The Nobel Memorial Prize in Economics: A Biographical Overview

Historical Background

Alfred Nobel (1833–96) was a Swedish inventor and industrialist who made a fortune largely from the manufacture of dynamite and other explosives. He left most of his money in trust and, according to the terms of his will,

the capital, invested in safe securities by my executors, shall constitute a fund, the interest on which shall be annually distributed in the form of prizes to those who … shall have conferred the greatest benefit on mankind. (emphasis added)

More specifically, Nobel’s will states that five prizes should be awarded to the persons who have:

- ‘made the most important discovery or invention’ in Physics;
- ‘made the most important discovery or improvement’ in Chemistry;
- ‘made the most important discovery’ in Physiology or Medicine;
- ‘produced the most outstanding work in an ideal direction’ in Literature;
- ‘done the most or the best work for fraternity between nations, for the abolition or reduction of standing armies and for the holding and promotion of peace congresses’ (Nobel Foundation, 2004).

In 1900 the executors of Nobel’s will established a private institution, the Nobel Foundation, to manage his bequest and to coordinate the work of the various prize-awarding institutions. The five original Nobel Prizes in Physics, Chemistry, Physiology or Medicine, Literature and Peace have been awarded annually since 1901.

It was not until 1968 that the Sveriges Riksbank (Bank of Sweden), as part of its tercentenary celebrations, instituted a sixth award: ‘the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel’. The Economics Prize is then technically not a Nobel
Prize, as it was not part of the terms of Nobel’s will, rather it is a Nobel Memorial Prize funded by the Bank of Sweden on the basis of a perpetual annuity. However, the Prize is popularly known as the Nobel Prize in Economics. The Prize is awarded annually by the Royal Swedish Academy of Sciences (which also awards the Prizes in Physics and Chemistry) in accordance with the same basic principles and rules as the original five Nobel Prizes. According to the statutes, ‘the Prize shall be awarded annually to the person who has carried out a work in economic science of the eminent significance expressed in the Will of Alfred Nobel drawn up on November 27, 1895’. This means that it rewards specific discoveries, achievements or breakthroughs in economic science, rather than outstanding economists. First awarded in 1969, the Prize consists of a gold medal, a diploma bearing a citation and a sum of money (in recent years approximately $1 million).

Nomination and Selection Process
The work in handling nominations and the selection of the Nobel Memorial Laureates in Economics is largely undertaken by the Economics Prize Committee of the Royal Swedish Academy of Sciences. Each year invitations to nominate candidates for the Prize in Economic Sciences are sent to:

1. Swedish and foreign members of the Academy;
2. members of the Economics Prize Committee;
3. recipients of the Prize in Economic Sciences;
4. permanent professors in relevant subjects at universities and colleges in Sweden, Denmark, Finland, Iceland and Norway;
5. holders of corresponding chairs in at least six universities or colleges, selected for the relevant year by the Academy to ensure the appropriate distribution between different countries and their seats of learning; and
6. other scientists from whom the Academy may see fit to invite proposals.


The Prize Committee investigates the nominations it receives (1 February being the latest date of receipt) and commissions studies by specially appointed experts of the most prominent nominated candidates. It then submits its recommendations in the form of a
report (including the expert studies) to the Social Science Class of the Academy. In keeping with the statutes of the Nobel Foundation, information about the nominations is confidential and cannot be disclosed for a period of 50 years. The full Academy meets in mid-October to decide the final choice of Laureates (a maximum of three economists can be awarded the Prize in any one year) by a secret ballot. The Academy’s final award decision, which must be made not later than 15 November, is usually reached after it has met in mid-October. The deliberations and votes of the Academy are kept secret. The annual presentation of the award – along with the Prizes for Physics, Chemistry, Physiology or Medicine, and Literature – is made in a formal ceremony, presided over by the Swedish Royal Family, at the Stockholm Concert Hall on 10 December, the anniversary of Alfred Nobel’s death.

The Nobel Memorial Laureates in Economics
Over the 1969–2004 period, 55 economists have been awarded the Prize. Single awards have been made on 20 occasions and joint awards on 16 occasions. In the case of joint awards, the Prize has been shared between two economists on 13 occasions and between three economists on three occasions. Table 1 provides summary information on the 55 Nobel Memorial Laureates in Economics including:

- their year and country of birth; and citizenship if different from country of birth (column 3);
- the university where they received their first degree and the year of its award (column 4);
- the university where they received their higher degree and the year of its award (column 5);
- their university/institutional affiliation at the time of the award of the Prize (column 6);
- their broad field of study (column 7); and
- the citation for which they received the Prize (column 8).

In what follows we use the summary information contained in Table 1 to comment on a number of characteristics of the awards.

Economics Prize Awards by Classification
It is possible to categorise the awards in a number of ways. For example, Lindbeck (1985) adopts a classification involving:
1. general ‘basic’ economic theory (e.g., Samuelson: 1970);
2. theoretical contributions concerning specific aspects or sectors of the economy (e.g., Friedman: 1976);
3. powerful new methods of economic analysis: their development and application (e.g., Leontief: 1973);
4. more nearly ‘pure’ empirical research (e.g., Kuznets: 1971); and
5. non-formalised innovative thinking (e.g., Myrdal and Hayek: 1974).

More recently Lindbeck (2001) has utilised a classification involving:

1. general equilibrium theory (e.g., Samuelson: 1970);
2. macroeconomics (e.g., Friedman: 1976);
3. microeconomics (e.g., Stigler: 1982);
4. interdisciplinary research (e.g., Becker: 1992); and
5. new methods of economic analysis (e.g., Leontief: 1973).

In both cases, Lindbeck (1985; 2001) acknowledges that because of the overlapping and ‘multidimensional nature of scientific contributions’ any classification is ‘rather arbitrary’.

The classification we have chosen to adopt (see column 7 of Table 1) embraces eleven broad fields of study, in line with courses frequently taught within university degree programmes, namely:

1. microeconomics (e.g., Stigler: 1982);
2. macroeconomics (e.g., Friedman: 1976);
3. public economics (e.g., Buchanan: 1986);
4. financial economics (e.g., Merton and Scholes: 1997);
5. development economics (e.g., Schultz and Lewis: 1979);
6. international economics (e.g., Ohlin and Meade: 1977);
7. economic growth (e.g., Solow: 1987);
8. methods of economic investigation (e.g., Stone: 1984);
9. macroeconometrics (e.g., Klein: 1980);
10. econometrics (e.g., Heckman and McFadden: 2000); and
11. economic history (e.g., Fogel and North: 1993)

While the broad fields we have adopted are of some use for rough identification purposes, the reader should bear in mind four main qualifications. First, as is evidenced by reference to the Prize citations (see column 8 of Table 1), it is possible to divide certain
broad fields of study into various subfields. In the case of microeconomics, for example, one can identify such specialist areas as general equilibrium theory and welfare theory (as evidenced by the Prize citation for Hicks and Arrow: 1972), and industrial organisation (as evidenced by the Prize citation for Stigler: 1982). Second, some of the fields of study we have identified could be subsumed within broader categories, thus significantly reducing our eleven-fold classification. Examples include grouping ‘economic growth’ and ‘international economics’ as part of ‘macroeconomics’, and treating ‘econometrics’ as part of ‘methods of economic investigation’. Third, in line with our second qualification, there is inevitably a degree of overlap between certain of the broad fields we have identified. For example, as reflected in the 1999 Prize citation, Mundell’s award could be classified under macroeconomics or international economics. Fourth, some Laureates’ work classified under a particular heading feeds directly into other areas, again illustrating the problem of overlap. For example, much of the work of Akerlof and Stiglitz who (along with Spence) were jointly awarded the 2001 Prize ‘for their analyses of markets with asymmetric information’ has provided important microfoundations for new Keynesian macroeconomics. Having offered these qualifications in respect of our preferred classification, it is evident that roughly 58 per cent of the Prize awards have gone to the broad fields of microeconomics and macroeconomics. Three awards have been made in econometrics; two awards in each of financial economics, international economics, economic growth, methods of economic investigation and macroeconometrics; and a single award in each of public economics, development economics and economic history.

Laureates’ Citizenship
Of the 55 economists who have, to date, been awarded the Prize, 36 have been US citizens. Of these, 27 were born in the USA and nine were foreign born. The fact that just under two-thirds of the awards, as of 2004, have been made to US citizens reflects the leading role the United States has played in pioneering economic research since 1969. Next in terms of ranking by nationality of recipient are eight Laureates with UK citizenship. Of these, six were born in the UK and two were foreign born. The remaining awards under the heading of citizenship have been distributed as follows. Three awards to citizens of Norway. Two awards to citizens of Sweden. Single awards to citizens of Norway. Two awards to citizens of Sweden. Single awards
to citizens of: the Netherlands, the Soviet Union, France, Germany, India, Canada and Israel.

**Affiliations of Laureates (At Time of Award)**

Not surprisingly the Laureates were affiliated, at the time of the award, with some of the most famous universities in the world (see column 6 of Table 1). Only 12 universities have ever been associated with more than one award, namely:

1. University of Chicago, USA: nine awards (Friedman, 1976; Schultz, 1979; Stigler, 1982; Miller, 1990; Coase, 1991; Becker, 1992; Fogel, 1993; Lucas, 1995; Heckman, 2000);
2. Harvard University, USA: four awards (Kuznets, 1971; Arrow, 1972; Leontief, 1973; Merton, 1997);
3. University of Cambridge, UK: four awards (Meade, 1977; Stone, 1984; Mirrlees, 1996; Sen, 1998);
4. University of California, Berkeley, USA: four awards (Debreu, 1983; Harsanyi, 1994; McFadden, 2000; Akerlof, 2001);
5. Columbia University, USA: three awards (Vickrey, 1996; Mundell, 1999; Stiglitz, 2001);
6. Massachusetts Institute of Technology, USA: three awards (Samuelson, 1970; Modigliani, 1985; Solow, 1987);
7. Princeton University, USA: three awards (Lewis, 1979; Nash, 1994; Kahneman, 2002);
8. Stanford University, USA: three awards (Sharpe, 1990; Scholes, 1997; Spence, 2001);
9. George Mason University, USA: two awards (Buchanan, 1986; Smith, 2002);
10. University of Oslo, Norway: two awards (Frisch, 1969; Haavelmo, 1989);
11. Yale University, USA: two awards (Koopmans, 1975; Tobin, 1981); and

With respect to the affiliation of the Laureates, two points are worth noting. First, 41 out of the 55 Prize winners (75 per cent) have at the time of the award been affiliated to American universities, again illustrating the leading role the United States has played in pioneering modern economic research. Second, while acknowledg-
ing the rank order of the 12 universities noted above, some econo-
mists have made their outstanding contributions while working in
universities other than the one where they were in post at the time
of the award. For example, Sen held professorial posts at Delhi
University (1963–71), the London School of Economics (1971–77),
the University of Oxford (1977–87) and Harvard University (1987–
98), before joining the University of Cambridge in 1998, the year in
which he was awarded the Prize.

**Laureates’ Doctorates**

Again, as one would expect, the Laureates have trained in some of
the world’s most renowned universities (see column 5 of Table 1).
Of the 55 Laureates, 41 received their doctorates from 14 select
universities. The 14 universities that have given doctoral training to
two or more Laureates are (with names of Laureates and year they
were awarded their doctorates in brackets):

1. University of Chicago, USA: seven (Simon, 1943; Stigler, 1938;
   Buchanan, 1948; Markowitz, 1954; Becker, 1955; Lucas, 1964;
   Scholes, 1969);
2. Harvard University, USA: five (Samuelson, 1941; Tobin, 1947;
   Solow, 1951; Spence, 1972; Smith, 1955);
3. Massachusetts Institute of Technology, USA: five (Klein, 1944;
   Merton, 1970; Mundell, 1956; Akerlof, 1966; Stiglitz, 1966);
4. Columbia University, USA: four (Kuznets, 1926; Arrow, 1951;
   Friedman, 1946; Vickrey, 1948);
5. Johns Hopkins University, USA: two (Miller, 1952; Fogel, 1963);
6. Princeton University, USA: two (Nash, 1950; Heckman, 1971);
7. University of California, Berkeley, USA: two (North, 1952;
   Kahneman, 1961);
8. Carnegie-Mellon University, USA: two (Kydland, 1973; Prescott,
   1967);
9. University of Cambridge, UK: two (Mirschles, 1963; Sen, 1959);
10. University of Leiden, The Netherlands: two (Tinbergen, 1929;
    Koopmans, 1936);
11. University of London, UK: two (Lewis, 1940; Coase, 1951);
12. University of Oslo, Norway: two (Frisch, 1926; Haavelmo, 1946);
13. University of Paris, France: two (Debreu, 1956; Allais, 1949); and
14. University of Stockholm, Sweden: two (Myrdal, 1927; Ohlin,
    1924).
Table 1 reveals that 52 of the 55 Laureates have undertaken a doctorate, most of which (34 or 65 per cent) were awarded by American universities.

**Forecasting Nobel Memorial Prize Winners in Economics**

Anyone trying to forecast a likely future winner of the Nobel Memorial Prize in Economics would be well advised to bear in mind the information contained in Table 1. In summary, of the 55 Prize winners: 65 per cent have been US citizens; 75 per cent have been affiliated to American universities; and 65 per cent have received their PhDs from American universities. As discussed in the case of the Laureates’ affiliation, and the place of their doctoral training, there has been a marked concentration on a small number of top American universities.

Additional indicators of potential Nobel Memorial status include high citation counts (for further details, see, for example, Quandt, 1976; Grubel, 1979) and the prior award of prestigious honours. In the latter case, for example, a number of recipients of the John Bates Clark Medal have subsequently been awarded the Nobel Memorial Prize. The Medal – named after the American economist John Bates Clark, 1847–1938 – was instituted in 1947 by the American Economic Association and is awarded every two years to an American economist under the age of 40 who is adjudged to have made ‘a significant contribution to economic thought and knowledge’. To date, of the 28 economists who have been awarded the John Bates Clark Medal (no award was made in 1953), 11 have subsequently been awarded the Nobel Memorial Prize, namely (with year of Medal award followed by year of Memorial Prize award): Samuelson (1947, 1970); Friedman (1951, 1976); Tobin (1955, 1981); Arrow (1957, 1972); Klein (1959, 1980); Solow (1961, 1987); Becker (1967, 1992); McFadden (1975, 2000); Stiglitz (1979, 2001); Spence (1981, 2001); and Heckman (1983, 2000).1

In using the award of the John Bates Clark Medal as an indicator of potential Nobel Memorial status, one has to take into account an interesting detail. The Francis A. Walker Medal (named after the American economist, Francis Walker, 1840–97), which was instituted in 1947 by the American Economic Association and awarded every five years to the living American economist who during their career has ‘made the greatest contribution to economics’, was discontinued in 1981 as the Nobel Memorial Prize had made it superfluous. Unlike the Francis A. Walker Medal, the Nobel Memorial Prize is not restricted to American economists.

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1 Interestingly, the Francis A. Walker Medal (named after the American economist, Francis Walker, 1840–97), which was instituted in 1947 by the American Economic Association and awarded every five years to the living American economist who during their career has ‘made the greatest contribution to economics’, was discontinued in 1981 as the Nobel Memorial Prize had made it superfluous. Unlike the Francis A. Walker Medal, the Nobel Memorial Prize is not restricted to American economists.
average time lag of 22 years between the receipt of the two awards. Given that four winners of the Medal since 1975 have been awarded the Nobel Memorial Prize since 2000, it will be interesting to see which other Medal winners since 1975 (Martin S. Feldstein, 1977; Jerry A. Hausman, 1985; Sanford J. Grossman, 1987; David M. Kreps, 1989; Paul R. Krugman, 1991; Lawrence H. Summers, 1993; David Card, 1995; Kevin M. Murphy, 1997; Andrei Shleifer, 1999; Mathew Rabin, 2001; Steven Levitt, 2003) go on to win the Nobel Memorial Prize. Of course, this does not preclude earlier living winners of the Medal receiving the Nobel Memorial Prize. Here it is interesting to note that the pre-1975 winners are: Kenneth E. Boulding, 1949 (d. 1993); Hendrik S. Houthakker, 1963; Zvi Griliches, 1965 (d. 1999); Marc Leon Nerlove, 1969; Dale W. Jorgensen, 1971; and Franklin M. Fisher, 1973.

For biographical details of many of these major economists, including their principal contributions, the reader is referred to Blaug (1999) and Blaug and Vane (2003).

Controversy Surrounding the Award of a Nobel Memorial Prize in Economics

Ever since the idea of instituting a new award was first put forward, a degree of controversy has surrounded the Nobel Memorial Prize in Economics. At the outset, objections were raised by some members of the Royal Swedish Academy of Sciences that Economics is a ‘soft’ social science, not sufficiently robust to be awarded a Prize by the Academy on a par with the ‘hard’ natural sciences of Physics and Chemistry. In addition, there were complaints that Economics does not contribute enough to the ‘benefit of mankind’ to be given a Prize in memory of Alfred Nobel in line with the views originally expressed in his will. Despite these concerns, the Academy nevertheless agreed to introduce the new Prize.

However, since its inception the award in Economics has been the subject of a number of other controversies. In particular three main criticisms have been made of the Prize. First, concerns have been voiced that the Prize Committee has shown a bias towards, and favoured, the Chicago School of neoclassical economics. As noted, of the 55 awards nine (Friedman, Schultz, Stigler, Miller, Coase, Becker, Fogel, Lucas and Heckman) have been made to faculty members of the University of Chicago and a further four (Simon, Buchanan, Markovitz and Scholes) to economists who received their
doctoral training from the University of Chicago, but who were affiliated to other American universities at the time of the award. Taken together, 24 per cent of all Memorial Prizes in Economics have gone to faculty members, and doctoral-trained economists, of the University of Chicago.

Second, concerns have been expressed that some of the more recent awards are less meritorious than earlier ones. Unlike the original five Nobel Prizes which have been awarded since 1901, the Memorial Prize in Economics only started in 1969. In the first two decades following its inception the Academy needed to clear a long backlog of specific achievements by outstanding economists, many of whom made their seminal contributions in the 1940s and 1950s or even earlier. Eventually this accumulated debt to those who had made important breakthroughs in economics was met either by the award of the Prize, or the death of a potential Prize winner (the Prize cannot be given posthumously). In the latter case some outstanding economists were arguably denied the Prize either because they died before it was instigated (for example, John Maynard Keynes, 1883–1946), or before the debt to them could be honoured (for example, Joan Robinson, 1903–1983).² Given these circumstances it has become more likely, since the 1990s, that the Prize may be awarded to more contemporary economists (notable exceptions being Coase and Vickrey, the 1991 and 1996 Laureates, who received the Prize when they were in their 80s). Perhaps this makes it inevitable that some recent awards are likely to be more contentious than many in the past. Moreover, as Lindbeck (2001) has noted, because the Prize selection committee has opted for a pluralist view of economic research, there will always be adherents of one perspective or another who adopt a critical stance towards work which they find has little sympathy with their own ‘brand’ of economics.

One recent award which did attract a degree of controversy was that in 1998 to Amartya Sen. A member of the Prize committee had even predicted that ‘Sen will never get the prize’ (Nasar, 1998). This statement was apparently based on Sen’s interest in ethical matters and his rather broad research agenda; both were seen to be at vari-

² See Snowdon and Vane (1999, pp. 94, 127, 148–9, 247 and 283) for the views of five Nobel Memorial Laureates – James Tobin, Milton Friedman, Robert Lucas, Franco Modigliani and Robert Solow – on whether Keynes would have been awarded the first Nobel Memorial Prize in Economics if he had still been alive in 1969.
ance with the neoclassical mainstream in economics. Other commentators have suggested that Sen’s award was a form of ‘Nobel penance’, intended to restore the reputation of the Prize after it had arguably been ‘tainted’ by the business problems of its recipients the previous year: Myron Scholes and Robert Merton. Scholes and Merton were associated with Long-Term Capital Management, a hedge fund now infamous for prompting the near-collapse of the US financial system in the period just before Sen’s award (Pressman and Summerfield, 2000). For eloquent explanations of the clear merit in Sen’s award, see Arrow (1999) and Atkinson (1999).

Third, concerns have been voiced that the Nobel Memorial Prize has become an object of such desire, given the status and prestige it affords its recipients and the universities to which they are affiliated, that it results in a competitive and unseemly race. Indeed, the Nobel Memorial Prize has become so well known that it is promoted in the media as the economics equivalent of the annual Oscar awards in cinema: a partial reflection of the modern-day cult of celebrity. Franco Modigliani, the 1985 Laureate, once jokingly commented that ‘Nobel Prize winners are to the scientific establishment what cardinals are to the church. They are figures who command reverence and benevolence’ (Snowdon and Vane, 1999, p. 257).

Our purpose in mentioning these criticisms is not to adjudicate on their validity but merely to highlight the degree of controversy that has surrounded the Nobel Memorial Prize in Economics since its inception.

Concluding Remarks
In conclusion, let us pose a question which we intend to be neither deep nor frivolous, merely interesting. What advice does our analysis offer to Nobel Memorial aspirants? We would suggest that they should try to meet at least some of the following criteria:

- be a US citizen (65 per cent of Laureates are);
- be affiliated to an American university (75 per cent of Laureates are);
- more specifically be an affiliate of a member of an elite group of 12 universities with a track record of employing Laureates at the time of their elevation (ten of the 12 are in the US);
- have doctoral training at one of 14 select universities with a
track record of training Laureates (of these 14, eight are in the US and have trained more than half of all Laureates);

- first win a prestigious award like the John Bates Clark Medal (39 per cent have so far gone on to a Nobel Memorial award);
- be affiliated to the University of Chicago or train there (nine awards to Chicago affiliates – more than twice as many as the next most successful institutions; seven Chicago doctoral students have subsequently won the Nobel Memorial Prize).

Only four (Hicks, Hayek, Kantorovich and Selten) of the 55 Laureates to date have received their award without meeting any of these criteria. A final apparent criterion is that the recipient should be a man.
<table>
<thead>
<tr>
<th>Year of award</th>
<th>Laureate(s)</th>
<th>Year and country of birth; citizenship</th>
<th>First degree (university and year)</th>
<th>Higher degree (university and year)</th>
<th>Affiliation (at time of award)</th>
<th>Broad field of study</th>
<th>Prize citation (Nobel Foundation, 2004)</th>
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</thead>
<tbody>
<tr>
<td>1969</td>
<td>Ragnar A.K. Frisch</td>
<td>b. 1895, Norway (d. 1973)</td>
<td>BA, University of Oslo, 1919</td>
<td>PhD (Mathematical Statistics), University of Oslo, 1926</td>
<td>University of Oslo, Norway</td>
<td>Macroeconometrics</td>
<td>‘for having developed and applied dynamic models for the analysis of economic processes’</td>
</tr>
<tr>
<td></td>
<td>Jan Tinbergen</td>
<td>b. 1903, The Netherlands (d. 1994)</td>
<td>Dr (Physics) University of Leiden, 1929</td>
<td>Netherlands School of Economics, The Netherlands</td>
<td></td>
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<tr>
<td>1970</td>
<td>Paul A. Samuelson</td>
<td>b. 1915, USA</td>
<td>BA, University of Chicago, 1935</td>
<td>PhD, Harvard University, 1941</td>
<td>Massachusetts Institute of Technology, USA</td>
<td>Microeconomics/Macroeconomics</td>
<td>‘for the scientific work through which he has developed static and dynamic economic theory and actively contributed to raising the level of analysis in economic science’</td>
</tr>
<tr>
<td>1971</td>
<td>Simon S. Kuznets</td>
<td>b. 1901, Russia (d. 1985); US citizen</td>
<td>BA, Columbia University, 1923</td>
<td>PhD, Columbia University, 1926</td>
<td>Harvard University, USA</td>
<td>Economic Growth</td>
<td>‘for his empirically founded interpretation of economic growth which has led to new and deepened insight into the economic and social structure and process of development’</td>
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### Table 1 continued

<table>
<thead>
<tr>
<th>Year of award</th>
<th>Laureate(s)</th>
<th>Year and country of birth; citizenship</th>
<th>First degree (university and year)</th>
<th>Higher degree (university and year)</th>
<th>Affiliation (at time of award)</th>
<th>Broad field of study</th>
<th>Prize citation of country (Nobel Foundation, 2004)</th>
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<tr>
<td>1972</td>
<td>John R. Hicks</td>
<td>b. 1904, UK (d. 1989)</td>
<td>BA (Philosophy, Politics and Economics), University of Oxford, 1925</td>
<td>University of Oxford, UK</td>
<td>Microeconomics</td>
<td></td>
<td>‘for their pioneering contributions to general economic equilibrium theory and welfare theory’</td>
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<td></td>
<td>Kenneth J. Arrow</td>
<td>b. 1921, USA</td>
<td>BSc (Mathematics), City College, New York, 1940</td>
<td>PhD, Columbia University, 1951</td>
<td>Harvard University, USA</td>
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<tr>
<td>1973</td>
<td>Wassily Leontief</td>
<td>b. 1906, Russia (d. 1999); US citizen</td>
<td>MA (Social Science), University of Leningrad, 1925</td>
<td>PhD, University of Berlin, 1928</td>
<td>Harvard University, USA</td>
<td>Methods of Economic Investigation</td>
<td>‘for the development of the input–output method and for its application to important economic problems’</td>
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<td>1974</td>
<td>Gunnar Myrdal</td>
<td>b. 1898, Sweden (d. 1987)</td>
<td>Law Degree, University of Stockholm, 1923</td>
<td>PhD, University of Stockholm, 1927</td>
<td>University of Stockholm, Sweden</td>
<td>Macroeconomics</td>
<td>‘for their pioneering work in the theory of money and economic fluctuations and for their penetrating analysis of the interdependence of economic, social and institutional phenomena’</td>
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<td></td>
<td>Friedrich A. von Hayek</td>
<td>b. 1899, Austria (d. 1992); UK citizen</td>
<td>PhD (Law) and PhD (Political Science), University of Vienna, 1921 and 1923</td>
<td>University of Freiburg, West Germany</td>
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<tr>
<td>Year</td>
<td>Name</td>
<td>Birth Date</td>
<td>Country</td>
<td>Education</td>
<td>Institution</td>
<td>Field</td>
<td>Prize Description</td>
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<tr>
<td>1975</td>
<td>Leonid V. Kantorovich</td>
<td>1912, Russia (d. 1986)</td>
<td>Russia</td>
<td>BSc (Mathematics), Leningrad State University, 1930</td>
<td>Academy of Sciences, Moscow, USSR</td>
<td>Microeconomics</td>
<td>‘for their contributions to the theory of optimum allocation of resources’</td>
</tr>
<tr>
<td></td>
<td>Tjalling C. Koopmans</td>
<td>1910, The Netherlands (d. 1985); US citizen</td>
<td>The Netherlands</td>
<td>MA (Mathematics and Physics), University of Utrecht, 1933</td>
<td>Yale University, USA</td>
<td>Microeconomics</td>
<td></td>
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<tr>
<td>1976</td>
<td>Milton Friedman</td>
<td>1912, USA</td>
<td>USA</td>
<td>BA, Rutgers University, 1932</td>
<td>University of Chicago, USA</td>
<td>Macroeconomics</td>
<td>‘for his achievements in the fields of consumption analysis, monetary history and theory, and for his demonstration of the complexity of stabilization policy’</td>
</tr>
<tr>
<td>1977</td>
<td>Bertil G. Ohlin</td>
<td>1899, Sweden (d. 1979)</td>
<td>Sweden</td>
<td>BA, University of Lund, 1917</td>
<td>Stockholm School of Economics, Sweden</td>
<td>International Economics</td>
<td>‘for their pathbreaking contribution to the theory of international trade and international capital movements’</td>
</tr>
<tr>
<td></td>
<td>James E. Meade</td>
<td>1907, UK (d. 1995)</td>
<td>UK</td>
<td>BA, University of Oxford, 1930</td>
<td>University of Cambridge, UK</td>
<td>International Economics</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>Herbert A. Simon</td>
<td>1916, USA (d. 2001)</td>
<td>USA</td>
<td>BA, University of Chicago, 1936</td>
<td>Carnegie-Mellon University, USA</td>
<td>Microeconomics</td>
<td>‘for his pioneering research into the decision-making process within economic organizations’</td>
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Table 1  continued

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<th>Year of award</th>
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<th>Broad field of study</th>
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<td>1979</td>
<td>Theodore W. Schultz</td>
<td>b. 1902, USA (d. 1998)</td>
<td>BA, South Dakota State College, 1926</td>
<td>PhD, University of Wisconsin, 1930</td>
<td>University of Chicago, USA</td>
<td>Development Economics</td>
<td>‘for their pioneering research into economic development research with particular consideration of the problems of developing countries’</td>
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<td></td>
<td>W. Arthur Lewis</td>
<td>b. 1915, West Indies (d. 1991); UK citizen</td>
<td>BCom, London School of Economics, 1937</td>
<td>PhD, University of London, 1940</td>
<td>Princeton University, USA</td>
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<td>1980</td>
<td>Lawrence R. Klein</td>
<td>b. 1920, USA</td>
<td>BA, University of California, Berkeley, 1942</td>
<td>PhD, Massachusetts Institute of Technology, 1944</td>
<td>University of Pennsylvania, USA</td>
<td>Macroeconometrics</td>
<td>‘for the creation of econometric models and their application to the analysis of economic fluctuations and economic policies’</td>
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<td>1981</td>
<td>James Tobin</td>
<td>b. 1918, USA (d. 2002)</td>
<td>BA, Harvard University, 1939</td>
<td>PhD, Harvard University, 1947</td>
<td>Yale University, USA</td>
<td>Macroeconomics</td>
<td>‘for his analysis of financial markets and their relations to expenditure decisions, employment, production and prices’</td>
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1982  George J. Stigler  
  b. 1911, USA (d. 1991)  
  BA, University of Washington, 1931  
  PhD, University of Chicago, 1938  
  University of Chicago, USA  
  Microeconomics  
  ‘for his seminal studies of industrial structures, functioning of markets and causes and effects of public regulation’

1983  Gerard Debreu  
  b. 1921, France; US citizen  
  Degree in Mathematics, University of Paris, 1946  
  DSc (Mathematics), University of Paris, 1956  
  University of California, Berkeley, USA  
  Microeconomics  
  ‘for having incorporated new analytical methods into economic theory and for his rigorous reformulation of the theory of general equilibrium’

1984  J. Richard N. Stone  
  b. 1913, UK (d. 1991)  
  BA, University of Cambridge, 1935  
  MA, University of Cambridge, 1938  
  University of Cambridge, UK  
  Methods of Economic Investigation  
  ‘for having made fundamental contributions to the development of systems of national accounts and hence greatly improved the basis for empirical economic analysis’

1985  Franco Modigliani  
  b. 1918, Italy (d. 2003); US citizen  
  Degree in Law, University of Rome, 1939  
  PhD, New School for Social Research, New York City, 1944  
  Massachusetts Institute of Technology, USA  
  Macroeconomics  
  ‘for his pioneering analyses of saving and of financial markets’
## Table 1 continued

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<td>1986</td>
<td>James M. Buchanan</td>
<td>b. 1919, USA</td>
<td>BA, Middle Tennessee State College, 1940</td>
<td>PhD, University of Chicago, 1948</td>
<td>George Mason University, USA</td>
<td>Public Economics</td>
<td>‘for his development of the contractual and constitutional bases for the theory of economic and political decision-making’</td>
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<td>1987</td>
<td>Robert M. Solow</td>
<td>b. 1924, USA</td>
<td>BA, Harvard University, 1947</td>
<td>PhD, Harvard University, 1951</td>
<td>Massachusetts Institute of Technology, USA</td>
<td>Economic Growth</td>
<td>‘for his contributions to the theory of economic growth’</td>
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<td>1988</td>
<td>Maurice F.C. Allais</td>
<td>b. 1911, France</td>
<td>Ancien élève, École Polytechnique, Paris, 1933</td>
<td>PhD (Engineering), University of Paris, 1949</td>
<td>École Nationale Supérieure des Mines de Paris, France</td>
<td>Microeconomics</td>
<td>‘for his pioneering contributions to the theory of markets and efficient utilization of resources’</td>
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<td>1989</td>
<td>Trygve Haavelmo</td>
<td>b. 1911, Norway (d. 1999)</td>
<td>Degree in Political Economy, University of Oslo, 1933</td>
<td>PhD, University of Oslo, 1946</td>
<td>University of Oslo, Norway</td>
<td>Econometrics</td>
<td>‘for his clarification of the probability theory foundations of econometrics and his analyses of simultaneous economic structures’</td>
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<td>1990</td>
<td>Harry M. Markowitz</td>
<td>b. 1927, USA</td>
<td>BPh (Liberal Arts), University of Chicago, 1947</td>
<td>PhD, University of Chicago, 1954</td>
<td>City University of New York, USA</td>
<td>Financial Economics ‘for their pioneering work in the theory of financial economics’</td>
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<td>Merton H. Miller</td>
<td>b. 1923, USA (d. 2000)</td>
<td>BA, Harvard University, 1944</td>
<td>PhD, Johns Hopkins University, 1952</td>
<td>University of Chicago, USA</td>
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<td>William F. Sharpe</td>
<td>b. 1934, USA</td>
<td>BA, University of California, Los Angeles, 1955</td>
<td>PhD, University of California, Los Angeles, 1961</td>
<td>Stanford University, USA</td>
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<td>1991</td>
<td>Ronald H. Coase</td>
<td>b. 1910, UK</td>
<td>B Com, University of London, 1932</td>
<td>PhD, University of London, 1951</td>
<td>University of Chicago, USA</td>
<td>Microeconomics ‘for his discovery and clarification of the significance of transaction costs and property rights for the institutional structure and functioning of the economy’</td>
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<td>1992</td>
<td>Gary S. Becker</td>
<td>b. 1930, USA</td>
<td>BA, Princeton University, 1951</td>
<td>PhD, University of Chicago, 1955</td>
<td>University of Chicago, USA</td>
<td>Microeconomics ‘for having extended the domain of microeconomic analysis to a wide range of human behaviour and interaction, including nonmarket behaviour’</td>
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<td>1993</td>
<td>Robert W. Fogel</td>
<td>b. 1926, USA</td>
<td>BA, Cornell University, 1948</td>
<td>PhD, Johns Hopkins University, 1963</td>
<td>University of Chicago, USA</td>
<td>Economic History</td>
<td>‘for having renewed research in economic history by applying economic theory and quantitative methods in order to explain economic and institutional change’</td>
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<td>Douglass C. North</td>
<td>b. 1920, USA</td>
<td>BA, University of California, Berkeley, 1942</td>
<td>PhD, University of California, Berkeley, 1952</td>
<td>Washington University, St Louis, USA</td>
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<td>1994</td>
<td>John C. Harsanyi</td>
<td>b. 1920, Hungary (d. 2000); US citizen</td>
<td>M Pharmacy, University of Budapest, 1944</td>
<td>PhD (Philosophy and Sociology) University of Budapest, 1947; PhD, Stanford University, 1958</td>
<td>University of California, Berkeley, USA</td>
<td>Microeconomics</td>
<td>‘for their pioneering analysis of equilibria in the theory of non-cooperative games’</td>
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<td>John F Nash Jr</td>
<td>b. 1928, USA</td>
<td>BS (Mathematics) Carnegie-Mellon University, 1948</td>
<td>PhD (Mathematics), Princeton University, 1950</td>
<td>Princeton University, USA</td>
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<td>1995</td>
<td>Reinhard Selten</td>
<td>b. 1930, Germany</td>
<td>Germany</td>
<td>MA (Maths), Johann-Wolfgang-Goethe University, Frankfurt, 1957</td>
<td>PhD (Maths), Johann-Wolfgang-Goethe University, Frankfurt, 1961</td>
<td>Rheinische Friedrich-Wilhelms-University, Bonn, Federal Republic of Germany</td>
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<td>1995</td>
<td>Robert E. Lucas Jr</td>
<td>b. 1937, USA</td>
<td>USA</td>
<td>BA (History), University of Chicago, 1959</td>
<td>PhD, University of Chicago, 1964</td>
<td>University of Chicago, USA Macroeconomics 'for having developed and applied the hypothesis of rational expectations, and thereby transformed macroeconomic analysis and deepened our understanding of economic policy'</td>
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<td>1996</td>
<td>James A. Mirrlees</td>
<td>b. 1936, UK</td>
<td>UK</td>
<td>MA (Maths), University of Edinburgh, 1957</td>
<td>PhD, University of Cambridge, 1963</td>
<td>University of Cambridge, UK Microeconomics 'for their fundamental contributions to the economic theory of incentives under asymmetric information'</td>
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<td>1996</td>
<td>William S. Vickrey</td>
<td>b. 1914, Canada(d. 1996); US citizen</td>
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<td>BS (Maths), Yale University, 1935</td>
<td>PhD, Columbia University, 1948</td>
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<td>1997</td>
<td>Robert C. Merton</td>
<td>b. 1944, USA</td>
<td>USA</td>
<td>BS (Engineering and Maths), Columbia University, 1966</td>
<td>PhD, Massachusetts Institute of Technology, 1970</td>
<td>Harvard University, USA Financial Economics 'for a new method to determine the value of derivatives'</td>
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<td>1997</td>
<td>Myron S. Scholes</td>
<td>b. 1941, Canada; US citizen</td>
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<td>BA, McMaster University, 1961</td>
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<td>1998</td>
<td>Amartya K. Sen</td>
<td>b. 1933, India</td>
<td>BA, Calcutta University, 1953</td>
<td>PhD, University of Cambridge, 1959</td>
<td>University of Cambridge, UK</td>
<td>Microeconomics</td>
<td>‘for his contributions to welfare economics’</td>
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<td>1999</td>
<td>Robert A. Mundell</td>
<td>b. 1932, Canada</td>
<td>BA (Economics and Slavonic Studies), University of British Columbia, 1953</td>
<td>PhD (Industrial Economics), Massachusetts Institute of Technology, 1956</td>
<td>Columbia University, USA</td>
<td>Macroeconomics – International Economics</td>
<td>‘for his analysis of monetary and fiscal policy under different exchange rate regimes and his analysis of optimum currency areas’</td>
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<td>James J. Heckman</td>
<td>b. 1944, USA</td>
<td>BA (Maths), Colorado College, 1965</td>
<td>PhD, Princeton University, 1971</td>
<td>University of Chicago, USA</td>
<td>Econometrics</td>
<td>‘for his development of theory and methods for analysing selective samples’</td>
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<td>Daniel L. McFadden</td>
<td>b. 1937, USA</td>
<td>BS (Physics), University of Minnesota, 1957</td>
<td>PhD (Behavioural Science), University of Minnesota, 1962</td>
<td>University of California, Berkeley, USA</td>
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<td>‘for his development of theory and methods for analysing discrete choice’</td>
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<td>2001</td>
<td>George A. Akerlof</td>
<td>b. 1940, USA</td>
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<td><strong>BA, Yale University, 1962</strong></td>
<td>Microeconomics</td>
<td>‘for their analyses of markets with asymmetric information’</td>
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<td>A. Michael Spence</td>
<td>b. 1943, USA</td>
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<td><strong>BA (Philosophy), Princeton University, 1966</strong></td>
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<td>Joseph E. Stiglitz</td>
<td>b. 1943, USA</td>
<td>USA/Israeli citizen</td>
<td><strong>BA, Amherst College, 1964</strong></td>
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<td>2002</td>
<td>Daniel Kahneman</td>
<td>b. 1934, USA</td>
<td>USA</td>
<td>**BA (Psychology and Maths), Hebrew University, Jerusalem, 1954</td>
<td>Microeconomics</td>
<td>‘for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty’</td>
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<td>Vernon L. Smith</td>
<td>b. 1927, USA</td>
<td>USA</td>
<td><strong>BSEE, California Institute of Technology, 1949</strong></td>
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<td>‘for having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms’</td>
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<td>2003</td>
<td>Robert F. Engle</td>
<td>b. 1942, USA</td>
<td>BS (Physics), Williams College, 1964</td>
<td>PhD, Cornell University, 1969</td>
<td>New York University, USA</td>
<td>Econometrics</td>
<td>‘for methods of analysing economic time series with time-varying volatility (ARCH)’</td>
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<td>Clive W.J. Granger</td>
<td>b. 1934, UK</td>
<td>BA (Maths), University of Nottingham, UK, 1955</td>
<td>PhD (Stats), University of Nottingham, UK, 1959</td>
<td>University of California, San Diego, USA</td>
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<td>‘for methods of analysing economic time series with common trends (cointegration)’</td>
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<td>Edward C. Prescott</td>
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<td>BA (Maths), Swarthmore College, 1962</td>
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