GUIDE TO THE PROPHE ENROLLMENT DATASET

This guide aims to inform the interested reader about PROPHE's dataset of global private and total enrollment, the first such dataset on the private-public dimension in higher education and unprecedented in scope and organization. The global scope sums from individual country data, then aggregated to regional (mostly geographical) level, with sub-regional presentation for Asia and Europe. The dataset's significance obviously reflects the significance of the mammoth phenomenon it documents—PHE, private higher education--much larger in 2015 than in 2000.

These 9 sections of the guide lay out the necessary information.

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A. Scope

1. Country and Longitudinal Coverage. PROPHE's dataset covers 210 countries. As 11 lack any higher education data, however, the effective "N" for country data analysis is 199. Longitudinally, the dataset runs from 2000 to 2015, using 2015 as the main contemporary snapshot year. PROPHE continues tracking beyond 2015 but there is a time lag before its principal source (UIS) achieves its maximum international coverage, as countries vary in how promptly they report to the UIS. Moreover, for several years beyond a year in question, the UIS often issues revised data, presumably more inclusive and accurate, and where PROPHE finds it appropriate to go beyond the UIS, that too sometimes requires additional time..

2. Countries not showing PHE. PROPHE retains in its 199-country dataset 11 countries that report no PHE data (which is quite different from reporting PHE as zero, a real number). The 11 instead show just a total enrollment, which could be all public, or show just a public enrollment, which could be the country's total. But because probably some of the 11 in fact have (un-shown) PHE, to include the 11 is to underestimate the global private share (private enrollment/ total enrollment): The numerator of private enrollment remains the same while the denominator of total enrollment enlarges. Yet only minimally does the private share change; as Table 1 shows, deletion of the 11 countries with their 690,932 enrollments, would raise PHE's global average only 0.1%, to 32.3%.

Table 1. Private Share of Total Global Enrollment: All Countries vs. Countries Showing Sectoral Data, 2015

	Private %	Private	Total
Global	32.2	69,789,020	216,840,935
Global showing private-public distinction	33	69,789,020	216,150,003

3. Separately, PROPHE has more detailed datasets on several individual countries at https://www.prophe.org/en/global-data/

B. Sources: UIS and Beyond

1. UIS coverage. The chief source from which PROPHE could build a dataset strong in reliability, inclusiveness, and comparability had to be UNESCO's Institute of Statistics (UIS), the only international agency gathering enrollment data by sector. [1] Since 1998, the UIS has annually solicited and (since 1999) displayed "tertiary education" data, aiming to include all its "levels," 5-8. [2] UIS continues to add countries to its list but this has little practical effect on global and regional analysis as these are generally very small countries, most not reporting higher education data . [3]

2. UIS problems. The UIS data can be only as good as what countries' designated official offices give them, which in turn depends on what the offices can obtain from individual higher education institutions. For a variety of reasons ranging from limited technical capacity to political interests for different institutions to inflate or deflate enrollment numbers in either sector, reliability varies by country, largely in accord with their general development level. Some countries gather no PHE data, others no data for higher education generally, whether for specific years or always. Even when data appear complete we cannot know how UIS' distributed guidelines to countries about what is "tertiary" education or "public" or "private" are being understood or followed in given countries. All this doubtless contributes to data inconsistencies, a significant caveat when it comes to cross-national and cross-regional analysis.

3. Improving over UIS. Using mostly UIS data, PROPHE inherits several of these "genetic" difficulties. But it also takes significant measures to overcome some UIS limitations. The specifics are laid out in Section C just below. These improvements are essential in allowing PROPHE to build its 2000-2015 country dataset solidly, especially for the earlier years. Yet data substitution generally involves risk of distortion—sometimes a virtual guarantee of at least small

distortion. We do not substitute because substitutions are perfect. We substitute because leaving missing data or inserting obviously false data is more often worse. Blank boxes not only provide no information for a country in whatever years, but also cripple us in assessing a country's longitudinal change. Especially in large countries, blank boxes can significantly distort sub-regional, regional, and even global calculations both at snapshot points in time and longitudinally. However, where we focus on 2015 alone we largely escape longitudinal problems and, additionally, our data are stronger for 2010 and 2015 (see Section H below) than for the earlier years.

C. Data Substitution: The Guidelines

These are the four data substitution guidelines, the second itself with and (a) and (b).

1. OECD and EuroStat. When UIS data are missing or problematic, handy, low-risk help occasionally has come from European-based organizations. OECD StatExtracts (http://stats.oecd.org/Index.aspx?DatasetCode=RENRL) or EuroStat (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_enrl1at&lang=en). The UIS, OECD, and EuroStat jointly administer the "UOE" (*UNESCO*-UIS/OECD/EUROSTAT) data collection and thus in theory should have the same data source in most years, accordingly allowing for insertions that are consistent with any UIS data we do show.

2. Data from Other Years. When no figure is available for a given year but is for another year or years, we have two ways to substitute:

2a. Calculating the Compound Growth Rate. Where figures are available for at least two years, and neither figure is 0, we estimate the missing year's figure by interpolating or extrapolating based on the compound annual growth rate implied by the two most proximate years. (Estimation is done for both private share and total enrollment where necessary.)

2b. Closest Year. However, we cannot interpolate or extrapolate when only one figure is available; similarly, we cannot do so when our prior year's value is 0 (see guideline #4 below) or when our ensuing year's PHE value is 0. We therefore substitute the most proximate figure for the missing year entry, with no adjustment. Using even the closest year obviously risks greater distortion when the years are far removed. Fortunately, the most frequent substitution comes from merely one year removed, followed by two years removed. Closest year substitution presents an automatic longitudinal problem, as replicating a figure necessarily precludes showing any change, thus exaggerating stability. At an extreme, a country for which there is data on only one year would appear to experience no change from 2000 to 2015. Likewise, and especially for large countries, the closest year substitutions for countries will usually under-state the amount of sub-regional and regional change.

3. National Data. We turn to data from national (or regional) sources under two circumstances: (a) UIS does not provide data (and neither do the European organizations); (b) expert judgment is that the UIS data in question are far from accurate. (A special case of (b) involves keeping the

international agency figure but altering its private/public categorization.) Where national data seem out of line with UIS data from other years, we report our determination in an individual country note. A plain risk in using national data is that individual countries can define and count "higher education" differently, leaving international inconsistency in what is included and excluded. Although UIS and other international agencies try to guide countries to categorize, count, and report in common ways, they too depend on what the countries give them. A vivid illustration of the value of guideline #3 is that UIS wrongly counts as private the public enrollment in the 19th largest system in 2015 (UK), in turn leading some agencies and scholars to put for Europe overall a very inflated private share. Likewise, a major example is that through 2010, while showing the total enrollment, UIS failed to show the private share in what are now the world's two largest higher education systems (China and India). Only since 2013 has the UIS shown their private enrollment.

4. Reasoning to 0 for PHE. Where our source shows data for total higher education but not PHE, yet shows 0 PHE enrollment in subsequent years, we use the higher education total for the given year and put PHE as 0. The logic is that as a rule PHE would not yet have emerged in the earlier year if it is absent in a later year and we would know any exceptions in which existing PHE has been abolished—almost surely never in our dataset's time period.

D. Data Substitution Frequency

1. Substitution frequency. How often, then, does our dataset draw on these data substitution guidelines? As Table 2 shows below (in Section H), tallying for all 199 countries, each for private and total counts, means 398 entries of raw data in each year (2010 and 2015). For 2010 PROPHE needed to substitute in 122 of those 371 cases (64 times for the private enrollment, 58 times for the total enrollment). For 2015, the figures are rather similar, as 118 substitutions were required (54 private and 64 total). Thus, for 2010 122/371 = 33% and for 2015 118/375=31%. The 31-33% reflect that PROPHE has employed data substitution quite frequently in order to overcome situations in which we would otherwise have had no data or less reliable data for either the private or total values. Clearly the guidelines play a major role in building a formidable dataset.

2. Relative frequency of substitutions. As to relative frequency of different substitutions, substitution for the private figure is a little more common in 2010, while substitution for the total is a little more common in 2015. More importantly, the aggregate substitution frequency is fairly constant between PROPHE's 2010 and 2015 datasets, neither clearly superior to the other on that score. (It is the *composition* of the data substitution guidelines that changes more notably between the 2010 and 2015 datasets, as Table 2 shows in Section H below.)

E. Inclusivity: Counting Private and Public (elaboration will appear in Chapter 1 of Daniel Levy, *A World of PHE*, book manuscript submitted for review).

1. Operationalized definition. To say PROPHE counts as private all enrollment that is private begs the question of what is private. This definitional question commands much analysis, across policy fields and historical periods. But for counting purposes our rule is simple: whatever is legally treated as private within a given country. This has been the rule usually employed in the PHE literature, whether explicitly or not. [4] It dovetails well with government or other nationally collected data used domestically and provided to international organizations. An admittedly inherent problem lies in the latitude for any country to label and treat as private something not taken as private in another country. As noted above, UIS attempts to mitigate variation but some variation persists, just as it does in how countries define and count tertiary education. Freak cases arise with institutions like "public Catholic" universities. It appears, however, that the degree of variation in usage is not large, just as it was not when Organization of American States (OAS) private-public data across Latin American countries was used in the past. Ultimately there comes a point where each country presents to the UIS its data shown by private and public. Whatever alternative nomenclature official used inside a country, it must be translated to public or private for international tabulation.

2. Sweeping coverage. Our operational definition favors inclusivity. As scholarship increasingly documents, private sectors are internally often rife with contrasting subsectors, types, and forms. Elite or non-elite, secular or religious, large or small, nonprofit or for-profit, cross-border or domestic only, freestanding or sites within broader networks or chains, all fit as long as they are officially counted as private in their country. The same holds even where, for political reasons, countries use semi-synonyms as alternative nomenclature; note that in almost all cases the alternatives are intended softening of "private": non-public, non-state, non-governmental, societal, or people-run. Such usage reflects the historical and persistent uneasiness with private sector provision of educational or other social services.

3. Privateness. A corollary is that we do not label private or public according to "how private" sectors or their component parts "really are." Degree of *privateness*—regardless of how one defines privateness--is not determinative for the definition, labeling, or counting of private. At an extreme a private university might have less privateness than a public university does, especially when we compare across countries. Degree as well as shape of privateness are of course crucial to many analytical concerns, and often to policy concerns. But how much privateness exists among legally private institutions is an empirical question properly addressed through scholarship. For counting we are straightforward as possible.

4. Government-dependent. Inclusion of "government-dependent privates" illustrates how we define, count, and include. Government-dependent is a formal label used by European data-collecting agencies and the UIS. Juxtaposed to "independent privates," government-dependent privates have much less privateness. Regardless, the decisive reason for the PROPHE dataset to include the government-dependent institutions as private is that national official usage counts them as such. Moreover, UIS does not break out the numbers between the two private categories, though other organizations at least sometimes do so, and we thus have been able to discover that the large majority of private enrollment is in fact independent private; for EU countries, 2009, the private total share was 15.6% while the private independent share was 12.0%. [5] Additionally, there is fuzziness within the very definition and operationalization of the terms. [6]

The global region with the most countries having "government-dependent private is Europe. Even there, however, the dependent enrollment is proportionally large in only a few countries, including Belgium, Estonia, and Latvia. The one major country UIS lists as having by far the largest government-dependent sector—100% in the UK—vanishes through the aforementioned PROPHE guideline on national data substitution. [7] The only other country for which PROPHE changes UIS government-dependent private to public is Israel. Much more salient in numerical weight than any European or other case, India's incomparably large private sector has become principally private independent—or "self-financed." [8]

F. Regional Categorization

1. Seven regions. The PROPHE dataset covers seven regions: Africa (Sub-Saharan), Arab, Asia, Developed British Commonwealth, Europe, Latin America, and the US. Two of these regions are sub-regionalized: Europe is divided into East/Central and West, Asia into Central/West, East, Pacific Islands, South, and Southeast.

2. Beyond UIS classification. There is no one definitive categorization of the world's regions or sub-regions. Any will have vulnerabilities, none will garner consensus. Like our dataset, our regional categorization starts with the UIS and UNESCO and then modifies. They show 7 regions (http://www.uis.unesco.org/Education/Documents/uis-regions-2012.pdf) We retain 3 intact: Africa (Sub-Saharan), Arab, and Latin America and the Caribbean. Note, for example, that some will be uneasy with the splitting of Africa into Sub-Saharan on the one hand and, on the other, North African countries that hereby lie in the Arab region. The UIS' other 5 regions are: North America and Western Europe, Central and Eastern Europe, and three sub-regions in Asia: Central Asia, East Asia and the Pacific, and South and West Asia. With both common usage and higher education history and development level in mind, we were uncomfortable with some groupings. We designate Europe and Asia their own conventional places as regions, and that involves not attaching either of them to other regions. We reason that by prominence and uniqueness the US should stand alone, not attached to Europe or Canada. Granted "Developed British Commonwealth" is an invented 'region' and a small one, but it too reflects historical roots and has persistent contemporary logic, as revealed by common patterns.

3. Sub-regions. While we insist on the "unification" for Europe and Asia, respectively, we see good reason to then divide each into sub-regions. The East/Central versus West split is compelling through post-war history overall and related bifurcation of higher education's postwar realities. For Asia, sub-regions seem imperative given the region's unmatched size and variation. Admittedly our 5 sub-regions leave us with a tiny sub-region (Pacific Islands) and the anomaly of having developed Japan and South Korea in the same sub-region, East Asia, as developing countries; but we give scant attention to the Pacific Islands and we take care to breakout Japan and South Korea when analyzing differences between the developed and developing worlds.

Thus, PROPHE's 7 regions, with the 7 sub-regions (of the 2 sub-regionalized regions) are:

1. Africa (Sub-Saharan)
2. Arab
3. Asia (with sub-regions of Central and West Asia, East Asia, Pacific Islands, South Asia, and Southeast Asia)
4. Developed British Commonwealth
5. Europe (with sub-regions of Central/ East and West)
6. Latin America and the Caribbean
7. US

Summing the specific regional and sub-regional changes from the UIS/UNESCO regional categorization to the PROPHE regions and sub-regions are:

a) UIS' North America and Western Europe: U.S. taken out and stands alone; Canada taken out and put into Developed British Commonwealth; Western Europe merged with Eastern Europe as one region with two sub-regions.
b) Created Developed British Commonwealth category: Canada joined by Australia, New Zealand and Tokelau (all taken from UIS East Asia and the Pacific).
c) UIS' Central Asia joined with Iran to form Central and Western Asia.
d) UIS' South and West Asia changed to South Asia after moving Iran into Central and Western Asia.
e) UIS' East Asia and the Pacific split into 3 sub-regions: East Asia, Southeast Asia (ASEAN countries), and Pacific Island Countries, and with the moving of Australia, New Zealand and Tokelau to Developed British Commonwealth.

4. Possible further sub-regionalization. Although sub-regionalization is especially compelling for Asia and Europe, it is reasonable in other regions as well. Africa could be divided into East and West but more likely by language into Anglophone, Francophone, and Lusophone, as they reflect different colonial seeds. The Arab region could also be divided by British or French colonial roots. Latin America could be divided into Mexico, Central America, and the Caribbean, on the one hand, and South America on the other, possibly dividing the latter into Andean and Southern Cone. Most compelling for higher education analysis—and PHE analysis—is the colonially rooted "Spanish America" versus Brazil. But Latin America is less often divided along such lines than Africa is, and both Africa and the Arab regions are comparatively small for sub-regionalization, though there is reason at times to speak of the Gulf Coast sub-region within the Arab region. The Developed British Commonwealth has too few countries to warrant division. And whereas there is ample precedent for dividing the U.S. national case by its own states or regions, for global analysis we must accept the US as a sole entity.

5. Country placements. However one categorizes regions and sub-regions, questions inevitably remain on the placement of individual countries into those categories. Israel and Turkey are examples, either part of Europe or its neighbors. Yet very few countries present regional placement dilemmas if we follow geography (as PROPHE does other than in Developed British Commonwealth, and as the UIS does not do). On sub-regions, the East-West divide is rather clear for Europe whereas country placement into Asia's sub-regions is more problematic, a given country reasonably labeled East Asian, Southeast Asian, or South Asia. When it comes to country groupings into regions and sub-regions the claim is not to objective superiority but to reasonable decisions within the mainstream.

G. Development Levels

1. Development classification. Different international agencies use different yet often similar categories to represent development levels. [9] As with categorization by region and sub-region, so with development level, one can quarrel with any categorization; no claim is made here that PROPHE's is superior, only that it is viable within the mainstream. It is helpful if we can place each of our 7 regions into one or the other category. We can, and we do with the single exception, noted above, of moving Japan and South Korea to the developed group, counting the rest of Asia in the developing group; but Singapore and Brunei now also raise questions about development level, as might Taiwan, Hong Kong, and Macao when listed as separate ("country") entities (which PROPHE follows UIS in doing for Hong Kong and Macao but not Taiwan). Categorization is likewise blurry when it comes to the poorer countries of Eastern and Central Europe. Obviously a country's level of development can change from one time period to another, presenting challenges for longitudinal categorization. Furthermore, as is also common with even reasonable categories, any number of individual countries placed into one category could reasonably be seen in a different category. But we are opting for the advantages of limiting the number of categories to just two (developed and developing) from seven regions, and thus accepting the weaknesses of categorizing together rather varied entities

2. Population vs enrollment indicator. Basic confirmation of our development designations comes from comparing population shares to total enrollment shares. Developing regions would have low enrollment to population ratios, developed ones the reverse. In fact, six of our seven regions fit their development designation, the stark exception being Latin America, and the Arab region's fits only weakly. But the fit is shown very powerfully on the developed end by the US, Europe, and British Commonwealth and the developing end by Africa. Moreover, Asia's fit is tight where shift Japan and Korea from ("developing") Asia overall to the developed world side.

H. 2015 Versus 2010: Data Coverage

1. 2010 marks new summit. As data from the UIS and elsewhere became more extensive, PROPHE made its push to amass and analyze a comprehensive dataset for 2010. Moving beyond its prior ad hoc posting of preliminary data and its global and regional estimates appearing in various publications, PROPHE would finally publish a rather polished global and regional data and analysis [10] (https://www.prophe.org/en/global-data/). That dataset would cover three years quinquennially, 2000-2010, facilitating eventual longitudinal analysis, along with immediate cross-sectional analysis for 2010. Even as subsequent work would make 2015 the main year (and a 2020 update should not be far in the future), 2010 provides a viable second snapshot year. Except for its lesser recency, the 2010 dataset is as solid as the 2015 dataset.

2. India and China. As noted above in Section D, data substitution (beyond what UIS provides) continues to play an important role in building comprehensive datasets. However, a significant change between 2010 and 2015 is that the UIS for the first time posts data on PHE in the world's two largest systems, China and India, India's with by far the largest PHE in the world. On the other

hand, since PROPHE had for 2000-2010 successfully found and substituted data from national sources for these two countries, the PROPHE datasets had been sound despite the need to go beyond the UIS; the largest exception involves the PROPHE 2010 under-reporting of Chinese public and total enrollment, thus modestly inflating China's 2010 private share (https://www.prophe.org/en/download/prophe-country-notes-2000-2015/). Before ultimately deciding it could switch to use the UIS data for 2015 and forward, PROPHE did detailed analysis to assure that no major longitudinal discontinuities would occur in its dataset.

3. Israel and the UK. Different but likewise compelling need prompted PROPHE to seek national data on Israel and the UK as well. Upon confirming that the UIS 2015 still classified enrollment in Israel's main universities as private and all of the UK's reported enrollment as private, PROPHE needed national data to identify what share of Israeli total enrollment was actually in PHE (overwhelmingly private colleges) while it merely flipped the UIS's UK total from private to public, as it had for prior years; for 2015, however, given the formal opening of a true private sector, PROPHE also independently calculated U.K. private enrollment. See the two country notes (https://www.prophe.org/en/download/prophe-country-notes-2000-2015/). However large the consequent divergence between the UIS and PROPHE data, the data substitution for Israel and the UK creates no longitudinal distortional between PROPHE's 2010 and 2015 datasets, as PROPHE has maintained its methodology.

4. 2010-2015 divergence. More distinguishing between the 2010 and 2015 datasets is the composition of the needed substitutions. Three substitution sources diminish in 2015 compared to 2010: (a) as UIS receives usable data from more and more countries, PROPHE resorts less often to national data sources (#3); (b) the continued decrease of systems with no PHE diminishes the frequency of reversion to zero (#4); (c) PROPHE does not pursue polation as often as it did for the 2015 dataset (#2a). On the other hand, the data substitution mode that increases markedly for 2015 over 2010 is the use of most proximate year (#2b), as PROPHE employed other substitution modes less and sometimes merely dragged 2010 figures into 2015. Table 2 pinpoints the divergence in data substitution modes between 2010 and 2015.

Table 2. Frequency of Data Substitution Guideline Usage

Guideline	2010 Private-Total	2015 Private-Total
#1	1-1	0-0
#2a	18-35	3-16
#2b	19-10	42-46
#3	13-12	2-2
#4	13-0	7-0
Total	64-58	54-64

I. 2015 Versus 2010: A Peek into Data Trends

Although this Guide to the PROPHE dataset is methodologically focused, Section I snatches a peek at recent data trends, even beyond 2015

1. Increased frequency of private declines is notable. Between 2010 and 2015, 64 of 188 systems decline in private share, compared to only 26 of 179 between 2005 and 2010. Even raw private numbers fall in 41 cases in the more recent period, compared to just 12 in the prior period. (Perhaps some of the 13 cases in which we have just extended 2010 figures to 2015 would in reality add to the 64 and 41 cases of decline, though likely most would not.) Several factors explain why PHE—especially non-elite PHE—generally takes a proportionally larger hit than does public higher education when overall demand for higher education slackens [11]

2. Declines in national total enrollment also multiply in 2010-2015 compared to 2005-2010, from 17 to 41. A largely demographically driven stagnation and even decline in *total* higher education is underway, overwhelmingly in the developed world. However, as such stagnation reaches even some developing world—where the private share of the total is markedly larger—impact may fall especially hard on (non-elite) PHE.

3. Eastern Europe is the sub-region of conspicuous declines in private and total enrollment. Japan and South Korea, Asia's leading developed countries, have had total enrollment stagnation throughout the new century, while each has strikingly maintained its very high private share. From 2010 to the present, however, 3 of Eastern Europe's largest 4 systems have led the sub-region downward in total enrollment and private share. Joining the Russian Federation, Poland, and Ukraine (aggravated by war and Russia's seizure of territory) have been Belarus, Bulgaria, the Czech Republic, Romania, Slovakia, and others—a quite general trend. Partially obscuring this general trend is the quite opposite tendency of the other largest system: Turkey. More like developing countries than like its sub-regional counterparts, Turkey's growth of private share and especially total enrollment has been strong so far in the young century (to at least 2019). Even with Turkey, the sub-region's private share slips from 16.6% to 12.8%, 2010-2015, while raw PHE enrollment slips from over 3.5 to only 2.5 million. Remove Turkey (as some regional categorizations would) and the sub-region's private enrollment would slip from 3.3 to 2.1 million. (By 2019, private enrollment without Turkey would be just @1.4 million for 12.5%, as compared to 2 million and 10.7% with Turkey. When it comes to higher education enrollment in general, including PHE, Turkey is the Healthy Being of Eastern Europe.

4. Asia and to a lesser extent Latin America will shape the overall global enrollment picture much more than will Eastern Europe, given raw size and growth, but PROPHE data beyond 2015 for those regions remains incomplete enough to warrant reticence in speculation.

5. Global PHE decline remains limited. Notwithstanding the substance #1-3 above, and the #4 caveat, PHE decline is limited by (a) many of the recent declines in both private share and raw

private enrollment being small; (b) declines concentrating disproportionally in smaller systems; (c) the private share declines being offset by increases in private share elsewhere, leaving us with global stagnation (as opposed to decline) in private share.

6. Global growth in raw PHE enrollment. Stagnation in PHE share and even potential for some decline still leaves robust growth in raw PHE enrollment globally, driven especially by the developing world.

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[1] In fact, UIS shows only private share and total enrollments and from these PROPHE calculates private enrollment and private share. The World Bank simply shows almost the same UIS data in slightly different form, acknowledging the UIS as its source. The number of UIS-listed countries depends upon when one consults their updated source, http://unstats.un.org/unsd/methods/m49/m49alpha.htm. For 2010 and 2015. UIS had listed 209 countries, PROPHE's addition of Kosovo, which the UN does not recognize, making for the 210-country dataset.

[2] Level 6 corresponds most closely to conventional usage of higher education, usually university, while levels 7 and 8 correspond respectively to Master's and Doctoral studies. Level 5 is non-university, short-cycle tertiary, normally requiring a secondary school degree. But tertiary excludes level 4, further education that adds something after or beyond upper secondary education.

[3] By 2022, UIS listed 249 countries but, again, the countries added beyond the PROPHE dataset are small and rarely provide any higher education data, almost never PHE data.

[4] Levy, Daniel C. 1986. *Higher Education and the State in Latin America: Private Challenges to Public Dominance*. Chicago: University of Chicago Press.

[5] The organizations using the government-dependent label do not always use a uniform definition and leave ambiguity on how to operationalize it. There are both financial and governance components to the definitions but no mention of how to tally when one component points one way, the second the other way. Moreover, even within each of the two components are sub-components that need not point in the same direction. On the financial side one criterion is an institution's receipt of at least 50% of its core funding from government agencies while another is that its teaching personnel be paid by a government agency, whether via the institution or directly. The governance criteria are further complicated by providing no clue as to how to quantify them. see http://uis.unesco.org/en/glossary-term/government-dependent-private-institution).

[6] Levy, Daniel C. 2012. *"*How Important Is Private Higher Education in Europe? A Regional Analysis in Global Context.*"* *European Journal of Education* 47 (2): 178–97.

[7] With the U.K. case in mind as an errant UIS classification of 100% private , we could suspect that the UIS might mistakenly put 100% private on the public sectors in other systems as well. It turns out, however, that instances are very few—to date, leaving aside the UK, only 2 countries appear as 100% private, 2010, with total enrollment under 1,000. The UIS does not put Canadian higher education as government-dependent private, even while, as in the UK, showing only one sector for the country. In Australia, New Zealand, and the US, where the UIS clearly puts two sectors, it rightfully shows the majority sector as public (not government-dependent private). Israel is the exception, where the UIS counts the main sector as government-dependent private; PROPHE of course changes that to public, as it does for the UK. It appears that a key to the UIS treating Israel and the UK one way, and the other countries another way, is that the first two happen to lie in Europe, where the government-dependent parlance is common.

[8] Chau, Q., Levy, D., and Matthews, E. 2022. *Data Analysis of the Growth and Composition of the Country Giant--India--within the World's Private Higher Education*. PROPHE Working Paper Series. WP No. (23). Program for Research on Private Higher Education.

[9] The UN classifies countries into one of three broad categories: developed economies, economies in transition, and developing economies, with also a separate designation for least developed countries. According to UN classification in 2014, the three broad categories are mutually exclusive and the economies in transition category cannot be put into either the developed or developing baskets. On the other hand, the World Bank uses classification in terms of levels of income, which include high income, middle income (lower, middle, and upper), and low income economies. Clearly allowing more categories can allow for closer fits between country and category.

[10] Levy, D. (2018). Global private higher education: an empirical profile of its size and geographical shape. *Higher Education*, 76(4), 701–715.

[11] Levy, D. (2013). The decline of private higher education. *Higher Education Policy*, *26*(1), 25-42.