

7. Reflection

The purpose of this chapter is to reflect on the research process of my graduation. I have split the reflection in four parts: graduation process, research subject, methodology and results.

7.1. Graduation process

The week before the graduation labs presentations I was still quite certain I wanted to find a topic within the Urban Area Development laboratory. Nevertheless, I went to see the presentations for the Real Estate Management and other laboratories as well and suddenly wasn't quite so certain anymore. Ilir's presentation on the tall building economics sublaboratory was inspiring for me, for reasons further discussed in the preface of this thesis. I felt that with this thesis subject, I would *not* lose motivation halfway - which is something many of my fellow students did experience.

The period until P2 was symbolized by a substantial amount of reading and an iterative process of trying to take in as much as possible to keep further defining my research proposal. At P2 I felt that I had positioned myself strongly in the literature on height premiums. Looking back, this is still partly true - but I had also included a lot of 'noise' that was not relevant - or at least is not anymore.

The period after P2 has been quite turbulent for me on a personal level. Several weeks of illness, the break-up with the girl I had a relationship with for 3,5 years and the week before P4, a minor concussion. Fortunately, there are also many good things to reflect on. Data gathering was one of the most crucial parts of my road to P3 and P4. Luckily, this went quite smooth and I managed to obtain more observations in more towers than we had initially expected. Processing the data went evenly smooth, which enabled me to spend time on something else. I set a goal for myself to learn the programming language of R and perform the analysis in it. This required a time-heavy investment in the beginning, but proved to be very useful and time-saving for the regression analysis. I do feel that I took too much time between the dataset creation and the actual analysis. One reason for this is that performing regression analyses was new to me and what I had coded seemed too simple to actually be 'it'. One way I could have prevented this was sitting down with my mentors for the analysis earlier in the process. Nevertheless, preliminary results were present at the P3 session and this provided a steady basis to move forward with towards P4.

Until P3 - as expected - motivation to proceed has always been present. However, after P3 my ex-girlfriend and I ended our relationship and my motivation had suddenly gone as well. The time between graduation laboratory presentations $\rightarrow P1 \rightarrow P2 \rightarrow P3$ was significantly longer than the time between P3 and P4 for me and I had some issues in finding the flow I had before P3. The sessions with my mentors after P3 helped me to relaunch the motivation I had before, resulting in a P4 good enough to obtain the green light for P5. The infrastructure for the regression analyses I had set up in R especially helped me in picking up the pace and efficiently performing the leftover analysis steps - making me extra glad and proud that I invested the effort and time in learning the programming language. Before P1 and at P2, graduation is still a long road towards 'destination unknown'. However, the results in this report are satisfactory for the journey I had and I feel that results are quite substantial in the small field of floor level premium, especially floor level premium determinants.

7.2. Research subject

This thesis is part of the tall building economics laboratory. It fits well within the domain of "*The vertical dimension in urban economics*", as Ilir titled it in his graduation sublaboratory presentation. The thesis provides novel insights on height premiums, assuming the developer point of view rather than the demand side point of view. The domain fits well within the master track of MBE. However, it

touches also touches upon some basic spatial econometrics, which I like to call real estate econometrics.

At P2, I had set a goal to also compare floor level premium assigned to apartments to the marginal costs for each floor. At this stage I argue that this is interesting in theory, but does not contribute to the broader understanding of developer behavior regarding premiums in residential tall buildings. The reason for this is that it is not a relevant determinant of floor level premiums, but relevant for other aspects in the development process. This insight enabled me to place it in a broader context and led to the findings presented in section 4.2. Nevertheless, I feel that the goals I had set at P2 were naïve and could have been sharper by more extensive experimentation. On the other hand, the knowledge I have on my thesis subject enables me to say this now, but the lack of knowledge back then must have absolutely been a factor in this matter.

The research subject has given me quite some insight in pricing strategies, tall building development and real estate econometrics. At my graduation firm, I notice that the topic is relevant and contributes to active projects. This reinforces my satisfaction for the choices I have made.

7.3. Methodology

Since the beginning of the graduation process, it had been clear that the core of this research would be of a quantitative nature. However, the process started with a qualitative journey: building a research proposition and studying the existing body of knowledge on relevant themes. The literature research provided a steady basis for the variables that I would research. Of course, a lot of what I had found back then would become less relevant or even irrelevant at some point. Nevertheless, all I have written and read has contributed to the knowledge I gain in the entire graduation process. The process towards and after P4 focused on interpreting the quantitative aspects of the thesis and placing them in a qualitative context. I experience joy in doing so and am satisfied with the idea that I have developed myself well in the thesis subject.

Another thing I have trained myself in is switching between different research styles: qualitative analysis, dataset creation, quantitative analysis and back to reporting. I notice how focusing on one of these enables me to become more efficient in that particular activity, but shifting to another of these activities becomes more difficult. That too is part of the less explicit things student learn during graduation, I suppose. This makes the chosen methodology extra valuable for me.

On a more technical level, it would be interesting to perform 3D-polynomial regression trials, mainly to discover if the relation between unit prices, floor level and indoor floor area is significant.

7.4. Results

Results are discussed in detail in chapter 4. The main roadblocks in working towards the results was variable selection. Quite some variables overlapped, and it took a long time before I managed to bring up the courage to delete these variables. I suppose removing products of work originating from prior phases of the graduation process is difficult for most students. Once I passed this point, things started to move along. However, at one point I had created a wide spectrum of models: different dependent variables, different datasets, different independent variables, with and without clustered standard errors, etcetera. It took a session with Ilir to choose what to proceed with - though the choices seem clearer now. I do feel that making these choices was easier after P4, resulting in some new regression models and additional findings. I am quite glad about the results and feel that it truly adds to the academic, but also professional body of knowledge. Not only the quantitative part, but also with heterogeneity of developer vertical price premium behavior and with the line of reasoning on developer behavior regarding cost premiums versus price premiums in the context of floor levels -

leading up to the conclusion on Rotterdam's residential tall building heights being largely consistent with profit maximization theories.