Chapter 4
The Academic Career

4.1 Introduction

The academic profession is often portrayed as composed of persons strongly driven by intrinsic motives who concentrate primarily on the substance of teaching and research. They are said to be willing to devote much time to their work and often to forego the conveniences of life outside academia in favour of their interesting and demanding academic work. They are described as isolated from the real world and even absent-minded. Given this portrayal, it can be argued that the employment conditions for academics are less important than for the work of most other occupations.

However, we also note contrasting arguments claiming that the details of biography, employment and work are of outmost importance for the proper functioning of academic work. Some journalists have questioned the propriety of professors spending long periods gliding across oceans on their yachts. Some experts claim that the academic productivity of young researchers is undermined by job insecurity, while others consider their instable employment situation as an incentive mechanism for stimulating high academic achievement. Moreover, the academics themselves seem to be more prone than the majority of professions to pay attention to the rites and symbols associated with their work, for example, titles or memberships in selective academies, and to embark on heated debates on minute distinctions related to academic employment and working conditions (cf. various articles in Enders 2001; Enders and De Weert 2004).

In general, the academic profession is viewed as a highly attractive profession in terms of challenging tasks and leeway to shape one's own work. And in many countries, it is a fairly prestigious profession. However, salaries for academics often are viewed as not matching the demanding job requirements and the high occupational prestige. Moreover, there are obvious hardships in the early career stages before academics attain stable appointments: (a) long periods of concurrent learning and productive work, (b) often accompanied only by part-time employment, short-term contract and relatively limited income, as well as (c) a high degree of selectivity

U. Teichler et al., *The Changing Academic Profession*, The Changing Academy – The Changing Academic Profession in International Comparative Perspective 1,
DOI 10.1007/978-94-007-6155-1_4, © Springer Science+Business Media Dordrecht 2013

which forces many scholars to move to other occupational areas usually at an age when moves between sectors tend to be rare (Teichler and Schomburg 2008).

Most descriptions of the academic profession focus on the situation in economically advanced countries. There are relatively few reports focusing on low-income and middle-income countries or on countries in an emerging state as far as the maturity of the higher education and research system is concerned. The available studies indicate an enormous diversity in the employment and work situations of the academic profession across countries. The work situation might be more favourable in the economically advanced countries; for example, in economically less favoured countries, research at universities often is an 'endangered species' (see Vessuri and Teichler 2008). On the other hand, academics in some of these countries face less job risks in their early careers than this is the case in most of the economically and academically advanced countries.

Altogether, substantial information is available on the regulatory system affecting the academic profession all over the world, but there is much less information about the actual situation of the academics. Therefore, it is worth describing various issues of the biography, the career, the employment and work of members of the academic profession, that is, issues less well documented in the past. This might help to illustrate the individual situation of the 'productive workers' of the academic system, that is, those in charge of teaching, research and possibly related services (see the analyses in Kogan and Teichler 2007; Locke and Teichler 2007; Research Institute for Higher Education 2008, 2009).

In the presentation of data that follows, differences by *country* will be documented consistently. Thereby, for conceptual and practical reasons, countries will be subdivided into (a) *advanced countries*, that is, those where junior academics as a rule are trained in the home country (autochthonous doctoral education): Canada (CA), the United States of America (US), Finland (FI), Germany (DE), Italy (IT), the Netherlands (NL), Norway (NO), Portugal (PT), the United Kingdom (UK), Australia (AU), Japan (JP), the Republic of Korea (KR) and the Special Administrative Region of Hong Kong (HK) as well as (b) *other countries*, that is, those where a substantial proportion of the brightest academics spend their key years of training, notably their doctoral education, abroad: Argentina (AR), Brazil (BR), Mexico (MX), South Africa (ZA), China (CH) and Malaysia (MY).

The academics of each country will be subdivided by *type of higher education institution* and by staff category. As regards type of higher education institution, a distinction will be made between those employed at *universities* in terms of institutions both in charge of teaching and research and responsible for awarding doctoral degrees (in Europe only these institutions are called 'university'; in the USA, we note references to 'research university', 'doctoral-granting institutions', etc.) and *other institutions of higher education*, that is, those primarily in charge of teaching and usually not in charge of doctoral awards (see the discussion of varying models of diversity in higher education in Teichler 2007).

As regards *staff category*, we present the responses by senior academics or professors, that is, those in the position of professors and associate professors in US terms, on the one hand, and *junior academic staff*, that is, those regularly employed in lower positions (even though some of them might be named professor, that is,

'assistant professor' or 'Junior-Professor'). In some cases, no reference will be made to junior academics in other higher education institutions because the size, the functions and the employment situation of this group is fairly heterogeneous across countries. This reflects the fact that academic careers are characterised in many countries by a long period of concurrent learning and productive work. Often, but not in all countries, this is combined with a clear status distinctions between junior staff and fully established senior staff, with high selectivity of those allowed to pursue the academic career and with a long period of job insecurity. In many countries, the academics are only accepted and stable members of the academic professor when they have reached a senior position. Moreover, the work situation and the assignments for junior staff differ systematically from those for senior staff notably in (a) reflecting the double function of learning and productive work of the former during their 'formative years' (Teichler 2006), (b) having lesser access to resources, (c) having more limited power in their institutions and (d) less often having the opportunity of spending their time in a balanced way both in teaching and research activities. Finally, a split of the respondents according to senior and junior academics staff provides a more realistic comparison of the responses by countries, because the junior to senior ratio varies strikingly by country.

Some of the themes addressed here were also surveyed in the Carnegie Study undertaken in the early 1990s (see Boyer et al. 1994; Altbach 1996). Where this applies, a comparison will be undertaken between the results of that survey with those of the CAP survey. In those cases, findings can be presented consistently for five advanced countries participating in both studies, that is, Australia, Germany, Japan, the United Kingdom and the United States of America, as well as in some cases also for Korea, Hong Kong and Brazil. For convenience's sake, we call it a comparison between the years 1992 and 2007, that is, those years when the majority of national studies were undertaken in the Carnegie Study and in the CAP study, respectively (cf. also Enders and Teichler 1995; Teichler 1996).

Finally, in this chapter, differences by *disciplinary area* as well as by *gender* will only be addressed selectively. Four countries were chosen for this purpose: the USA, Germany, Brazil and Korea. The USA was chosen as an example of an advanced country with a relatively high proportion of female academics as well as a relatively high proportion of academics in the *humanities and social sciences*, while Germany is the case of an advanced country with a relatively low proportion of female academics as well as a relatively high proportion of academics in *science and engineering*. Similarly, Brazil was chosen as an example of another country with a relatively high proportion of female academics as well as a relatively high proportion of academics in the humanities and social sciences, while Korea is the case of a country, which was not viewed as an advanced country when the Carnegie Study was undertaken but is viewed so now, with a relatively low proportion of female academics as well as a relatively high proportion of academics in science and engineering.

A comparison by country, however, reveals enormous variety even among advanced countries. Though academic knowledge transcends borders and academics are among the most international professionals often with 'cosmopolitan' values, the institutional fabrique of the higher education systems, the rules for study programmes, the governance of higher education institutions, the funding of higher

education and, last but not least, the institutional frameworks for academic careers and for the employment and work characteristics are strongly shaped nationally (see Research Institute for Higher Education 2006); this even holds true, if many of the supervisory and funding responsibilities rest on smaller geographical entities (e.g. the 'states' in the USA or the 'Länder' in Germany).

4.2 Biography and Career

4.2.1 Gender Distribution

The share of women among academics in the 19 countries (more precisely 18 countries and the Special Administrative Region of Hong Kong) surveyed differs strikingly. In 2007, the share of women among professors at universities in advanced countries is highest in Australia with almost four out of ten (39%), as Fig. 4.1 shows. It is about one-third in the United Kingdom (33%) and the USA (32%). In most of these countries, about one-quarter or slightly more of the university professors are women, while their share is one-fifth or even less in Hong Kong (20%), the Netherlands (19%), Germany (18%), Japan and Korea (13% each). In the other countries, the share of women among university professors is mostly higher: 46% in South Africa, 45% in Brazil and slightly less than 40% in the remaining countries.

In almost all countries, the share of women among junior staff is substantially higher than among professors. Women comprise more than half of the junior academic staff at universities of advanced countries in Australia (63%) as well as in the United Kingdom (52%) and in Norway (50%) and more than two-fifth in all other advanced countries addressed except for Germany (38%), the Netherlands (35%), Korea (20%) and Japan (14%). As concerns the other countries, more than half of the junior academics are women in Argentina (54%) and China (52%), while the other countries reported proportions slightly less than half.

At other institutions of higher education, the share of women among senior staff is lower in several countries than at universities. This is due to the fact that the proportion of fields with high shares of men, for example, engineering, often is larger in other higher education institutions than in the sector of research-oriented universities. In 2007, the share of women among professors at other higher education institutions in advanced countries is almost half in Australia and Portugal (47% each) and one-third or slightly more in the majority of cases, while only one-fifth or less in Germany (20%), Korea (19%) and Japan (17%) are women. As regards other countries, the share of women among the professors at other higher education institutions ranges from 48% in Brazil to 21% in Malaysia. Among junior staff at other higher education institutions, we note again higher percentage of women than among senior academics of this institutional type in most countries and again small shares of those in Germany, Japan and Korea.

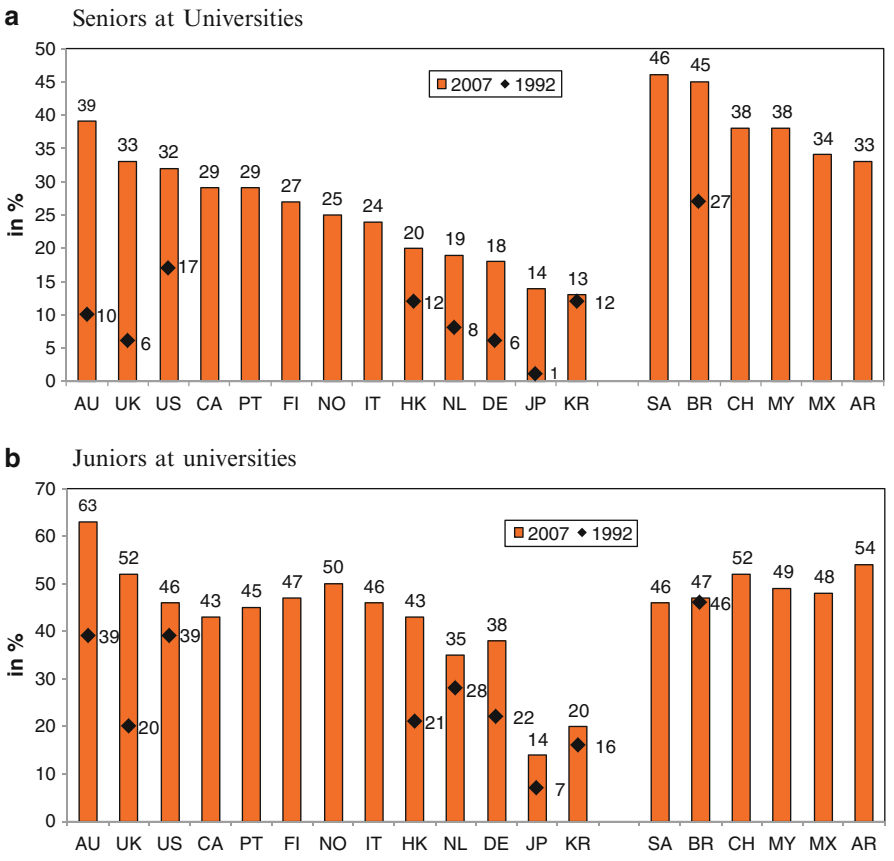

Fig. 4.1 Women academics in 1992 and 2007 (percentage). (**a**) Seniors at universities. (**b**) Juniors at universities (See the country codes on p. 76)

In all the countries selectively included in the analysis by field and gender, we note higher shares of women in the humanities and social sciences than in science and engineering, for example:

- In the USA 41% versus 17% among senior and 48% versus 36% among junior academics
- In Germany 30% versus 3% and 59% versus 22%, respectively
- In Brazil 58% versus 24% and 62% versus 20%
- In Korea 17% versus 7% and 10% versus 11%
- In Japan 22% versus 2% among seniors and 40% versus 0% among junior academics, and in Argentina 27% versus 46% and 62% versus 42% among juniors

In general, we know from available analyses in this area that a lower proportion of women in senior positions than in junior positions often is in part a historical

phenomenon: If the share of women is on the increase historically, the relatively higher share of women among junior staff at a certain point in time will lead to an increased representation among senior staff one or two or three decades later. We also know that there is often career selectivity according to gender in many countries: A lower share of women than men move up to higher stages of the career ladder. This survey does not allow us to disentangle these two factors clearly, but a comparison of the findings of 1992 and 2007 provides some relevant information.

Actually, we observe a most striking *change within 15 years* in terms of an increase of women among senior academics at universities, for example, from 10% in 1992 to 39% in 2007 in Australia, from 6 to 33% in the UK, from 6 to 18% in Germany, from 8 to 19% in the Netherlands, and even from 1 to 13% in Japan. In the USA, where already 17% of the senior academics at universities were women in 1992, the increase to 32% is by no means marginal as well; the same holds true for Hong Kong (from 12 to 20%). In contrast, hardly any change occurred in Korea in this respect (12 and 13%). As regards other countries, we also see a substantial increase from 27 to 45% in Brazil.

In comparing the shares of women *among junior staff at universities in 1992* with those of *senior staff in 2007*, we note that the figures are very similar in most of the countries for which data are available. This suggests that almost all of the change observed from 1992 to 2007 is of a historical nature: More or less the same share of men and women being in a junior position in 1992 progressed to a senior position during the period observed. For example, women have comprised only 10% of senior academics in Australia, but 39% of junior academics in 1992; 15 years later, the share of women among senior academics is exactly 39%. In Japan, the share of women among senior academics in 2007 is even more than twice as high as that of junior academics 15 years earlier. In these countries, the findings support the interpretation of a historical catching-up process, but not any 'glass ceiling' or similar interpretation. In the Netherlands, however, we note that the share of senior academics at universities recently (19%) is substantially lower than the share of junior academics in the early 1990s (28%); the same holds true for the USA (32 and 42%, respectively).

4.2.2 Qualifications

For a long time, a **doctoral degree** has been the normal entry qualification for a career at a university in several of the advanced countries analysed. In Germany (95%) and the USA (94%), almost all professors at universities have been doctoral degree holders in 1992, and we note only small changes until 2007 (95% in Germany and 91% in the USA). Actually, in Germany, academics are expected to have passed the habilitation, that is, a kind of second-level doctoral degree, as a requirement for being eligible for an appointment as a professor.

During the period analysed, the doctoral degree has become increasingly a 'must' in Korea (from 79 to 99%), Hong Kong (from 80 to 94%) and Australia (from 85 to 92%). In the United Kingdom, we note only a moderate growth (from 74 to 78%).

In Japan, the respective quota remained constant at 85%. In contrast, the percentage of doctoral degree holders among professors at universities even decreased during that period in the Netherlands (from 90 to 83%). Thus, there is no clear trend towards a doctoral degree as a mandatory entry qualification across all economically advanced countries.

In most of all other advanced countries, almost all university professors are holders of a doctoral degree in 2007 (97% in Portugal, 94% in Canada and 92% in Finland). In Norway, the respective proportion is 85%. Only in Italy (33%), the doctoral award is not the typical entry qualification to a professor position. In the other countries, the share of university professors with a doctoral degree in 2007 is 93% in Brazil, 72% in Malaysia and less than half in Mexico (52%), China (47%), South Africa (44%) and Argentina (31%).

At other institutions of higher education, the doctoral degree increasingly has become a regular entry qualification. In 1992, only about three quarters of professors of these institutions in the USA, about two-thirds in Germany, about half in Japan, less than half in Australia and in the United Kingdom, and close to none in the Netherlands and Korea have had a doctoral degree. In 2007, more than 80% of professors at other institutions of higher education are holders of a doctoral degree in Korea (97%), Australia (92%), the USA (89%), Germany and Norway (86%) and Portugal (82%), while the respective proportion has remained below three quarters in Japan, below half in the United Kingdom and Finland, and even on marginal levels in the Netherlands (17%).

Actually, the **average age at the time of the doctoral award** (arithmetic mean) differs substantially by country. The professors at universities surveyed in 2007 have been on average 30 years in Germany, 31 years in the United Kingdom, 32 years in Italy and 33–35 years in most advanced countries, when they have been awarded a doctoral degree, while the average age at that stage of the academic career had been relatively high in Finland (36 years) and Norway (37 years). The respective average age had been higher in the other countries: 35 years in China, 36 years in Malaysia, 37 years in South Africa, 38 years in Brazil as well as 40 years both in Argentina and Mexico.

The average age at the award of a doctoral degree as a rule is higher among those who later in their career have become professors at other institutions of higher education than among those who later have become university professors. The average age of junior staff is not presented here, because a substantial proportion of those surveyed have not been awarded a doctoral degree at the time the survey has been conducted; therefore, an average of those awarded a degree at the time the survey is conducted would provide a distorted picture.

4.2.3 Professional and Institutional Mobility

Academics do not easily shift back and forth from academic work to other sectors of employment. However, the notion would be misleading as well that more or less all of them spend their whole career within the higher education and

Table 4.1 Senior academics having been employed full-time outside higher education since their first degree (percentage)

	CA	USA	DE	IT	NL	NO	PT	UK	AU	JP	KR	HK	AR	BR	MX	ZA	CH	MY
Universities	32	45	35	25	29	39	33	42	36	13	20	39	90	33	30	44	12	28
Other HEIs	.	40	77	.	63	28	46	[a]	48	18	14	.	.	36	39	[a]	8	39

Question A4_a: Since your first degree, how long have you been employed in the following? (only full-time), (other) government or public sector institutions, (other) industry or private sector institutions, self-employed

[a]Too small number of respondents

·No other higher education institutions or no other HEIs not surveyed

research system. A substantial proportion of them have worked for some period of their career in a *research institute*. Moreover, the responses to the CAP questionnaire suggest that senior academics have on average almost 2 years of their career been full-time employed outside higher education and research institutes. However, cross-sector professional mobility of academics varies substantially by country.

Table 4.1 indicates the proportion of senior academics who had been *employed full-time outside higher education* at least for a short period since the award of their first degree. On average across countries, 19% of university professors and 17% of senior academics now employed at other institutions of higher education had been employed for some time at research institutes.

Outside the higher education and research sectors, the respective rates have been 20 and 19%, respectively, in the public sector, 16 and 25% in the private sector as well as 5 and 12% being self-employed. Some period of employment outside higher education and research is more or less customary in the careers of senior academics at other higher education institutions in Germany, the Netherlands and Brazil. In contrast, such type of career mobility is rare among academics both at universities and other higher education institutions in East Asia.

Being employed *the whole academic career within a single institution of higher education* is often viewed with pride if the whole career has been spent at a very prestigious university such as Oxford University or Tokyo University but also is frequently called negatively as 'inbreeding'—possibly an indication of narrow experience and possibly caused by non-meritocratic selection. Definitions of inbreeding vary: whether one has been employed all the time at a single institution of higher education, whether all academic employment has been in a single institution, whether one is employed at the university one has graduated from, etc.

In the framework of this study, information is available about the proportion of academics who have been employed in higher education *only by a single institution* of higher education. This can be viewed as one possible definition of 'inbreeding'; one has to bear in mind, though, that these persons might have been employed full-time somewhere at an institution outside higher education; on the other hand, we do not know whether the respondents have been awarded their degrees at the institution where they are employed at the time the survey has been conducted.

Nine per cent of university professors in Germany report no mobility within higher education during the academic career; a change of career is viewed as obligatory at the moment of first appointment to a professorial rank. The respective rate is also quite small, as Fig. 4.2 shows, among university professors in the USA (13%)

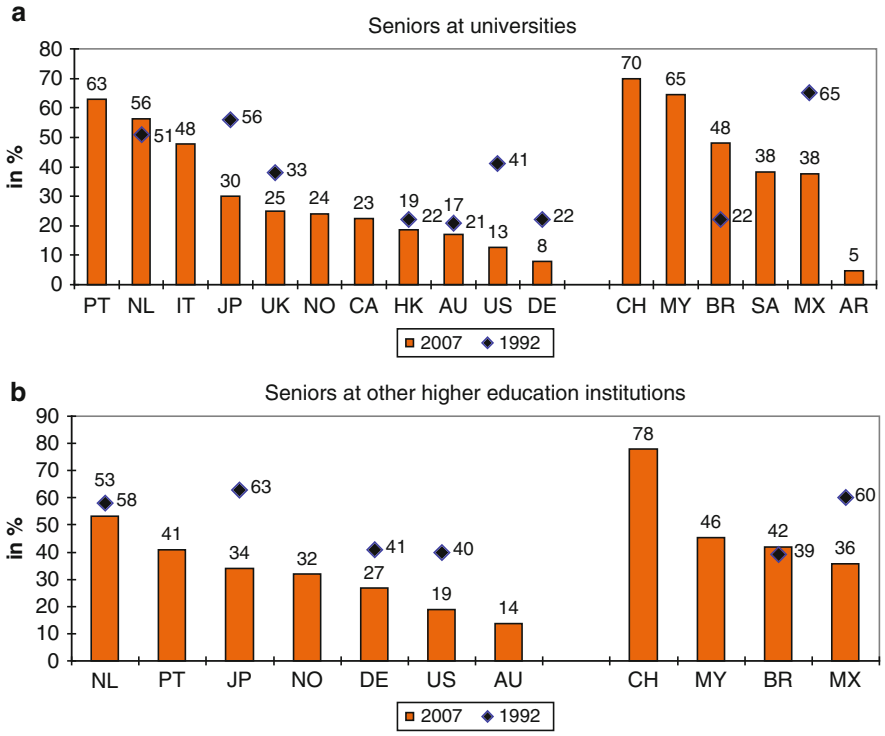

Fig. 4.2 Employed only at a single higher education institution during one's career—1992 and 2007 (percentage). (**a**) Seniors at universities. (**b**) Seniors (for 1992: Senior and junior academics of other higher education institutions combined) at other higher education institutions. Question A5 (2007): By how many higher education institutions or research institutes have you been employed since your first degree?

and quite moderate in various other advanced countries. Inbreeding according this definition is only frequent at universities in Portugal (64%), Italy (48%) and various emerging countries (notably 70% in China). Also, high rates of senior academics at other institutions of higher education not having been professionally mobile within the higher education systems can be found primarily in emerging countries (again notably 78% in China).

Figure 4.2 indicates as well that inbreeding by this definition has declined in most countries since the early 1990s for which respective information is available: For example, in the case of professors at universities in Japan from 56% in 1992 to 30% in 2007 and in the USA from 41 to 13% during the same period. The same holds true for professors at other institutions of higher education. To take the same cases: we note the decline in Japan from 63 to 34% and in the USA from 40 to 19%.

Substantially fewer professors among the 2007 respondents than in the 1992 sample have remained at the same university over their whole career in Germany (from 22 to 9%), Japan (from 56 to 30%) and in Mexico (from 65 to 38%). Today, Germany and the USA are the countries with the highest interuniversity mobility of professors at universities.

Comparing the professor mobility of universities with that of other higher education institutions, we come up with a similar picture—at least where the data is available. The only country notably that is different is Germany, where seniors have stayed more often at other institutions than at universities. Thus, overall institutional mobility has much increased during the last 15 years at universities as well as at other higher education institutions. Germany, the USA and Argentina show the greatest institutional mobility.

4.2.4 International Mobility

To find out how internationally mobile senior and junior staff are or have been during their lifetime, the data describes when the citizenship is or has not been the same as the country of residence at three points in time: at birth (migration background), at the moment of the first degree (student mobility) and currently (foreign staff).

Foreign citizenship, as one can expect, is relatively frequent among advanced countries that are known to accept large numbers of immigrants: 10% of university professors and 22% of junior staff at universities in Canada are foreign citizens at the time of the survey; the respective figures are 8 and 14%, respectively (5% for professors at other higher education institutions), in Australia as well as 9, 8 and 4%, respectively, in the USA. But three other European countries report large proportion of foreign academics, as Table 4.2 shows: the Netherlands, Norway and the United Kingdom. The data show that the respective proportion is even higher in Hong Kong. On the other hand, the number of foreign academics is negligible in Italy, Japan and Korea. The proportion of those born abroad are substantially higher in the immigrant countries: 45% of the university professors in Australia, 36% in Canada and 20% in the USA, while Norway is a country where a higher proportion of university professors were foreigners at the time of the award of the degree than at the time of birth.

In comparing university professors with junior academic staff at universities, we note in almost all European countries a higher proportion of foreigners among the latter (no matter whether we refer to citizenship at birth, at the time of first degree or at the time the survey is conducted). We cannot establish on the basis of these data whether this finding indicates a biographic phenomenon (i.e. substantial numbers of scholars being internationally mobile at the early stages of their career and returning home later) or a historical phenomenon (increase of academic mobility over time). It is interesting to note that the reverse is true for most economically advanced countries outside Europe: a higher proportion of foreign professors than foreign junior staff. Thus, there is no global trend towards the increase of foreign academic staff over time.

In the majority of the economically advanced countries, the proportion of foreign academics at other institutions of higher education is lower than those at universities. As Table 4.2 shows, however, this phenomenon does not consistently apply to all countries. There is about the same ratio of foreigners among professors from

Table 4.2 Foreign citizenship[a] at birth, at the award of first degree and currently (percentage)

		CA	USA	FI	DE	IT	NL	NO	PT	UK	AU	KR	HK	AR	BR	MX	ZA	MY
At birth																		
Universities	Seniors	36	20	5	10	1	11	19	1	17	46	0	36	4	3	8	10	6
	Juniors	30	15	12	10	1	22	21	5	22	37	0	25	1	0	6	14	2
Other HEIs	Seniors	.	12	4	8	.	4	23	8	[b]	38	0	.	.	0	2	[b]	25
	Juniors	.	18	2	12	.	4	6	5	[b]	31	0	.	.	2	3	[b]	9
At the award of first degree																		
Universities	Seniors	33	18	6	10	1	11	22	3	16	35	0	.	3	3	7	7	4
	Juniors	29	14	11	8	1	20	46	6	21	29	3	.	1	0	5	12	2
Other HEIs	Seniors	.	11	4	8	.	3	19	3	[b]	30	1	.	.	0	3	[b]	11
	Juniors	.	14	2	12	.	3	47	5	[b]	26	0	.	.	2	2	[b]	5
Currently																		
Universities	Seniors	10	9	5	6	0	10	19	0	15	8	1	51	2	2	3	6	5
	Juniors	22	8	10	6	1	19	22	3	20	14	0	35	1	0	5	8	2
Other HEIs	Seniors	.	4	3	2	.	2	19	3	[b]	5	0	.	.	0	2	[b]	23
	Juniors	.	11	2	6	.	2	15	2	[b]	9	1	.	.	1	2	[b]	8

Question F9: What was/is your nationality/citizenship and your country of residence?

[a]Percentage of respondents whose citizenship is different from country of current employment

[b]Too small number of respondents

· No other HEIs or no other HEIs surveyed

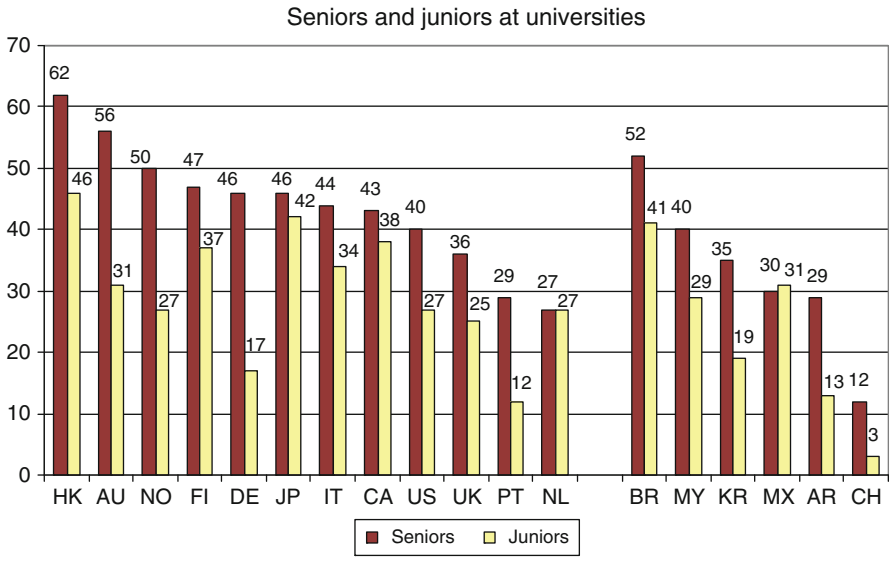

Fig. 4.3 Years spent in other countries—2007 (percentage). Question F13: Since the award of your first degree, how many years have you spent…in other countries (outside the country of your first degree and current employment)?

both types of higher education institutions in Norway, and the proportion of foreigners among staff at other institutions is higher than those at universities in the United Kingdom.

In the emerging countries surveyed in this study, the proportion of foreign staff at other institutions of higher education tends to be low. Only among junior staff at universities in South Africa and among junior staff at other institutions of higher education in Malaysia, do we note sizeable numbers of foreigners.

Figure 4.3 depicts the staff *having spent time outside their country* after their first degree and then coming back to their home country. The Australian university staff and all the Mexican staff have spent the longest time in foreign countries. Also staff from Argentina, Canada, the UK, Portugal and Norway are internationally mobile for relatively longer periods.

One further pointer to internationalisation of academic work is the *language used in teaching and research*. Figure 4.4 depicts the use of a language that is not the first language, by staff members with the citizenship of the country where they are born as well as where they currently live. We can clearly see that a foreign language is much more often used in research than in teaching in all countries. A frequent use of foreign language in teaching indicates widespread provisions of international study programmes; in contrast, we note that foreign languages are employed frequently in countries where the native language is spoken by a relatively small academic community (as in Finland, Italy, Norway, Portugal, Malaysia). Malaysia is the country where a foreign language is used in over three-fourths of the time or more, while in China

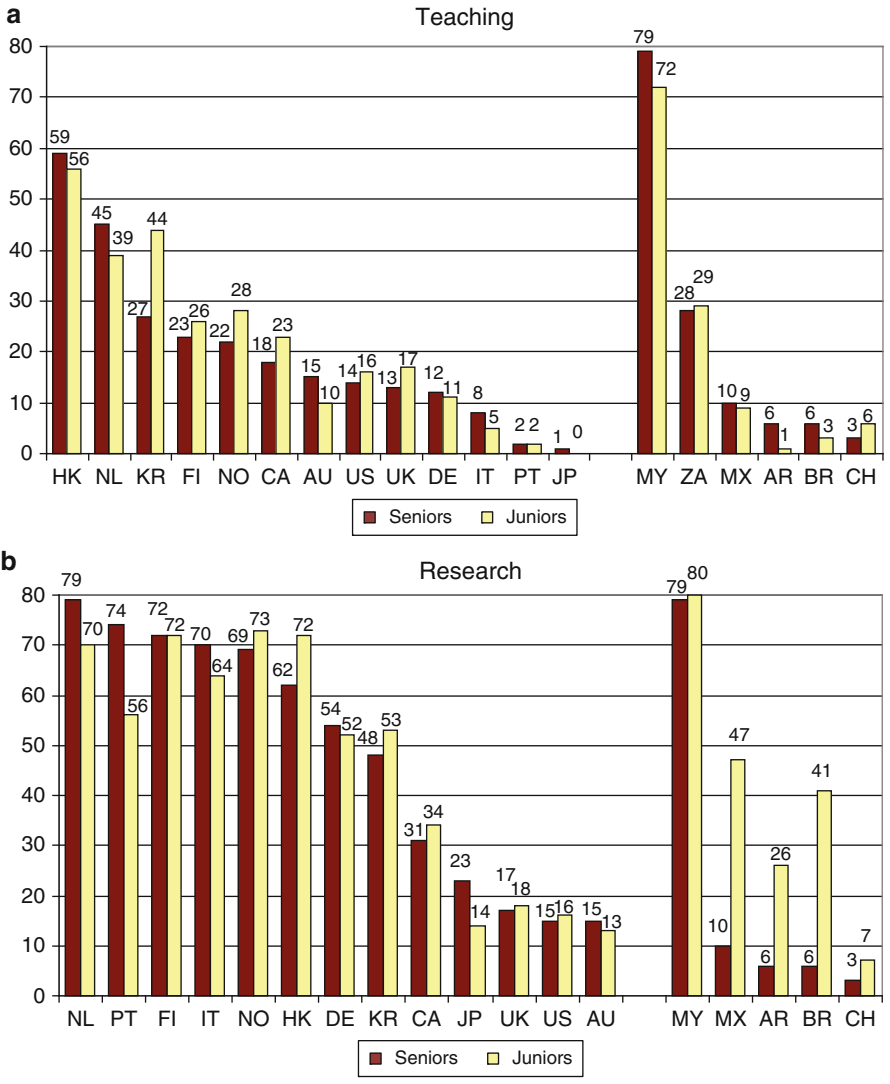

Fig. 4.4 Use of foreign language(s) (language not being the respondents' mother tongue/first language) in teaching and research (percentage of academics at universities whose citizenship is the same of the country of residence). (**a**) Teaching. (**b**) Research. Question F11: Which language do you primarily employ in teaching/research?

and Australia a foreign language is used the least for both teaching and research. Concerning which language is the 'other language', English is most frequently named by the respondents employing a foreign language: 88% in teaching and 95% in research activities.

4.3 Employment Conditions

4.3.1 Part-Time and Short-Term Employment

In many advanced countries, a substantial proportion of academics are employed part-time for some period of their junior career, and employment on a short-term basis is more frequent than for persons of their age in other professional areas. These employment conditions seem to be a function of the long phase of concurrent learning and productive work as well as by the high degree of selectivity which continues up to the promotion to senior positions. Some observers assert that these features of 'precarious' and 'uncertain' employment for junior academic staff are on the increase as the academy becomes more market-driven under the influence of the 'managerial university' (see the overviews on these debates in Enders 2001; Enders and De Weert 2004; Teichler 2006; Finkelstein 2010). In contrast, the full-time employment of professors is customary in advanced countries.

The 'Changing Academic Profession' survey suggests—as documented in Table 4.3—that the prevalence of part-time and short-term employment already varied substantially by country in the early 1990s. It also shows that between the early 1990s and 2007, there were increases in some countries and decreases in others. Obviously, an enormous variety can be observed in this respect in advanced countries, and it would be difficult to conclude that there has been a convergent trend across countries.

Part-time employment of junior academic staff at universities is very low in a substantial number of countries surveyed: None in Korea, 2% each in Canada and Italy and 6% in Finland on the part of the advanced countries. In the other countries, the incidence is 1% in Malaysia, 2% in China, 3% in South Africa and 6% in Mexico. In Japan, for example, the respective rate was 2% in 1992 but has increased to 7% in recent years. In Hong Kong, a substantial decline can be observed (from 26% in 1992 to 10% in 2007). In Australia (5%) and the United Kingdom (6%), part-time employment of juniors was infrequent in 1992, but the rates have doubled and tripled within 15 years (19 and 13%, respectively).

Part-time employment among junior staff at universities was the highest in 1992 in the Netherlands (34%), Germany (25%) and the USA (23%) among the advanced countries that participated in both surveys. According to the recent CAP data, the rate of those employed part-time is 31% in Germany and 30% in the Netherlands. In Germany, the relatively high rate is often explained as being caused by two reasons. First, German universities employ substantial numbers of young academics already during the period of work on doctoral thesis; in that case, part-time employment prevails. Second, employment of young researchers funded by contract funds has increased in the recent two decades; among them, a substantial proportion of the positions created are part-time positions. In the Netherlands, we also have a substantial number of part-time positions for young scholars working on their doctoral thesis. In addition, substantial efforts have been made in the Netherlands to facilitate part-time employment for academics, if they prefer such a solution for a better work-life balance.

Table 4.3 Part-time and short-term employment of academics in 1992 and 2007 (percentage)

		CA	USA	FI	DE	IT	NL	NO	PT	UK	AU	JP	KR	HK	AR	BR	MX	SA	CH	MY
(a) Seniors at universities																				
Part-time	2007	1	2	4	0	3	23	6	3	5	9	0	0	1	75	10	3	11	2	0
	1992		3		2		14		.	6	2	0	2	16		9				
Short-term	2007	5	5	34	3	.	17	4	13	2	23	13	23	27	62	2	11	17	21	8
	1992		5		2		3		.	9	6	1	31	43		7				
(b) Juniors at universities																				
Part-time	2007	2	15	6	31	2	30	11	12	14	19	7	0	10	88	26	6	3	2	1
	1992		23		25		34		.	6	5	2	1	26		41				
Short-term	2007	82	56	50	79	.	41	74	69	28	52	39	86	82	68	15	35	8	23	6
	1992		63		79		44		.	28	36	4	33	67		33				
(c) Seniors at other higher education institutions																				
Part-time	2007	.	2	10	6	.	41	10	2	[b]	6	0	0	.	.	·	65	10	[b]	2	0
	1992[a]		12		7		51		.	6	5	.	.	.	.	·	47				
Short-term	2007	.	9	8	2	.	11	13	15	[b]	14	9	19	.	.	·	4	4	[b]	24	29
	1992[a]		30		6		15		.	10	26	.	.	.	.	·	4				
(d) Juniors at other higher education institutions																				
Part-time	2007	.	14	11	12	.	59	13	6	[b]	11	1	0	.	.	·	84	16	[b]	2	0
Short-term	2007		63	12	41		17	61	75	[b]	34	23	80			·	5	20	[b]	29	12

Question A7 (2007): How is your employment situation in the current academic year at your higher education institution/research institute? (categories 'part-time employed' and 'part-time employed with payment according to work tasks')
Question A11 (2007): What is the duration of your current employment contract at your higher education institution or research institute? (categories 'fixed-term employed with permanent/continuous employment prospects (tenure-track)' and 'fixed-term employed without permanent/continuous employment prospects')
[a]Senior and junior academics of other higher education institutions combined
[b]Too small number of respondents
·No other HEIs or no other HEIs surveyed

In the USA, part-time employment of junior academic staff has declined over time (to 14%). However, the survey does not show whether part-time employment has been substituted by honorarium-based payments, because persons paid through an honorarium for part-time teaching have not been surveyed.

Short-term employment of junior academic staff at universities prevails in the majority of advanced countries. The highest rates are reported for Korea (86%), Canada and Hong Kong (82% each), Germany (79%), Norway (74%) and Portugal (69%) as well as Argentina on the part of emerging countries (68%). In contrast, less than 10% are short-term employed in Malaysia and South Africa.

For those countries for which information is available both for the early 1990s and for recent years, we do not note any consistent trends. In some cases, short-term employment has increased substantially: For example, in Japan from 4 to 39% and in Hong Kong from 33 to 82%. In some countries, this rate remained more or less constant, for example, in Germany (both 79%), in the Netherlands (44 and 41%) and in the United Kingdom (28%). There are countries as well where a decrease is noted: A modest drop in the USA (from 63 to 56%) and a more substantial drop in Brazil (from 33 to 15%).

There is no consistent pattern across countries for the short-term employment of academic junior staff at universities according to disciplinary group or gender. Altogether, men are slightly more often employed short-term than women. In Germany (98%) and the USA (78%), men in science and engineering and in Korea (82%) and Brazil (15%), men in the humanities and social science report the highest quota of short-term employed among junior staff at universities.

The part-time employment of professors at universities was rare both in 1992 and 2007. It remained on a level of 0–6% in most of the countries analysed. Only in the Netherlands do we note an increase from 14 to 23%. In Australia the increase has been from 2 to 9%. Also in the other advanced countries, the respective ratio has been between 3 and 6%. Among the other countries, the respective ratios is small in most cases, while the Latin American countries stand out with higher ratios of part-time employment among professors: 75% in Argentina, 11% in South Africa, and 10% in Brazil (part-time professors were not surveyed in Mexico).

Short-term employment of senior academics at universities was slightly more frequent in 1992 than part-time employment; the rates ranged from 1% in Japan to 9% in the United Kingdom. Up to 2007, the rates of short-term employment among professors increased substantially in three of the countries: in Australia from 6 to 23%, in the Netherlands from 3 to 17% and in Japan from 1 to 13%. In contrast, it has declined in the United Kingdom from 9 to 2%. In Korea, the rate of short-term employed professors has decreased substantially during that period from 43 to 23%.

In the economically advanced countries with information available only for 2007, Norway (3%) and Canada (5%) report very low rates and Portugal a somewhat higher rate (13%) of short-term employment among senior academics at universities; in contrast, a shift towards short-term contracts for university professors has been realised in Finland (34%). In other countries, ratios between 20 and 30% are often reported, while Argentina (62%) has the highest rate of short-term employed university professors of all the countries analysed.

Part-time employment of professors at other institutions of higher education is quite low (at most 10%) in almost all the countries analysed; a much higher ratio is reported only in the Netherlands (41%) and an extremely high ratio only in Brazil (65%). In many countries, the rate of short-term employment of professors at other institutions of higher education is higher than that at universities. Among advanced countries, we note higher rates than 10% only in Portugal (19%), Australia (16%) and Norway (13%). In other countries, higher rates than 10% dominate (mostly between one-fifth and one-third) with the highest rates in Malaysia (29%).

We have to bear in mind, though, that an international comparison of part-time and short-term employment is difficult because of different employment practices. In some countries, many doctoral candidates are university employees and thus contribute in the statistics to seemingly higher 'unstable employment' while they are financially and socially better off than doctoral students with or without fellowships. In Germany, for example, most of the junior academics are paid only for small tasks over short periods (in contrast to a regular contract) and, thus, contribute to the overall image of high proportions of part-time and short-term employment. In some other cases, persons with similar tasks would be paid through an honorarium and, thus, would not show up in the statistics. In some countries, many affiliated teaching and research assistants are not viewed as regular employees and are not included in the lists of academic staff, while in other countries those tasks are taken over by regular employees. In some countries, part-time professors are regular employees, while in others, part-timers only work on an honorarium basis and therefore are excluded from the CAP survey.

4.3.2 Income

In general, the academic profession is considered as not being as highly paid as various other professions. High intrinsic motivation, interesting work and the leeway to shape one's own work are generally viewed as crucial for the attractiveness of the academic profession. It is often claimed, however, that the opportunity of earning side-income might be an attractive element of the academic profession.

In the CAP questionnaire, the academics were asked to state their *gross annual income*. For comparative purposes, this has been recalculated in US$. The following data have to be viewed with caution. We note substantial differences as regards items included or not included in gross income (e.g. contribution to a pension system). Moreover, the purchasing power of the respective countries is not taken into consideration.

On that basis, we note the following gross annual remuneration of university professors in advanced countries (total sum by their university) is about

- 159,000 US$ in Hong Kong
- 114,000 US$ in the USA
- 98,000 US$ in Japan

– 93,000 US$ in Germany
– Between 76,000 US$ and 83,000 US$ in various other advanced countries
– 60,000 US$ in Korea

In the other countries, the nominal income is lower. It ranged from about 32,000 US$ in Brazil down to about 8,000 US$ in China.

The average income for senior academics at other institutions of higher education is between 60,000 and 80,000 US$ in most advanced countries. As a rule, it is lower than that of university professors except for Japan, where the highest remuneration is reported from professors at teaching-oriented institutions (102,000 US$), and for Finland where the average income of both groups of professors is around 74,000 US$. Among other countries, the professors at other institutions of higher education are exceptions as they earn more than their colleagues at universities (about 29,000 US$ as compared to about 26,000 US$).

Junior academics at universities report on average by country an income ranging from about half to about three quarters of that of senior academics. There is not sufficient information available in the CAP survey about the career stages of the respondents to draw clear conclusions about the typical income differences according to career stages. In absolute figures, junior academic staff at universities are most highly paid in Japan (82,000 US$) and Hong Kong (76,000 US$), while in other advanced countries, the figures range from 41,000 to 64,000 US$.

Junior academics at other higher education institutions have a higher remuneration on average than their peers at universities—a finding certainly linked to the fact that there are more nonprofessorial employment provisions for senior academic staff at these institutions than at universities in many countries. The highest figures are reported for Japan (83,000 US$) and Portugal (71,000 US$).

More than one-third of the academics surveyed in the CAP study have some *income beyond the remuneration from their own university*. Detailed data are not provided here, because they are not suitable for providing a valid picture of the situation across countries. First, the individual countries had different approaches as far as the exclusion and inclusion into the survey of various categories of part-time and honorarium-based academics are concerned. Second, the questions regarding additional employment and income were not equally phrased across countries and obviously not equally understood by the respondents. In one respect, the data show a striking peculiarity in some countries: As already pointed out, the proportion of those having another income is especially high in Latin American countries where part-time teaching in the area of one's major professional expertise and major professional assignment is a widespread phenomenon.

Though many academics do additional work, in the more advanced countries the additional remuneration hardly constitutes a considerable percentage of their overall income. Senior academics at universities report that their additional income is very moderate on average; in most countries, it doesn't exceed much more than 10% of the overall income. The USA is the only exception, where the additional income is in the range of about 20% in 2007, whereby an increase is visible since the early 1990s (see Fig. 4.5). The relatively high side-income reported by US

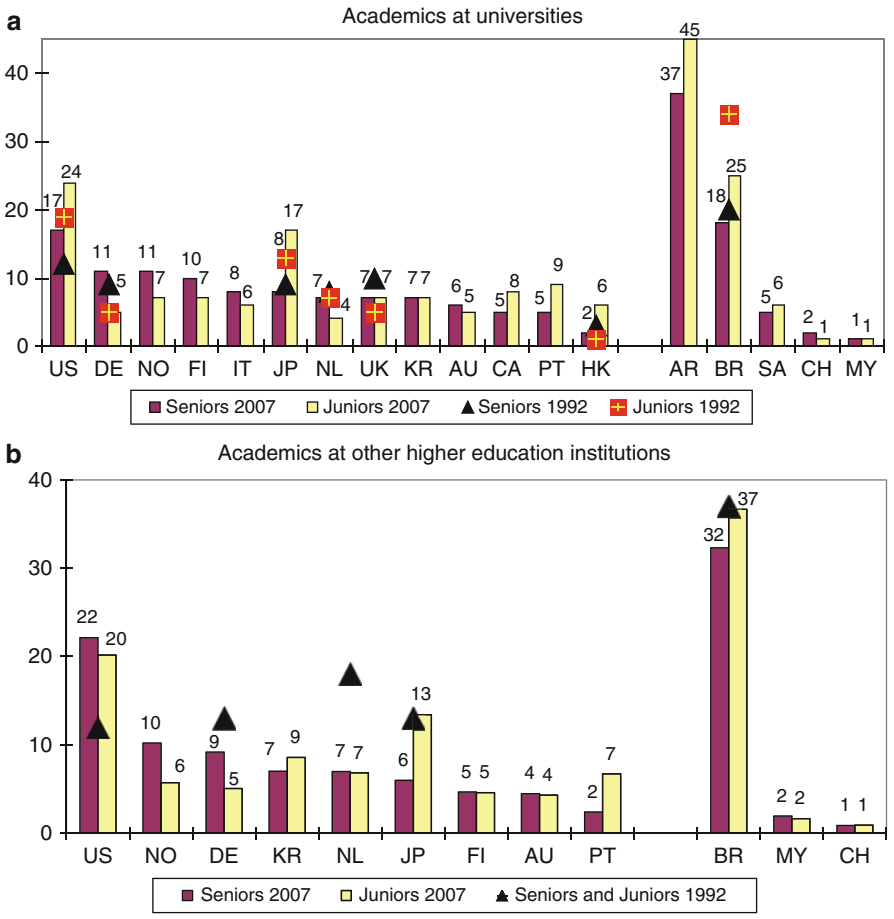

Fig. 4.5 Percentage of additional income of academics 1992 and 2007. (**a**) Academics at universities. (**b**) Academics at other higher education institutions. Question A12 (2007): What is your annual gross income by the following sources? Here: (A12_2 + A12_3)/(A12_1 + A12_2 + A12_3)

senior and junior staff reflects the fact that many academics in the USA do not receive a salary all the year around, but only for 9 of the usual 11 months paid for employees. In addition, junior academic staff in Japan reports a relatively high level of additional income.

As regards emerging countries, the income from other sources is exceptionally high in the Latin American countries. As already stated, a considerable proportion of part-time professors were surveyed in these countries. In Brazil, over 70% report side-income and 10% report an income that constitutes more than two-fifth of their overall gross income. In Argentina, over 40% earn half of their income from additional sources.

4.4 Work Situation

4.4.1 Quality of Facilities and Resources

It is generally assumed that the quality of academic work does not just rely on the talent of the academics. Rather, the *quality of facilities and resources for teaching and research* can be a key for the actual academic performance. Therefore, the academics surveyed have been asked to assess the quality of their resources and facilities.

In Fig. 4.6, the *average ratings* are presented for all the eight major areas of facilities and resources addressed in the survey which allow us to compare across countries, types of higher education institutions and ranks of academics: classroom, technology for teaching, laboratories, research equipment/instruments, computer facilities, library holdings, office space and secretarial support. We note that the university professors from Hong Kong (2.2 on a five-point scale) and from Finland (2.3) give the highest rating to their facilities and resources for teaching and research in 2007. The professors of universities from most of the other advanced countries seem to be quite content as well with their resources (average ratings between 2.5 and 2.7). In contrast, university professors from Italy and the United Kingdom (both 2.9) as well as all those from most of the other countries (ranging in most cases from 2.7 to 3.1) are not impressed by the quality of their working conditions; in Argentina, the professors are the least content in this respect (3.1).

Junior academic staff at universities rates their working conditions about as favourably as the senior academics (both reach an overall average of 2.7). There are a few countries where the juniors' ratings are slightly more positive and other countries where the reverse is true; only in Argentina do junior academic staff consider the facilities and resources clearly worse. The similarity of ratings by junior and senior staff comes as a surprise, because it is widely believed that senior staff have power which they use to obtain a 'bigger piece of the cake'. What does this finding mean: Do junior staff have lower expectations or more or less equal access to these facilities and resources?

Also, the average ratings on the part of academics at other institutions of higher education do not differ substantially from the ratings of their peers at universities. They rate their conditions only slightly lower in the overall average (senior staff 2.8 and junior staff 2.9). There is one exception: Academics at other institutions of higher education in Brazil view their working conditions somewhat more positively than their colleagues at universities.

In examining the university professors' rating of the individual areas of facilities and resources, we might opt for varying perspectives: the appreciations of the different types of facilities across countries, the specific areas emphasised or criticised by professors from countries with an average very positive or a negative view of the resources and facilities in general, and finally the most positive or negative assessments of the individual areas of facilities and resources.

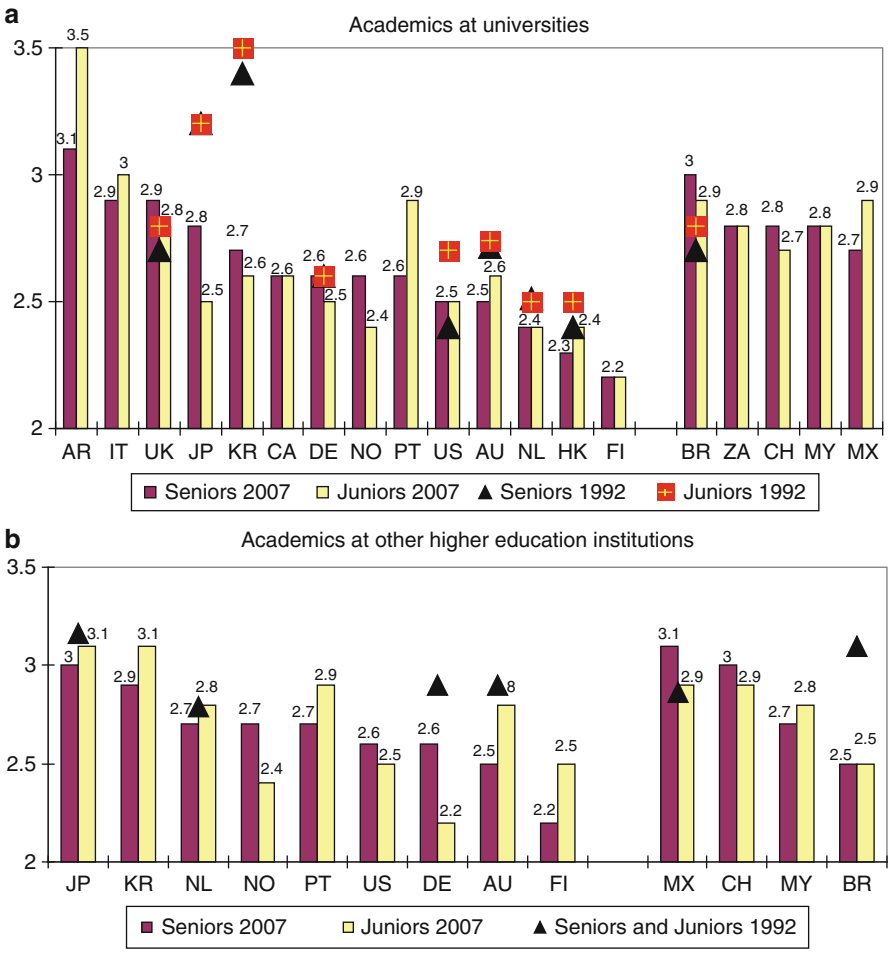

Fig. 4.6 Academics' assessment of facilities and resources 2007 (arithmetic mean, 2007: on a scale for 1 = excellent to 5 = poor, 1992: On a scale for 1 = excellent to 4 = poor). (**a**) Academics at universities. (**b**) Academics at other higher education institutions. Question B3 (2007): At this institution, how would you evaluate each of the following facilities, resources or personnel you need to support your work? Means of eight categories. 1992 Senior and junior academics of other higher education institutions combined

Looking at the *various facilities and resources* addressed across countries, we note that the ratings of the telecommunication (2.2) and library facilities and services computer facilities (2.4 each) are most positive, followed by those of office space, classrooms and technology for teaching (2.6 each). Not so highly appreciated on average are research equipment and instruments (2.8) as well as secretarial support (3.2).

Looking at differences by county, we note:

- Among those university professors from those countries who rate the facilities and resources altogether very positively, the university professors in Hong Kong appreciate the quality of classrooms, technology for teaching, computer facilities and the library facilities as highly appreciated as compared to other countries. The Finnish professors also positively rate the quality of classrooms, the technology for teaching and their office space clearly more often than the average of respondents.
- Among those respondents whose average ratings are close to the average of advanced countries, university professors in the Netherlands often observe good research equipment and instruments as well as good secretarial supports. Respondents from Norway underscore the quality of computer facilities, those from Australia are satisfied with their office space and those from Korea appreciate the telecommunications. In contrast, many university professors in Germany rate the library facilities and services not very positively.
- As the average across the eight areas suggest, university professors from the United Kingdom and Italy formulate critique with respect to various areas addressed. In addition, university professors from Japan relatively often point to deficiencies with regards to classrooms, technology for teaching and computer facilities.
- The university professors from emerging countries on average rate laboratories, research equipment and instruments as well as secretarial support consistently worse than their colleagues from advanced countries. In contrast, university professors from China appreciate the classrooms and the technology for teaching, and those from South Africa, the library facilities and services as well as their office space.

Finally, in looking at the *individual areas of facilities and resources*, we observe some additional noteworthy differences across countries:

- Classrooms are often assessed positively by university professors not only from Finland (75%) and Hong Kong (70%) but also from China (75%) and the Netherlands (74%). Least frequent positive assessments are reported for Japan (30%) and Argentina (31%).
- Technology for teaching seems to excel clearly in Finland and Hong Kong (75%), while positive ratings are less common in Brazil (33%), Italy, Japan (37% each) and Argentina (38%).
- Laboratories are favourably assessed by about half of the professors from universities in Finland, the Netherlands, Hong Kong, Germany and Australia, but by less than one-third in Argentina, Brazil, Italy and Japan.
- More than half of the university professors in Australia, Hong Kong and the Netherlands rate the research equipment and instruments positively in contrast to one-fifth in Argentina and about one-third in Brazil, Italy, China and the United Kingdom.
- Computer facilities are notably praised by university professors from Hong Kong (80%), Norway and Finland and least often appreciated by their colleagues in Brazil (37%), Argentina (43%), Italy (47%), China and the United Kingdom (48% each).

- The working conditions as far as telecommunication is concerned are rated most often positively by university professors in Norway and Hong Kong (84% each), Finland (81%) and the Republic of Korea (80%). Less than half positive ratings can be noted only in Argentina (38%) and China (41%).
- Library facilities are viewed as exceptionally positive in Hong Kong (88%) and Australia (80%). Less than half of the ratings are positive in all emerging countries except for South Africa and among the advanced countries only in Germany (44%).
- Personal office space was most often positively viewed by professors in Finland (78%) and Norway (74%) and least often in Argentina (29%) and China (35%).
- Finally, secretarial support was assessed positively by about half of the university professors in advanced countries: the Netherlands, Hong Kong, Finland and Germany. Positive ratings are seldom—a quarter or less—in all other Asian countries and Norway.

An analysis of change over time cannot be undertaken accurately here. Although the same question was posed in both surveys, a *four-point scale was employed in 1992* as compared to a five-point scale in 2007. Altogether, the data suggest that there has been an improvement of the working conditions for teaching and research in all countries for which information is available at both points in time. Only the ratings of secretarial support are less favourable in 2007 in various countries. The greatest turn towards more positive ratings can be observed for two countries where the ratings had been fairly negative in average in 1992: Japan and even more so Korea.

All the ratings are on average not overwhelmingly positive, but they suggest that it is only a minority of academics in the country surveyed who really complain about their working resources. Moreover, a comparison of the surveys suggests that contemporary academics have a more favourable views of their working resources that they their predecessors in the early 1990s. This holds true both for the majority of academics in economically advanced countries and in the emerging countries surveyed.

4.4.2 Perceived Change of Working Conditions

It should be added, though, that an additional question has been raised in the CAP questionnaire: whether the overall working conditions in higher education have improved or deteriorated since the respondents started their careers. Actually,

- 27% on average of university professors in advanced countries report an improvement and 47% a deterioration; the responses by professors at other institutions of higher education are almost identical on average (30 and 46%). In contrast, 46% of the university professors in emerging countries note an improvement and 25% a deterioration of working conditions; the responses by professors at other institutions of higher education in emerging countries are even more positive (46 vs. 19%).

- Although junior academic staff can only look back at a shorter career span on average, their perceptions of the change of working conditions only differ moderately from those of the professors'. Of the junior staff at universities, 23% on average across advanced countries observe an improvement and 36% a deterioration; the junior staff at other higher education institutions in advanced countries hold a more negative view (19% vs. 42%). Again the respondents from emerging countries observe more often an improvement than a deterioration of the working conditions (40% vs. 27% and 45% vs. 22%, respectively).
- The views of academics from advanced countries vary substantially in the respects. On the one hand, academics from Korea and Portugal predominantly note an improvement. On the other hand, academics from the United Kingdom, Germany and Australia hold the most negative views.

The two findings are incompatible. When a historical analysis of the perceived working conditions with respect to detailed areas of resources for their own work is undertaken through a comparison of surveys conducted at a different point in time, the working conditions for academics seem to have improved moderately on average over time both in economically advanced countries and emerging countries. When academics are asked retrospectively about changes of working conditions in higher education in general during the course of their career, perceptions of improvement only prevail in emerging countries and in a few economically advanced countries which have 'caught up' recently, while the perception of deterioration prevails in the majority of advanced countries. It is justified to assume that retrospective questions as regards higher education in general are more likely to elicit nostalgia to the 'good old days' in the majority of advanced countries rather than a realistic observation.

4.5 Time Budget

4.5.1 Time Committed to Work and Time Distribution Across Work Tasks

Working time has been a frequent theme in discussions about the situation of the academic profession. Two issues are frequently named.

First, the overall working time is frequently addressed. In economically advanced countries, it is widely assumed that most academics are strongly devoted to their work task and spend more time for academic work than officially required. In some developing countries, however, concern is widespread that low wages in higher education necessitate considerable 'moonlighting' at the expense of work time for the academic profession.

Second, there are frequent debates about how to achieve a balance with respect of the time spent for various functions. For example, concerns are voiced in some countries that large numbers of students might enlarge the involvement in teaching and teaching-related activities to such an extent that insufficient time remains for

research. Moreover, the critique is widespread among academics themselves that too much time might be spent on administrative matters at the expense of the core functions of teaching and research.

There are complaints that junior staff might not have enough time for research which would be needed to qualify for a professorial position. The critique is frequently heard that the activities required for quality assurance might have gotten out of hand in comparison to the productive working time in the areas of teaching and research. Other issues might be added here. All these discussions suggest that information about the actual working time is relevant.

However, self-ratings of working time are by no means easy and reliable modes of inquiry. The critique has frequently been voiced that self-rating of working time might be too unreliable, notably if undertaken by professionals with very flexible schedules and a high degree of intrinsic motivation. Both of these factors might contribute to exaggerated reports. Moreover, it is not easy to allocate time estimates to the various functions of the academic profession: For example, to what extent does attendances at conferences, reading of books and talking with a colleague contribute to teaching, research or possibly other functions? There might be different views across countries as well: Advice of doctoral candidates is understood as part of the teaching functions in some countries and part of the research functions in other countries. Teaching in the framework of continuing education is viewed as part of teaching in some countries and part of a general service function in other countries.

This study cannot overcome all the problems which call for a cautious interpretation of the findings. The CAP study, however, in the same way as the precursor Carnegie Study, successfully counterbalances one widely spread weakness of surveys of the time budget of academics. Both surveys asked the respondents to estimate the average time spent—altogether and for various functions—separately for the period of the year when classes are in session on the one hand and on the other hand for period when classes are not in session. Comparisons between different surveys suggest that academics if only asked to report their working time without such a distinction tend to think about their working time when classes are in session. As a consequence, they might overestimate in such surveys both the average weekly working time as well as the time spent on teaching. This study, however, provides information about the estimated work time both when classes are in session and when classes are not in session; an aggregate score of the average working time is calculated based on the assumption that classes are in session in about 60% of the working weeks per year and classes are not in session in about 40%.

4.5.2 Weekly Working Hours

In 2007, university professors of the advanced countries on average have worked, according to their own observations, about 48 h per week. This is about 120% of the usual full-time working time in those countries, but it is by no means unusual for a

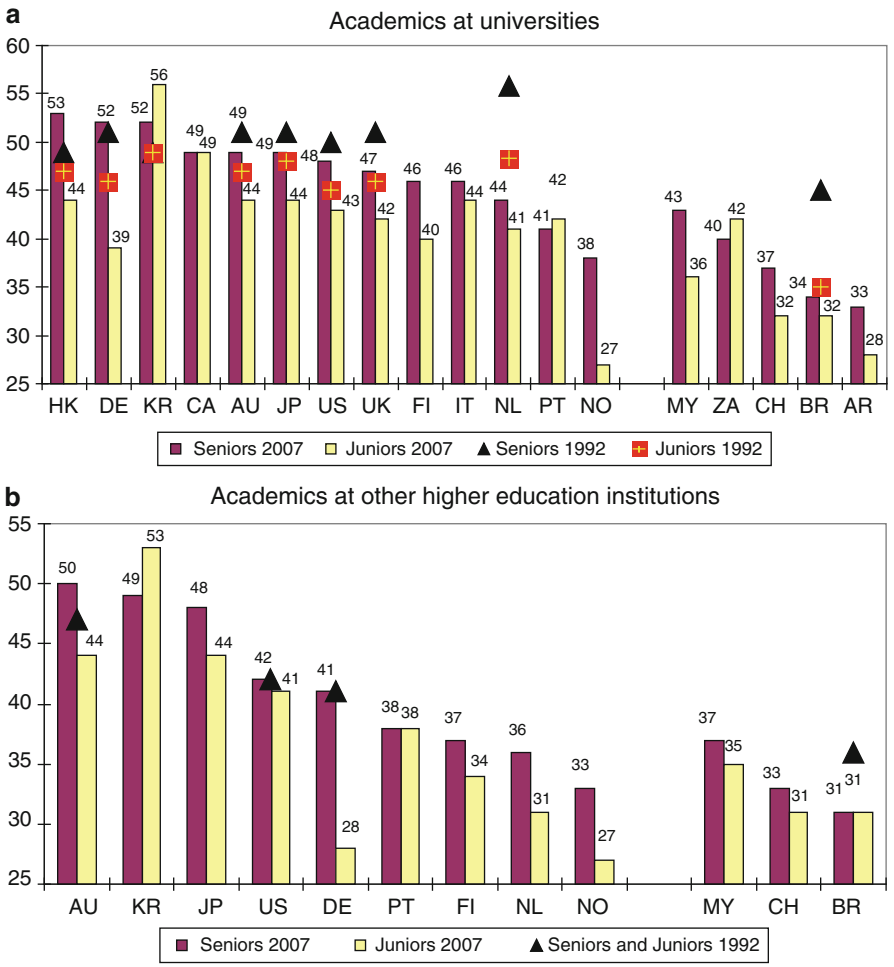

Fig. 4.7 Average weekly working hours (calculated as 60% when classes are in session and 40% when classes are not in session) in 1992 and 2007. (**a**) Academics at universities. (**b**) Academics at other higher education institutions. Question B1 (2007): Considering all your professional work, how many hours do you spend in a typical week on each of the following activities? (hours per week)

profession with high motivation, flexible schedules, room for disposition and a high sense of responsibility. The average working hours differ substantially by country, as Fig. 4.7 shows. Highest working hours are reported by university professors Hong Kong (53 h), Germany and Korea (52 h each). In contrast, university professors in the Netherlands, Norway (44 h) and Portugal (41 h) do not seem to work much more than the usual work time of employees.

The respective figure for university professors in emerging countries is 40 h. The average number of work hours ranges between 41 and 44 in the majority of

countries, while lower figures in Brazil (34 h) and Argentina (33 h) reflect the fact that a significant proportion of the respondents are professionals active in higher education on a part-time basis.

Professors at other institutions tend to spend less time on academic work than their colleagues at universities: The average figures are 43 h for advanced countries and 38 h for emerging countries, that is, 5 h less and 2 h less, respectively. Relatively high weekly working hours are only reported by respondents in Australia (50 h), Korea (49 h) and Japan (48 h), while less than 40 h are reported for five countries. As prior studies have shown, academics that are devoted to research on average spend more time on academic activities altogether than those devoted to teaching.

The weekly working hours of junior academic staff at universities seem to be fewer on average than that of seniors: 5 h less (44 h as compared to 48 h) on average of the advanced countries and 3 h less (37 h compared to 40 h) on average of the other countries. Less than half of the difference on average time is due to the fact that larger proportions of junior staff than those of professors are employed part-time. It should be noted, though, that the average weekly working hours of junior staff at universities vary strikingly by country: Very high figures are reported to Korea (56 h) and Canada (49 h), while very low figures hold true for Brazil (34 h), Norway (33 h) and Argentina (29 h).

The average working hours of junior staff at other institutions of higher education are 39 h in advanced countries and 37 h in emerging countries, that is, 5 h less and 1 h less, respectively, than those of the senior staff. Junior staff at teaching-oriented institutions in Korea report the highest average weekly working hours (53 h), that is, more than senior academic staff at these institutions in Korea.

Across countries and functions of the respondents, the academics surveyed in 2007 spend on average 2 weekly hours more when classes are in session than during the periods of the year when classes are not in session. Thereby, schedules vary substantially: While in some cases fewer hours are customary when classes are not in session, the opposite is true in other cases. In the early 1990s, the academics worked on average 4 h more when classes are in sessions than during the periods of the year when classes are not in session.

Altogether, these figures do not confirm the traditionally widespread view that many academics—often highly intrinsically motivated and highly devoted to academic work—are willing to spend substantially more time for work than persons in other occupations. In assuming—somewhat simplistically—that 40 h per week would be the normal working time in well-established blue-collar occupations at most of the countries considered here, we note in 2007 that only university professors in advanced countries report that they invest on average about two-tenths more time for their academic work than one would expect from employees in other sectors. About one-tenth more investment is reported on average by professors from other higher education institutions in advanced countries, junior staff from universities in advanced countries and by university professors in emerging countries. The others—junior staff at other higher education institutions in economically advanced countries as well as all except for university professors in emerging countries—do not work more hours than the typical employee.

In this context, it is interesting to examine changes over time. In the countries which were included both in the comparative survey in the early 1990s and in 2007, only the university professors in Germany and Korea among the advanced countries report an increase of the actual work time (3 h on average in both countries); the same holds true for university professors in Mexico. In the majority of countries, though, we note a reduction of the actual work time—the most dramatic example is the Netherlands (from 56 to 44 h). Also among professors at other higher education institutions as well as junior staff at both types of higher education institutions, we note not a consistent trend across all countries, but more cases of a reduction of work time than cases of an increase.

The dominant trend of a reduction of the academics' actual work time does not come as surprise: The academic profession seems to lose its exceptionality in the course of higher education expansion; moreover, an increasing number of academics seem to care more for a 'work-life balance' rather than for a strong devotion to academic work. On the other hand, we note in many countries the increasing managerial power, a growth of evaluation activities and increasing efforts in recent years to raise the quality and efficiency of higher education through incentives and sanctions. One could have assumed that these changes might have pushed the academics to invest more working time—the resource the academics can control most easily themselves—into their academic work. A comparison of the results of the Carnegie study and the CAP study, however, suggests that fewer academics are mobilised to invest more time in academic work relative to the numbers decreasing their work budget down in the direction of average employees.

4.5.3 Work Time Spent on Teaching and Research

Teaching and research are the core functions of academics. At research-oriented universities, a balance of time spent by professors on both functions is widely assumed as desirable. The functions of junior staff at research-oriented universities might be divergent: Some might be primarily in charge of research, some might be expected to strike a similar balance as professors, and others might be predominantly in charge of teaching. Finally, teaching is viewed generally as the clearly dominant task of professors at other institutions of higher education.

Teaching is the dominant function for university professors in most countries at those periods of the year when classes are in session: During those periods, they spend on teaching among advanced countries on average 38% and on average of emerging countries 46% of their actual working hours. This includes both teaching in classes and teaching-related activities such as preparation for classes, guidance and examinations. However, this proportion varies from 54% in South Africa as one extreme to 31% in Korea and 30% in Australia as the opposite extreme; in the latter two countries and Japan, university professors spend less time on teaching than on research even during the periods when classes are in session.

Research is also a frequent activity of university professors *when classes are in session*. The proportion of time spent on research during those periods is 32% on

average in advanced countries and 29% in emerging countries. Naturally, it is the prevailing activity when classes are not in session.

In calculating the *overall working time for the whole year*, we note that university professors in all advanced countries on average spend more time on research than on teaching. However, the ratios vary substantially, as Fig. 4.8 shows. The proportion of the overall working time spent on research ranges among advanced countries from 34% in the United Kingdom to 45% each in Korea and Italy, while the time spent on teaching ranges from 23% in Australia to 35% in Portugal. Australian and Korean university professors report that they spend about 1.7 times as much of their working time on research as on teaching; in contrast, university professors in Finland, Portugal and the United Kingdom spend about 1.1 times as much of their working time on research as on teaching. The situation is even more diverse in emerging countries. While university professors in Argentina and China spend somewhat more time on research, teaching dominates the schedules notably in South Africa but also somewhat in Brazil and Malaysia.

We note various pressures to change the balance between teaching and research. Quality assessment activities grew in most countries both in the area of research and teaching. Rising student-teacher ratios in some countries call for more working time of academics in teaching. The growing popularity of ranking of world-class universities mostly underscores the research functions. Political campaigns vary across countries in favour of the research or the teaching function. Altogether, we note the relative time spent on teaching did not change substantially for professors at universities at the countries for which information is available for both points in time. However, changes occurred in different directions in the individual countries. In Germany, where university professors have devoted the highest proportion of their time on teaching in 1992 (33%), and in Australia (25%) the relative time spent on teaching declined up to 2007 (to 29 and 23%, respectively). Thus, the schedules differ less on average by country in 2007 than they have differed in 1992.

We cannot expect the average schedules of *junior staff at universities* to be similar to those of university professors. First, junior staff both in charge of research and teaching are expected to teach fewer hours than senior staff in some countries, more or less the same in other countries, and even more in some countries. Second, some of the junior staff at universities in some countries are employed exclusively for research purposes.

Figure 4.11 actually shows that junior staff at universities in Hong Kong, Australia, Portugal and the USA spends a clearly higher proportion of their actual working hours on teaching than the university professors in those countries. In contrast, junior staff spends a clearly smaller proportion of their work hours on teaching in Japan, Norway, Germany and Finland. Altogether, junior staff in many countries reports that quite some time is spent on research; obviously, a lower proportion of their working hours are absorbed by other activities (administration, services, etc.) than that of the university professors. In almost all emerging countries included in the CAP, junior staff at universities spend, clearly more time on teaching than on research.

From 1992 to 2007, the involvement of junior academic staff at universities in teaching has increased on average. Such an increase is most noteworthy in Hong Kong and in the USA.

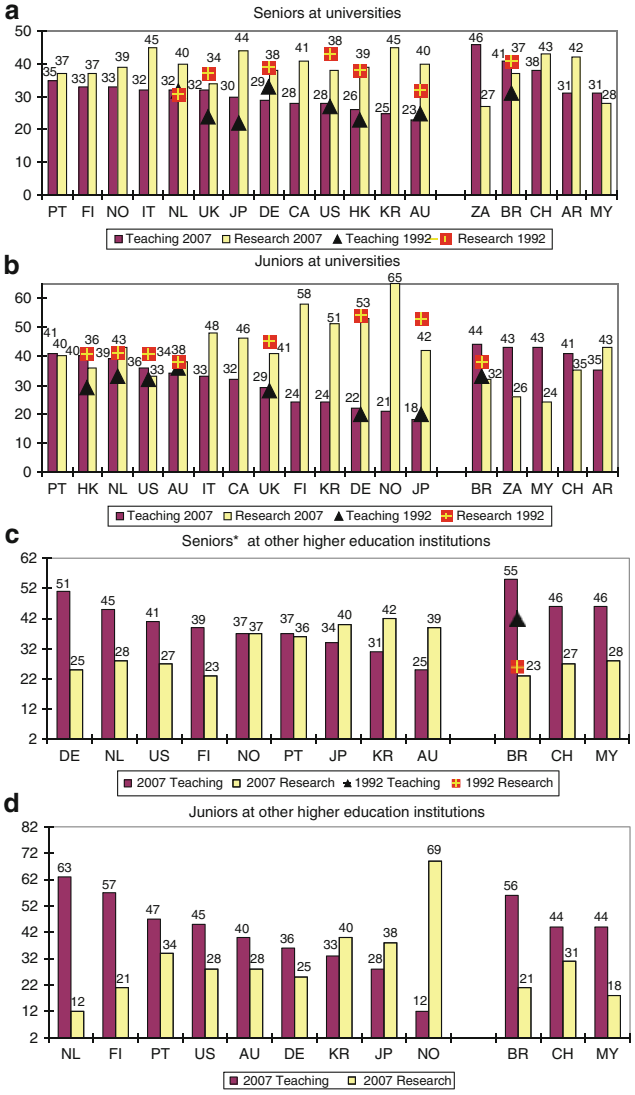

Fig. 4.8 Average (calculated as 60% of the weeks when classes are in session and 40% of the weeks when classes are not in session) percentage of work time spent on teaching and research in Fig. 4.8 (continued) 1992 and 2007. (**a**) Seniors at universities. (**b**) Juniors at universities. (**c**) Seniors (Calculated as 60% of the weeks when classes are in session and 40% of the weeks when classes are not in session) at other higher education institutions. *For 1992: Senior and junior academics of other higher education institutions combined. (**d**) Juniors at other higher education institutions. Question B1 (2007): Considering all your professional work, how many hours do you spend in a typical week on each of the following activities: teaching, research, service, administration, other academic activities?

Teaching is officially the major function of *other types of higher education institutions* in most countries, but in some advanced countries, these institutions have moved towards a substantial research role over time. In 1992, teaching clearly dominated in all countries for which information was available. In 2007, the picture is mixed. In emerging countries for which information is available, teaching is clearly the dominant function for professors at these institutions (55% in Brazil and 46% each in China and Malaysia), but in advanced countries, this is only the case in Germany (51%), the USA (41%) and Finland (39%). In other countries, the weekly hours devoted to teaching equals that to research or is even less; in Australia and Portugal, professors at other institutions even spend lower proportions of their working time for teaching than do university professors.

The role of junior staff at other institutions of higher education is quite diverse. In Finland and Portugal, they spend a clearly higher proportion of their working time than senior academics of these institutions on teaching. In Norway, in reverse, junior academics at other institutions of higher education spend most of their time on research. In Germany, junior staff at these institutions are to a lesser extent involved in teaching than professors at these institutions, but spend more time on service functions.

4.5.4 Work Time Spent on Other Assignments

Teaching and research are the core functions of academics. This does not mean, however, that all of their time is spent on teaching and research. In the CAP survey, for example, university professors in the advanced countries report that they spend 30% of their time on other assignment. The respective rate for the emerging countries is 25%. In the CAP survey, respondents have reported how many of the weekly working hours they actually spend—in addition to teaching and research—on

- **Service**: this has been explained in the questionnaire by services to clients and/or patients, unpaid consulting, public or voluntary services
- **Administration**: committees, department meetings, paper work
- **Other academic activities**: professional activities not clearly attributable to any of the categories above

Altogether, we note that the time devoted for these additional activities varies even more strongly by country than the time devoted to teaching and research. As regards services, we note the quite varied figures: university professors in Germany report that they spend 7 h per week on average for this function, followed by those in Korea and the USA (6 h); in contrast, the respective figures are only 2 h per week in half a dozen—advanced and emerging—countries. Administrative tasks comprise around 10 h per week in Australia and Hong Kong (11 h each), the United Kingdom and Malaysia (10 h each) and Canada (9 h), while they absorb much less time (5 h or less)

in Italy and some emerging countries (Argentina, Brazil and China). Finally, other activities vary on average by country between 2 and 5 h per week.

Junior staff at universities spends on average less time on activities other than teaching and research. The weekly hours spent for these additional functions, however, varies strikingly across countries especially for those who are not university professors. Substantial numbers of hours for services are reported by junior staff from Japan (9 h), Germany and Korea (6 h each). As regards administration, junior academic staff at universities in the United Kingdom (8 h), Australia and Malaysia (7 h each) state a substantial time load. Other activities vary only between 2 and 4 h on average.

Professors at other institutions of higher education spend altogether almost the same proportion of their weekly working hours on activities other than teaching and research as university professors do. However, they spend on average less on service, whereas professors from Korea report the highest number of weekly hours, that is, 5 h on average. Administration is a major function of professors at other institutions of higher education in Australia (12 h) and Finland (11 h). Again, other activities vary moderately between 2 and 4 h on average. Among junior staff at other higher education institutions, service functions are most widely spread in Japan (11 h on average) and administrative functions in the United Kingdom (10 h) as well as in Australia and Mexico (9 h each).

Altogether, the academics' estimates of their working hours suggest that activities beside teaching and learning absorb a substantial proportion of the working time. More detailed descriptions of the actual activities would be needed in future studies in order to explain the enormous differences of the actual types of activities in the various countries.

4.6 Assessment of the Professional Situation

4.6.1 Reflection of the Professional Situation

In the 'The Changing Academic Profession' survey, the respondents have been presented with three specific statements to help them examine how they view the professional situation of academics in general:

- 'My job is a source of considerable personal strain'.
- 'This is a poor time for any young person to begin an academic career in my field'.
- 'If I had it to do over again, I would not become an academic'.

Moreover, the academics have been asked to state the extent to which they are satisfied with their overall professional situation. Finally, they have been asked about their views as regards teaching and research as well as their commitments to their discipline, their department and their institution of higher education; the responses to these latter questions will be addressed in the subsequent sections.

Personal Strain: Actually, 45% of university professors on average across the advanced countries consider their job as a source of considerable personal strain. This proportion is even higher among junior academic staff of these countries: 49%. The responses vary substantially by country, as Fig. 4.9 shows. A considerable strain is stated very often by both senior and junior scholars from universities in Korea (64 and 74%) and Japan (61 and 70%) as well as from senior scholars in the United Kingdom (61%). In contrast, less than half the respondents from Italy characterise their job as a source of considerable strain (27 and 35%). Also in Norway (34 and 35%) and the USA (36 and 37%), both senior and junior academics from universities do not often respond affirmatively to this statement. In emerging countries, strain is least often reported—ranging from more than half in China (59 and 51%) to clearly less than a third both of senior and junior academics in Malaysia (23 and 19%), Mexico (25 and 31%) and Argentina (27% each).

The respective proportions were similar or lower among both senior and junior academic staff at other institutions of higher education. Among advanced countries, many respondents from Korea note such a strain (65 and 73%), but relatively few of both senior and junior academics in the USA (30 and 26%) and Germany (34 and 29%), senior academics in Portugal (31%) and Australia (34%) and finally junior academics in Norway (31%). Again, the proportions are lower in some emerging countries, notably Mexico (21% each) as well as Malaysia (18 and 25%).

In the early 1990s, the academics also have been asked to state whether they consider their job as a source of personal strain. As Fig. 4.9 shows, personal strain seems to have increased most among Korean scholars. But in the majority of the other countries, some increase is reported as well. The only clear exceptions are decreases on the part of university professors in Japan (from 65 to 61%) and junior academic staff at US universities (from 42 to 37%).

We have to bear in mind, though, that the term ‘strain’ has different meanings in the various countries. For example, the term used, for example, in the Japanese language is closer to ‘effort’ than to ‘stress’. Therefore, we cannot simply assume that considering the job as a source of strain has the same negative connotations regarding the academics’ own employment and work conditions.

Poor Time: On average across advanced countries, 36% of the university professors and 36% of junior academics at universities state ‘This is a poor time for any young person to begin an academic career in my field’. The respective rate is

- Clearly highest in Italy (73 and 77%).
- More than half in Finland (53 and 44%) and the United Kingdom (51% each).
- Between one-third and half in six countries.
- Clearly lower in the USA (21 and 23%) and Korea (22 and 20%).
- By far the lowest in Japan (8 and 7%, respectively).

In emerging countries, this view is shared by substantially fewer academics on average across countries: 21% of university professors and 24% of university junior staff. The respective ratios are 8 and 14% in Malaysia, around 20% in the majority of these countries (except for 10% among junior academic staff in Mexico as well as 34 and 48% in China).

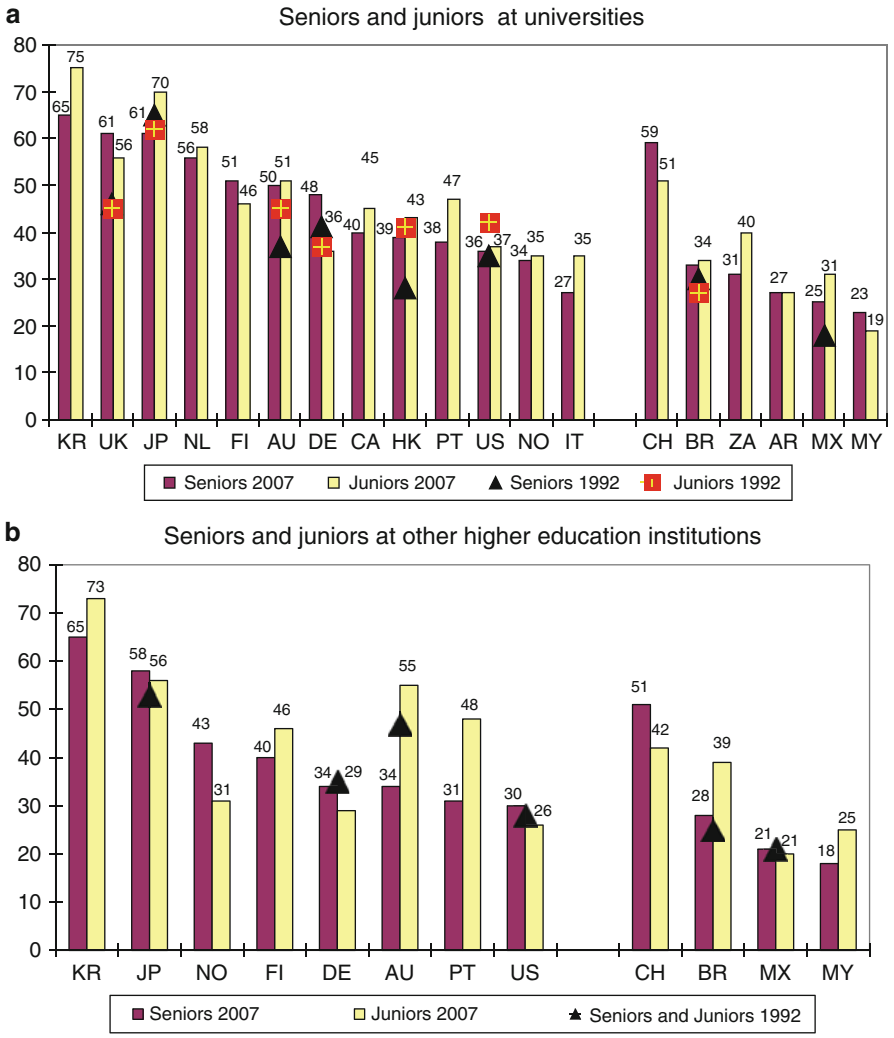

Fig. 4.9 Percentage (responses 1 and 2 on a scale from 1 = agree to 5 = disagree) of academics stating 'My job is a source of considerable personal strain' in 1992 and 2007. (**a**) Seniors and juniors at universities. (**b**) Seniors and juniors at other higher education institutions (for 1992: Senior and junior academics of other higher education institutions combined). Question B5 (2007): My job is a source of considerable personal strain

The academics at other higher education institutions in advanced countries consider the current period to be a poor time for young academics: Only 24% both of senior academics and junior academics state this on average across countries. The respective figures in emerging countries are even as low as 18 and 21%, respectively. Relatively high proportions hold true only for senior academics

of other institutions of higher education in Australia (40%) and the United Kingdom (38%) as well as junior academics in Australia (52%), China (45%) and Portugal (42%).

Would Not Become an Academic Again: Even fewer academics state that they would not choose again to become academics: Only one out of seven on average across countries, institutional types and staff ranks. The respective rates are relatively high—above one fifth on average across institutional types and ranks—in Australia, China, Portugal, South Africa and the United Kingdom. The highest can be observed among junior academic staff at universities in the United Kingdom (30%). In reverse, this is least often stated (between 4 and 7%, respectively) by university professors and university junior academic staff in Argentina, university professors and staff at other institutions in Korea, university junior staff in Japan as well as senior academics at other institutions of higher education in Finland and Germany.

4.7 Commitment to the Discipline, Department and Institution

The 1992 survey indicated that academics in all of the countries felt a strong commitment to their academic discipline. As regards their department and their university, their sense of commitment was lower, though positive on average in most countries. Germany has been the exception in 1992 where the question on commitment to the department and to the university was not positively responded. Altogether, scholars from advanced countries less often stated a strong commitment to their university than scholars from emerging countries.

It is difficult to compare the responses of the 1992 and the 2007 questionnaires by scholars from those countries where information is available on both points in time because a *four-point rating scale was employed in 1992 in contrast to a five-point rating scale in 2007*. We argue though that the commitment to the department and university has increased in the case of German academics, whereas it remained more or less the same in the other countries or somewhat declined, the latter certainly in the United Kingdom. As a consequence, the differences by country are smaller in 2007 than they were in 1992, as Fig. 4.10 shows. In 2007, though, the commitment to the department as well as to the university continues to be somewhat lower in Germany and is now somewhat lower in the United Kingdom and Norway than in the countries addressed here.

Actually, in 2007, about 90% or even more of the professors and the junior academic staff at research-oriented universities express a strong affiliation (1 or 2 on a five-point scale) to their *discipline/field*. The respective share is only lower in four countries: Portugal (76 and 80%), Italy (78% each), China (80% each) and the United Kingdom (83 and 80%). The same holds true for senior academic staff at other institutions of higher education, as far as information is available (79% in China, 80% in Portugal and 81% in the United Kingdom).

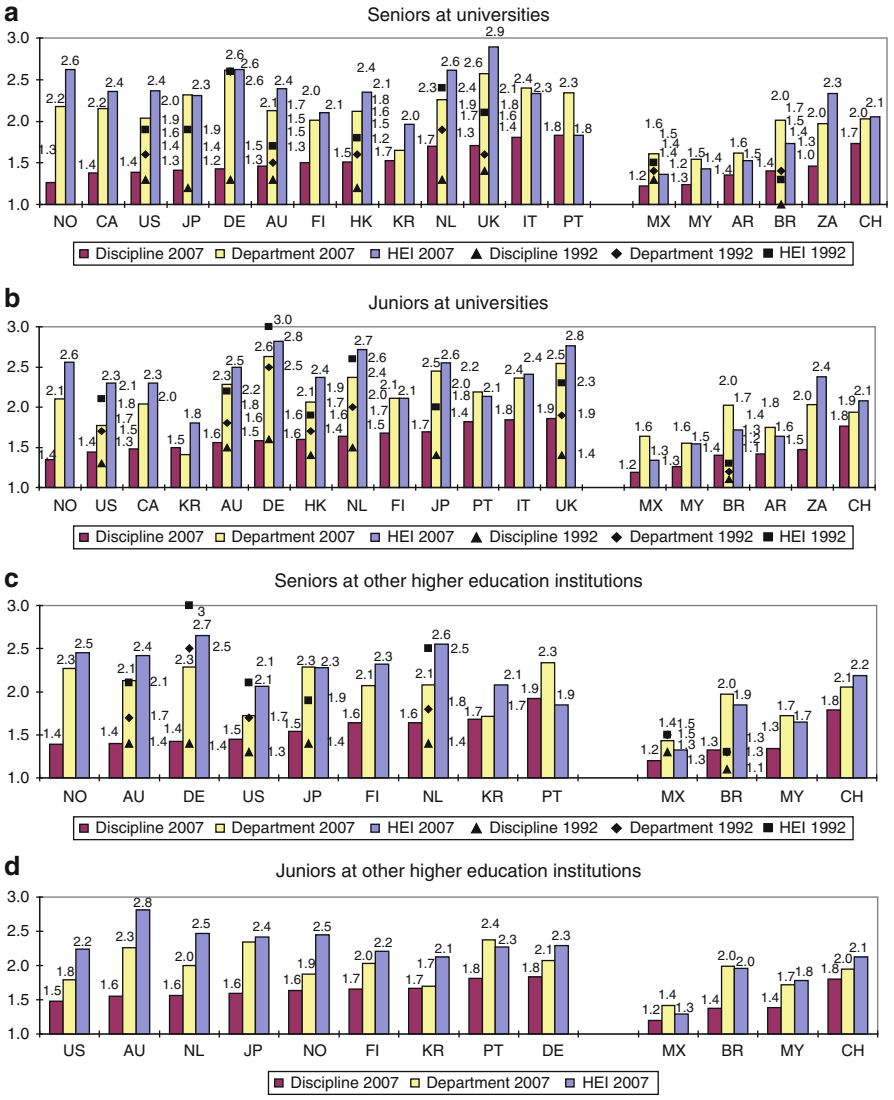

Fig. 4.10 Commitment to the discipline, department and higher education institution in 1992 and 2007. (**a**) Seniors at universities. (**b**) Juniors at universities. (**c**) Seniors at other higher education institutions (for 1992: Senior and junior academics of other higher education institutions combined). (**d**) Juniors at other higher education institutions. Question B4 (2007): Please indicate the degree to which each of the following affiliations is important to you. 2007: Scale from 1 = 'Very important' to 5 = 'Not at all important'; 1992: Scale from 1 = 'Very important' to 4 = 'Not at all important'

A sense of *affiliation to one's department* is most frequently felt (more than 80%) by professors at research-oriented universities in Malaysia, Brazil, Argentina and Mexico. The majority of countries report affirmatively between 60 and 80%. The department is lowest on the agenda for university professors in Germany (49%), the United Kingdom (53%) and Italy (57%). As regards junior staff at research-oriented universities, we observe more or less the same pattern; only the US junior academics have a strong affiliation to their department as well (84%). Among professors of other institutions of higher education, those from Mexico and the United States feel the strongest affiliation to their department, while the lowest affirmative responses were reported by respondents from Germany (54%) and Portugal (56%).

Again, the *affiliation to the university* is most often seen as important by university professors and junior academic staff from other countries, that is, Malaysia (94 and 89%, respectively), Mexico (92 and 95%), Argentina (88 and 87%) and Brazil (83 and 75%). In most countries, it ranges between 50 and 80%, while the lowest scores are reported from the United Kingdom (36 and 39%), Germany (46 and 41%) and Norway (46 and 48%). Many professors from other higher education institutions in Mexico and Malaysia consider their affiliation to their institution of higher education as important, while a very low sense of affiliation is not reported from any other institution of higher education.

Altogether, affiliation to the discipline is rated as more important than affiliation to the department, and the latter is seen as more important than the affiliation to the institution of higher education. Most surprisingly, senior academic staff and junior academic staff at research-oriented universities as well as senior academic staff from other higher education institutions of each individual country harbour very similar views. The differences by status and type of higher education institution do not seem to be highly important for the academics within each country. Clearly, the local affiliation to one's department and institution is most important in newly emerging countries. In contrast, affiliation with one's department or institution is accorded low importance by academics in Germany and the United Kingdom.

4.8 Job Satisfaction

In 2007, senior academics from research-oriented universities rate their overall professional satisfaction on average 2.2 on a scale from 1 = 'very satisfied' to 5 = 'very dissatisfied'. In most countries, between 60 and 80% state that they are satisfied (1 or 2 on the scale), and the proportion of those expressing dissatisfaction (4 or 5 on the scale) ranges in most cases from 1 to 14%. The clear majority is satisfied, but the ratings are by no means enthusiastic. On average, we do not note any differences between the advanced countries and the other countries in this respect. On the one hand, the university professors from Mexico stand out positively with a mean score of 1.8 and 87% positive ratings. On the other hand, satisfaction is on average lowest in the United Kingdom (2.6, 49%), South Africa (2.6, 54%) and China (2.5, 58%).

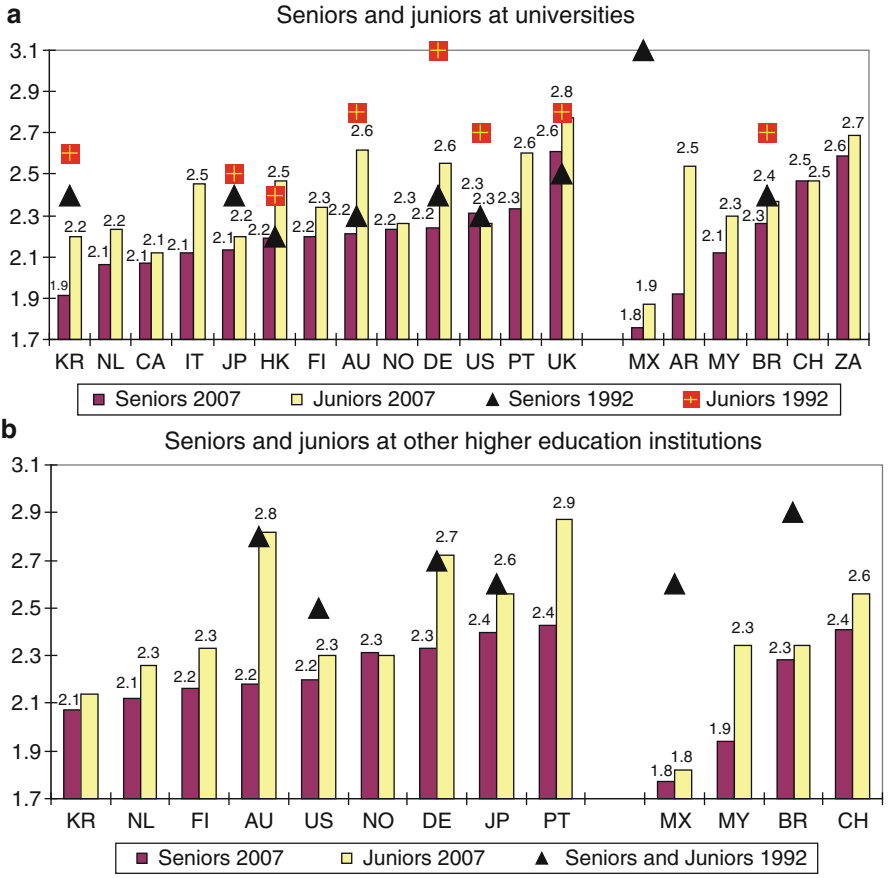

Fig. 4.11 Overall job satisfaction in 1992 and 2007 (arithmetic mean, on a scale from 1 = very satisfied to 5 = very dissatisfied). (**a**) Seniors and juniors at universities. (**b**) Seniors and juniors at other higher education institutions. Question B6 (2007): How would you rate your overall satisfaction with your current job?

In 1992, senior academics from research-oriented universities of those advanced countries, for which information is available at both points in time, have rated their overall professional satisfaction on average 2.4. In 2007, the average score is 2.3, that is, so marginally higher that no clear significant improvement can be observed. Among senior academics, the differences by country are small both in 1992 and 2007, as Fig. 4.11 shows, except for the more negative ratings by professors in the United Kingdom and South Africa in 2007. As regards other countries, we note a substantial increase of satisfaction over time in the Republic of Korea (from 2.4 to 1.9) and a moderate increase in Brazil (from 2.4 to 2.3).

Junior academic staff at research-oriented universities are somewhat less satisfied on average with their professional situation in 2007 than senior academic

staff of the same institutional type. Thereby, the ratings by junior academics from advanced countries are less positive on average than those from other countries. The ratings are most positive, again, among junior staff in Mexico (1.9), and the most negative ratings, again, come from the United Kingdom (2.8) and South Africa (2.7) with ratings not better than 2.5 in eight countries.

In 1992, junior academic staff had stated a clearly lower satisfaction with their professional situation than senior academic staff at research-oriented universities. Among the countries for which information is available at both points in time, German junior academics have been clearly less satisfied on average, that is, even slightly lower on average than the scale mean (3.1 as compared to 2.5 of the senior academic staff in Germany). However, German junior academic staff made the biggest leap towards more positive views in 2007 (by 0.6–2.5), even though they remain slightly below the average of junior academic staff and clearly below the average of university professors in their country. We note also moves towards more positive ratings among junior academic staff in some other countries: a substantial change in the USA (from 2.7 to 2.3) and somewhat of a move in Australia (from 2.8 to 2.6), as Fig. 4.11 shows. As regards other countries, a substantial rise of job satisfaction is also visible in the Republic of Korea (from 2.6 to 2.1) and a considerable rise is also seen in Brazil (from 2.7 to 2.4).

On average, job satisfaction is equally high on average among senior academic staff of other higher education institutions as that of their colleagues at research-oriented universities. Positive ratings stand out not only in Mexico (1.8) but also in Malaysia (1.9). In 1992, professors of German *Fachhochschulen* have been clearly less satisfied on average with their professional situation than university professors of Germany, but the formers' satisfaction has increased substantially in comparison to the moderate increase on the part of the latter.

4.9 Summary of Major Findings

In many studies on the academic profession, a substantial gap is depicted between junior academic staff and senior academic staff. High selectivity and a mix between learning and productive work seems to be characteristic of the junior stages of the academic career; as a consequence, short-term contract and part-time employment is widespread. In contrast, most senior academics seem to enjoy a stable employment situation and freedom to shape their own professional activities. Senior academics might not be highly remunerated in comparison to other highly selective and demanding occupations, but they enjoy a relatively high professional reputation, interesting work and leeway to shape their own work.

We have to be cautious in merely reinforcing this 'conventional wisdom'. On average, first, we have more information available on academics in advanced countries, and we tend to address these countries predominantly because they are often viewed as role models for other countries; there is less information available on other countries. Second, the variety existing among advanced countries tends to be

underestimated; it is worth analysing the range of practices across countries. Third, most statements on the academic profession have academics in 'research-oriented universities' in mind, that is, universities in which senior academics are expected to serve teaching and research more or less equally. Fourth, there have been indications that the situation of the academic profession has changed in many respects in recent years. In many countries, the power of the university management has been strengthened, and senior academics are put under pressure recently to contribute to an increase of quality, relevance and efficiency of higher education through extended measures of evaluation and a stronger emphasis on incentives and sanctions which also might imply a less stable employment situation. The trend towards a 'knowledge society' might affect academics in various respects; we also hear of measures aimed at making academic careers more attractive.

Two comparative surveys on the academic profession undertaken in 1992 (the 'Carnegie Survey') and in 2007 ('The Changing Academic Profession'—CAP) comprising 14 and 19 countries, respectively, provide a substantial range of information on these issues. However, clearly comparable information at both points in time is only available on eight advanced countries (Australia, Germany, Hong Kong, Japan, Korea, the Netherlands, the United Kingdom and the USA) and to a more limited extent on two emerging countries. Also, information on change over time is limited with respect to other institutions of higher education.

The single most obvious trend as far as the situation of the academic profession is concerned is the rising share of women. Yet remaining differences by country are not at all trivial. To a certain extent, we also note a general trend of the doctoral degree becoming increasingly a 'must' for academic careers, even though there are still enormous differences as far as the rate of doctoral degree holders and as trends towards increasing rates are concerned.

As regards employment stability of junior academic staff at research-oriented universities, the available data suggest the need to be quite cautious with respect to generalisations. The share of part-timers varied in 2007 in advanced countries between 2% in Canada and Italy on the one hand and 31% in Germany on the other hand; thereby, an increase since 1992 could be observed in three countries, no change in one country and a decrease in one country. In other countries, the rates of part-time employment even varied more strikingly from 1% in Malaysia to 88% in Argentina. Also, the rate of short-term contracts ranged from 6% or less in Malaysia and Japan to about 80% or more in Canada and Germany as well as the Republic of Korea and Hong Kong. Where information is available on both points in time, we note an increase of short-term employment in the majority of countries. The data, however, are by no means perfect in mirroring the degree of stability or instability of junior academic careers within the various countries, because they might include many doctoral candidates being employed in some cases and few in others, because short assignments might be done through regular short-term employment contracts included in this study or through auxiliary staff contracts or honorarium contracts not included here.

Professors at research-oriented universities continue to be mostly employed full-time with the exception of Latin American countries, especially Argentina,

where part-timers comprise a substantial proportion of the regular professors. Short-term contracts for professors at research-oriented universities increased in many countries. Among advanced countries, short-term contracts only reached high rates in Argentina (62%), Finland (34%) and Hong Kong (27%), while in the majority of the other countries, rates beyond 25% can be observed. More professors at other institutions of higher education seem to be on short-term contracts than professors at research-oriented universities.

Spending more hours on work than the usual contract hours for employees is most pronounced among professors at research-oriented universities in advanced countries: in various countries averages of 50 h weekly or more are reached. We note less additional hours among junior staff in advanced countries as well as a range from some additional hours to less than a normal work schedule among professors at other institutions of higher education in advanced countries as well as among both senior and junior academic staff in other countries.

In the majority of countries, both senior and junior academics at research-oriented universities spend more time in 2007 on research all over the year than on teaching. Where information is available at both points in time, we note increasing activities of research in some cases and increasing teaching activities in other cases with no dominant overall trend. At other institutions of higher education, we observe a considerably higher proportion, and also an increase over time, of research activities in a select number of countries.

Job satisfaction of academics is quite high on average, and in most countries, where respective information is available, on a rise; notably, junior academic staff in various countries are more highly satisfied with their professional situation in 2007 than in 1992. This suggests that the work characteristics and the conditions for academic work—the academics do not report increasing problems as far as the resources for their work are concerned—are more important for the overall assessment of their situation than the employment conditions.

It would be misleading, though, to claim that the academics are generally quite satisfied with their professional situation. About one-sixth or one-seventh of the academics is dissatisfied with their job, and also a similar percentage state that they would not become an academic, if they could choose again. So, there is still room for improvement. Actually, we note relatively consistent findings across the subgroups of academics addressed and the various issues addressed in the questionnaire that academics from certain countries are highly satisfied on average, notably from Mexico and Malaysia, and that academics from certain other countries report below-average levels of satisfaction, notably the United Kingdom, South Africa and to some extent China. In the case of the United Kingdom, available information shows clearly a decline over time; obviously, changes such as increasing expectations to demonstrate more visible research results and to ensure the practical relevance of teaching and research are often viewed as a burden; we also note that the sense of affiliation to one's university and to one's department has declined in this country.

By and large, reports on the work situation from academics in the 'other countries', that is, those not traditionally awarding doctoral degrees to their academics

themselves, are at least as positive on average or even slightly more positive as those from advanced countries. Certainly, it would be interesting to know what the basis of these ratings is and what comes into play beyond the working conditions as such: the role of academics in the society, a comparison with other occupations in their country, expectations of future developments, etc. This might be clarified in future analyses.

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