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Persistence studies: a new kind of economic history?

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Abstract Since the early years of the 21st century, economists have started to look for the historical roots of current economic outcomes. In this article, we deal with this new approach (called persistence studies), as represented by the 75 articles published in ten leading economics journals since 2001. We outline the key features (issues, period, geographical area of interest, etc.) of these articles and we discuss their citational record, in comparison with the (much more numerous) economic history articles in the same journals. We also explore the affiliation and training of the 121 authors of persistence studies, highlighting the role of some Boston institutions as the cradle of the new approach.

Keywords Persistence studies · Economic history · Citational success · Top journals

JEL CODES A11 · A12 · B4 · N01

1 Introduction

In a recent article in one of the top academic scientific journal (*Science*), Nunn (2020, p. 1441) has called for a far-reaching change in the nature of economic history. He claims that 'in recent decades, there has been a rapidly growing body of research within economics that takes a historical perspective when attempting to understand

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contemporary issues related to global poverty and comparative development'. Thus, in this approach, history is interesting mostly, if not exclusively, for its long-run consequences rather than in itself; in the felicitous expression by Michalopoulos and Papaioannou (2017), 'history casts its long shadows over the present'. Indeed, Cantoni and Yuchtman (2021) distinguish these '[natural] experiments to understand contemporary outcomes' from 'experiments to understand history' (i.e., the re-vamped and re-named "traditional" cliometric history (Cioni, Federico and Vasta 2021a)) and from 'experiments to understand economics', which use historical data to test models or to estimate parameters such as the very successful paper by Broda and Weinstein (2006) on the positive effects of the increase in product variety in the United States imports on economic growth.

These 'natural experiments' connect some feature or event in the distant past to present-day outcomes with econometric testing and, when possible, explain this persistent effect (hence the label of "persistence studies", henceforth PS for the sake of brevity) with some specific causal mechanisms. This new line of research was to some extent anticipated by two very popular contributions by La Porta et al. (1997, 1998), who argued that the legal origins of commercial laws (common vs civil law) of different countries explained their financial development at the end of the 20th century. However, the success of this new approach flourished after the publication of the seminal and highly successful article on the colonial roots of underdevelopment by Acemoglu, Johnson and Robinson (2001). It argued that past colonial institutions in general, not just the legal system, determined GDP per capita in 1995: countries with large proportion of white settlers were blessed by 'inclusive' institutions and developed, colonies with 'extractive' institutions struggled. Other scholars have studied different outcomes and events, but the inspiration has remained the one introduced by these seminal works. In the following years, this approach has attracted a lot of attention among economists, as shown by the proliferation of survey articles, which cover exhaustively the scientific achievements of PS (Nunn 2009, 2020;Spolaore and Wacziarg 2013; Ashraf and Galor 2018; Michalopoulos and Papaioannou 2020; Cantoni and Yuchtman 2021; Voth 2021).

This article adopts a different, more quantitative, approach. We select all PS published from 2001 to 2020 in a representative sample of top economics journals (Section 2), and then we perform four different exercises. Section 3 puts forwards a first taxonomy of the key features of the articles (issues, period, geographical area of interest, etc.) and shows that on average PS have attracted many citations, mostly thanks to the outstanding success of Acemoglu, Johnson and Robinson contributions (2001, 2002). Section 4 compares the success of PS with the (much more numerous) economic history articles in the same economics journals. Section 5 shifts the focus from articles to the 121 authors of PS studies. Our analysis of their affiliation and training highlights the relevance of institutions from the Boston area in the movement. Section 6 deals with some objections on data, econometric methodology and general research design of PS by economic historians. Section 7 concludes.

2 Persistence studies: a first look

We define as PS an article which explains an outcome (e.g., the level of GDP in a country or region) as the effect of its permanent features or of specific events which had happened at least 100 years earlier. Although this is not strictly necessary for our definition, almost all articles focus on present-day outcomes at the time of the publication. We survey ten leading economics journals. Our sample of journals comprise the top five—the *American Economic Review* (*AER*), *Econometrica* (*ECMA),* the *Journal of Political Economy* (*JPE*), the *Quarterly Journal of Economics* (*QJE*), and the *Review of Economic Studies* (*RESTUD*)[1]—, three prominent general-interest journals—the *Economic Journal* (*EJ*), the *Journal of Economic Literature* (*JEL*), and the *Review of Economics and Statistics* (*RESTAT*)—, and two "history-friendly" journals—the *Journal of Development Economics* (*JDE*), and the *Journal of Economic Growth* (*JEG*). We have chosen these latter among the many other leading journals because they show the greatest interest in economic history issues, as shown by the high share of PS they have published and the number of citations they made and received from top field economic history journals.

We cover the period from 2001, the year of the first paper by Acemoglu, Johnson and Robinson (2001), to 2020, finding a total of 75 articles (Fig. 1). The graph shows a jump around 2010 which seems to herald a regime shift in the second half of the decade. However, the PS account for a very tiny share of all articles published in the ten leading journals over the whole period (Table 1) and they did not reach a fiftieth of total in any year. The highest percentage (1.7%) was reached in 2016.

The share of PS varies a lot between journals. It is quite low for the top five, except for *QJE*, and it is really sizeable only in the *JEG*, up to 25% in 2020. Indeed, this journal accounts for a share of all PS disproportionately high relative to its size (only 2% of all published articles in our sample). Actually, the methodological novelty of

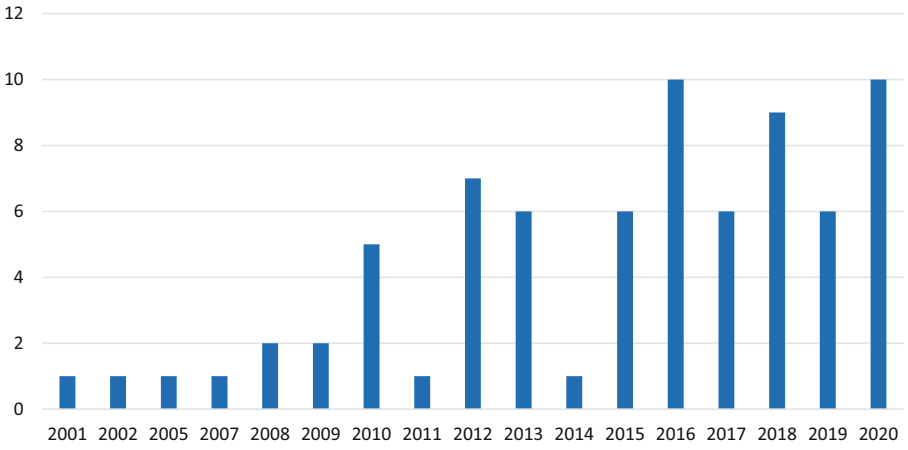

Fig. 1 Number of PS per year (2001–2020). (Source: our own elaborations)

[1] For an analysis of recent trends in the top five economics journals, see Wei (2019).

Table 1 Number and share of PS by journal (2001–2020)

Journal	No. PS article	Total	% PS on Total articles	% PS on Total PS
Top five	**24**	**6258**	**0.4**	**32.0**
American Economic Review	9	2202	0.4	12.0
Econometrica	5	1289	0.4	6.7
Journal of Political Economy	0	931	–	0.0
Quarterly Journal of Economics	9	820	1.1	12.0
Review of Economic Studies	1	1016	0.1	1.3
Three prominent general-interest journals	**27**	**3624**	**0.7**	**36.0**
Economic Journal	14	1746	0.8	18.7
Journal of Economic Literature	3	442	0.7	4.0
Review of Economics and Statistics	10	1436	0.7	13.3
History friendly	**24**	**1972**	**1.2**	**32.0**
Journal of Development Economics	10	1723	0.6	13.3
Journal of Economic Growth	14	249	5.6	18.7
Total	**75**	**11,854**	**0.6**	100.0

Source: our own elaborations

PS has led many scholars to overlook a somewhat inconvenient reality. Even in our sample of economics journals, the PS account for a minority of economic history articles—i.e. of articles which use historical data to address a historical research question (as opposed to testing economic models or looking for empirical long term regularities). We have prepared for a companion paper (Cioni, Federico and Vasta 2021b) a list of these articles from 2001 to 2018, which we have updated for this paper to 2020. The list now includes 588 articles, the 75 PS and 513 "traditional" economic history articles. On the other hand, of course, our database does not include all PS. Some of them have been published in other economics journals (Basile, Ciccarelli and Groote 2021) or in book chapters (Nunn 2015), others are now being revised for publication and a lot of research is on going. Recently, this approach seems to find space also outside economics: for instance, a geography journal has just published a paper on the effect of civil service quality in 17th century Qing China on current economic performance (Wang, Rodriguez-Pose and Lee 2021).

3 What are PS and how successful are they?

As a first step of our analysis, Table 2 classify the 75 PS according to the main outcome, the time and the type of event, and the geographical area of interest. Most of the classifications are clear cut, and thus we need to remind only a couple of points. First, many PS deal with multiple outcomes of the same historical event. For instance, according to Dell (2010) the *mita*, a system of forced labour for silver mines in Peru, produced both an increase of stunting in children, and a reduction in household consumption. In these cases, we have classified as "main outcome"

Table 2 A taxonomy of the PS (2001–2020)

	Number of articles	Average Citations per year	Median Citations per year
Main outcome			
GDP level or growth	24	26.9	7.3
Proxies of GDP (Urbanization, pop. density, etc.)	11	11.7	10.0
Institutions	7	8.1	5.5
Well-being (health, education)	18	5.9	2.8
Other	15	13.6	6.0
Time event			
Early modern and medieval	26	10.8	5.5
Modern	29	22.0	7.2
Long run	20	11.2	5.5
Type event			
Pre-colonial institutions	13	16.4	10.6
Colonialism (colonial institutions and policies)	20	29.8	10.2
Religious institutions	11	5.9	5.5
Permanent characteristics	20	10.7	3.1
Other	11	4.6	2.8
Geographical area			
Africa	18	14.1	9.6
Asia	6	8.9	6.3
America	8	17.7	5.0
OECD countries	16	6.3	3.4
World	27	21.8	6.2
Total	75	15.2	5.7

Source: citations extracted by *Scopus* on 28 June 2021

the dependent variable of the main regression in the article. Second, we define "permanent event" the genetic characteristics of populations, whose effects have been explored in number of papers by Oded Galor and his co-authors (Ashraf and Galor 2013; Galor and Özak 2016; Ashraf, Galor and Klemp 2021).

The taxonomy shows that the field is still deeply influenced by the original approach by Acemoglu, Johnson and Robinson (2001, 2002). Most works explore the historical roots of current level of development, as measured by national GDP or its proxies or by other measure of well-being. These measures data are seldom available for poor countries at regional level and thus scholars have resorted to proxies, such as luminosity (Wahl 2017; Castello-Climent, Chaudhary and Mukhopadhyay 2018). When available, district data have been used with a regression discontinuity design (RDD) framework, as in the already quoted paper by Dell (2010). The legacy of Acemoglu, Johnson and Robinson (2001) is evident also in other features of large number of PS—such as the world-wide comparisons, the interest in colonial institutions and the focus on modern period. However, the table shows also how authors have extended their interests. Michalopoulos and Papaioannou (2013) have

Table 3 Citations per year, PS and all articles, by journal (2001–2020)

Journal	PS Average Citations per year	All articles Average Citations per year
American Economic Review	45.0	7.0
Econometrica	19.6	7.1
Journal of Political Economy	–	7.7
Quarterly Journal of Economics	30.1	15.9
Review of Economic Studies	6.0	5.8
Economic Journal	5.0	4.4
Journal of Economic Literature	38.8	13.1
Review of Economics and Statistics	7.7	6.1
Journal of Development Economics	3.0	4.1
Journal of Economic Growth	4.7	6.9
Total	15.2	6.9

Source: citations extracted by *Scopus* on 28 June 2021

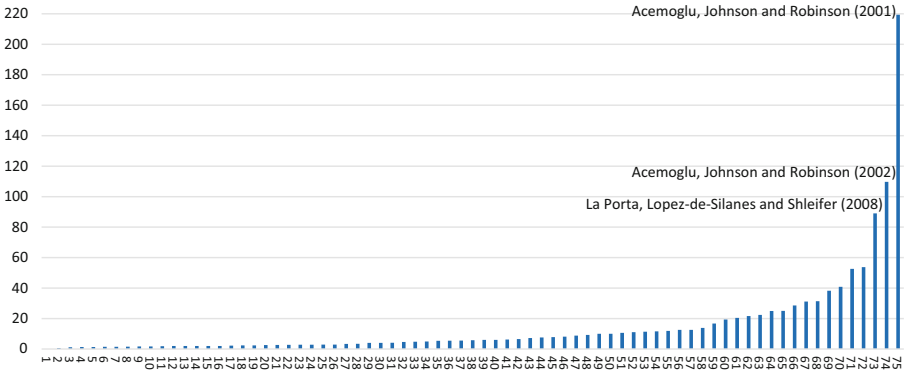

Fig. 2 Number of citations per year of the PS (2001–2020). (Source: citations extracted by Scopus on 28 June 2021)

argued that the development of centralized pre-colonial institutions affects positively current level of development, Alesina, Giuliano and Nunn (2013) have suggested that the early choice of main cereal (maize or wheat) has affected the current gender roles and so on.

Table 2 reports also the average and median number of citations per year suggesting that PS are very successful, and this first impression is buttressed by a comparison with the mean number of citations to all articles in the same journals (Table 3).[2]

PS are cited more than other articles in all journals but *JDE* and *JEG*, and the difference is humongous for the *AER*. On the other hand, these aggregate comparison of average number of citations are somehow misleading. The comparison between mean and median (Table 2) hints to a skewed distribution and Fig. 2 confirms this feature.

[2] The average number of citations to all articles is somewhat understated because the *Scopus* database includes articles which are less likely to be quoted, such as editorials, comments, and rejoinders.

The three top articles account for 55% of all citations received by PS, while the 37 under the median garner a total of 473—i.e. only 3.4% of the total. To be fair, about one third of these less cited papers have been published in 2019 or 2020 and thus may be too recent to attract citations, given the well-known lags in publication in economics journals. However, the ten papers from 4th to 13th in the ranking have been published from 2005 (Banerjee and Iyer 2005) to 2016 (Galor and Özak 2016) and yet have obtained a total of 3579 citations, a fifth less than the 4498 citations received by Acemoglu, Johnson and Robinson (2001).

4 PS and the "traditional" economic history articles

In spite of the attention, they have been getting in the 21st century, PS represent only a minority of the research in economic history, also in economics journals. As it is well known, economic departments deem publishing in the top five or in other leading economics journals relevant if not essential for hiring and tenure (Margo 2018; Heckman and Moktan 2020). A growing number of (mostly young) scholars have reacted accordingly, publishing in top economics journals articles on historical topics, ranging from the origins of agriculture (Bowles and Choi 2019) to long-run credit crises (Schularick and Taylor 2012).

These "traditional" economic history articles outnumber the PS seven to one (513 vs 75), but they have been much less successful. The average "traditional" article has received 7.3 citations—i.e. less than half the average PS and also the median number of citations is a third lower (3.8 vs 5.7). Furthermore, PS are overrepresented in the top of the distribution. There are three PS among the ten most cited articles in the whole database (Table 4), and two other PS, the articles by Nunn and Wantchekon (2011) on the effects of the slave trade on trust in Africa, and the already quoted one by Alesina, Giuliano and Nunn (2013) are respectively eleventh and twelfth in the overall ranking. Interestingly, five out of the seven "traditional" economic history articles in the top ten deal with inequality, currently a very hot topic in the field.

The relative success of PS is confirmed also for less stringent definitions of top distribution—they account for 21.3% of articles in the top decile, and for 38.7% of articles in the top quartile (Table 5). Vice-versa, they are underrepresented in the lower rungs—2.7% in the bottom decile and 14.7% in the bottom quartile. Furthermore, the PS in the first quartile are cited more, on average and median, than the "traditional" economic history articles and this gap persists even if one drops the top ten articles of the whole distribution. In this latter case, the mean is 17.4 for "traditional" economic history articles and 21.4 for PS, the median is respectively 13.4 and 18.1.[3] As expected, the difference disappears in other quartiles.

Does the relative success of PS depend on their appeal beyond the narrow boundaries of economic history? According to Angrist *et al*. (2020), economic articles are now attracting a growing number of citations from 'extramural' disciplines, espe-

[3] Two "traditional" articles are missing from Table 5 because they are not included in *Scopus* database, and thus the number of citations they received is not available.

Table 4 Top 10 cited articles (2001–2020)

#	Authors	Year	Title	Journal	Type	Total citations	Citations per year
1	Acemoglu D., Johnson S. and Robinson J.A.	2001	The colonial origins of comparative development: An empirical investigation	AER	PS	4498	219.4
2	Barro R.J. and Lee J.W.	2013	A new data set of educational attainment in the world, 1950–2010	JDE	H	1353	159.2
3	La Porta R., Lopez-de-Silanes F. and Shleifer A	2008	The economic consequences of legal origins	JEL	PS	1481	109.7
4	Acemoglu D., Johnson S. and Robinson J.A.	2002	Reversal of fortune: Geography and institutions in the making of the modern world income distribution	QJE	PS	1736	89.0
5	Piketty T. and Saez E	2003	Income inequality in the United States, 1913–1998	QJE	H	1560	84.3
6	Atkinson A., Piketty T. and Saez E	2011	Top incomes in the long run of history	JEL	H	854	81.3
7	Schularick M. and Taylor A	2012	Credit booms gone bust: Monetary policy, leverage cycles, and financial crises, 1870–2008	AER	H	761	80.1
8	Autor D.H., Katz L.F. and Kearney M.S.	2008	Trends in U.S. wage inequality: Revising the revisionists	RESTAT	H	889	65.9
9	Saez E. and Zucman G	2016	Wealth in equality in the United States since 1913: Evidence from capitalized income tax data	QJE	H	344	62.5
10	Goldin C	2014	A grand gender convergence: Its last chapter	AER	H	463	61.7

Source: citations extracted by *Scopus* on 28 June 2021

cially political science, sociology and business.[4] One could surmise that this trend would benefit more the PS, which focus on present-day outcomes, than "traditional" economic history articles, which in contrast are more likely to be quoted by other economic history journals. The pool of potentially interested journals would clearly be much larger for PS than for "traditional" economic history, and this can explain the different success. We test this hypothesis by classifying citations received by economic history articles in 19 categories of sources—i.e. groups of journals and

[4] The article does not consider cross-citations between different sub-fields within economics and include economic history articles in a "miscellaneous" category with experimental economics, law and economics and so on.

Table 5 Quartiles and deciles of citations per year by type of articles (2001–2020)

	Number		Mean		Median	
	"Traditional"	PS	"Traditional"	PS	"Traditional"	PS
Quartiles						
First	117	29	21.5	33.7	14.0	20.4
Second	131	16	5.7	6.0	5.3	5.9
Third	127	19	2.8	2.7	2.7	2.7
Fourth	136	11	0.8	1.3	0.8	1.4
Deciles						
First	43	16	38.0	51.8	29.8	31.3
Second	50	9	13.0	12.5	12.5	11.9
Third	51	8	8.6	8.6	8.4	8.5
Fourth	51	8	5.9	5.9	5.9	5.9
Fifth	54	4	4.5	4.6	4.4	4.7
Sixth	53	5	3.4	3.5	3.4	3.5
Seventh	50	8	2.6	2.7	2.5	2.7
Eight	49	10	1.8	1.9	1.8	2.0
Ninth	53	5	1.0	1.3	1.0	1.3
Tenth	57	2	0.3	0.3	0.3	0.3
Total	511	75	7.3	15.2	3.8	5.7

Source: our own elaboration on citations extracted by *Scopus* on 28 June 2021

books—and measuring the relative impact of the PS and the "traditional" economic history journals as the ratio between the shares on total citations received.[5] As a starting point, Fig. 3 distributes the total citations to PS by macro-categories.

At a first glance, the data raise some doubts on the hypothesis of a greater extra-mural appeal of PS. The journals of extramural disciplines account for a over a quarter of all citations to PS, but most quotations come from "business" (i.e. finance and management) and "political science" journals, while the share of "other (hard) science" barely exceeds 5%. As expected, the share of history journals, including economic history, is fairly low (6.9%), and the top five ones—the *Economic History Review, Explorations in Economic History*, the *European Review of Economic History, Cliometrica*, and the *Journal of Economic History* account for a mere 2.7%. The latter, the most important journal in the field, is thirteenth in the ranking of sources, with a share of slightly less than 1%. The aggregate share of history journals would be much lower without the *Economic History of Developing Regions*, the seventh highest source of citations (and the first non-economics journals), which publishes many articles on Africa, a major area of interest for the PS.

[5] For a full analysis on this issue, see: Cioni, Federico ad Vasta (2021b, Table A15). The data on citations have been collected in May 2019 and refer to all articles published in the ten journals until 2018 (325 "traditional" economic history articles and 40 PS). We have classified only the 1641 sources which has quoted at least three times an article in the database—both PS and "traditional" thus losing about 15% of all citations. We allocate each journal to a category according to its main subject category in *Scimago* and to the "aims and scope" reported in its website.

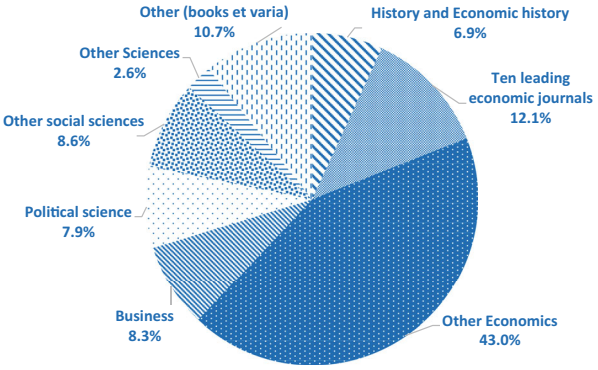

Fig. 3 Distribution of citation received by PS by categories of journals (2001–2018). (Source: our own elaborations on Cioni, Federico and Vasta (2021b))

Almost all quotations from "other" sources are from 266 books and are quite concentrate. Ten books, including some well-known economics handbooks such as the *Handbook of Economic Growth* (Aghion and Durlauf 2014) account for a fifth of the citations from the category. Over a half the citations to the PS come from economics journals, but the distribution is highly skewed. Over a third of citations from ten leading journals comes from the two "history-friendly" ones (the *JDE* is second in the ranking of sources and the *JEG* fourth) and the number of citations is strongly (0.83) correlated with the number of PS papers they published.[6] Ten out of 387 journals in the category "other economics" for 12.3% of all citations to PS—i.e., roughly as much as the ten leading journals of our sample. In this case, the concentration depends on the specialization of the journal: the *Journal of Comparative Economics* (first in the ranking) and *World Development* (third) deal respectively with institutions and with long-run institutional and economic change. This impression is confirmed by Fig. 4, which compares the distribution of citations to the PS and the "traditional" economic history articles, and thus ultimately the impact on different sources, by plotting the ratios of the respective shares on total citations.

Most of the ratios cluster around 1—i.e., the differences between PS and "traditional" economic history articles are smaller than hypothesized. From one hand, as expected, the results confirm that PS get relatively little attention from historians and also economic historians. Indeed, the aggregate ratios (0.8) is the sum of 0.51 for the top five economic history journals and of 1.58 for other economic history journals. On the other hand, the PS do not attract proportionally more citations outside economics, with the exceptions of political science. The PS get proportionally fewer citations than "traditional" economic history journals in "other (hard) science" and, rather surprisingly, also in economics. Indeed, the higher ratio for the ten leading journals (thanks to the *JDE* and the *JEG*) is compensated by the lower ratio for other journals—so that the overall ratio for all economics journals is 0.98. Likewise, the "business" ratio is the combination of the low ratio for finance journals (0.79)

[6] Thus, four other leading journals are fairly high in the ranking of PS—the *EJ* (5th), the *AER* 6th, the *RESTAT* (8th), and the *QJE* (10th)—and jointly get 5.8% of all citations, while the *JEL* (18th), *ECMA* (31st), the *JPE* (97th), and the *RESTUD* (108th) together only 1.6% of all citations.

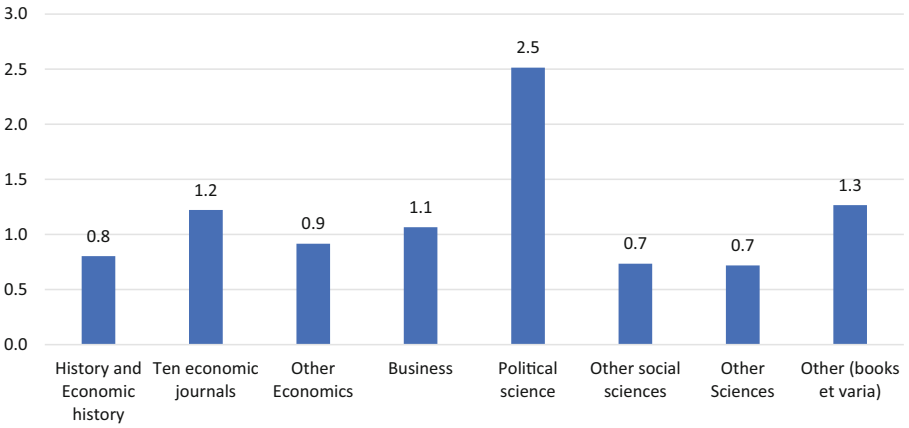

Fig. 4 The differences of impact between PS and "traditional" economic history articles by type of citing journals (2001–2018). (Source: our own elaborations on Cioni, Federico and Vasta (2021b))

and the quite high one for management ones (ratio 1.76), which reflect the success of the survey article by La Porta, Lopez-de-Silanes and Shleifer (2008) on the legal origins.

Summing up, the absolute success of the PS is mainly due to the massive impact of the works by Acemoglu and co-authors and it is obtained mainly within economics. Probably, this success, at least partially, is also due to the reputation that Daron Acemoglu has reached within other field of economics in recent years. The historical perspective adopted by the PS seems to gain the interest of the economists and, to some extent, of political scientists, while economic historians show a limited interest and also, as we will see later, a certain degree of scepticism towards this new approach.

5 Who are persistence economists?

Overall, our database features a total of 121 authors.[7] Most of them are males (81.8%) and the majority works in teams: indeed, three quarters of articles are joint works, by two (41.3%), three (25.3%) or even four (6.7%) people. Both features do not diverge significantly from the current trends in economics (Hamermesh 2018) and also in economic history journals (Cioni, Federico and Vasta 2020). The authors were affiliated as of June 2021 to 87 different institutions, including some international organizations and even a private firm (Amazon).[8] About half of the authors (61 out

[7] The result does not change substantially if we weight papers according to the number of authors (Cioni, Federico and Vasta 2021b).

[8] We classify the geographical area of international institutions according to the location of the headquarter (so the area for Bank for International Settlements is included in Switzerland, the World Bank and International Monetary Fund in the United States). Sadly, Alberto Alesina died in 2020, but we include him as affiliated to Harvard where he was teaching.

of 121) and of institutions (40 out of 87) are American—the rest is concentrated in continental Europe (37 authors and 27 institutions) and in the UK (10 authors and 9 institutions). Countries in other continents are almost absent, with the significant exception of Hong Kong, which boasts five authors from three different universities. Three of them teamed together to write a paper on the long run effect of entry exams in the Chinese administration (Ting, Kung and Ma 2020).

This information is not really earth-shattering but for one key point, the low level of concentration for both authors and institutions. Only 23 authors have authored or co-authored more than one PS in the ten leading economics journals, with a maximum of five by Nathan Nunn (Harvard University) and James A. Robinson (University of Chicago). Both authors have published extensively both in the ten journals (respectively 20 and 30 articles) and elsewhere—with respectively a total of 36 and 98 documents in *Scopus* from 2001 to 2020, which may include other PS. Only three scholars can be defined "specialized" to PS, as they have published only PS in the ten journals and few other documents overall, as reported by *Scopus,* in the period from 2001 to 2020. All of them are relatively freshly minted PhDs.[9]

The concentration is apparently very low also if one considers the institution of current affiliation. The four most productive universities have a total of 19 authors (six at Harvard University, including Alesina, five at the University of Copenhagen and four each at Brown University and the University of Southern Denmark), 15.7% of the total, who have authored or co-authored a total of 32 papers. The contribution of top world departments of economics for such a novel approach is strikingly limited relative to the size and quality of their faculty. After Harvard University, the next top university, the Massachusetts Institute of Technology, is fifth, with three authors and seven papers, but the other eight top institutions according to the Quacquarelli-Symonds ranking in 2020 (www.qs.com), have a total of 10 authors and 16 papers.[10] Actually, a substantial number of authors of PS is affiliated to five institutions in the Boston area—Harvard University, Massachusetts Institute of Technology, Boston College, Brown University (50 miles South of Boston) and Williams College (111 miles West of Boston). One out of twelve faculty of these institutions (15 out of 194) has authored at least one PS (and, of course, much else), for a total of 33 articles.[11]

[9] As of June 2021, Omer Özak has published 3 PS in ten leading journals (one in the top five), he has 8 documents in *Scopus* and got his PhD in 2011; C. Justin Cook has 2 PS (none in the top five), 5 documents in *Scopus* and got his PhD in 2012 and Felipe Valencia Caicedo has published 2 PS in the ten journals (1 in the top five), he has 3 documents in *Scopus* and got his PhD in 2015. Moreover, there are two border cases, Jeanet Bentzen and Leonard Wantchekon. The former has published 2 PS and another paper in the ten journals, 8 documents in *Scopus* and got her PhD in 2011. Wantchekon has only 2 PS in the ten journals (and none other articles), including the most quoted article with Nunn on slave trade, but he is a senior scholar who got his PhD in 1995 and has published extensively on political science issues (a total of 28 *Scopus* documents from 2001 to 2021).

[10] Stanford University (2 authors and as many papers), University of California Berkeley (2 with 3 papers), University of Chicago (2 with 6 papers, thanks to Robinson), London School of Economics and Political Science (1 with 1 paper), Princeton University (1 with 2 papers), University of Oxford (1 author and 1 paper), Yale University (1 and 1 paper), and University of Cambridge (no authors and papers).

[11] As of July 31st 2021, these five institutions employ a total of 194 faculty in economics (Harvard University 55, Massachusetts Institute of Technology 40, Boston College 40, Brown University 45, and Williams College 14).

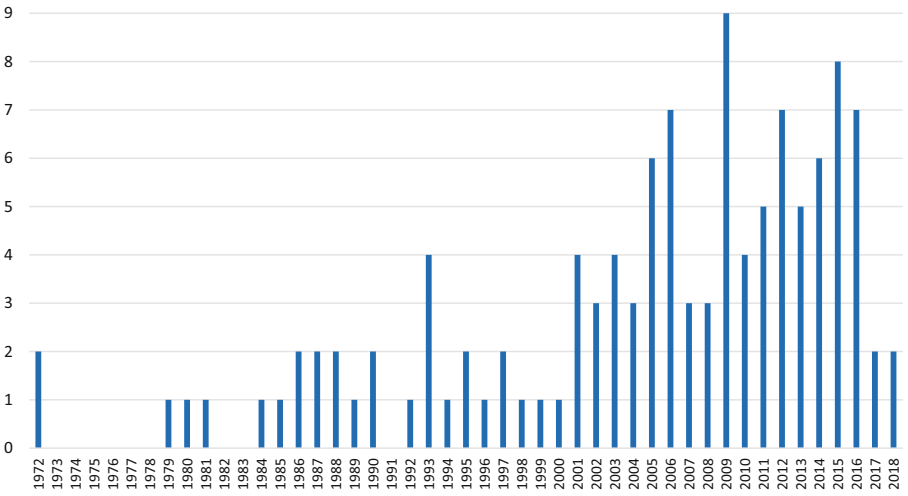

Fig. 5 Year of PhD graduation of PS authors. (Source: our own elaborations)

The gap between this "Boston cluster" and the other eight top universities is wider for authors of more than one PS: three only are currently affiliated to non-Boston prominent departments (University of Chicago, Princeton University and University of California Berkeley) and nine in the Boston cluster (four in Brown University, two each Harvard University and Massachusetts Institute of Technology and one in Williams College).

The relevance of the "Boston cluster" appears even stronger if one looks for the training of PS authors. First, almost all of them have a PhD in economics (100, plus other 10 on specific subjects, such as international economics, finance, and so on) and the rest (8) in other social sciences (mostly political science). As Fig. 5 shows, their graduation years range from 1972 to 2018, and some of the leading scholars in the field, including Oded Galor (Columbia University, 1984), Simon Johnson (Massachusetts Institute of Technology, 1989), Acemoglu (London School of Economics and Political Science, 1992), and Robinson (Yale University, 1993), graduated when the very idea of PS had not yet been conceived.[12] Yet, it is quite clear, and not really surprising, that the pattern reflects the success of the approach. The Acemoglu, Johnson and Robinson (2001) caused, with due lag, a first increase in the number of PhD students interested in PS and the success of the first wave of PS attracted even more PhD students looking for a fashionable subject (of course still accounting for a very small proportion of total PhD in economics).

A visual inspection suggests selecting thresholds in 2005 and 2011 and, thus, in Table 6 we report the number of PhD distinguishing the "Boston cluster", the eight top universities outside the Boston area (five American and three English), other North American universities (including one Canadian), Continental Europe, the other British and rest of the world.

[12] We have been unable to find information on the year of graduation of three authors, thus for this information the total sample is 118.

Table 6 The training of PS authors (geographical area of PhD)

Period	Boston area	Other QS	Other North America	Continental Europe	Other UK	Rest of the world	Total
1972–2004	15	9	8	10	1	1	44
2005–2010	9	4	5	11	2	1	32
After 2011	10	3	6	19	1	3	42
Total[a]	34	18	19	41	4	5	121

[a]The total is greater than the sum of period-specific figures because we know the granting institution but not the year of graduation of three authors

The "Boston cluster" accounts for over a quarter of all PhDs and for more than half of the American ones.[13] Outside this cluster, a lot of dispersion is visible. The list features a total of 59 PhDs granting institutions on top of the four Boston ones, including Hebrew University, two Hong Kong universities and Australian National University in the rest of the world, the University of Luxembourg, University of Macedonia and quite a few German universities in Europe, Louisiana State University, Pennsylvania State University and University of Florida in the United States. The opposite side of the coin is the relatively small (and declining) number of PhD granted by top non-Boston universities and also by other highly ranked universities.[14] Thus outside Boston, does not appear any systematic training dedicated to PS.

Last but not least, one can combine the two criteria (training and current affiliation) in an all-encompassing definition of "Boston related" authors. This yields a total of 40 names—i.e., at least about a third of all PS authors has a strong link with the cluster.

6 Shall we believe?

Several authors have expressed concern for the quality of data used by PS (e.g. Austin 2008; Bisin and Federico 2021), but the most detailed instance is the criticism by Albouy (2012) to the settlers' mortality data by Acemoglu, Johnson and Robinson (2001). Acemoglu, Johnson and Robinson (2012) answered defending their data and claiming that their results were anyway robust. This debate is relevant to the whole PS literature, as settlers' mortality data have been used as instrument in many major works. Doubts can be raised also on other widely used sources. Guinnane (2021) deals with the many weaknesses of the population data by McEvedy and Jones (1978). The available maps of missions in Africa report only the Western-managed missions which were a minority of the total and were concentrated in

[13] Overall, the United States account for 64 PhDs—i.e. 34 from the "Boston cluster", 11 from universities included in the top ten of Quacquarelli-Symonds ranking and 19 from other North American universities (including prestigious ones such as the New York University, the Northwestern University or the University of California Los Angeles). The United Kingdom accounts for 11 PhDs, 7 from universities included in the top ten of Quacquarelli-Symonds ranking and 4 from other universities.

[14] The universities ranked just below the top, from eleventh to twentieth, by Quacquarelli-Symonds ranking, account for nine PhDs (two each the New York University, the Northwestern University and the University of California Los Angeles).

the best locations (Meier zu Selhausen 2019). Consequently, the results about the positive long-run effects of missions may well be spurious. Murdock, in his *Ethnographic Atlas* (1967), painstakingly collected information on economic, social and cultural behaviour in over a thousand societies from a wealth of Western sources (Lowes 2021). Authors were travellers looking for the exotic, colonial administrators monitoring their subjects, anthropologists studying primitive societies. It is unclear whether they were interested in describing all the features of the native societies, rather than some specific ones relevant for their purpose (e.g., tax collection), and also to what extent the natives were willing to disclose them. Furthermore, over a half of the total cases (677 out of 1282), and two thirds of African one (338 out of 528) were collected after 1920, after decades of colonial rule and thus it is likely that the information, although correct at that date, did not reflect the pre-colonial situation.

Criticizing data is to some extent unfair. Poor or missing data are the hallmark of history and indeed the authors of PS have shown remarkable industry in squeezing data from known sources and ingenuity in finding novel ones, especially while looking for suitable instruments (Giuliano and Matranga 2021; Matranga and Pascali 2021). Austin (2008) has put forward a different and more pertinent criticism to the use of history in PS in a famous critical review of the article on *Reversals of fortune* by Acemoglu, Johnson and Robinson (2002). He argues that searching for historical roots centuries or millennia earlier implies a 'compression of history'. This expression refers first and foremost to the neglect of the historical changes in the period from the event and the outcome (or 'vertical compression') but the author reminds that 'compression of history occurs horizontally as well as vertically, conflating different 'paths' of economic history as well as different periods' (Austin 2008, p. 998). Gerschenkron (1962) famously argued that 'history is a messy housewife', but some PS tend to sweep some inconvenient details under the carpet in order to present the reader with a neat hypothesis (nobilitated as 'quasi-natural experiment').

Actually, PS imply a major methodological change relative to the tradition of economic history as defined by the Cliometric revolution of the 1960s. It rested on three 'pillars' (Arroyo Abad and Maurer 2021)—the identification of a research question within a specific historical context, the definition of a model to tackle it with testable hypotheses and eventually the statistical testing. Some PS still pay lip-service to this three-pronged approach, but they weight the three components very differently. The question is no longer historical, the hypothesis is not necessarily based on any formal modelling and most of the attention is given to econometric testing, with long discussions of econometric issues (most notably causation and endogeneity) and some suspect of *p*-Hacking (Brodeur, Cook and Heyes 2020). This approach is inspired by the credibility revolution in labour economics (Angrist and Pischke 2010), but PS very seldom can rely on high-quality databases. The analysis of econometric methodology of PS is thus essential and recent work has suggested three potential weaknesses.

First, Kelly (2019) accused PS to overstate the impact of historical event by failing to correct for spatial autocorrelation. The geographical patterns are likely to be independently similar (or opposite) in the dependent variable and the variable of

interest and this can increase positive (negative) correlation over time. The article buttresses his claim by re-running the main regressions of a number of most quoted PS with a correction for spatial autocorrelation: all t-statistics are lower than the original ones, and most falls below the standard threshold for significance. Kelly's results have been strongly disputed by Voth (2021), but, in a later paper Kelly (2021) defends his work and suggests a randomization procedure to tackle spatial autocorrelation issue.

Second, Bisin and Moro (2021) warns readers about a naïve interpretation of the coefficients of the variable of interest as true for all observations (ATE or average treatment effect) while they may be driven by observations susceptible to the effect of the treatment (LATE or local average treatment effect). Acemoglu, Johnson and Robinson (2001) may be a case in point, to the extent that the mortality for white people was high, and thus caused the adoption of extractive institutions (treatment), in tropical colonies but not in the rest of the world. This bias in interpretation is clearly the more serious the smaller and/or less representative the local group of observations are relative to the universe.

Last but not least, Casey and Klemp (2021) discuss a possible violation of the exclusion cause. PS assume that the instrument affects the variable of interest at the time of measurement and that this effect is persistent until time t—i.e., that the variable of interest affects the outcome only via its current level x_t. They point out that past values of × may affect the outcome also via an alternative channel ('physical or human capital, technology or culture'), reducing correspondingly the direct effect of the original event—i.e. the level of persistence. The standard PS regression, by ignoring this possibility, would attribute all effects of the variable of interest to its value at time t and thus return upward biased coefficients in the second stage. Casey and Klemp (2021) suggest to estimate the long-run effect with the coefficients from auxiliary regressions of values of the variable of interest at different points in time. Their estimate of the true (post-correction) long-run effect of colonial institutions is two thirds lower than the original one by Acemoglu, Johnson and Robinson (2001).

The works by Bisin and Moro (2021) and Casey and Klemp (2021) can be used for an econometric interpretation of Austin's concept 'vertical compression of history'. This latter has an intuitive appeal for historians, but hard-line persistence economists could still claim that the causal relation is proved if the coefficient of the variable of interest is significant (ignoring here spatial autocorrelation). They would not deny the relevance of historical events between the treatment and the outcome, but they would argue that their effect end in the unexplained residual. This would not be the case if subsequent historical events affect the local effects of previous treatment differently according to the nature of the (group of) observations and thus cause results to be LATE rather than ATE (Bisin and Moro 2021) and/or if they open new alternative channels for the effect of the initial treatment (Casey and Kemp 2021).

The key building block of any PS is the mechanism of persistence—how did past treatment affect current outcomes? There are two possible alternative channels, which Voth (2021) calls 'apples-on-apples' and 'apples-on-oranges'. The former assumes that the variable of interest is itself persistent over time, while the latter assumes its effect to be permanent. Some early PS simply assumed persistence or mustered anecdotal historical evidence, but this is no longer the case in the state-

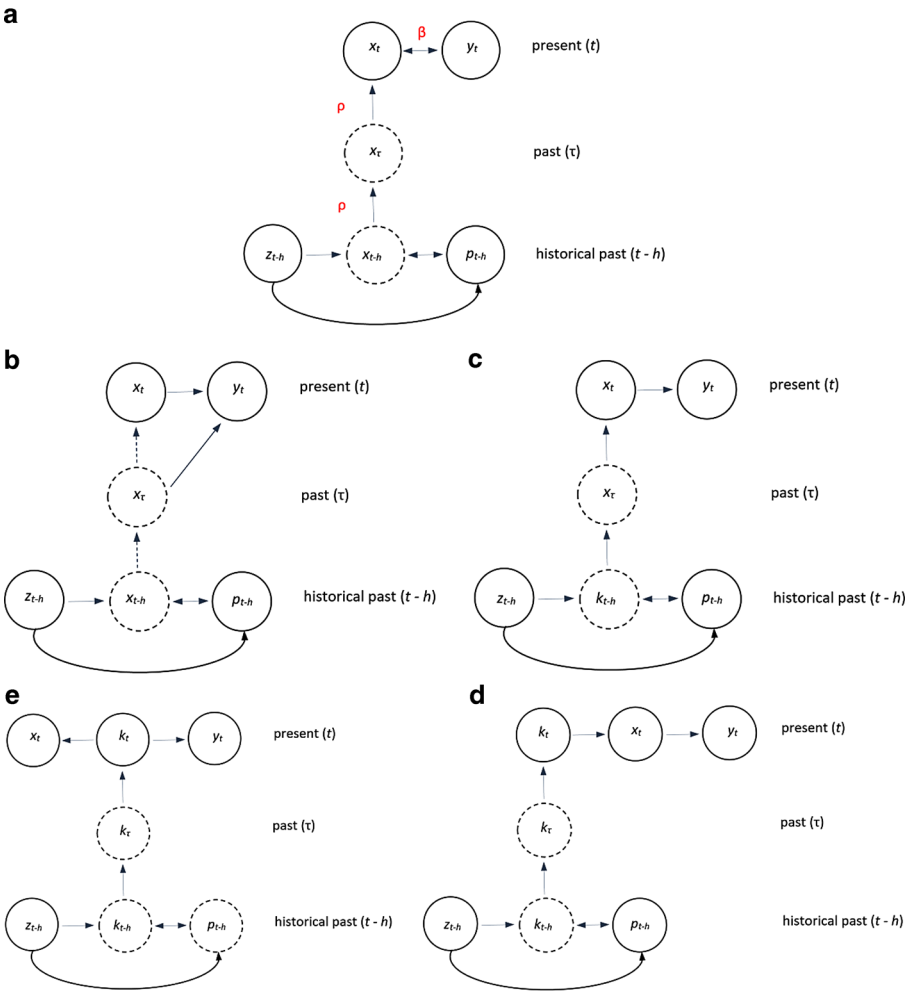

Fig. 6 Persistence studies. **a** general case ('apples on apples'). **b** Casey and Klemp (2021), alternative channel. **c** 'apples and oranges', baseline case. **d** 'apples and oranges', persistent k affecting ×. **e** 'apples and oranges', persistent k affecting y. (Source: **a** general case: Bisin and Moro (2021, Fig. 10.1); other cases our own)

of-the-art literature. Some authors rely on structural modelling or economic theory (in Voth's taxonomy 'apple and orange with theory'), but this approach is not very popular, possibly because theories of long-run institutional change are not yet well developed. Thus, most work rely on additional econometric testing with some subset of the data, and thus they open to data and econometric criticism.

In Fig. 6, we sum up by borrowing Bisin and Moro (2021) stylized description of PS.[15] Case *i*) reproduces their Fig. 10.1, which corresponds to 'apples on apples' PS in Voth's classification. The variable of interest (×) persists over

[15] See Bisin and Moro (2021) for the graphical illustration of the issue of LATE vs ATE.

time—Medieval anti-semitism in Germany resurfaced with tragic consequences in the 1930s (Voigtländer and Voth 2012), extractive colonial institutions morphed in poor-quality post-colonial ones (Acemoglu, Johnson and Robinson 2001) and so on. In this case, the variable × is not observable in history, but it can be proxied by $p_{t\text{-}h}$, which might be endogenous and thus is instrumented by $z_{t\text{-}h}$. Casey and Klemp (2021) violation of exclusion restriction (case *ii*) is still within this 'apples on apples' case. The variable of interest is correctly proxied at time t-h, and it is persistent (x_t), but it has an additional effect on the outcome y_t from time τ via an alternative channel. Omitting this latter overestimates the persistent effect.

The other diagrams present three cases of Voth's definition of 'apple and orange' PS. The variable $p_{t\text{-}h}$ proxies a variable k ('orange'), which then affects × ('apple') at time t. Case *iii*) is Voth's baseline. The inference about the effect of the event can still be correct, but an author is expected to put forward convincing evidence on the mechanism of transmission from k in the past ($k_{t\text{-}h}$) to current values of the variable of interest (x_t). In contrast, in cases *iv*) and *v*), the inference is misleading because k, rather than ×, is the really persistent variable. In case *iv*) k affects both × and y at the same time, while in case *v)* k determine ×, and × determines y, at time t. An example of case *iv)* might be construed from the paper by Nunn and Wantchekon (2011) on mistrust between different ethnic groups as a long-term effects of slave trade. Mistrust could affect negatively the post-colonial economy directly (e.g. by reducing trade between different regions of the same country), and at the same time it can make the post-colonial institutions dysfunctional (e.g. by inspiring voting along ethnic divisions). One can re-interpret Acemoglu, Johnson and Robinson (2001) as an instance of case *v)*. Post-colonial institutions (x_t) did determine GDP (y_t), but they were shaped in the long run by culture ($k_{t\text{-}h}$) rather than by colonial institutions.[16] In this re-interpretation, the share of white settlers would proxy the diffusion of 'good' cultural traits, or bourgeois virtues à la McCloskey (2006), rather than the existence of 'inclusive' colonial institutions. In both cases, x_t comes out significant only as a proxy for omitted k_t.

These cases can be seen as examples of a more general problem of PS: the set of controls may omit confounding factor and thus mis-attributing the outcome to the selected event. This hypothesis has been tested in few but relevant cases. Arroyo Abad and Maurer (2019), revising the work by Dell (2010), find that the effect of the *mita* system on population (as proxy of development) petered out in the late 17th century and argue that the subject people implemented effective strategies of resistance (e.g., migrations). Kelly (2020) shows that adding regional dummies reduces substantially the coefficients and the significance of the main variable in a sample of 25 major PS and thus concludes that long run effects often capture immobile (geographic) features.

[16] Acemoglu, Johnson and Robinson (2001) do test directly persistence with regression of current to early institutions (Table 3) but the regression does not include any 'cultural' variable. See for similar point, stressing the role of human capital, rather than of more generic 'culture', of white settlers Gleaser et al. (2004).

7 Conclusion

Summing up, we can quote three main results from our work. First, Boston is the cradle of PS in terms of affiliation and of training of authors. This shows the relevance of regional clustering in science (Saxenian 1994; Kenney and Mowery 2014; Catini *et al.* 2015), even when is not related with technology transfer. Second, PS have been so far quite successful in terms of citations, clearly outperforming "traditional" economic history articles. The very high number of citations to a few ground-breaking PS account for a substantial part of the gap, but by no means for all. The PS receive most citations from economics journals, while they attract little attention from economic historians and also from 'extramural' disciplines, with the exception of political science journals. Third, PS are still a niche product: the number of articles is fairly small, at least in the leading economics journals and, thus far, there are not totally, or very few, "specialized" persistence scholars.

On a more general vein, we would like to stress two points. First, the criticism of Section 6 is aimed at specific PS rather at the idea per se. The comments can be interpreted as part of a wider discourse on improving future works, which could be of interest also in other fields of economics (spatial autocorrelation is not an issue for PS only). Bisin and Federico (2021) suggest that a 'merger' with economic historians (and also historians) would greatly help economists to find relevant and reliable sources and to avoid careless definitions of the historical context. Along this line, Dippel and Leonard (2021) argue that editors and referees of economics journals are not knowledgeable enough to assess the sources and the context and suggest asking also a report to an 'historian referee'. This solution is sensible, but it is unlikely to be adopted soon by top economics journals.

Second, the contribution of PS to the knowledge of economic history is modest at best. Relatively few PS test directly historical outcomes—a notable exception being the article Comin, Easterly and Gong (2010), which shows the long-run technological persistence from 1000 BC to 0 AD, from 0 AD to 1500 AD, and from 1500 AD to the present. One might argue that assessing the PS according to their contribution, direct or indirect, to historical knowledge is unfair. So far, PS have been written by economists who have deemed historical investigation a useful approach to understand present-day world and thus should be assessed accordingly. This is a massive task, which would need not just to analyse the results of PS in isolation, as most surveys do, but to compare them with alternative explanations for the same present-day outcomes.

These reflections imply that, in our view, the future of the PS is uncertain. It is possible that the initial enthusiasm will wane, as the number of (measurable) historical events to be related to current outcomes is limited and doubts rise on the validity of purely econometric inference. On the other hand, it is possible that PS will become an established field in economics departments, as labour economics, or international economics and that this will create a market for specialists—i.e., scholars who exclusively or predominantly write PS articles. In this latter case, PS might develop alongside, or substitute "traditional" economic history and we believe the latter outcome would be a substantial cultural loss. Exploring our economic

past is intellectual rewarding and relevant and "traditional" (cliometric) economic historians are producing important new insights.

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