# Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Marshall’s diagram</td>
<td>30</td>
</tr>
<tr>
<td>1.2</td>
<td>Cournot’s demand curve</td>
<td>31</td>
</tr>
<tr>
<td>1.3</td>
<td>Cournot’s scissors diagram and tax incidence analysis</td>
<td>32</td>
</tr>
<tr>
<td>2.1</td>
<td>Walras</td>
<td>39</td>
</tr>
<tr>
<td>2.2</td>
<td>Marshall</td>
<td>39</td>
</tr>
<tr>
<td>2.3</td>
<td>Marshall stable Walras unstable</td>
<td>39</td>
</tr>
<tr>
<td>2.4</td>
<td>Marshall unstable Walras stable</td>
<td>39</td>
</tr>
<tr>
<td>3.1</td>
<td>An indifference map</td>
<td>44</td>
</tr>
<tr>
<td>4.1</td>
<td>The tangency points for a given isoquant and two budget lines</td>
<td>51</td>
</tr>
<tr>
<td>4.2</td>
<td>Lerner-Hicks diagram relating relative factor prices to relative factor intensities</td>
<td>53</td>
</tr>
<tr>
<td>5.1</td>
<td>Hicks decomposition</td>
<td>59</td>
</tr>
<tr>
<td>5.2</td>
<td>Slutsky decomposition</td>
<td>60</td>
</tr>
<tr>
<td>6.1</td>
<td>Engel curves</td>
<td>65</td>
</tr>
<tr>
<td>6.2</td>
<td>Working-Engel curves</td>
<td>67</td>
</tr>
<tr>
<td>7.1</td>
<td>Isoquant map under homotheticity</td>
<td>70</td>
</tr>
<tr>
<td>8.1</td>
<td>Short-run unit cost curves</td>
<td>74</td>
</tr>
<tr>
<td>8.2</td>
<td>Long-run and short-run average cost curves</td>
<td>75</td>
</tr>
<tr>
<td>9.1</td>
<td>Labor demand and supply</td>
<td>81</td>
</tr>
<tr>
<td>9.2</td>
<td>Income distribution</td>
<td>82</td>
</tr>
<tr>
<td>10.1</td>
<td>Hicks’s classification of technical change</td>
<td>84</td>
</tr>
<tr>
<td>10.2</td>
<td>Hicks-neutral technical change</td>
<td>85</td>
</tr>
<tr>
<td>10.3</td>
<td>Harrod-neutral technical change</td>
<td>87</td>
</tr>
<tr>
<td>11.1</td>
<td>Three matrix games</td>
<td>90</td>
</tr>
<tr>
<td>11.2</td>
<td>Best reply</td>
<td>91</td>
</tr>
<tr>
<td>11.3</td>
<td>Nash equilibrium</td>
<td>92</td>
</tr>
<tr>
<td>11.4</td>
<td>Nash equilibrium in mixed strategies</td>
<td>93</td>
</tr>
<tr>
<td>11.5</td>
<td>Prisoners’ Dilemma and Stag Hunt</td>
<td>93</td>
</tr>
<tr>
<td>12.1</td>
<td>The Marshallian measure of consumer surplus</td>
<td>98</td>
</tr>
<tr>
<td>12.2</td>
<td>Hicks’s four measures</td>
<td>99</td>
</tr>
<tr>
<td>12.3</td>
<td>The equivalent measures are not superior to the compensating measures</td>
<td>102</td>
</tr>
<tr>
<td>13.1</td>
<td>The Harberger triangle</td>
<td>105</td>
</tr>
<tr>
<td>13.2</td>
<td>The Tullock trapezoid</td>
<td>108</td>
</tr>
</tbody>
</table>
Famous figures and diagrams in economics

14.1 Construction of community indifference curves through a given point \((B_0)\) 111
14.2 Compensation tests with crossing and non-crossing community indifference curves 113
15.1 The textbook diagram 122
15.2 The Buchanan/Stubblebine diagram 123
16.1 The Auspitz and Lieben constructs 130
16.2 Joan Robinson’s construction updated 132
17.1 Reaction curves – linear demand case with constant and identical costs 138
17.2 Reaction curves – stability analysis and comparison of market performances 141
17.3 Reaction curves – strategic complements 143
18.1 Monopoly 147
18.2 Pure competition 148
18.3 The large group 150
18.4 The small group 151
19.1 The kinked demand curve 155
20.1A The individual labour supply decision 162
20.1B The individual labour supply curve 163
20.2A Lionel Robbins’s first diagram 165
20.2B Lionel Robbins’s second diagram 166
20.3 Henry Phelps Brown’s version with axes inverted 167
20.4 Backward-bending labour supply curve (conservative version) 168
21.1 Allocation of land in von Thünen’s model around a single city (top half) and as distorted by an additional small town and river (bottom half) 171
21.2 Lösch’s market areas: circles and hexagons 172
21.3 Market boundaries under the block metric 176
22.1 Hotelling’s line 180
23.1 Ezekiel’s diagram 185
24.1 Straight line \(w - r\) relationships for neoclassical parable 194
24.2 Non-linear \(w - r\) relationships and capital values with reswitching and capital reversing 196
25.1 The Markowitz mean-variance diagram 200
26.1 Rent-seeking import restrictions 206
27.1 The logistic curve \(y(t)\) 210
28.1 Graph with five vertices 213
28.2 Decision tree 213
28.3 Local and long-distance telephone network 214
28.4 A random graph 214
Figures

28.5 Local network of collaboration of Joseph E. Stiglitz in the 1990s 215
28.6 Network of fifteenth-century Florentine marriages 216
29.1 The circular flow diagram of contemporary textbooks 222
29.2 Samuelson’s circular flow diagram 223
29.3 The Phillips machine 224
29.4 Knight’s wheel of wealth 226
29.5 Quesnay’s Tableau économique 227
30.1 The unit simplex 231
31.1 The Edgeworth box 234
31.2 The contract curve 235
31.3 A disequilibrium price ratio 236
31.4 The price-taking equilibrium 237
32.1 Two pairs of traders 240
32.2 The new limit to the contract curve 242
32.3 Final settlement with many traders 243
33.1 The production possibilities curve 245
33.2 A ruled surface: three goods, two inputs 247
33.3 Traded and non-traded goods 248
33.4 Multi-country schedule 249
34.1 Graaff’s depiction of Samuelson’s 1947 ‘possibility locus’ 253
34.2 Samuelson’s 1950 depiction of crossing ‘utility possibility functions’ 254
34.3 Samuelson’s 1955 depiction of a utility possibility set with superimposed social indifference curves 255
34.4 Allais’s 1943 depiction of a ‘surface of maximum return’ 256
34.5 Allais’s 1947 depiction of a ‘curve of maximum social return’ 257
34.6 Allais’s 1978 depiction of the frontier separating possible from impossible situations 258
35.1 Factor price frontier with three goods and two factors 264
35.2 Factor market equilibrium with three goods and two factors 266
35.3 Effect of a product price change on the factor price frontier with three goods and two factors 267
36.1 Pareto efficiency 274
37.1 Marshall’s trade diagram 281
37.2 Marshall’s multiple equilibria diagram 283
37.3 The gross substitute system 284
38.1 Second best policy in a triangle 287
38.2 Third best policy 289
39.1 Offer curves of H and G derived from their terms of trade 296
Famous figures and diagrams in economics

39.2 Offer curves of H and G determine the equilibrium traded quantities 297
40.1 Cost minimization 301
40.2 Equilibrium in the production box 301
40.3 A tariff on product 1 and factor prices 302
41.1 Prices of goods and factors in the Lerner diagram 306
41.2 Factor intensities and allocations 307
41.3 Effects of increase in price or technology for good X 308
41.4 Two cones of diversification 309
42.1 Gains from trade 312
42.2 The welfare loss due to a tariff 314
43.1 Autarky equilibrium in the H-O model 318
43.2 Two-country equilibrium in the H-O model 320
44.1 The integrated world equilibrium diagram 324
45.1 G’s optimal tariff identified on H’s offer curve 329
45.2 The possibility of a zero optimal tariff 330
46.1 45 degree or Keynesian cross diagram 338
46.2 Injections–withdrawals or Keynesian cross diagram 340
46.3 Patinkin diagram 341
46.4 The Z/D-N diagram 343
46.5 The AS-AD diagram 344
47.1 Hicks’s CC-LL diagram (September 1936) 349
47.2 From Hicks (1937) 351
47.3 From Lutfalla (1937) 352
47.4 From Hansen (1949) 353
48.1 Mundell’s diagram: monetary policy 357
48.2 Mundell’s diagram: fiscal policy 358
49.1 The comparative statics of the AD-AS model 367
50.1 Wage- and price-Phillips curves 378
50.2 Expectations-augmented Phillips curves for various expected inflation rates 379
50.3 An IS-LM model closed by a price-Phillips curve 382
50.4 An AD-AS model closed by a price-Phillips curve 383
51.1 Relation between unemployment and vacancy rates in a UV space for Great Britain, 1946–1956 394
51.2 Idealized UV relations (with v/s = adjusted vacancy rate) 394
52.1 Marshall’s demand and supply curve for money apparatus 402
52.2 Modigliani’s demand curve for ‘money to hold’ 404
53.1 Nominal aggregate demand expansion with a constant marginal cost results in an increase in output and no change in price in the short run 407
### Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>53.2</td>
<td>Nominal aggregate demand expansion with upward shifting marginal cost results in an increase in output and no change in price in the long run</td>
</tr>
<tr>
<td>54.1</td>
<td>The Laffer curve</td>
</tr>
<tr>
<td>55.1</td>
<td>Fisher’s 1907 diagram of intertemporal utility maximization</td>
</tr>
<tr>
<td>56.1</td>
<td>The Swan diagram</td>
</tr>
<tr>
<td>56.2</td>
<td>The Solow diagram</td>
</tr>
<tr>
<td>57.1</td>
<td>The Lorenz curve: $L(p)$</td>
</tr>
<tr>
<td>57.2</td>
<td>Absolute inequality curve: $\phi(p)$</td>
</tr>
<tr>
<td>57.3</td>
<td>Generalized Lorenz curve: $\mu L(p)$</td>
</tr>
<tr>
<td>58.1</td>
<td>The Kuznets curve</td>
</tr>
<tr>
<td>58.2</td>
<td>The environmental Kuznets curve</td>
</tr>
</tbody>
</table>