

May's selection of the top 15 countries does not agree with our data. The SciSearch online database includes 9.6 million documents in the period from 1981 to 1994. The ranking of the top 12 countries according to their share of the world's papers agrees with that shown by May in table 1 of his Policy Forum, but according to our data, the 13th should be Spain (1.37%), followed by Israel (1.12%), Belgium (0.96%), China (0.87%), Poland (0.84%), and Denmark (0.81%). It is surprising that Spain, Israel, Belgium, and Poland were not considered by May.

Studies by Schubert and his colleagues (1), who used data from the Hungarian Academy of Sciences [although they used a different methodology (SCI database considering only citable items and first-address country)], show the same 12 top countries for 1981-1984, but Spain ranks 14th, followed by Israel, Poland, Belgium, Denmark, and China. With any of these methodologies, Spain should be included in the top 15 countries (together with Israel and Belgium). There was a great effort in R&D investment in Spain during the 1980s with the launching of the Spanish Science Law. The percentage of gross domestic product spent on R&D grew from 0.4% in 1981 to 0.82% in 1993 (2). Although this percentage is still far below the European Union average (1.9%), positive results of the Spanish effort should be noted. If one refers to the total growth in that period, Spanish scientific production in 1994 was four times that of 1981 (from 0.7% to 2% of the world's papers) and was only below that of China, which increased by a factor of 6.3 (from 0.29% to 1.31% of the world's papers).

In the absence of detailed information about methodology, May's conclusions should be considered cautiously.

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REFERENCES

1. A. Schubert, W. Glänzel, T. Braun, *Scientometrics* **16**, 3 (1989); T. Braun, W. Glänzel, H. Maczelka, A. Schubert, *ibid.* **29**, 299 (1994); T. Braun, W. Glänzel, H. Grupp, *ibid.* **33**, 263 (1995).
2. F. J. Ayala, *Polít. Científ.* **43**, 5 (1995).