

Public sector pay scales in PNG: are academics underpaid?

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Abstract

PNG's public universities face difficulties in retaining academic staff, many of whom join government departments, statutory authorities, public enterprises, or the private sector for better paid jobs. We compare university pay in PNG with public service, statutory authority, and state-owned enterprise pay. We include allowances in our comparison, among them, importantly, the imputed value of university-provided housing. University salaries are uncompetitive for professors, and uncompetitive for all positions relative to the salaries offered by state-owned enterprises and probably some by statutory authorities. They are relatively competitive for positions below that of professor relative to the salaries offered by the public service. The PNG government will need to raise salaries to improve the competitive position of universities in those disciplines that are facing shortfalls. However, given that universities are likely to remain at a competitive disadvantage for some time to come, improving job satisfaction for academics and expanding the supply of quality candidates for areas where there are shortages will also be important.

1. Introduction

PNG's public universities face difficulties in retaining academic staff, many of whom join government departments, statutory authorities, public enterprises, or the private sector for better paid jobs. While this is not an unusual problem for a developing country, it seems to have got worse of late. It is possible that the booming resource sector has pushed up the salaries paid to skilled workers in the resources sector, and that this has had a flow-on effect on skilled workers in both the private and the public sectors. Universities might find it difficult to respond, and thus be left behind.

As far as we know, there has been no systematic effort to compare university and other public sector pay scales in PNG. No doubt such comparisons are made within government at the time when university salaries are set. However, such data is typically not made public.

There has been a recent cross-country study on academic salaries. Altbach, Resiberg, Yudkevich, Androushchak and Pacheco (2012) examine 28 countries. This provides a very useful benchmark which we use in our study.

Ideally, we would also like to include private sector pay scales in our comparison. However, due to data limitations we focus on the public sector, which we divide into four types: universities, government departments, statutory authorities and state-owned enterprises. Pay scales for government departments are centralized, but not for the other three types of institutions. For universities, statutory authorities, and state-owned enterprises we use data from individual institutions as examples. For universities, we use data for UPNG. We keep our statutory authority and state-owned enterprise examples anonymous to respect the confidential nature of their salary

data. We are confident that our examples are broadly representative of the broader group from which they are drawn, and not unusually generous.

The next section sets out the pay scales for our four institutions. We then undertake a comparison, using three methods, each increasingly restrictive. The final section concludes and considers policy implications.

2 Public Sector Pay Scale Review

We include both base salary and allowances to calculate and compare gross salaries (before tax and employee superannuation contributions). We include the value of imputed rental assistance for academics. Some specific allowances are provided to some employees (e.g. for transport), and some also receive a Domestic Market Allowance, in recognition that the Base Salary alone is Employer superannuation contributions, annual leave fares and bonuses are excluded. The salaries we report are for national staff.

We lack data for the most senior positions, namely for heads of universities (Vice Chancellor), government departments (Secretary), statutory authorities (Chief Executive Officer), and public enterprise (Managing Director).

This section provides information on the pay scales for the four institutions we compare: UPNG, government departments, and our sample statutory authority and state-owned enterprise.

2.1 UPNG (Academics)

UPNG has 6 categories of academic staffs: Tutor, Lecturer 1, Lecturer 2, Senior Lecturer, Associate Professor, and Professor. Each category has 7 salary points, with 4 as the median base salary.

The Base Salary is the gross annual salary paid to each academic staff, and varies with staff classification and salary points. The Base Salary is subject to compulsory tax and superannuation deductions.

All staff also receives a number of allowances including the Domestic Market Allowance, Academic Teaching Allowance, and Gratuity (25% of DMA and BS). The Heavy Duty Allowance is paid to Deans, Deputy Deans, Directors, and Division Heads. The allowances vary with staff classification and salary points and attract tax.

Housing is not provided to all UPNG academics. However, academics in the three senior classifications (Senior Lecturer, Associate Professor and Professor) are provided houses or flats upon contractual engagement. The lower three classifications are allocated houses when they are available. There is no housing allowance for academic staff, but rents are well below market levels. The difference between the market rental and the amount charged to staff times the probability of being provided with a house gives the Imputed Housing Value (IHV). **Since this imputed value is not subject to tax, we also multiply it by the relevant marginal tax rate to make it comparable with other gross benefits.**¹ Table 1 shows the imputed housing values.

¹ We simply inflate imputed housing values by 30% to get a pre-tax equivalent. In fact, marginal tax rates rise to 40% for incomes in excess of K70,000 (see

Table 1: UPNG Imputed Housing Value

Designation	Share of Staff with House	Market Rental Value for House Type per Fortnight	Rent Pay by Staff per Fortnight	IHV per Fortnight	Annual IHV
	(%)	(K)	(K)	(K)	(K)
Tutor	60	600	80	312	8,112
Lecturer 1	70	800	90	497	12,922
Lecturer 2	90	1,000	110	801	20,826
Senior Lecturer	100	1,500	160	1,340	34,840
Associate Professor	100	1,500	160	1,340	34,840
Professor	100	1,500	160	1,340	34,840

Notes: The three relevant variables are: share of staff allocated a house during the signing of the employment contract (S), the fortnightly rental value for a house type in the property market (Y), and rental amount paid by staff for a house or flat allocated by the university (Z). The Imputed Housing Value (IHV) is calculated as $IHV = S(Z-Y)$. Thus for tutors, $IHV = 60/100*(600-80)$ per fortnight = K312 per fortnight = K312*26 per year = K8,112 per year*

Sources: UPNG for housing allowances; authors' estimates for market values, and share of staff with a university-provided house.

Table 2 and Figure 1 show the academic staff salaries including the imputed housing value.

<https://www.kpmg.com/global/en/issuesandinsights/articlespublications/taxation-international-executives/papua-new-guinea/pages/income-tax.aspx>) so this is a conservative conversion factor.

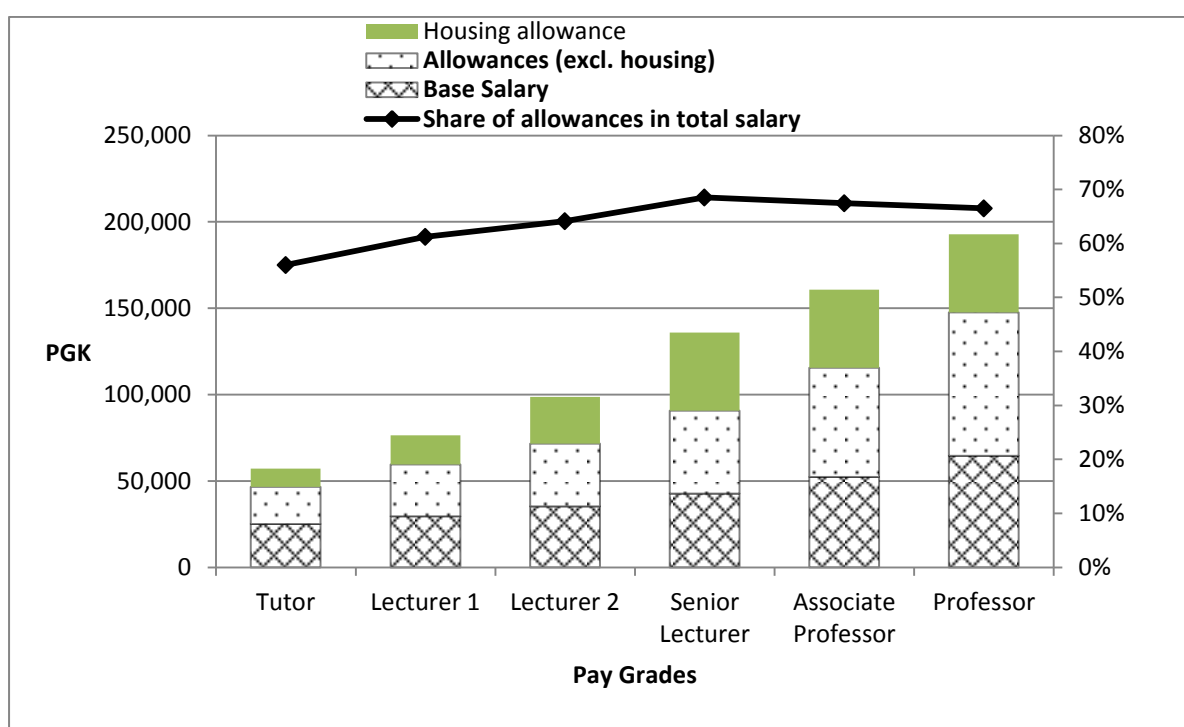
Table 2: UPNG Academic Staff Salary Scale 2012

Grade	Base Salary	Allowances					Total Salary
	(K)	DMA (K)	ATA (K)	Gratuity (K)	Housing (K)	Total (K)	(K)
UA1 (Tutor)	25,158	7,000	6,432	8,040	10,546	32,017	57,175
UA2 (Lecturer I)	29,632	11,500	8,226	10,283	16,799	46,808	76,440
UA3 (Lecturer II)	35,386	14,000	9,877	12,347	27,074	63,298	98,684
UO4 (Senior Lecturer)	42,818	19,700	12,504	15,630	45,292	93,125	135,943
UO5 (Associate Prof.)	52,354	27,300	15,931	19,914	45,292	108,436	160,790
UO6 (Professor)	64,595	37,200	20,359	25,449	45,292	128,300	192,895

Notes: There are six grades for academic, and within each grade 7 points. We assess salaries at the median 4th point. DMA is Domestic Market Allowance, ATA Academic Teaching Allowance, and IHV the Imputed Housing Allowance (Table 1).

Source: Human Resources Division, UPNG, and Table 1.

Figure 1: UPNG Academic Staff Salary Scale 2012



Source: Table 2.

As can be seen from Figure 1, for all positions the value of allowances is greater than the base salary. For example, in a year, a tutor can expect to receive K57,175 of which 44 percent will be their base salary, a senior lecturer K135,943 (31 percent via their base salary) and a professor K192,895 (33 percent via their base salary). Housing allowances are significant, making, for example,

a third of the total package a senior lecturer can expect. There are significant pay differentials, with a professor earning 2.5 times the salary of a lecturer.

2.2 Public Service (Government Departments)

The public service has 20 levels of pay grade up to Deputy Secretary. Each grade has 5 salary points, with 3 the median. The base salary varies with pay grades and salary points, and is subject to compulsory superannuation deduction and tax.² Most senior officers receive Accommodation, Vehicles, Utilities, Telephone, and Entertainment Allowances. The Domestic Market Allowance is paid to both junior and senior staff above PS10. The standard housing allowance for grades below PS10 is K7 per fortnight.

Pay levels at median points for each of the 20 grades are shown in Table 3 and Figure 2.

Table 3: Public Service Salary Scale 2012

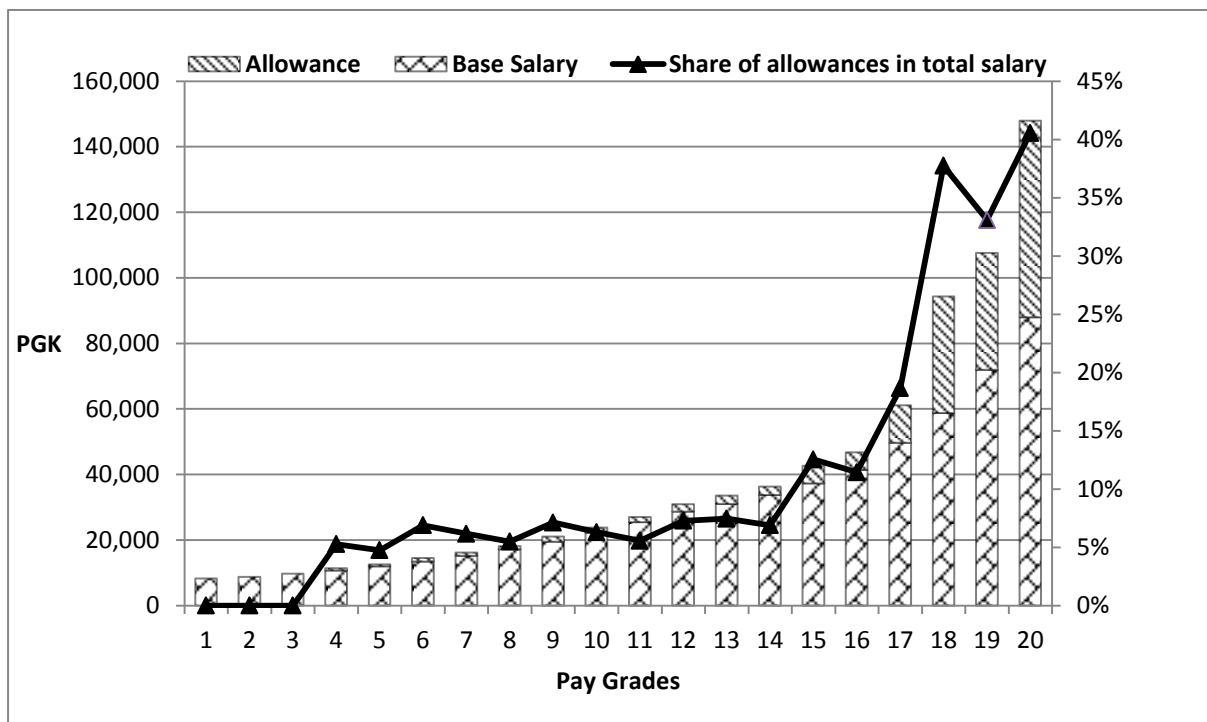
	Base Salary	Allowances						Total Salary
		Accommodation	Vehicle	Utilities	Telephone	Entertainment	Total	
	(K)	(K)	(K)	(K)	(K)	(K)	(K)	(K)
PS01	8,290	0	0	0	0	0	0	8,290
PS02	8,808	0	0	0	0	0	0	8,808
PS03	9,724	0	0	0	0	0	0	9,724
PS04	10,770	600	0	0	0	0	600	11,370
PS05	12,017	600	0	0	0	0	600	12,617
PS06	13,505	1,000	0	0	0	0	1,000	14,505
PS07	15,229	1,000	0	0	0	0	1,000	16,229
PS08	17,192	1,000	0	0	0	0	1,000	18,192
PS09	19,551	1,500	0	0	0	0	1,500	21,051
PS10	22,282	1,500	0	0	0	0	1,500	23,782
PS11	25,489	1,500	0	0	0	0	1,500	26,989
PS12	28,657	2,250	0	0	0	0	2,250	30,907
PS13	31,044	2,500	0	0	0	0	2,500	33,544
PS14	33,785	2,500	0	0	0	0	2,500	36,285
PS15	37,290	5,000	0	350	0	0	5,350	42,640
PS16	41,413	5,000	0	350	0	0	5,350	46,763
PS17	49,732	7,500	0	1,200	900	1,800	11,400	61,132
PS18	58,727	15,000	15,000	1,800	1,200	2,600	35,600	94,327
PS19	71,977	15,000	15,000	1,800	1,200	2,600	35,600	107,577
PS20	87,937	26,000	26,000	2,600	1,800	3,600	60,000	147,937

Notes: Table 3 shows base salary and allowances for each grade assessed at the median salary point within each grade.

Source: Public Relations Division, Department of Personnel Management.

²Tax deductions are exempted for pay grades PS03 to PS01 which are below the tax threshold of K10,000 per year.

Figure 2: Public Service Salary Scale 2012



Source: Table 3

As can be seen from Figure 2, the public sector pay scale covers a wide spectrum, from less than K8,300 for the lowest grade (1) to K140,000 for the highest (20), with a ratio of 18. The importance of allowances also varies. As Figure 2 shows, for grades 1 to 3, there are no allowances; for grades 4 to 17, allowances account between 5 and 19 percent of the total; and for the three very senior grades 18 to 20, allowances account at least 33 percent of the annual gross salary.

2.3 Statutory authorities

The statutory authority we examine has 16 levels of pay grade up to the General Manager, which is one below the head of the authority. Each grade has 7 salary points with 4 as the median salary base. The base salary varies with pay grades and salary points, and is subject to compulsory tax and superannuation deductions.

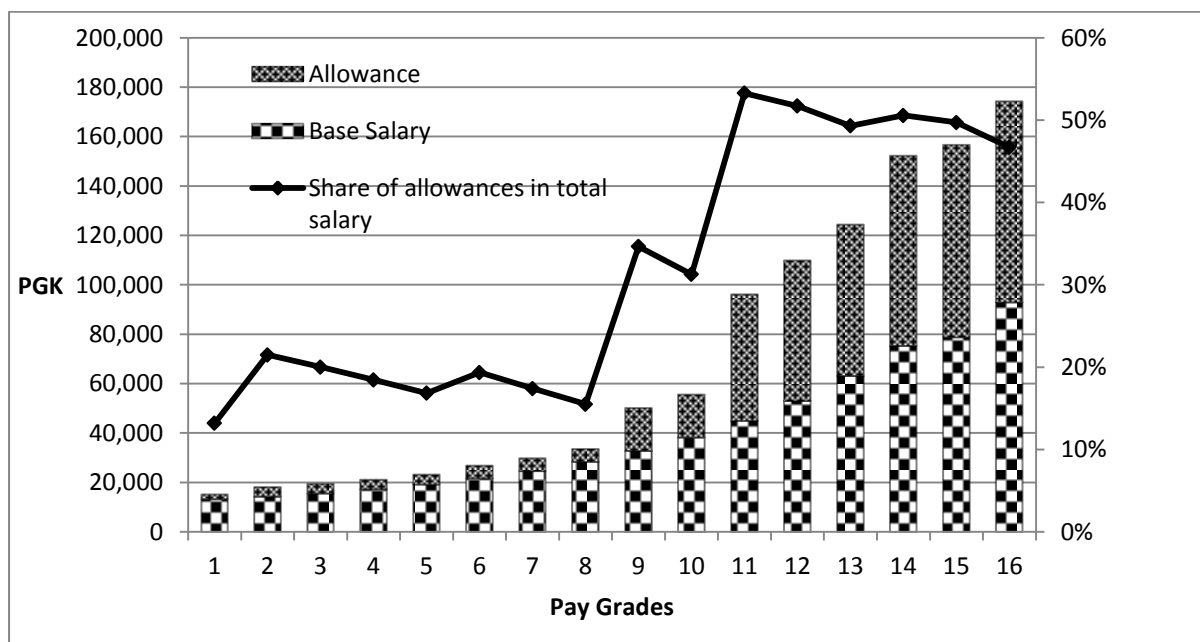
The allowances are the Domestic Market Allowance, Housing, Motor Vehicles, Entertainment, Utilities, Telephone and Gratuity. Each pay grade receives a housing allowance. Most other allowances are only paid to senior positions. Table 4 and Figure 3 show the results.

Table 4: Statutory Authority Salary Scale 2013

Grade	Base Salary	Allowances								Total salary
		SDMA	Housing	Vehicle	Entertainment	Utilities	Telephone	Gratuity	Total	
		(K)	(K)	(K)	(K)	(K)	(K)	(K)	(K)	
1	13,165	0	2,000	0	0	0	0	0	2,000	15,165
2	14,239	0	3,900	0	0	0	0	0	3,900	18,139
3	15,581	0	3,900	0	0	0	0	0	3,900	19,481
4	17,236	0	3,900	0	0	0	0	0	3,900	21,136
5	19,248	0	3,900	0	0	0	0	0	3,900	23,148
6	21,664	0	5,200	0	0	0	0	0	5,200	26,864
7	24,661	0	5,200	0	0	0	0	0	5,200	29,861
8	28,328	0	5,200	0	0	0	0	0	5,200	33,528
9	32,801	7,000	10,400	0	0	0	0	0	17,400	50,201
10	38,259	7,000	10,400	0	0	0	0	0	17,400	55,659
11	44,924	15,000	15,000	10,000	0	0	0	11,231	51,231	96,155
12	53,064	15,000	15,000	10,000	1,800	900	900	13,266	56,866	109,930
13	63,084	15,000	15,000	12,000	1,800	900	900	15,771	61,371	124,455
14	75,251	15,000	18,000	18,000	3,600	1,800	1,800	18,813	77,013	152,264
15	78,784	15,000	18,000	18,000	3,600	1,800	1,800	19,696	77,896	156,680
16	92,919	15,000	18,000	18,000	3,600	1,800	1,800	23,230	81,430	174,349

Note: Table 4 shows median base salary and allowances for each grade. The data was sourced from the Human Resources Division, Independent Consumer and Competition Commission.

Figure 3: Statutory Authority Salary Scale 2013



Source: Table 4

Similarly to the public service, allowances are skewed to the top end. Senior positions receive significant allowances from K17,500 to K81,430 per year. As Figure 4 shows, for Grades 1 to 8 allowances account between 13 and 22 percent of the gross salary, and for Grades above 9 allowances account between 35 and 53 percent of the annual gross salary. The lowest grade (1) receives a total salary of K15,000, while the highest grade (16) receives a total salary of K174,000, giving a salary range of 11.5.

2.3 State Owned Enterprises

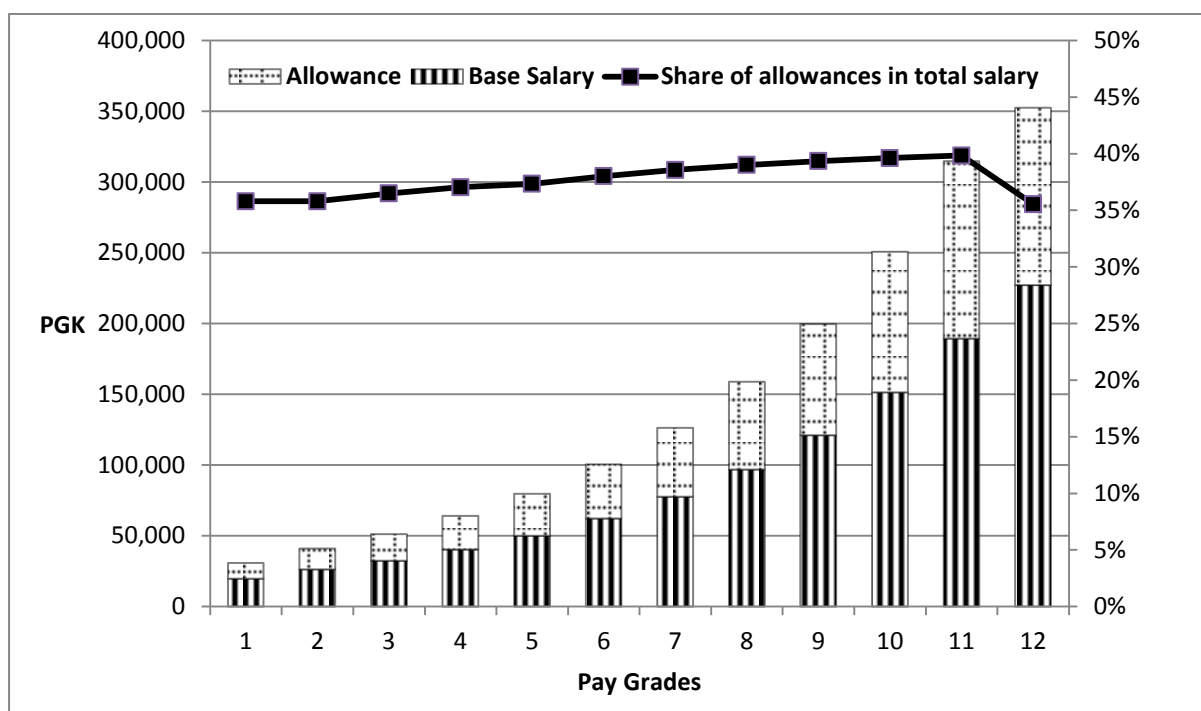
The state-owned enterprise (SOE) we study has 12 levels of pay grade up to and including Chief Officer, which is a second-in-command position. Each grade has 9 salary points, 5 is the median. The base salary varies with pay grades and salary points, and is subject to compulsory tax and superannuation deductions. Individual allowances are for rent, vehicles, and a market allowance. We only have data on total allowances, not on different allowances separately. We also exclude any performance bonuses, and any incentive and retention payments. Table 5 and Figure 4 show the results.

Table 5: SOE Salary Scale 2012

Grade	Base Salary (K)	Allowances (K)	Total Salary (K)
1	19,801	11,042	30,843
2	26,402	14,722	41,124
3	32,521	18,679	51,200
4	40,282	23,696	63,978
5	49,983	29,778	79,761
6	62,222	38,171	100,393
7	77,594	48,714	126,308
8	96,848	61,918	158,766
9	121,026	78,500	199,526
10	151,324	99,278	250,602
11	189,383	125,380	314,763
12	227,259	125,276	352,535

Notes: Table 4 shows median base salary and allowances for each grade.

Figure 4: SOE Salary Scale 2012



Source: Table 5

The share of allowances in the salary is very constant across grades at around 40 per cent. The lowest pay is K31,000 and the highest is K353,000, giving a ratio of 11.

3.0 Comparative analysis

We provide three comparisons in this section. The first makes no assumptions concerning comparable grades, and simply looks at the full range of salaries on offer, as well as the varying importance of allowances. The second makes assumptions of which minimum and maximum scales are comparable across institutions (for the range of academic positions only), and then assumes that intermediate scales are spread evenly between these (Section 3.2). The third matches the full range of academic positions with comparable positions in other institutions (Section 3.3). Obviously, the fewer the assumptions made, the more reliance we can place on the results. A consistent pattern emerges from the three methods.

3.1 Comparing salaries across different institutions

We begin by comparing the four different distributions of pay scales without any assumptions at all about which positions are comparable with which.

Table 6 shows average salaries, and the share of base salaries and allowances for each of the four institution types. Average pay is highest for the SOE, then the Statutory Authority and UPNG, and then the public service. The average share of allowances in total pay is highest at UPNG and lowest in the public service. The pay range (ratio of highest to lowest pay) is the highest in the public sector, and lowest among academics.

Table 6 Summary statistics for the four different pay scales

	Averages				Minimum	Maximum	Range
	Base Salary	Allowances	Total	Share of Allowances in Total			
	(K)	(K)	(K)	(%)			
UPNG	41,657	71,345	113,002	63%	54,741	182,443	3.3
PS	30,171	8,463	38,633	22%	8,290	147,937	17.8
SA	39,576	29,613	69,188	43%	15,165	174,349	11.5
SOE	91,220	56,263	147,483	38%	30,843	352,535	11.4

Figure 5 shows the range of salaries at the different type of institutions. UPNG has the highest minimum pay. Maximum pay rates are similar for all three of UPNG, public service, and SA. Maximum pay is much higher at the SOE. Indeed, the top four grades of the SOE pay scale all exceed the maximum for the other three types.

Figure 5 The range of salaries across different public sector institutions

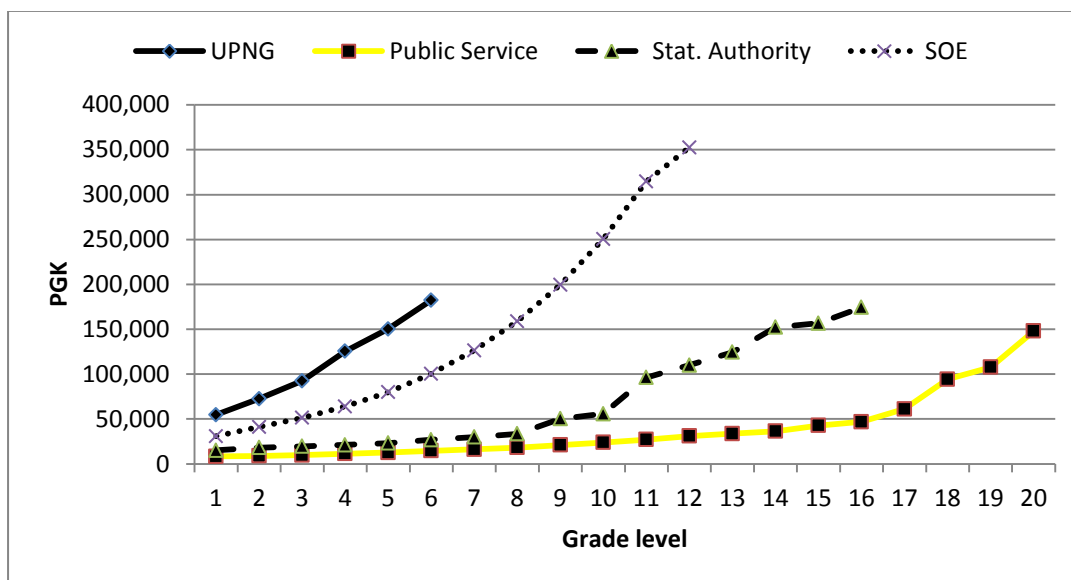
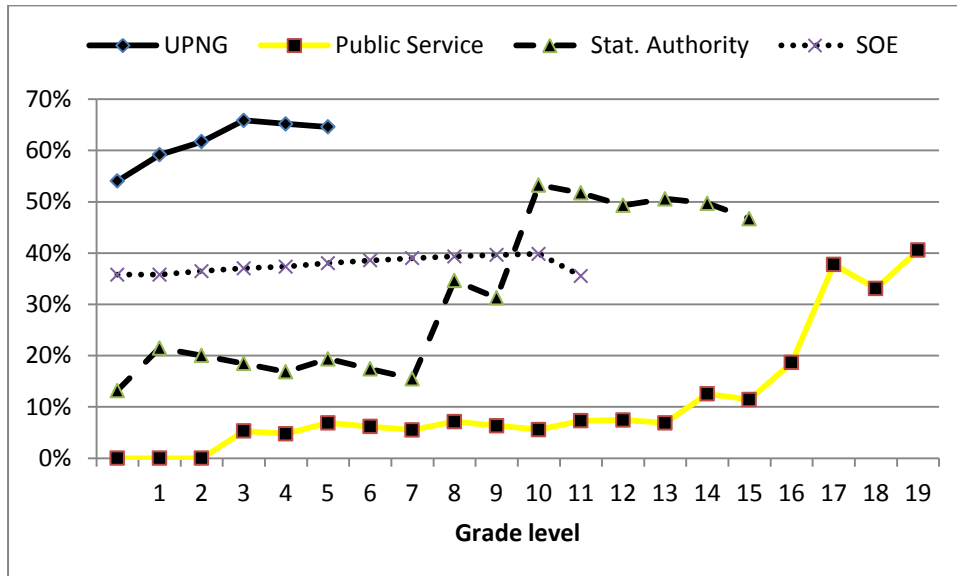


Figure 6 shows the share of allowances at the four types of institutions. Allowances are more important for every UPNG salary grade than they are for any other grade at any other institution. Allowances are only important for higher grades in the public service and SA, but are of roughly equal importance across grades for the SOE.

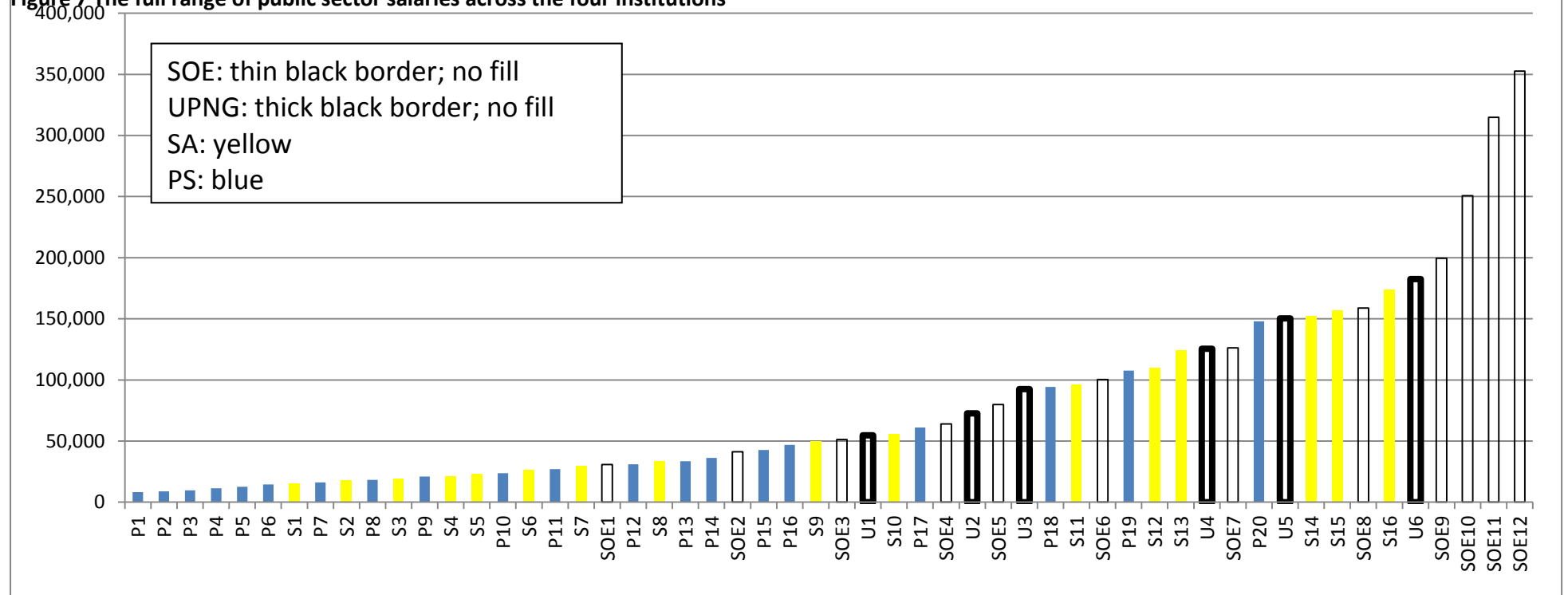
Figure 6 The share of allowances in total salaries across different public sector institutions



Finally, Figure 7 lines up all the pay grades together, from smallest to largest, with different institutions shown by different colours and different legends. We can see that the SOE grades cluster at the top and the public service grades at the bottom. University grades are largely in the top half, and SA grades are spread fairly evenly through the distribution, though not at either extreme.

Clearly is unlikely that universities can compete with SOEs. SOE salaries are much higher over a significant range of grades. The salary of a UPNG professor is similar to that of the most junior SOE manager.

Figure 7 The full range of public sector salaries across the four institutions



3.2 Comparing salaries across different institutions for a comparable range

To say more about the comparability of salaries we need to make some assumptions about the comparability of grades across institutions. To begin with, we make assumptions only about the comparability of the most junior and senior positions in common across the four data sets.

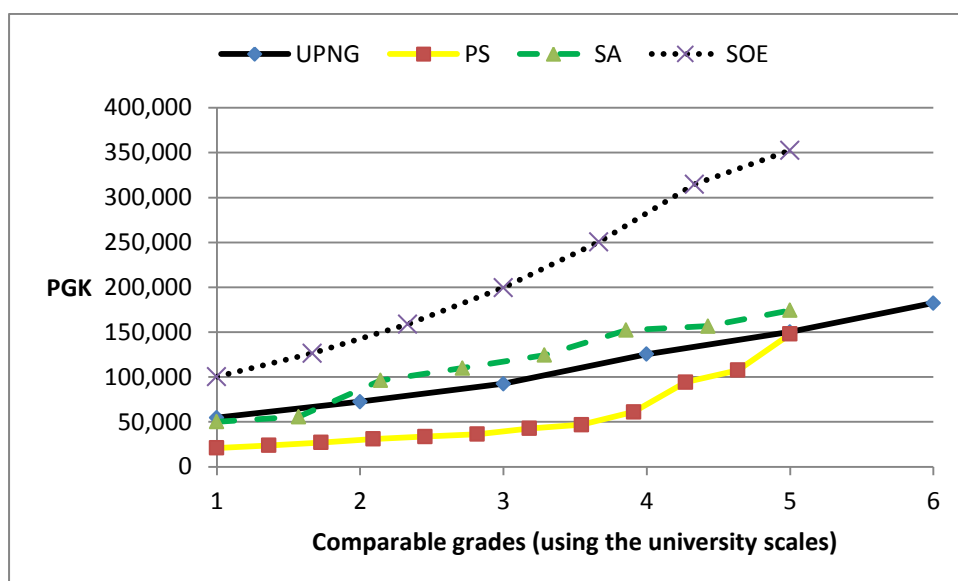
At the junior end, we assume that the role of a tutor (Grade 1 at the universities) is equivalent to that of a graduate at other organizations (Grade 9 at the public service and statutory authority, and Grade 6 at the SOE). This is a very reasonable assumption because the pool of university tutors is drawn from recent, if not immediate, graduates.

At the other end, the most senior academic role, that of a professor is comparable with Secretary of Government Departments, Chief Executive Officer of Statutory Authorities, and Managing Director of State Enterprises. (We know this because we can observe professors taking these roles.) We lack data for these comparator positions, and so the best comparison we can make at the senior end is to compare the role of an Associate Professor with Grade 20 (Deputy Secretary) in government departments, Grade 12 (General Manager) at ICC, and Grade 12 (Chief Officer) at IBPC.

With these comparisons at both ends of the range, we then assume that intermediate grades are spread out evenly within each institution. Figure 8 shows the results. From this comparison we can see that, excluding the position of Professor, university academic salaries are competitive with the comparable statutory authority positions, and superior to those of the public service. However, academic salaries are only half to one third of comparable SOE positions.

Professorial positions are not at all competitive. This is because there is little difference between Associate Professor and Professor salaries. Yet the former are comparable with the highest positions in the public service and SAs for which we have data: the "2IC" (second-in-command) positions. And it is well known that there is a significant pay gap between between public service and SA 2IC and 1IC (top) positions.

Figure 8: Comparison of Salaries Across a Comparable Range



3.3 Comparing salaries across different institutions for comparable positions

Finally, we make the most detailed comparisons possible by identifying, based on our own judgement and feedback from others, comparable positions for the entire range of academic positions. See Table 8 for these assumptions, and Figure 9 and Table 9 for the results.

Table 8: Comparable Positions in the Public Sector

UPNG		Government		SA		SOE	
Grade	Designation	Grade	Designation	Grade	Designation	Grade	Designation
1	Tutor	9	Graduate	9	Graduate	6	Graduate
2	Lecturer 1	12	Officer	11	Officer	7	Officer
3	Lecturer 2	14	Heads	12	Senior Officer	8	Senior Officer
4	Senior Lecturer	17	Assistant Secretary	14	Manager	10	Senior Manager
5	Associate Professor	20	Deputy Secretary	16	General Manager	12	Chief Officer
6	Professor		Secretary		MD		CEO

Figure 9: Base Salary and Allowances for Comparable Positions

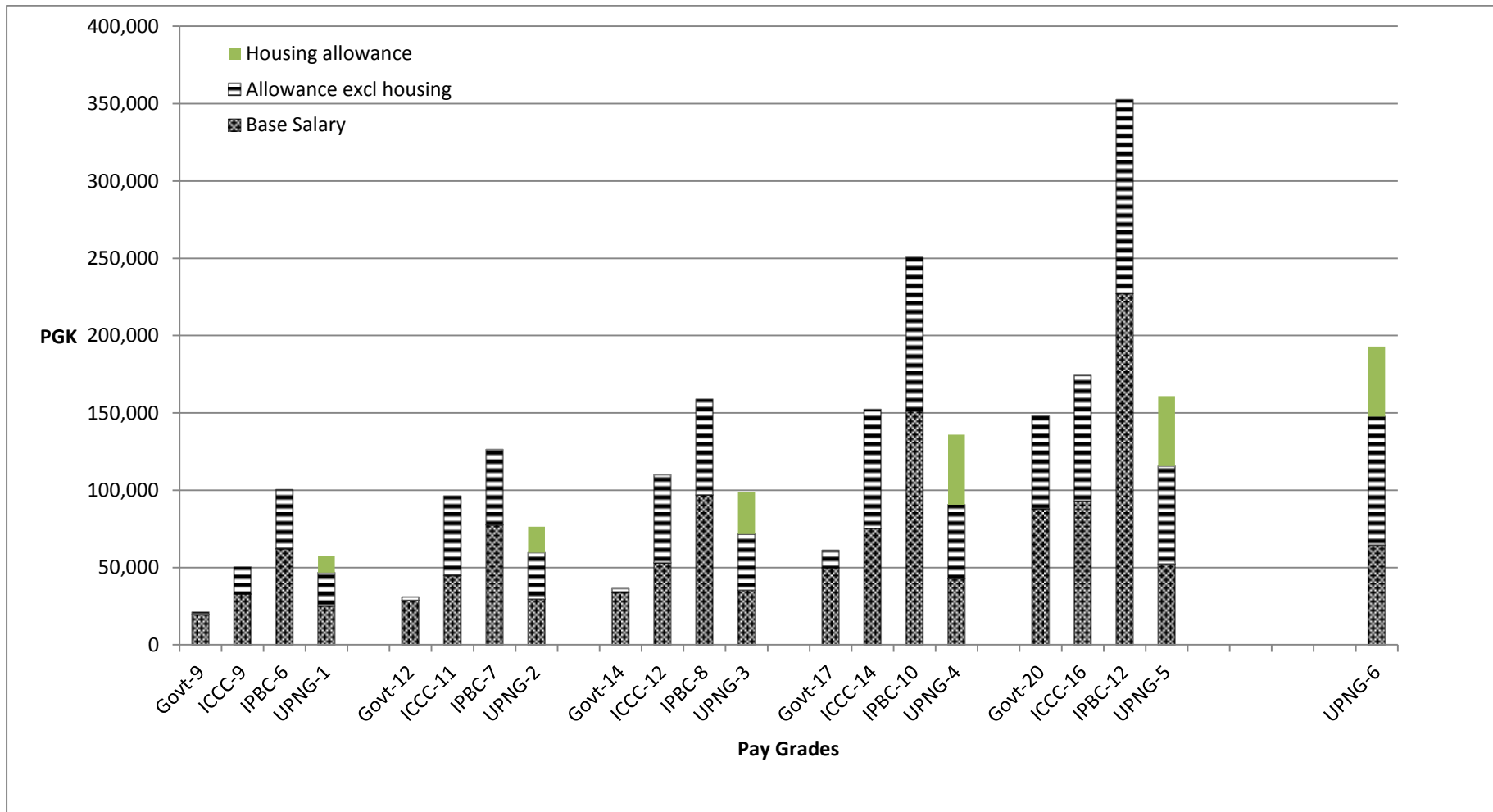


Table 9 Salary analysis for comparable positions

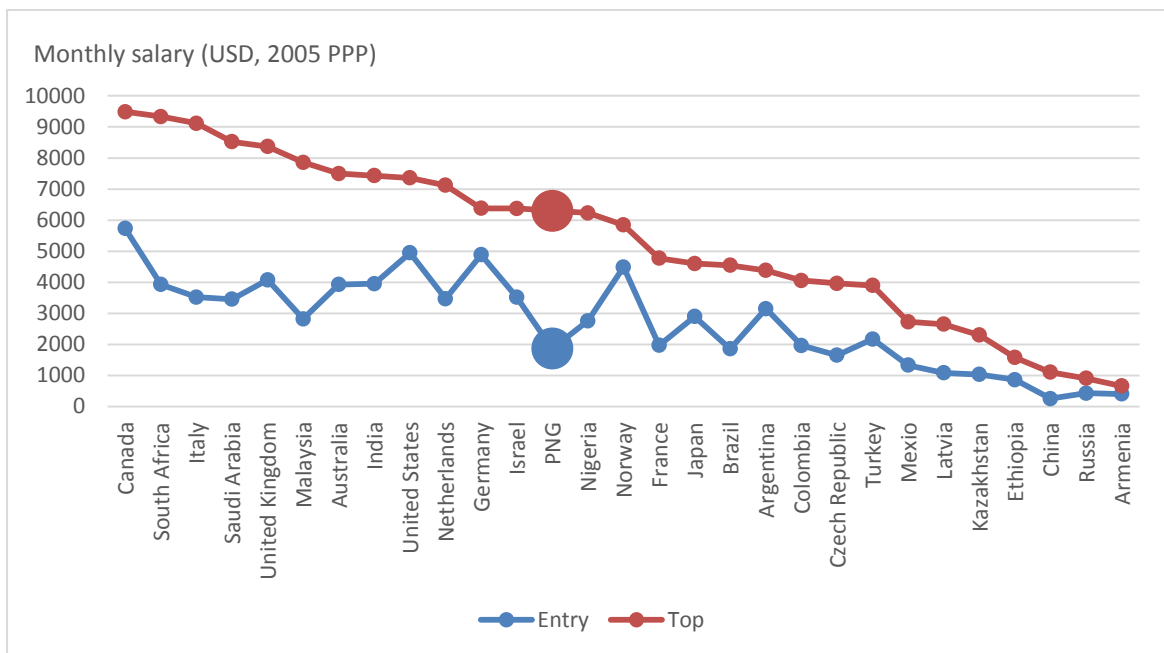
UPNG		Government		SA		SOE	
Designation	Salary (K)	Designation	Salary (K)	Designation	Salary (K)	Designation	Salary (K)
Tutor	57,175	Graduate	21,051	Graduate	50,201	Graduate	100,393
Lecturer 1	76,440	Officer	30,907	Officer	96,155	Officer	126,308
Lecturer 2	98,684	Heads	36,285	Senior Officer	109,930	Senior Officer	158,766
Senior Lecturer	135,943	Assistant Secretary	61,132	Manager	152,264	Senior Manager	250,602
Associate Professor	160,790	Deputy Secretary	147,937	General Manager	174,349	Chief Officer	352,535
Professor	192,895	Secretary		MD		CEO	

For all positions, the SOE salaries are by far the highest, and 60 to 120 per cent above the comparable academic positions. For four out of the five positions, the SA positions are the second highest. However, the differences between the SA and academic positions are not large, often only around 10%. All comparable UPNG positions offer higher salaries than the comparable government positions. The differences are large (more than double) until the Associate Professor level.

4. International comparisons

Using the work of Altbach *et al.* (2012) mentioned earlier, we can supplement the above analysis of salaries across the public sector in PNG with a comparison of academic salaries in PNG and 28 other countries. Altbach *et al.* contain three types of comparisons. The first is in US dollars, using purchasing power parities, for both “top” and “entry-level” positions. (They also include a comparison for average salaries but it is not clear how this is calculated.) PNG is added to the cross-country comparisons in Figure 9. (We deflate salaries to 2005 prices using the CPI (deflator of approximately 1.5) and then convert to USD using a PPP XR of 1.7 from WorldDatabank for 2005, using the PPP exchange rate for consumption.) PNG academic salaries emerge fairly well from this comparison, coming in at around the half-way mark, not far below Australia. Among developing countries, the only ones with higher professorial (top) salaries than PNG are Malaysia, South Africa and India. The other 12 developing countries in the sample all have professorial salaries below PNG.

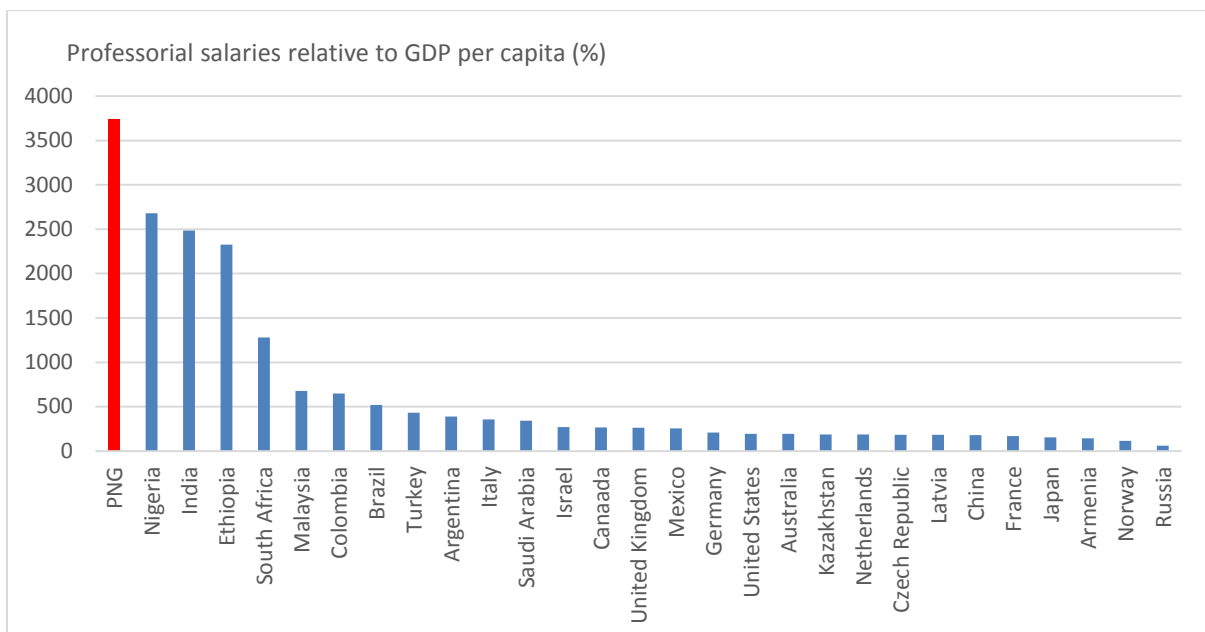
Figure 10 PNG academic salaries in international comparison



Sources: PNG data from this paper. Other countries from Altbach et al. (2012).

Since academic salaries are internationally comparable in PNG, but PNG remains a very poor country, this must mean that the ratio of salaries to GDP per capita in PNG must be high. Figure 11 confirms that indeed, this ratio is higher for PNG than for any of the 28 countries surveyed by Altbach *et al.*, and by a considerable margin. The ratio in PNG is 35. The next highest are Nigeria, India and Ethiopia, all around 25.

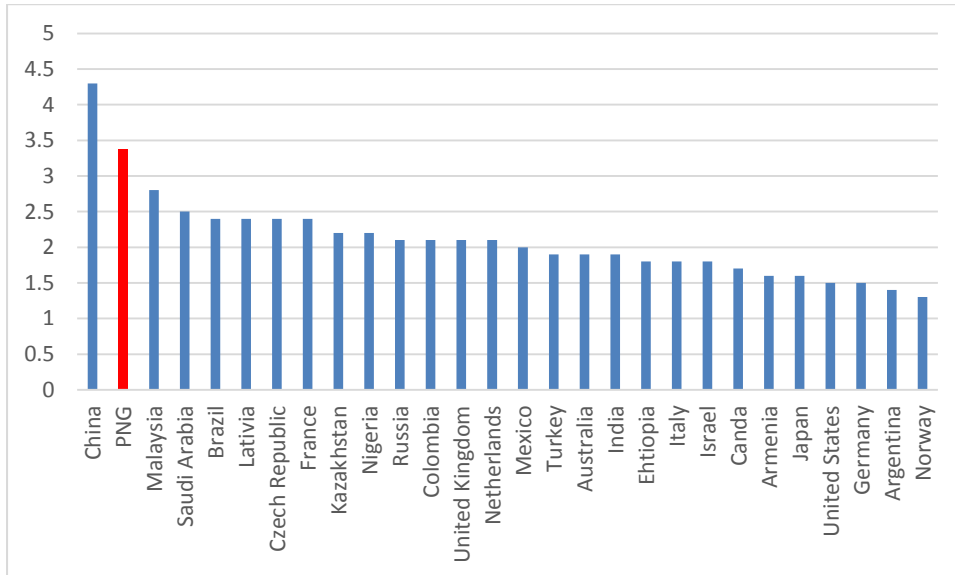
Figure 11 Professorial salaries relative to GDP per capita in PNG and other countries.



Sources: PNG data from this paper. Other countries from Altbach et al. (2012).

The final comparison involves the relativity of professorial to junior academic pay. PNG has a relatively large differential between professorial and tutor pay, second only to China among the countries which Altbach et al. examine

Figure 12 The ratio of professorial to entry-level academic salaries in PNG and other countries.



Sources: PNG data from this paper. Other countries from Altbach et al. (2012).

5. Conclusions

Some simple but important conclusions can be drawn from this analysis. From an international perspective, academics are not underpaid. Indeed, academic salaries in PNG are generous compared to what is observed in other developing countries. Nevertheless, we can see why universities struggle to retain their senior staff in disciplines also in demand from the public sector, such as economics and accounting. PNG universities will also struggle to keep their junior staff in such disciplines from taking up jobs in SOEs or statutory authorities. Junior academics are unlikely to head to the public service (at least not for financial reasons) but they will find SOE salaries attractive. There will also be some statutory authorities which offer salaries above our sample SA. If so, then university salaries are not competitive against SOEs and a range of statutory authorities.

These results explain what we can observe in the university sector. In particular, the UPNG School of Business and Administration has found it difficult to attract and retain staff. What can be done?

First, there is clearly scope for an increase in salaries, but, since academic salaries are already high by international standards, any increase should not be across the board. Rather, it should be carefully targeted to those disciplines where there is competition from the market.

Second, staff are already permitted to undertake consultancies, and this policy should remain in place. However, too much reliance on consultancy income will undermine teaching and research performance.

Third, allowances are very important for university remuneration: much more important than for any other public sector institution. Where universities are able to provide housing, they should take measures to improve their housing stock, in terms of both quantity and quality.

Fourth, it will be difficult, and perhaps impossible and indeed undesirable, to close the gap between academic and SOE salaries. Other measures, such as improving the job satisfaction of academics by improving the work environment, and increasing the supply of quality candidates to fill academic positions will also be critical for ensuring the future of disciplines such as commerce and economics in Papua New Guinea.

Finally, and on a somewhat different topic, the fact that the ratio of PNG salaries to GDP per capita is so high, and the highest for a sample of 29 countries (Figure 11) suggests just how dualistic the PNG economy is. This would be an interesting subject for further analysis.

Reference

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