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Abstract

This paper compares the research productivity between two groups of Chinese early- and mid-career researchers, who both got their PhDs in research leading institutions outside Mainland China. One group was recruited back to mainland China under a specific scheme, called "Young Thousand Talents" ("Y1000T") – a clear attempt by the Chinese Government to tackle brain drain and to nurture Chinese universities. These researchers got their PhD predominantly, though not exclusively, from US institutions. Many other Chinese researchers of similar age, disciplines and prestige of PhD awarding institutions continue to work outside China at research-intensive universities. We collected a sample of this latter category of Chinese diasporas, searching from US research intensive universities. We use this distinction to set up a quasi-experimental research design in order to answer whether or not scheme recipients returnees ("Y1000T") have been more productive in research, in comparison to those who remained outside China. The comparison primarily considers the number of publications. Results show that after coming back to China, Y1000T returnees have significantly increased their productivity in terms of the number of outputs, arguably because of their favourable research conditions.

Keywords: Policy effect; Talent mobility; China; the US; Early and mid-career researchers; Research performance
JEL Codes: C930, I230, M520, O320, O380

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Introduction

China is a rising star in global science competition (Altbach & Salmi, 2011; Hayhoe, Li, Lin, & Zha, 2012). This paper analyses China's achievement in science advancement, especially regarding attracting back their own nationals, and further supporting the academic development of these returnees. Mobility of researchers, especially in the STEM disciplines, is key to the creation of knowledge (Breschi et al. 2020). It is often assumed that top scholars are likely to be driven by scientific reasons including the possibility of networking for collaborations, on top of benefits including competitive salaries or steeped career perspectives (Chen 2016). According to a critical literature review conducted by Cañibano and Woolley (2015), there are three key aspects in analysing talents attraction. They are: first, talents are considered independent of context, making them like "golden nuggets" ready to be paid in salary and ready to generate wealth where they move themselves; secondly, more recent reflections suggest that talents would take into account the possibility to fulfil their potentials, accounting for other dimensions than those strictly related to, say, salary; and, third, the possibility of establishing and maintaining international connection in a specific country is critical for researchers, as social capital and international embeddedness can be relevant to unleash their potentials.

Specifically, we test whether certain Chinese returnees, who are supported by a specific scheme ("Y1000T") outperform or underperform in term of research productivity, compared to a selection of their most similar possible counterparts who remain abroad. In devising this research, we try to respond to the assumption that with a desirable environment, the mobility of researchers can have positive effects on these researchers' scientific development (Marini 2019), which is currently challenged in academia (Horta et al. 2020). This research not only sheds light on the individuals' career choices, but also reveals the capacity of the Chinese government in supporting the development of early- and mid-career scientists (Jöns 2015).

Classical studies (see for example, Khoury, 1977) highlighted that PhDs who are bred in prestigious places are often less likely to work in places where higher education is less prestigious. This makes policies devised for attracting back overseas diaspora challenging. Nevertheless, China's Y1000T policy is particularly generous, attempting to provide competitive conditions to attract top talents and support their academic development. Yet, some Chinese universities are also ascending the global rankings. While some top talents have returned to China under this Y1000T scheme (see the descriptive data in Table 1), it remains unclear whether Chinese higher education's efforts to support the mobility of talents can really generate better research performances against a theoretical control group, considering a reasonable span of time after the moment of recruitment. Thus, the paper provides findings from an original empirical analysis to assess if returnees ("treated" in a quasi-experimental research design) are more productive in research outputs, compared to some other researchers who stay in the US (ie the control group, see below). There is still a lack of this specific sort of analysis in the topic (Yang & Marini 2019).

The paper provides a literature review in the next section, followed by a description of data including explanations of variables. The Results section then presents findings of a quasi-experimental research design. Conclusions give further lines of research in the issue of talents mobility and talent recruitment programs.

Literature review

The mobility of Chinese scholars who may return to China has, especially in the last decade, attracted international attention, though representing still a small part of literature, if compared to its relevance. Having been one of the major "brain sending countries" for decades, China in recent years has striven to recruit top talents in order to tackle the brain drain situation, partly by launching specific talent recruitment programs (Jonkers & Cruz-Castro, 2013; M. Li, Yang, & Wu, 2018; Zweig & Wang, 2013). Without the presence of such policies, it is likely that the rate of returnees would decrease for countries like China – at least this was the case a decade ago (Finn, 2010). However, according to Wang and Bao (2015), although Chinese institutions have made big progresses in attracting back diaspora, it still lags behind in attracting and recruiting the very best Chinese researchers who moved abroad, especially those who got a PhD, and/or have worked, in institutions that are world top in terms of rankings. This finding was echoed by C. Cao (2008) who regarded the situation in China as 'brain drain at the high end'. A policy like Y1000T is meant to cope with this problem.

To decide to move back in one's home country after having invested many energies abroad is not an easy decision. For the specific case of Mainland China, there is still uncertainty whether China is really a better choice. There are many possible factors that can influence such choices. We try here to debate one of the main

ones that emerges from literature – that is talents' concerns with their career development and research performance after returning to China (Zhao et al., 2020). Indeed, the development of returnees' academic career faces challenges. A distinctive one already known in literature is the cultural backlash. In their study on research collaboration, F. Li, Miao, and Yang (2015) found that after returning to one's home country following studying/working overseas, a returnee often needs to re-adapt to the home country's cultural framework and academic environment. For example, in terms of the publication strategy and behaviour, returnees need to balance their publications in both international journals and national journals (Jonkers & Cruz-Castro, 2013). In addition, for the specific Chinese context, social capital – partially manifested in social nexuses (the so-called *guānxì*) – is of importance in academia (Lu & McInerney, 2016). One's education background at doctoral level can be highly reflective of possessed social and academic capital. Returnees, on the one hand, may be disadvantaged with regard to domestic social nexuses and relationships, compared to their domestically-educated colleagues. On the other hand, returnees might be better-off regarding international networking, which can be conducive to their international scientific collaborations. This phenomenon can be captured by a proxy such as international co-authorship, when observing bibliometrical patterns (Wagner & Leydesdorff, 2005). However, it can also be difficult for returnees to sustain their international network, in comparison with those researchers who continue to work overseas. Another relevant factor in understanding academic careers performance as predicted by social capital patterns is the mentorship relationship at doctoral stage. For instance, indicating whether or not at doctoral stage researchers could benefit from a substantial mentorship relationship does make a different for the consequential academic career (Jiang & Shen 2019). Stronger mentorships are associated with more resilient international collaborations once Chinese nationals return to home-land. This is a factor arguably relevant in assessing the extent to which returnees can feed their own research with international collaborations.

Disentangling the pros and cons of moving back to one's home country after studying and working overseas is yet underexplored. For returnees, brand new national relationships may be established in addition to the already existing international ones. However, at the same time, compared to those researchers remaining overseas, returnees might be disadvantaged in maintaining their previously developed international relationships. These relationships can further influence the number and patterns of scientific outputs (Xu 2009; Zweig et al 2004; Chen 2016). Hence, in the examination of returnees' research productivity, it is necessary to feed the debate with fresher evidence.

In addition, research productivity is contingent on infrastructures too – including financial support, experimental equipment, and research team leadership – especially in STEM fields (Zhang, Bao, & Sun, 2016). Chinese Talents' programs are usually generous with regard to providing talents with desirable infrastructure. Cheung and Xu (2015) demonstrated that the narrowing gap between China's research capacity and the global research excellence relies largely to China's dedication in talent attraction policies. The Chinese government's generous financial investment in top researchers plays a significant role in guaranteeing returnees' academic development and research productivity (Liu et al. 2019). In a study conducted by M. Li et al. (2018) on Chinese returnees' academic career development, interviewees noted that they had no difficulty in securing funding for their research after coming back. Arguably, talent-recruitment policies not only aim to address the problem of brain drain, but to further trigger brain gain (Ma & Pan, 2015). Post-hoc analyses are essential for providing a more accurate measure of the effectiveness of these generous supports in promoting scientific capacity. This is true especially for the assessment of what such beneficial recruitment packages ought to produce: research performances.

It is also important to look at a specific program's features to understand what sort of global mobility the policy maker is enacting. Among China's talent recruitment policies, the "Young Thousand Talent" (Y1000T) Program is one of the flagship policies in attracting back the very best early- and mid-career talents. This specific program targets at recruiting scientists below the age of 40 who have at least five-year overseas working experience (if holding a doctoral degree awarded by a mainland Chinese university) or three-year overseas working experience (if holding a doctoral degree awarded by a prestigious overseas university). Although Y1000T recipients might be from China in terms of PhD attainment, and might be non-Chinese citizens also, Y1000T recipients are predominantly Chinese citizens who got a PhD in the US in STEM disciplines (Wang, 2011). They shall have "engaged in scientific research, with formal teaching and research positions in overseas prestigious universities, institutions or enterprises", as the policy states.

However, while a large amount of resources has been deployed, it remains unclear to what extent this program has boosted China's research capacity out of the overall extraordinary progresses China's science has demonstrated in general. Though there have been studies focusing on the effect of international mobility on researchers' performance (see for example, Zhao et al., 2020), to the best of our knowledge there is not yet

research that specifically evaluates the talent program's impact, especially if devised in a counterfactual way. Such dearth of studies is particularly regrettable, as talents attraction policies often involve considerable resource investments.

Studies on this topic have pinpointed that academics with qualifications attained abroad are often more productive than those who gained education and built careers domestically. Returnees are for instance more likely to chair prestigious collegial bodies, and to publish in lingua franca provided they keep international collaborations (Xian, 2015). However, these investigations do not consider the possible contribution of talent-supporting policies, such as the one examined in this research, which arguably may alter this dynamic. Yet, returnees' research work may face difficulties without sufficient financial support. According to Sun, Guo, and Zhang (2017), top performative Chinese scholars active abroad tend to remain abroad on the assumption that China is not ready yet to let them have the same (or even better) conditions to conduct research in homeland. In particular, ranking of PhD-awarding institution is a strong factor, especially at the wake of one's viva. This means that just after exiting a world leading university as a fresh PhD-holder the likelihood to benefit from a pay-off is higher. This effect though decreases by time. Researchers with a permanent position or a tenure-track position are less likely to opt to return, arguably on the ground that they "got it". For Chinese nationals, age is another factor when considering accepting to go back China or not (Sun, Guo, and Zhang, 2017). In addition, there is still a lack of research that provides fresh evidence in the respect of "post-treatment" effects.
In the topic of academic staffing, some literature about Chinese academic staff has highlighted that since the "opening doors" in the 80s (X. Cao, 1991), China's destiny cannot be separated from human resource policies. Nevertheless, there is still a paucity of empirical studies about these policies. C. Cao, Baas, Wagner, and Jonkers (2020) used aggregate data to estimate the apportion of returnees to China to examine the interconnection of the Chinese research system. They acknowledged the existence of a dearth comparison between returnees and other Chinese diasporas who are based abroad. The diasporas often play an important role in international co-authorships, though their staying abroad remains a brain drain concern for the Chinese government. Moreover, to recur to microdata instead of aggregated data would allow more fine-grained analyses.

Data

The dataset is a combination of CV individual collections of the researchers, plus their individual Scopus publications. We also use additional indicators concerning the institution to take into account institutional standing and prestige. Using CV as a source of data has a longstanding tradition, and a specific application in Chinese geographical field (Lu & McInerney, 2016). CVs can reveal information such as age, institution of graduation and PhD attainment, and mobility trajectories. In this way, it is possible to collect sex, institutional mobility, PhD awarding institution, year of PhD attainment, and age of researchers.

We consider the first two waves of Y1000T policy (2011 and 2012) in order to have a reasonable span of time to compare scientific production before and after the "treatment". The list of researchers in the two waves was of public domain, so recipients' names were publicly available at the moment of research data collection. The first two waves of Y1000T program listed around 350 people for whom some biographical data were available. These researchers have been scanned individually to check if they, at the stage of data collection, still worked in mainland China and more specifically in universities. After this check we have around 200 valid people who still work in Mainland Chinese universities. The second largest group work in public research institute, which we discard for having no teaching loads and therefore being not fairly comparable with the control group we devised. This group is the "treatment" group. A "control group" has been extracted manually by searching in US research-intensive universities' staff directories. This sample was devised in a stratified way, scanning all STEM and science departments of a list of universities, which represented proportionally institutions from the first 500 ones ranked by Academic Ranking of World-class Universities (ARWU). A list of this universities is available in the Annex 1. By name, we individually collected people who were in the same generation of the first two waves of Y1000T. The aim was to match the treatment group with a control group consisting of researchers with similar features in terms of age, prestige of awarding PhD and discipline (STEM). There is a substantial difference in terms of countries where both groups attained their PhDs (See Annex 2), although all universities are top research-intensive ones.

The last step was to download these individuals' Scopus publications and some institutional indicators (see below). After pruning some occasional outlier by age and prestige of PhD awarding institutions, the control group is made up of around 350 highly similar researchers against the Y1000T recipients.
A first dataset comprises around 38000 observations (single publications). We collapsed by single authors, either Y1000T recipients or control group members obtaining a dataset of around 550 researchers. The final

dataset comprises the averages by person and period of reference (before and after treatment – see below for "p").

Independent variables

As visible in Table 1, we have two variables to measure productivity over time. They are *n_no_out* and *n_frac*. Number of scientific outputs is the first independent variable considered in this paper. It simply counts the number of the total scientific outputs by each person, splitted by pre- and post- treatment (see below for the control group). With the number of co-authoring persons, it is also possible to compute the fractioned productivity (Abramo & D'Angelo, 2014). Values for both variables are normalized by total years of productivity available in each period (pre- and post- treatment). The total years of productivity (or actual amount of time spent as research-active) are computed from the available year of PhD attainment. Although there are slightly differences from person to person, the amount of total years of activity are almost the same, tiny differences can arguably reveal relevant difference in total production.

For the pre-treatment period, we consider 3 years before the year of the PhD attainment for all individuals, to take into account publications that were based on research conducted during the PhD studentship, or potentially even earlier. Considering the average age for this study, a span of three years before PhD attainment for all appears to be fair. Both variables are reported on Table 1 as a normalization by number of years in respective periods that differ from person to person. Regarding gross number of articles, both Y1000T and control group researchers increased their productivity, but Y1000T clearly outperformed control group ones. The observed difference about fractional publications is much smaller, although, even for this variable, Y1000T people published more than control group persons.

Treatment and period (t & p)

In order to run a difference-in-difference test, both treatment and period binary variables are needed. Treatment variable is "t"; period is "p". Treated (1) consists of Chinese who are treated by the policy and are working currently in mainland China; not treated (0) refers to the control group (Chinese nationals who got a PhD abroad and work in research-intensive US universities). "Period" is the before and after treatment for the returnees. Control group people do not have a pre- and post- period, for it is not of public domain if they even applied to this scheme, or to any other similar one. For the control group we use the median of years elapsed from PhD attainment that has been observed for the treated group: 5 years from PhD attainment. The consideration of publication patterns during the PhD and in its immediate aftermath is consistent with recent literature in the field (Horta & Santos, 2016).

Academic social capital

Academic social capital of authors is important (Lu & McInerney, 2016). Patterns of publications during PhD, and the academic social capital embodied in the patterns of relationships, may persist or play a role in later stages of one's career (Horta & Santos, 2016). From the list of authors of each publication, and the affiliation of co-authors, we computed a measure of extent to which papers are co-authored by scholars affiliated in other countries than that of the author in question (US for all-treatment; US for control group after treatment; China for treated group after treatment). This variable (int_coll) has a range from 0 to 1. This variable may float from 0 to 1 because it describes how often individuals co-author with colleagues who are based abroad. We assume that this distinction is meaningful for reflecting the patterns of publication, as discussed in the literature review. Table 1 shows that Y1000T talents, especially before being recruited back to Mainland China, had a more international profile in their publication in comparison to the researchers comprising the control group. However, as it is shown on Table 1, after the treatment, Y1000T researchers halved the percentage of papers co-authored at the international level. Although control group researchers remained stable, if not increase the value of this measure of international social capital, Y1000T recipients remain more international even in post-treatment period.

Prestige of universities

The paper also considers certain statistics to measure the quality of one's institution, including:

- average of Journal Normalized Citation Index (JNCI) by the whole university a single researcher is affiliated in ;
- average of journal percentile of articles (av_percentile) published by researchers affiliated to a given university – inverted for coherence with other indicators;
- percentage of top 10 percentile articles (perTOP10) published by researchers affiliated to a given university;

- percentage of 1 percentile articles (perTOP_1) published by researchers affiliated to a given university;
- percentage of documents cited (% documents cited) published by researchers affiliated to that university.

Table 1 indicates the extent to which Y1000T recipients and control group people are substantially similar with regard to the features listed above. Yet, for both groups, there is a slight downward trend in terms of institutional prestige, partly because researchers in both groups gained their PhDs from very highly prestigious universities.

Institutional Mobility (Mob)

Institutional mobility refers to the possibility for researchers to change their academic affiliation since the time of their PhD attainment. For returnees, or Y1000T grant holders, institutional mobility happened necessarily, as this study contemplates only those Y1000T recipients who got their PhDs outside Mainland China. For the control group of Chinese nationals, non-institutional mobility (i.e. inbreeding) may occur. This specificity is consistent with research in the field (Veugelers & Van Bouwel, 2015). Table 1 does not show this value: only around 5% of control group people had no mobility.

Table 1. Descriptive Statistics of Y1000T and control group by pre and post treatment periods. N=547

		pre-treatment		post-treatment	
		Mean	Std. Err.	Mean	Std. Err.
n_no_out (gross number of publications per year of activity)	Control Group	4.329	0.5002	4.596	0.2217
	Treated (Y1000T)	3.473	0.2199	6.053	0.3766
n_frac (net number of publications per year of activity considering number of co-authors in publications)	Control Group	1.017	0.1121	0.923	0.0452
	Treated (Y1000T)	0.712	0.0485	1.039	0.0712
int_coll (percentage of internationally co-authored publications over the total)	Control Group	0.170	0.0090	0.179	0.0100
	Treated (Y1000T)	0.690	0.0160	0.387	0.0169
perTOP10 (percentage of top10% publication in whole university of affiliation)	Control Group	17.973	0.2193	16.662	0.1822
	Treated (Y1000T)	16.748	0.3162	12.506	0.1946
perTOP_1 (percentage of top1% publication in whole university of affiliation)	Control Group	2.948	0.0570	2.602	0.0462
	Treated (Y1000T)	2.545	0.0760	1.492	0.0356
JNCI (average of Journal Normalized Citation Index in whole university of affiliation)	Control Group	1.231	0.0068	1.189	0.0060
	Treated (Y1000T)	1.180	0.0100	1.060	0.0053
av_percentile (average of journal percentile of articles published by whole university researchers are affiliated in – inverted)	Control Group	50.547	0.2624	51.589	0.1976
	Treated (Y1000T)	50.392	0.4070	53.769	0.3863
perDOC_cit (percentage of cited publication in whole university of affiliation)	Control Group	74.000	0.2657	73.822	0.1880
	Treated (Y1000T)	76.976	0.5380	78.284	0.6099

Source: own dataset

Results

Respectively, the independent variables are “number of outputs” (Model1 in Table2) and “fractioned number of outputs by number of co-authoring colleagues” (Model2 in Table2). Both regressions contemplate covariates as per Table 2. They are: age, gender, institutional mobility, international collaborations (int_coll), and the five institutional qualifiers.

As Table2 shows, there is a clear positive effect engendered by the Y1000T policy. This is true on both tests indicating respectively gross number of publications and fractioned number of publications. For the former independent variable, the coefficient is 2.559 (p>0.001); for the former the coefficient is smaller (0.529) though equally statistically significant. Thus, we conclude that individual working conditions provided by the Y1000T in China have positive effects of one's research productivity expressed in number of outputs.
Table 2 provides the full details of the same two tests including the difference-in-difference results including the sets of covariates. As demonstrated, the tests reveal statistically significant values and positive coefficients, meaning that the treatment of Y1000T policy has led to an increase in the values of the two dependent variables.

Table 2. Diff-in-diff models clustered by univocal authors. Number of observations: 547.

Group	*Coef.*	*Std.Err.*	*t*	*P>|t|*	*[95% Conf. Interval]*	
Model 1 – Number of outputs (n_no_out)						
1.t (treatment)	-1.715	0.918	-1.870	0.062	-3.517	0.088
1.p (period)	0.803	0.526	1.520	0.128	-0.231	1.837
1 1 t##p	2.559	0.753	3.400	0.001	1.080	4.038
sex	1.019	0.622	1.640	0.102	-0.202	2.241
age	-0.122	0.072	-1.710	0.089	-0.263	0.019
mob	-1.944	1.431	-1.360	0.175	-4.755	0.867
int_coll	1.363	1.096	1.240	0.214	-0.790	3.515
perTOP10	0.078	0.367	0.210	0.831	-0.643	0.800
perTOP_1	0.080	0.564	0.140	0.887	-1.028	1.188
JNCI	4.600	2.672	1.720	0.086	-0.649	9.849
av_percentile	-0.152	0.320	-0.480	0.634	-0.780	0.475
perDOC_cit	0.073	0.138	0.530	0.599	-0.198	0.343
_cons	-9.844	32.307	-0.300	0.761	-73.305	53.616
F(12, 546) = 8.45	Prob > F = 0.0000		R-squared = 0.0356		Root MSE = 6.5624	
Model 2 Fractioned # of outputs (n_frac)						
1.t	-0.426	0.182	-2.340	0.019	-0.783	-0.069
1.p	0.000	0.115	0.000	0.997	-0.225	0.226
1 1 t##p	0.529	0.153	3.450	0.001	0.228	0.830
sex	0.296	0.137	2.160	0.031	0.027	0.565
age	-0.028	0.016	-1.760	0.079	-0.060	0.003
mob	0.102	0.205	0.500	0.618	-0.300	0.504
int_coll	0.177	0.197	0.900	0.371	-0.210	0.564
perTOP10	-0.043	0.076	-0.570	0.570	-0.192	0.106
perTOP_1	0.007	0.106	0.070	0.944	-0.200	0.215
JNCI	0.771	0.522	1.480	0.140	-0.254	1.796
av_percentile	0.056	0.066	0.840	0.401	-0.074	0.186
perDOC_cit	-0.036	0.028	-1.270	0.206	-0.091	0.020
_cons	7.070	6.713	1.050	0.293	-6.117	20.257
F(12, 546) = 5.47	Prob > F = 0.0000		R-squared = 0.0280		Root MSE = 1.4167	

Source: own dataset

Discussions and conclusions

This paper focuses on Chinese researchers who got their PhDs from the most prestigious universities or research institutions outside Mainland China, predominantly in the US. Some of them chose to return to China under the Y1000T policy, a very generous and exclusive scheme tailored for early and mid-career researchers. This scheme generates an elite cohort of academics within the Chinese academic context. However, at the same time, there are still Chinese researchers who are also educated at doctoral level in world leading universities/research institutions chose to remain in research-intensive institutions abroad. This paper argues that these latter people constitute the best term of comparison in order to unpack the effectiveness of the Y1000T program in promoting researchers' productivity. This is especially the case when the respective performances before talents' returning to China are taken into account. From the control group we extracted a statistically balanced set of individuals to pursue a comparison, having the following scope in mind: to assess if, and to what extent, returnees have found good condition to thrive, making the talents attraction a whole success.

Overall, we conclude that Y1000T researchers increased their productivity in terms of gross number of publications per unit of time. This is also the case if productivity is taken into account in terms of fractioned productivity by number of co-authoring colleagues. Since, for instance, Chinese destination institutions of Y1000T recipients are less well performing in research than those institutions that awarded their PhDs, we conclude that the policy has incentivised and allowed researchers to produce more outputs. This is an interesting

finding because although the existing literature has expressively described the extent to which returnees may suffer, for example, cultural shocks in a short period of time, this study demonstrates that at least these returnees have shown good performances. Further research may look at the quality of publications in terms of target journals (ie which quartile journal for respective discipline), and also the influence of research by indicators derived by, for instance, citations. This latter limitation marks the prospect for future research in the field.

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Annex 1 – List of US universities scanned to build up the control group (alphabetic sorting)

California Institute of Technology, Columbia University, Cornell University, Duke University, Emory University, George Washington University, Georgia Tech, Harvard University, Iowa State University, John Hopkins University, Louisiana State University, Massachusetts Institute of Technology, Michigan State University, New Mexico State University, New York University, Oregon State University, Princeton University, Purdue, Rochester, Stanford University, Temple, University of Arizona, University of California at Berkeley, University of California at Los Angeles, University of California at Santa Barbara, University of Chicago, University of Cincinnati, University of Colorado, University of Connecticut, University of Florida, University of Iowa, University of Kentucky, University of Minnesota, University of Oklahoma, University of Oregon, University of Pennsylvania, University of Tennessee, University of Wyoming, University of California at San Francisco, Virginia Commonwealth University, Washington State University, West Virginia University, Yale University, Yeshiva University.

Annex 2 – List of Country where Y1000T recipients obtained their PhD (first two years of policy) and list of Countries where control group Chinese nationals obtained their PhD

Y1000T recipients: Australia; Belgium; Canada; Switzerland; Germany; Denmark; France; Hong Kong (SAR); Italy; Japan; South Korea; New Zealand; Sweden; Singapore; United Kingdom; USA (representing around two thirds of total); South Africa.

Control Group: Australia, Denmark, Singapore, USA (representing above 90% of this group).