Enclosure 5 appendix

Confidential

IT University of Copenhagen

Finance Section

4 September 2014

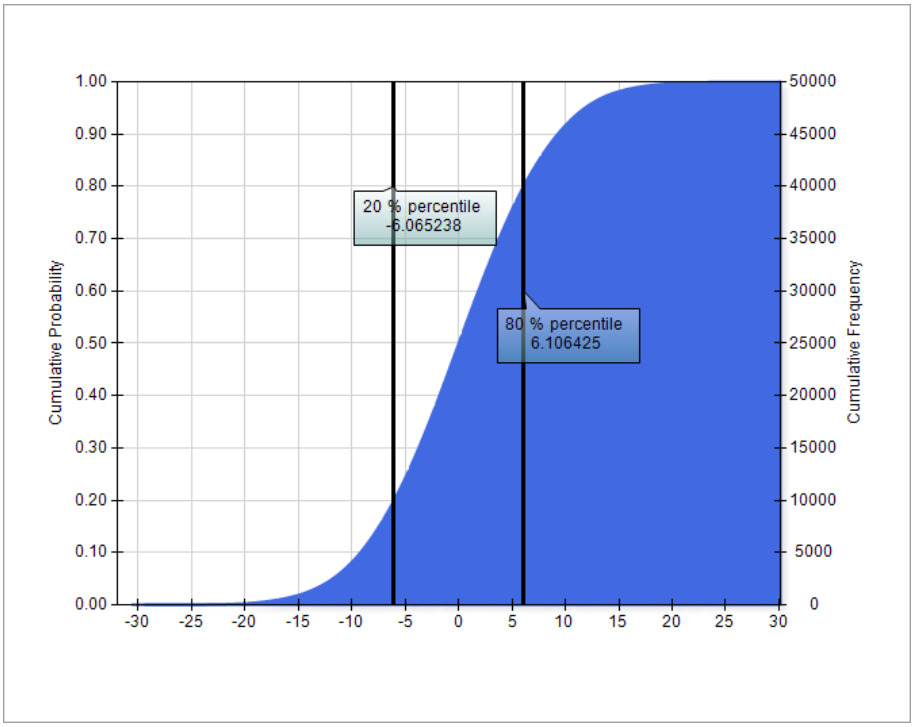
Uncertainty and risk analysis

Setting up the financial framework is a difficult task that calls for careful considerations with regard to numerous factors. This document displays main uncertainties, which could affect the IT University's financial framework with regard to the financial year 2015, along with a risk analysis based on probability calculation.

Summary

The uncertainties, which could affect the IT University's financial framework, includes production of full-time and part-time student FTE, number of MSc's and BSc's that trigger completion bonuses, external research funding, self-insurance, and educational reforms. Figure 1 below displays a simulation where these uncertainties have been compared to the framework budget.

Figure 1: Uncertainties related to income

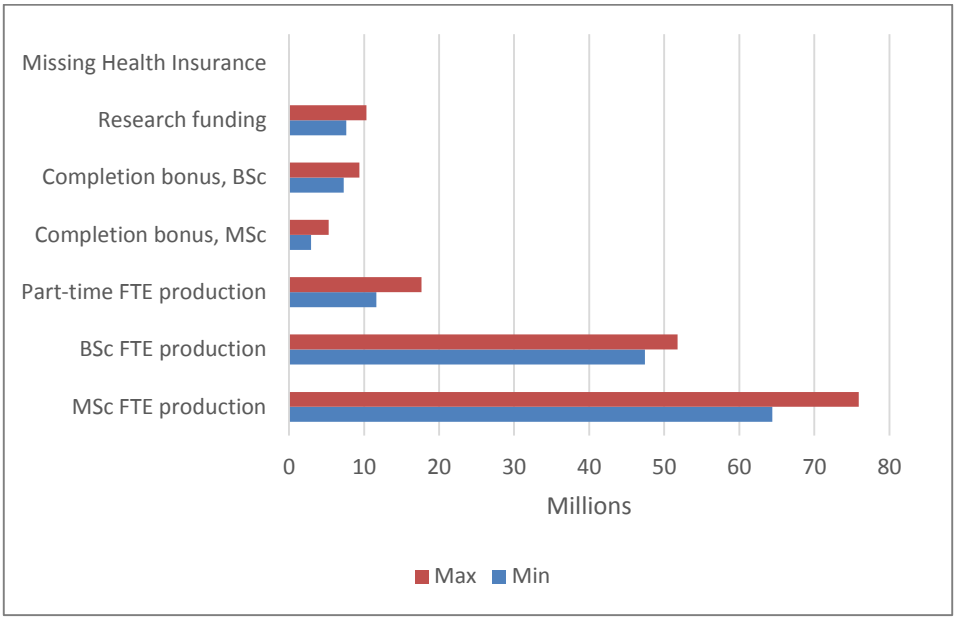


The simulation indicates that the probability of the actual result being at least DKK 6.1 m less than the budgeted result of minus DKK 1.8 m is approx. 20 percent.

Since the request for a rent reduction at Rued Langgaards Vej is in progress at the present, it is not included in the calculation of risks above. The request may cause additional cost or an actual rent reduction for the IT University.

Figure 2 below displays a sensitivity analysis regarding the factors with the greatest possible impact on the IT University's financial framework. Taken the risk of fluctuations into consideration, the red bar shows the maximum income from a given factor, while the blue bar shows the minimum income from a given factor. The larger the difference is between the red and blue, the greater sensitivity. Hence, the MSc FTE production is followed by part-time student FTE's, then BSc FTE production and so on.

Figure 2: sensitivity analysis



In addition to the above stated, there is a number of uncertainties which are not quantifiable at this point. This goes for the Budget Act, which leaves uncertainty with regard to the possibility of achieving full tuition-fee from an unpredicted increase in the full-time student FTE production.

Furthermore, the Ministry of Higher Education and Science has started investigation of a taximeter system reform, which aims at reviewing the tariffs for all higher educations. In addition, the ongoing Student Progress Reform causes uncertainty with regard to student behavior.

The next sections demonstrate how the assumptions of the above stated uncertainties have been calculated.

Full-time and part-time student FTE production

The budget is based on the assumption that the production of full-time and part-time students FTE, will stay at the same level or increase in the forthcoming years. However, reports show that the production of FTEs follows the socio-economic structures. Hence, while the number of full-time students is rising during recession, the number of part-time students is falling and vice versa. These trends can be seen in table 1 below, from which the corresponding standard deviations have been calculated.

In 2014, the IT University experienced an unexpected drop in full-time student activities. This drop has been added to the risk analysis in the "2014" column below and is being used in the risk analysis. Since part-time student activities did not experience a similar drop, the standard deviation is being used in the risk analysis concerning part-time students.

Table 1: Full-time and part-time student FTE standard deviations

	2008	2009	2010	2011	2012	2013	Standard deviation	2014
MSc budget	471	441	518	587	665	751		793
MSc recorded	486	458	529	629	696	769		732
MSc deviation	15	17	11	42	31	18	23	- 61
BSc budget	24	48	155	272	399	486		491
BSc recorded	31	65	159	286	422	492		468
BSc deviation	7	17	4	14	23	6	7	- 23
Part-time budget	130	130	184	139	122	112		-
Part-time recorded	146	156	145	130	122	125		-
Part-time deviation	16	26	-39	-9	0	13	23	-

Student grant reform

The recently adopted student grant reform is likely to affect the number of MSc's and BSc's that triggers completion bonuses. The hitherto recorded deviations can be seen in table 2 below, resulting in the corresponding standard deviations.

In 2014, the IT University experienced an unexpected drop in BSc's earning completion bonuses. This drop has been added to the risk analysis in the "2014" column below and is being used in the risk analysis. Since MSc's earning completion bonuses did not experience a similar drop, the standard deviation is being used in the risk analysis concerning MSc's.

Table 2: Number of MSc's and BSc's that triggers completion bonuses

	2010	2011	2012	2013	Standard deviation	2014
MSc budget	72	80	100	54		-
MSc recorded	54	83	84	102		-
MSc deviation	-18	3	-16	48	31	-
BSc budget	18	30	67	120		142
BSc recorded	22	25	78	133		124
BSc deviation	4	-5	11	13	8	- 18

External research funding

The university's ability to attract and spend external research funding is an important issue as it affects both the number of scientific staff and revenue from overhead pricing. The part of external research funds that goes to salaries for scientific staff is approx. 62 percent, while the revenue from overhead pricing is approx. 28 percent. Table 3 below displays the recorded deviations in external research funding compared to the budget, with the corresponding standard deviation.

After the second quarter of 2014, the prognosis shows a higher difference between the budgeted external research funding and the expected result than ever recorded. This drop has been added to the risk analysis in the "2014" column below and is being used in the risk analysis.

Table 3: Standard deviation in external research funding

	2008	2009	2010	2011	2012	2013	Standard deviation	2014
Budget	19.000	14.000	19.099	18.205	30.000	30.000		33.000
Recorded	15.160	17.293	19.759	22.190	26.224	26.671		28.211
Deviation	-3.840	3.293	660	3.985	-3.776	-3.329	3.626	- 4.789

Self-insurance

The IT University is self-insured with respect to accidents, both in terms of structural damages to buildings and personal injuries under the auspices of the IT University. These accidents have the possibility to amount into major replacements and compensations. However, if we look upon the number of personal injuries during travel under the auspices of the IT University the reports tell us that there is 0.09 percent probability of being injured, cf. table 4:

Table 4: The probability of being injured

	2008	2009	2010	2011	2012	2013	Total	Binomial distribution
Number of travels	201	240	278	300	325	353	1697	
Number of personal injuries	0	0	1	3	3	4	11	
Probability of injury	0,5	0,5	0,5	0,5	0,5	0,5	0,50%	0,09