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25 November 2018 (with minor revisions 29 April 2019)

Insufficient retirement funds and consequently the need to save a large share of my HKUST salary

To determine the pension savings that I can expect to have at age 65 (in 2030) and see what these can then buy, I start with my pension savings today (2018) and project them forward using the past yield, adding in new additions to the pension savings between now and retirement. I assume that at age 65 all pensions savings are invested at exactly the inflation rate and that I live to age 95. All forward projections are in 2018 prices.

A. Deriving the past yield on my “vested benefits” in the HKUST pension scheme

The average annual compound nominal rate of return since I joined the HKUST pension scheme (in 2002) is 6.893%, implying a real rate of return of 4.651% (Table 1). The following explains how these values were derived.

I joined the HKUST substantiation retirement scheme currently administered by the BCT (Consortium Trust Company) Group on 1 July 2002. I contribute 5% of my salary. HKUST contributes an amount equivalent to 14.75% (since October 2017: 15%) of my salary.

For the most recent years, I have the details of each month’s contribution. For earlier years, I have details on my monthly salary (with a few monthly values missing that can easily be interpolated since the salary typically, though not always, changes on an annual basis). The starting and end dates of my no-pay leaves in 2007/08 and 2010-13 (with the summer months of 2011 back on HKUST’s payroll) may contain slight imprecisions. Overall, I estimate the margin of error in piecing together the past contributions to my HKUST pension account to be within +/- 3%.¹

Between 1 July 2002 (when I joined the scheme) and end-June 2018, I have never changed the allocation of the contributions to individual funds, which then also allows the calculation of the rate of return *by fund*. I have always kept the allocations of the employee and of the HKUST employer contributions identical.

To obtain the average annual rate of return, each month’s contribution to the pension scheme was compounded forward on an annual basis into the 12 months July 2017 through July 2018 and then aggregated for each month. Then the aggregate value of July 2017—compounded past July contributions plus the new contribution of July 2017—earned a further return through June 2018 equal to 11/12 of the annual rate, the aggregate value of August 2017—compounded past August contributions plus the new contribution of August 2017—earned a further return through June 2018 equal to 10/12 of the annual rate, etc.

In an Excel spreadsheet, for each investment fund, and separately for the total of all investments, the rate of return was altered up to the third decimal until the obtained end-June

¹ I have evidence of two AXA “rebates” in 2017/18 that are of trivial size and that I have ignored in the following. There may have been one or more other “rebates” in the most recent years that I don’t have evidence of.

2018 calculated aggregate value equaled the value provided by BCT's in its 30 June 2018 statement (for each of the four funds, and the total, i.e., the sum of the four funds).

Table 1. Rates of Return

	Percentage share of employee (and equally: employer) contribution	Nominal rate of return 1 July 2002 – 30 June 2018	Real rate of return 1 July 2002 – 30 June 2018**
AXA Conservative	20	4.811	2.569
AXA Growth	20	6.771	4.529
Allianz Balanced*	10	6.670	4.428
Allianz Growth*	50	7.590	5.348
Sum (total)	100	6.893	4.651

* Allianz was previously RCM, which was previously Dresdner. The allocation between “Balanced” and “Growth” is unaffected by the change in company. Whether the change in company was initiated by HKUST (likely) or by me (unlikely), I do not recall.

** The average annual (compound) rate of change in the CPI between June 2002 and June 2018 was 2.242295%

(<https://www.censtatd.gov.hk/hkstat/sub/sp270.jsp?tableID=052&ID=0&productType=8>, accessed 12 November 2018).

B. Value of retirements savings

(i) The total value of my “vested benefits” in the HKUST pension scheme (discussed in section A) as of 30 June 2018 was HKD 4,253,652.²

(ii) End-June 1998 I received a gratuity equivalent to 25% of my salary for the first three years of my employment at HKUST. End-June 2002 I received a gratuity equivalent to 25% of my salary for the second three years of my employment at HKUST (in 1999-2000, I was on no-pay leave). Assuming I invested the post-tax gratuities at the same rate as the yield obtained in the HKUST pension scheme in the years 2002-2018 (6.893%), the value of investments based on the two gratuities at end-June 2018 was HKD 2,514,127.

(iii) Assuming that in four out of the five years of no-pay leave (in 1999/2000, 2007/2008, 2010-2012) I saved an amount equivalent to 12.5% of what my post-tax salary at HKUST would have been, and invested it at the typical rate of return of the HKUST pension scheme (6.893%), implies an additional HKD 761,797 at end-June 2018. (Trying to explain finances during no-pay leave periods would be lengthy. The approximation here is reasonable.)

(iv) For the fifth year of no-pay leave, 2012/2013, Acting Division Head Michelle Yip, Dean James Lee, and Provost SHYY Wei denied sabbatical leave and I paid for the year at Stanford University out of my (retirement) savings, approximately USD 70,000, or in terms of compounded savings by end-June 2018, HKD 761,972.³ I.e., this amount needs to be subtracted from the retirement savings in items (i) through (iii).

The sum of (i) through (iv) is HKD 6,767,604 (4,253,652 + 2,514,127 + 761,797 – 761,972).

² For reference, the total value of “vested benefits” as of 12 November 2018 (the most recent month as of the time of writing) was HKD 4,192,139 (i.e., 1.4% less despite an additional four months of contributions).

³ All publications produced in that year counted in the subsequent Research Assessment Exercise, i.e., HKUST collected money from the government for the year for research that I financed out of my retirement savings.

Moving forward at the real rate of return implicit in the July 2002 – June 2018 HKUST pension scheme, 4.651% (Table 1), means that by end-June 2030, when I have reached HKUST's mandatory retirement age of 65, I will have HKD 11,677,257 in today's prices. This is probably a best-case scenario; a common argument based on demographic change and monetary policy shifts suggests lower future rates of return.

If I work at HKUST without interruption until retirement (July 2018 through June 2030) and if my real salary at HKUST stays unchanged (both are optimistic assumptions), then I will have accumulated additional contributions to the HKUST pension scheme of, at end-June 2030 in today's prices, HKD 4,289,217 (where each year's contribution was compounded at the likely optimistic real rate of return of 4.651%).⁴

Under the stated numerous, optimistic assumptions, I can expect to retire on 30 June 2030 with retirement savings of HKD 15,966,474 in today's (June 2018) prices.

C. What these retirement funds buy me

The big unknowns for the future are housing prices and the future rate of return. Between mid-2002 and mid-2018, housing prices in Hong Kong rose by an average approximately 10% every year (see Centa City Leading Index, at http://www1.centadata.com/cci/cci_e.htm), while the annual rate of return on the HKUST pension scheme was only 6.893%. If these rates continue to hold, housing in Hong Kong would become ever more unaffordable for me.

Rather than trying to predict future house price changes in Hong Kong and future rates of return on investments, it seems easiest to work with current data. Especially since I have to make decisions on saving behavior today, and only have available the information of today.

Thus, if I were to retire today (30 June 2018) and take the retirement funds that I have at this point, HKD 6,767,604, these funds would buy me one-quarter to one-third of a low-quality (actual) 700 square foot apartment in Mid-Levels. Alternatively, it buys near campus one-quarter to one-third of an apartment of the size that HKUST lets to professors on campus (in my case originally against 7.5% of my salary, but I no longer have this option today).

Current expenses at retirement would then have to be paid for out of the retirement savings accumulated between 30 June 2018 and 30 June 2030. Under the most optimistic scenario, this is HKD 4,289,217 in today's prices, received on 30 June 2030. Assume that I live to age 95 (another 30 years). Then I will have at my disposal HKD 11,914 per month (in today's prices).

I.e., the HKUST retirement plan puts a professorial family into a hotel room sized apartment with a monthly income that is well below the median income of (already highly unequal) Hong Kong.

That, to me, is unacceptable.

⁴ Going forward, I assumed that all pension contributions of any one particular academic year are made on 31 December of that year, i.e., I used annual rather than monthly calculations.

The conclusion from the reality of the HKUST pension scheme values and the fact that I am a university professor is that I need two to three times the amount of retirement funding that HKUST allows for. This means saving 100- 150% of my salary (and be continuously on HKUST's payroll) from now till age 65. I.e., I already know now that no matter what I do, I have been and am continuously being screwed by HKUST management.

An alternative, quick calculation to check on the adequacy of the HKUST retirement scheme is based on the assumption that in retirement I need an annual amount equal to 80-90% if not 100% of my pre-retirement salary (see, for example, a retirement publication by the U.S. Department of Labor, Employee Benefits Security Administration). This means that I will need (at 100%) HKD 40mio in today's money when I retire at age 65, i.e., more than 2.5 times as much than I will have in retirement savings under the most optimistic scenario.

No matter how I cut it, I know today that I am dealing with HKUST administrators who force me into retirement at age 65 with insufficient funds. I.e., they are cheating me now of my livelihood in the future (and maybe they hope I don't notice?).

-- Please describe, in writing, a plausible retirement scenario for a professor at HKUST using the real-world figures that I have provided. As long as I am not presented with a plausible retirement scenario for a university professor, I cannot take HKUST management seriously other than as exploitative sweatshop managers (not suited for and not acceptable at a university).

-- I figure the best I can do when it comes to retirement is save half of my salary and otherwise hope for a future miracle. With 15% taxes and 5% pension contribution, that leaves 30% of my salary. Feel free to make an argument as to how you expect a professor and his family to live the life of a professor family (including renting an appropriate apartment) on that budget.