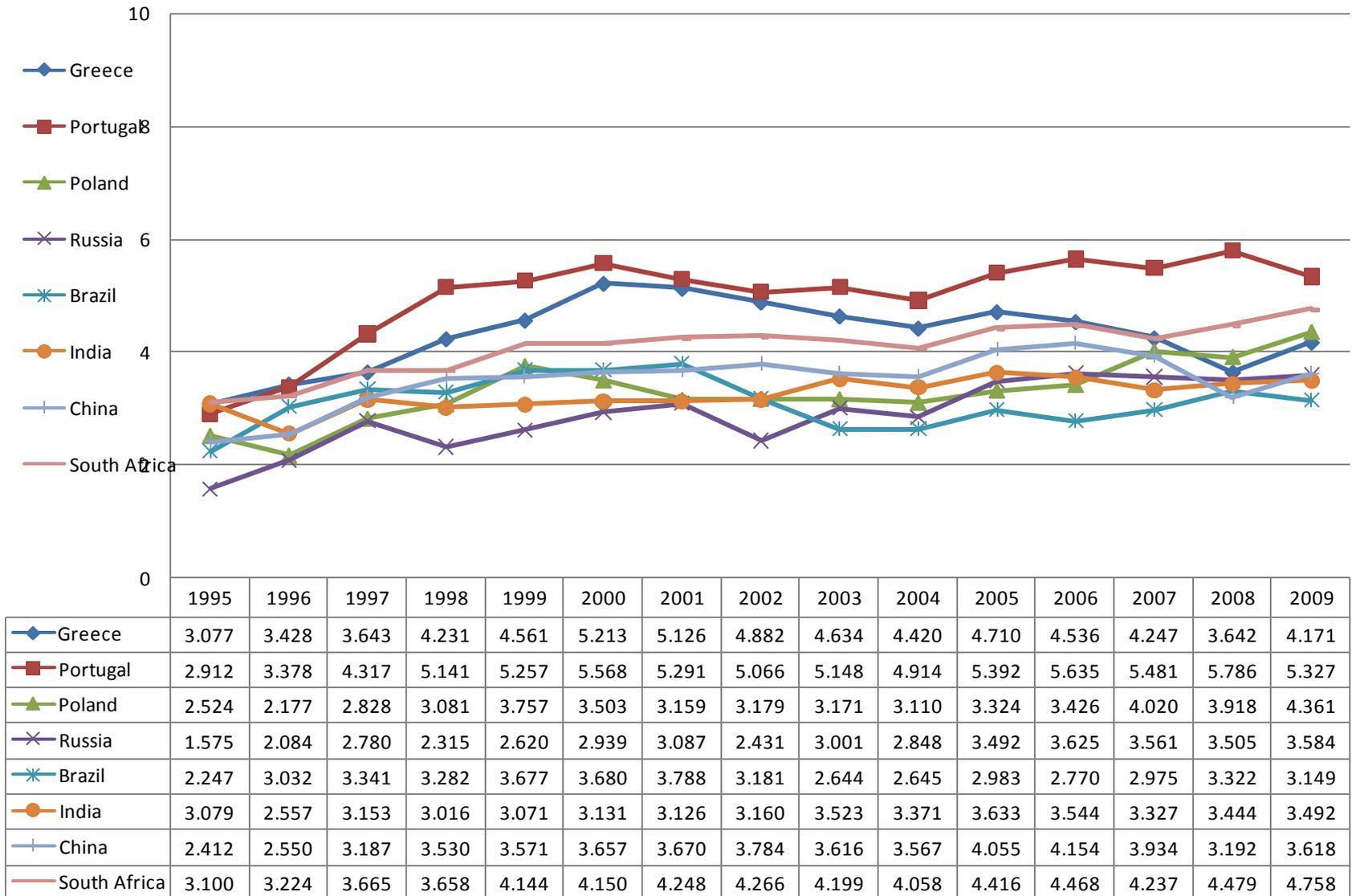


|                | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| ◆ Greece       | 4.350 | 4.579 | 4.367 | 5.371 | 5.258 | 5.548 | 5.781 | 5.634 | 5.854 | 5.776 | 5.817 | 5.877 | 5.827 | 5.866 | 6.220 |
| ■ Portugal     | 4.542 | 4.805 | 4.854 | 5.614 | 5.733 | 4.892 | 5.160 | 6.143 | 6.542 | 6.651 | 6.790 | 6.963 | 7.010 | 7.119 | 6.534 |
| ▲ Poland       | 4.552 | 4.574 | 4.642 | 5.321 | 5.943 | 5.256 | 5.573 | 5.873 | 5.951 | 5.728 | 6.111 | 6.150 | 6.321 | 6.338 | 6.743 |
| ✕ Russia       | 4.429 | 4.389 | 5.321 | 5.627 | 5.071 | 5.476 | 5.196 | 5.271 | 5.561 | 5.496 | 5.674 | 5.410 | 5.542 | 5.530 | 5.425 |
| ✱ Brazil       | 3.784 | 4.004 | 4.010 | 4.583 | 4.726 | 4.217 | 4.738 | 4.120 | 4.068 | 4.640 | 4.693 | 4.635 | 4.763 | 4.835 | 4.707 |
| ● India        | 3.298 | 3.338 | 3.160 | 3.918 | 3.849 | 4.132 | 3.912 | 3.823 | 4.065 | 3.903 | 3.959 | 4.014 | 3.757 | 3.829 | 3.962 |
| + China        | 3.383 | 3.667 | 3.619 | 4.177 | 4.383 | 3.817 | 3.704 | 3.914 | 4.189 | 4.158 | 4.916 | 5.044 | 4.632 | 4.811 | 5.042 |
| — South Africa | 3.852 | 4.127 | 4.018 | 4.866 | 5.184 | 5.227 | 5.301 | 4.938 | 4.938 | 4.779 | 4.523 | 4.392 | 4.339 | 5.179 | 4.906 |

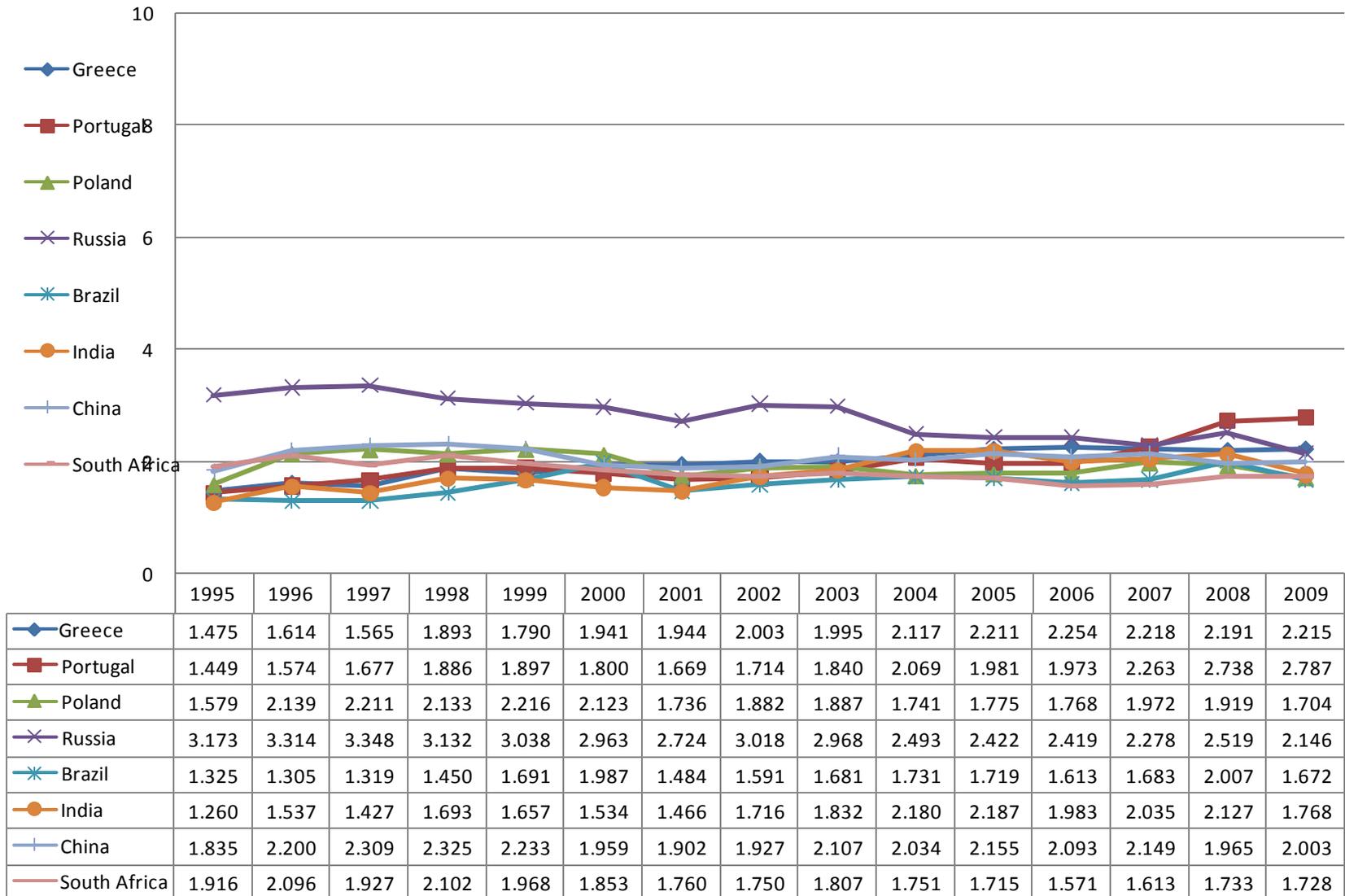
# Market Capital



# Process Capital



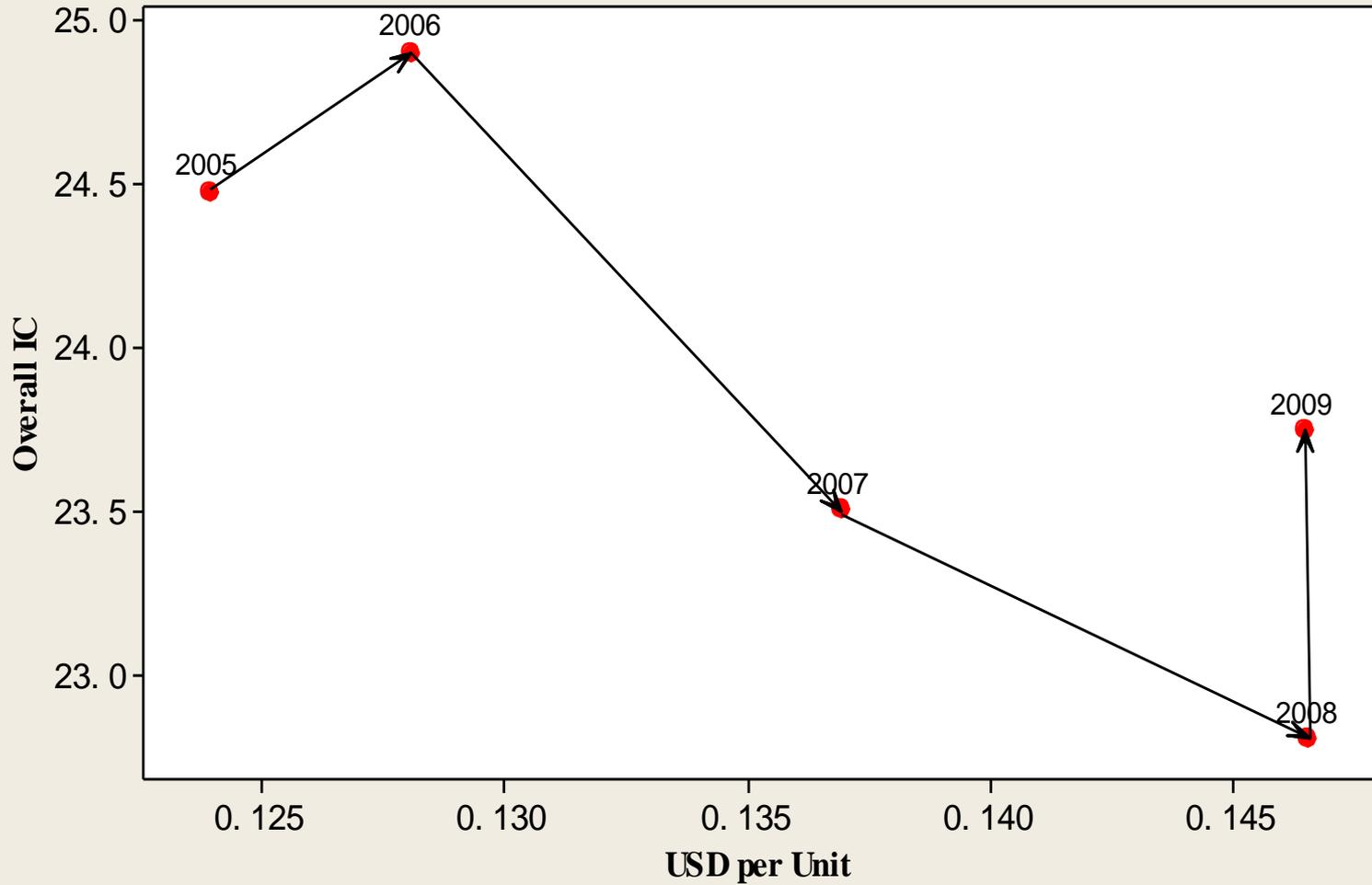
# Renewal Capital



# Summary

- Poland & South Africa – human capital (up) + process capital (up)
- BRIC countries – process capital (up)
- Greece & Portugal – market capital (down)

**Scatterplot of Overall IC vs. USD per Unit of China**



xe USD per 1 CNY

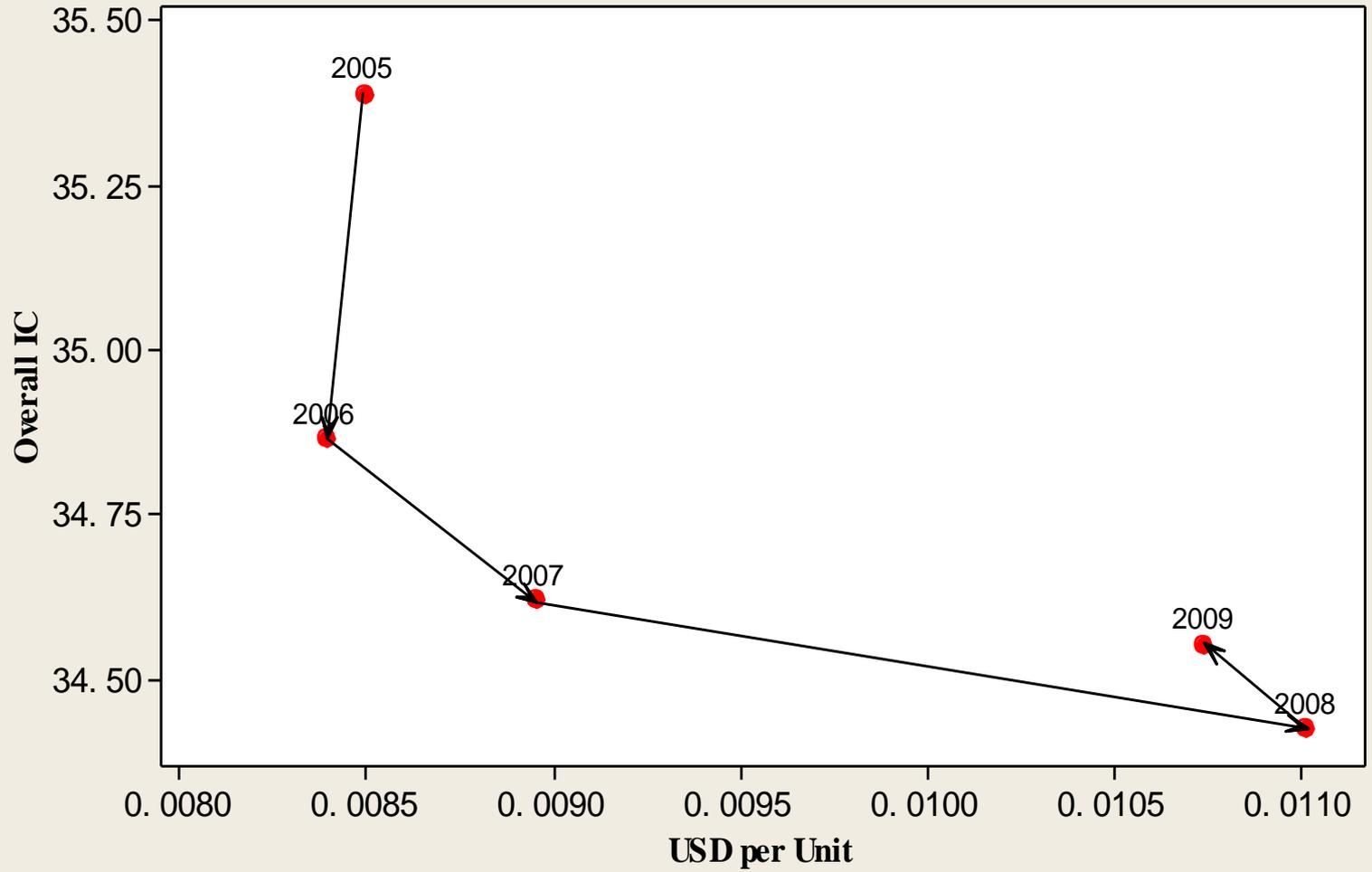
INV

CNY/USD close:0.15368, low:0.11855, high:0.15434

24 May, 2001 08:44 UTC - 23 May, 2011 08:44 UTC



**Scatterplot of Overall IC vs. USD per Unit of Japan**



xe USD per 1 JPY

INV

JPY/USD close:0.01226, low:0.00742, high:0.01275

24 May, 2001 08:47 UTC - 23 May, 2011 08:47 UTC



xe USD per 1 EUR

INV

EUR/USD close:1.40101, low:0.83707, high:1.59752

24 May, 2001 08:40 UTC - 23 May, 2011 08:40 UTC

