List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Patent applications at the EPO 1977-2005</td>
<td>6</td>
</tr>
<tr>
<td>1.2</td>
<td>Patent applications at the EPO 1977-2005 by country</td>
<td>7</td>
</tr>
<tr>
<td>1.3</td>
<td>EPO patent application density 2003-2004</td>
<td>9</td>
</tr>
<tr>
<td>1.4</td>
<td>Number of EPO patent applications with foreign co-inventors</td>
<td>11</td>
</tr>
<tr>
<td>3.1</td>
<td>Lorenz curve of an unweighted Gini coefficient</td>
<td>137</td>
</tr>
<tr>
<td>3.2</td>
<td>Lorenz curve of a weighted Gini coefficient</td>
<td>138</td>
</tr>
<tr>
<td>3.3</td>
<td>The Lorenz curve of a locational (and spatial) Gini coefficient</td>
<td>139</td>
</tr>
<tr>
<td>3.4</td>
<td>Spatial distribution: patent application density of European regions by country</td>
<td>142</td>
</tr>
<tr>
<td>3.5</td>
<td>Spatial distribution: patent application density of European regions by country</td>
<td>143</td>
</tr>
<tr>
<td>3.6</td>
<td>Spatial distribution: patent application density of European regions by country</td>
<td>144</td>
</tr>
<tr>
<td>3.7</td>
<td>Patent density (per million inhabitants) by region 1985-1986</td>
<td>146</td>
</tr>
<tr>
<td>3.8</td>
<td>Patent density (per million inhabitants) by region 2003-2004</td>
<td>147</td>
</tr>
<tr>
<td>3.9</td>
<td>High-tech EPO patent density (per million inhabitants) by region 1985-1986</td>
<td>148</td>
</tr>
<tr>
<td>3.10</td>
<td>High-tech EPO patent density (per million inhabitants) by region 2003-2004</td>
<td>149</td>
</tr>
<tr>
<td>3.11</td>
<td>Share of European regions with n&gt;0 patent applications by TF</td>
<td>155</td>
</tr>
<tr>
<td>3.12</td>
<td>Share of European regions with n&gt;1 inventor IDs by TF</td>
<td>157</td>
</tr>
<tr>
<td>3.13</td>
<td>Share of European regions with RTA&gt;1 by TF</td>
<td>159</td>
</tr>
<tr>
<td>3.15</td>
<td>European regions w/ RTA&gt;1 of regions w/ n&gt;0 patent applications</td>
<td>161</td>
</tr>
<tr>
<td>3.16</td>
<td>Locational Gini: regional disparity of EPO patenting by TF (1)</td>
<td>162</td>
</tr>
<tr>
<td>3.17</td>
<td>Locational Gini: regional disparity of EPO patenting by TF (1)</td>
<td>163</td>
</tr>
<tr>
<td>3.18</td>
<td>Locational Gini: regional disparity of EPO patenting by TF (2)</td>
<td>166</td>
</tr>
<tr>
<td>3.19</td>
<td>Locational Gini: regional disparity of EPO patenting by TF (2)</td>
<td>167</td>
</tr>
<tr>
<td>3.20</td>
<td>Locational Gini: regional disparity of EPO patenting by TF (3)</td>
<td>168</td>
</tr>
<tr>
<td>3.21</td>
<td>Locational Gini: regional disparity of EPO patenting by TF (3)</td>
<td>169</td>
</tr>
<tr>
<td>3.22</td>
<td>Spatial Gini: regional disparity of EPO patent applications by TF</td>
<td>171</td>
</tr>
<tr>
<td>3.23</td>
<td>Spatial Gini: regional disparity of EPO patent applications by TF</td>
<td>172</td>
</tr>
<tr>
<td>3.24</td>
<td>Locational Gini: regional disparity of EPO patent applications (all IPC) (a)</td>
<td>174</td>
</tr>
<tr>
<td>3.25</td>
<td>Locational Gini: regional disparity of EPO patent applications (all IPC) (b)</td>
<td>175</td>
</tr>
<tr>
<td>3.26</td>
<td>Change (%) of locational Gini: regional disparities by TF (819 TL3)</td>
<td>177</td>
</tr>
<tr>
<td>3.27</td>
<td>Change (%) of locational Gini: regional disparities by TF in EU-15 and NMS</td>
<td>178</td>
</tr>
<tr>
<td>3.28</td>
<td>Change (%) of spatial Gini: development of regional disparities by TF</td>
<td>179</td>
</tr>
<tr>
<td>3.29</td>
<td>Structure of research clusters by TF and RCI class, 1990-1994</td>
<td>186</td>
</tr>
<tr>
<td>3.30</td>
<td>Structure of research clusters by TF and RCI class, 2000-2004</td>
<td>187</td>
</tr>
<tr>
<td>3.31</td>
<td>Change of research clusters by TF and RCI class, 2000-2004 vs. 1990-1994</td>
<td>189</td>
</tr>
</tbody>
</table>
3.32. Change of research clusters by TF with RCI>16 .......................... 191
3.33. Change number and structure of research clusters by TF .................. 196
3.34. Change of research clusters (RCI) in ERA by TF .......................... 201
3.35. Co-agglomeration of TF cluster (RCI), 2000-2004 .......................... 212

4.1. Inter-regional knowledge pipelines and co-patenting network linkages ........ 223
4.2. Aggregation, zones and concentration measures .............................. 227
4.3. Inter-regional co-patenting network linkages ................................ 240
4.4. Number of EPO patents with foreign co-inventors by country (1) ............ 244
4.5. Number of EPO patents with foreign co-inventors by country (2) ............ 245
4.7. Structure of European co-patenting networks, 2000-2004 ..................... 254
4.8. Changing structure of inter-regional network linkages ....................... 259
4.9. Change (number) of co-patenting linkages between NMS and EU-15 .......... 264
4.10. Change (%) of co-patenting linkages between NMS and EU-15 ............... 265
4.11. European co-inventor network: TF10 Basic chemicals, 1990-1994 ........... 266
4.21. Geographical coincidence of TF: degree centrality .......................... 281

5.1. GDP per capita (PPP) year 1995 ............................................. 294
5.2. GDP per capita (PPP) year 2006 ............................................. 295
5.3. Growth Rates of GDP per capita (PPP) 1995-2006 ............................ 297
5.4. Boxplot: GDP per capita (PPP) level vs. growth rate .......................... 299
5.5. Kernel density: density function of income distribution TL3 regions by group 300
5.6. Development of regional disparities in GDP/capita (PPP) by group .......... 305
5.7. Locational Gini coefficients of GDP per capita (PPP) (a) ...................... 306
5.8. Locational Gini coefficients of GDP per capita (PPP) (b) ...................... 307
5.9. Income inequality decomposition: EU-23, CH, NO ............................ 310
5.10. Income inequality decomposition: EU-14 group .............................. 311
5.11. Income inequality decomposition: NMS group ................................ 312

A.1. EPO Patent Applications: Share by Region and Quantile ...................... xxiv
A.9. Share of European regions with n>9 patent applications by TF  xxxi
A.10. Share of European regions with n>9 inventor IDs by TF  xxxiii
A.11. Share of European regions w/ RTA>1 of regions w/ n>0 patent applications  xxxiv
A.15. Belgium: Locational Gini of EPO Patent Applications by TF (b)  xxxviii
A.17. Switzerland: Locational Gini of EPO Patent Applications by TF (b)  xl
A.18. Germany: Locational Gini of EPO Patent Applications by TF (a)  xli
A.19. Germany: Locational Gini of EPO Patent Applications by TF (b)  xlii
A.20. France: Locational Gini of EPO Patent Applications by TF (a)  xliii
A.22. Italy: Locational Gini of EPO Patent Applications by TF (a)  xlvi
A.23. Italy: Locational Gini of EPO Patent Applications by TF (b)  xlvii
A.27. Sweden: Locational Gini of EPO Patent Applications by TF (b)  li
A.29. United Kingdom: Locational Gini of EPO Patent Applications by TF (b)  liii
A.30. Change of research clusters (RCI) in ERA by TF (2)  lixiv
A.32. Technological diversity, co-agglomeration and clustering in capital regions  lv
A.33. Technological diversity, co-agglomeration and clustering in metro regions  lvi
A.34. Technological diversity, co-agglomeration and clustering in urban regions  lvii
A.35. Technological diversity, co-agglomeration and clustering in intermediate regions  lviii
A.36. Technological diversity, co-agglomeration and clustering in rural regions  lix
A.37. Data selection method for inter-regional co-inventorship network analysis  lx
A.38. Share of EPO patents with foreign co-inventors by country (1)  lxi
A.39. Share of EPO patents with foreign co-inventors by country (2)  lxii
A.40. Foreign co-inventorship structure by country  lxiii
A.41. Foreign co-inventorship structure by country (cont’d)  lxiv
A.42. Number of European co-patenting network linkages, 1990-1994  lxv
A.43. Number of European co-patenting network linkages, 2000-2004  lxvi
A.44. Geographical coincidence of TF: betweenness centrality  lxvii
A.45. Geographical coincidence of TF: eigenvector centrality  lxviii
A.46. Income inequality decomposition: EU-15 vs. NMS  lxix
A.47. GDP per capita (2000) and Regional Typology  lxx
A.48. Patenting Activity in Europe 1995  lxxi