Laboratoire interdisciplinaire d'évaluation des politiques publiques

LIEPP Working Paper

April 2014, n°24

Do prizes in economics affect productivity?

Jean-Charles Bricongne
Université de Tours, Sciences Po LIEPP
jean-charles.bricongne@univ-tours.fr

www.sciencespo.fr/liepp

© 2014 by the author. All rights reserved.

Do prizes in economics affect productivity?

Jean-Charles Bricongne[1]

Abstract:

This paper analyses the evolution of economists' productivity after an important award such as the John Bates Clark Medal or the "Nobel Prize". A diff-in-diffs methodology is used, with a control group composed of economists with characteristics close to the members of the treatment group, who were awarded prizes. Several robustness checks are used with different indicators of productivity (articles, weighted or not by reviews' rankings and working papers) and with or without economists and time fixed effects in panel estimates. We find that John Bates Clark Medals alter the (yearly cumulated) ranking of articles, while the number of publications remains unchanged, but only because of an increase in publications in non-ranked reviews. As regards Nobel Prizes, they neither alter the number of articles nor their quality.

Keywords: award, diff-in-diffs methodology, John Bates Clark, Nobel Prize, productivity
JEL codes: A11, C23

[1] Associate professor at Tours University; Sciences Po, LIEPP.
I thank Professor G. Borjas, Professors L. Fontagné and D. Mirza for their useful remarks and V. Buffery for her advice to improve the redaction of the article. Any potential errors are mine.

1. Introduction

Do prizes in economics, such as the John Bates Clark or the Nobel Prize, affect productivity?

All outcomes are possible, depending on the factors at play:

- An increase in productivity, due to a rise in motivation or in the financing of projects.
- A decrease in productivity, due to the fact that those who were awarded the prize think they have reached their goal and prefer to allocate their time in a different way, for instance, by delivering more speeches, investigating other areas or taking on responsibilities other than research. This decrease in productivity may be incidental, in that the economists had already reached the peak of their productivity and it would have declined anyway. However, assessing this effect is difficult and would suppose that the people awarding the prizes know when the peak of a career has been reached. This is a strong assumption given the information asymmetry between the prize-givers and the contenders.
- No change in productivity: even if the awarding of the prize leads to gains in terms of reputation and financing (amount of the prizes, or increased financing of projects), economists do not change their behavior. Concerning the rise in financing, this may be perceived as a temporary shock as opposed to a permanent change, by analogy with the permanent income hypothesis.

The impact of these prizes cannot be assessed directly using dummies alone because many factors (age, year, etc.) can have an influence. Even if we try to control for factors such as age, year or

each individual's profile by adding an economist fixed effect, other factors may come into play. We thus need to consider a control group and a diff-in-diff methodology.

The paper is organized as follows: after discussing the need for a control group and control variables from a methodological point a view, we compare the paper with the existing literature. We then set the results from the various econometric estimates. The last section concludes.

2. Methodology : need for a control group and control variables such as age

2.1.Construction of the control group

To construct the control group, we need economists who have characteristics that are comparable with those of the treatment group. For that purpose, we include economists who were awarded prizes other than those being tested. Since we are testing the impact of different prizes (the Nobel Prize, the John Bates Clark Medal, the Frisch Medal and the IZA reward), and since these prizes have not been awarded to the same economists (not all John Bates Clark Medals were awarded the Nobel Prize and conversely), economists who have been awarded prizes different from the one considered in the regression can be used for the control group.

Moreover, we include economists who are among the best 358 ranked in the RePEc classification (we select only some of these economists, using the additional condition of age). We check that a sizable share of these economists is also considered favorites for the

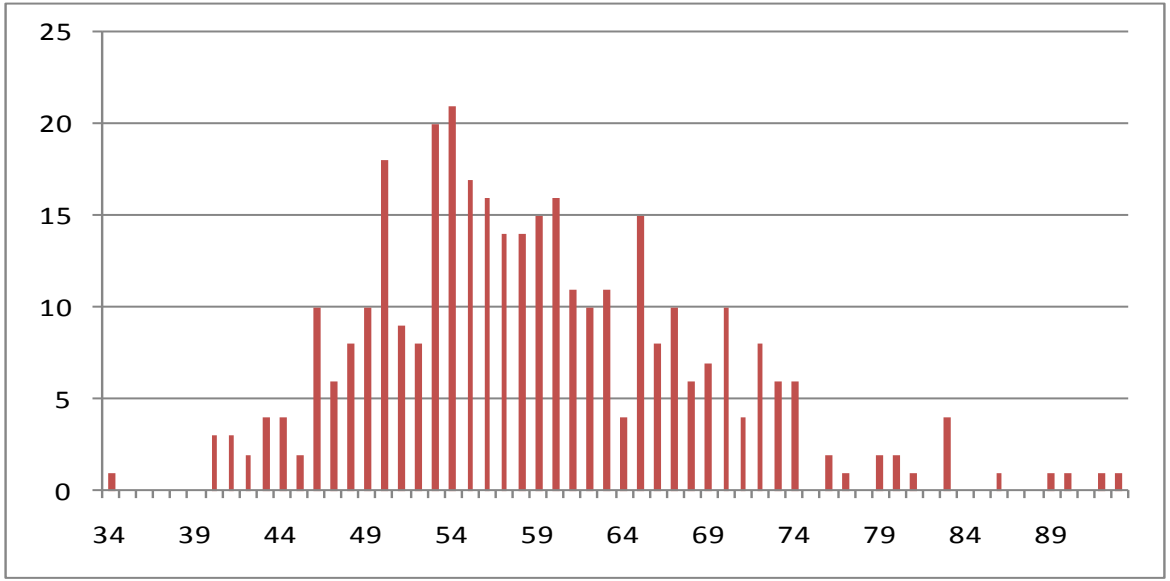
prizes under consideration, such as the Nobel Prize, by entities that make forecasts on this topic (such as Thomson Reuters). A lot of these economists are also fellows of the Econometric Society, and the proportion is roughly comparable to the one of the treatment group. For example, 78% of the economists of the sample who have been awarded neither the Nobel Prize nor the John Bates Clark Medal are members of the Econometric Society, to be compared with 88% of the economists of the sample who have received at least one of these two rewards.

2.2.Need to control for the age of the economists

Whether they were awarded a given prize (treatment group) or not (control group), the age of an economist seems to impact their productivity. This is why we control for economists' ages in regressions.

This stylized fact is illustrated by the following graphs.

Graph 1: Distribution of economists in the potential sample (treatment and control group, without no age condition at this stage) by age



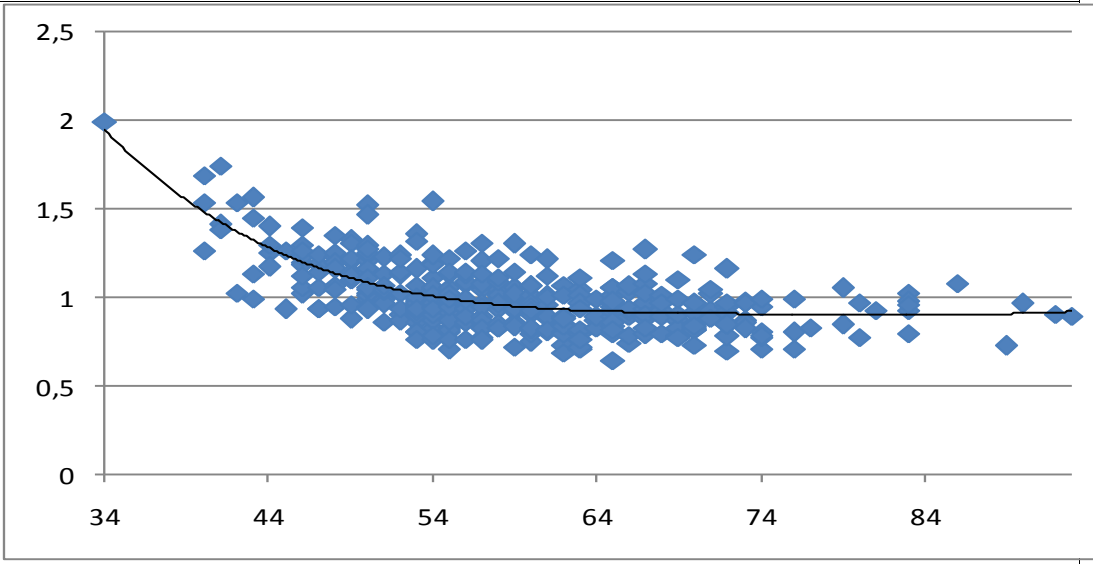
Source: RePEc, author's calculations

We can see in this first graph that the there is a peak in the age distribution at around 55 years. Although this may be due to a period effect (in the sense that the number of economists trained and likely to be in the sample may depend on the period of birth), justifying the inclusion of a year effect, there also seems to be a variation in productivity depending on age, which suggests that we need to include a fixed age effect in our regressions.

We use another indicator to confirm the influence of age on the productivity of the economists in the sample: we calculate the ratio between the actualized score (provided by RePEc) and the non actualized score of each economist.

We then draw a graph connecting this ratio with the age of the economists (Cf. Graph 2).

Graph 2: Ratio of the actualized score/non actualized score (average=1)



Source: RePEc, author's calculations

This ratio decreases up to the age of around 65, and then stabilizes below the average (around 0.9). The average ratio is reached at around 55 years of age.

The impact of age is confirmed by Hamermesh (2013). This article also confirms that productivity depending on age evolves over time. These findings justify including both age and year variables in the regressions.

3. Comparison with the existing literature

This hypothesis has already been tested in the realm of mathematics: Cf. Borjas & Doran (2013). However, the present article differs from this in a number of ways:

- Unlike mathematics, a "Nobel Prize" (or equivalent) has been attributed in economics since 1969. We are thus able to analyze the impact of this prize and that of other prizes such as the John Bates Clark, the Frisch Medal and the IZA award.
- Among the variables of productivity, we consider not only the number of publications, but also their quality. As a robustness check, we use an indicator which is the sum of the following annual publication rankings for each economist[2]:

[2] As this indicator is the sum of the rankings for all publications in a given year for a given economist, a rise in the indicator does not necessarily mean that the average quality has increased. Even if the average quality diminishes, it may be compensated by an increased number of (ranked) publications.

  - Fed New York ranking (attributing marks: 400, 200, etc. down to 25. We attribute the mark nil when a publication is not included in this ranking).
  - RePEc ranking.
  - JCR influence and JCR ranking.

- By taking into account the quality of publications, we are able to enlarge our control group to include not only economists who were awarded other prizes (Frisch Medal, IZA), but also economists who are highly ranked in the RePEc classification. We add another condition related to age (the economist must be at least 60 at the end of the period, since age has an impact on productivity, even if we control for it).
- Since economics is divided into more different areas than mathematics, we are able to study the impact of awarding the Nobel Prize to a given economist (and thus to a given area, since economists are increasingly specialized) over other contenders specializing in the same area in the control group (does their productivity decrease due to the disappointment of not being awarded the prize?). We consider contenders of a certain age (at least 55 in the year of the "disappointment"): their probability of receiving the Nobel Prize later on in the same area of economics should indeed be decreased. This would be a "by-product" of the Nobel Prize: even if it does not have a direct impact on those who are rewarded, it may affect the productivity of those "missing" this prize.

Chan et al. (2013) also test the impact of the John Bates Clark Medal for economists using a diff-in-diffs methodology. They build a synthetic control group of non recipient scholars with similar

previous research performance. Yet, their analysis does not control for certain variables or effects such as individual fixed effects. As we will see, this point is important, all the more so as samples are limited and individuals specific.

4. Econometric results

In the regressions, the general linear models (GLM) method is used, with the inclusion of some controls, such as age or certain fixed effects, depending on the case.

For years in which no publications are registered, we take the value nil.

When the explanatory variables are rankings, we sum up all the rankings for a given year.

To take into account the time needed to publish an article, we consider the post-prize period as beginning three years after the prize was granted.

This period of three years is necessary not just because of the time needed for the publication process, but also because in the period immediately after the award of the Nobel Prize, the prize-winner's rankings are boosted thanks to the publication of the Nobel award speech, which often appears in reviews such as the *American Economic Review* or the *Scandinavian Journal of Economics*. This boost in the cumulated rankings can be checked in the table in the appendix, even if this table, calculated directly for the pool of publications by all Nobel Prize winners, does not take into account either the year or the economist fixed effects and does not exhibit

standard errors. In spite of the boost in the total score due to the immediate effect of the Nobel Prize (i.e. up to 3 years after), the average scores seem to follow a regular decreasing path, justifying once more the inclusion of years and ages.

The reference regression is as follows, using yearly data:

$\text{Productivity}_{i,t}$ = a + b.dummy post John Bates Clark + c.dummy post Nobel + d.dummy post IZA or Frisch Medal + e.period post "disappointment" + f(age) + fixed effects_i + fixed effects_t

Where productivity $_{i,t}$ is the number of publications/working papers or the quality of the publications of the economist i, in year t. f(age) is a fourth degree polynomial function depending on age.

The "post disappointment" period corresponds to the years following that in which the Nobel Prize was attributed to an economist working on the same topics as the other economists in the control group who were at least 55 years at that time.

Formally, we should also include a variable for the period post prize attribution for the control group. However, with the exception of the John Bates Clark Medal, which is attributed to economists up to the age of 40, the prizes under consideration have no age limit. Moreover, the function of the age of the economists partly fulfills this requirement. The inclusion of the "post disappointment" period also meets this requirement, and has the advantage of also taking into account the economists' area of specialization.

As a robustness check, we test regressions with a supplementary variable covering the period after the age of 40, and

the results are almost unchanged (Cf. also Tables 4 to 6, where the effects of the John Bates Clark Medal are tested separately with the inclusion of a variable to control for the fact of being over 40).

4.1. Regressions with the number of publications and rankings

We first set regressions without fixed effects (Cf. table 1).

The results are as follows:

- The impact of the John Bates Clark Medal is significant at the 1% level in all cases and it seems to have a positive influence on productivity (number of publications and quality). The results are similar for the variable "Frisch Medal or IZA", which has a positive influence on the quality of the publications, but not on their number.
- The Nobel Prize variable is never significant.
- The "post disappointment" period boosts the number of publications, but not their quality.

However, as shown in the next table, which displays the reference regressions with economist and year fixed effects, some of these results are affected and are not robust to the inclusion of these fixed effects.

Table 1: Regressions without fixed effects

	Number of publications	Publication ranking (Federal Reserve)	Publication ranking (RePEc)	Publication ranking (JCR influence)	Publication ranking (JCR ranking)
Intercept	0.485 (2.162)	-661.450 (424.718)	-1.700 (2.296)	-2.252 (4.475)	-8.238 (8.492)
Period post John Bates Clark	0.949*** (0.085)	133.456*** (16.731)	0.800*** (0.090)	1.757*** (0.176)	3.118*** (0.335)
Period post Frisch Medal or IZA	0.169 (0.128)	94.495*** (25.110)	0.523*** (0.136)	0.861*** (0.265)	1.953*** (0.502)
Period post Frisch Medal	- -	- -	- -	- -	- -
Period post IZA	- -	- -	- -	- -	- -
Period post "Nobel" prize	-0.132 (0.103)	-28.100 (20.263)	-0.143 (0.110)	-0.249 (0.214)	-0.504 (0.405)
Period post disappointment*	0.994*** (0.172)	49.185 (33.852)	0.201 (0.183)	0.292 (0.357)	0.718 (0.677)
Control for age (polynomial function of order 4)	Yes	Yes	Yes	Yes	Yes
Economist fixed effects	No	No	No	No	No
Year Fixed effects	No	No	No	No	No
Number of observations	5856	5856	5856	5856	5856
R^2	0.042	0.081	0.083	0.070	0.084

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level
*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group who are at least 55 years old.
For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

The inclusion of economist and year fixed effects gives the following results (Cf. table 2):

- The John Bates Clark Medal no longer has an influence on the number of publications. The influence on quality remains significant at the 1% or 5% level for all ranking indicators, but the effect becomes negative. This finding would be consistent with that of Borjas and Doran (2013) for the Fields Medal, particularly as the age threshold (40) is the same for both prizes. The inclusion of these fixed effects would also explain the difference of conclusions with Chan et al. (2013), in which a diff-in-diffs methodology is also used to estimate the impact of the John Bates Clark Medal, with a robust control group. Indeed, due to the small size of samples for treatment groups, not controlling for economists fixed effects may change drastically results (all the more so as economist who win prizes cannot really be considered as homogeneous, because they have strong individual characteristics, including the choice of their specializations).
- The influence of the Frisch or Iza prizes on the quality of articles remains significant for just two indicators, and then only at the 10% level.
- The Nobel Prize continues to have no significant effect on all indicators
- The finding whereby the “post disappointment” period boosts the number of publications is still valid and still significant at the 1% level, although the magnitude of the effect is lessened.

Table 2: Regressions with economist and year fixed effects

	Number of publications	Publication ranking (Federal Reserve)	Publication ranking (RePEc)	Publication ranking (JCR influence)	Publication ranking (JCR ranking)
Intercept	-13.619*** (2.968)	-3578.317*** (611.564)	-19.562*** (3.327)	-39.883*** (6.473)	-74.004*** (12.402)
Period post John Bates Clark	0.143 (0.152)	-110.337*** (31.419)	-0.594*** (0.171)	-0.836** (0.336)	-2.219*** (0.637)
Period post Frisch Medal or IZA	-0.173 (0.175)	57.745 (35.993)	0.307 (0.196)	0.650* (0.381)	1.410* (0.730)
Period post Frisch Medal	- -	- -	- -	- -	- -
Period post IZA	- -	- -	- -	- -	- -
Period post "Nobel" prize	0.039 (0.098)	-1.971 (20.174)	0.028 (0.110)	0.102 (0.214)	0.176 (0.409)
Period post disappointment*	0.575*** (0.169)	5.360 (34.732)	-0.036 (0.189)	-0.117 (0.368)	-0.132 (0.704)
Control for age (polynomial function of order 4)	Yes	Yes	Yes	Yes	Yes
Economist fixed effects	Yes	Yes	Yes	Yes	Yes
Year Fixed effects	Yes	Yes	Yes	Yes	Yes
Number of observations	5856	5856	5856	5856	5856
R^2	0.358	0.323	0.316	0.309	0.306

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level
*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group who are at least 55 years old.
For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

Table 3: Regressions with economist fixed effects and without year fixed effects

	Number of publications	Publication ranking (Federal Reserve)	Publication ranking (RePEc)	Publication ranking (JCR influence)	Publication ranking (JCR ranking)
Intercept	-7.424*** (1.895)	-1572.744*** (392.355)	-7.002*** (2.130)	-13.548*** (4.145)	-24.235*** (7.935)
Period post John Bates Clark	0.236 (0.152)	-73.628** (31.502)	-0.401** (0.171)	-0.454 (0.333)	-1.507** (0.637)
Period post Frisch Medal or IZA	-0.384** (0.175)	3.195 (36.143)	0.023 (0.196)	0.098 (0.382)	0.415 (0.731)
Period post Frisch Medal	- -	- -	- -	- -	- -
Period post IZA	- -	- -	- -	- -	- -
Period post "Nobel" prize	0.114 (0.098)	10.115 (20.315)	0.086 (0.110)	0.230 (0.215)	0.377 (0.411)
Period post disappointment*	0.348** (0.167)	-44.165 (34.585)	-0.299 (0.188)	-0.675* (0.365)	-1.092 (0.699)
Control for age (polynomial function of order 4)	Yes	Yes	Yes	Yes	Yes
Economist fixed effects	Yes	Yes	Yes	Yes	Yes
Year Fixed effects	No	No	No	No	No
Number of observations	5856	5856	5856	5856	5856
R^2	0.331	0.288	0.284	0.276	0.274

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level

*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group who are at least 55 years old.

For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

In Table 3 we also perform the same regressions using economist fixed effects, but without year fixed effects. The results are on the whole consistent with the main findings of our previous regressions (negative influence of the John Bates Clark Medal on the quality of publications and positive effect on the number of publications "post-disappointment" but coefficients are globally less significant).

Since the main results concern the John Bates Clark Medal, we also perform the regressions by including only the John Bates Clark, to avoid any colinearity effects. Since this prize concerns economists under the age of 40, we also control for the fact of being over 40. Our findings on the effect of the John Bates Clark Medal (Cf. Tables 4 to 6, where Table 5, like Table 2, is the benchmark result with the most fixed effects) are very similar to those in Tables 1 to 3.

Table 4: Regressions with the John Bates Clark Medal alone, without fixed effects

	Number of publications	Publication ranking (Federal Reserve)	Publication ranking (RePEc)	Publication ranking (JCR influence)	Publication ranking (JCR ranking)
Intercept	0.965 (2.147)	-541.992 (421.138)	-1.076 (2.277)	-1.189 (4.435)	-6.003 (8.420)
Period post John Bates Clark	0.897*** (0.082)	131.706*** (16.078)	0.795*** (0.087)	1.748*** (0.169)	3.109*** (0.321)
Control for age (polynomial function of order 4)	Yes	Yes	Yes	Yes	Yes
Economist fixed effects	No	No	No	No	No
Year Fixed effects	No	No	No	No	No
Control for the post-40 period	Yes	Yes	Yes	Yes	Yes
Number of observations	5856	5856	5856	5856	5856
R^2	0.035	0.078	0.080	0.068	0.081

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level
*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group who are at least 55 years old.
For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

Table 5: Regressions with the John Bates Clark Medal alone, with economist and year fixed effects

	Number of publications	Publication ranking (Federal Reserve)	Publication ranking (RePEc)	Publication ranking (JCR influence)	Publication ranking (JCR ranking)
Intercept	-13.599*** (2.960)	-3595.656*** (609.387)	-19.544*** (3.316)	-39.727*** (6.450)	-73.801*** (12.359)
Period post John Bates Clark	0.122 (0.151)	-106.954*** (31.061)	-0.567*** (0.169)	-0.767** (0.329)	-2.084*** (0.630)
Control for age (polynomial function of order 4)	Yes	Yes	Yes	Yes	Yes
Economist fixed effects	Yes	Yes	Yes	Yes	Yes
Year Fixed effects	Yes	Yes	Yes	Yes	Yes
Control for the post-40 period	Yes	Yes	Yes	Yes	Yes
Number of observations	5856	5856	5856	5856	5856
R^2	0.357	0.323	0.316	0.308	0.305

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level
*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group who are at least 55 years old.
For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

Table 6: Regressions with the John Bates Clark Medal alone, with economist fixed effects and without year fixed effects

	Number of publications	Publication ranking (Federal Reserve)	Publication ranking (RePEc)	Publication ranking (JCR influence)	Publication ranking (JCR ranking)
Intercept	-7.701*** (1.879)	-1593.172*** (388.693)	-7.189*** (2.110)	-14.059*** (4.107)	-25.116*** (7.863)
Period post John Bates Clark	0.223 (0.151)	-69.749** (31.163)	-0.371** (0.169)	-0.377 (0.329)	-1.366** (0.630)
Control for age (polynomial function of order 4)	Yes	Yes	Yes	Yes	Yes
Economist fixed effects	Yes	Yes	Yes	Yes	Yes
Year Fixed effects	No	No	No	No	No
Control for the post-40 period	Yes	Yes	Yes	Yes	Yes
Number of observations	5856	5856	5856	5856	5856
R^2	0.330	0.288	0.283	0.275	0.273

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level
*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group who are at least 55 years old.
For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

4.2.Regressions with "other articles" (i.e. not classified by the Federal Reserve ranking)

Table 7: Regression with the number of publications not listed by the Federal Reserve, with and without economist and/or year fixed effects

	Number of publications	Number of publications	Number of publications
Intercept	1.056 (1.064)	-0.387 (1.603)	-0.298 (1.011)
Period post John Bates Clark	0.444*** (0.042)	0.285*** (0.082)	0.260*** (0.081)
Period post Frisch Medal or IZA	- -	- -	- -
Period post Frisch Medal	-0.066 (0.067)	-0.098 (0.109)	-0.062 (0.108)
Period post IZA	-0.193 (0.155)	-0.131 (0.156)	-0.188 (0.153)
Period post "Nobel" prize	-0.052 (0.051)	0.018 (0.053)	0.021 (0.052)
Period post disappointment*	0.556*** (0.085)	0.513*** (0.091)	0.522*** (0.089)
Control for age (polynomial function of order 4)	Yes	Yes	Yes
Economist fixed effects	No	Yes	Yes
Year Fixed effects	No	Yes	No
Number of observations	5856	5856	5856
R^2	0.051	0.234	0.221

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level
*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group who are at least 55 years old.
For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

We then analyze the influence of prizes on publications in reviews not classified by the Federal Reserve, which means publications in reviews in non-standard areas, possibly intended to diversify the economist's specialization, or in reviews with a limited reputation. In this latter case, this phenomenon may be the consequence of either 1/ a change in the objective quality of the economist's publications, or the fact that he/she is paying less attention to the ranking of the review, or 2/ an increase in the overall number of articles published by the economist, and thus the publication of a certain number in reviews that are not as good as expected, as a kind of "collateral" effect of this boost in the number of publications.

For economists awarded the John Bates Clark Medal, the first effect seems to hold true if we combine the results of Table 7 with those in Table 2. Economists receiving the John Bates Clark Medal do not reduce their total number of publications, but they maintain this level by reducing the number of publications in well-ranked reviews, which has an impact on the annual quality of their publications post-prize. This finding on diminished quality is particularly robust given that the prestige of this award and the possibilities offered by the related financing should, on the contrary, boost the rate of acceptance of submissions in well-ranked reviews, and diminish the magnitude of this altered quality.

For economists who are in the "post-disappointment" period, the second hypothesis is the most likely, since Table 2 shows that the number of publications increases, but with no increase in the yearly cumulated quality.

For economists awarded the Nobel Prize or the Frisch/IZA prizes, there seems to be no influence on the number of publications in other reviews.

4.3.Regressions with working papers

Table 8: Regressions with the number of working papers, with and without economist and/or year fixed effects

	Number of publications	Number of publications	Number of publications
Intercept	2.399 (1.922)	-1.404 (3.983)	2.278 (1.792)
Period post John Bates Clark	0.252** (0.117)	0.154 (0.248)	0.091 (0.241)
Period post Frisch Medal or IZA	3.121*** (0.195)	1.234*** (0.268)	1.125*** (0.268)
Period post Frisch Medal	- -	- -	- -
Period post IZA	- -	- -	- -
Period post "Nobel" prize	-0.725*** (0.142)	-0.402*** (0.136)	-0.379*** (0.136)
Period post disappointment*	0.296 (0.228)	-0.399* (0.218)	-0.533** (0.217)
Control for age (polynomial function of order 4)	Yes	Yes	Yes
Economist fixed effects	No	Yes	Yes
Year Fixed effects	No	Yes	No
Number of observations	4434	4434	4434
R^2	0.093	0.447	0.431

Standard errors in parentheses, ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level
*"disappointment" corresponds to the years after the year in which the Nobel Prize was awarded to an economist working on the same topics as the economists in the control group being who are least 55 years old.
For the definition of periods post prizes, we consider the year of the prize + at least 3 years, because of the time needed to publish an article in economics

As a complement, we analyze the impact of prizes on the number of published working papers (Cf. table 8), which allow economists to display their findings via a process which is generally "lighter" than the one for reviews.

If we focus on regressions using both economist and year fixed effects, we find that the John Bates Clark has no influence whereas the Frisch or IZA awards boost the number of working papers. Interestingly, the Nobel Prize seems to have a significant negative impact on the number of working papers, but no obvious impact on the number of articles or on their quality.

Either Nobel Prize winners choose to spend less time on this process, independently of the review process, or, most likely, they choose to save time by submitting their articles directly to reviews, without going through the "first step" of publishing in working papers.

5. Conclusion

Combining our results, we find that:

- John Bates Clark Medals alter the (yearly cumulated) ranking of articles, while the number of publications remains unchanged, but only because of an increase in publications in non-ranked reviews.
- Nobel Prizes neither alter the number of articles nor their quality, which does not mean that there is no "composition" effect, as the proportion of articles in reviews such as the *Journal of Economic Literature* increases noticeably. They diminish the number of working papers: Nobel winners seem to

adjust their time allocation, as they are still interested in publishing in well-ranked reviews, but spend less time than before on the working papers process. They thus allocate their time in a different way, probably giving more interviews, taking on more responsibilities… or simply taking more time off.

- Results are more mixed for awards such as the Frisch Medal or the IZA award.
- Prizes do not just have direct effects, they also seem to have an influence on the contenders, as shown by the results of the "post-disappointment" period: the (yearly cumulated) ranking of articles is unchanged, but the number of publications increases, thanks to non-ranked reviews. This may be due to (aborted) attempts to publish more in ranked reviews or a desire to diversify their output, including in topics not covered by "traditional" ranked reviews.

A further step would be to consider the interaction of the different prizes: is there a "learning effect" for economists awarded several prizes, i.e. a reaction different from those awarded just one prize? Does the way the post-reward period is managed (typically the post John Bates Clark period) in terms of number of publications or their quality, increase the probability of receiving the Nobel Prize, or is this awarded for one-off contributions?

References

Borjas G. & Doran K. (2013), Prizes and Productivity: How Winning the Fields Medal Affects Scientific Output?, *NBER Working Paper*, No. 19445

Chan H., Frey B., Gallus J. & Torgler B. (2013), Does the John Bates Clark Medal Boost Subsequent Productivity And Citation Success?, University of Zurich Working Paper n° 111, February.

Hamermesh D. (2013), Ageing and productivity: Economists and others, VOX, 20th February

Appendix: scores (sum of rankings and average scores) by Nobel Prize winners before, during and after the Nobel Prize period

Scores by Nobel prize winners	Up to 3 years before the Nobel prize	Up to 3 years after the Nobel prize	between 4 and 6 years after the Nobel prize
Sum of RePEc rankings	175,98	243,69	127,82
Average of RePEc rankings	1,05	0,94	0,87
Sum of JCR influence	375,57	579,15	317,21
Average of JCR influence	2,25	2,24	2,16
Sum of JCR impact	667,76	970,77	501,73
Average of JCR impact	4,00	3,76	3,41
Sum of ECB rankings	105,33	158,17	79,67
Average of ECB rankings	0,63	0,61	0,53

Source: RePEc, author's calculations

Le LIEPP (Laboratoire interdisciplinaire d'évaluation des politiques publiques) est un laboratoire d'excellence (Labex).
Ce projet est distingué par le jury scientifique international désigné par l'Agence nationale de la recherche (ANR).
Il est financé dans le cadre des investissements d'avenir.

(ANR-11-LABX-0091, ANR-11-IDEX-0005-02)

www.sciencespo.fr/liepp

Directeurs de publication:
Etienne Wasmer & Cornelia Woll

Sciences Po - LIEPP
27 rue Saint Guillaume
75007 Paris - France
+33(0)1.45.49.83.61
liepp@sciences-po.fr