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## **GLOBALIZATION: Past, Present & Future**

- 3 Globalization I (1820–1990)
  - 3.1 The First Era of Integration: 1820–1914
    - 3.1.1 **Industrialization** (Figure 26–39)

## Figure 26: Rates of growth of world GDP

Table B-19. Rates of Growth of World GDP, 20 Countries and Regional Totals, 0-1998 A.D.  
(annual average compound growth rates)

| Year                                | 0-1000       | 1000-1500   | 1500-1820   | 1820-70     | 1870-1913   | 1913-50     | 1950-73     | 1973-98      |
|-------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Austria                             |              |             | 0.33        | 1.45        | 2.41        | 0.25        | 5.35        | 2.36         |
| Belgium                             |              |             | 0.41        | 2.25        | 2.01        | 1.03        | 4.08        | 2.08         |
| Denmark                             |              |             | 0.38        | 1.91        | 2.66        | 2.55        | 3.81        | 2.09         |
| Finland                             |              |             | 0.60        | 1.58        | 2.74        | 2.69        | 4.94        | 2.44         |
| France                              |              |             | 0.39        | 1.27        | 1.63        | 1.15        | 5.05        | 2.10         |
| Germany                             |              |             | 0.37        | 2.01        | 2.83        | 0.30        | 5.68        | 1.76         |
| Italy                               |              |             | 0.21        | 1.24        | 1.94        | 1.49        | 5.64        | 2.28         |
| Netherlands                         |              |             | 0.56        | 1.70        | 2.16        | 2.43        | 4.74        | 2.39         |
| Norway                              |              |             | 0.54        | 1.70        | 2.12        | 2.93        | 4.06        | 3.48         |
| Sweden                              |              |             | 0.66        | 1.62        | 2.17        | 2.74        | 3.73        | 1.65         |
| Switzerland                         |              |             | 0.50        | 1.85        | 2.43        | 2.60        | 4.51        | 1.05         |
| United Kingdom                      |              |             | 0.80        | 2.05        | 1.90        | 1.19        | 2.93        | 2.00         |
| <b>12 Countries Total</b>           |              |             | <b>0.42</b> | <b>1.71</b> | <b>2.14</b> | <b>1.16</b> | <b>4.65</b> | <b>2.03</b>  |
| Portugal                            |              |             | 0.51        | 0.63        | 1.27        | 2.35        | 5.73        | 2.88         |
| Spain                               |              |             | 0.31        | 1.09        | 1.68        | 1.03        | 6.81        | 2.47         |
| Other                               |              |             | 0.41        | 1.61        | 2.20        | 2.45        | 5.55        | 3.10         |
| <b>Total Western Europe</b>         | <b>-0.01</b> | <b>0.30</b> | <b>0.41</b> | <b>1.65</b> | <b>2.10</b> | <b>1.19</b> | <b>4.81</b> | <b>2.11</b>  |
| <b>Eastern Europe</b>               | <b>0.03</b>  | <b>0.18</b> | <b>0.41</b> | <b>1.36</b> | <b>2.31</b> | <b>1.14</b> | <b>4.86</b> | <b>0.73</b>  |
| <b>Former USSR</b>                  | <b>0.06</b>  | <b>0.22</b> | <b>0.47</b> | <b>1.61</b> | <b>2.40</b> | <b>2.15</b> | <b>4.84</b> | <b>-1.15</b> |
| United States                       |              |             | 0.86        | 4.20        | 3.94        | 2.84        | 3.93        | 2.99         |
| Other Western Offshoots             |              |             | 0.34        | 5.51        | 3.79        | 2.65        | 4.75        | 2.88         |
| <b>Total Western Offshoots</b>      | <b>0.05</b>  | <b>0.07</b> | <b>0.78</b> | <b>4.33</b> | <b>3.92</b> | <b>2.81</b> | <b>4.03</b> | <b>2.98</b>  |
| Mexico                              |              |             | 0.14        | 0.44        | 3.38        | 2.62        | 6.38        | 3.47         |
| Other Latin America                 |              |             | 0.25        | 1.75        | 3.51        | 3.61        | 5.10        | 2.90         |
| <b>Total Latin America</b>          | <b>0.07</b>  | <b>0.09</b> | <b>0.21</b> | <b>1.37</b> | <b>3.48</b> | <b>3.43</b> | <b>5.33</b> | <b>3.02</b>  |
| <b>Japan</b>                        | <b>0.10</b>  | <b>0.18</b> | <b>0.31</b> | <b>0.41</b> | <b>2.44</b> | <b>2.21</b> | <b>9.29</b> | <b>2.97</b>  |
| China                               | 0.00         | 0.17        | 0.41        | -0.37       | 0.56        | -0.02       | 5.02        | 6.84         |
| India                               | 0.00         | 0.12        | 0.19        | 0.38        | 0.97        | 0.23        | 3.54        | 5.07         |
| Other Asia                          | 0.01         | 0.10        | 0.15        | 0.72        | 1.67        | 2.47        | 6.05        | 4.67         |
| <b>Total Asia (excluding Japan)</b> | <b>0.00</b>  | <b>0.13</b> | <b>0.29</b> | <b>0.03</b> | <b>0.94</b> | <b>0.90</b> | <b>5.18</b> | <b>5.46</b>  |
| <b>Africa</b>                       | <b>0.07</b>  | <b>0.06</b> | <b>0.16</b> | <b>0.52</b> | <b>1.40</b> | <b>2.69</b> | <b>4.45</b> | <b>2.74</b>  |
| <b>World</b>                        | <b>0.01</b>  | <b>0.15</b> | <b>0.32</b> | <b>0.93</b> | <b>2.11</b> | <b>1.85</b> | <b>4.91</b> | <b>3.01</b>  |

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Source: OECD Development Centre Studies (2006). *The World Economy Report*. Paris. (first published 2001, 2003). p. 262.

## Figure 27: Rates of growth of world GDP per capita

Table B-22. Rates of Growth of World GDP per Capita, 20 Countries and Regional Totals, 0-1998 A.D.  
(annual average compound growth rates)

| Year                                | 0-1000       | 1000-1500    | 1500-1820   | 1820-70      | 1870-1913   | 1913-50      | 1950-73     | 1973-98      |
|-------------------------------------|--------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|
| Austria                             |              |              | 0.17        | 0.85         | 1.45        | 0.18         | 4.94        | 2.10         |
| Belgium                             |              |              | 0.13        | 1.44         | 1.05        | 0.70         | 3.55        | 1.89         |
| Denmark                             |              |              | 0.17        | 0.91         | 1.57        | 1.56         | 3.08        | 1.86         |
| Finland                             |              |              | 0.17        | 0.76         | 1.44        | 1.91         | 4.25        | 2.03         |
| France                              |              |              | 0.16        | 0.85         | 1.45        | 1.12         | 4.05        | 1.61         |
| Germany                             |              |              | 0.14        | 1.09         | 1.63        | 0.17         | 5.02        | 1.60         |
| Italy                               |              |              | 0.00        | 0.59         | 1.26        | 0.85         | 4.95        | 2.07         |
| Netherlands                         |              |              | 0.28        | 0.83         | 0.90        | 1.07         | 3.45        | 1.76         |
| Norway                              |              |              | 0.17        | 0.52         | 1.30        | 2.13         | 3.19        | 3.02         |
| Sweden                              |              |              | 0.17        | 0.66         | 1.46        | 2.12         | 3.07        | 1.31         |
| Switzerland                         |              |              | 0.17        | 1.09         | 1.55        | 2.06         | 3.08        | 0.64         |
| United Kingdom                      |              |              | 0.27        | 1.26         | 1.01        | 0.92         | 2.44        | 1.79         |
| <b>12 Countries Total</b>           |              |              | <b>0.15</b> | <b>1.00</b>  | <b>1.33</b> | <b>0.83</b>  | <b>3.93</b> | <b>1.75</b>  |
| Portugal                            |              |              | 0.13        | 0.07         | 0.52        | 1.39         | 5.66        | 2.29         |
| Spain                               |              |              | 0.13        | 0.52         | 1.15        | 0.17         | 5.79        | 1.97         |
| Other                               |              |              | 0.15        | 0.72         | 1.28        | 0.87         | 4.90        | 2.39         |
| <b>Total Western Europe</b>         | <b>-0.01</b> | <b>0.13</b>  | <b>0.15</b> | <b>0.95</b>  | <b>1.32</b> | <b>0.76</b>  | <b>4.08</b> | <b>1.78</b>  |
| <b>Eastern Europe</b>               | <b>0.00</b>  | <b>0.03</b>  | <b>0.10</b> | <b>0.63</b>  | <b>1.31</b> | <b>0.89</b>  | <b>3.79</b> | <b>0.37</b>  |
| <b>Former USSR</b>                  | <b>0.00</b>  | <b>0.04</b>  | <b>0.10</b> | <b>0.63</b>  | <b>1.06</b> | <b>1.76</b>  | <b>3.36</b> | <b>-1.75</b> |
| <b>Off.</b>                         |              |              |             |              |             |              |             |              |
| United States                       |              |              | 0.36        | 1.34         | 1.82        | 1.61         | 2.45        | 1.99         |
| Other Western Offshoots             |              |              | 0.20        | 2.29         | 1.76        | 1.14         | 2.52        | 1.64         |
| <b>Total Western Offshoots</b>      | <b>0.00</b>  | <b>0.00</b>  | <b>0.34</b> | <b>1.42</b>  | <b>1.81</b> | <b>1.55</b>  | <b>2.44</b> | <b>1.94</b>  |
| <b>OC</b>                           |              |              |             |              |             |              |             |              |
| Mexico                              |              |              | 0.18        | -0.24        | 2.22        | 0.85         | 3.17        | 1.28         |
| Other Latin America                 |              |              | 0.13        | 0.25         | 1.71        | 1.56         | 2.38        | 0.91         |
| <b>Total Latin America</b>          | <b>0.00</b>  | <b>0.01</b>  | <b>0.15</b> | <b>0.10</b>  | <b>1.81</b> | <b>1.43</b>  | <b>2.52</b> | <b>0.99</b>  |
| <b>AS</b>                           |              |              |             |              |             |              |             |              |
| Japan                               | 0.01         | 0.03         | 0.09        | 0.19         | 1.48        | 0.89         | 8.05        | 2.34         |
| China                               |              | 0.06         | 0.00        | -0.25        | 0.10        | -0.62        | 2.86        | 5.39         |
| India                               |              | 0.04         | -0.01       | 0.00         | 0.54        | -0.22        | 1.40        | 2.91         |
| Other Asia                          |              | 0.05         | 0.00        | 0.13         | 0.64        | 0.41         | 3.56        | 2.40         |
| <b>Total Asia (excluding Japan)</b> | <b>0.00</b>  | <b>0.05</b>  | <b>0.00</b> | <b>-0.11</b> | <b>0.38</b> | <b>-0.02</b> | <b>2.92</b> | <b>3.54</b>  |
| <b>Africa</b>                       | <b>0.00</b>  | <b>-0.01</b> | <b>0.01</b> | <b>0.12</b>  | <b>0.64</b> | <b>1.02</b>  | <b>2.07</b> | <b>0.01</b>  |
| <b>World</b>                        | <b>0.00</b>  | <b>0.05</b>  | <b>0.05</b> | <b>0.53</b>  | <b>1.30</b> | <b>0.91</b>  | <b>2.93</b> | <b>1.33</b>  |

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Source: OECD Development Centre Studies (2006). *The World Economy Report*. Paris. p. 265.

## Figure 28: World GDP

Table B-18: World GDP, 20 Countries and Regional Totals (0-1998 A.D.)  
(million 1990 international \$)

| Year                                | 0              | 1000           | 1500           | 1600           | 1700           | 1820           | 1870             | 1913             | 1950             | 1973              | 1998              |
|-------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|-------------------|-------------------|
| Austria                             |                |                | 1 414          | 2 093          | 2 483          | 4 104          | 8 419            | 23 451           | 25 702           | 85 227            | 152 712           |
| Belgium                             |                |                | 1 225          | 1 561          | 2 288          | 4 529          | 13 746           | 32 347           | 47 190           | 118 516           | 198 249           |
| Denmark                             |                |                | 443            | 569            | 727            | 1 471          | 3 782            | 11 670           | 29 654           | 70 032            | 117 319           |
| Finland                             |                |                | 136            | 215            | 255            | 913            | 1 999            | 6 389            | 17 051           | 51 724            | 94 421            |
| France                              |                |                | 10 912         | 15 559         | 21 180         | 38 434         | 72 100           | 144 489          | 220 492          | 683 965           | 1 150 080         |
| Germany                             |                |                | 8 112          | 12 432         | 13 410         | 26 349         | 71 429           | 237 332          | 265 354          | 944 755           | 1 460 069         |
| Italy                               |                |                | 11 550         | 14 410         | 14 630         | 22 535         | 41 814           | 95 487           | 164 957          | 582 713           | 1 022 776         |
| Netherlands                         |                |                | 716            | 2 052          | 4 009          | 4 288          | 9 952            | 24 955           | 60 642           | 175 791           | 317 517           |
| Norway                              |                |                | 192            | 304            | 450            | 1 071          | 2 485            | 6 119            | 17 838           | 44 544            | 104 860           |
| Sweden                              |                |                | 382            | 626            | 1 231          | 3 098          | 6 927            | 17 403           | 47 269           | 109 794           | 165 385           |
| Switzerland                         |                |                | 482            | 880            | 1 253          | 2 342          | 5 867            | 16 483           | 42 545           | 117 251           | 152 345           |
| United Kingdom                      |                |                | 2 815          | 6 007          | 10 709         | 36 232         | 100 179          | 224 618          | 347 850          | 675 941           | 1 108 568         |
| <b>12 Countries Total</b>           |                |                | <b>38 379</b>  | <b>56 708</b>  | <b>72 625</b>  | <b>145 366</b> | <b>338 699</b>   | <b>840 743</b>   | <b>1 286 544</b> | <b>3 660 253</b>  | <b>6 044 301</b>  |
| Portugal                            |                |                | 632            | 850            | 1 708          | 3 175          | 4 338            | 7 467            | 17 615           | 63 397            | 128 877           |
| Spain                               |                |                | 4 744          | 7 416          | 7 893          | 12 975         | 22 295           | 45 686           | 66 792           | 304 220           | 560 138           |
| Other                               |                |                | 590            | 981            | 1 169          | 2 206          | 4 891            | 12 478           | 30 600           | 105 910           | 227 300           |
| <b>Total Western Europe</b>         | <b>11 115</b>  | <b>10 165</b>  | <b>44 345</b>  | <b>65 955</b>  | <b>83 395</b>  | <b>163 722</b> | <b>370 223</b>   | <b>906 374</b>   | <b>1 401 551</b> | <b>4 133 780</b>  | <b>6 960 616</b>  |
| <b>Eastern Europe</b>               | <b>1 900</b>   | <b>2 600</b>   | <b>6 237</b>   | <b>8 743</b>   | <b>10 647</b>  | <b>23 149</b>  | <b>45 448</b>    | <b>121 559</b>   | <b>185 023</b>   | <b>550 757</b>    | <b>660 861</b>    |
| <b>Former USSR</b>                  | <b>1 560</b>   | <b>2 840</b>   | <b>8 475</b>   | <b>11 447</b>  | <b>16 222</b>  | <b>37 710</b>  | <b>83 646</b>    | <b>232 351</b>   | <b>510 243</b>   | <b>1 513 070</b>  | <b>1 132 434</b>  |
| United States                       |                |                | 800            | 600            | 527            | 12 548         | 98 374           | 517 383          | 1 455 916        | 3 536 622         | 7 394 598         |
| Other Western Offshoots             |                |                | 320            | 320            | 300            | 941            | 13 781           | 68 249           | 179 574          | 521 667           | 1 061 537         |
| <b>Total Western Offshoots</b>      | <b>468</b>     | <b>784</b>     | <b>1 120</b>   | <b>920</b>     | <b>827</b>     | <b>13 489</b>  | <b>112 155</b>   | <b>585 632</b>   | <b>1 635 490</b> | <b>4 058 289</b>  | <b>8 456 135</b>  |
| Mexico                              |                |                | 3 188          | 1 134          | 2 558          | 5 000          | 6 214            | 25 921           | 67 368           | 279 302           | 655 910           |
| Other Latin America                 |                |                | 4 100          | 2 623          | 3 813          | 9 120          | 21 683           | 95 760           | 356 188          | 1 118 398         | 2 285 700         |
| <b>Total Latin America</b>          | <b>2 240</b>   | <b>4 560</b>   | <b>7 288</b>   | <b>3 757</b>   | <b>6 371</b>   | <b>14 120</b>  | <b>27 897</b>    | <b>121 681</b>   | <b>423 556</b>   | <b>1 397 700</b>  | <b>2 941 610</b>  |
| <b>Japan</b>                        | <b>1 200</b>   | <b>3 188</b>   | <b>7 700</b>   | <b>9 620</b>   | <b>15 390</b>  | <b>20 739</b>  | <b>25 393</b>    | <b>71 653</b>    | <b>160 966</b>   | <b>1 242 932</b>  | <b>2 581 576</b>  |
| China                               | 26 820         | 26 550         | 61 800         | 96 000         | 82 800         | 228 600        | 189 740          | 241 344          | 239 903          | 740 048           | 3 873 352         |
| India                               | 33 750         | 33 750         | 60 500         | 74 250         | 90 750         | 111 417        | 134 882          | 204 241          | 222 222          | 494 832           | 1 702 712         |
| Other Asia                          | 16 470         | 18 630         | 31 301         | 36 725         | 40 567         | 50 486         | 72 173           | 146 999          | 362 578          | 1 398 587         | 4 376 931         |
| <b>Total Asia (excluding Japan)</b> | <b>77 040</b>  | <b>78 930</b>  | <b>153 601</b> | <b>206 975</b> | <b>214 117</b> | <b>390 503</b> | <b>396 795</b>   | <b>592 584</b>   | <b>824 703</b>   | <b>2 633 467</b>  | <b>9 952 995</b>  |
| <b>Africa</b>                       | <b>7 013</b>   | <b>13 723</b>  | <b>18 400</b>  | <b>22 000</b>  | <b>24 400</b>  | <b>31 010</b>  | <b>40 172</b>    | <b>72 948</b>    | <b>194 569</b>   | <b>529 185</b>    | <b>1 039 408</b>  |
| <b>World</b>                        | <b>102 536</b> | <b>116 790</b> | <b>247 116</b> | <b>329 417</b> | <b>371 369</b> | <b>694 442</b> | <b>1 101 369</b> | <b>2 704 782</b> | <b>5 336 101</b> | <b>16 059 180</b> | <b>33 725 635</b> |

Source: OECD Development Centre Studies (2006). *The World Economy Report*. Paris. p. 261.

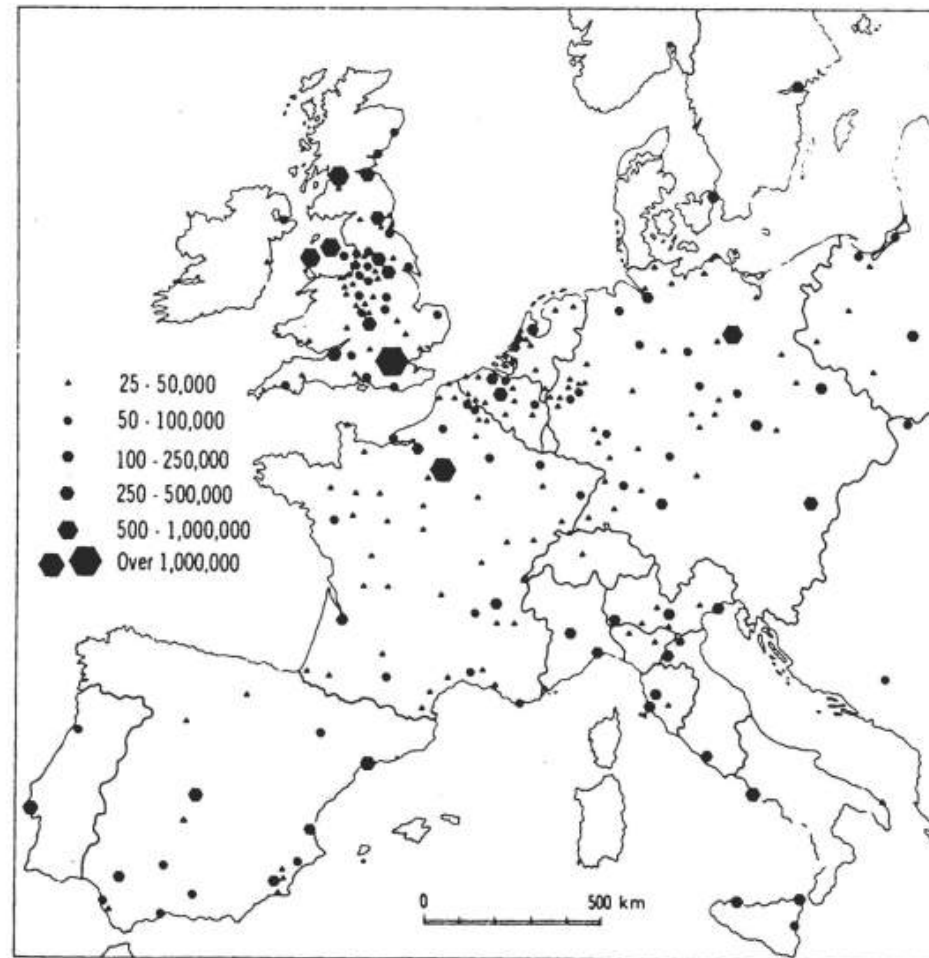
## Figure 29: World GDP per capita

Table B-21. World GDP per Capita, 20 Countries and Regional Averages, 0–1998 A.D.  
(1990 international \$)

| Year                                | 0          | 1000       | 1500       | 1600       | 1700         | 1820         | 1870         | 1913         | 1950         | 1973          | 1998          |
|-------------------------------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Austria                             |            |            | 707        | 837        | 993          | 1 218        | 1 863        | 3 465        | 3 706        | 11 235        | 18 905        |
| Belgium                             |            |            | 875        | 976        | 1 144        | 1 319        | 2 697        | 4 220        | 5 462        | 12 170        | 19 442        |
| Denmark                             |            |            | 738        | 875        | 1 039        | 1 274        | 2 003        | 3 912        | 6 946        | 13 945        | 22 123        |
| Finland                             |            |            | 453        | 538        | 638          | 781          | 1 140        | 2 111        | 4 253        | 11 085        | 18 324        |
| France                              |            |            | 727        | 841        | 986          | 1 230        | 1 876        | 3 485        | 5 270        | 13 123        | 19 558        |
| Germany                             |            |            | 676        | 777        | 894          | 1 058        | 1 821        | 3 648        | 3 881        | 11 966        | 17 799        |
| Italy                               |            |            | 1 100      | 1 100      | 1 100        | 1 117        | 1 499        | 2 564        | 3 502        | 10 643        | 17 759        |
| Netherlands                         |            |            | 754        | 1 368      | 2 110        | 1 821        | 2 753        | 4 049        | 5 996        | 13 082        | 20 224        |
| Norway                              |            |            | 640        | 760        | 900          | 1 104        | 1 432        | 2 501        | 5 463        | 11 246        | 23 660        |
| Sweden                              |            |            | 695        | 824        | 977          | 1 198        | 1 664        | 3 096        | 6 738        | 13 493        | 18 685        |
| Switzerland                         |            |            | 742        | 880        | 1 044        | 1 280        | 2 202        | 4 266        | 9 064        | 18 204        | 21 367        |
| United Kingdom                      |            |            | 714        | 974        | 1 250        | 1 707        | 3 191        | 4 921        | 6 907        | 12 022        | 18 714        |
| <b>12 Countries Total</b>           |            |            | <b>796</b> | <b>906</b> | <b>1 056</b> | <b>1 270</b> | <b>2 086</b> | <b>3 688</b> | <b>5 013</b> | <b>12 159</b> | <b>18 742</b> |
| Portugal                            |            |            | 632        | 773        | 854          | 963          | 997          | 1 244        | 2 069        | 7 343         | 12 929        |
| Spain                               |            |            | 698        | 900        | 900          | 1 063        | 1 376        | 2 255        | 2 397        | 8 739         | 14 227        |
| Other                               |            |            | 462        | 528        | 617          | 743          | 1 066        | 1 840        | 2 536        | 7 614         | 13 732        |
| <b>Total Western Europe</b>         | <b>450</b> | <b>400</b> | <b>774</b> | <b>894</b> | <b>1 024</b> | <b>1 232</b> | <b>1 974</b> | <b>3 473</b> | <b>4 594</b> | <b>11 534</b> | <b>17 921</b> |
| <b>Eastern Europe</b>               | <b>400</b> | <b>400</b> | <b>462</b> | <b>516</b> | <b>566</b>   | <b>636</b>   | <b>871</b>   | <b>1 527</b> | <b>2 120</b> | <b>4 985</b>  | <b>5 461</b>  |
| <b>Former USSR</b>                  | <b>400</b> | <b>400</b> | <b>500</b> | <b>553</b> | <b>611</b>   | <b>689</b>   | <b>943</b>   | <b>1 488</b> | <b>2 834</b> | <b>6 058</b>  | <b>3 893</b>  |
| United States                       |            |            | 400        | 400        | 527          | 1 257        | 2 445        | 5 301        | 9 561        | 16 689        | 27 331        |
| Other Western Offshoots             |            |            | 400        | 400        | 400          | 753          | 2 339        | 4 947        | 7 538        | 13 364        | 20 082        |
| <b>Total Western Offshoots</b>      | <b>400</b> | <b>400</b> | <b>400</b> | <b>400</b> | <b>473</b>   | <b>1 201</b> | <b>2 431</b> | <b>5 257</b> | <b>9 288</b> | <b>16 172</b> | <b>26 146</b> |
| Mexico                              |            |            | 425        | 454        | 568          | 759          | 674          | 1 732        | 2 365        | 4 845         | 6 655         |
| Other Latin America                 |            |            | 410        | 430        | 505          | 623          | 705          | 1 461        | 2 593        | 4 459         | 5 588         |
| <b>Total Latin America</b>          | <b>400</b> | <b>400</b> | <b>416</b> | <b>437</b> | <b>529</b>   | <b>665</b>   | <b>698</b>   | <b>1 511</b> | <b>2 554</b> | <b>4 531</b>  | <b>5 795</b>  |
| <b>Japan</b>                        | <b>400</b> | <b>425</b> | <b>500</b> | <b>520</b> | <b>570</b>   | <b>669</b>   | <b>737</b>   | <b>1 387</b> | <b>1 926</b> | <b>11 439</b> | <b>20 413</b> |
| China                               | 450        | 450        | 600        | 600        | 600          | 600          | 530          | 552          | 439          | 839           | 3 117         |
| India                               | 450        | 450        | 550        | 550        | 550          | 533          | 533          | 673          | 619          | 853           | 1 746         |
| Other Asia                          | 450        | 450        | 565        | 565        | 565          | 565          | 603          | 794          | 924          | 2 065         | 3 734         |
| <b>Total Asia (excluding Japan)</b> | <b>450</b> | <b>450</b> | <b>572</b> | <b>575</b> | <b>571</b>   | <b>575</b>   | <b>543</b>   | <b>640</b>   | <b>635</b>   | <b>1 231</b>  | <b>2 936</b>  |
| Africa                              | 425        | 416        | 400        | 400        | 400          | 418          | 444          | 585          | 852          | 1 365         | 1 368         |
| <b>World</b>                        | <b>444</b> | <b>435</b> | <b>565</b> | <b>593</b> | <b>615</b>   | <b>667</b>   | <b>867</b>   | <b>1 510</b> | <b>2 114</b> | <b>4 104</b>  | <b>5 709</b>  |

Source: OECD Development Centre Studies (2006). *The World Economy Report*. Paris. p. 264.

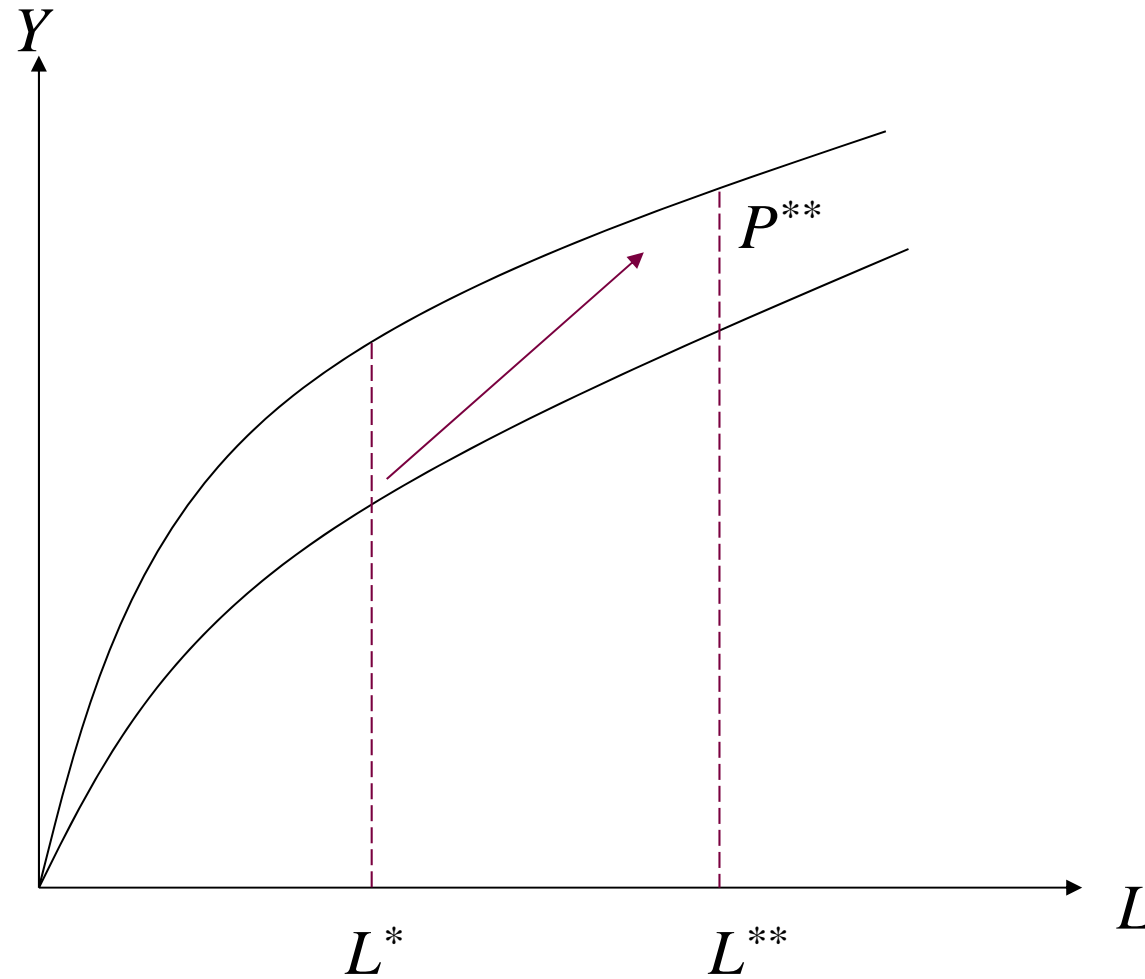
## Figure 30: Urban development in Europa, about 1840



4.28 Urban development in Europe, about 1840

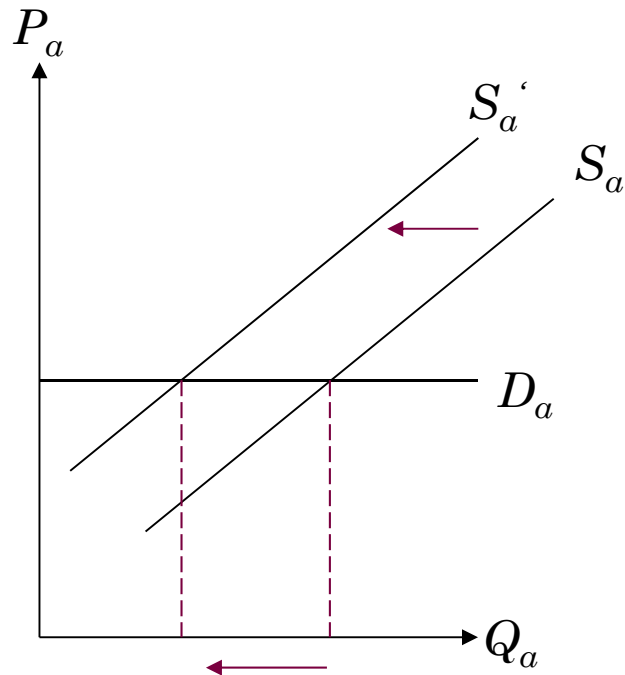
Source: Pounds (1990). *An Historical Geography of Europe*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 222.

Figure 31: Production function

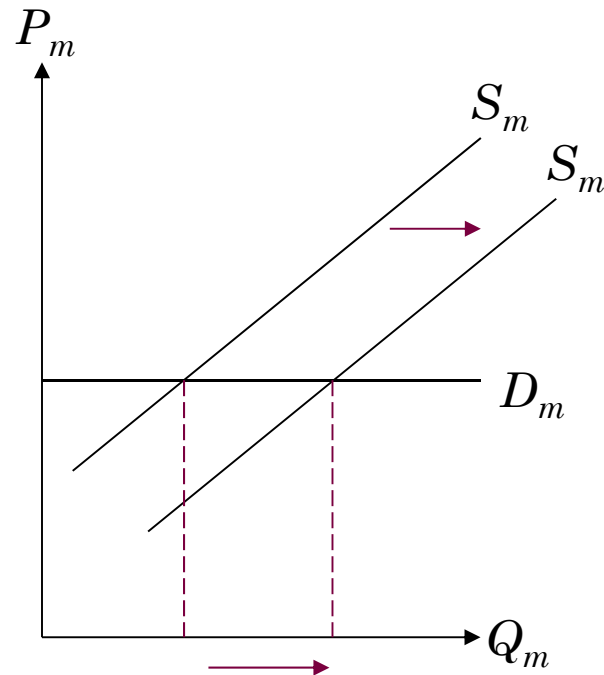


**Figure 32: Structural change due to “industrialization” in stylized three-sector-model**

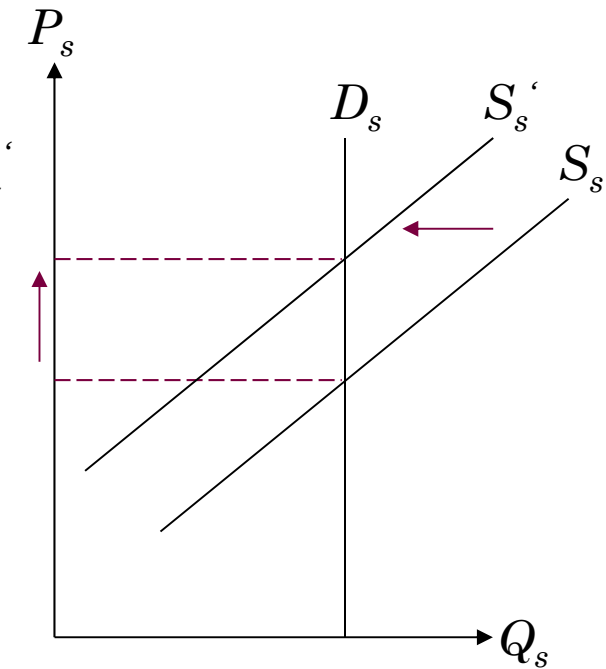
agriculture (a)



manufacturing (m)



services (s)





**Figure 33: English industry in 1800**



FIGURE 7-11. English industry in 1800.

Source: Cameron & Neal (2003). *A Concise Economic History of the World*. 4<sup>th</sup> ed. Oxford University Press. Oxford. p. 182.

## Figure 34: Inland navigation



FIGURE 7-5. Inland navigation.

Source: Cameron & Neal (2003). *A Concise Economic History of the World*. 4<sup>th</sup> ed. Oxford University Press. Oxford. p. 170.

## Figure 35: Turnpikes in 1770

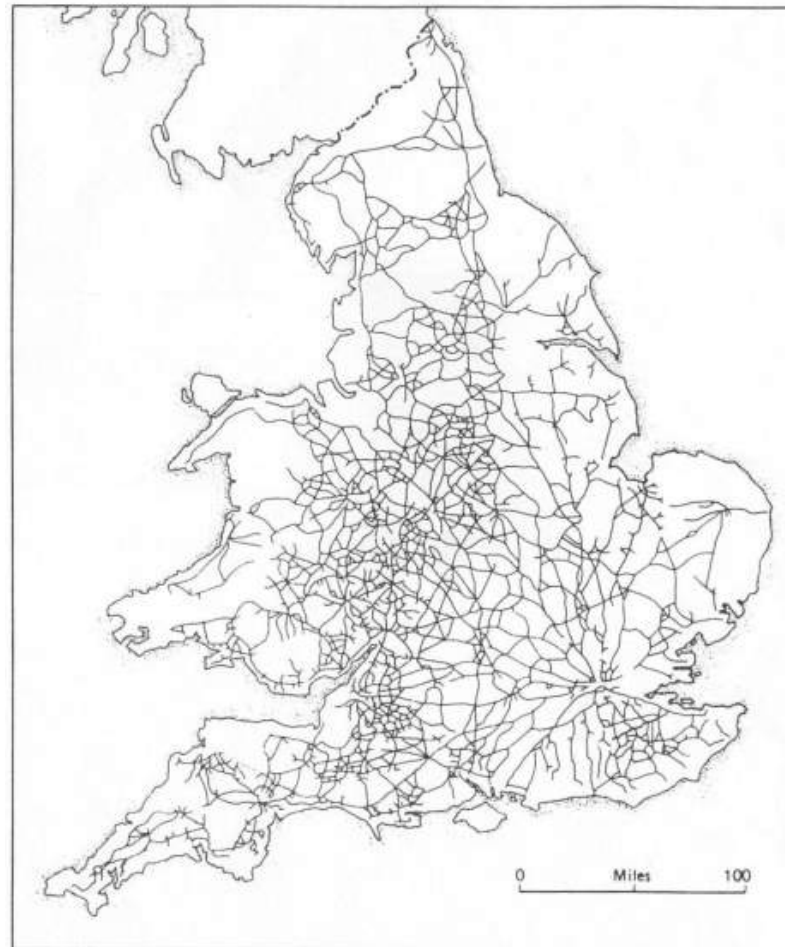
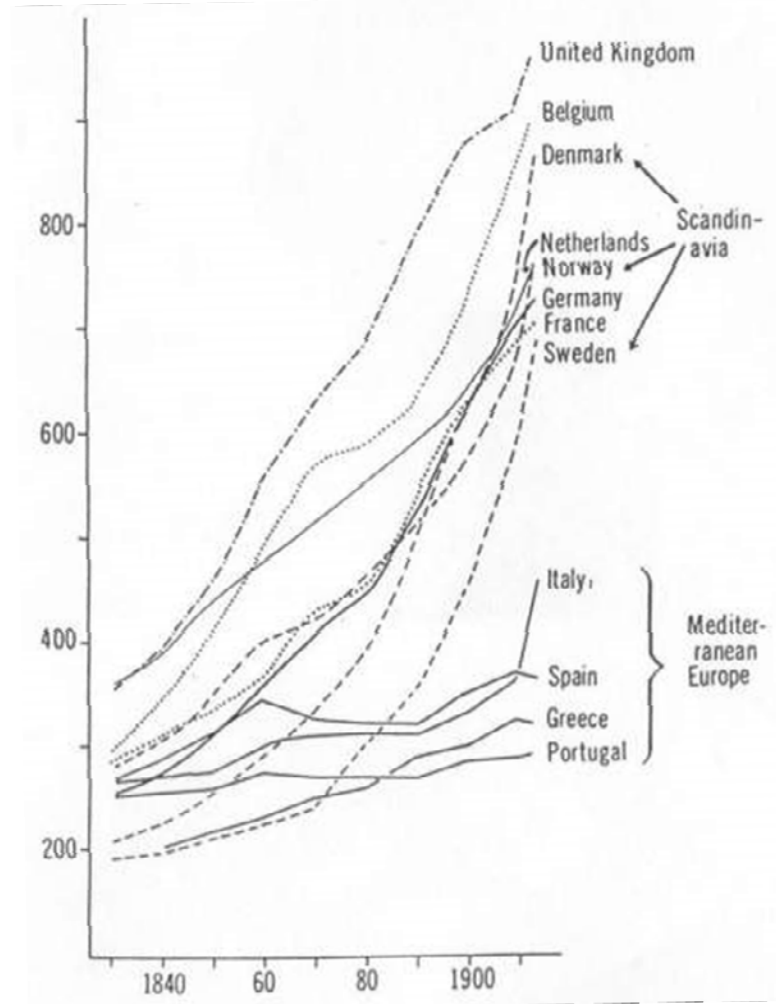


FIGURE 7-6. Turnpikes in 1770.

Source: Cameron & Neal (2003). *A Concise Economic History of the World*. 4<sup>th</sup> ed. Oxford University Press. Oxford. p. 171.

**Figure 36: The increase in the GNP per capita in Europa**



Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 32.

**Figure 37: Raw cotton, pig iron and coal consumption**

| <i>Raw cotton, kg. per cap.</i> |      |      |      |      |      |
|---------------------------------|------|------|------|------|------|
|                                 | 1840 | 1860 | 1880 | 1900 | 1910 |
| United Kingdom                  | 7.3  | 15.1 | 17.3 | 18.7 | 19.8 |
| Germany                         | 0.9  | 1.4  | 2.9  | 5.8  | 6.8  |
| France                          | 1.5  | 2.7  | 2.6  | 4.5  | 6.0  |
| Russia                          | 0.3  | 0.5  | 1.0  | 1.6  | 3.0  |
| Italy                           | 0.1  | 0.2  | 1.1  | 4.0  | 5.4  |

(Source: Bairoch, Tableau, 3 modified)

| <i>Pig iron, kg. per cap.</i> |      |      |      |      |      |      | (steel) |
|-------------------------------|------|------|------|------|------|------|---------|
|                               | 1810 | 1840 | 1860 | 1880 | 1900 | 1910 | 1910    |
| United Kingdom                | 20   | 54   | 130  | 220  | 220  | 210  | 150     |
| Germany                       | 2    | 5    | 14   | 53   | 130  | 200  | 220     |
| France                        | 4    | 12   | 25   | 46   | 65   | 100  | 100     |
| Russia                        | –    | 3    | 5    | 5    | 25   | 31   | 38      |
| Italy                         | –    | 1    | 2    | 1    | 1    | 8    | 28      |

(Source: Bairoch, Tableau 4)

| <i>Coal consumption kg. per cap.</i> |      |      |      |      |      |      |
|--------------------------------------|------|------|------|------|------|------|
|                                      | 1810 | 1840 | 1860 | 1880 | 1900 | 1910 |
| United Kingdom                       | 600  | 1110 | 2450 | 3740 | 4070 | 4040 |
| Germany                              | –    | 110  | 400  | 1170 | 2650 | 3190 |
| France                               | 40   | 130  | 390  | 740  | 1200 | 1450 |
| Russia                               | –    | –    | –    | 70   | 190  | 300  |
| Italy                                | –    | –    | –    | 100  | 150  | 270  |

(Source: Bairoch, Tableau 6)

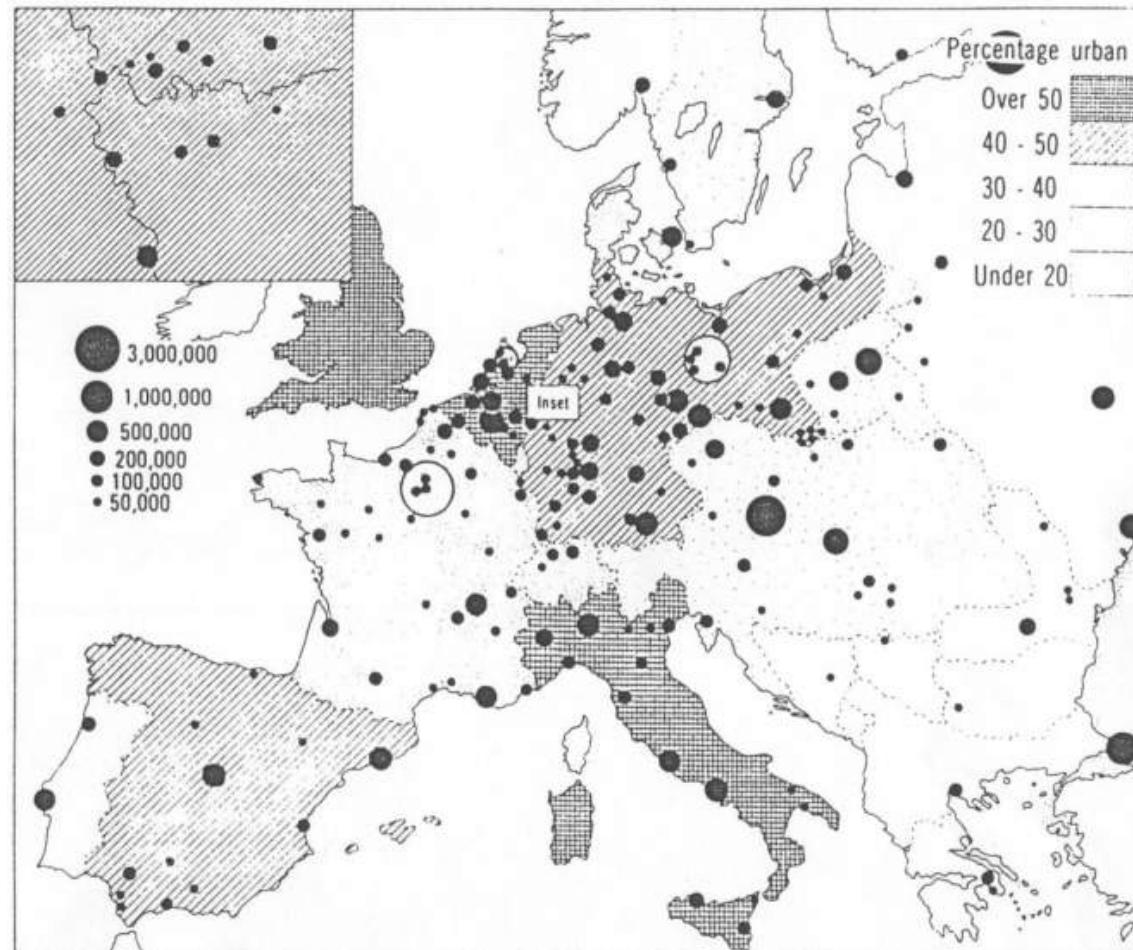
Source: Kemp (1969). *Industrialization in Nineteenth-Century Europe*. Routledge. London.

**Figure 38: Total output of coal, pig iron and steel**

|                             | <i>Coal</i> | <i>Pig iron</i> | <i>Steel</i> | <i>Population (mn)</i> |
|-----------------------------|-------------|-----------------|--------------|------------------------|
| United Kingdom              | 292         | 10·4            | 7·7          | 45 (1911)              |
| Germany<br>(1913 frontiers) | 190         | 16·7            | 17·5         | 64 (1910)              |
| France<br>(1913 frontiers)  | 40          | 5·2             | 4·6          | 39 (1910)              |
| Russia                      | 35          | 4·6             | 4·0          | 175                    |
| Italy                       | 0·7         | 0·4             | 0·9          | 36 (1914)              |

Source: Kemp (1969). *Industrialization in Nineteenth-Century Europe*. Routledge. London.

**Figure 39: Urban map of Europe, 1910**



10.4 An urban map of Europe, 1910. Only cities of more than 50,000 are shown

Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 504.

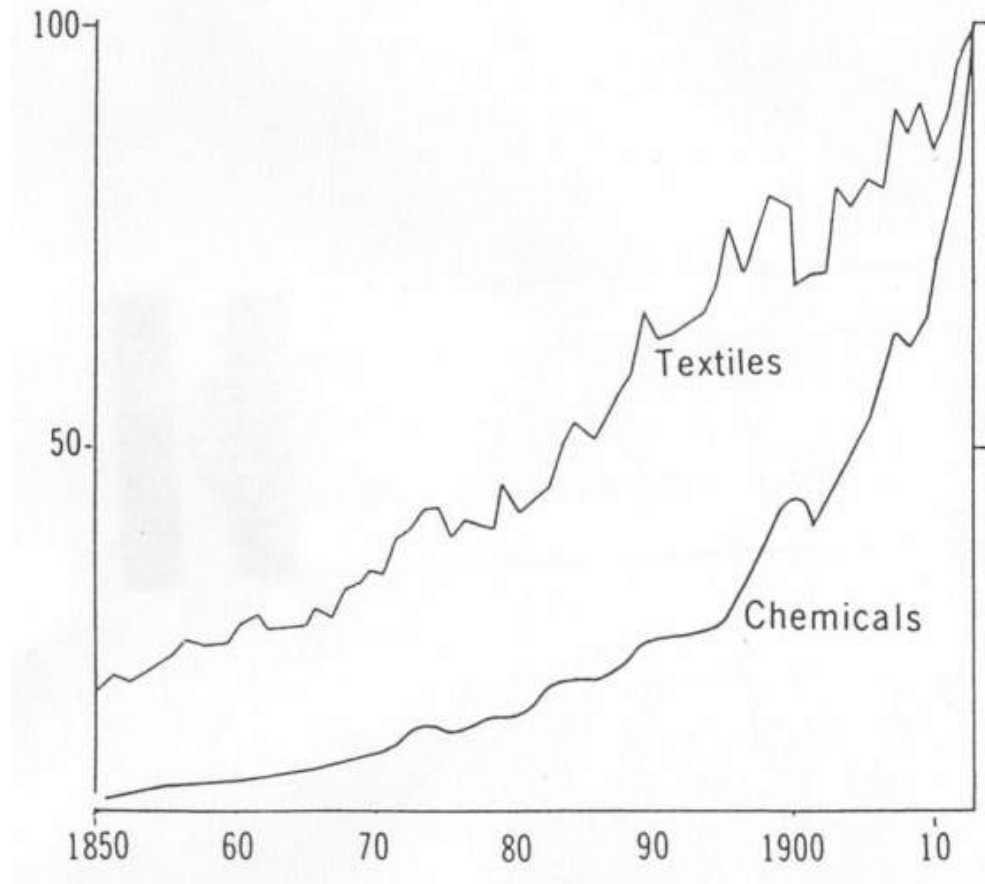
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Chair of International Economics

## **GLOBALIZATION: Past, Present & Future**

- 3 Globalization I (1820–1990)
  - 3.1 The First Era of Integration: 1820–1914
    - 3.1.2 R&D-based Industrialization (Figure 40)



**Figure 40: The increase in production of textiles and chemicals in Germany, 1850–1913 (1913 = 100)**



Note the contrast between the linear expansion of the textile industry and the exponential growth in the manufacture of chemicals.

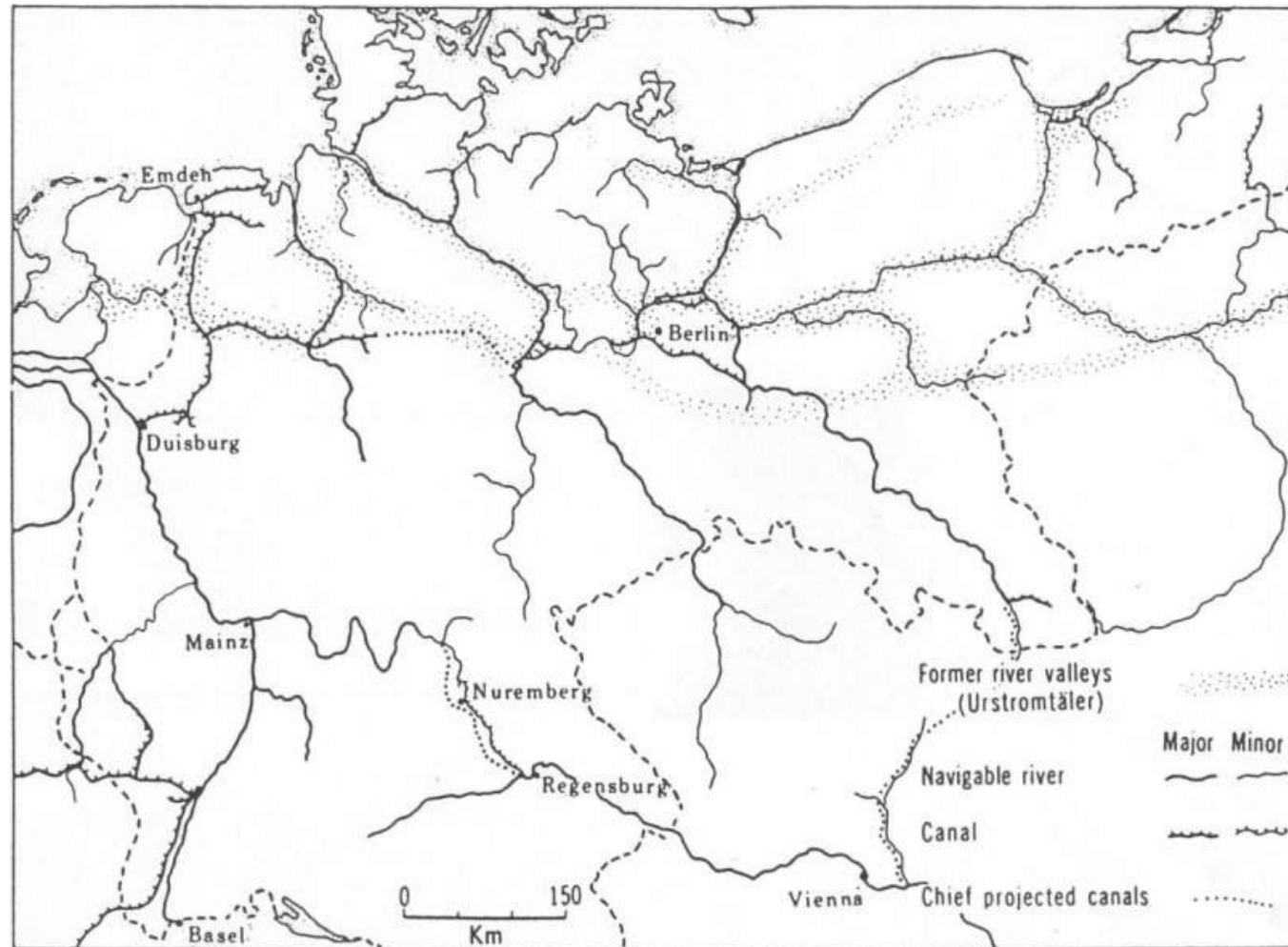
Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 347.

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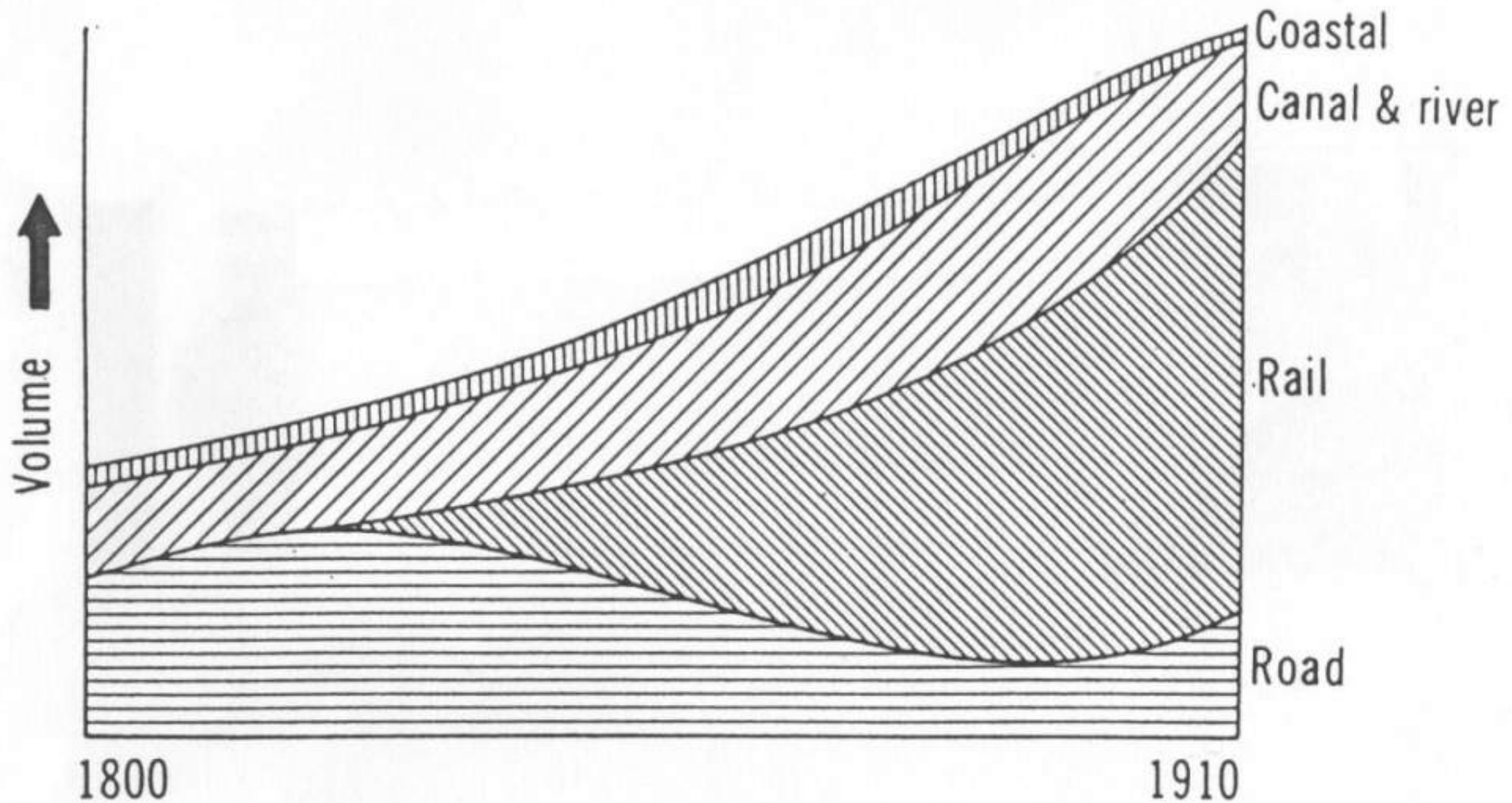
- 3 Globalization I (1820–1990)
  - 3.1 The First Era of Integration: 1820–1914
    - 3.1.3 Steamships, Railways and Telecommunication  
(Figure 41–47)

**Figure 41: Navigable waterways in the north German plain**



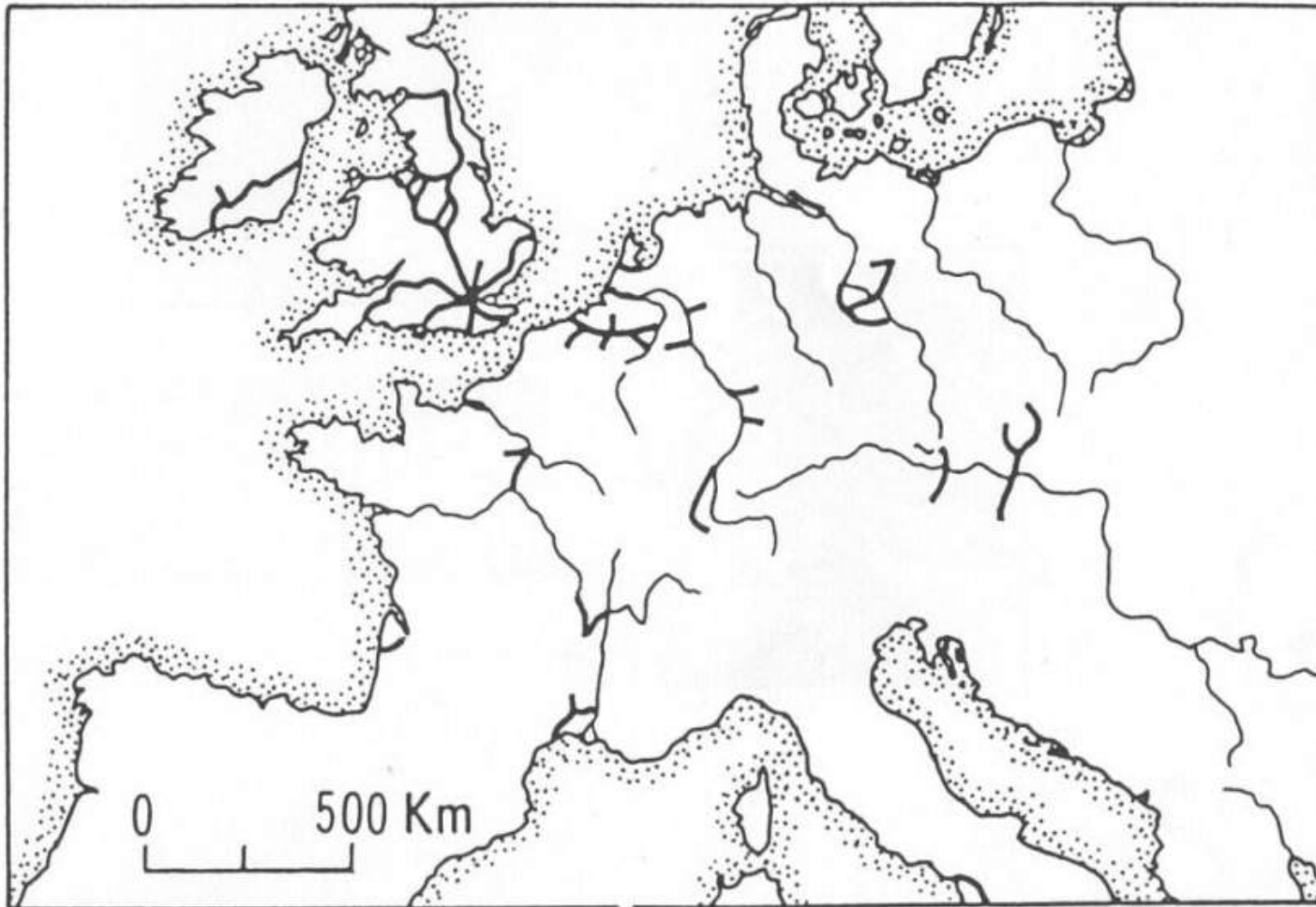
Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 445.

**Figure 42: Development of transport during the 19th century**



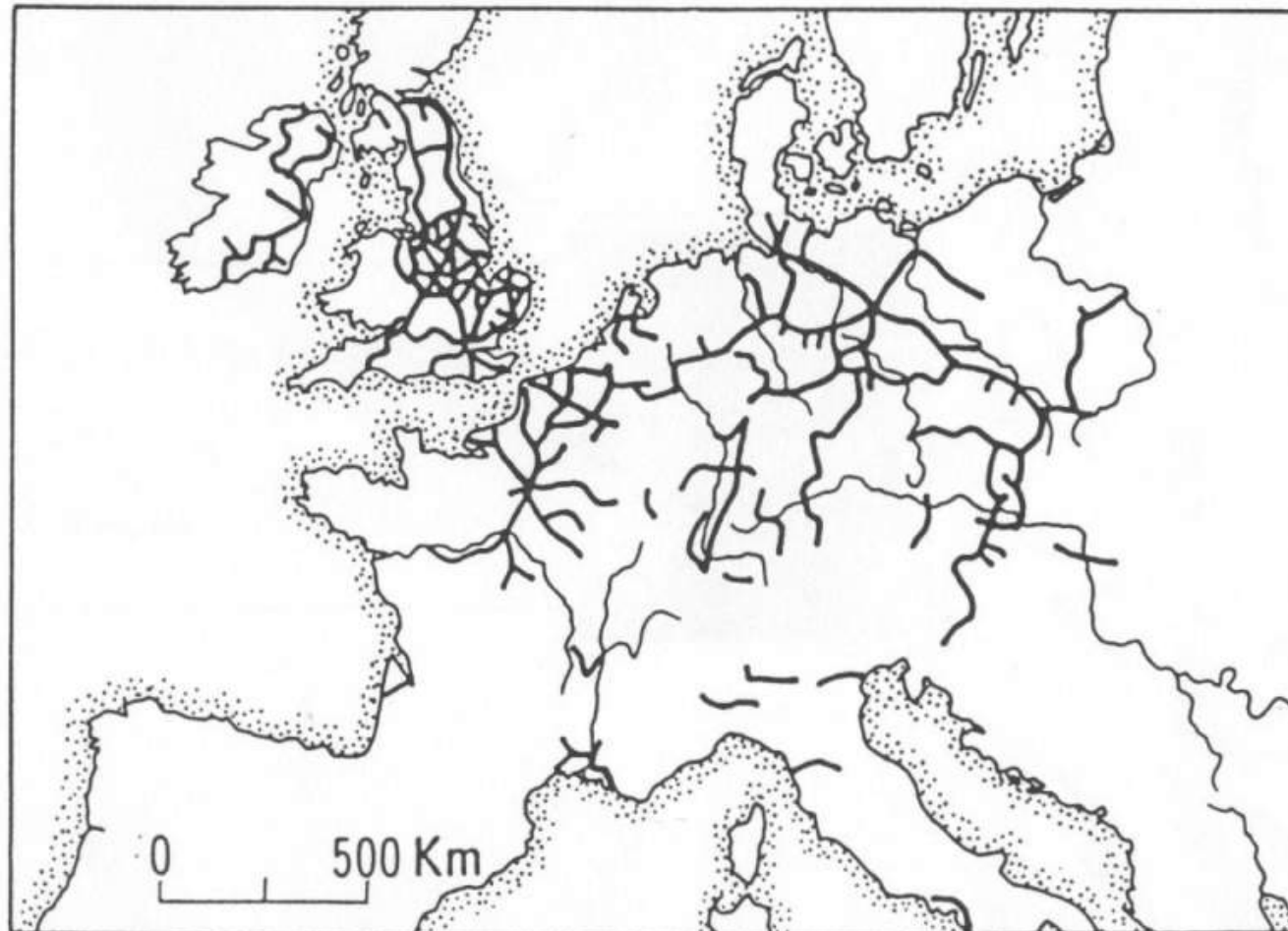
Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 428.

**Figure 43: Railway development in Europe, 1840**



Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 451.

**Figure 44: Railway development in Europe, 1850**



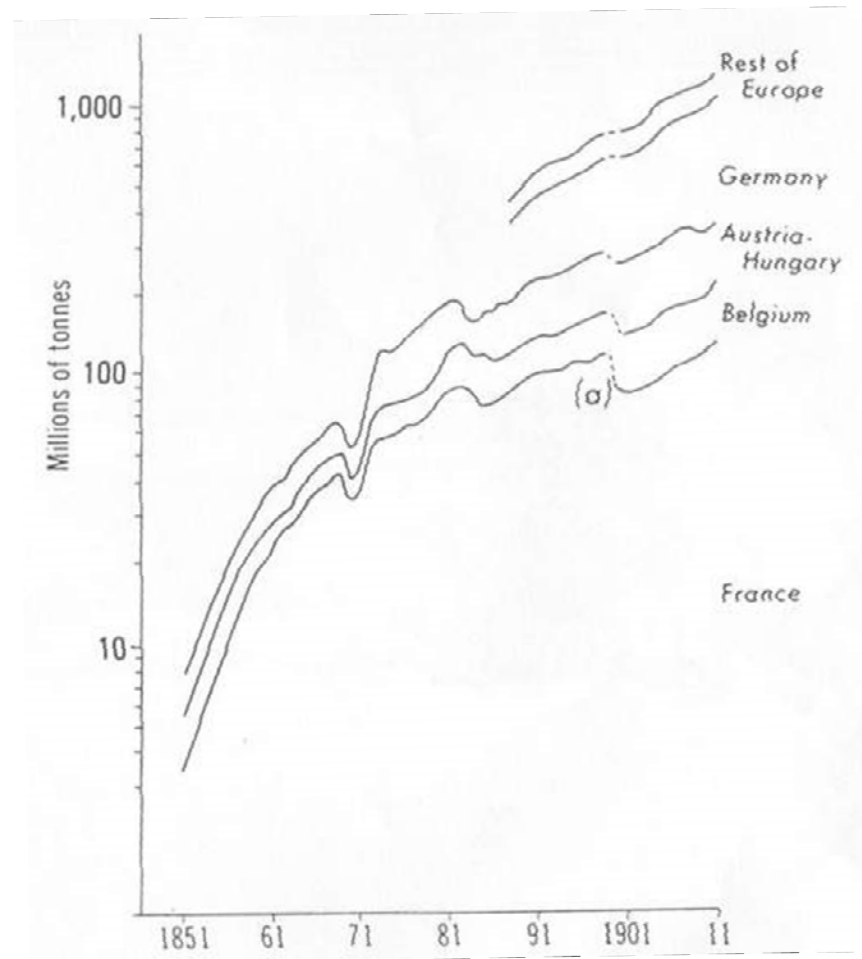
Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 451.

**Figure 45: Railway development in Europe, 1880**



Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 452.

**Figure 46: Growth in the use of railways for freight, 1851–1911**

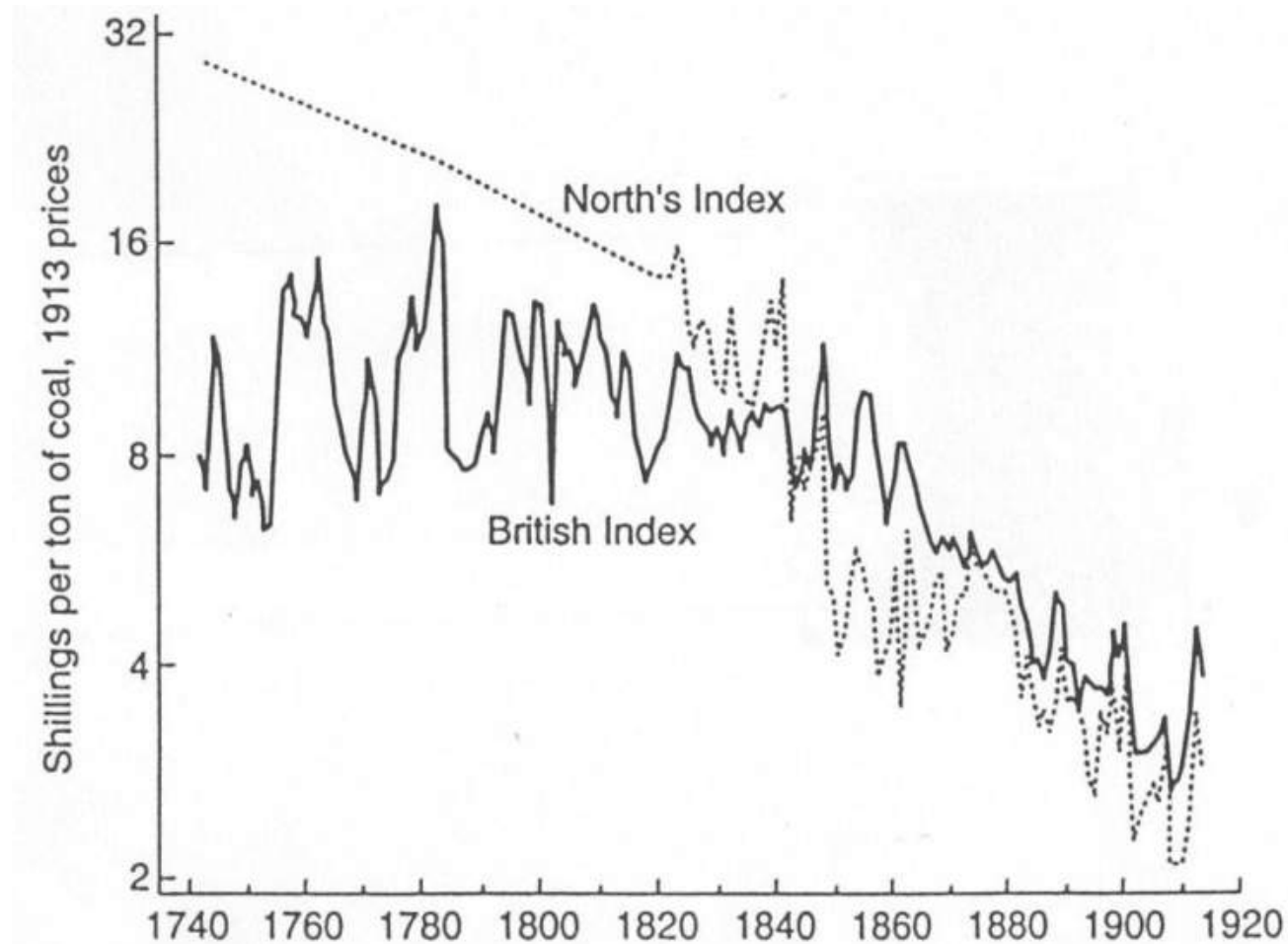


Source: Pounds (1985). *An Historical Geography of Europe 1800–1914*. 1<sup>st</sup> ed. Cambridge University Press. Cambridge. p. 452.

Note: (a) refers to a change in calculating the freight quantity



**Figure 47: Freight rate indexes, 1741–1913, nominal rates deflated by UK GNP deflator**



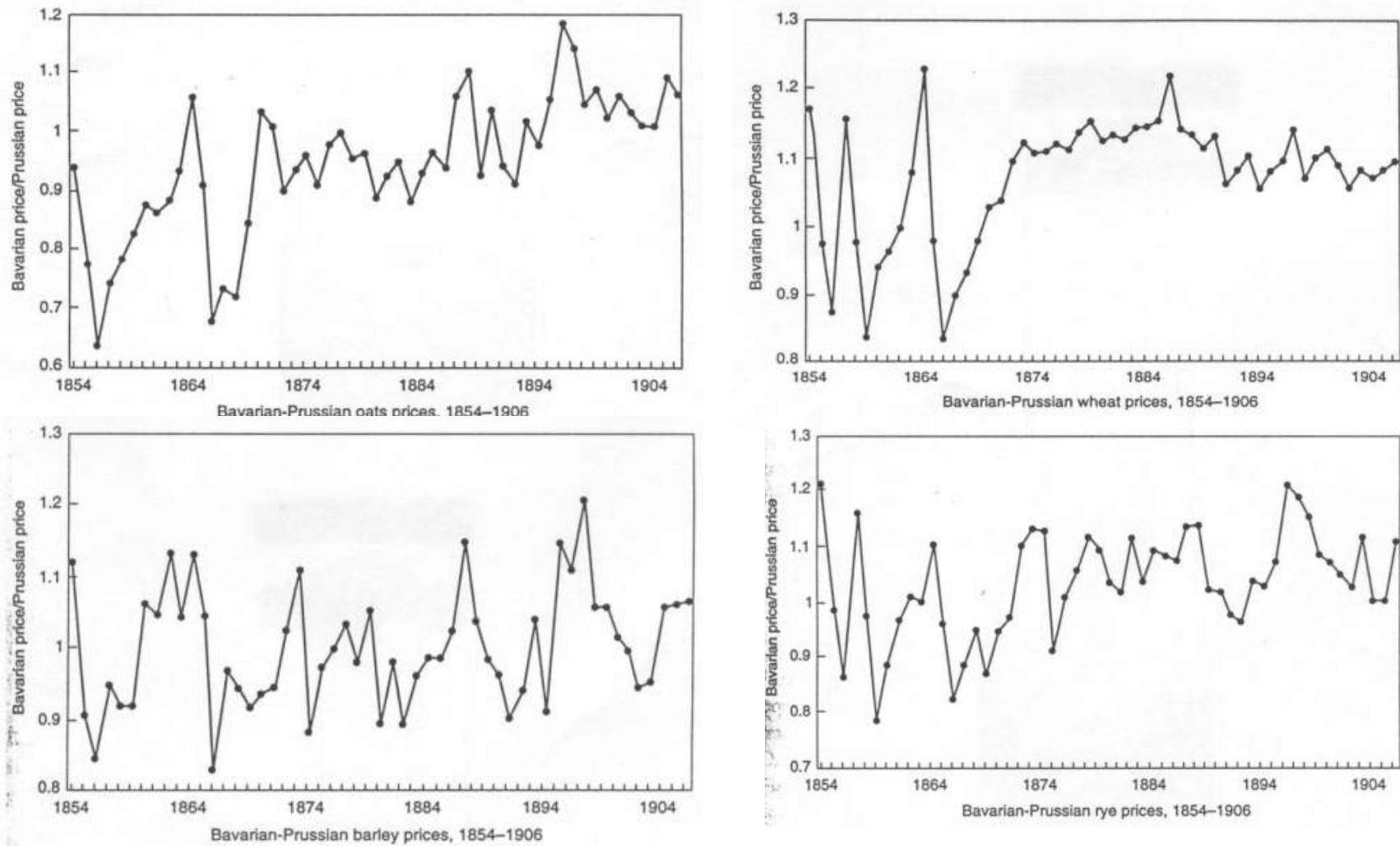
Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 36.

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## **GLOBALIZATION: Past, Present & Future**

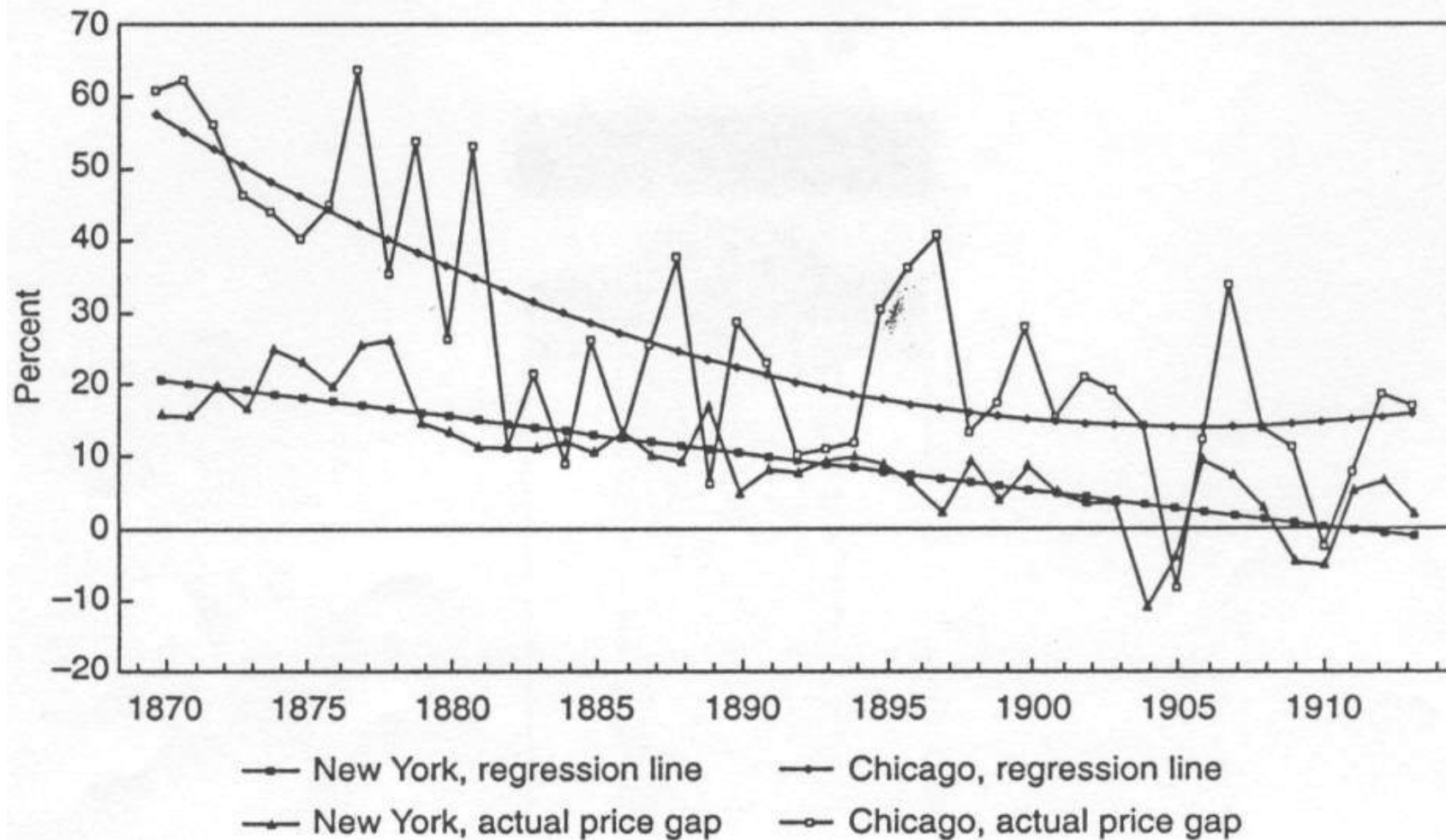
- 3 Globalization I (1820–1990)
  - 3.1 The First Era of Integration: 1820–1914
    - 3.1.4 **International Trade** (Figure 48–56)

**Figure 48: Intra-German grain price differentials, 1854–1906**



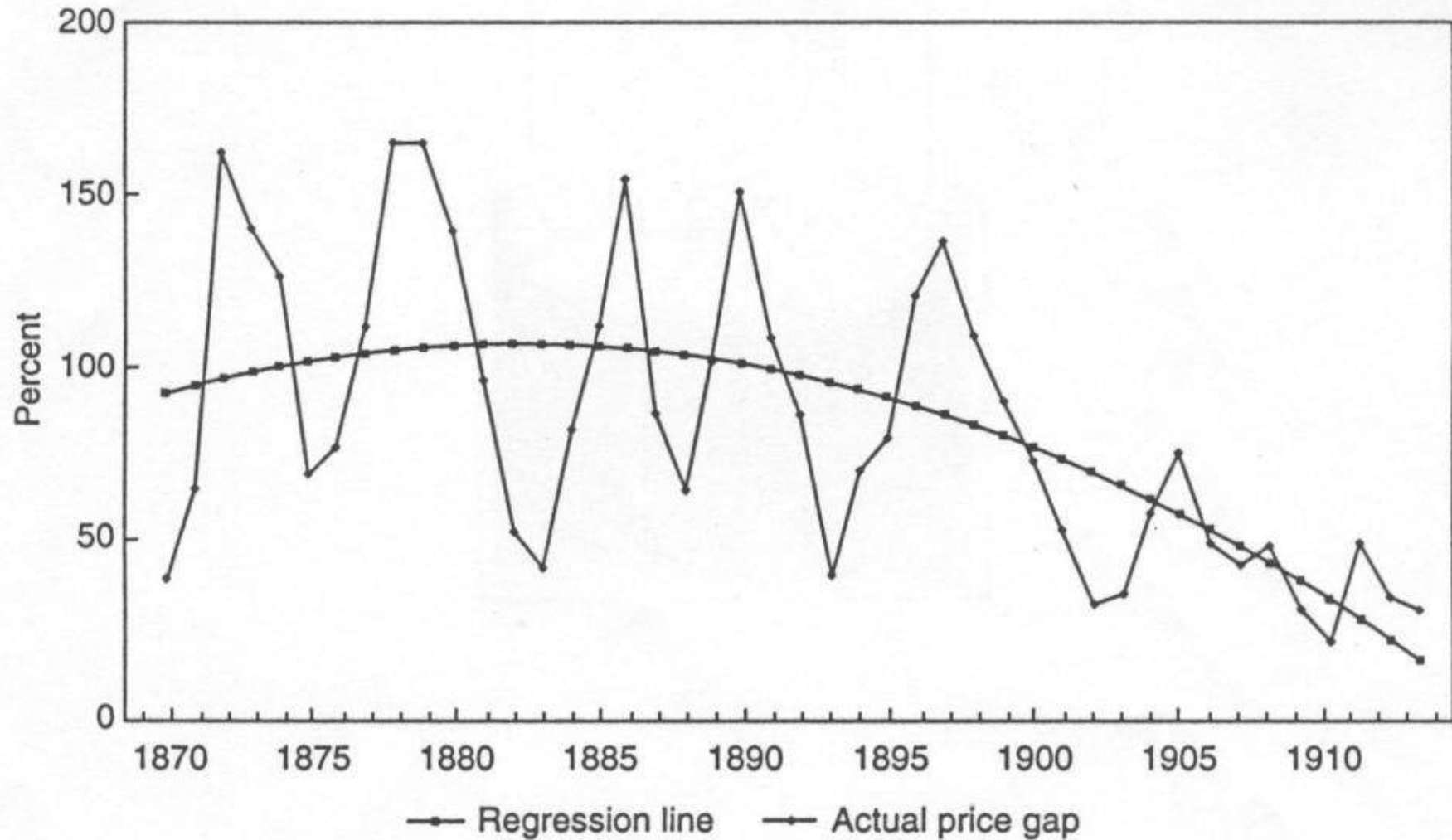
Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 44–45.

**Figure 49: Wheat price differentials UK/US (percent of US price)**



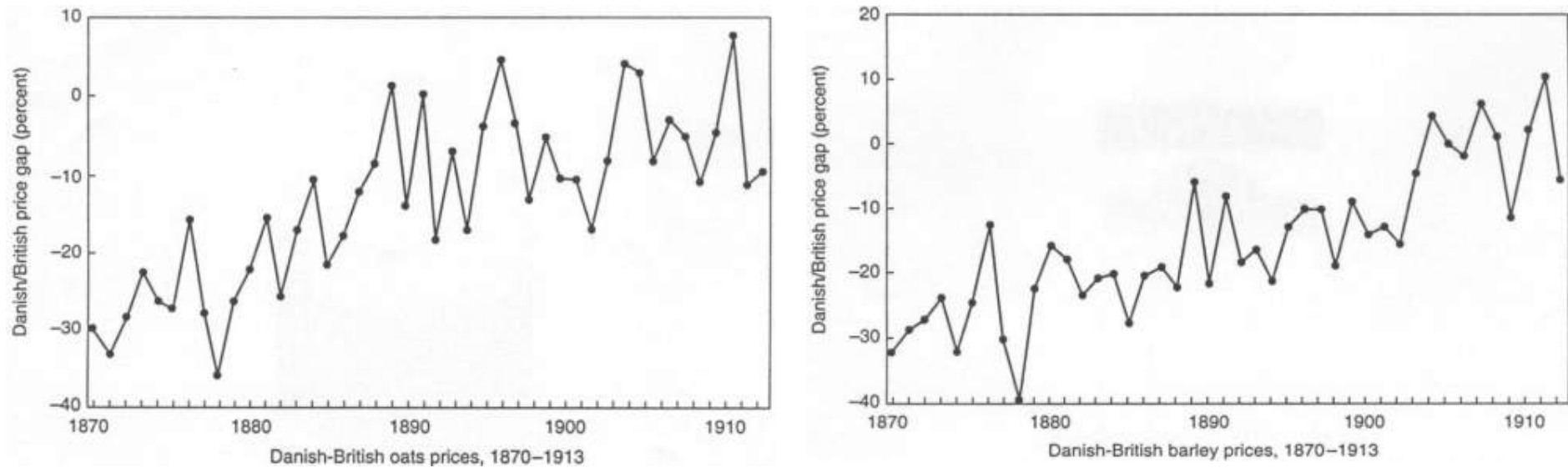
Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 46.

**Figure 49f: Meat price differentials UK/US (percent of US price)**



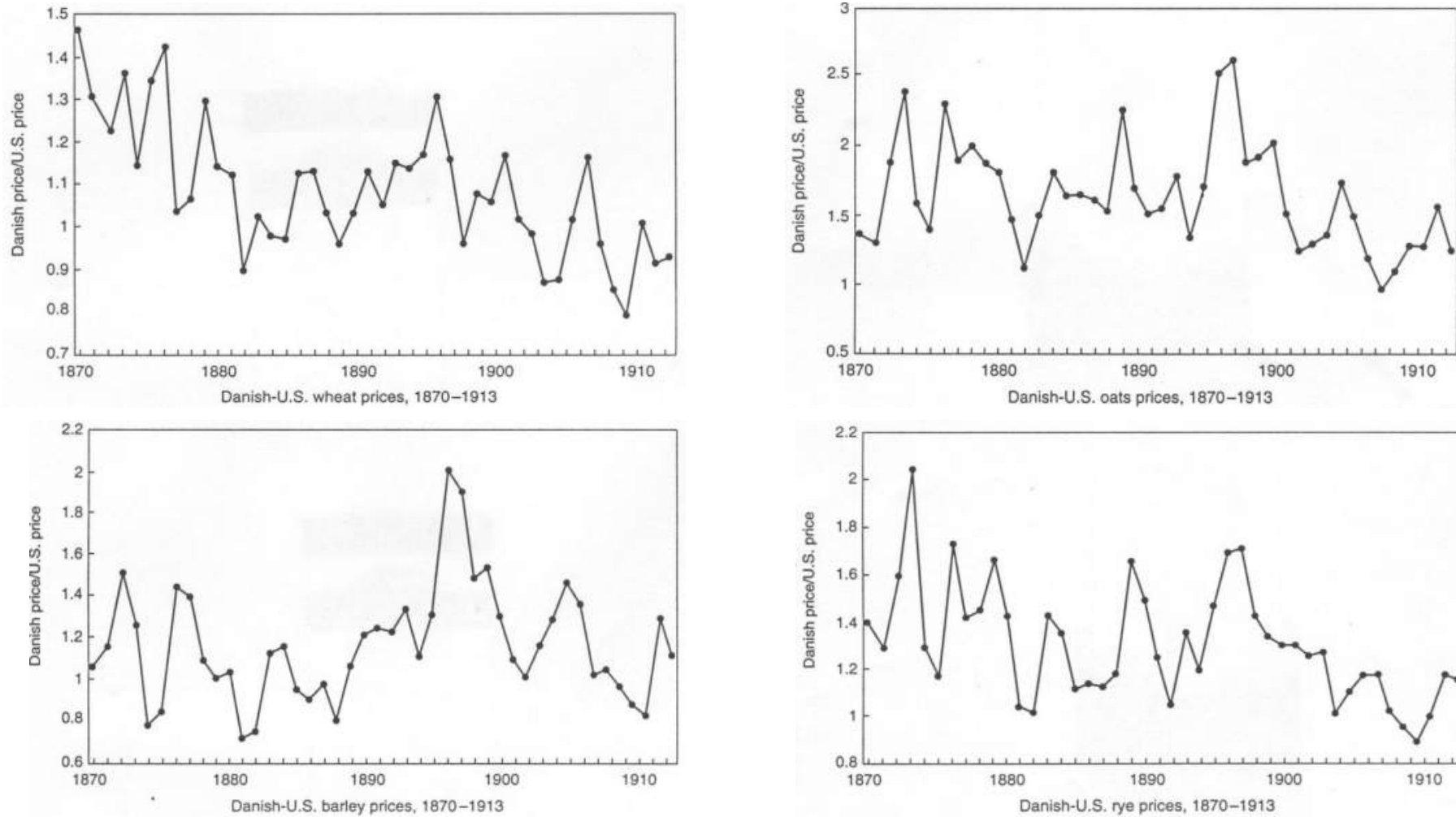
Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 46.

**Figure 50: Anglo-Scandinavian grain price gaps, 1870–1913**



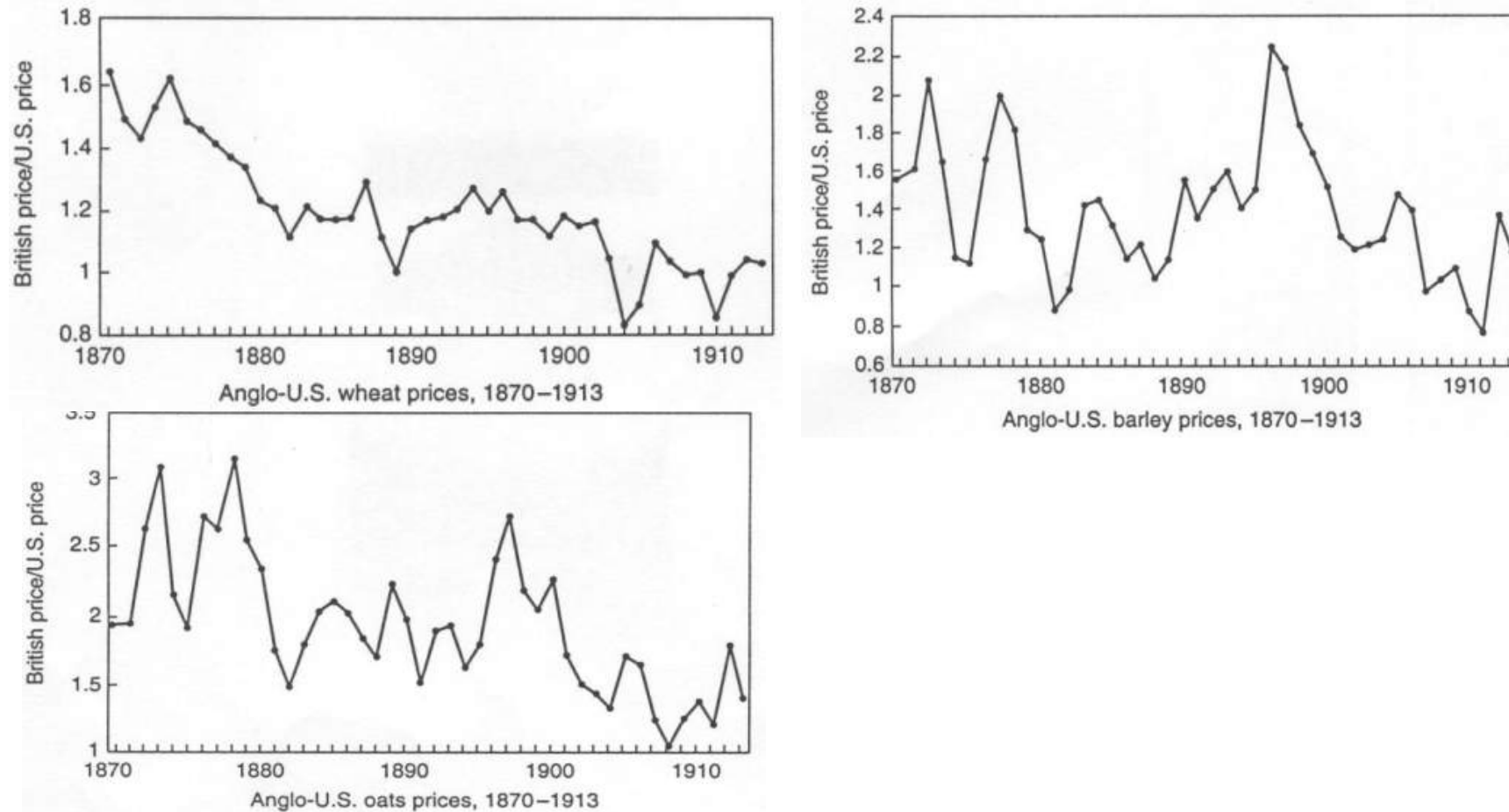
Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 48.

**Figure 51: Danish-American grain price differentials, 1870–1913**



Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 50–51.

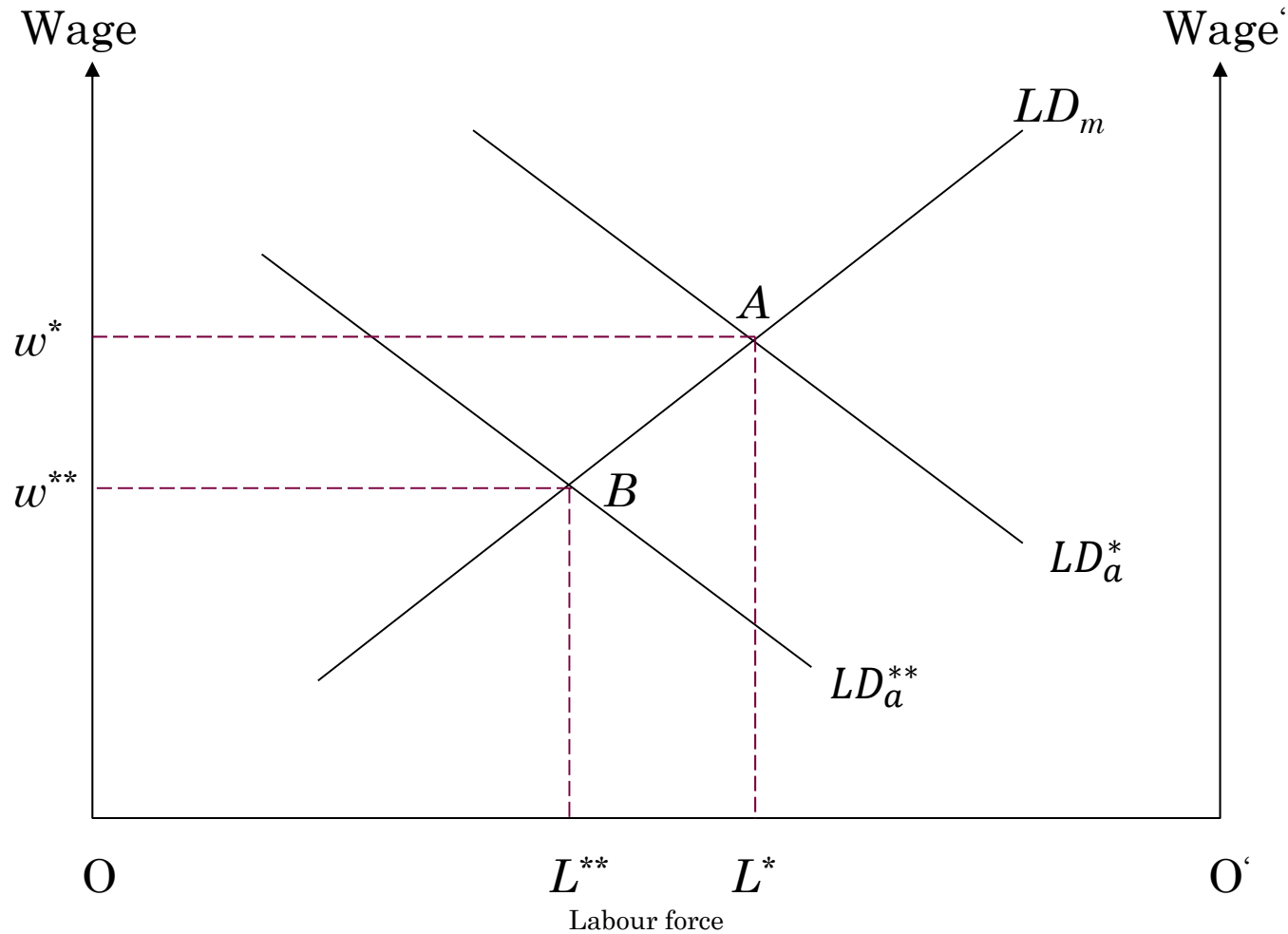
**Figure 52: Anglo-American grain price differentials, 1870–1913**



Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 52.



**Figure 53: Effect of repeal of corn laws on wages**



Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 80.

**Figure 54: European Tariffs, 1875–1913**

| Manufacturing  |                   |                       |                       |                    |                    |
|----------------|-------------------|-----------------------|-----------------------|--------------------|--------------------|
| Country        | 1875<br>(percent) | 1913 (1)<br>(percent) | 1913 (2)<br>(percent) | 1913 (3)<br>(rank) | 1913 (4)<br>(rank) |
| Belgium        | 9–10              | 9                     | 9                     | 11                 | 11                 |
| Denmark        | 15–20             | 14                    | NA                    | 16                 | 14                 |
| France         | 12–15             | 20                    | 21                    | 12                 | 12                 |
| Germany        | 4–6               | 13                    | 13                    | 6                  | 3                  |
| Italy          | 8–10              | 18                    | 20                    | 15                 | 17                 |
| Norway         | 2–4               | NA                    | NA                    | 8                  | 8                  |
| Portugal       | 20–25             | NA                    | NA                    | 14                 | 13                 |
| Spain          | 15–20             | 41                    | 34                    | 18                 | 18                 |
| Sweden         | 3–5               | 20                    | 25                    | 5                  | 6                  |
| Switzerland    | 4–6               | 9                     | 8                     | 3                  | 7                  |
| Netherlands    | 3–5               | 4                     | NA                    | 1                  | 1                  |
| United Kingdom | 0                 | 0                     | 0                     | 4                  | 5                  |

| Agriculture    |                             |  |  |
|----------------|-----------------------------|--|--|
| Country        | Wheat,<br>1913<br>(percent) | All agriculture,<br>1913 (1)<br>(rank) | All agriculture,<br>1913 (2)<br>(rank) |
| Belgium        | 0                           | 8                                      | 7                                      |
| Denmark        | 0                           | 1                                      | 1                                      |
| France         | 38                          | 10                                     | 12                                     |
| Germany        | 36                          | 6                                      | 6                                      |
| Italy          | 40                          | 12                                     | 16                                     |
| Norway         | 4                           | 16                                     | 13                                     |
| Portugal       | Prohibitive                 | 18                                     | 18                                     |
| Spain          | 43                          | 14                                     | 17                                     |
| Sweden         | 28                          | 7                                      | 8                                      |
| Switzerland    | 2                           | 17                                     | 14                                     |
| Netherlands    | 0                           | 3                                      | 3                                      |
| United Kingdom | 0                           | 4                                      | 2                                      |

Source: O'Rourke and Williamson (1997, table 8, 178–179).

Note: Manufacturing 1875: average levels of duties on manufactured products in 1875, from Bairoch (1989, table 5, 42).

Manufacturing 1913 (1): League of Nations estimate, as reported in Bairoch (1989, table 9, 76).

Manufacturing 1913 (2): Liepmann (1938) estimate, as reported in Bairoch (1989, table 9, 76).

Manufacturing 1913 (3): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 104).

Manufacturing 1913 (4): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 105).

Wheat 1913: Levels of duties on wheat, calculated by Bairoch (1989, table 9, 76).

Agriculture 1913 (1): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 104).

Agriculture 1913 (2): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 105).

Overall 1913 (1): Import duties as percentage of special total imports (1909–1913), calculated by Bairoch (1989, table 9, 76).

Overall 1913 (2): League of Nations estimate, as reported in Bairoch (1989, table 9, 76).

Overall 1913 (3): Liepmann (1938) estimate, as reported in Bairoch (1989, table 9, 76).

Overall 1913 (4): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 8, 107).

Overall 1913 (5): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 8, 107).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 98.

**Figure 54: European Tariffs, 1875–1913**

| Country        | Overall, 1913 (1) (percent) | Overall, 1913 (2) (percent) | Overall, 1913 (3) (percent) | Overall, 1913 (4) (rank) | Overall, 1913 (5) (rank) |
|----------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|--------------------------|
| Belgium        | 15.8                        | 6                           | 14                          | 10                       | 10                       |
| Denmark        | 5.8                         | 9                           | NA                          | 2                        | 4                        |
| France         | 8.7                         | 18                          | 24                          | 14                       | 14                       |
| Germany        | 7.9                         | 12                          | 17                          | 8                        | 8                        |
| Italy          | 9.7                         | 17                          | 25                          | 16                       | 17                       |
| Norway         | 11.4                        | NA                          | NA                          | 11                       | 12                       |
| Portugal       | 23.7                        | NA                          | NA                          | 17                       | 15                       |
| Spain          | 14.3                        | 33                          | 37                          | 18                       | 18                       |
| Sweden         | 9                           | 16                          | 28                          | 7                        | 7                        |
| Switzerland    | 4.4                         | 7                           | 11                          | 9                        | 9                        |
| Netherlands    | 0.4                         | 3                           | NA                          | 1                        | 1                        |
| United Kingdom | 5.6                         | 0                           | 0                           | 3                        | 3                        |

Source: O'Rourke and Williamson (1997, table 8, 178–179).

Note: Manufacturing 1875: average levels of duties on manufactured products in 1875, from Bairoch (1989, table 5, 42).

Manufacturing 1913 (1): League of Nations estimate, as reported in Bairoch (1989, table 9, 76).

Manufacturing 1913 (2): Liepmann (1938) estimate, as reported in Bairoch (1989, table 9, 76).

Manufacturing 1913 (3): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 104).

Manufacturing 1913 (4): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 105).

Wheat 1913: Levels of duties on wheat, calculated by Bairoch (1989, table 9, 76).

Agriculture 1913 (1): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 104).

Agriculture 1913 (2): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 6, 105).

Overall 1913 (1): Import duties as percentage of special total imports (1909–1913), calculated by Bairoch (1989, table 9, 76).

Overall 1913 (2): League of Nations estimate, as reported in Bairoch (1989, table 9, 76).

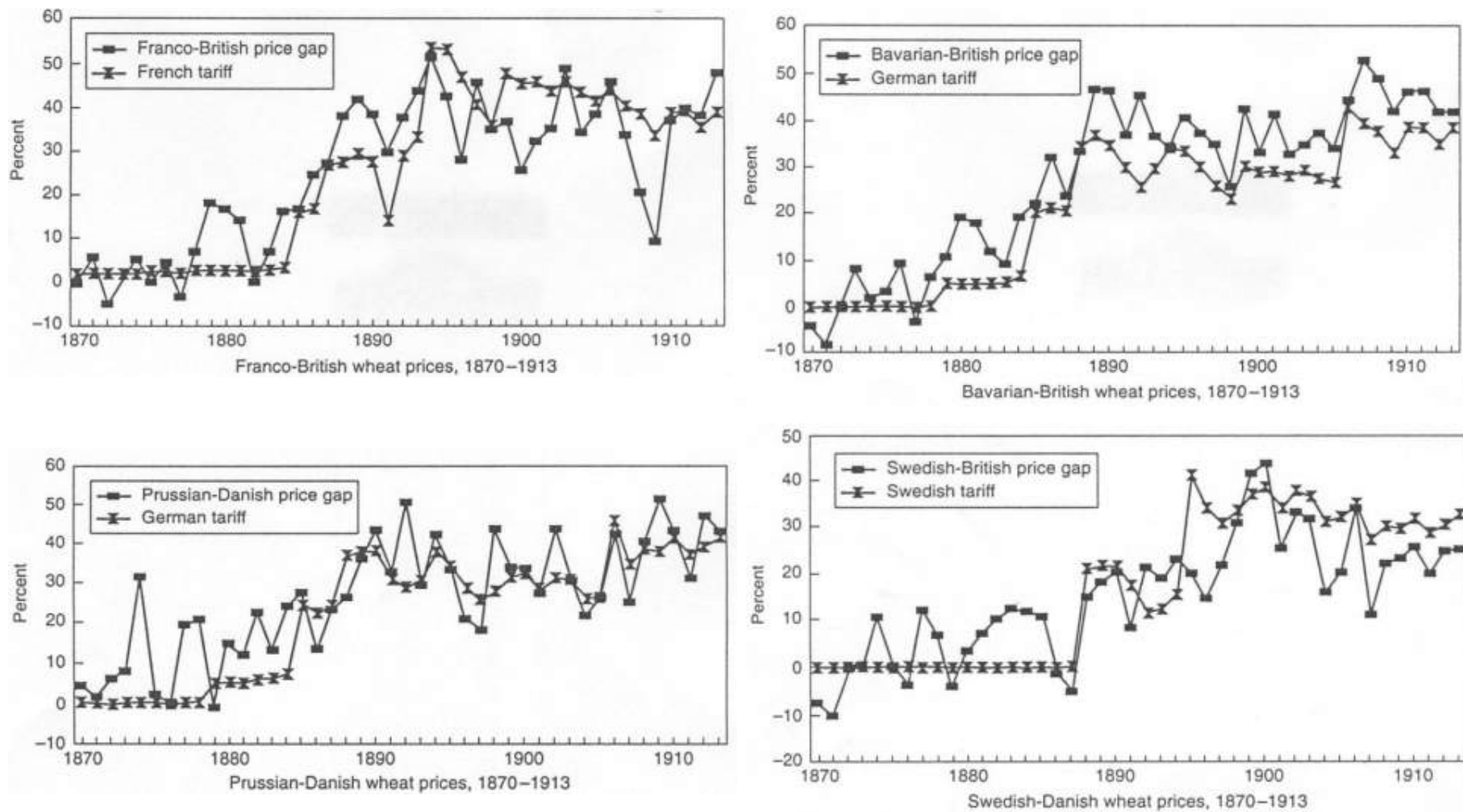
Overall 1913 (3): Liepmann (1938) estimate, as reported in Bairoch (1989, table 9, 76).

Overall 1913 (4): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 8, 107).

Overall 1913 (5): Rank among eighteen countries (1 = least protectionist, 18 = most protectionist), based on the adjusted trade intensity ratios in Estevadeordal (1997, table 8, 107).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 98.

**Figure 55: Tariffs and domestic prices: wheat, 1870–1913**



Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 102–103.

## Figure 56: International grain price spreads, 1870 and 1913 (in percent)

Table 6.3  
International Grain Price Spreads, 1870 and 1913 (in percent)

| Grain  | Countries             | 1870  | 1913  |
|--|-----------------------|-------|-------|
| <b>A. Transatlantic price gaps</b>             |                       |       |       |
| Wheat  | Britain–United States | 54.1  | –0.8  |
| Barley   | Britain–United States | 45.9  | 10.9  |
| Oats   | Britain–United States | 138   | 28.1  |
| <b>B. U.S.-Scandinavian price gaps</b>         |                       |       |       |
| Wheat  | Denmark–United States | 28.9  | –4.6  |
| Barley   | Denmark–United States | 0.4   | 11.4  |
| Oats   | Denmark–United States | 60.1  | 19.4  |
| Rye  | Denmark–United States | 44.7  | 5.3   |
| Wheat  | Sweden–United States  | 18.7  | 17.3  |
| Barley   | Sweden–United States  | –6    | 17.6  |
| Oats   | Sweden–United States  | 53.4  | 22.3  |
| Rye  | Sweden–United States  | 39.2  | 26.1  |
| <b>C. Continental European–U.S. price gaps</b> |                       |       |       |
| Wheat  | France–United States  | 43.8  | 29.3  |
| Barley   | France–United States  | 6.1   | 15.4  |
| Oats   | France–United States  | 118   | 61    |
| Rye  | France–United States  | 61.1  | 16.9  |
| Wheat  | Bavaria–United States | 44    | 37.1  |
| Barley   | Bavaria–United States | 5.4   | 43.6  |
| Oats   | Bavaria–United States | 82.6  | 106.3 |
| Rye  | Bavaria–United States | 66.5  | 48.5  |
| <b>D. Western European–Odessa price gaps</b>   |                       |       |       |
| Wheat  | Britain–Odessa        | 37.9  | 6.5   |
| Wheat  | Denmark–Odessa        | 15.7  | 4.9   |
| Wheat  | Sweden–Odessa         | 9.4   | 35.9  |
| Wheat  | France–Odessa         | 28    | 48.8  |
| Wheat  | Bavaria–Odessa        | 25.3  | 43.8  |
| <b>E. Intra-European price gaps</b>            |                       |       |       |
| Wheat  | Britain–France        | 5.8   | –23.5 |
| Wheat  | Denmark–France        | –11.2 | –26.2 |
| Wheat  | Sweden–France         | –17.1 | –9.2  |
| Wheat  | Bavaria–France        | 0.6   | 7.1   |

Source: O'Rourke (1997a, table 1, 782).

Note: Predicted values from regressions of price gaps on time and time squared. Underlying price data as described in O'Rourke (1997a, appendix 1).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 104.

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## **GLOBALIZATION: Past, Present & Future**

- 3 Globalization I (1820–1990)
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    - 3.1.5 International Capital Movements (Figure 57–64)

## Figure 57: Foreign investment as percentage of domestic savings

Foreign Investment as Percentage of Domestic Savings (at current prices)

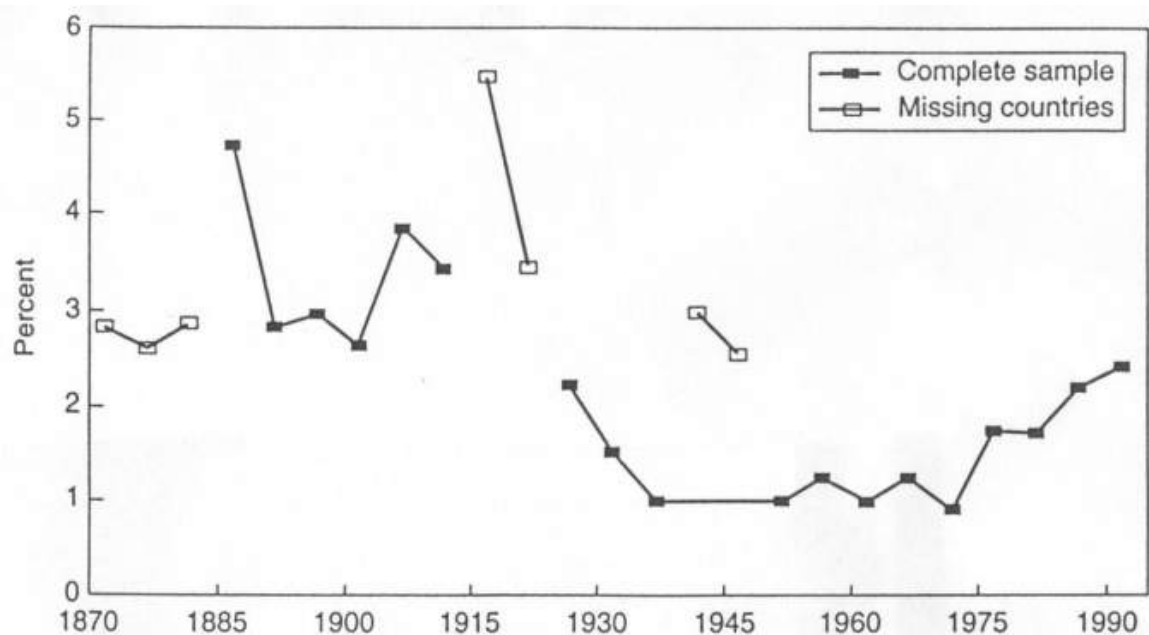
|           | United Kingdom | Germany | France |
|-----------|----------------|---------|--------|
| 1850–1854 | (12.3)         | NA      | (20.1) |
| 1855–1859 | (30.2)         | NA      | 21.6   |
| 1860–1864 | (21.5)         | (1.4)   | 24.8   |
| 1865–1869 | (32.2)         | (3.4)   | 25.9   |
| 1870–1874 | 38.0           | (7.3)   | 29.0   |
| 1875–1879 | 16.2           | (13.1)  | 18.7   |
| 1880–1884 | 33.2           | 18.3    | -1.1   |
| 1885–1889 | 46.5           | 19.3    | 11.3   |
| 1890–1894 | 35.3           | 12.6    | 10.0   |
| 1895–1899 | 20.7           | 11.5    | 23.0   |
| 1900–1904 | 11.2           | 9.0     | 16.1   |
| 1905–1909 | 42.7           | 7.6     | 22.0   |
| 1910–1913 | 53.3           | 7.3     | 12.5   |

Source: Jones and Obstfeld (1997). French numbers amended using Lévy-Leboyer and Bourguignon (1990).

Note: Numbers in parentheses are calculated using original current account data rather than the gold-adjusted data.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 209.

**Figure 58: Extent of capital flows since 1870**



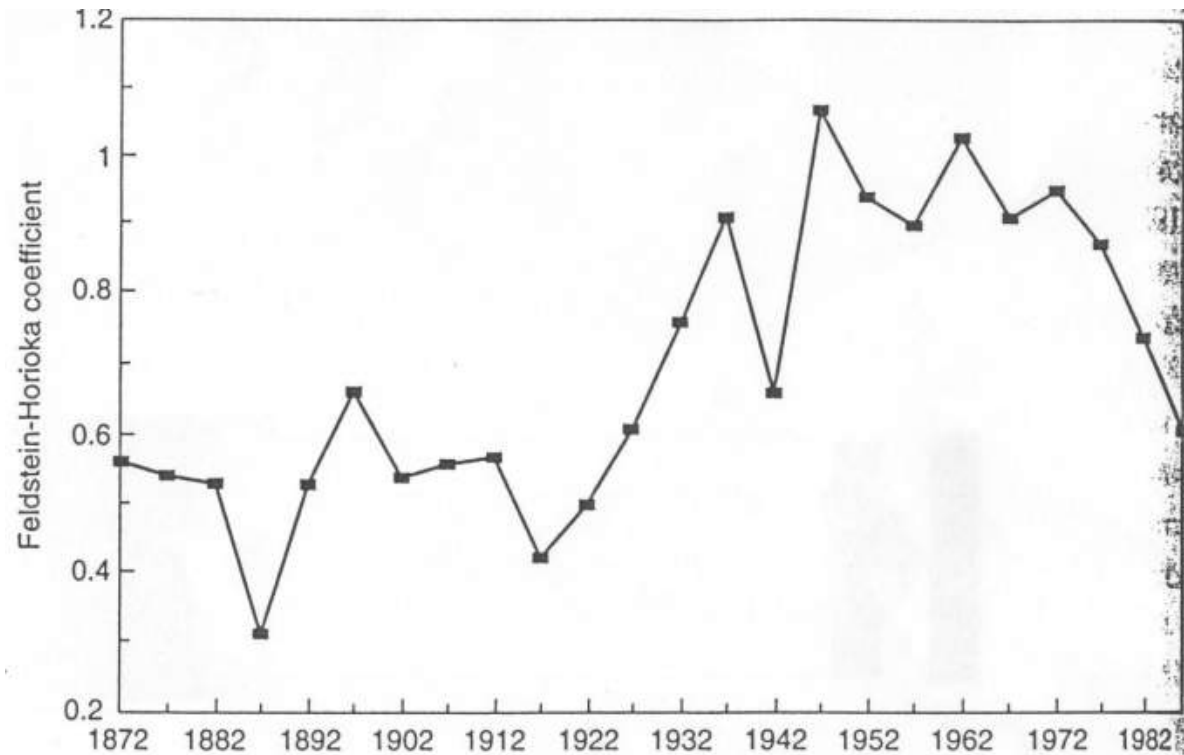
**Figure 11.2**

Extent of capital flows since 1870: mean absolute value of current account, fourteen countries, five-yearly averages (percent of GDP). Source: Based on Obstfeld and Taylor (1997). The gold-adjusted data in Jones and Obstfeld (1997) are used where possible; other data kindly supplied by Alan Taylor. Note: Countries are Argentina, Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Norway, Spain, Sweden, United Kingdom, and United States. Data for first three periods exclude Japan and Argentina. French numbers amended using Lévy-Leboyer and Bourguignon (1990).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 213.



**Figure 59: Feldstein-Horioka-correlation**



**Figure 11.3**

Feldstein-Horioka correlation in history. Note: The Feldstein-Horioka coefficient is the slope coefficient in a regression of investment shares on savings shares. Regressions are for a cross-section of countries in each five-year period. Source: Taylor (1996), revised 1997 version.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 216.

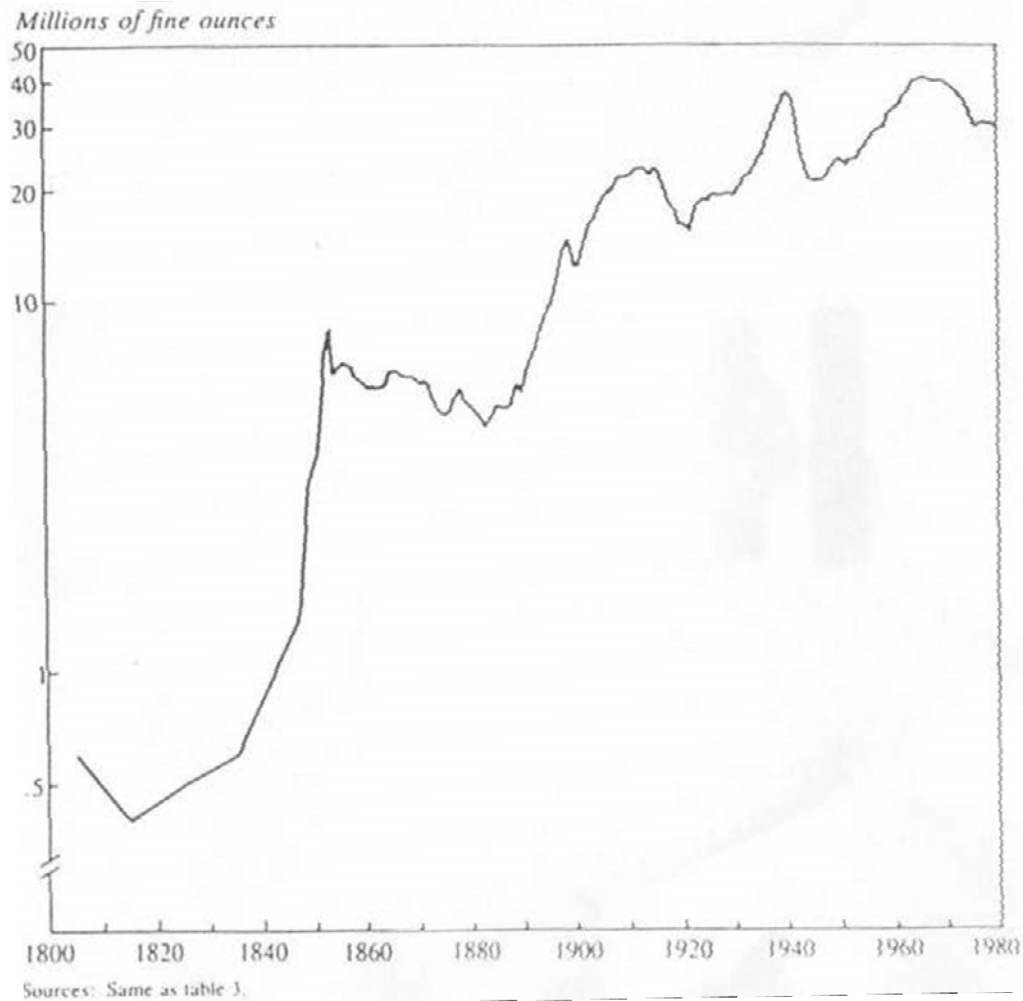
**Figure 60: British overseas investment, 1907–1913**

| British Overseas Investment, 1907–1913                    |                       |              |
|---|-----------------------|--------------|
| Area  | Amount<br>(£ million) | Share<br>(%) |
| New World empire  | 319                   | 28           |
| Canada and Newfoundland                                   | 254                   |              |
| Australasia   | 65                    |              |
| United States   | 164                   | 15           |
| Latin America   | 268                   | 24           |
| Argentina   | 118                   |              |
| Brazil  | 88                    |              |
| Mexico  | 34                    |              |
| Chile   | 28                    |              |
| <i>New World empire, United States, and Latin America</i> |                       | 67           |
| Other empire  | 163                   | 14           |
| China and Japan   | 50                    | 4            |
| <i>Other empire, and China and Japan</i>                  |                       | 18           |
| Europe  | 49                    | 4            |
| Russia  | 46                    | 4            |
| <i>Europe and Russia</i>                                  |                       | 8            |
| Miscellaneous foreign                                     | 68                    | 6            |
| Total   | 1,127                 | 100          |

Source: Taylor and Williamson (1994, table 1, 350).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 211.

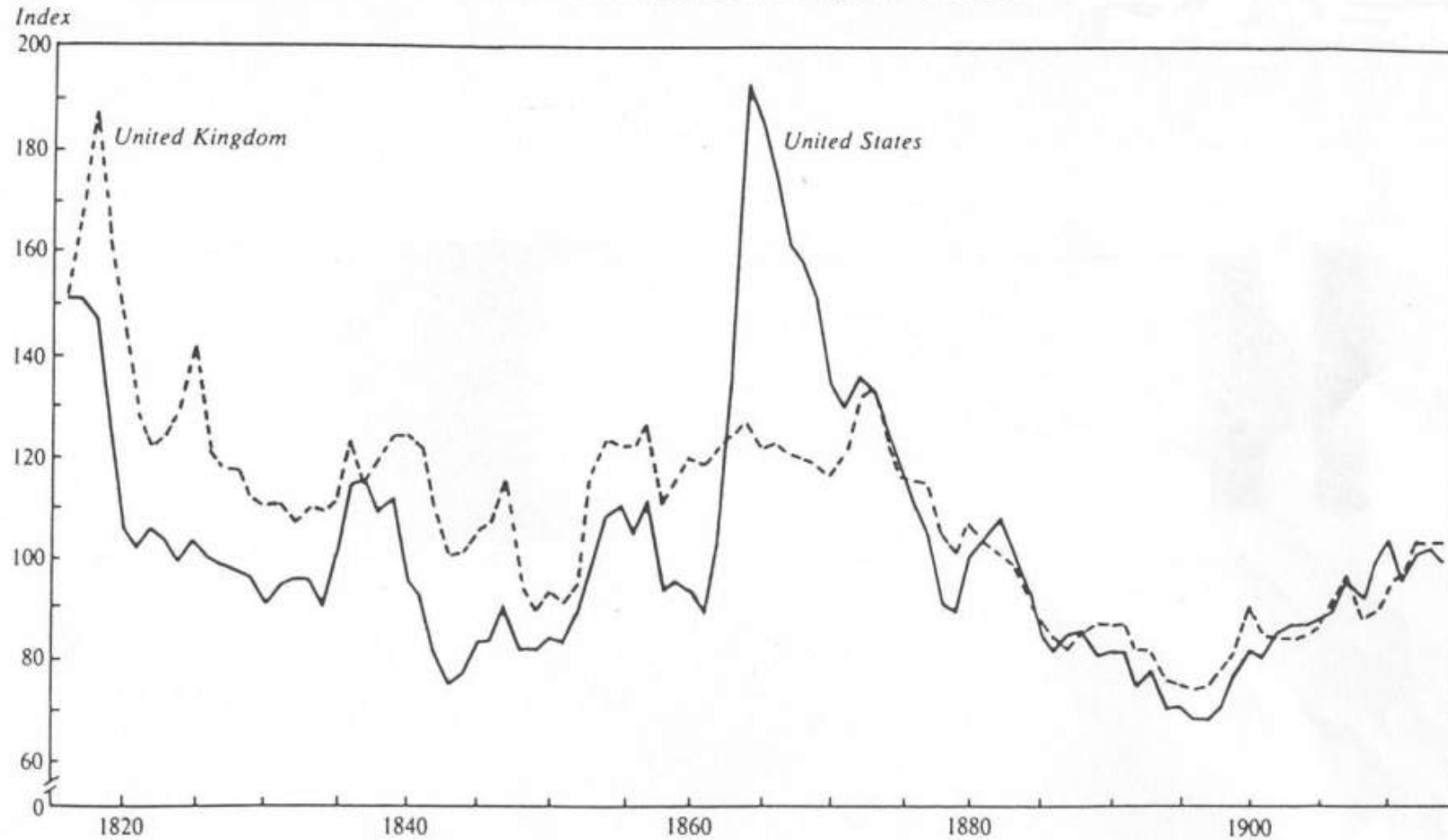
**Figure 61: World gold production, 1805–1980**



Source: Cooper (1982). *The Gold Standard: Historical Facts and Future Prospects. Brooking Papers on Economic Activity 1*. p. 15.

## Figure 62: Wholesale price indexes, USA and UK, 1816–1914

Figure 1. Wholesale Price Indexes in the United States and the United Kingdom, 1816–1914\*



Source: Cooper (1982). *The Gold Standard: Historical Facts and Future Prospects. Brooking Papers on Economic Activity 1*. p. 8.

## Figure 63: Wholesale price indexes : USA, UK, GER, FR, 1816–1913

Table 2. Wholesale Price Indexes for the United States, the United Kingdom, Germany, and France, Selected Years, 1816–1913

| <i>Year and period</i> | <i>United States</i> | <i>United Kingdom</i> | <i>Germany</i> | <i>France</i> |
|------------------------|----------------------|-----------------------|----------------|---------------|
| Indexes (1913 = 100)   |                      |                       |                |               |
| 1816                   | 150                  | 147                   | 94             | 143           |
| 1849                   | 82                   | 86                    | 67             | 94            |
| 1873                   | 137                  | 130                   | 114            | 122           |
| 1896                   | 64                   | 72                    | 69             | 69            |
| 1913                   | 100                  | 100                   | 100            | 100           |
| Changes (in percent)   |                      |                       |                |               |
| 1816–49                | –45                  | –41                   | –29            | –33           |
| 1849–73                | 67                   | 51                    | 70             | 30            |
| 1873–96                | –53                  | –45                   | –40            | –45           |
| 1896–1913              | 56                   | 39                    | 45             | 45            |

Sources: Data for the United States and the United Kingdom are from Warren and Pearson, *Gold and Prices*, pp. 87–88; data for Germany and France are from B. R. Mitchell, *European Historical Statistics, 1750–1970* (Columbia University Press, 1975), pp. 736–39.

Source: Cooper (1982). *The Gold Standard: Historical Facts and Future Prospects. Brooking Papers on Economic Activity 1*. p. 9.

## Figure 64: US wholesale prices, long-term interest rates, and long-term real interest rates for a 20-year holding period, 1873–1914



Source: Cooper (1982). *The Gold Standard: Historical Facts and Future Prospects*. *Brookings Papers on Economic Activity* 1. p. 12.

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- 3 Globalization I (1820–1990)
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    - 3.1.6 **International Migration** (Figure 65–74)

## Figure 65: Migration rates by decade

Table 7.1  
Migration Rates by Decade (per 1,000 mean population)

| Country                            | 1851–1860 | 1861–1870 | 1871–1880 | 1881–1890 | 1891–1900 | 1901–1910 |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>European emigration rates</b>   |           |           |           |           |           |           |
| Austria-Hungary                    |           |           | 2.9       | 10.6      | 16.1      | 47.6      |
| Belgium                            |           |           |           | 8.6       | 3.5       | 6.1       |
| British Isles                      | 58.0      | 51.8      | 50.4      | 70.2      | 43.8      | 65.3      |
| Denmark                            |           |           | 20.6      | 39.4      | 22.3      | 28.2      |
| Finland                            |           |           |           | 13.2      | 23.2      | 54.5      |
| France                             | 1.1       | 1.2       | 1.5       | 3.1       | 1.3       | 1.4       |
| Germany                            |           |           | 14.7      | 28.7      | 10.1      | 4.5       |
| Ireland                            |           |           | 66.1      | 141.7     | 88.5      | 69.8      |
| Italy                              |           |           | 10.5      | 33.6      | 50.2      | 107.7     |
| Netherlands                        | 5.0       | 5.9       | 4.6       | 12.3      | 5.0       | 5.1       |
| Norway                             | 24.2      | 57.6      | 47.3      | 95.2      | 44.9      | 83.3      |
| Portugal                           |           | 19.0      | 28.9      | 38.0      | 50.8      | 56.9      |
| Spain                              |           |           |           | 36.2      | 43.8      | 56.6      |
| Sweden                             | 4.6       | 30.5      | 23.5      | 70.1      | 41.2      | 42.0      |
| Switzerland                        |           |           | 13.0      | 32.0      | 14.1      | 13.9      |
| <b>New World immigration rates</b> |           |           |           |           |           |           |
| Argentina                          | 38.5      | 99.1      | 117.0     | 221.7     | 163.9     | 291.8     |
| Brazil                             |           |           | 20.4      | 41.1      | 72.3      | 33.8      |
| Canada                             | 99.2      | 83.2      | 54.8      | 78.4      | 48.8      | 167.6     |
| Cuba                               |           |           |           |           |           | 118.4     |
| United States                      | 92.8      | 64.9      | 54.6      | 85.8      | 53.0      | 102.0     |

Source: Hatton and Williamson (1998, table 2.1) based on Ferenczi and Willcox (1929, 200–201).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 122.



**Figure 66: Internationally comparable wage rates and wage ratios**

Internationally Comparable Wage Rates and Wage Ratios

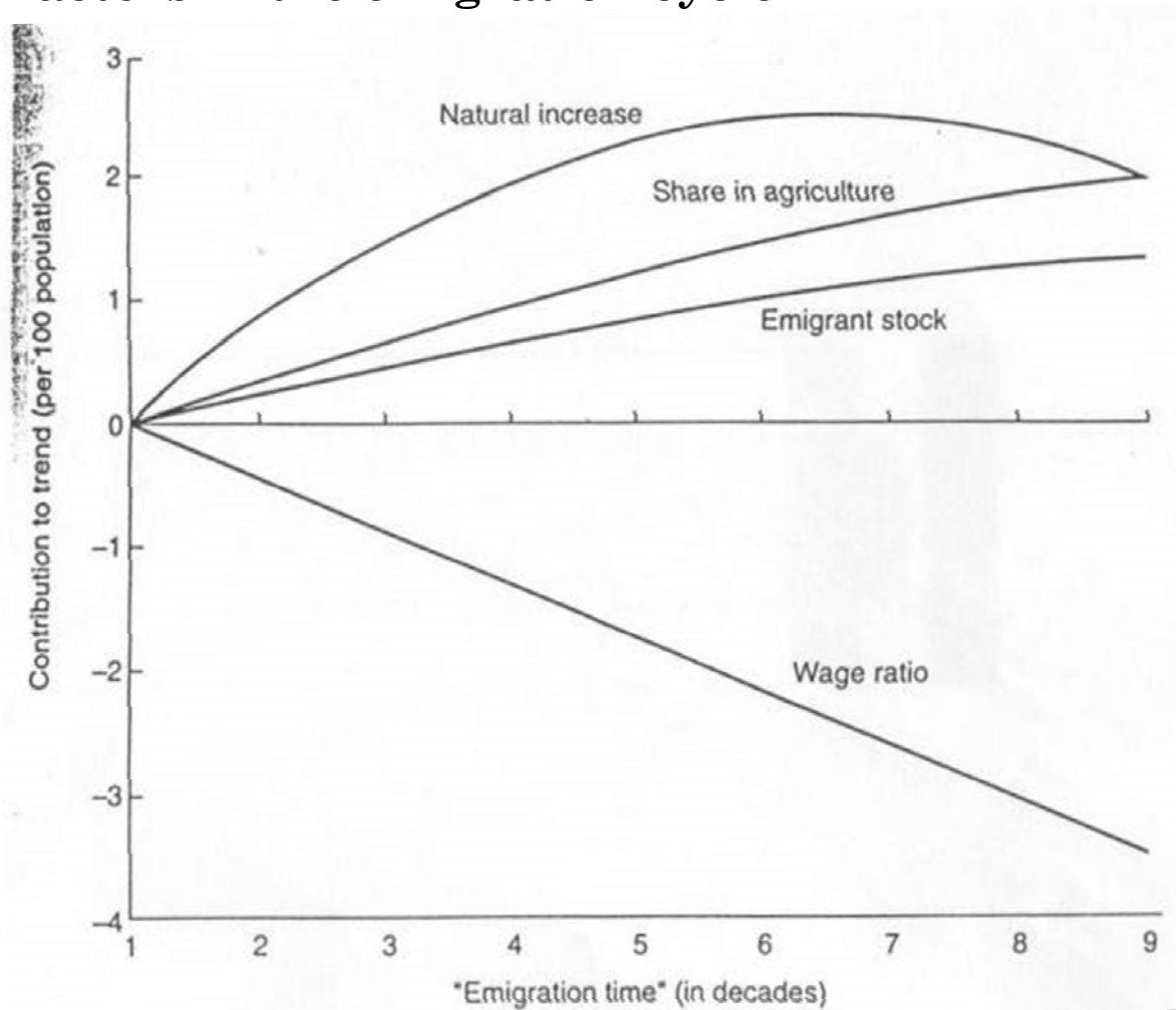
| Country       |   | 1850–1859 | 1860–1869 | 1870–1879 | 1880–1889 | 1890–1899 | 1900–1913 |
|---------------|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Belgium       | A | 45.5      | 52.8      | 64.2      | 73.9      | 85.6      | 86.9      |
|               | B | —         | 118.2     | 110.7     | 109.0     | 115.9     | 109.9     |
| Denmark       | A | —         | —         | 41.0      | 52.6      | 70.6      | 94.2      |
|               | B | —         | —         | 34.6      | 40.1      | 47.9      | 56.8      |
| France        | A | 44.3      | 46.2      | 52.0      | 60.4      | 65.1      | 71.2      |
|               | B | —         | —         | 45.6      | 45.4      | 38.3      | 42.9      |
| Germany       | A | 52.5      | 55.4      | 62.3      | 68.5      | 78.1      | 85.9      |
|               | B | —         | —         | 54.1      | 53.4      | 53.9      | 52.7      |
| Great Britain | A | 59.4      | 59.0      | 70.3      | 83.5      | 99.4      | 98.2      |
|               | B | —         | —         | 59.6      | 63.0      | 66.0      | 59.4      |
| Ireland       | A | 44.4      | 43.6      | 51.7      | 64.5      | 87.3      | 90.9      |
|               | B | —         | —         | 45.4      | 50.0      | 60.2      | 56.2      |
| Italy         | A | —         | —         | 26.2      | 34.2      | 37.4      | 46.4      |
|               | B | —         | —         | 37.8      | 42.6      | 40.7      | 45.5      |
| Netherlands   | A | 45.7      | 48.9      | 62.8      | 79.9      | 88.1      | 77.8      |
|               | B | —         | 52.5      | 53.0      | 60.9      | 59.8      | 46.9      |
| Norway        | A | 27.2      | 30.7      | 40.1      | 45.8      | 67.5      | 83.8      |
|               | B | 26.0      | 32.9      | 25.0      | 34.9      | 45.8      | 50.5      |
| Portugal      | A | 18.8      | 19.6      | 20.1      | 27.4      | 23.3      | 24.6      |
|               | B | —         | 36.2      | 33.7      | 36.1      | 25.1      | 23.9      |
| Spain         | A | 30.4      | 28.0      | 27.6      | 25.5      | 26.8      | 30.4      |
|               | B | —         | 56.3      | 52.1      | 36.6      | 30.9      | 31.7      |
| Sweden        | A | 24.2      | 34.6      | 39.0      | 51.1      | 70.7      | 92.2      |
|               | B | —         | —         | 36.7      | 43.2      | 52.3      | 59.9      |

Source: Based on data in Williamson (1995), revised in O'Rourke and Williamson (1997).

Note: A = real wage rate, Great Britain 1905 = 100; B = real wage ratio, home to receiving countries.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 126.

Figure 67: Factors in the emigration cycle



Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 137.

**Figure 68: Net migration rates and cumulative impact, 1870–1910**

Summary Data: Net Migration Rates and Cumulative Impact, 1870–1910

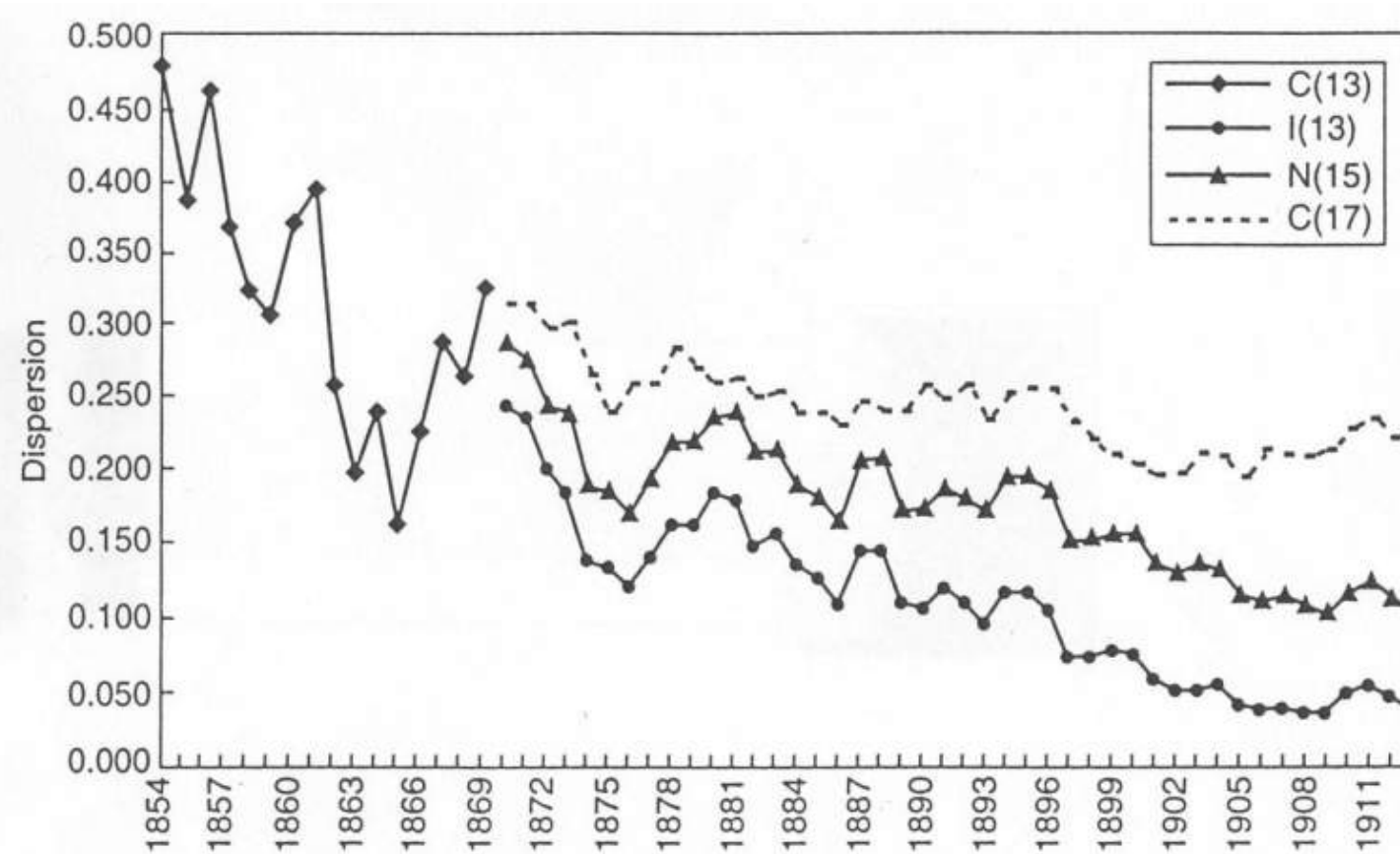
|               | Persons                                |   | Labor force                            |  | Impact of migration                                     |   |   |
|---------------|--|---|--|--|---|---|---|
|               | Adjusted net migration rate, 1870–1910 | Adjusted cumulative population impact, 1910 | Adjusted net migration rate, 1870–1910 | Adjusted cumulative labor force impact, 1910 | On real wages (actual versus counterfactual), 1870–1910 | On GDP/capita (actual versus counterfactual), 1870–1910 | On GDP/worker (actual versus counterfactual), 1870–1910 |
| Argentina     | 11.74                                  | 60%   | 15.50                                  | 86%  | -21.5%  | -8.2%   | -21.0%  |
| Australia     | 6.61                                   | 30  | 8.73                                   | 42   | -14.6   | -6.8  | -14.4   |
| Belgium       | 1.67                                   | 7   | 2.20                                   | 9  | -4.4  | -3.1  | -5.1  |
| Brazil        | 0.74                                   | 3   | 0.98                                   | 4  | -2.3  | -0.5  | -1.5  |
| Canada        | 6.92                                   | 32  | 9.14                                   | 44   | -15.6   | -7.6  | -15.5   |
| Denmark       | -2.78                                  | -11   | -3.67                                  | -14  | 7.6   | 3.7   | 7.4   |
| France        | -0.10                                  | 0   | -0.13                                  | -1   | 1.4   | 0.2   | 0.3   |
| Germany       | -0.73                                  | -3  | -0.96                                  | -4   | 2.4   | 1.3   | 2.2   |
| Great Britain | -2.25                                  | -9  | -2.97                                  | -11  | 5.6   | 2.8   | 5.8   |
| Ireland       | -11.24                                 | -36   | -14.84                                 | -45  | 31.9  | NA  | NA  |
| Italy         | -9.25                                  | -31   | -12.21                                 | -39  | 28.2  | 14.2  | 28.6  |
| Netherlands   | -0.59                                  | -2  | -0.78                                  | -3   | 2.7   | 1.1   | 1.9   |
| Norway        | -5.25                                  | -19   | -6.93                                  | -24  | 9.7   | 3.1   | 10.4  |
| Portugal      | -1.06                                  | -4  | -1.40                                  | -5   | 4.3   | 0.0   | 0.0   |
| Spain         | -1.16                                  | -5  | -1.53                                  | -6   | 5.9   | 0.0   | 0.0   |
| Sweden        | -4.20                                  | -15   | -5.55                                  | -20  | 7.5   | 2.5   | 8.2   |
| United States | 4.03                                   | 17  | 5.31                                   | 24   | -8.1  | -3.3  | -8.1  |
| New World     | 6.01                                   | 29%   | 7.93                                   | 40%  | -12.4%  | -5.3%   | -12.1%  |
| Old World     | -3.08                                  | -11   | -4.06                                  | -13  | 8.6   | 2.3   | 5.4   |

Source: Taylor and Williamson (1997, tables 1, 3, 4).

Note: Migration rates per thousand per annum. Minus denotes emigration. Taylor and Williamson calculated the difference between real wages, GDP per capita, and GDP per worker in a counterfactual (no-migration) scenario with their actual levels; here we report the difference between actual and counterfactual levels.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 155.

**Figure 69: International real wage dispersion, 1854–1913**



Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 15.

## Figure 70: Irish real wages, 1850–1913



Figure 8.1

Irish real wages, 1850–1913. Source: Boyer, Hatton, and O'Rourke (1994, figure 9.1).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 149.

**Figure 70f: Irish urban wages relative to Britain/USA, 1850–1913**

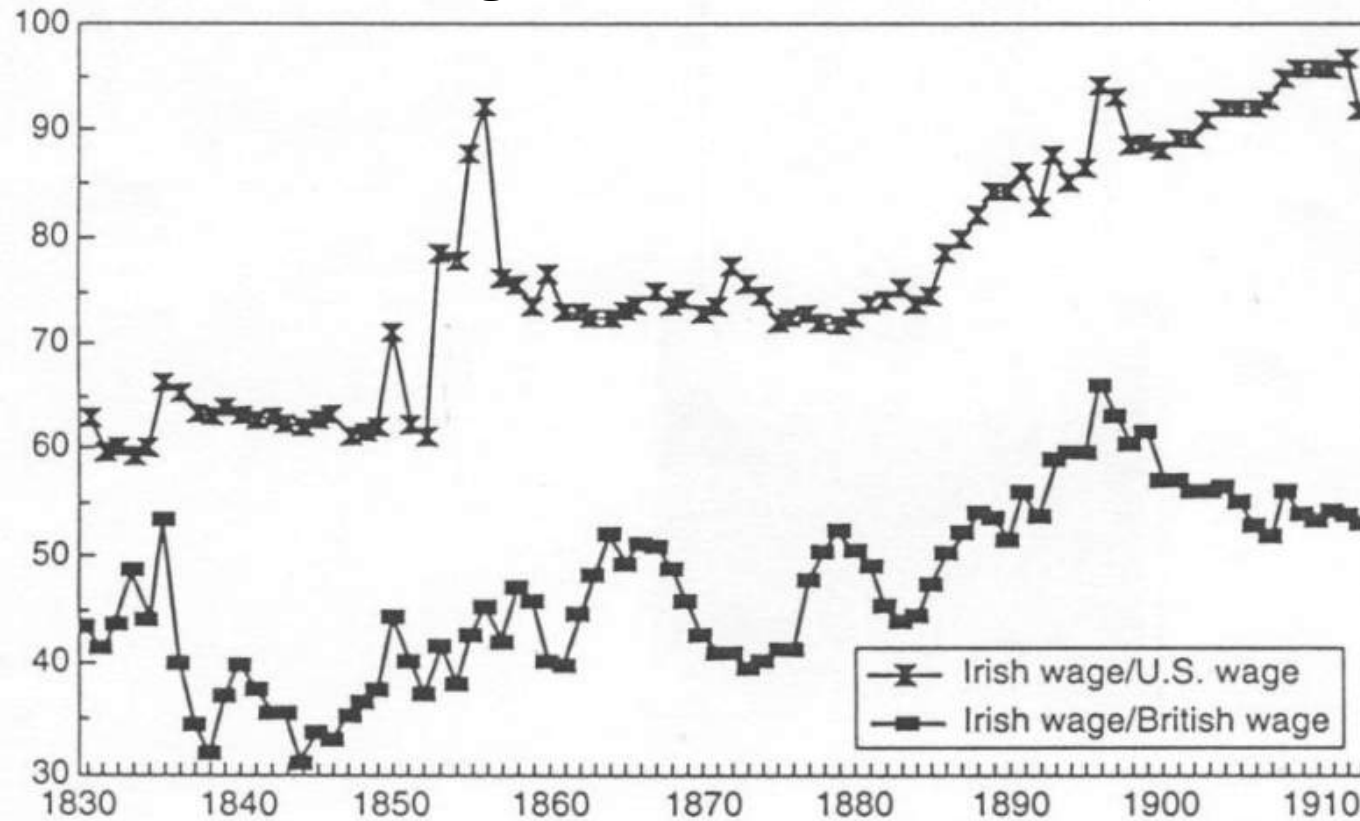
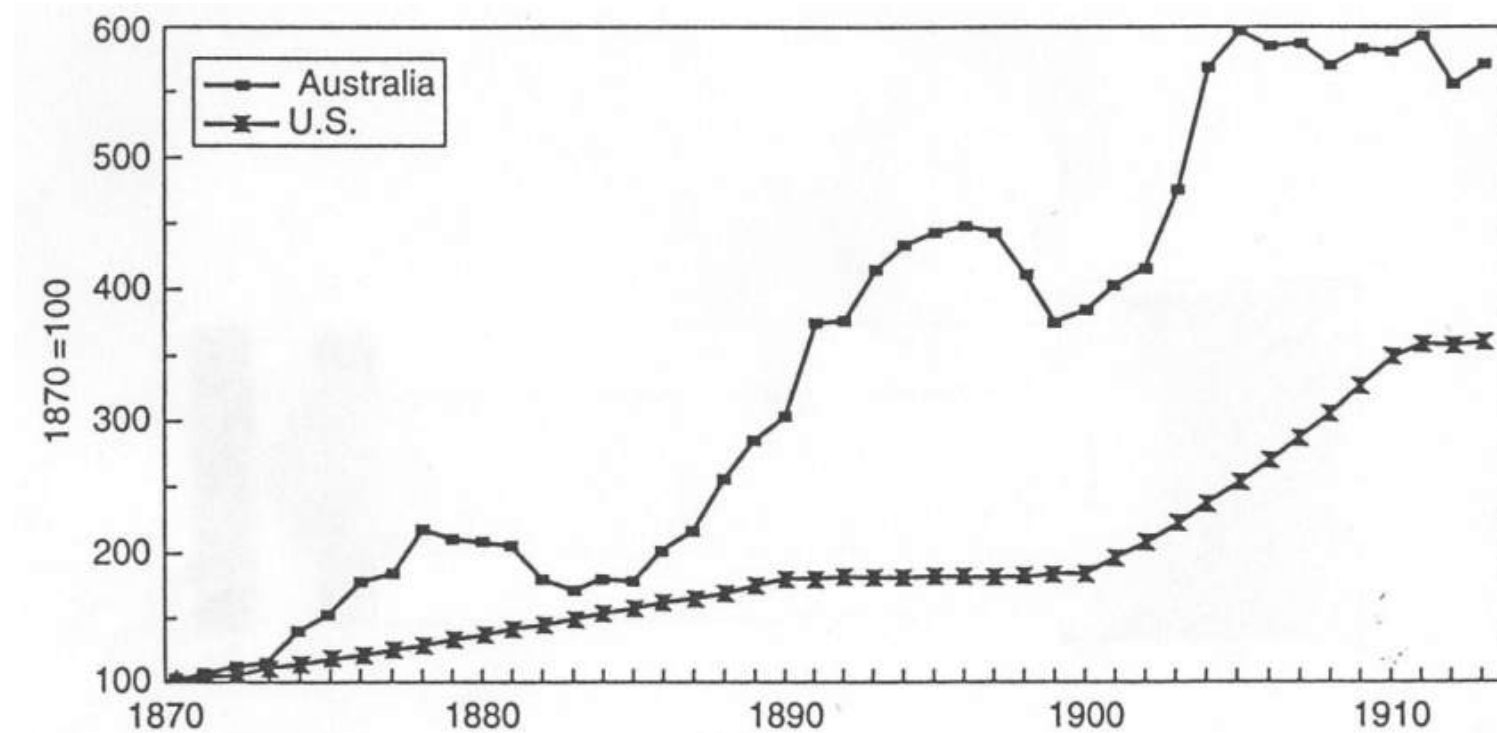


Figure 8.2

Irish urban wages relative to Britain and the United States, 1830–1913. Source: Williamson (1995), revised in O'Rourke and Williamson (1997).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 149.

**Figure 71: Real land prices, New World, 1870–1913**



**Figure 4.1**

Real land prices, 1870–1913, New World. Source: Land price data underlying O'Rourke, Taylor, and Williamson (1996). Land prices are deflated by country-specific consumer prices.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 60.

## Figure 72: Real land prices, free-trading Old World, 1870–1913

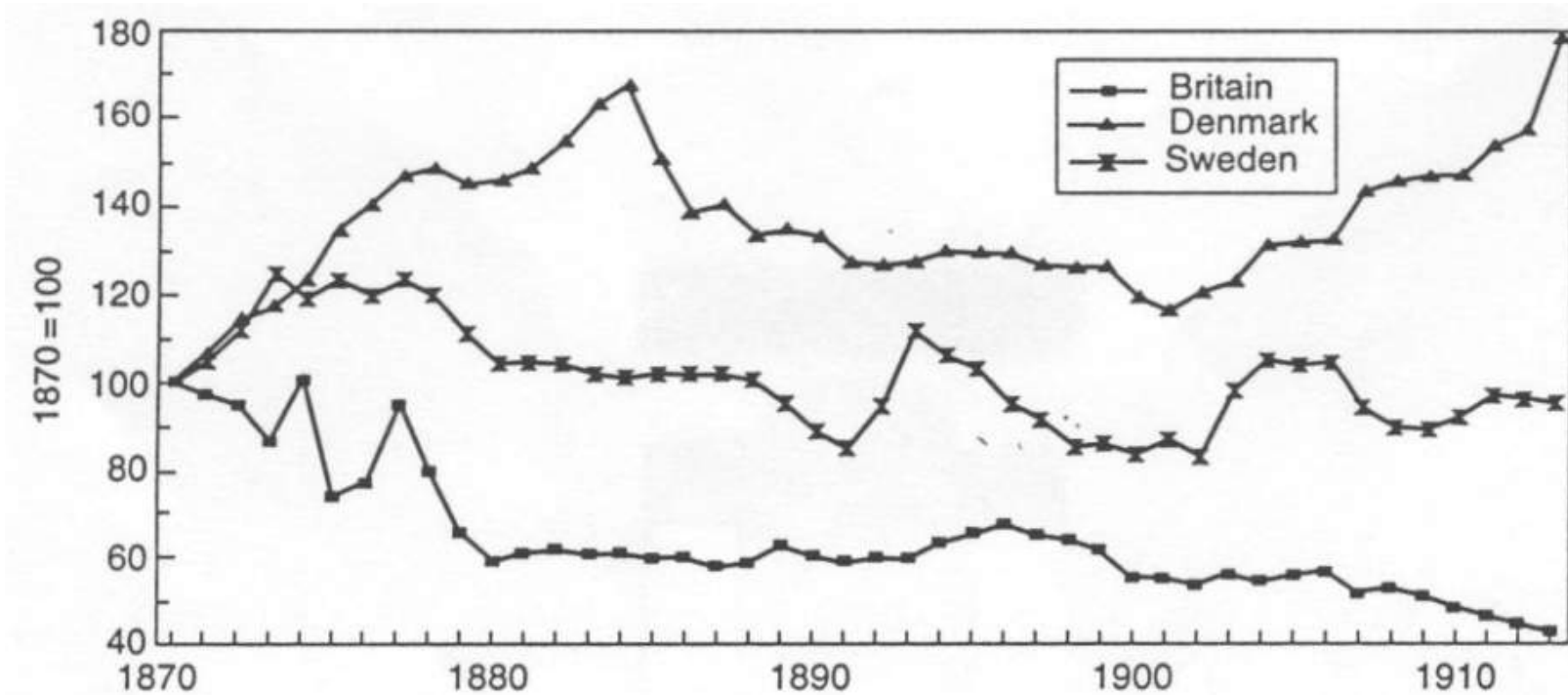


Figure 4.2

Real land prices, 1870–1913, free-trading Old World. Source: Land price data underlying O'Rourke, Taylor, and Williamson (1996). Land prices are deflated by country-specific consumer prices.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 61.



## Figure 72f: Real land prices, protectionist Old World, 1870–1913

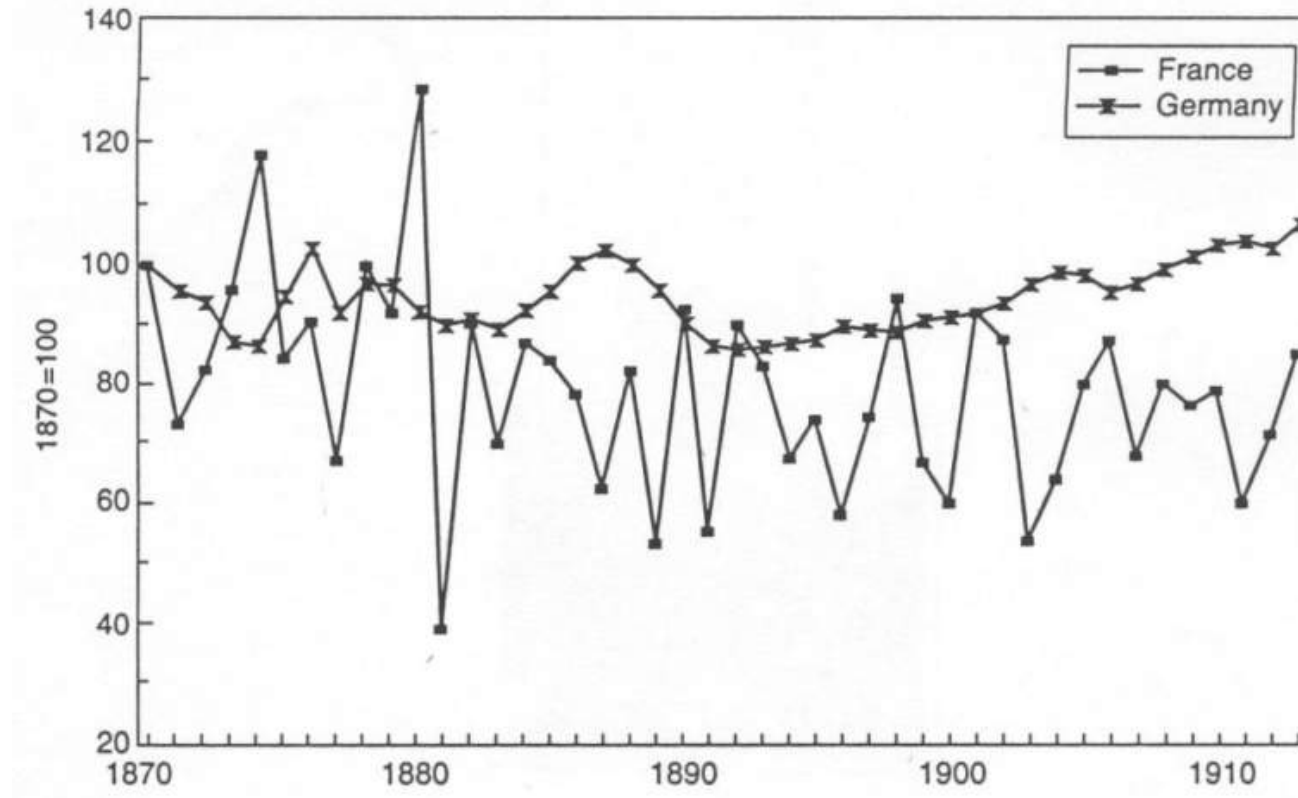
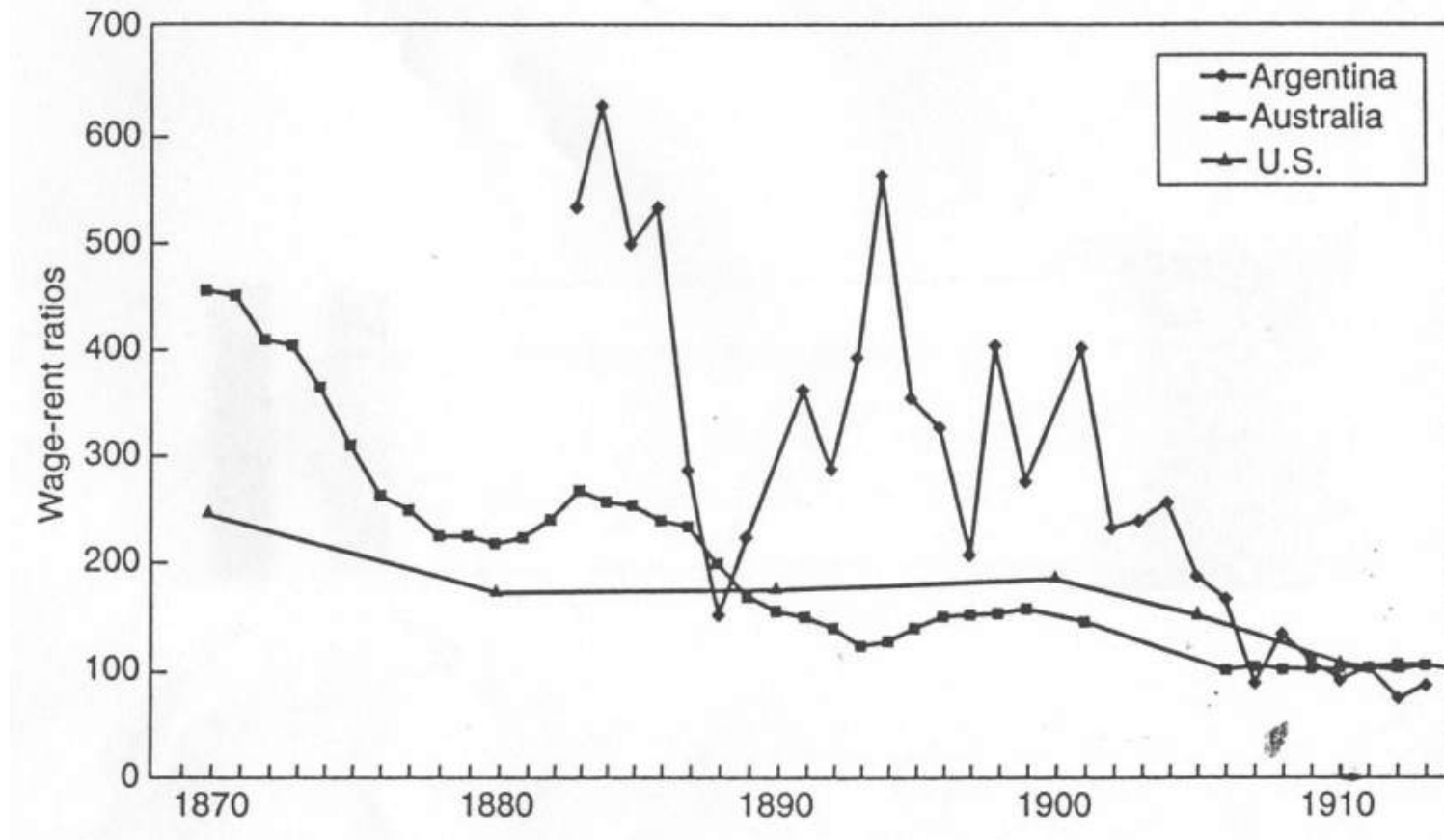


Figure 4.3

Real land prices, 1870–1913, protectionist Old World. Source: Land price data underlying O'Rourke, Taylor, and Williamson (1996). Land prices are deflated by country-specific consumer prices.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 61.

**Figure 73: Wage-rent ratio, New World, 1870–1914 (1911 = 100)**



Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 62.

## Figure 74: Wage-rent ratios, protectionist Old World, 1870–1913

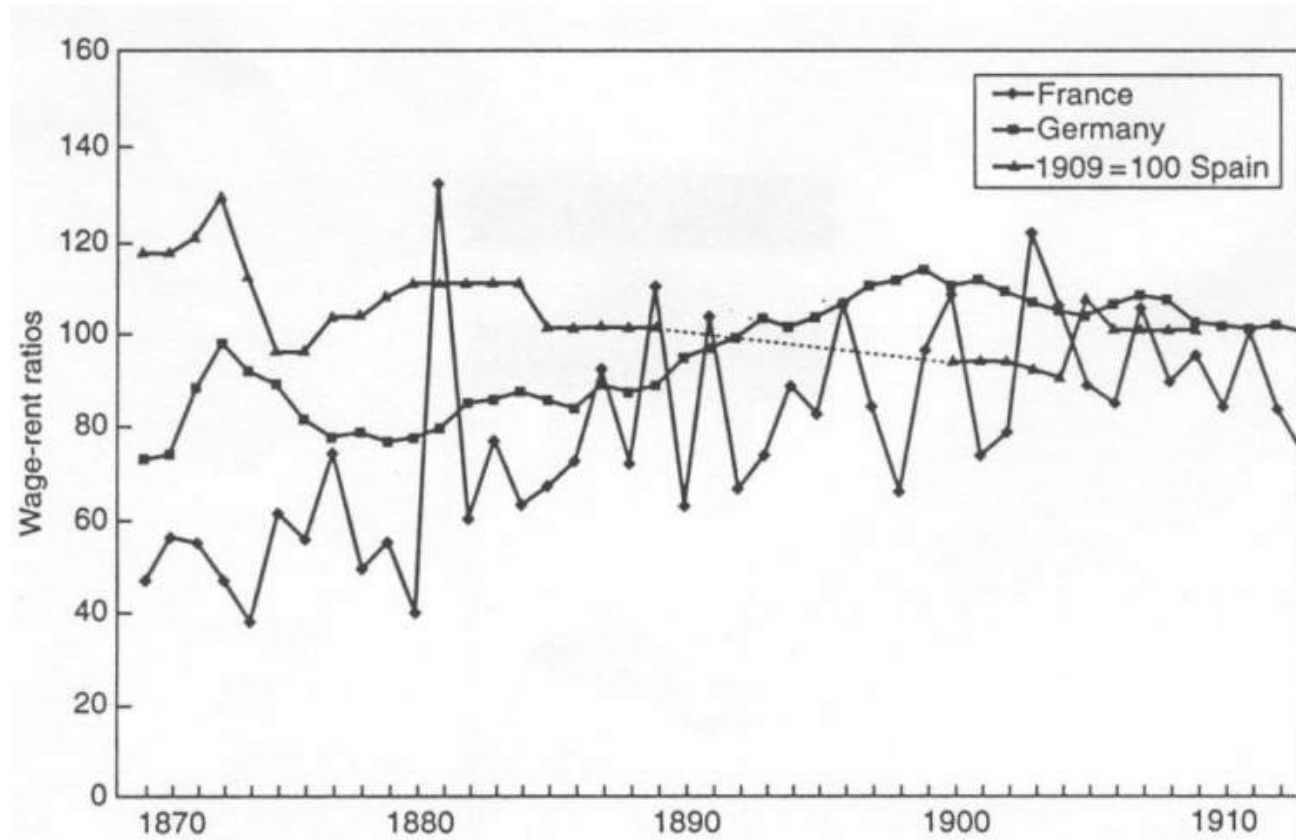
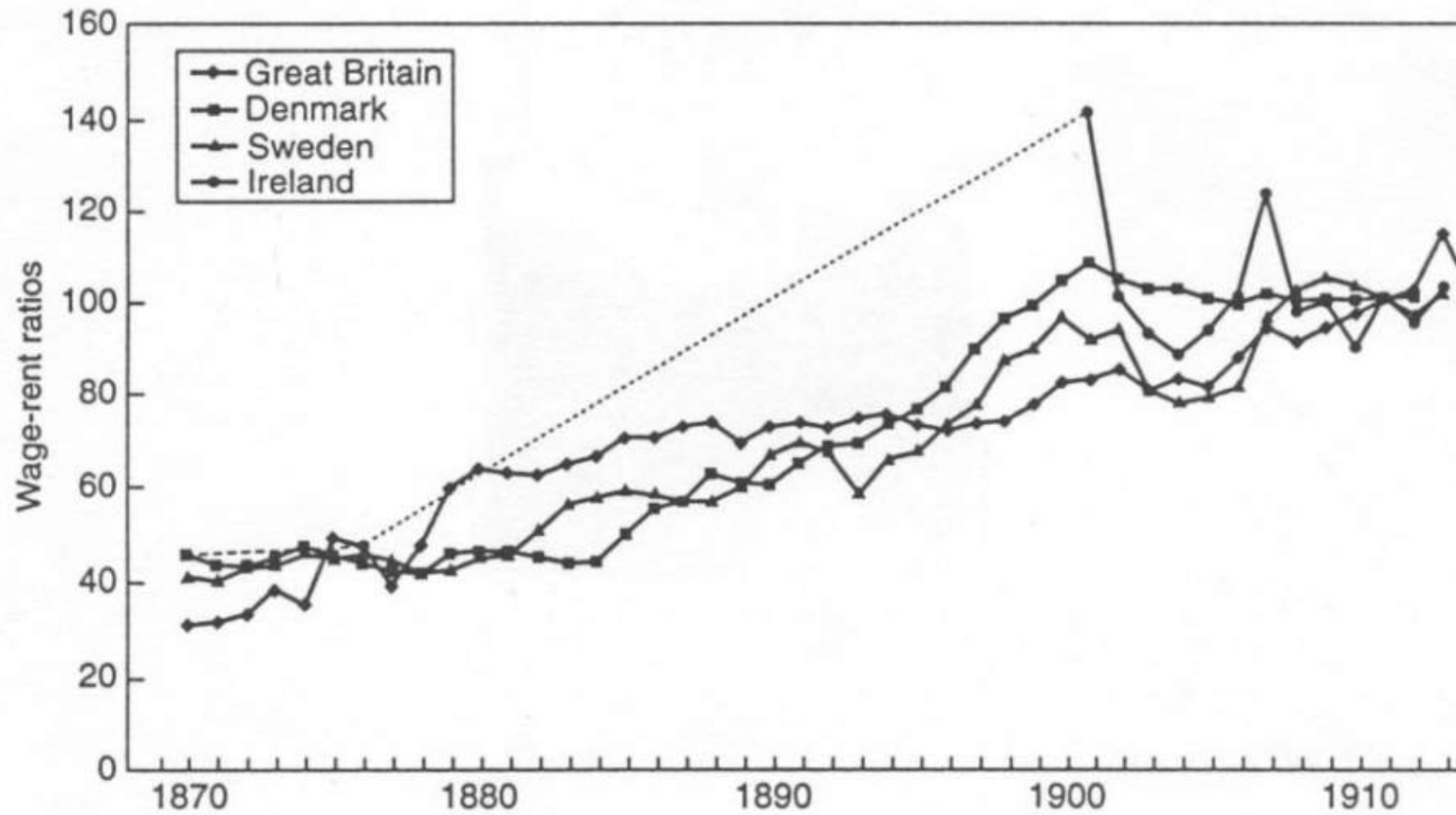


Figure 4.5

Protected Old World, wage-rent ratios, 1870–1913 (1911 = 100, except Spain, 1909 = 100).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 63.

**Figure 74f: Wage-rent ratios, free-trade Old World, 1870–1913**



**Figure 4.6**  
Free-trade Old World, wage-rent ratios, 1870–1914 (1911 = 100).

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 63.

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- 3 Globalization I (1820–1990)
  - 3.2 The Era of Disintegration: 1914–1950
    - 3.2.1 World War I and its Aftermath (Figure 75)

## Figure 75: Trade shares, 1870–1987

Table 3.1  
Trade Shares, 1870–1987 (merchandise exports as percentage of GDP, 1985 prices)

| Country        | 1870 | 1913 | 1950 | 1973 | 1987 |
|----------------|------|------|------|------|------|
| Australia      | 6.3  | 10.9 | 7.8  | 9.5  | 12.4 |
| Austria        | 9.0  | 13.9 | 4.0  | 12.6 | 20.0 |
| Belgium        | 7.0  | 17.5 | 13.4 | 40.3 | 52.5 |
| Canada         | 12.8 | 12.9 | 13.0 | 19.9 | 23.8 |
| Denmark        | 6.6  | 10.1 | 9.3  | 18.2 | 25.8 |
| Finland        | 10.5 | 17.0 | 12.7 | 20.5 | 23.0 |
| France         | 3.4  | 6.0  | 5.6  | 11.2 | 14.3 |
| Germany        | 7.4  | 12.2 | 4.4  | 17.2 | 23.7 |
| Italy          | 3.3  | 3.6  | 2.6  | 9.0  | 11.5 |
| Japan          | 0.2  | 2.1  | 2.0  | 6.8  | 10.6 |
| Netherlands    | 14.6 | 14.5 | 10.2 | 34.1 | 40.9 |
| Norway         | 9.3  | 14.6 | 13.5 | 27.4 | 34.0 |
| Sweden         | 8.0  | 12.0 | 12.2 | 23.1 | 27.0 |
| Switzerland    | 10.4 | 22.3 | 9.8  | 21.3 | 28.9 |
| United Kingdom | 10.3 | 14.7 | 9.5  | 11.5 | 15.3 |
| United States  | 2.8  | 4.1  | 3.3  | 5.8  | 6.3  |
| Total*         | 5.9  | 8.2  | 5.2  | 10.3 | 12.8 |

Source: Calculated from Maddison (1991, appendix tables F.6, A.2, A.3).

\* Average over all sixteen countries, weighted by country GDP.

Source: O'Rourke & Williamson (1999). *Globalization and History*. MIT Press. Cambridge, Mass. p. 30.

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- 3 Globalization I (1820–1990)
  - 3.2 The Era of Disintegration: 1914–1950
    - 3.2.2 **The Great Inflation 1922/23** (Figure 76–80)

## Figure 76: Wholesale prices in Germany

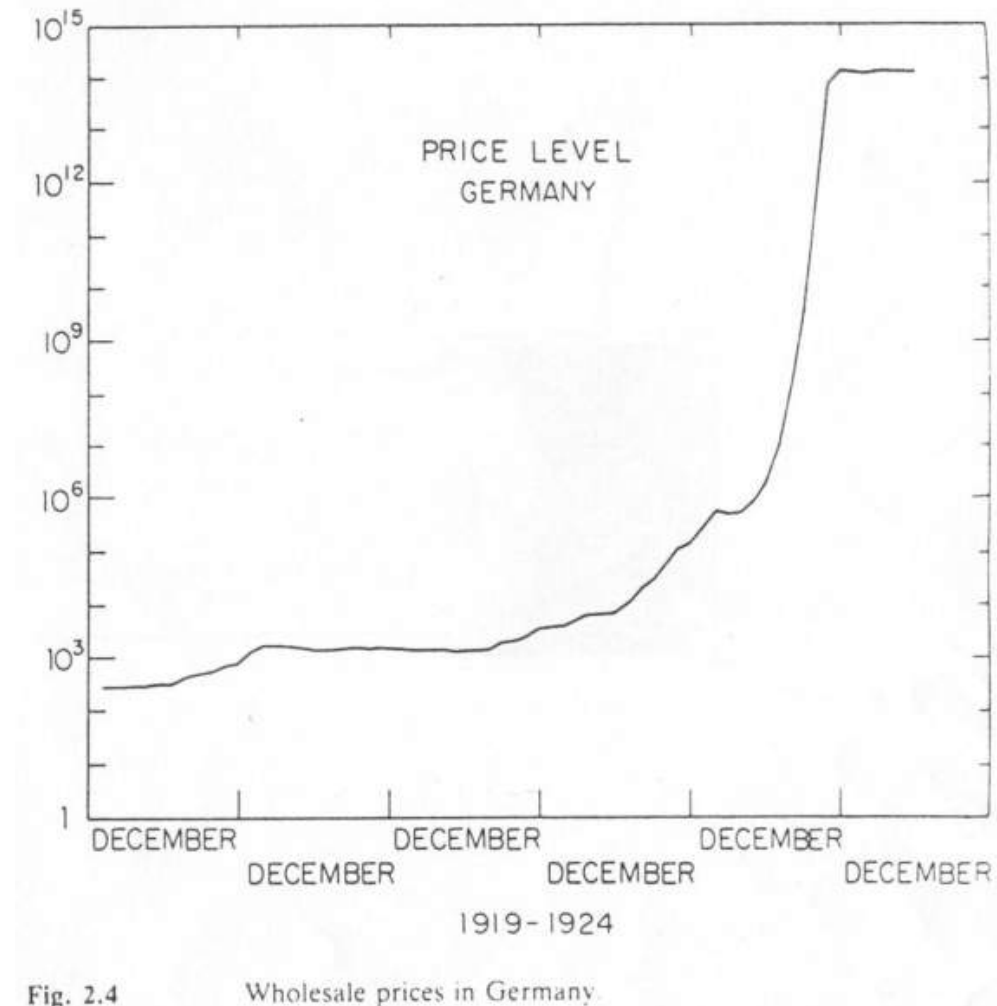


Fig. 2.4 Wholesale prices in Germany.

Source: Sargent (1983). *The Ends of Four Big Inflation*. in Hall (ed.), *Inflation: Causes and Effects*. University of Chicago Press. London. p. 47.



**Figure 77: German exchange rates, 1914–1925**

Table G2 German Exchange Rates, 1914–25

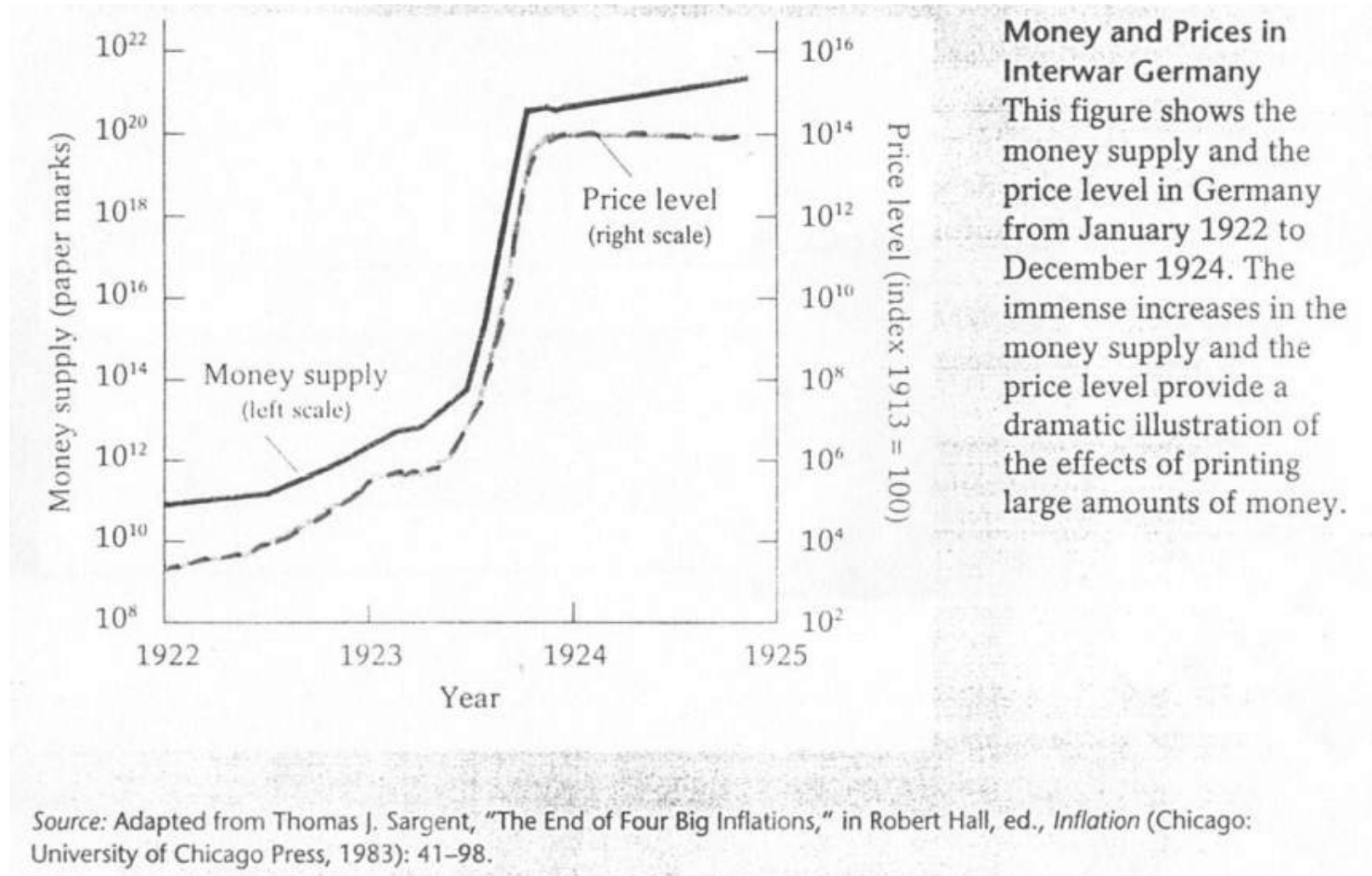
| Year | Month     | Cents per Mark | Year              | Month     | Cents per Mark     |        |
|------|-----------|----------------|-------------------|-----------|--------------------|--------|
| 1920 | January   | 1.69           | 1922              | August    | .10                |        |
|      | February  | 1.05           |                   | September | .07                |        |
|      | March     | 1.26           |                   | October   | .03                |        |
|      | April     | 1.67           |                   | November  | .01                |        |
|      | May       | 2.19           |                   | December  | .01                |        |
|      | June      | 2.56           |                   | 1923      | January            | .007   |
|      | July      | 2.53           |                   |           | February           | .004   |
|      | August    | 2.10           |                   |           | March              | .005   |
|      | September | 1.72           |                   |           | April              | .004   |
|      | October   | 1.48           |                   |           | May                | .002   |
|      | November  | 1.32           |                   |           | June               | .001   |
|      | December  | 1.37           |                   |           | July               | .000,3 |
| 1921 | January   | 1.60           | August            |           | .000,033,9         |        |
|      | February  | 1.64           | September         |           | .000,001,88        |        |
|      | March     | 1.60           | October           |           | .000,000,068       |        |
|      | April     | 1.57           | November          |           | .000,000,000,043   |        |
|      | May       | 1.63           | December          |           | .000,000,000,022,7 |        |
|      | June      | 1.44           | 1924              | January   | 22.6               |        |
|      | July      | 1.30           |                   | February  | 21.8               |        |
|      | August    | 1.19           |                   | March     | 22.0               |        |
|      | September | .96            |                   | April     | 22.0               |        |
|      | October   | .68            |                   | May       | 22.3               |        |
|      | November  | .39            |                   | June      | 23.4               |        |
|      | December  | .53            |                   | July      | 23.9               |        |
| 1922 | January   | .52            |                   | August    | 23.8               |        |
|      | February  | .48            |                   | September | 23.8               |        |
|      | March     | .36            |                   | October   | 23.8               |        |
|      | April     | .35            |                   | November  | 23.8               |        |
|      | May       | .34            |                   | December  | 23.8               |        |
|      | June      | .32            | 1925 <sup>1</sup> | January   | 23.8               |        |
|      | July      | .20            |                   |           |                    |        |

Source: Young [36, vol. 1, p. 532].

<sup>1</sup>Cents per rentenmark and (after October 1924) per reichsmark. 1 rentenmark is equivalent to 1 reichsmark or 1 billion former paper marks. The reichsmark is the equivalent of the gold mark worth 23.82 cents.

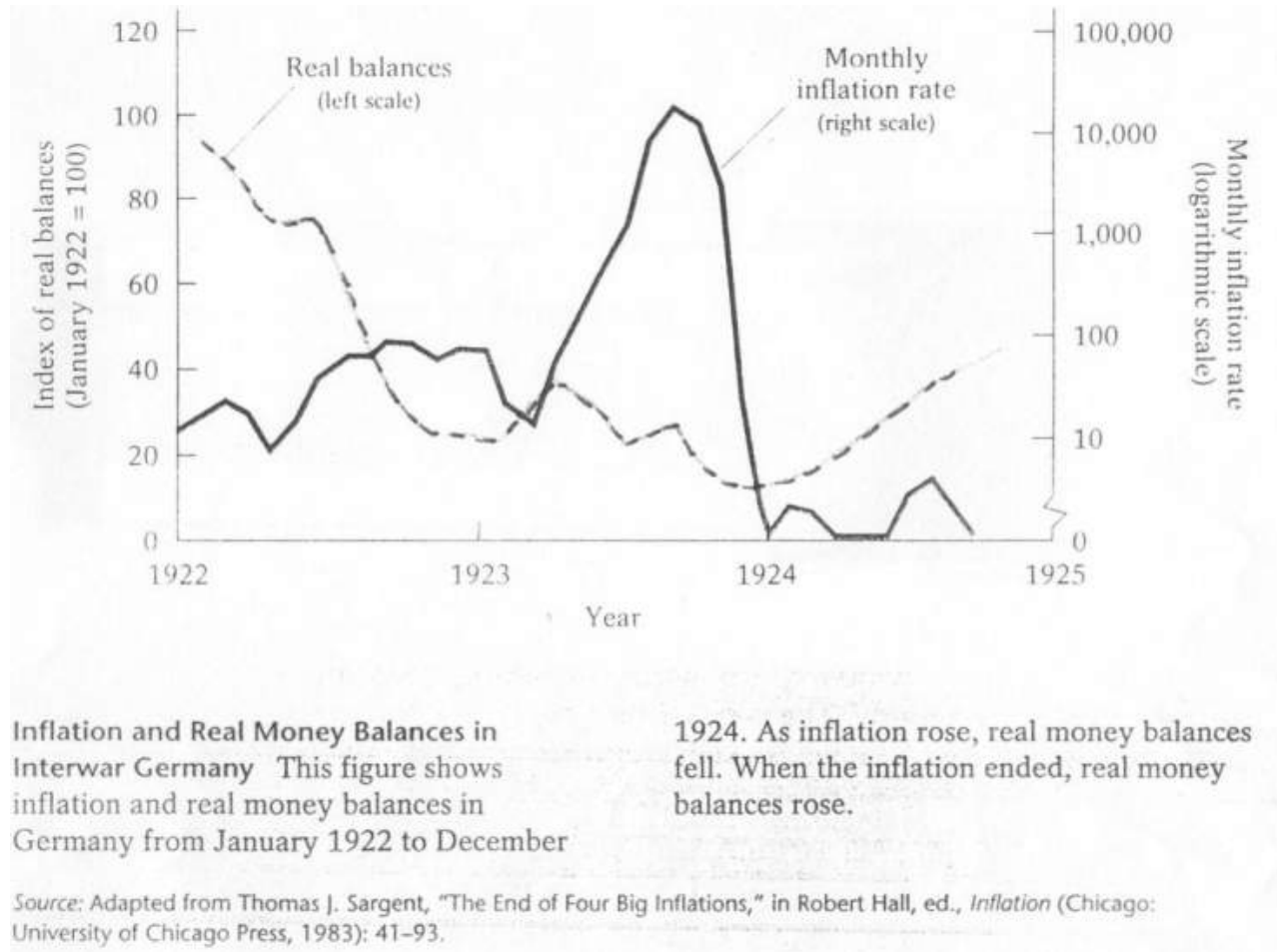
Source: Sargent (1983). *The Ends of Four Big Inflations*. in Hall (ed.), *Inflation: Causes and Effects*. University of Chicago Press. London. p. 76.

**Figure 78: Money and prices in Germany**



Source: Mankiw (1997). *Macroeconomics*. 6<sup>th</sup> ed. R. R. Donnelley & Sons Company. New York. p. 107.

**Figure 79: Inflation and real money balances in interwar Germany**



Source: Mankiw (1997). *Macroeconomics*. 6<sup>th</sup> ed. R. R. Donnelley & Sons Company. New York. p. 107.

## Figure 80: Index of physical volume of production per capita in Germany

Table G6

Index of Physical Volume  
of Production per Capita in Germany

| Year | Index of<br>Production | Year | Index of<br>Production |
|------|------------------------|------|------------------------|
| 1920 | 61                     | 1924 | 77                     |
| 1921 | 77                     | 1925 | 90                     |
| 1922 | 86                     | 1926 | 86                     |
| 1923 | 54                     | 1927 | 111                    |

Source: Graham [7, p. 287].

Source: Sargent (1983). The Ends of Four Big Inflations. in Hall (ed.), *Inflation: Causes and Effects*. University of Chicago Press. London. p. 84.

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    - 3.2.3 Temporary Stabilisation (Figure 81)

## Figure 81: Unemployment rates in industry

Table 1.1 Unemployment Rates in Industry (In percentage points)

| Year | Australia | Belgium | Canada | Denmark | France | Germany |
|------|-----------|---------|--------|---------|--------|---------|
| 1920 | 5.5       | -       | 4.6    | 6.1     | -      | 3.8     |
| 1921 | 10.4      | 9.7     | 8.9    | 19.7    | 5.0    | 2.8     |
| 1922 | 8.5       | 3.1     | 7.1    | 19.3    | 2.0    | 1.5     |
| 1923 | 6.2       | 1.0     | 4.9    | 12.7    | 2.0    | 10.2    |
| 1924 | 7.8       | 1.0     | 7.1    | 10.7    | 3.0    | 13.1    |
| 1925 | 7.8       | 1.5     | 7.0    | 14.7    | 3.0    | 6.8     |
| 1926 | 6.3       | 1.4     | 4.7    | 20.7    | 3.0    | 18.0    |
| 1927 | 6.2       | 1.8     | 2.9    | 22.5    | 11.0   | 8.8     |
| 1928 | 10.0      | 0.9     | 2.6    | 18.5    | 4.0    | 8.6     |
| 1929 | 10.2      | 1.3     | 4.2    | 15.5    | 1.0    | 13.3    |
| 1930 | 18.4      | 3.6     | 12.9   | 13.7    | 2.0    | 22.7    |
| 1931 | 26.5      | 10.9    | 17.4   | 17.9    | 6.5    | 34.3    |
| 1932 | 28.1      | 19.0    | 26.0   | 31.7    | 15.4   | 43.8    |
| 1933 | 24.2      | 16.9    | 26.6   | 28.8    | 14.1   | 36.2    |
| 1934 | 19.6      | 18.9    | 20.6   | 22.2    | 13.8   | 20.5    |
| 1935 | 15.6      | 17.8    | 19.1   | 19.7    | 14.5   | 16.2    |
| 1936 | 11.3      | 13.5    | 16.7   | 19.3    | 10.4   | 12.0    |
| 1937 | 8.4       | 11.5    | 12.5   | 21.9    | 7.4    | 6.9     |
| 1938 | 7.8       | 14.0    | 15.1   | 21.5    | 7.8    | 3.2     |
| 1939 | 8.8       | 15.9    | 14.1   | 18.4    | 8.1    | 0.9     |

Table 1.1 (continued)

| Year | Netherlands | Norway | Sweden | UK   | US   |
|------|-------------|--------|--------|------|------|
| 1920 | 5.8         | 2.3    | 5.4    | 3.2  | 8.6  |
| 1921 | 9.0         | 17.7   | 26.6   | 17.0 | 19.5 |
| 1922 | 11.0        | 17.1   | 22.9   | 14.3 | 11.4 |
| 1923 | 11.2        | 10.7   | 12.5   | 11.7 | 4.1  |
| 1924 | 8.8         | 8.5    | 10.1   | 10.3 | 8.3  |
| 1925 | 8.1         | 13.2   | 11.0   | 11.3 | 5.4  |
| 1926 | 7.3         | 24.3   | 12.2   | 12.5 | 2.9  |
| 1927 | 7.5         | 25.4   | 12.0   | 9.7  | 5.4  |
| 1928 | 5.6         | 19.2   | 10.6   | 10.8 | 6.9  |
| 1929 | 2.9         | 15.4   | 10.2   | 10.4 | 5.3  |
| 1930 | 7.8         | 16.6   | 11.9   | 16.1 | 14.2 |
| 1931 | 14.8        | 22.3   | 16.8   | 21.3 | 25.2 |
| 1932 | 25.3        | 30.8   | 22.4   | 22.1 | 36.3 |
| 1933 | 26.9        | 33.4   | 23.2   | 19.9 | 37.6 |
| 1934 | 28.0        | 30.7   | 18.0   | 16.7 | 32.6 |
| 1935 | 31.7        | 25.3   | 15.0   | 15.5 | 30.2 |
| 1936 | 32.7        | 18.8   | 12.7   | 13.1 | 25.4 |
| 1937 | 26.9        | 20.0   | 10.8   | 10.8 | 21.3 |
| 1938 | 25.0        | 22.0   | 10.9   | 12.9 | 27.9 |
| 1939 | 19.9        | 18.3   | 9.2    | 10.5 | 25.2 |

*Note:* Australia: trade union reports corrected to eliminate unemployment for reasons other than non-availability of work; Belgium: statistics of voluntary unemployment insurance societies; Canada: trade union reports adjusted from 1921 by the Dominion Bureau of Statistics; Denmark: trade union unemployment insurance fund reports; France, Germany: see text; Netherlands: trade union unemployment insurance fund returns; Norway: trade union reports; Sweden: trade union reports; UK: unemployment insurance system series; US: Lebergott estimates.  
*Sources:* Galenson and Zellner (1957), p. 455, Lebergott (1964), p. 512.

Source: Eichengreen & Hatton (1988). *Interwar Unemployment in International Perspective*. Kluwer Academic Publishers. London.

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    - 3.2.4 **The Great Depression 1930/32** (Figure 82–89)

**Figure 82: Percentage changes in industrial production and output (GDP), 1929–1938**

| Country        | 1929–32               |                    | 1932/33–1937/8        |                   | 1929–1937/8           |                  |
|----------------|-----------------------|--------------------|-----------------------|-------------------|-----------------------|------------------|
|                | Industrial production | GDP                | Industrial production | GDP               | Industrial production | GDP              |
| Austria        | -34.3                 | -22.5              | 53.8                  | 18.6              | 1.0                   | -4.8             |
| Belgium        | -27.1                 | -7.1               | 42.3                  | 9.8               | 3.7                   | 2.0              |
| Denmark        | -5.6                  | 4.0                | 47.1                  | 15.1              | 38.9                  | 19.7             |
| Finland        | -20.0                 | -5.9               | 96.2                  | 48.7              | 56.9                  | 39.9             |
| France         | -25.6                 | -11.0              | 20.0                  | 7.9               | -11.8                 | -4.0             |
| Germany        | -40.8                 | -15.7              | 122.2                 | 67.5              | 31.6                  | 41.1             |
| Italy          | -22.7                 | -6.1               | 48.5                  | 20.8              | 14.8                  | 13.5             |
| Luxembourg     | -32.0                 | n.a.               | 40.2                  | n.a.              | 4.7                   | n.a.             |
| Netherlands    | -9.8                  | -8.2               | 35.1                  | 12.2              | 22.0                  | 3.1              |
| Norway         | -7.9                  | -0.9               | 40.8                  | 29.2              | 29.9                  | 28.0             |
| Spain          | -11.6                 | -8.0               | 3.0 <sup>a</sup>      | 9.0 <sup>a</sup>  | -13.1 <sup>b</sup>    | 0.4 <sup>c</sup> |
| Sweden         | -11.8                 | -8.9               | 72.4                  | 38.3              | 53.8                  | 26.0             |
| UK             | -11.4                 | -5.8               | 52.9                  | 25.7              | 35.4                  | 18.4             |
| Bulgaria       | n.a.                  | 26.8               | n.a.                  | 17.7              | n.a.                  | 49.2             |
| Czechoslovakia | -26.5                 | -18.2 <sup>c</sup> | 51.5                  | 20.3 <sup>d</sup> | -3.9                  | -1.6             |
| Hungary        | -19.2                 | -11.5              | 58.7                  | 24.5              | 29.9                  | 10.2             |
| Poland         | -37.0                 | n.a.               | 86.2                  | n.a.              | 17.4                  | n.a.             |
| Romania        | -11.8                 | n.a.               | 49.3                  | n.a.              | 31.6                  | n.a.             |
| Yugoslavia     | n.a.                  | -11.9              | n.a.                  | 28.0              | n.a.                  | 12.8             |
| USSR           | 66.7                  | 6.9                | 146.7                 | 59.3              | 311.1                 | 70.2             |
| United States  | -44.7                 | -28.0              | 86.8                  | 46.6              | 3.3                   | 5.6              |

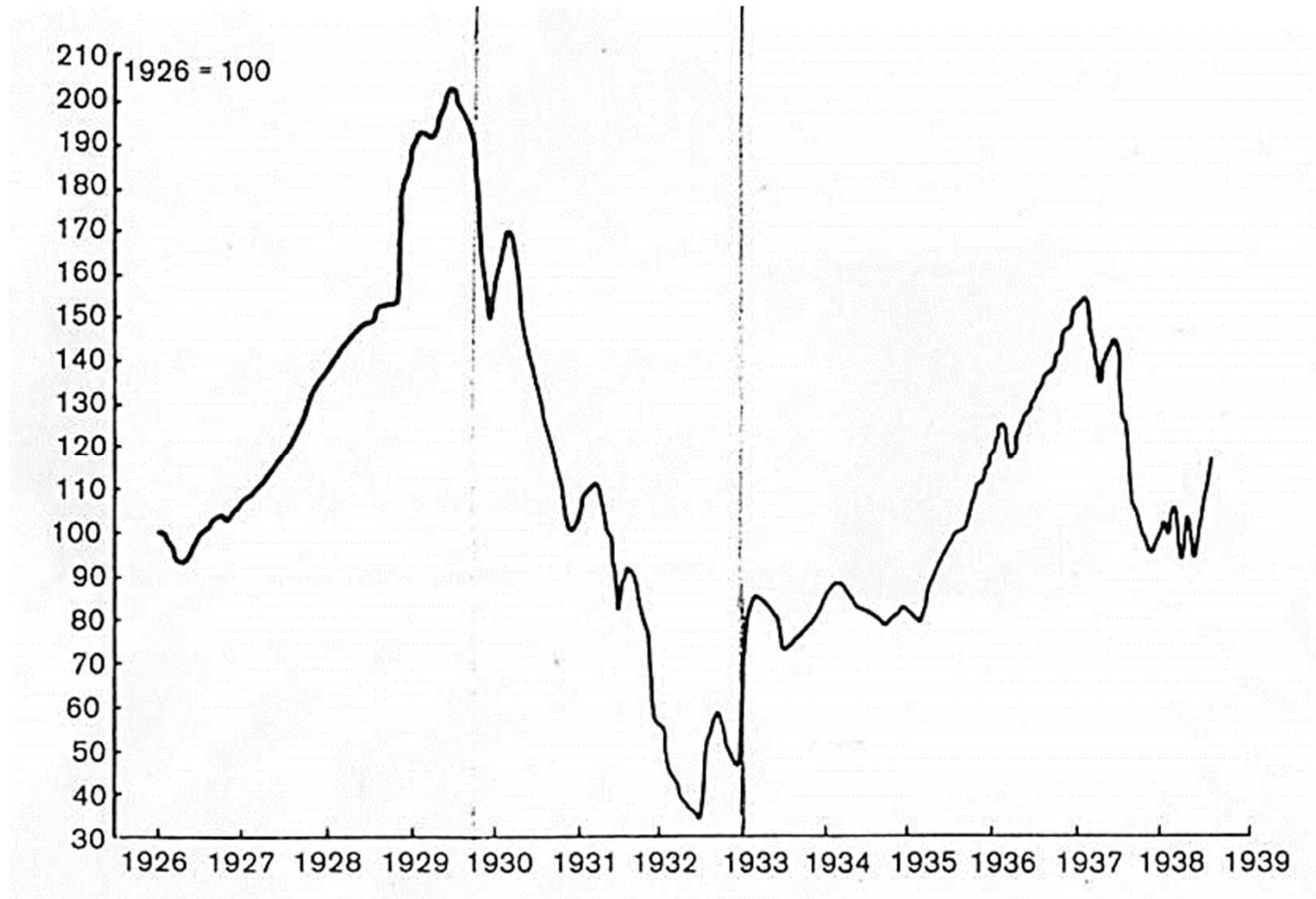
Sources: Organization for European Economic Co-operation, *Industrial Statistics, 1900–1959*, 1960, p. 9; United Nations, *Statistical Yearbook 1948*, 1949, Table 36; League of Nations, *Statistical Yearbook, 1935/36*, 1936, Table 107; A. Maddison, *Economic Policy and Performance in Europe, 1913–1970*, London: Collins/Fontana, 1973, Table 22

Notes: <sup>a</sup> 1933–5.  
<sup>b</sup> 1929–35.  
<sup>c</sup> 1929–35.  
<sup>d</sup> 1935–7.

Source: Aldcroft (1993). *The European Economy 1914–1990*, 3rd ed. Routledge. London. p. 64.

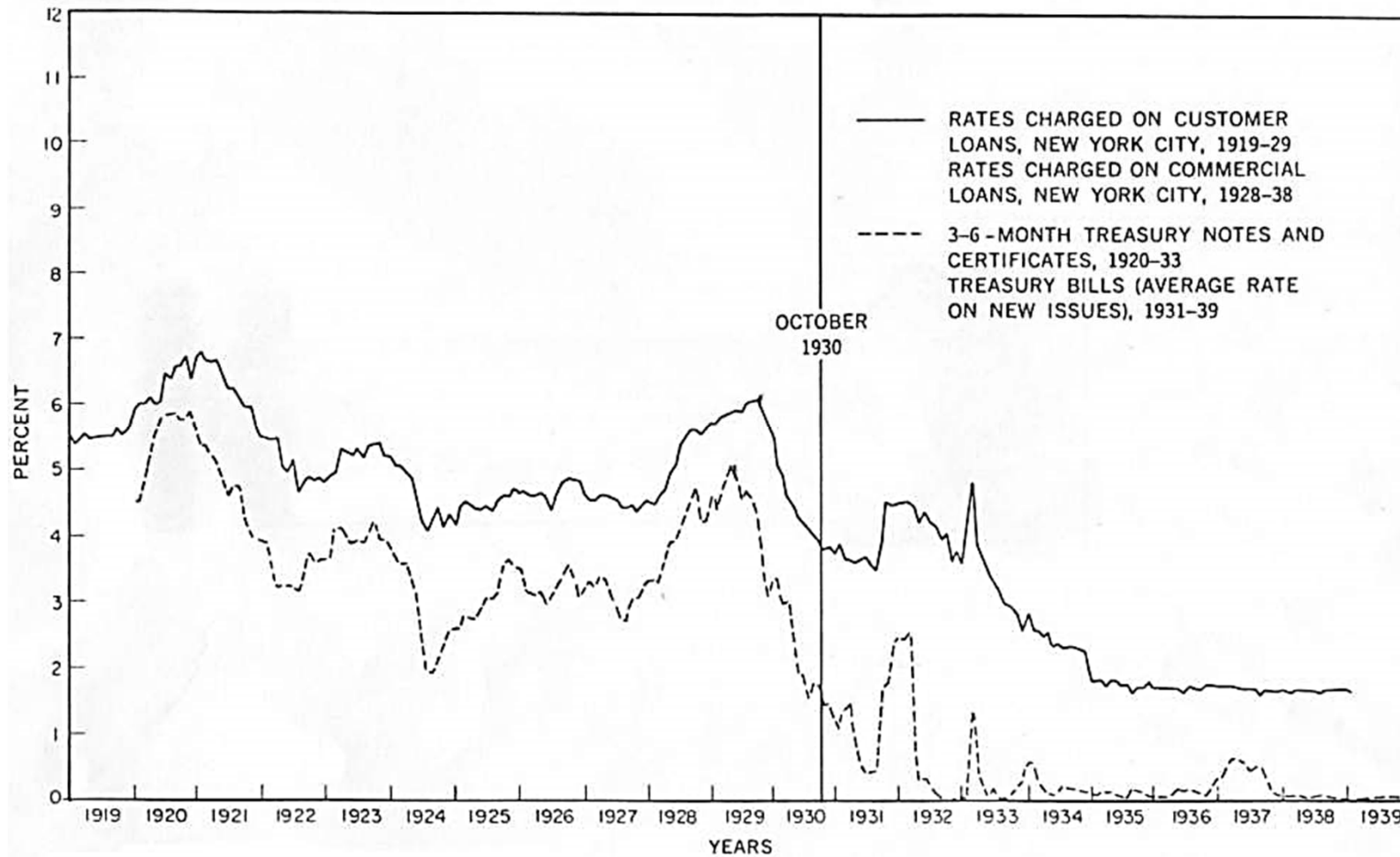


**Figure 83: Stock prices at the NY Stock Exchange, 1926–1938**



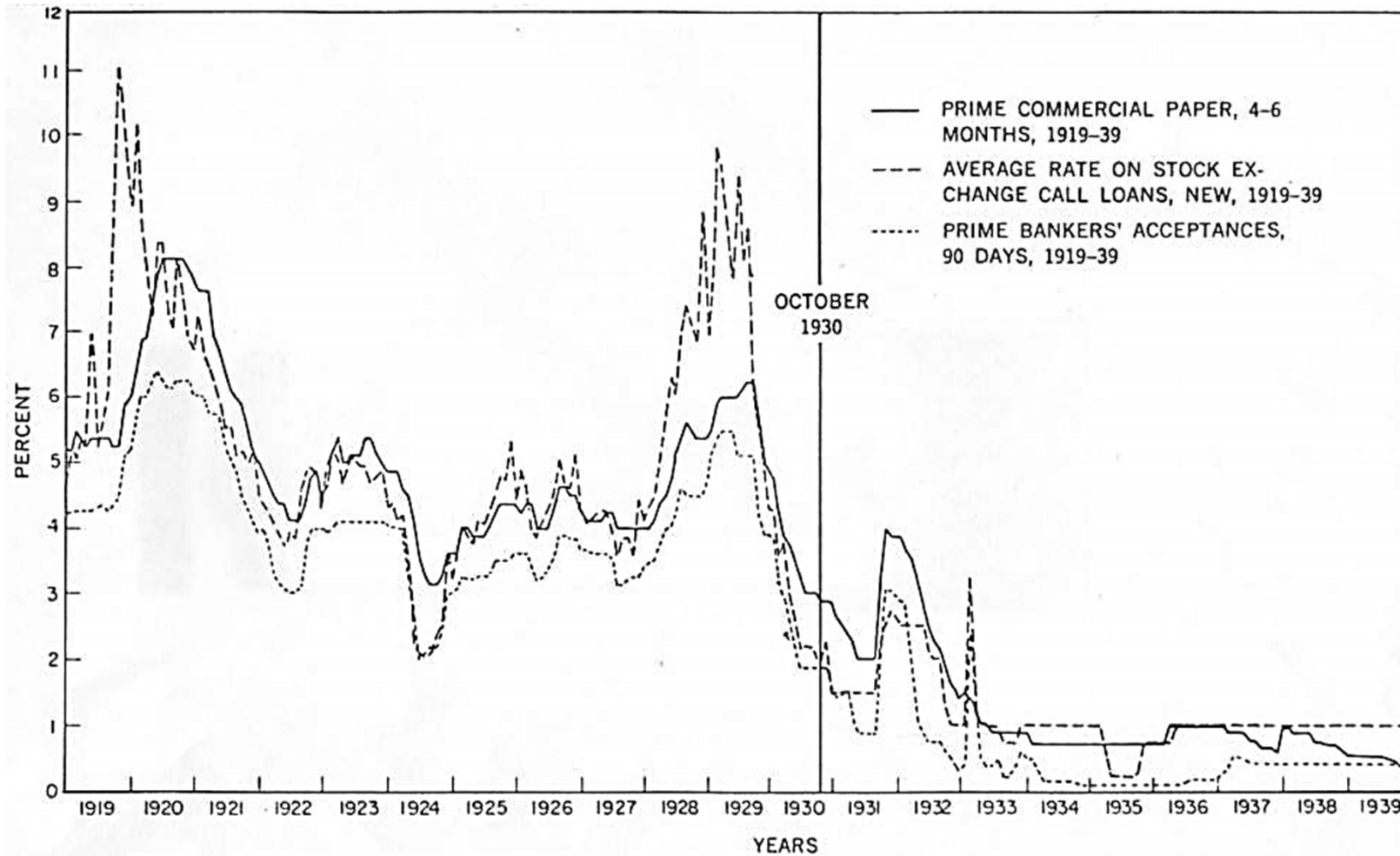
Source: Kindleberger (1973). *Die Weltwirtschaftskrise*. Deutscher Taschenbuchverlag GmbH & Co. KG. München.

**Figure 84: Short-term interest rates USA, monthly, 1919–1939**



Source: Temin (1975). *Did Monetary Forces Cause the Great Depression?* W.W. Norton. New York.

Figure 84f: Short-term interest rates USA, monthly, 1919–1939



Source: Temin (1975). *Did Monetary Forces Cause the Great Depression?* W.W. Norton. New York.

**Figure 85: Economic indicators during the Great Depression**

| Year | Unemployment Rate | Real GNP | Consumption | Investment | Government Purchases |
|------|-------------------|----------|-------------|------------|----------------------|
| 1929 | 3.2               | 203.6    | 139.6       | 40.4       | 22.0                 |
| 1930 | 8.9               | 183.5    | 130.4       | 27.4       | 24.3                 |
| 1931 | 16.3              | 169.5    | 126.1       | 16.8       | 25.4                 |
| 1932 | 24.1              | 144.2    | 114.8       | 4.7        | 24.2                 |
| 1933 | 25.2              | 141.5    | 112.8       | 5.3        | 23.3                 |
| 1934 | 22.0              | 154.3    | 118.1       | 9.4        | 26.6                 |
| 1935 | 20.3              | 169.5    | 125.5       | 18.0       | 27.0                 |
| 1936 | 17.0              | 193.2    | 138.4       | 24.0       | 31.8                 |
| 1937 | 14.3              | 203.2    | 143.1       | 29.9       | 30.8                 |
| 1938 | 19.1              | 192.9    | 140.2       | 17.0       | 33.9                 |
| 1939 | 17.2              | 209.4    | 148.2       | 24.7       | 35.2                 |
| 1940 | 14.6              | 227.2    | 155.7       | 33.0       | 36.4                 |

Source: *Historical Statistics of the United States, Colonial Times to 1970, Parts I and II*. U.S. Department of Commerce, Bureau of Census, 1975, Washington, D.C. The unemployment rate is series D9. Real GNP, consumption, investment, and government purchases are series F3, F48, F52, and F66, and are measured in billions of 1958 dollars. The interest rate is the prime Commercial Paper rate, 4–6 months, series x445.

Source: Mankiw (2007). *Macroeconomics*, 6th ed. Worth Publishers. New York. p. 318.

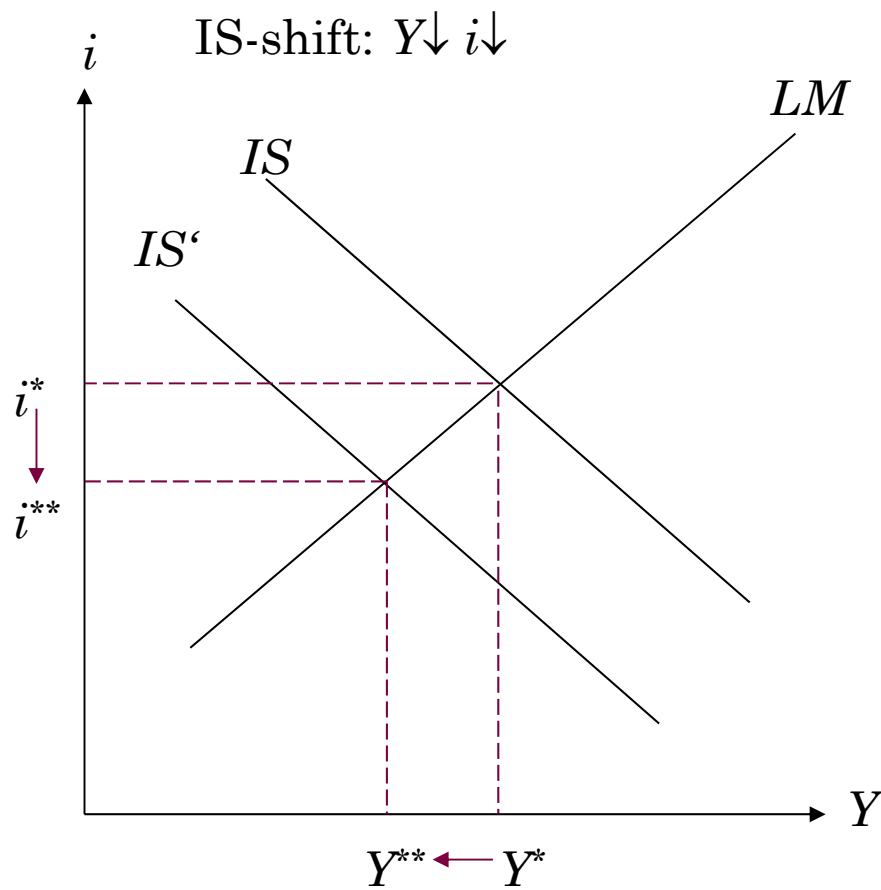
**Figure 85f: Economic indicators during the Great Depression (cont.)**

| Year | Nominal Interest Rate | Money Supply | Price Level | Inflation | Real Money Balances |
|------|-----------------------|--------------|-------------|-----------|---------------------|
| 1929 | 5.9                   | 26.6         | 50.6        | —         | 52.6                |
| 1930 | 3.6                   | 25.8         | 49.3        | – 2.6     | 52.3                |
| 1931 | 2.6                   | 24.1         | 44.8        | –10.1     | 54.5                |
| 1932 | 2.7                   | 21.1         | 40.2        | – 9.3     | 52.5                |
| 1933 | 1.7                   | 19.9         | 39.3        | – 2.2     | 50.7                |
| 1934 | 1.0                   | 21.9         | 42.2        | 7.4       | 51.8                |
| 1935 | 0.8                   | 25.9         | 42.6        | 0.9       | 60.8                |
| 1936 | 0.8                   | 29.6         | 42.7        | 0.2       | 62.9                |
| 1937 | 0.9                   | 30.9         | 44.5        | 4.2       | 69.5                |
| 1938 | 0.8                   | 30.5         | 43.9        | – 1.3     | 69.5                |
| 1939 | 0.6                   | 34.2         | 43.2        | – 1.6     | 79.1                |
| 1940 | 0.6                   | 39.7         | 43.9        | 1.6       | 90.3                |

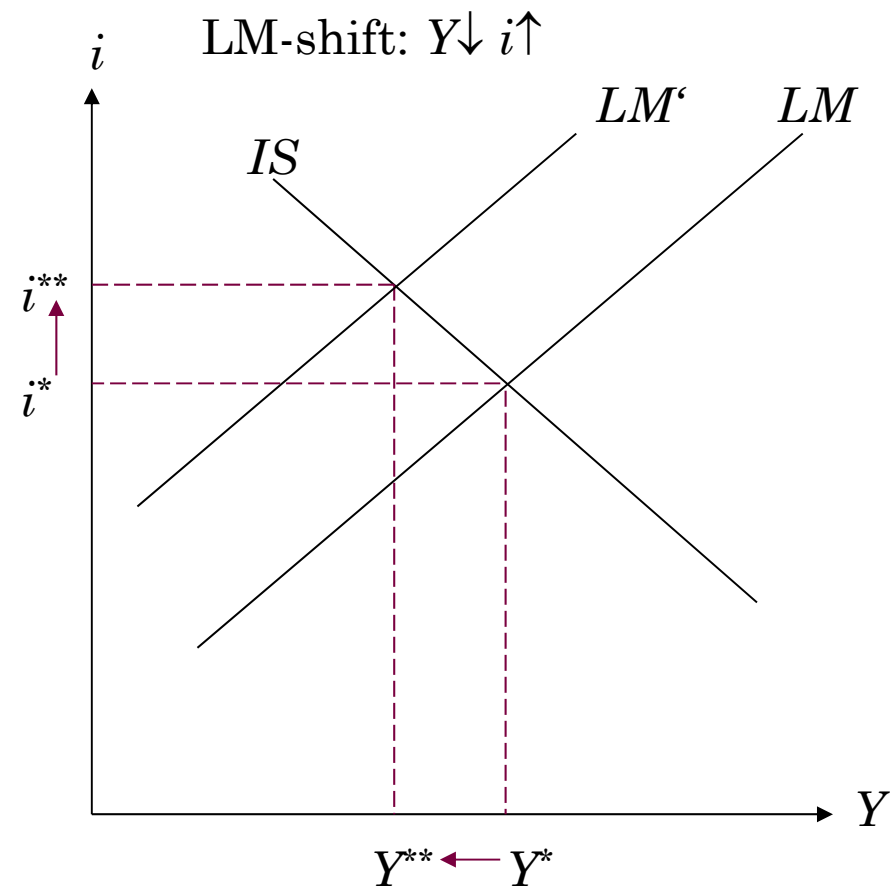
Source: Mankiw (2007). *Macroeconomics*, 6th ed. Worth Publishers. New York. p. 319.

**Figure 86: Spending Hypothesis and Money Hypothesis**

**(a) Spending Hypothesis**



**(b) Money Hypothesis**



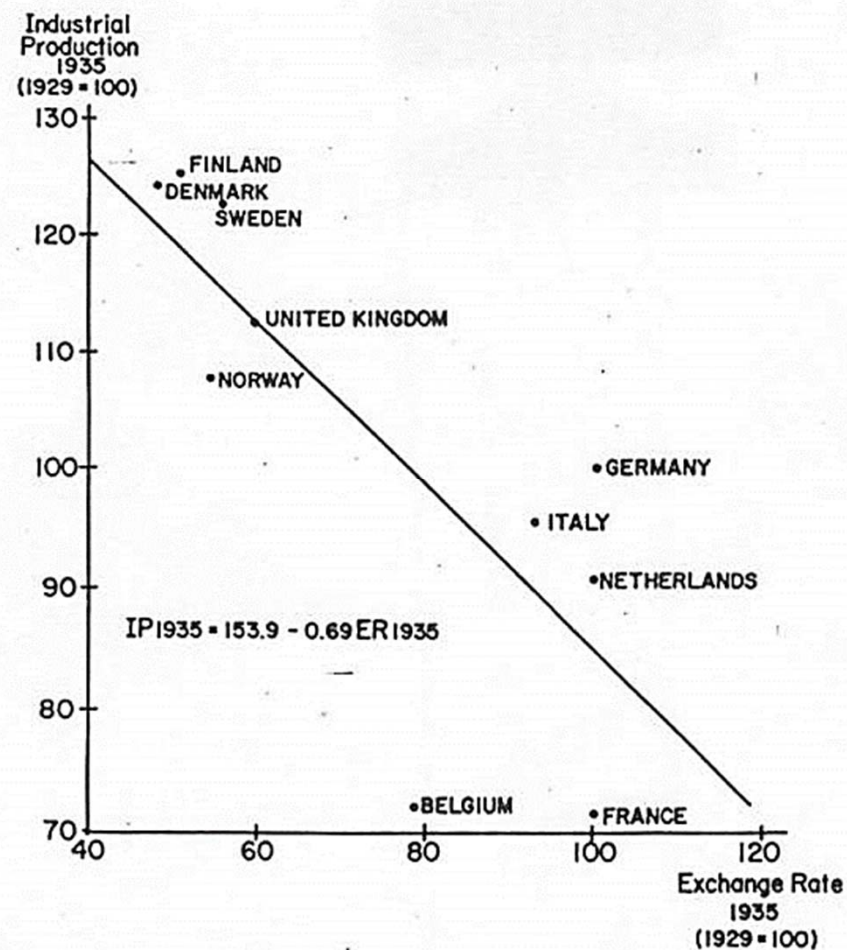
**Figure 87: Principal measures affecting exchange rates, 1937 (month and year of introduction)**

| Country        | Official<br>Suspension of<br>Gold<br>Standard | Exchange Control | Depreciation<br>or<br>Devaluation |
|----------------|---|------------------|-----------------------------------|
| Belgium        | 3.35  | 3.35             | 3.35                              |
| Denmark        | 11.31   | 11.31            | 11.31                             |
| Finland        | 12.31   | –                | 10.31                             |
| France         | –   | –                | 9.36                              |
| Germany        | –   | 7.31             | –                                 |
| Italy          | –   | 5.34             | 3.34                              |
| Netherlands    | 9.36  | –                | 9.36                              |
| Norway         | 9.31  | –                | 9.31                              |
| Sweden         | 9.31  | –                | 9.31                              |
| United Kingdom | 9.31  | –                | 9.31                              |

*Source: League of Nations Economic Intelligence Service, Monetary Review (Geneva, 1937), appendix table 1.*

Source: Eichengreen & Sachs (1985). *Exchange Rates and Economic Recovery in the 1930s*. The Journal of Economic History 45(4). p. 928.

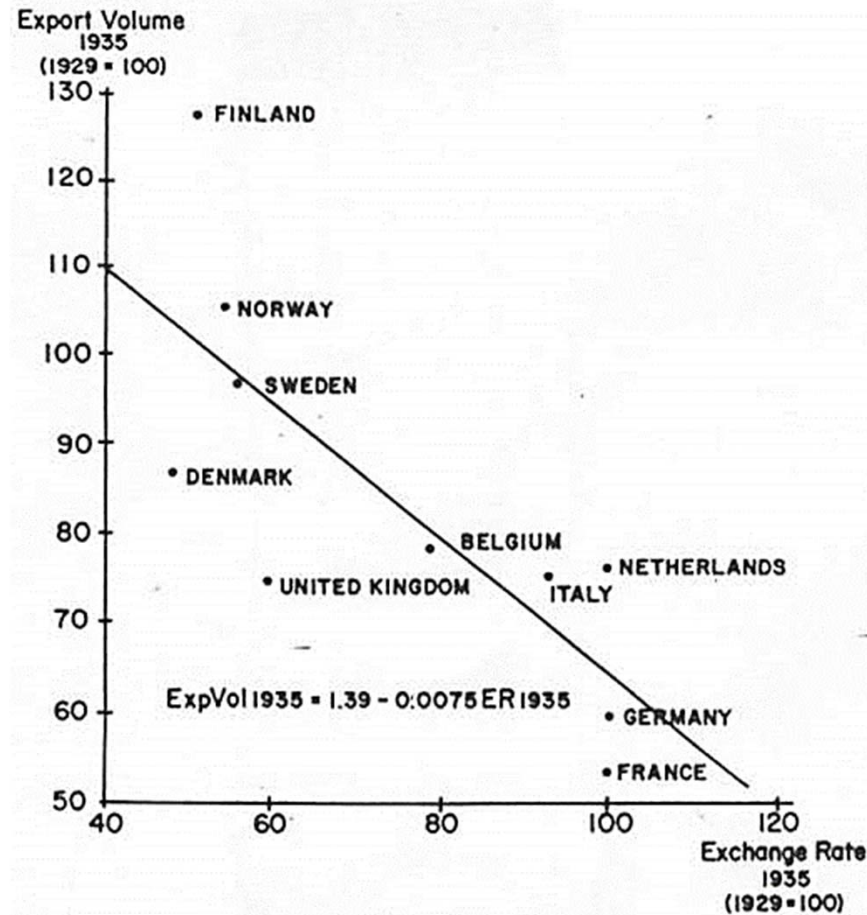
**Figure 88: Changes in the exchange rates in industrial production, 1929–1935**



Source: Eichengreen & Sachs (1985). *Exchange Rates and Economic Recovery in the 1930s*. The Journal of Economic History 45(4). p. 936.



**Figure 89: Changes in exchange rates and export volume, 1929–1935**



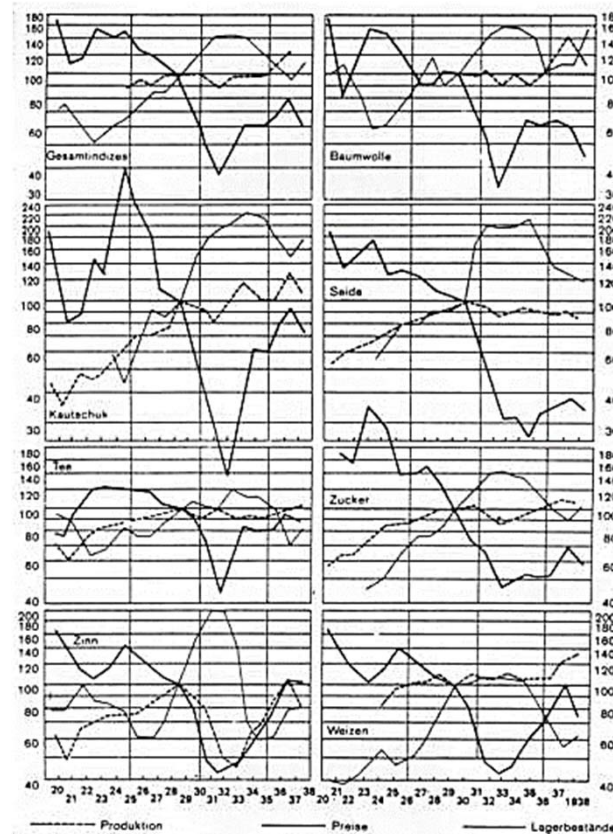
Source: Eichengreen & Sachs (1985). *Exchange Rates and Economic Recovery in the 1930s*. The Journal of Economic History 45(4). p. 940.

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- 3 Globalization I (1820–1990)
  - 3.2 The Era of Disintegration: 1914–1950
    - 3.2.5 Paths towards Autarky (Figure 90–92)

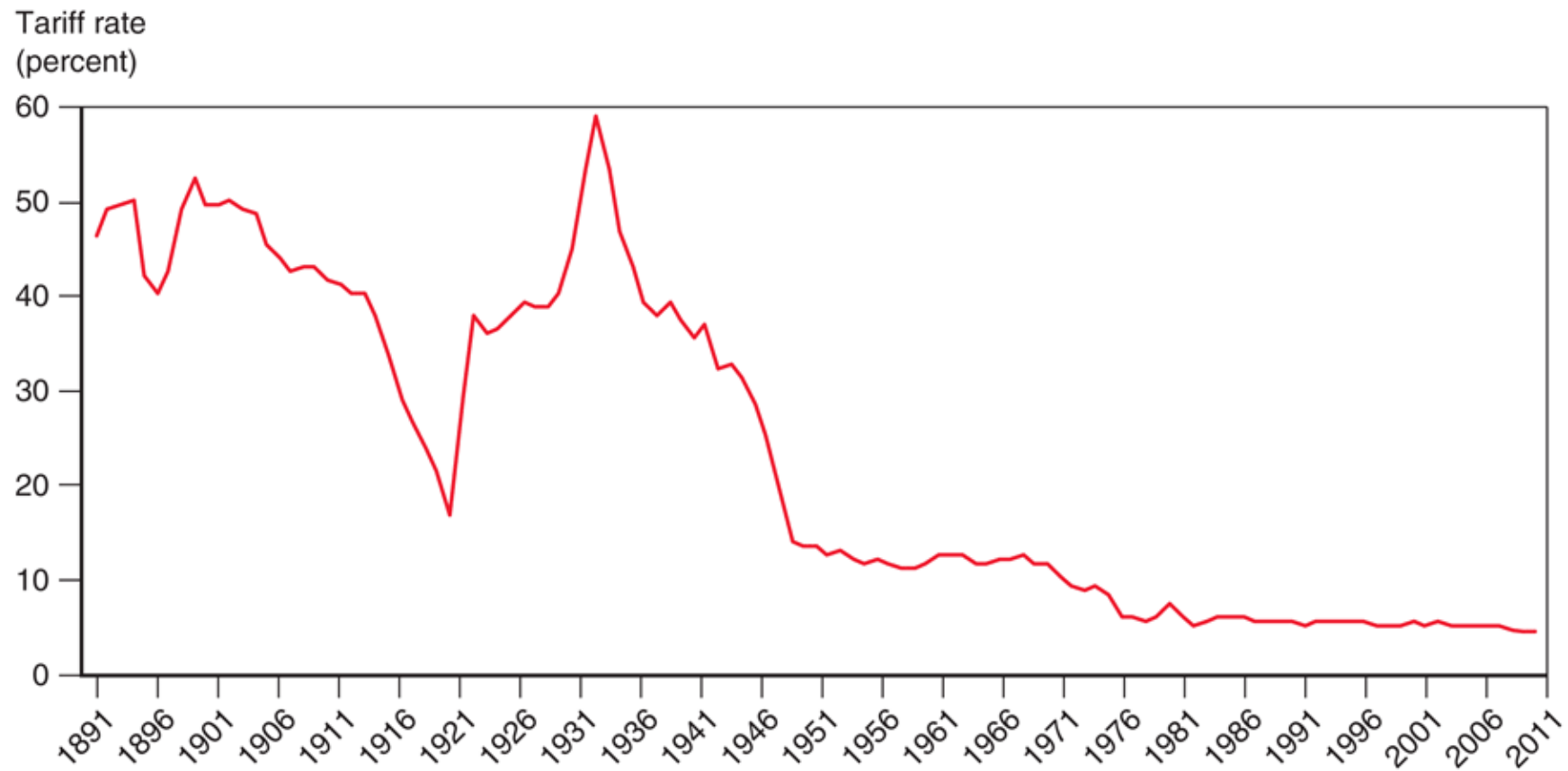
**Figure 90: World production, prices and stocks of raw materials, 1920–1938 (1929 = 100)**



Quelle: League of Nations, *Economic Instability in the Postwar World*. Genf 1945, S. 85.  
Die Gesamtindizes stellen gewogene Durchschnitte der sieben Warenarten dar.

Source: Kindleberger (1973). *Die Weltwirtschaftskrise*. Deutscher Taschenbuchverlag GmbH & Co. KG. München.

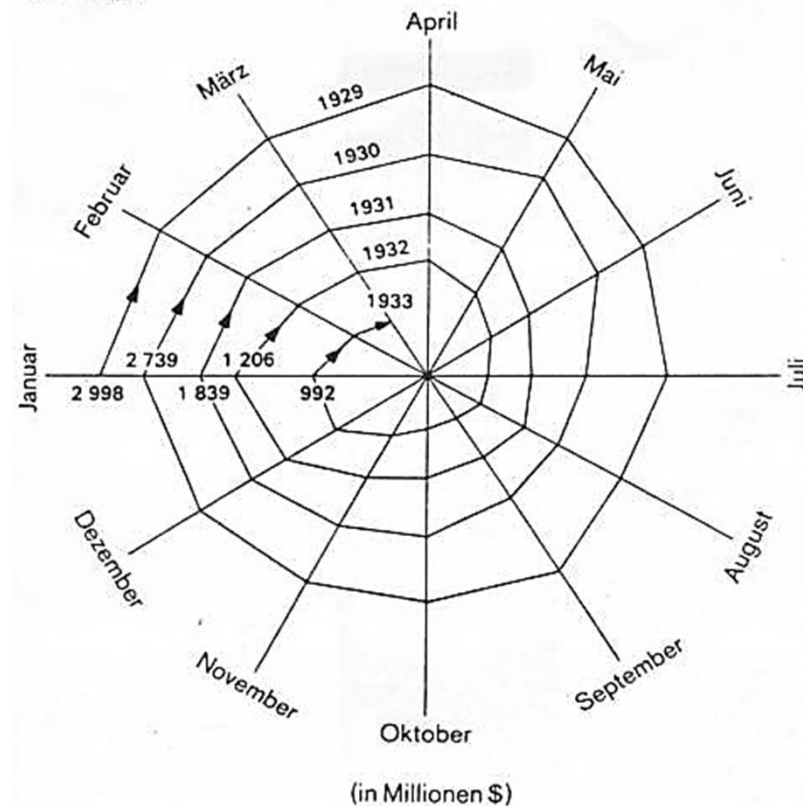
**Figure 91: The U.S. tariff rate, 1891–2011**



Source: Krugman, Obstfeld & Melitz (2015). *International Economics – Theory and Policy*, 10th ed. Pearson. Boston. p. 284.

## Figure 92: The spiral of world trade 1929–1933

Abbildung 8 mit Tabelle. Die enger werdende Spirale des Welthandels Januar 1929 – März 1933; Gesamtimporte von 75 Ländern (Monatswerte in Millionen Dollar, vor der Abwertung)



Source: Kindleberger (1973). *Die Weltwirtschaftskrise*. Deutscher Taschenbuchverlag GmbH & Co. KG. München.

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- 3 Globalization I (1820–1990)
  - 3.3 The Second Era of Integration: 1950–90
    - 3.3.1 **Rapid Post-War Growth 1950–73** (Figure 93–109)

**Figure 93: European growth, 1890–1992 (average annual growth)**

| Period    | Real GDP<br>(1) | Population<br>(2) | Real GDP<br>per capita<br>(3) | Real GDP<br>per person-hour<br>(4) |
|-----------|-----------------|-------------------|-------------------------------|------------------------------------|
| 1890–1992 | 2.5             | 0.6               | 1.9                           | 2.6 <sup>a</sup>                   |
| 1890–1913 | 2.6             | 0.8               | 1.7                           | 1.6                                |
| 1913–50   | 1.4             | 0.5               | 1.0                           | 1.9                                |
| 1950–73   | 4.6             | 0.7               | 3.8                           | 4.7                                |
| 1973–92   | 2.0             | 0.3               | 1.7                           | 2.7 <sup>b</sup>                   |

<sup>a</sup> 1890–1987.

<sup>b</sup> 1973–87.

*Note:* GDP and population are aggregates for 12 countries (Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom, all adjusted for boundary changes).

*Sources:* 1870–1989, Maddison (1991); 1989–92, OECD (1993). Countries are those for which col. (4) can be calculated.

Source: Crafts & Toniolo (1996). *Economic Growth in Europe since 1945*. Cambridge University Press. Cambridge. p. 2.

**Figure 94: War damage and reconstruction**

|                      | Pre-war year<br>when GDP was<br>the same as<br>in 1945 | Year when GDP<br>recovered the<br>highest prewar<br>level | Annual rate of GDP<br>growth during<br>'reconstruction'<br>(1945 to year in<br>col. (2)) |
|----------------------|--|---|--|
|                      | (1)  | (2)   | (3)  |
| Austria              | 1886   | 1951  | 15.2   |
| Belgium <sup>a</sup> | 1924   | 1948  | 6.0  |
| Denmark              | 1936   | 1946  | 13.5   |
| Finland              | 1938   | 1945  |  |
| France               | 1891   | 1949  | 19.0   |
| Germany              | 1908 <sup>b</sup>                                      | 1951  | 13.5   |
| Italy                | 1909   | 1950  | 11.2   |
| Netherlands          | 1912   | 1947  | 39.8   |
| Norway               | 1937   | 1946  | 9.7  |
| Sweden               | never  |   |  |
| Switzerland          | never  |   |  |
| United Kingdom       | never  |   |  |

<sup>a</sup> Interpolations.

<sup>b</sup> Relative to 1946.

Source: Data from Maddison (1991: 208–19).

Source: Crafts & Toniolo (1996). *Economic Growth in Europe since 1945*. Cambridge University Press. Cambridge. p. 4.



**Figure 95: GDP per capita in 1990 international dollars**

|                | 1950 | 1973  | 1950–73<br>growth<br>% (rank) | 1973  | 1992  | 1973–92<br>growth<br>% (rank) |
|----------------|------|-------|-------------------------------|-------|-------|-------------------------------|
| 1. Switzerland | 8939 | 17953 | 3.1 (12)                      | 17953 | 21036 | 0.9 (16)                      |
| 2. UK          | 6847 | 11932 | 2.4 (16)                      | 13494 | 16927 | 1.2 (15)                      |
| 3. Sweden      | 6738 | 13494 | 3.1 (12)                      | 13416 | 18293 | 1.7 (9)                       |
| 4. Denmark     | 6683 | 13416 | 3.1 (12)                      | 13152 | 19351 | 2.1 (5)                       |
| 5. Netherlands | 5850 | 12763 | 3.4 (10)                      | 12940 | 17959 | 1.7 (9)                       |
| 6. Belgium     | 5346 | 11905 | 3.5 (9)                       | 12763 | 16898 | 1.5 (12)                      |
| 7. France      | 5221 | 12940 | 4.0 (8)                       | 11932 | 15738 | 1.5 (12)                      |
| 8. Norway      | 4969 | 10229 | 3.2 (11)                      | 11905 | 17165 | 1.9 (7)                       |
| 9. W. Germany  | 4281 | 13152 | 5.0 (4)                       | 11308 | 17160 | 2.2 (3)                       |
| 10. Finland    | 4131 | 10768 | 4.2 (7)                       | 10768 | 14646 | 1.6 (11)                      |
| 11. Austria    | 3731 | 11308 | 4.9 (5)                       | 10409 | 16229 | 2.4 (2)                       |
| 12. Ireland    | 3518 | 7023  | 3.1 (12)                      | 10229 | 17543 | 2.9 (1)                       |
| 13. Italy      | 3425 | 10409 | 4.9 (5)                       | 8739  | 12500 | 1.9 (7)                       |
| 14. Spain      | 2397 | 8739  | 5.8 (2)                       | 7568  | 11130 | 2.1 (5)                       |
| 15. Portugal   | 2132 | 7568  | 5.6 (3)                       | 7023  | 10711 | 2.2 (3)                       |
| 16. Greece     | 1558 | 6229  | 6.2 (1)                       | 6229  | 8238  | 1.5 (12)                      |

Source: Maddison (1995).

- Both Switzerland at the top and Greece at the bottom remained in the same positions
- There is an inverse rank correlation between initial level of income and growth, which is particularly marked in the Golden Age

Source: Crafts & Toniolo (1996). *Economic Growth in Europe since 1945*. Cambridge University Press. Cambridge. p. 6.

**Figure 96: Unemployment rates**

| Twelve countries<br>(benchmark years) |     | Four countries<br>(benchmark years) |      |
|---------------------------------------|-----|-------------------------------------|------|
| 1929                                  | 4.0 | 1920–9 <sup>a</sup>                 | 4.4  |
| 1938                                  | 5.0 | 1930–8                              | 7.1  |
| 1950                                  | 4.5 | 1932 <sup>b</sup>                   | 12.8 |
| 1973                                  | 2.9 | 1950–9                              | 4.2  |
| 1989                                  | 7.4 | 1960–73                             | 2.5  |
|                                       |     | 1962                                | 1.9  |
|                                       |     | 1974–81                             | 5.2  |
|                                       |     | 1982–9                              | 8.8  |
|                                       |     | 1990–3                              | 9.2  |

<sup>a</sup>Three countries only (excludes Italy): France three years only.

<sup>b</sup>Three countries only (excludes France).

Sources: Maddison (1991), OECD (1993).

Source: Crafts & Toniolo (1996). *Economic Growth in Europe since 1945*. Cambridge University Press. Cambridge. p. 7.

**Figure 97: Estimated trend rates of growth of output per capita in different periods (percent per year)**

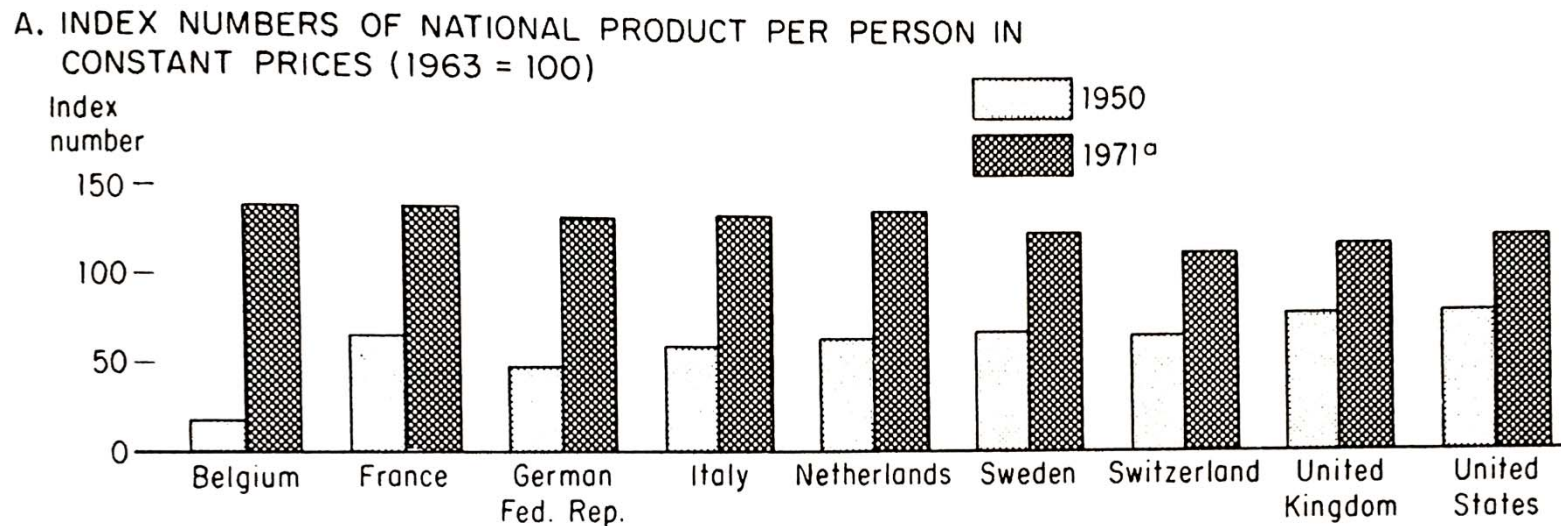
|         | 1860–1914 | 1920–39 | 1951–73 | 1974–89 |
|---------|-----------|---------|---------|---------|
| Belgium | 0.90      | 1.01    | 3.90    | 2.09    |
| Denmark | 1.77      | 1.58    | 3.46    | 1.59    |
| France  | 0.96      | 0.78    | 4.92    | 1.42    |
| Germany | 1.47      | 2.91    | 5.11    | 1.26    |
| Italy   | 1.47      | 0.21    | 5.31    | 2.05    |
| Sweden  | 1.52      | 3.03    | 3.42    | 1.62    |
| UK      | 1.04      | 1.56    | 2.24    | 1.83    |
| USA     | 1.70      | 0.86    | 1.54    | 1.89    |

*Note:* Dataset taken from Maddison (1991); start date for Italy = 1861, USA = 1869.

*Source:* Crafts and Mills (1996), which includes full details of estimation methods, statistical significance and testing for unit roots.

Source: Crafts & Toniolo (1996). *Economic Growth in Europe since 1945*. Cambridge University Press. Cambridge. p. 16.

**Figure 98: Economic recovery and growth of western Europe, 1948–1971**

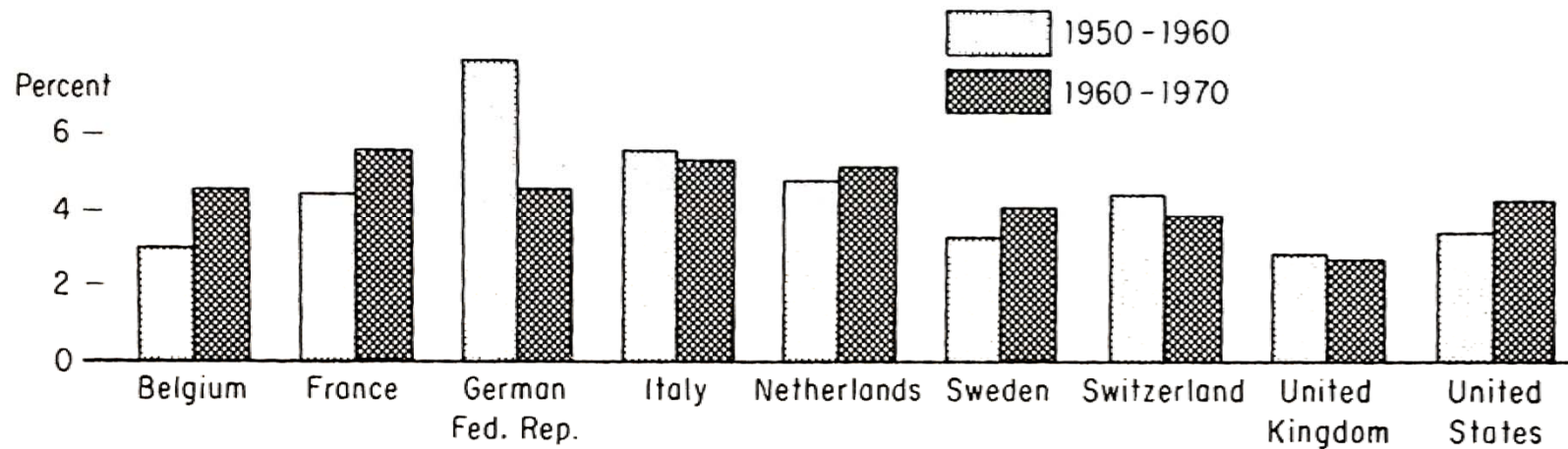


<sup>a</sup> Data for France, Italy, and the Netherlands from 1970; Data for Switzerland from 1969.

Source: Cameron & Neal (2003). *A Concise Economic History of the World*. 4th ed. Oxford Press. Oxford. p. 369.

**Figure 98f: Economic recovery and growth of western Europe, 1948–1971**

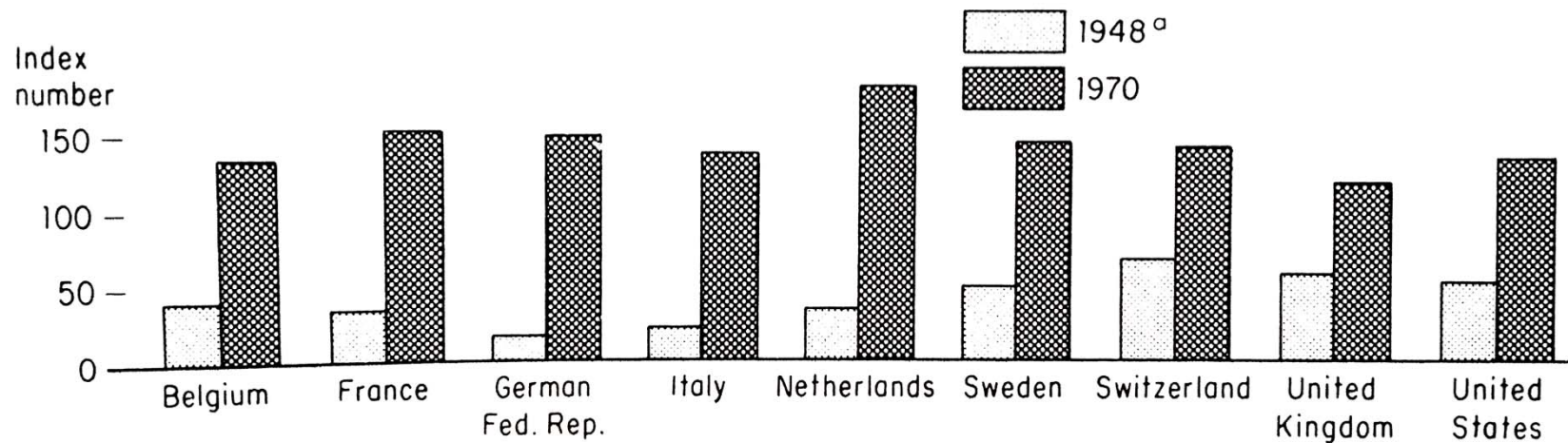
B. NATIONAL INCOME, ANNUAL AVERAGE GROWTH RATE



Source: Cameron & Neal (2003). *A Concise Economic History of the World*. 4th ed. Oxford Press. Oxford. p. 369.

**Figure 98f: Economic recovery and growth of western Europe, 1948–1971**

C. INDEX OF GENERAL INDUSTRIAL PRODUCTION (1963 = 100)

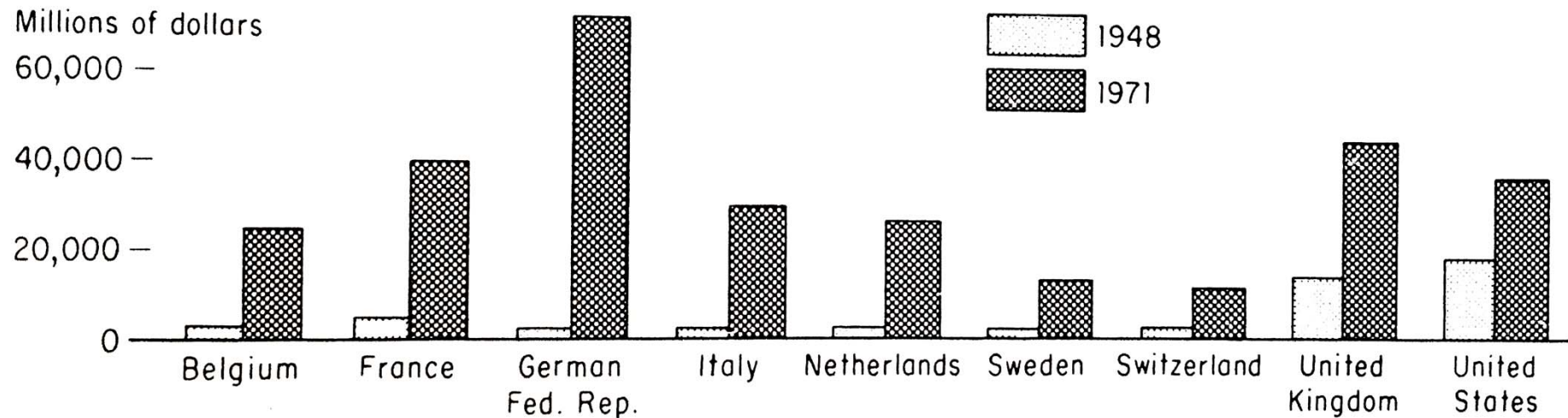


<sup>a</sup> Data for Switzerland from 1958

Source: Cameron & Neal (2003). *A Concise Economic History of the World*. 4th ed. Oxford Press. Oxford. p. 369.

**Figure 98f: Economic recovery and growth of western Europe, 1948–1971**

D. FOREIGN TRADE (IMPORTS PLUS EXPORTS)



Source: Cameron & Neal (2003). *A Concise Economic History of the World*. 4th ed. Oxford Press. Oxford. p. 369.

**Figure 99: Comparative levels of labour productivity in manufacturing  
(UK per employee = 100)**

|             | 1870 | 1913 | 1929 | 1938 | 1950 | 1973 | 1989 |
|-------------|------|------|------|------|------|------|------|
| UK          | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| USA         | 204  | 213  | 250  | 192  | 263  | 215  | 177  |
| Canada      | 132  | 230  | 256  | 218  | 227  | 229  | 185  |
| Australia   |      | 138  | 102  | 101  | 96   | 86   | 81   |
| Germany     | 100  | 119  | 105  | 107  | 96   | 119  | 105  |
| Netherlands |      |      | 102  | 117  | 88   | 133  | 128  |
| Norway      |      | 90   | 109  | 95   | 103  | 104  | 85   |
| Sweden      |      | 102  | 94   | 100  | 118  | 128  | 121  |
| Denmark     |      |      | 115  | 98   | 88   | 89   | 93   |
| France      |      | 79   | 82   | 76   | 84   | 114  | 115  |
| Italy       |      | 59   | 59   | 49   | 68   | 96   | 111  |
| Japan       |      | 24   | 32   | 42   | 20   | 95   | 143  |

Source: Broadberry (1996).

Source: Crafts & Toniolo (1996). *Economic Growth in Europe since 1945*. Cambridge University Press. Cambridge. p. 21.



## Figure 100: The overvaluation of major West European currencies, 1947–1953

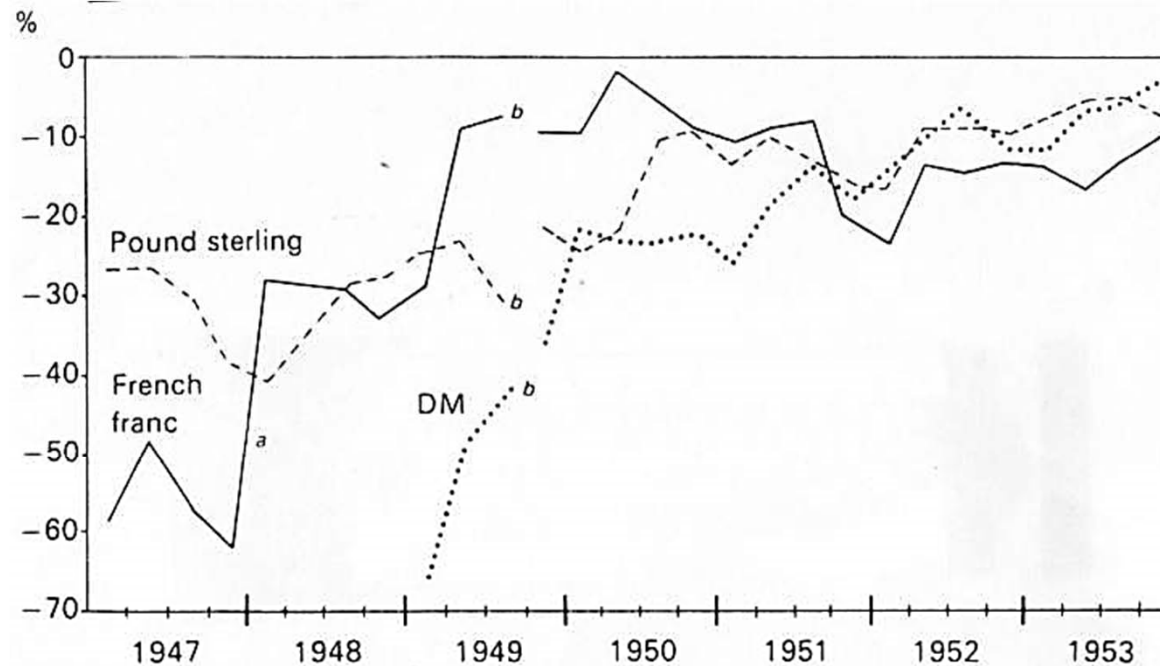


Figure 10. The overvaluation of major West European currencies 1947–53: Deviation of market exchange rate (Zurich rate for banknotes) from official dollar parity.

Notes: <sup>a</sup>Devaluation. <sup>b</sup>Currency realignment of September 1949.

Source: Bank für Internationalen Zahlungsausgleich; own calculations.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 93.

**Figure 101: Marshall-Plan aid and economic performance**

|                             | GNP 1950 in<br>bill. \$ | Aid receipts <sup>a</sup> in: |                       | Real growth rates <sup>b</sup> of: |                          |         |                               |
|-----------------------------|-------------------------|-------------------------------|-----------------------|------------------------------------|--------------------------|---------|-------------------------------|
|                             |                         | m. \$                         | % of GNP <sup>c</sup> | GNP                                | Industrial<br>production | Exports | Gross<br>capital<br>formation |
| Austria                     | 2.430                   | 703.5                         | 7.2                   | 8.66                               | 12.82                    | 22.30   | 16.87                         |
| Belgium-Luxemburg           | 7.052                   | 324.8                         | 1.2                   | 3.87                               | 2.92                     | 8.71    | 3.66                          |
| Denmark                     | 3.348                   | 271.2                         | 2.0                   | 3.79                               | 3.96                     | 15.46   | 7.46                          |
| France                      | 29.090                  | 2862.6                        | 2.5                   | 4.26                               | 4.47                     | 17.08   | -0.56                         |
| West Germany                | 23.310                  | 1317.2                        | 1.4                   | 13.32                              | 20.37                    | 50.09   | 20.12                         |
| Greece                      | 2.185                   | 773.7                         | 8.9                   | 9.01                               | 14.69                    | 17.76   | 4.55                          |
| Italy                       | 15.165                  | 1253.5                        | 2.1                   | 6.05                               | 9.96                     | 8.68    | 11.79                         |
| Netherlands                 | 4.976                   | 980.6                         | 4.9                   | 5.18                               | 7.63                     | 23.89   | 2.96                          |
| Norway                      | 2.720                   | 263.6                         | 2.4                   | 3.34                               | 7.26                     | 7.54    | 3.61                          |
| Portugal                    | 1.398                   | 41.6                          | 0.7                   | 3.71                               | —                        | 4.87    | 1.98                          |
| Sweden                      | 6.520                   | 82.1                          | 0.3                   | 3.59                               | 2.48                     | 7.54    | 2.11                          |
| Turkey                      | 2.300                   | 213.1                         | 2.3                   | 7.39                               | 8.36                     | 12.81   | —                             |
| United Kingdom              | 37.337                  | 2690.7                        | 1.8                   | 2.71                               | 4.03                     | 4.40    | 2.92                          |
| Ireland                     | 1.086                   | 146.5                         | 3.4                   | 3.07                               | 7.78                     | 12.92   | 6.00                          |
| Iceland                     | 0.110                   | 29.3                          | 6.7                   | 1.63                               | —                        | 0.71    | —                             |
| All recipients <sup>d</sup> | 139.027                 | 11954.0                       | 2.1                   | 5.27                               | 7.71                     | 13.3    | —                             |

Notes: <sup>a</sup>Total expenditures, adjusted for the reallocation of aid via bilateral drawing rights 1948/9.

<sup>b</sup>1948-53 average (gross capital formation: 1948-52 average), in per cent p.a.

<sup>c</sup>Aid receipts divided by four times the GNP of 1950.

<sup>d</sup>Excluding the working capital of the European Payments Union, which amounted to 350 m. dollars. Spearman rank correlation coefficients between aid receipts in per cent of GNP and (i) GNP growth: 0.18; (ii) export growth: 0.36; (iii) growth of industrial production: 0.54, and (iv) growth rate of gross capital formation: 0.28.

Sources: Agency for International Development (1971), Bank für Internationalen Zahlungsausgleich (various issues), Donovan (1987), Milward (1984), OEEC, *Foreign Trade, Series I*, various issues; own calculations.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 98.

**Figure 102: West Germany's foreign trade 1960–1973**

|                                     |       |       |                    |                    | Average rate of growth <sup>b</sup> |         |        |         |
|-------------------------------------|-------|-------|--------------------|--------------------|-------------------------------------|---------|--------|---------|
|                                     | 1960  | 1965  | 1970               | 1973               | 1960–5                              | 1965–70 | 1970–3 | 1960–73 |
| <i>Imports</i>                      |       |       |                    |                    |                                     |         |        |         |
| Values <sup>a</sup>                 | 42.7  | 70.5  | 109.6              | 145.4              | 10.5                                | 9.2     | 9.9    | 9.9     |
| Volumes <sup>c</sup>                | 42.7  | 72.4  | 115.1              | 150.0              | 11.1                                | 9.7     | 9.3    | 10.1    |
| % of GNP                            | 14.1  | 15.3  | 16.0               | 15.6               |                                     |         |        |         |
| <i>Exports</i>                      |       |       |                    |                    |                                     |         |        |         |
| Values <sup>a</sup>                 | 47.9  | 71.7  | 125.3              | 178.5              | 8.4                                 | 11.8    | 12.5   | 10.6    |
| Volumes <sup>c</sup>                | 47.9  | 69.7  | 118.2              | 161.4              | 7.8                                 | 11.1    | 10.9   | 9.8     |
| % of GNP                            | 15.8  | 15.5  | 18.3               | 19.2               |                                     |         |        |         |
| <i>Balance of trade<sup>a</sup></i> |       |       |                    |                    |                                     |         |        |         |
|                                     | 5.2   | 1.2   | 15.7               | 33.0               |                                     |         |        |         |
| % of GNP                            | 1.7   | 0.3   | 2.3                | 3.6                |                                     |         |        |         |
| <i>Terms of trade</i>               |       |       |                    |                    |                                     |         |        |         |
|                                     | 100.0 | 105.6 | 110.9 <sup>d</sup> | 113.6 <sup>d</sup> |                                     |         |        |         |

Notes: <sup>a</sup> In billion DMarks.

<sup>b</sup> In per cent p.a.

<sup>c</sup> In 1960 prices.

<sup>d</sup> Original base: 1962 = 100.

Source: Statistisches Bundesamt; own calculations.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 165.

**Figure 103: Regional Structure of West Germany's foreign trade 1960–1973**

|                              | 1960 | 1965 | 1970 | 1973 |
|------------------------------|------|------|------|------|
| <i>Imports</i>               |      |      |      |      |
| Western industrial countries | 72.8 | 76.6 | 79.8 | 78.9 |
| EC (6)                       | 29.7 | 37.8 | 44.2 | 46.7 |
| EFTA (7)                     | 19.6 | 17.2 | 15.2 | 11.7 |
| North America                | 16.0 | 14.3 | 12.7 | 9.5  |
| Others                       | 7.5  | 7.3  | 7.7  | 11.0 |
| Eastern Europe               | 4.0  | 3.7  | 3.7  | 4.2  |
| Developing countries         | 22.9 | 19.5 | 16.4 | 16.8 |
| Asia                         | 9.2  | 6.2  | 5.4  | 7.0  |
| <i>Exports</i>               |      |      |      |      |
| Western industrial countries | 76.3 | 81.5 | 83.6 | 82.2 |
| EC (6)                       | 29.5 | 35.2 | 40.3 | 39.9 |
| EFTA (7)                     | 28.0 | 27.0 | 22.6 | 22.7 |
| North America                | 9.0  | 9.1  | 10.1 | 9.3  |
| Others                       | 9.8  | 10.2 | 10.6 | 10.3 |
| Eastern Europe               | 3.9  | 3.3  | 3.8  | 5.5  |
| Developing countries         | 19.5 | 14.9 | 12.4 | 12.0 |
| Asia                         | 8.8  | 7.1  | 5.5  | 5.5  |

*Note:* Respective share in per cent of total.

*Source:* Statistisches Bundesamt; own calculations.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 166.

**Figure 104: Relative importance of intra-industry specialization in West Germany's foreign trade**

|   | Manufactures <sup>a</sup> |      |      | All commodities <sup>b</sup> |      |      |
|---|---------------------------|------|------|------------------------------|------|------|
|   | 1960                      | 1972 | 1980 | 1960                         | 1972 | 1980 |
| <i>Share of intra-industry trade in total trade (in %) with</i> |                           |      |      |                              |      |      |
| EEC   | 62.3                      | 75.8 | 81.3 | 59.8                         | 71.6 | 72.9 |
| EFTA  | 59.6                      | 60.7 | 72.4 | 56.3                         | 58.2 | 66.8 |
| North America   | 48.5                      | 57.5 | 66.9 | 39.4                         | 45.6 | 50.2 |
| World   | 55.9                      | 68.6 | 74.0 | 46.4                         | 58.6 | 66.0 |

*Notes:* <sup>a</sup> SITC-sections 5–8; two-digit level; number of industries 28.

<sup>b</sup> SITC-sections 0–9; two-digit level except for SITC 0, 4, 9 (one digit level); number of industries 46.

*Source:* Schmieding (1988), p. 25.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 172.

## Figure 105: Macroeconomic data, 1963–1972

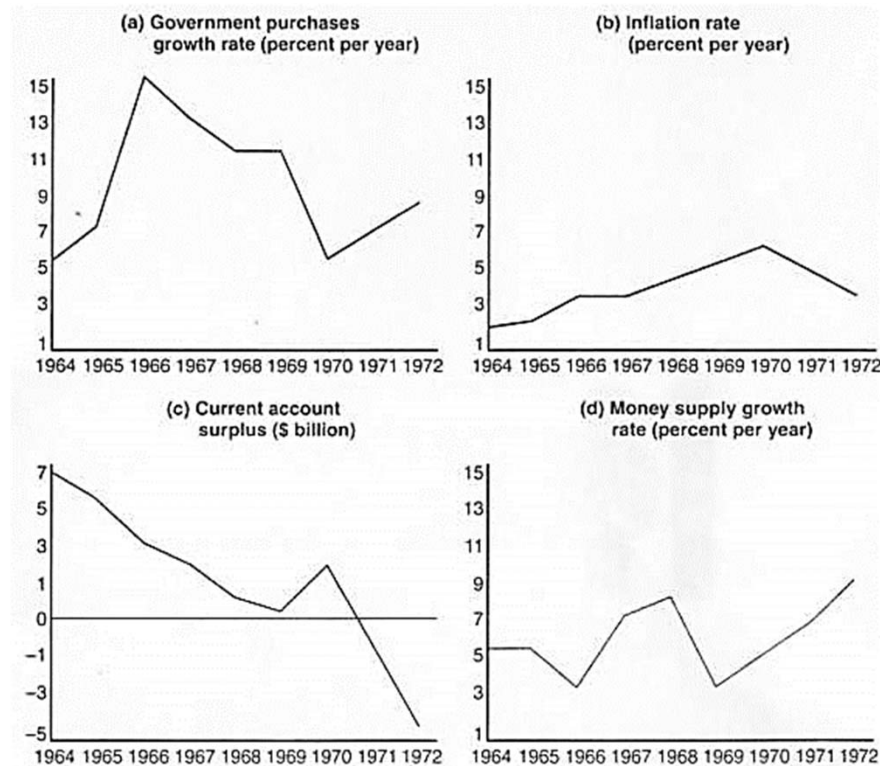


Figure 18-3  
U.S. Macroeconomic Data, 1964–1972

Source: *Economic Report of the President*, 1985. Money supply growth rate is the December to December percentage increase in M1. Inflation rate is the percentage increase in each year's average consumer price index over the average consumer price index for the previous year.

Source: Krugman & Obstfeld (2006). *International Economics – Theory and Policy*, 8th ed. Pearson. Boston. p. 524.

**Figure 106: Inflation rates in Industrial countries, 1966–1972 (percent per year)**

| Country       | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 |
|---------------|------|------|------|------|------|------|------|
| Britain       | 3.6  | 2.6  | 4.6  | 5.2  | 6.5  | 9.7  | 6.9  |
| France        | 2.8  | 2.8  | 4.4  | 6.5  | 5.3  | 5.5  | 6.2  |
| Germany       | 3.4  | 1.4  | 2.9  | 1.9  | 3.4  | 5.3  | 5.5  |
| Italy         | 2.1  | 2.1  | 1.2  | 2.8  | 5.1  | 5.2  | 5.3  |
| United States | 2.9  | 3.1  | 4.2  | 5.5  | 5.7  | 4.4  | 3.2  |

**Source:** Organization for Economic Cooperation and Development. *Main Economic Indicators: Historical Statistics, 1964–1983*. Paris: OECD, 1984. Figures are percentage increases in each year's average consumer price index over that of the previous year.

Source: Krugman, Obstfeld & Melitz (2015). *International Economics – Theory and Policy*, 10th ed. Pearson. Boston. p. 597.

**Figure 107: Changes in Germany's money supply and international reserves 1968–1972**

| <b>Growth rate of</b>           | <b>1968</b> | <b>1969</b> | <b>1970</b> | <b>1971</b> | <b>1972</b> |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|
| Money supply                    | 6.4         | −6.3        | 8.9         | 12.3        | 14.7        |
| Official international reserves | 37.8        | −43.6       | 215.7       | 36.1        | 35.8        |

*Source:* Organization for Economic Cooperation and Development. *Main Economic Indicators: Historical Statistics, 1964–1983*. Paris: OECD, 1984. Figures are percentage increases in each year's end-of-year money supply or international reserves over the level at the end of the previous year. Official reserves are measured net of gold holdings.

Source: Krugman & Obstfeld (2006). *International Economics – Theory and Policy*, 7th ed. Pearson. Boston. p. 512.

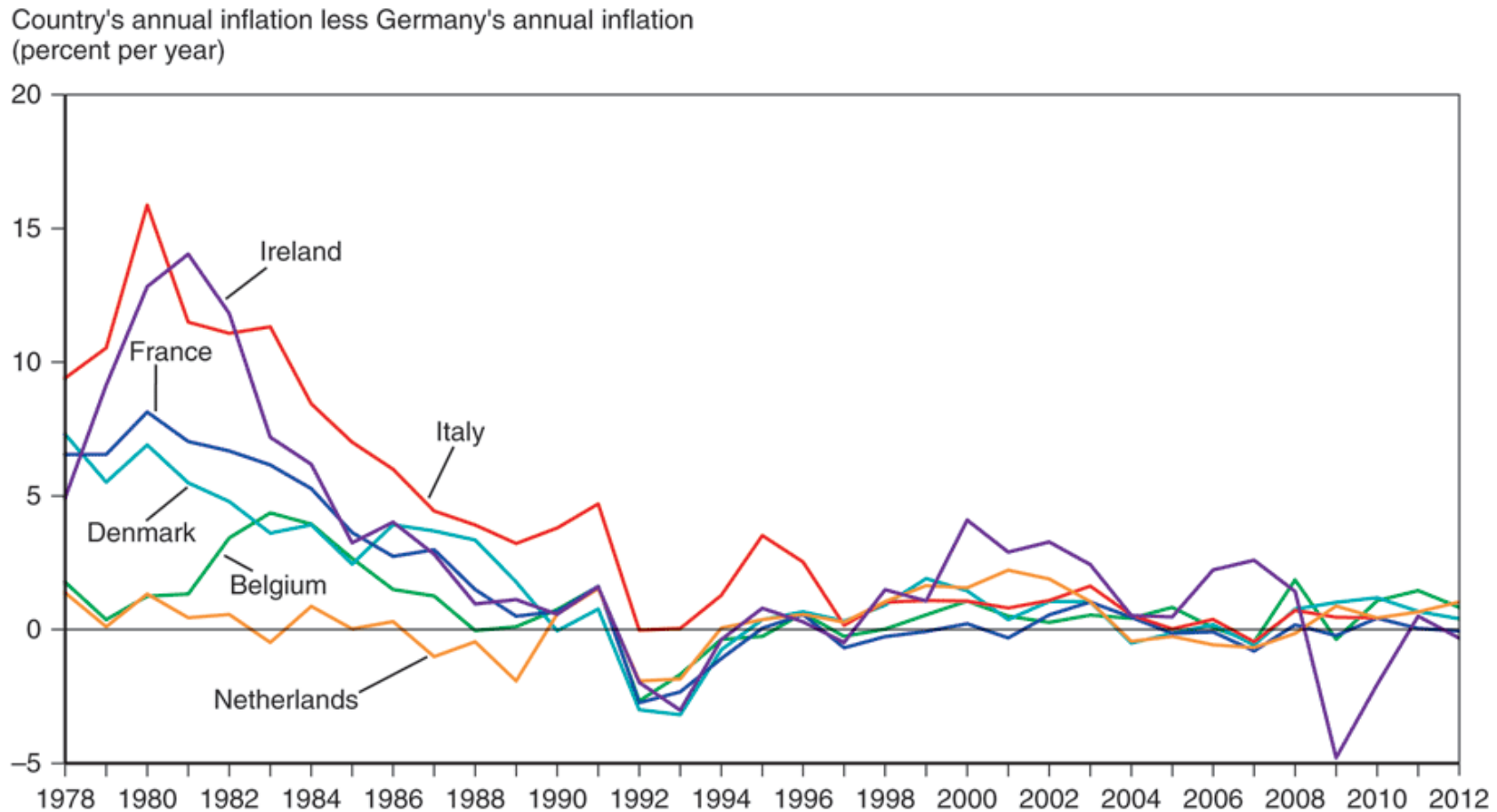


**Figure 108: Members of the Euro Zone, January 1, 2014**



Source: Krugman, Obstfeld & Melitz (2015). *International Economics – Theory and Policy*, 10th ed. Pearson. Boston. p. 667.

**Figure 109: Inflation convergence for six original EMS members, 1978–2012 (CPI inflation rates)**



Source: Krugman, Obstfeld & Melitz (2015). *International Economics – Theory and Policy*, 10th ed. Pearson. Boston. p. 671.

Prof. Dr. Dr. h.c. Karl-Heinz Paqué  
Chair of International Economics

## **GLOBALIZATION: Past, Present & Future**

- 3 Globalization I (1820–1990)
  - 3.3 The Second Era of Integration: 1950–90
    - 3.3.2 **Oil-Crises and their Aftermath 1973–90** (Figure 110–119)

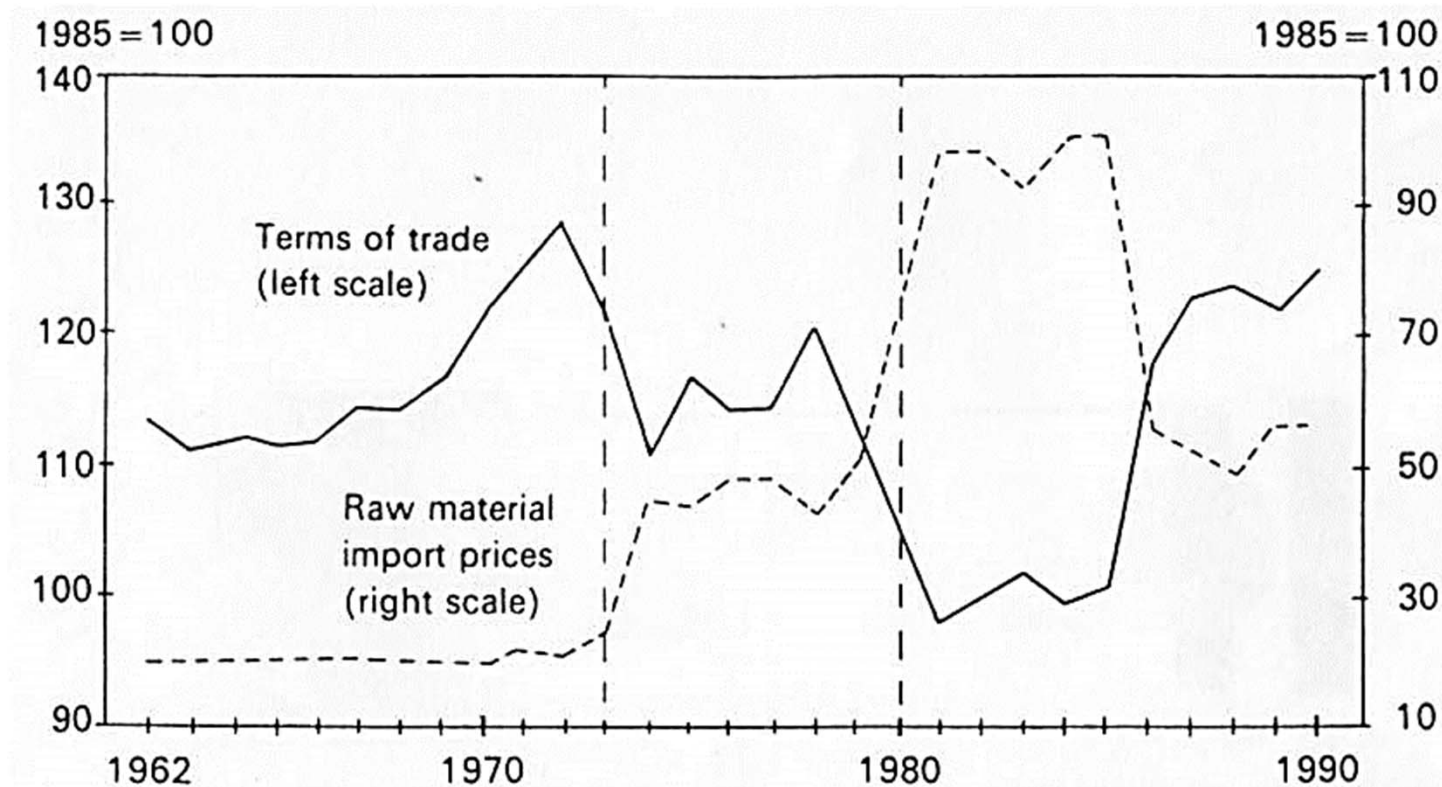
**Figure 110: Macroeconomic data for key industrial regions, 1963–2012**

| Period   | 1963–1972 | 1973–1982 | 1983–1992 | 1993–2006 | 2007–2009 | 2010–2012 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Inflation (percent per year)</b>                  |           |           |           |           |           |           |
| United States  | 3.3       | 8.7       | 4.0       | 2.7       | 2.1       | 2.3       |
| Europe   | 4.4       | 10.7      | 5.1       | 2.4       | 2.3       | 2.5       |
| Japan  | 5.6       | 8.6       | 1.8       | 0.2       | 0.0       | −0.3      |
| <b>Unemployment (percent of labor force)</b>         |           |           |           |           |           |           |
| United States  | 4.7       | 7.0       | 6.8       | 5.3       | 6.6       | 8.9       |
| Europe   | 1.9       | 5.5       | 9.4       | 9.4       | 7.8       | 10.0      |
| Japan  | 1.2       | 1.9       | 2.5       | 4.0       | 4.3       | 4.7       |
| <b>Per Capita Real GDP Growth (percent per year)</b> |           |           |           |           |           |           |
| United States  | 2.8       | 0.9       | 2.4       | 2.1       | −0.9      | 1.4       |
| Europe   | 3.9       | 2.0       | 3.0       | 2.1       | 0.6       | 0.8       |
| Japan  | 8.5       | 2.9       | 3.4       | 1.0       | −3.8      | 2.1       |

**Source:** International Monetary Fund and Eurostat.

Source: Krugman, Obstfeld & Melitz (2015). *International Economics – Theory and Policy*, 10th ed. Pearson. Boston. p. 605.

**Figure 111: Terms of Trade and raw material import prices, 1962–1990**



Source: Statistisches Bundesamt; own calculations.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 159.

## Figure 112: Unemployment rate in West Germany, 1948–1990

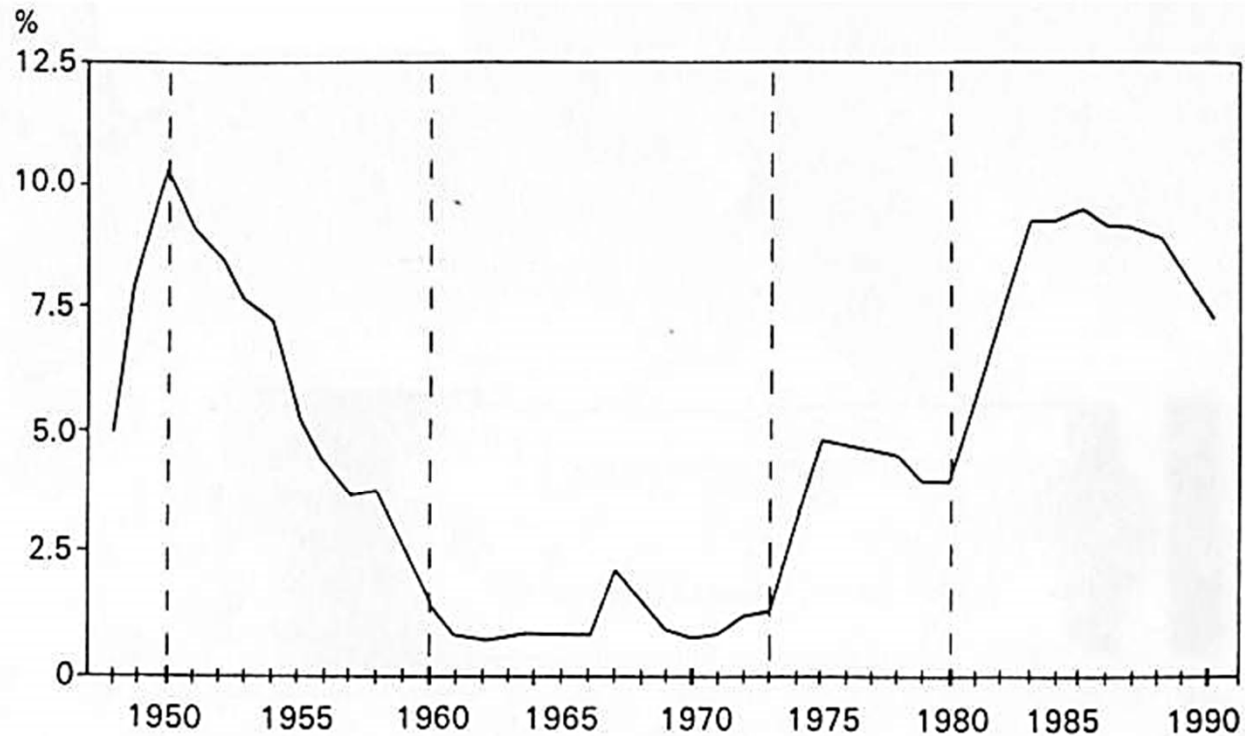


Figure 4. The unemployment rate in West Germany 1948–90.

*Notes:* for 1948 only second half of the year; for 1948–59 excluding the Saar and Berlin.

*Sources:* until 1952, Bundesminister für Arbeit; from 1953, Bundesanstalt für Arbeit.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 159.

**Figure 113: Contractual minimum and effective wages, West Germany 1958–1989**

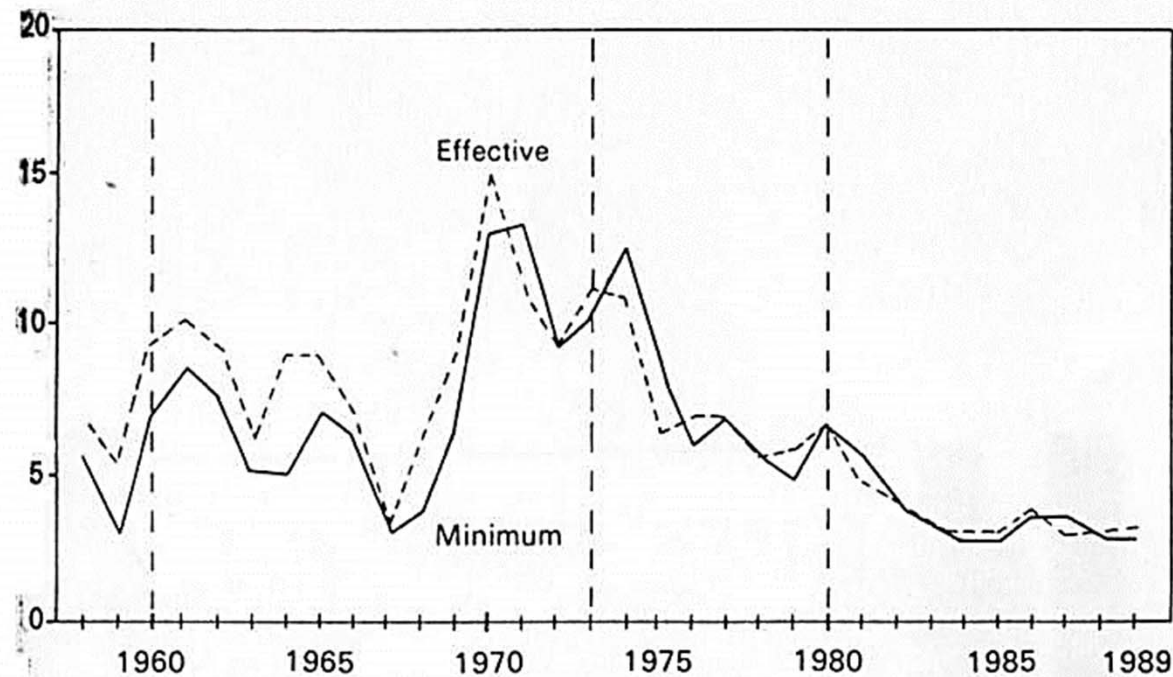


Figure 11. Contractual minimum and effective wages 1958–89.

Note: Average annual growth rate (in per cent) of index of hourly wage rate in industry.

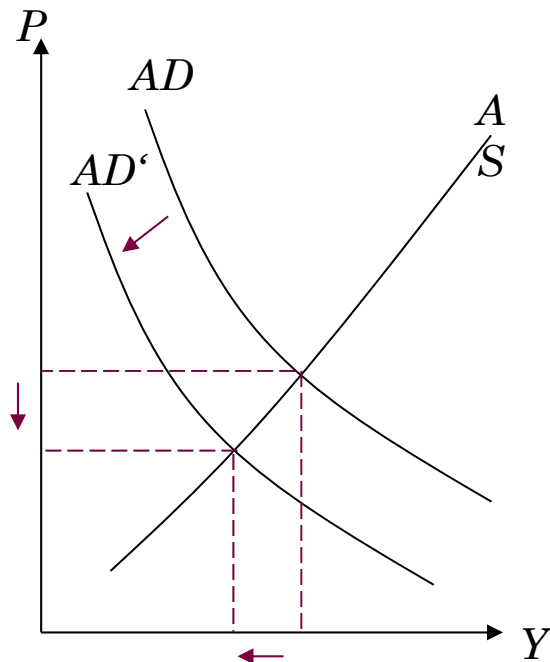
Source: Statistisches Bundesamt: own calculations.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 133.

## Figure 114: Great Depression and Recessions of the 1970s

Great Depression: 1930-1932:

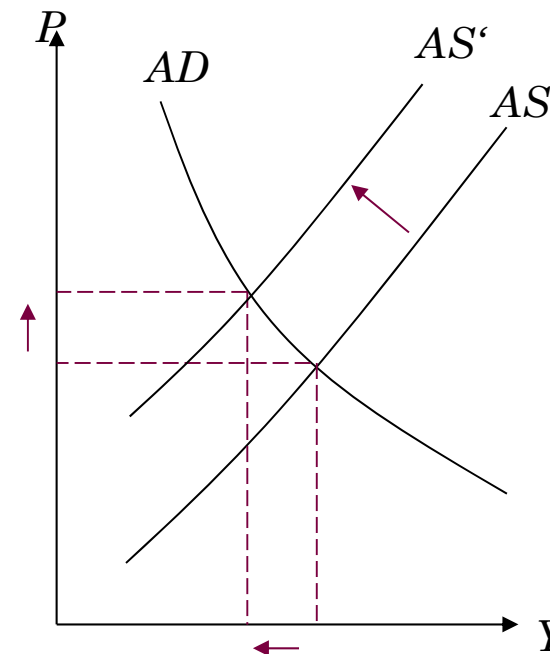
**Demand-side Schocks**



„depression“:  $P\downarrow$ ,  $Y\downarrow$

Recessions: 1973-1975, 1980:

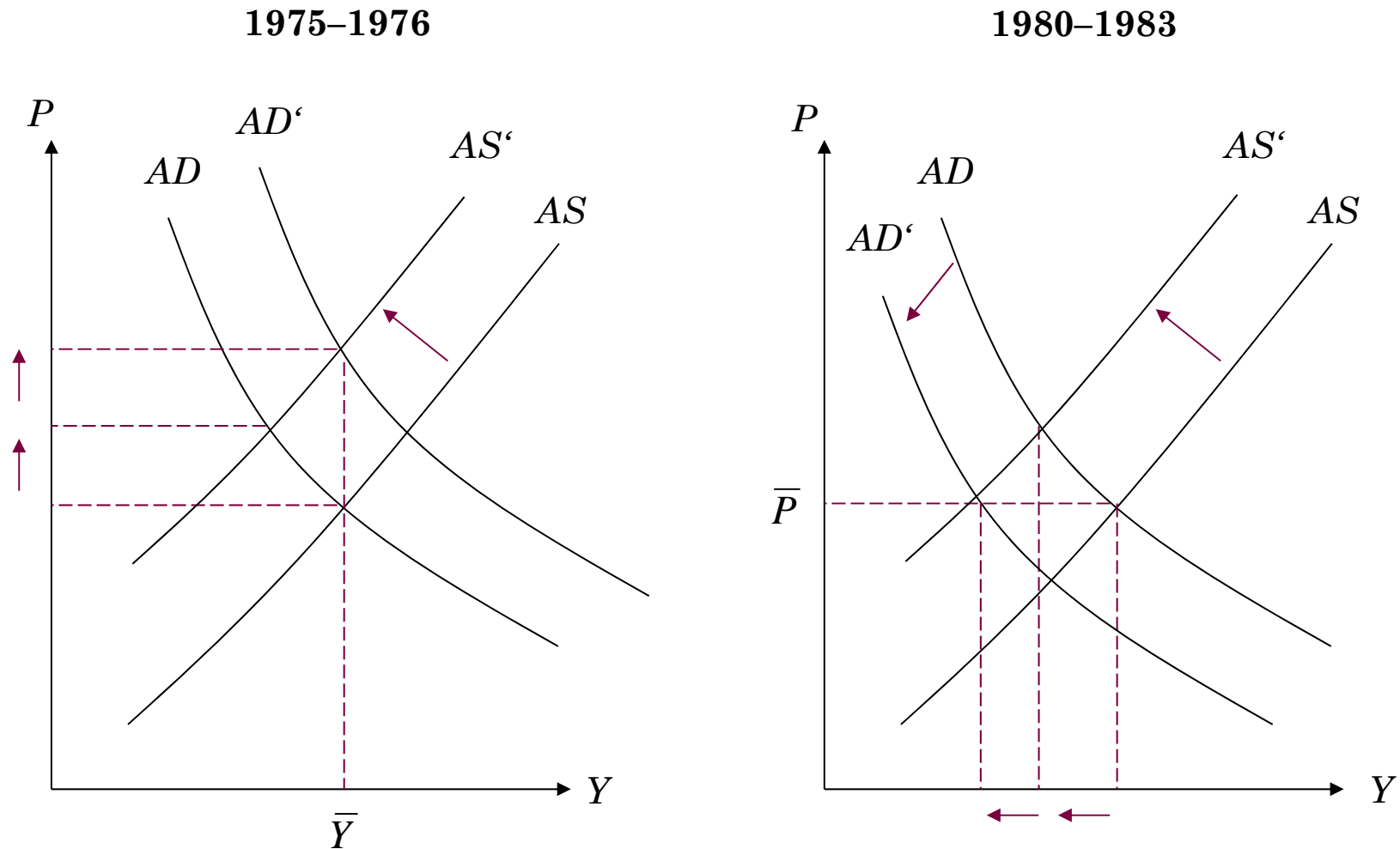
**Supply-side Schocks**



$P\uparrow$ ,  $Y\downarrow$ : „stagflation“



**Figure 115: Macroeconomic policy reactions 1975-1976 and 1980-1983**



## Figure 116: Price inflation in West Germany, 1949–1990

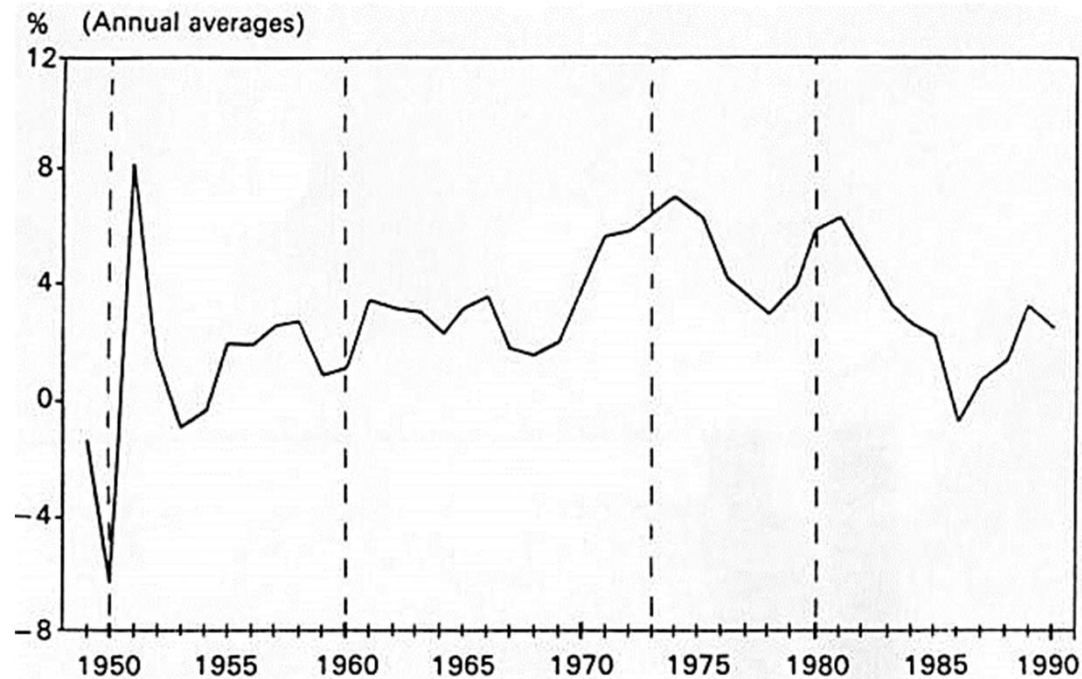


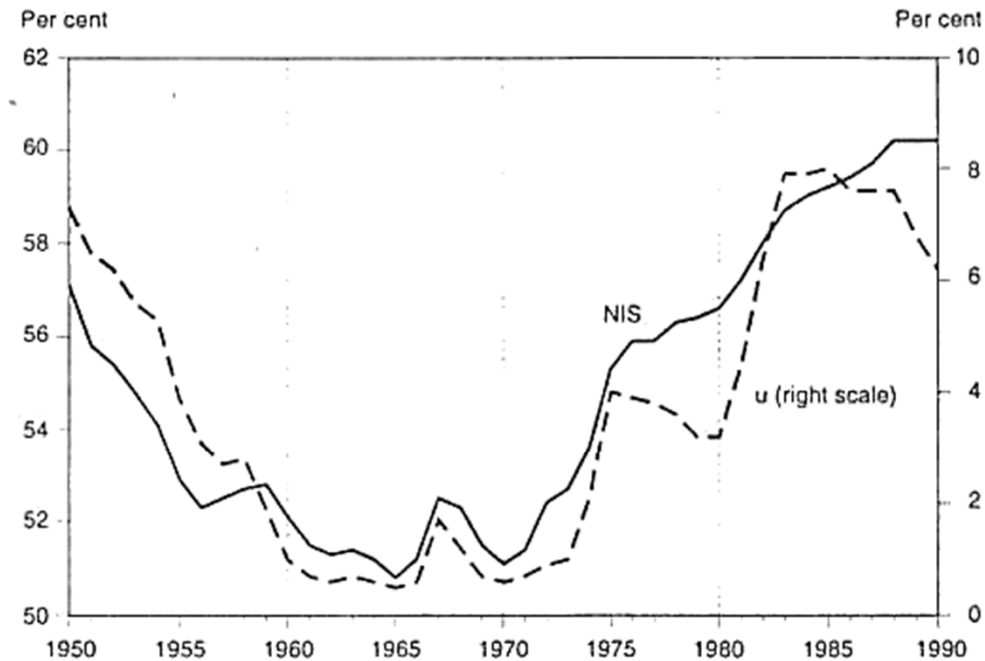
Figure 5. Price inflation in West Germany 1949–90.

Notes: for 1949 annualized growth rate relative to second half of 1948; for 1948/9–1959/60 excluding the Saar; up to 1950 consumer price index for representative household (four persons); from 1951 onwards deflator of private consumption expenditure.

Source: Statistisches Bundesamt; own calculations.

Source: Giersch, Paqué & Schmieding (1994). *The Fading Miracle. Four Decades of Market Economy in Germany*. Cambridge University Press. Cambridge. p. 12.

**Figure 117: Unemployment and the rise and decline of industry in West Germany, 1950–1990<sup>a</sup>**

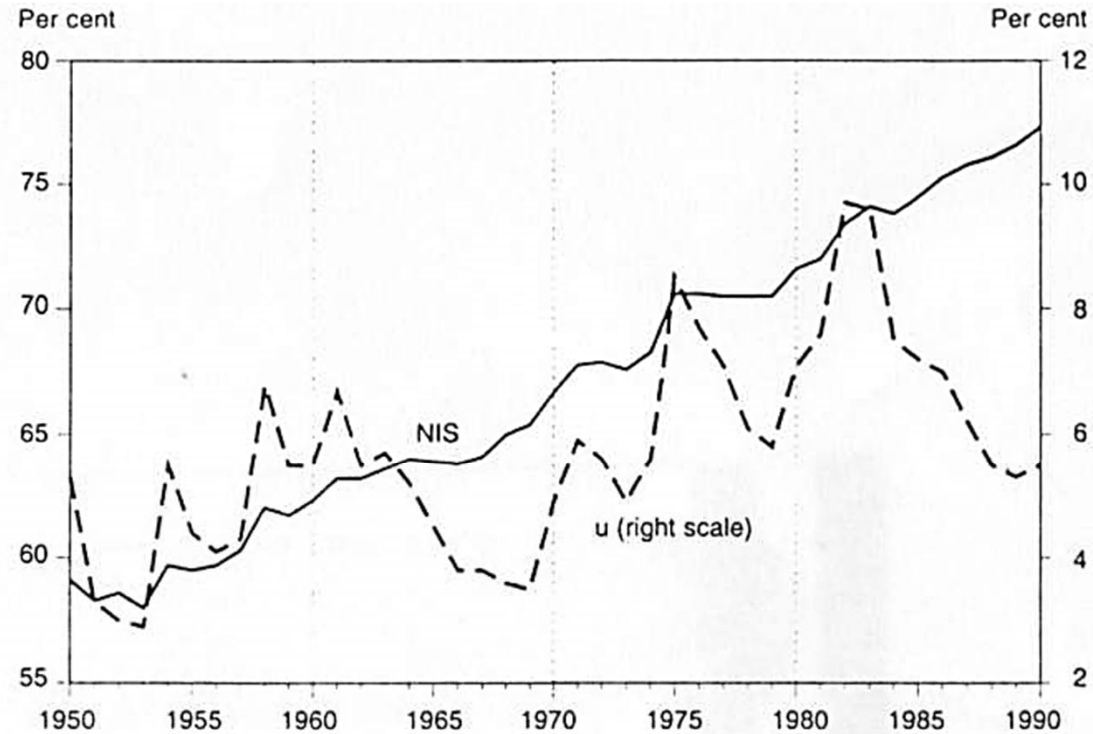


<sup>a</sup>NIS = share of sectors other than industry in total employment (per cent); *u* = unemployment rate, defined as number of registered unemployed persons divided by labour force (per cent).

Source: Bundesanstalt für Arbeit *Amtliche Nachrichten* (various issues), *Arbeitsstatistik* (various issues); Statistisches Bundesamt *Fachserie 18, Reihe 1.3.* (various issues) as well as the special issues S.7, S.8 and S.15.

Source: Paqué (1999). *Structural Unemployment and Real Wage Rigidity in Germany*. Mohr Siebeck. Tübingen. p. 107.

**Figure 117f: Unemployment and the decline of industry in the U.S., 1950–1990<sup>a</sup>**

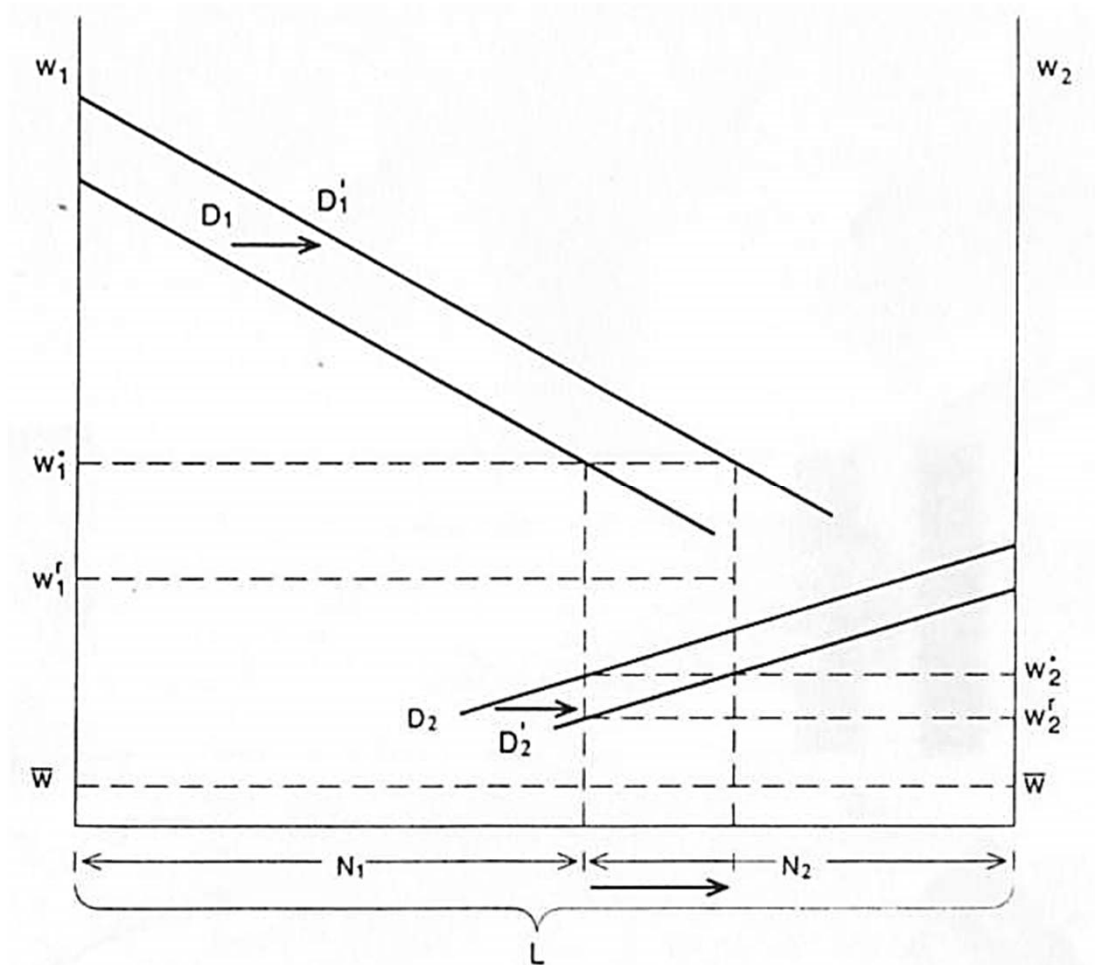


<sup>a</sup>NIS = share of sectors other than industry in total employment (per cent); *u* = unemployment rate, defined as number of registered unemployed persons divided by labour force (per cent).

Source: U.S. Bureau of the Census *Employment and Earnings* (various issues).

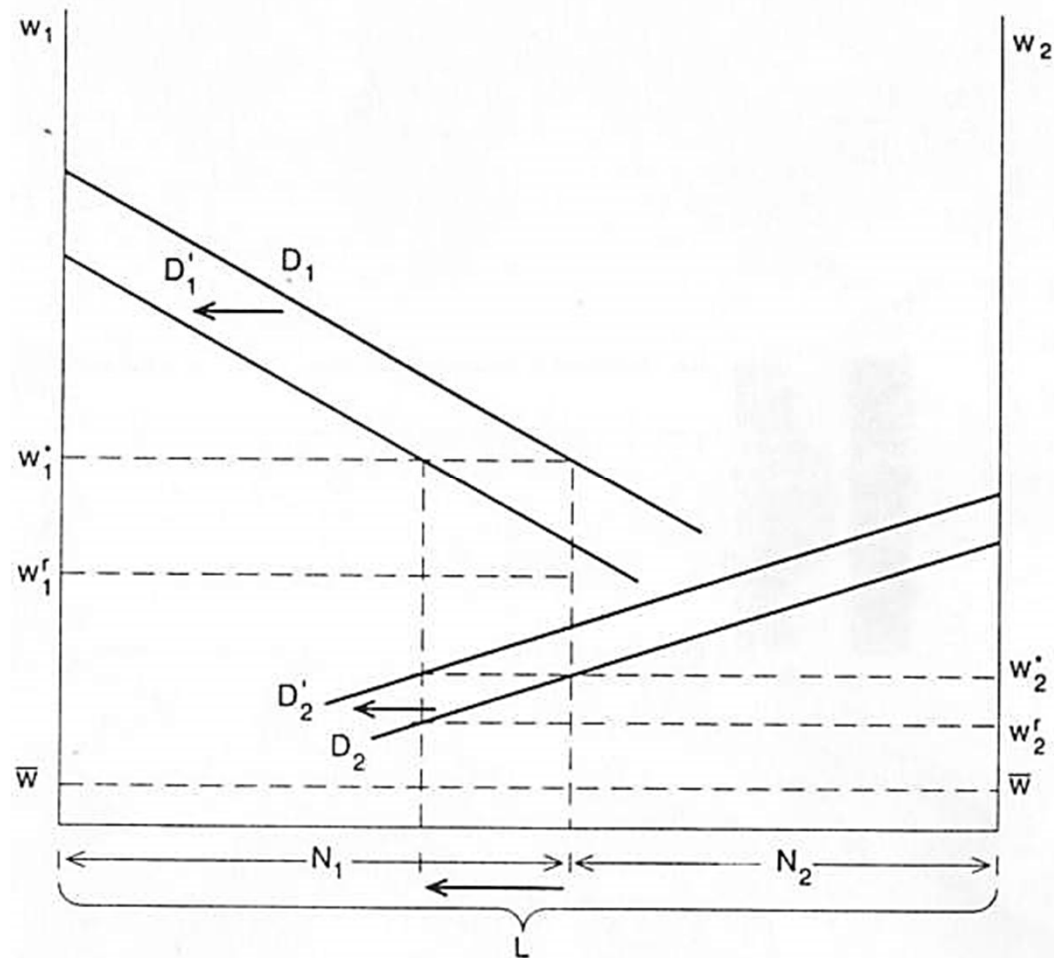
Source: Paqué (1999). *Structural Unemployment and Real Wage Rigidity in Germany*. Mohr Siebeck. Tübingen. p. 109.

**Figure 118: Structural change in a two-sector economy**



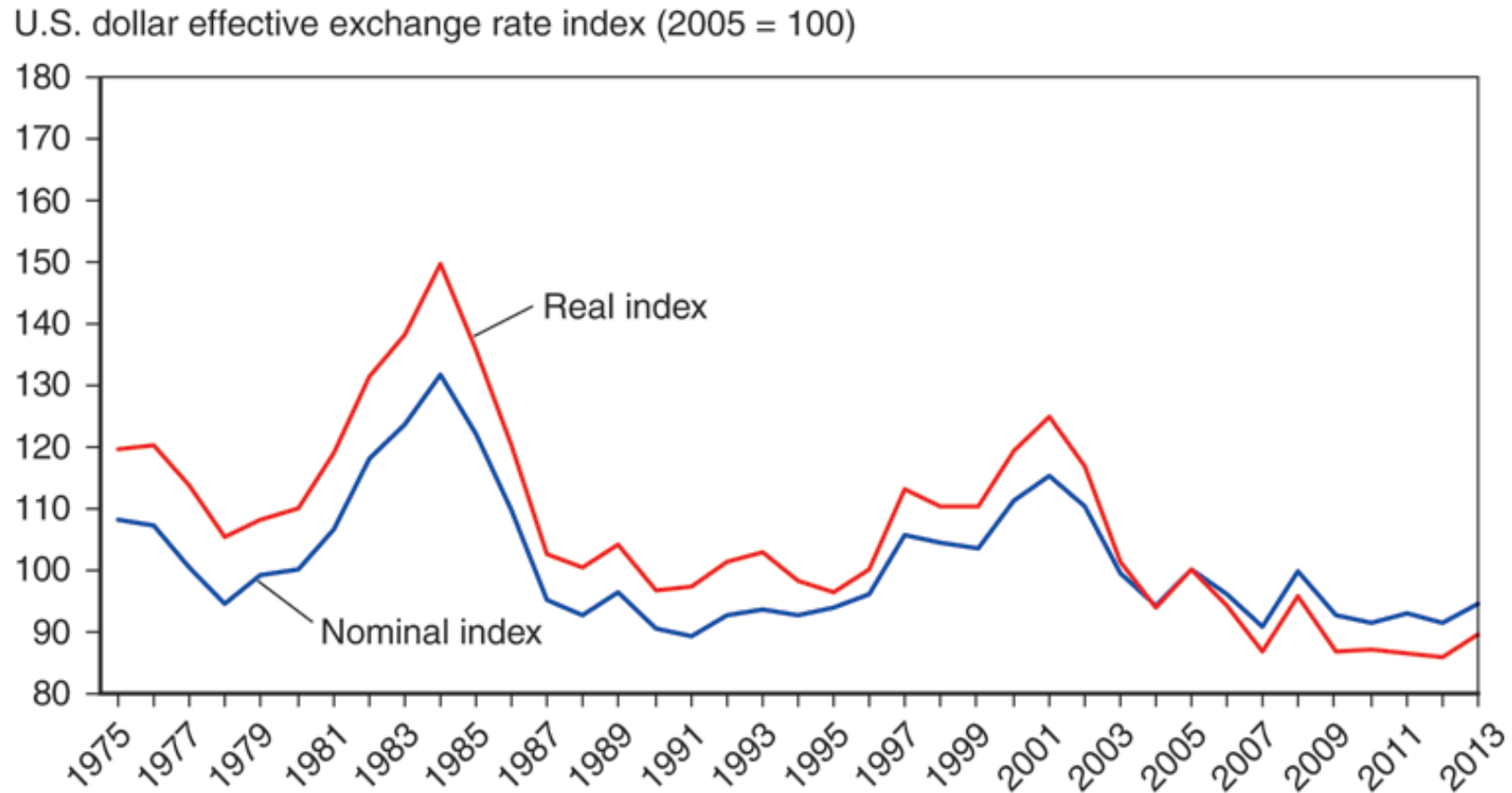
Source: Paqué (1999). *Structural Unemployment and Real Wage Rigidity in Germany*. Mohr Siebeck. Tübingen. p. 86.

Figure 118f: Structural change in a two-sector economy



Source: Paqué (1999). *Structural Unemployment and Real Wage Rigidity in Germany*. Mohr Siebeck. Tübingen. p. 87.

**Figure 119: Nominal and real effective Dollar exchange rate indexes, 1975–2013 (2005 = 100)**



Source: Krugman, Obstfeld & Melitz (2015). *International Economics – Theory and Policy*, 10th ed. Pearson. Boston. p. 606.