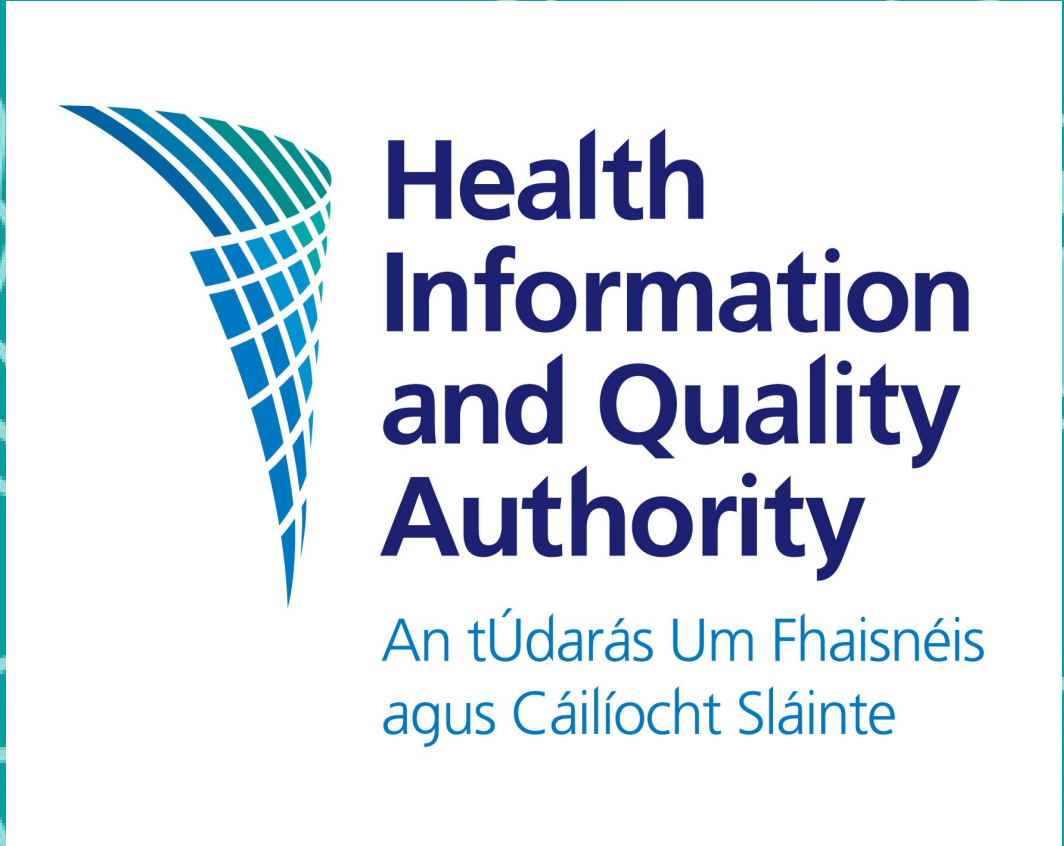


The evolution of peer reviewed publications on the subject of economic evaluation

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Background

The discipline of health technology assessment and economic evaluation had its origins in the 1970s. Peer-reviewed publications of economic evaluation began appearing in the 1980s, and accepted methodologies began to take shape. The field has grown immensely since then, with cost-effectiveness analysis increasingly used to support decision making. Publications can be methodological or applied in nature. Given the multi-disciplinary nature of health technology assessment and the relative blank canvas that presented itself in the 1970s, development of economic evaluation methodology has has been and continues to be substantial.

An aspect of interest is characterising the change in publication over time and what implications those changes may have for practice and methodology. Changes in publication can, for example, have consequences for how we search for evaluations or associated literature, and how we interpret the quality and applicability of what we find.

The aim of this study was to conduct an exploratory analysis of the evolution of peer reviewed publication in economic evaluation.

Methods

Using a standard search filter, we searched Pubmed for published papers that made reference to economic evaluation. We did not apply limits to the publication date or language:

models, economic[mesh] OR "economics, pharmaceutical"[mesh] OR "economics, medical"[mesh] OR "health care costs"[mesh] OR "decision support techniques"[mesh] OR "cost-benefit analysis"[mesh] OR "Cost of illness"[mesh] OR "cost savings"[mesh] OR "Hospital costs"[mesh] OR "economic"[Title] OR "costs and cost analysis"[mesh] OR economic evaluation*[Title] OR economic analy*[Title] OR cost analy*[Title] OR cost eff*[Title] OR cost benefit*[Title] OR cost utilit*[Title] OR "economics"[mesh] OR cost*[Title/Abstract]

We extracted data on publishing journal, year of publication, number of authors and authors' affiliations. Country classification was based on the details available in the affiliation field for the lead author. Where the lead author had multiple affiliations recorded, the first listed was used for analysis. We compared the growth in economic evaluation publications against growth in publications from all topics in PubMed. It should be noted that the search was run in June 2022; figures for 2022 are therefore based on a half year and represent an undercount for absolute figures.

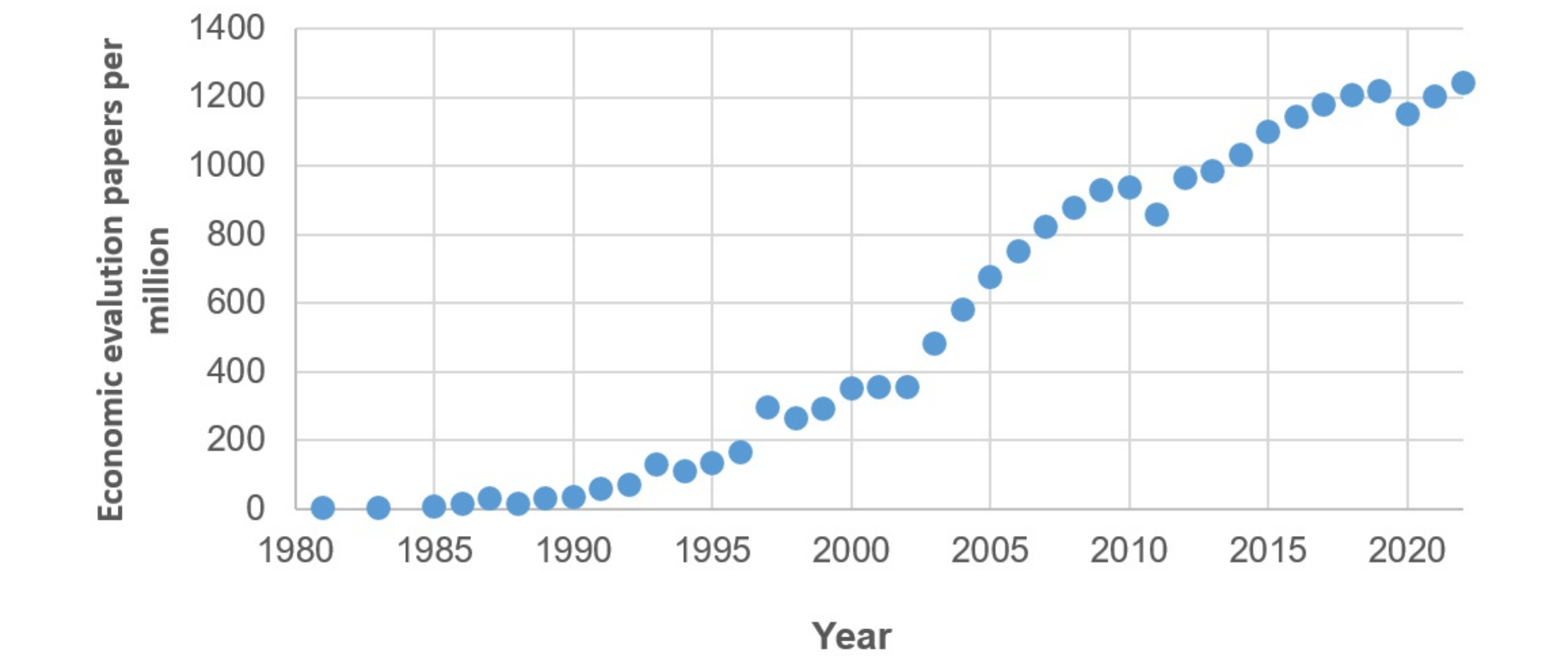
Results

We identified 14,514 papers for inclusion. The included papers were published across 1,940 journals between 1983 and 2022.

Proportion of all publications

Publications in health economics have grown as a proportion from 5 in a million publications in 1981, to 1,240 in a million in 2022 (Figure 1).

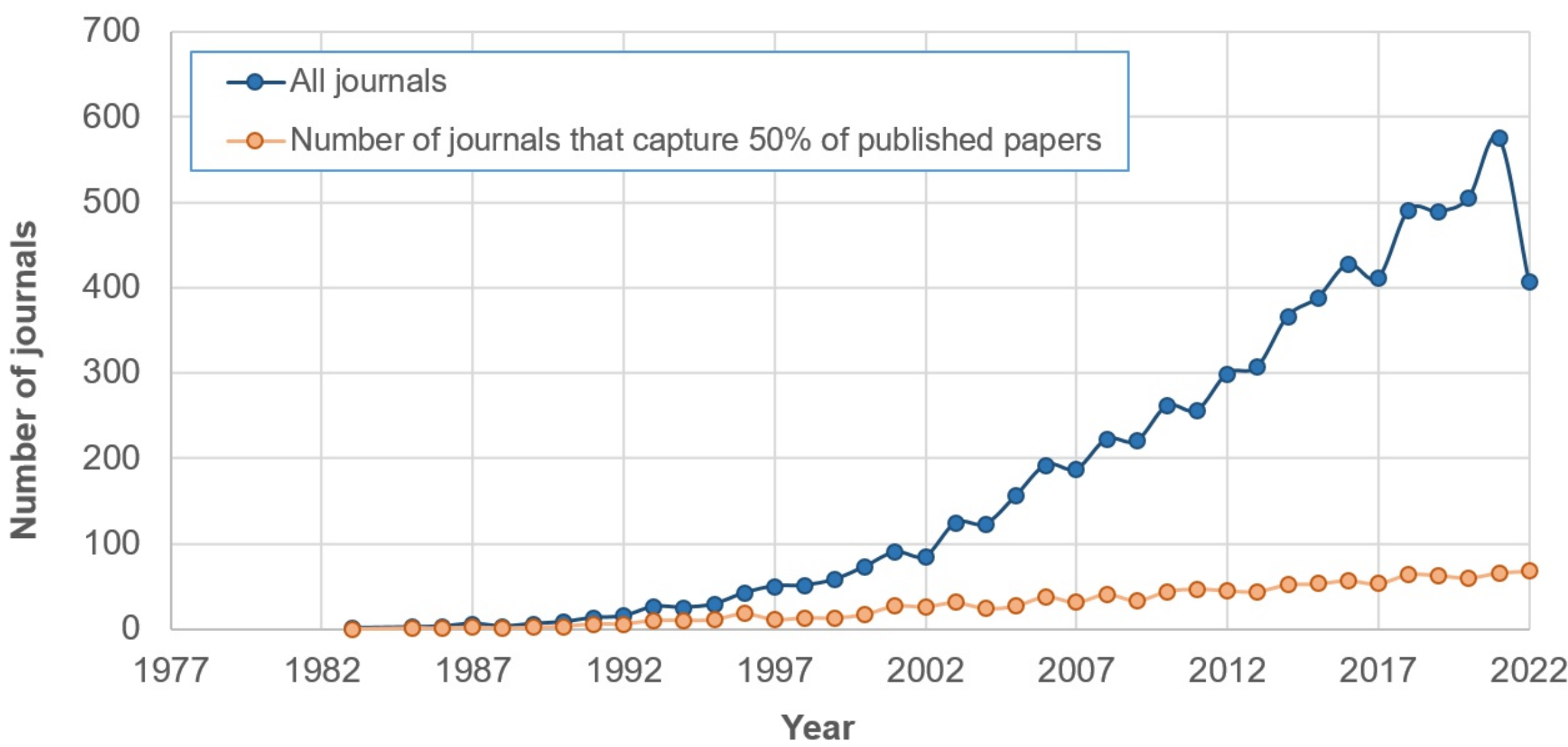
Figure 1. Economic evaluation papers per million papers published by year



Publishing journals

Ten journals account for 21% of published articles, peaking in 2009 with a 27% share of articles. However, the total number of journals publishing articles on economic evaluation has increased from 8 in 1990, to 73 in 2000, to over 500 in 2020 (Figure 2). However, the number of journals that capture 50% of published output is increasing at a lower rate.

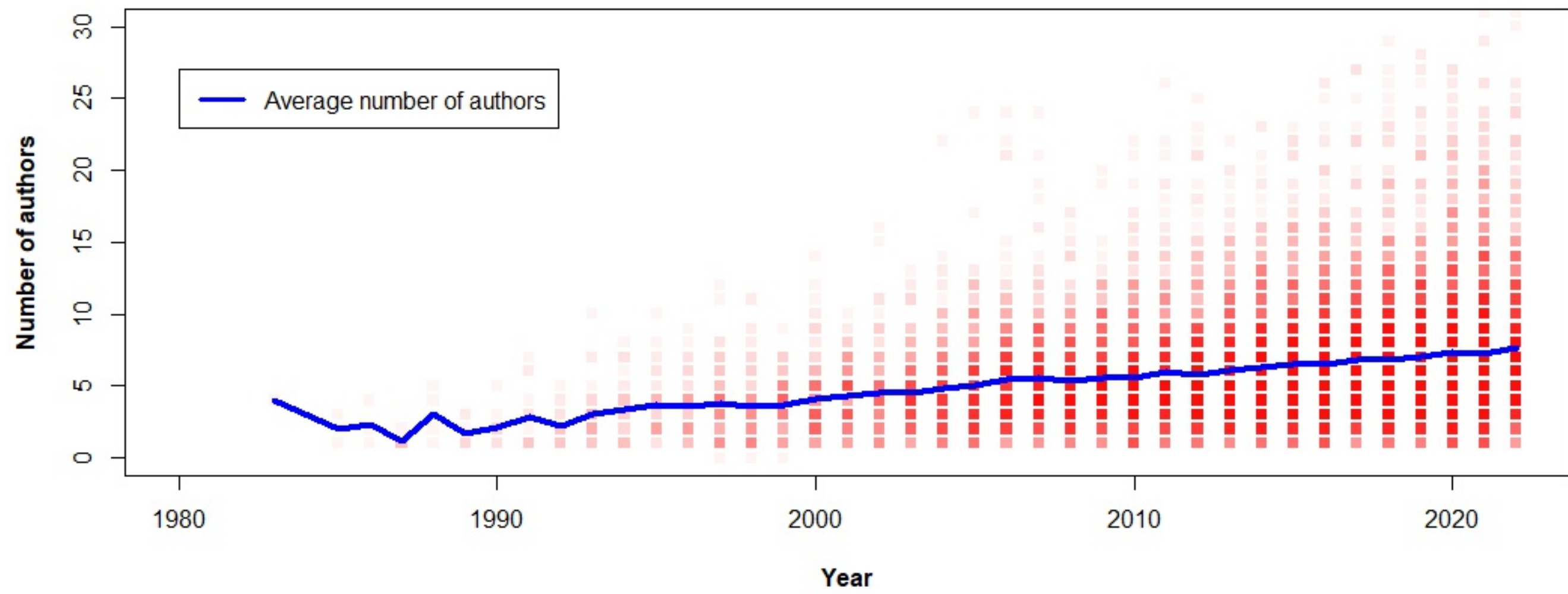
Figure 2. Number of journals publishing papers on economic evaluation by year



Authors per paper

The average number of authors per paper has increased linearly from 1.5 in 1987 to 7.6 in 2022 (Figure 3).

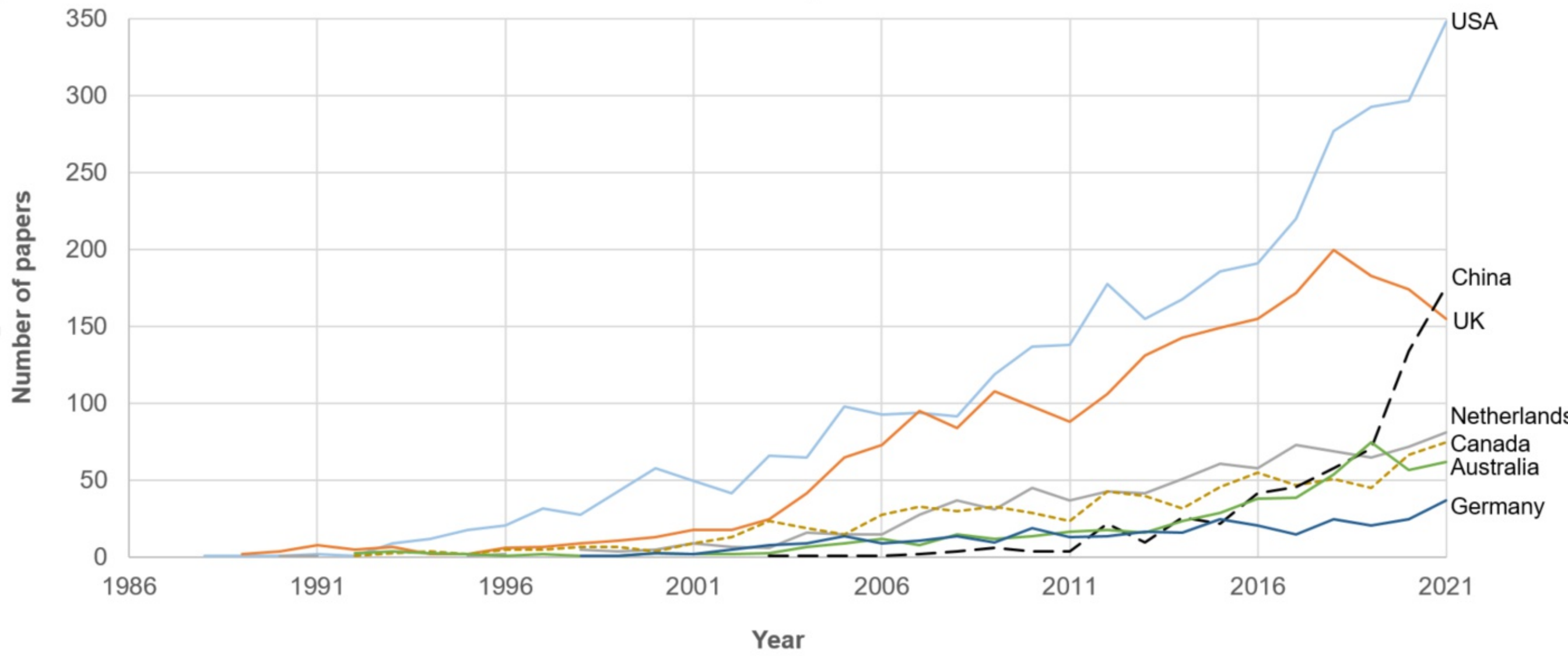
Figure 3. Number of authors per paper by year



Country of publication

The number of countries represented by the lead authors has increased over time from 5 in 1990, to 13 in 2000, to over 60 in 2020. Publication was initially dominated by the US and then the UK, but China has become a substantial contributor in the last three years while publishing by UK authors appeared to peak in 2018 (Figure 4).

Figure 4. Economic evaluation papers published per country by year



Footnote: for clarity, only the top seven countries are included in the plot. These countries account for 73% of included papers.

Conclusions

This study set out to describe the evolution of peer reviewed publication in economic evaluation. Publication in economic evaluation is increasing at a rate that exceeds that of publication generally on PubMed. The number of journals publishing on economic evaluation has increased markedly over time, with large numbers of journals now occasionally publishing on economic evaluation. The number of authors per paper has been increasing over time, although this may be a general trend not limited to economic evaluation. The lead authors represent an ever increasing pool of countries, illustrating the widening penetration of economic evaluation. These findings of increasing diversity and reach have implications for the need to assess applicability and quality when conducting systematic reviews of economic evaluations.

One concern that could arise is that the increasing reach of economic evaluation into non-specialist journals may have implications for the depth of review carried out and maintenance of the quality of outputs. The need to ensure awareness and application of reporting standards is becoming more important and should be reiterated regularly.

Although initially a niche topic, economic evaluation has become increasingly mainstream. The volume of papers has increased, as has the reach in terms of number and type and journals publishing material, and the number of countries contributing to the research. Further research is required to determine if this increased output translates into an increasing contribution to decision making in healthcare.