NEKST

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ASSET Econometrics

AEGON

Sharing Experiences

The end of the summer marks the start of a new academic year, which calls for a new board for our association, a new city for some of us, but certainly a new Nekst issue for all our readers. Conventions tell me that this is the place to tell you all about what can be found in this issue, and I am happy to do so.

Contributions from the department are made in the shape of not two, but three new columnists. This year Goos Kant will share some of his expertise with us, as well as the columnist duo Marieke Musegaas and Nick Huberts.

Next to expertise, we share experiences with you too. From the first student steps in Tilburg all the way to the time where one can call themselves a university graduate, Nekst covers it all! Discover it yourself, as this issue contains articles concerning topics ranging from the TOP-week to a Practical Report about Delay Management at NS, just like many that fall in between. Furthermore, we investigated the use of mathematics in counterterrorism and paid a visit to the head of the department Henk Norde.

The editorial team responsible for making sure that Nekst arrives at your doorstep is introduced in the Committee Introduction, so I recommend you stop there too when leafing through the magazine, if you are up for a good laugh. Finally, we continue beyond the last page of this magazine: www.Nekst-Online.nl contains solutions to previous puzzles, photos, and exclusive articles such as a report on the Asset International Experience to Tanzania. I can only suggest you pick your favorite articles, go for the best seat you can find, and enjoy Nekst!

Stefan ten Eikelder
Editor-in-Chief

TOP-week

An article about the week where it all starts for freshmen. Jonas de Boo shares his first-hand experiences.

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What is it that sets us econometricians apart from other people? Nick Huberts and Marieke Musegaas, who both earned their stripes in EOR, formulate an answer.

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CAREER PORTAL

Dear Members,

Looking outside I see a beautiful autumn day; the sun is shining and the leaves have started to fall from the trees. Some of you might know me, for those who do not: my name is Thijs Kramer, I am twenty years old and a fourth-year econometrician. After having been a member of the Introduction. Activity and LEVT committee, I have the privilege to be the chairman of our beautiful association for the upcoming year.

The first month of the academic year has passed which means that freshmen have had their first midterms, new Master students have experienced an increase in difficulty compared to the Bachelor program and everyone is, or at least should be, used to the rhythm of lectures by now. A new year comes with new challenges, which results in new opportunities. The challenge is to pick up where you left off last year and improve even further.

Since it is autumn, weather is changing rapidly and looking outside now, I see it is raining cats and dogs. Just like the weather, my life and the life of my fellow board members has changed rapidly. Facing new challenges every day, we are still improving ourselves to take the association to an even higher level and to serve you to the best of our ability. But like I have said before, new challenges result in new opportunities and we strive to make the best out of every opportunity we get.

With a new year comes a new board and a new board comes up with new ideas. This year, the first interurban conference in the history of Asset | Econometrics will be organized. In cooperation with two study associations of Eindhoven's University of Technology, GEWIS and Industria, we will organize a conference in the field of operations research. This conference is an ideal opportunity for you to get in touch with less well-known companies and to broaden your horizon regarding your future employer.

For those of you who are not only interested in their future career but also want to connect with fellow econometricians on a personal level, we will organize a new event called the Monthly Afternoon. The first edition of this afternoon has already been organized and it turned out to be a great success. Many econometricians showed up to share hearsay, play a game of Mario Kart or

Mario Party and solve puzzles, which apparently is not only for the elderly, but also a real passion of many econometricians.

Of course, we are incredibly exited for this year and we hope you are as well. Information about all our upcoming activities can be found in this magazine and also on Asset | Econometrics' website. For this moment, lean back and enjoy the remarkable stories, astonishing specials and many more interesting articles.

I hope to see you at one of our activities and at the rooms in Esplanade in the nearby future.

On behalf of the board,

Thijs Kramer
Chairman Asset | Econometrics
2015-2016

Who's Who?

Text by: Max van der Lee

Ennia Suijkerbuijk

The twenty-year-old Ennia is a fourth-year bachelor student who hopes to complete her bachelor this year, and she is also the secretary of this year's board of Asset | Econometrics! She has been living in lodges for the past few years with ten others: two inflatable monkeys, a crocodile and seven other students. Her hobbies are sailing, badminton, reading and playing the piano, something with she has been practicing since she was six years old. Upcoming December she will make sure that the Asset | Econometrics rooms are accompanied with her favourite Christmas tunes. Be aware not to challenge her at her favorite game Halli Galli, because she can get a vivid feeling of competitiveness while playing it, and apparently if she loses she could give you one of her great high-kicks!

Claire Vink

This girl who only recently turned nineteen is a first-year student and her hobbies are traveling, photography, watching movies and TV shows. You can even wake her up in the middle of the night for a new episode of one of her favorite TV shows. Claire gets the best feeling in the world while having late night conversations with her best friends. On the other hand she hates that there are human beings capable of causing so much pain to one another, and if she had lots of money she would contribute to projects that help improve the living conditions in developing countries. This brings us to her favorite quote: "The most beautiful things in the world cannot be seen or even touched, they must be felt with the heart."

Lotte van Bakel

Her friends describe her by the song `laugh about it´ from Racoon and as a cheerful person whereas Lotte herself describes herself as a happy, stressful, stubborn and caring figure. This 21-year-old fourth-year bachelor student loves playing volleyball and visiting concerts. They give her the best feeling in the world, and she has even flown to another country to attend one! She lives here in Tilburg with two other fellow econometricians and her collection of stuffed animals. During the weekends she enjoys visiting her friends and reading a book. The one thing Lotte really wants to do one day is to see the Northern Lights, because apparently she needs to witness them herself and finds scientific proof not enough to believe in them.

Pepijn Wissing

I could not stop laughing while reading Pepijn's own introduction, and I am not even trying to top this one so I am giving you the pleasure by quoting the good man himself. "On a staff party of the restaurant where I work, we had to dress in our carnival outfits; mine was a Baywatch outfit, with hotpants and everything. At the party I got really drunk. When we had to travel back to our hometown, by bus, I did not feel so great. Sitting in pretty much the front seat, I threw up in one of those plastic bags, but a few moments later one of the handles slipped from my hand, causing most of its contents to spill, partially on the bus driver. The bus driver then (understandably) got so mad that he stopped the bus at the first opportunity he got and gave me some water and a mop. He then made me clean the bus, drunk out of my mind, in my Baywatch suit, in the middle of the night, in front of all of my colleagues. This made me rethink some of my choices from the night before."

Mantas Satkevičius

This smart nineteen-year-old Lithuanian loves traveling and has traveled all the way to the beautiful city of Tilburg. Mantas is here to work hard and reach his goals while enjoying his spare time in the gym, playing basketball or table tennis. Another thing Mantas likes is learning something new, especially knowledge obtained from history books, which Mantas would absolutely never throw away. He is into various types of music, and just like most of us it depends on in which mood he is in, what his choice is. This can vary from classical music to rap music. During the weekends he hangs out and has a laugh with friends with whom he would love to go on a Trans-Siberian train to China in the future. The only reason those friends could wake him up for in the middle of the night, is to play a prank on the others who are still sleeping. Lastly, Mantas' biggest inspiration thus far originates from the prospective results of his big goals!

Gailius Praninskas

This nineteen-year-old student is also in his first year and is living in lodges because he comes from Lithuania. Gailius comes across as a down-to-earth, philosophical guy who enjoys the little things in life like snoozing for another ten minutes in the morning and wanting to travel and see the world. Fun fact about Gailius: when he was a kid, he tried washing his head in the toilet. He gets inspired by his friends and they are also the ones that can wake him up for adventures in the middle of the night. Recently however, he has been no fun, since he spends his time studying in the weekends. Gailius hopes he will have more time during the weekends to spend on his hobbies and sports!

Aurel Macias Minambres

'The Mexican' is what his friends call this musical 22-year-old first-year bachelor student, even though he is Spanish rather than Mexican. He spends a lot of his spare time playing his guitar, piano, keyboard and more. His favorite music is 'shoegazing' which is an English style of rock music known for its psychedelic, loud and dreamily character. He has an authentic view on how to live life; according to Aurel you should "live without a significant personal motto." However, he used to have other life goals as a child, namely being able to produce thunderbolts like Pikachu. Nowadays, he would like to participate in one of the many TV shows in which you can win a large amount of money, especially 'Miljoenenjacht' since it has the biggest prizes. If he would win he would then live a fine life from the interest, because he has no clue of what to do with the money.

Jesson Einmahl

The best friend of Jesson would describe him as loyal, fair, kind chap who is always too late. Well, he got at least one of them right, as even though Jesson sent the same set of answers as last year, he managed to do it one day too late. If Jesson could have a superpower he would like to pause time, which would probably come in handy if you work with deadlines and have the habit of always being late! In regards to his other wishes, Jesson would love to play the last scene in Shawshank Redemption: this beautiful scene on the beach, from a brilliant film, shot on one of the most beautiful places on earth, gives him the best feeling in the world. Jesson does not have any plans moving to a beautiful place of his own since he is living comfortably at his folk's house in Tilburg.

Max van der Lee

This nineteen-year-old also just started his first year of econometrics. He loves cycling, watching sports, winning at FIFA and investing. He likes to describe himself as ambitious, a perfectionist and a little crazy, especially when he has had a few drinks. What you really need to know about him however, is that if he could participate in a TV show he would be a senior partner in Suits. Also, he would like to meet Kevin Spacey and his biggest dream is to climb all the fifty most anticipated mountains of Europe. But do not be fooled by these deep and clever answers, because this guy is actually a drunken weirdo most of the time. He has a habit of ripping out of his pants on various occasions, such as his high school senior prom and just a couple weeks ago in the TOP-week for example. ●

The Sexiest Job...

I was born on a farm and since I did not have brothers (only sisters), my parents hoped and expected me to follow their footsteps and become the next farming generation. At primary school, it was already clear that my talents were more in math than in working at a farm. And although my parents did not understand the fun of math at all (who does outside mathematicians?), they supported my decision to not become a farmer. Nevertheless, I tried to combine farming with mathematics when I was around twenty years old by writing an optimization model to select the best cows at the farm. According to my father, the model was incomplete by not taking at least the kindness into account. Hence the implementation failed, and I learned that making a complete model and implementing a plan can be challenging.

This experience did not discourage me and I continued studying optimization models. I even received a PhD in this field, and made an occupation of it by working at a leading software and consultancy firm in this area (ORTEC) and obtaining a position as professor at Tilburg University. Meanwhile my oldest sister took over the farm, so the family traditions are preserved and my parents have a successor. Over the years the gap between farming and math has gradually become smaller. Milking the cows by hand used to be an exhausting job, but the entire process of milking has been taken over by a milking robot, packed with optimization and intelligence. And almost everyone visiting the farm, from the mailman to the dairy company collecting the milk to the feed company delivering the feed, is supported by logistic optimization models.

Nowadays, even my parents, though quite old already, understand the power of math. They use computers nor the internet and have no mobile phone, but even they recognize that the world is getting more and more complex and globalized, and that the power of computers, internet and data is exploding. Not only my parents, by the way, but everybody nowadays recognizes this. Thanks to increasing computer and optimization power, and data capturing and storing technologies, we are entering a new era: The era of data science. Studying (applied) math used to be one of the most boring activities thirty years ago, but nowadays the job of data scientist, according to the famous professor Tom Davenport, is the sexiest job of the 21st century.

Therefore, I really owe a lot to my parents. They trusted me and gave me their commitment. They could not predict thirty years ago how Google, Facebook, Amazon and many other companies (like ORTEC) are at the edges of optimization power to get the best out of their data. And similarly I am extremely proud of all the members of the staff and our students, who want to explore, analyze and implement the next steps in optimization power and data. The developments are going so fast that I really do not know what our field will look like in thirty years. I am sure that our job will remain the sexiest job. And... I am still very happy with the cows in the green fields, producing my milk. Computers can do a lot, but producing fresh organic milk might still be a challenge thirty years from now. ●

Goos Kant

Goos Kant is a part-time full professor at the Department of Econometrics and OR, as well as partner and member of the supervisory board of ORTEC. His research interests include logistics and supply chain optimization.

Calculations to Prevent Chaos

Text by: Stefan ten Eikelder

An all too familiar scenario for those interested in crime series on TV: a group of terrorists plans a devastating attack, passing messages to one another in empty apartments in shady neighborhoods. At the exact moment the attack is supposed to be carried out, counterterrorist agencies figure out who is involved and what their roles are; smart computer experts use nifty software to find out who is responsible for placing the bomb, shooting the president or whatever their goal might be and miraculously, they intervene just in time.

As discussed in the Nekst issue of summer 2014, mathematics is used in fighting crime. Here, we take it one step further and show the ways in which mathematics can help in the field of life and death that is counterterrorism. You might have your doubts with regards to the realism of the described TV-scenarios, but one thing we can be sure about is that nowadays a lot of time and money is spent on counterterrorism. Since ever more complex problems call for smarter and smarter solutions, we will show how the elegant field of mathematics can be applied to one of the most uncontrollable and unpredictable problems of modern time, to decide where to spend valuable resources such as money, time and agents.

Breaking their cells
Let us turn to the field of graph theory. Consider a terrorist cell, consisting of terrorists and communication paths. Communication could be done by phone calls, by real-life meetings, via advertisements in newspapers; basically anything you can think of. We model the terrorists by nodes and we say communication between two nodes is only possible if a direct line between these two nodes exists. An example of such a graph is shown in Figure 1. One criterion for disrupting the cell is the connectedness criterion. This criterion states that we can reasonably say to have disrupted the terrorist cell when we have removed one or more nodes (terrorists) such that the graph breaks into two unconnected

Figure 1 A graph representing a terrorist cell

subgraphs. In Figure 1, removing nodes B and D would result in breaking the terrorist cell. No terrorist strike can be carried out by the remaining terrorists, so we have succeeded. Or have we not?

Recent developments in the application of math to counterterrorism suggest that the connectedness criterion is not the right measure. A drawback associated with the use of this measure will be discussed below. It has been suggested that what we need instead of graph theory is the field of mathematics known by the name of lattice theory. Just like in any organization, it is likely that a terrorist organization has a certain hierarchy in its structure. Some members are leaders, others are followers.

Figure 2 shows a partially ordered set (poset), which is the main concept in lattice theory. In the example, person B is higher in the hierarchy than persons E or G, but there is no clear hierarchy between persons E and G. Unlike in normal graphs, the vertical location of a node in a poset graph is actually
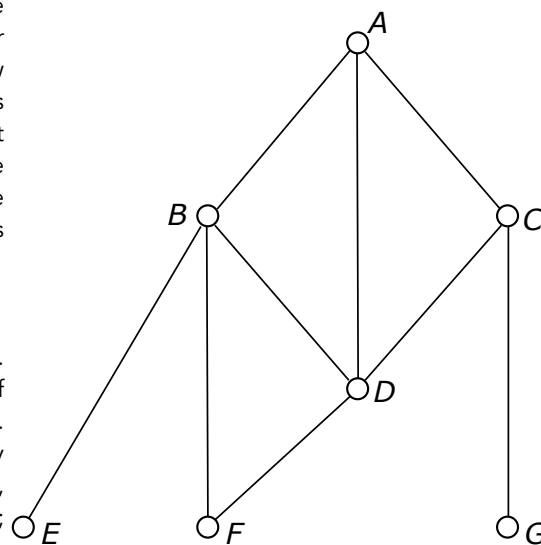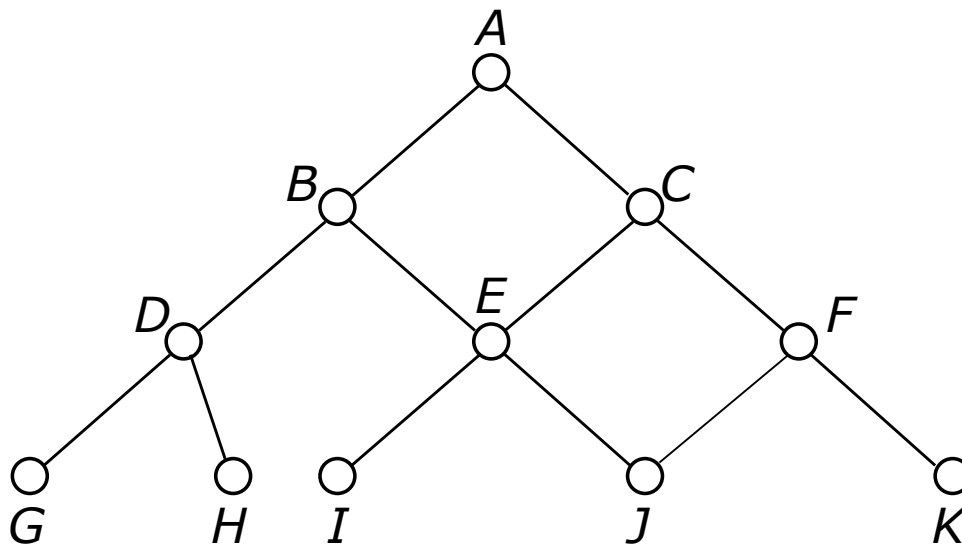
Figure 2 A graph of a poset

important, since it gives us information about the hierarchy.

Now, removing persons B and E, for instance, would result in breaking the poset graph into multiple unconnected subgraphs, disrupting the terrorist cell. However, person A can still pass messages to person C and person C can pass messages to person F. Finally, person F can instruct persons J and K to perform some terrorist attack. Even capturing person K as well would not solve this problem, as history has shown that devastating attacks causing many deaths can be carried out by just a single person. It is therefore wrong to assume that breaking a poset graph into subgraphs means that we have made a successful intervention. An alternative criterion is that we have disrupted the terrorist cell if it is unable to pass messages from top to bottom, that is, from the leader to one of the foot soldiers.

Therefore, we would like to capture either person A, persons B and C, persons D, E and C, or any other combination that would cut off leader A from all foot soldiers G to K. In other words, every maximal chain from top to bottom has to be disrupted. An example of a maximal chain is ABEG. A set of nodes which disrupts every maximal chain is called a cutset.

Now, we are getting to the essence of the story. When an intelligence agency captures a number of terrorists, say k members of a cell, they want to know the probability that the cell is disrupted. In other words, they want to know the probability that there is a cutset among those k members. Denote by *Pr(T,k)* the probability that terrorist cell T is disrupted when k members are captured or killed. If we write *Cut(T,k)* for the amount of cutsets of size k or smaller in terrorist cell T, we obtain:

$$Pr(T,k) = \frac{Cut(T,k)}{\binom{n}{k}}$$

where n is the total number of members of the terrorist cell. For Figure 2, the only cutset of size 1 is A. Using combinatorics we find that the total number of cutsets of size 2, 3 and 4 are 11, 56 and 170 respectively. For an effort of capturing 1, 2, 3 or 4 terrorists we are rewarded with a probability of disruption of the terrorist cell of 9%, 20%, 34% and 52% respectively. Thus, if you happen to work for an intelligence agency, two things should be clear to you by now. First, this framework helps you to understand the probability of a successful intervention, when you do not know where the captured terrorists exactly fit in the hierarchy. Of course, in case we know where some of them fit in, our predications will be more accurate. Secondly, the example above suggests that the probability of disruption increases rather quickly in k. Allocating a little more manpower to also capture a fourth member, instead of just three, seems like a reasonable investment.

Practical issues
Keep in mind though, that terrorist organizations do not give away their organizational structure on a silver platter. In practice we unfortunately do not know what poset corresponds to a terrorist cell's structure. Intelligence sources might be able to tell who the leader is and gain other information about the general structure and ⟶
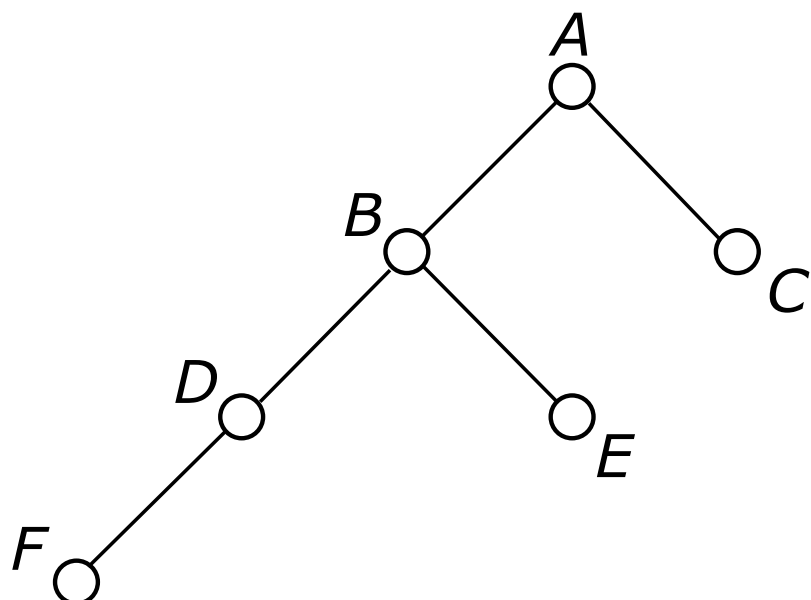

Figure 3 The fishbone structure for terrorist cells

size, but unless the captured terrorist was actually planting a bomb, it might be difficult to find out where he or she would fit in. A particular structure that is often encountered is the so-called tree structure.

Let us consider this tree structure. A tree structure has exactly one maximal node, which represents the leader, such as person A in Figure 2. Every other member has exactly one superior. In Figure 2, person E has two superiors, namely persons B and C, so this is not a tree structure. It is unlikely that a terrorist answers to two superiors, because capturing him would put both of them to danger. Our analysis of the tree structure does not stop here though: there are still many tree structures that a terrorist cell can adopt. We shall once again call the concept of the cutset to aid. Naturally, a terrorist cell will want to organize itself in the best possible way. Even though we are not sure whether or not terrorists study lattice theory, it is likely that some of the results are known to them as well, through trial and error. Therefore, by determining theoretically 'good' structures, we might just find structures very similar to the ones actually in use. For now, we define 'good' structures as being those with few cutsets.

It turns out that, by using advanced mathematics, 'good' structures are special pure binary fishbone posets. In this complicated name, binary indicates that each member has at most 2 subordinates (followers). A special pure fishbone poset looks like the graph shown in Figure 3. This also happens to be the 'best' binary single leader poset for terrorist cells with 6 members. For 5 members, the graph that is obtained by simply deleting node F is the 'best'. For smaller terrorist cells, other structures turn out to be even better. The fishbone structure, however, can easily be extended to larger terrorist cells, for instance by giving terrorist D an extra follower. It has not yet been shown that these fishbone structures are the 'best' for sizes larger than 6.

What if we are too late?
Ideally, we would get hold of terrorist cells while they are in communication phase and we can prevent them from passing on orders. However, in case plans have already been communicated, capturing terrorists who are not foot soldiers might not make a difference.

model from the previous section. For now, we assume they chose the business site. They then succeed with a probability 1 - θ_B. In any case our expected cost involves the deterrence costs $D(\theta_B)$.
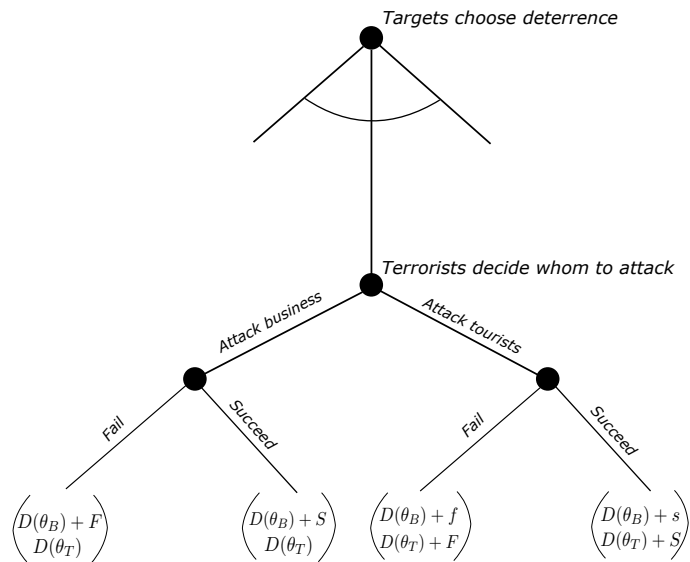

Figure 4 Deterrence game tree for targets

At this stage, we have to call upon other counterterrorism methods. For fairly obvious reasons, terrorists like to focus their attacks on important and crowded places. The probability of an attack on your house is, luckily for you, not that big. Naturally, focusing our protection efforts on those important places is the way to go. But which places should we protect, and how much should we spend on protection?

Even here mathematics can come to the rescue. For simplification we shall focus on two places of interest: a business site B and a tourist site T. For both sites, we can choose deterrence or security levels $D(\theta_B)$ and $D(\theta_T)$, resulting in terrorist failure probabilities θ_B and θ_T respectively. Now, which potential target site the terrorists choose to attack is obviously influenced by the level of deterrence at those sites. Say the probability of choosing the tourist site is π_T and π_B the probability of choosing the business site is , the sum of both being equal to 1. Once the terrorists have chosen their target they launch their attack, assuming that the intelligence agencies did unfortunately not succeed using our lattice theory

As we econometricians can be very cold-hearted, we assign some cost S to a successful attack, capturing both damage and casualties at the business location. A failed terrorist strike might also result in some damage, say F. For simplicity, we say that the damage at the tourist site will also be S or F, in case the bad guys strike there. However, since business is involved everywhere, it is likely that the business sector also takes some damage in case a tourist site is hit. Thus, in that case, we assign costs s and f. A graphical representation of the situation is given by Figure 4.

Smart solutions
Having established all this, important choices have to be made. Both people with tourist interests and people with business interests want their own site to be secure. You can imagine that the more money is spent on protecting the Statue of Liberty, the higher the probability terrorists will go for an attack on Wall Street, because it has become a relatively easier target.

Decision makers now have two options: They either cooperate, in which case they minimize the expected total aggregate

costs (prevention cost plus damage cost), or they act individually by minimizing the expected cost to their own interest. Let us omit calculations and describe the results. In the case of individually minded decision makers, people with business interests will spend more money on deterrence than that what is socially optimal, i.e. what would have been the result of cooperation. This is due to the fact that their expected loss is higher.

However, an opposing factor comes into play. Business interests are also in favor of spending more on tourist site protection, because this also protects their interests at this site. Ironically, this may actually hurt their primary concern: the business site. The models tells us that the tourist site will likely be either overprotected or underprotected, depending on which of the opposing factors described above dominates.

Let us now switch off the mathematic mindset and use some logical reasoning. An ordinary civilian cannot simply call the government and tell them to increase security on a certain monument. Increasing security efforts by means of lobbying, for example, will therefore take

some time for tourist sites. Businesses, on the other hand, can act collectively, and protect many employees at the same time.

This will lead to underprotection for the tourist site, making it a more vulnerable target to a terrorist attack. If we would use collective deterrence instead, and both sites would decide together on deterrence, total expected costs would be lower. Because this also includes human lives and not just money, this is certainly something to think about.

For now, let us just hope that terrorists are not hiding among Nekst readers, and we can continue to use mathematics to our advantage. ●

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Ad the

It was already getting light, the morning we cycled through Tilburg. This was the end of un-doubtedly the most amazing week of my life. This week, which started exactly five days earlier at around the same time, was a truly outstanding way to kick-off of the next couple of years.

Monday

I got up really early, because we had to be at the sports center at 9.00 hours. I had two friends sleeping over for the rest of this week and after they dropped off their belongings we went to the sports center to get ourselves registered. After our registration we met our introduction 'mommies'. Luckily, we had attended the mandatory introduction day, so we had all seen each other before. Since all introduction moms and dads were dressed up, ours wore minion costumes and had made minion eyes for the group. When our entire group was gathered around (all 17 members) we went to a field where a variety of games were set up. We had to compete against other groups, and in some games we did well, in others not so much.

At around 12.00 hours we had lunch and afterwards we went to a university classroom to play a game. Because the game was required by the university, we knew it had something to do with our studies. It was a quite complicated game and no one really enjoyed it, since it was hard to play and way too serious. In the afternoon we tried to break the world record of most people performing push-ups for one minute and we enjoyed a nice barbecue in the Koepelhal, where all TOP-participants ate. After the meal we had the opening party where we learned the TOP-dance. Although it was very hot I had a really good time. As the party ended it was still relatively

early, so we went to the house of one of our mentors. Here we drank some beer before we went to Café the Boekanier, our final destination for this night.

Tuesday

On the second day of the TOP-week we went to the Boekanier for breakfast. They served hamburgers, which was good because it helped to cure my hangover. Even after eating the hamburgers, our energy level was not restored. Because we were still feeling tired the games day was rather boring. The games were set up in the Leijpark. All study and sports associations had a stand were everybody could participate in activities. Enthusiastic members of the clubs tried to talk the new students into joining an association. Afterwards we got dinner at the Boekanier, because soon we would attend our first cantus! Despite me not being allowed to drink because of my age, I really enjoyed it.

When the cantus ended we stayed in the Boekanier the entire night. Well, officially not the entire night, because one of the guys who were staying in my room was feeling sick.

Therefore me and one of my moms brought him to my place and put him in bed, after which we returned to the Boekanier. I would not let something like that spoil my TOP-week.

Wednesday

On Wednesday there was another cantus, which about half of our group attended. For anyone who did not have the legal drinking age or who was not keen on going to the cantus, there was a no-alcohol activity. We were not really looking forward to play laser tag, so we decided not to go. One of my friends and I went to my room where we drank some beer. Afterwards we went to Plato to have dinner. Subsequently we went to the full-moon party in Café Philip, which MAK had organized.

Together with three other guys I left the group in order to visit the parties of some student associations, because I had not done that yet. It was still quite early and there were not many people at St. Olof or Plato, so we only drank a few beers and left not too long after. At midnight we were already heading back to Café Philip. After a lot of walking, one of the guys was not feeling very well, so we sat down for a while. He was feeling really

Jonas de Boo

AGE: 18

Began studies in 2015

Thursday afternoon there was a festival-like activity, where all the student and sport associations were promoting themselves, but due to heavy rainfall it was not attended by a lot of students. We also left early and went to one of our group members' house, were we sat down for a while before we left to get rid of our wet clothes.

Brandpunt, where we had an equally good time.

Friday

On the last day we could finally sleep in, because we did not have breakfast all together. My friends who were sleeping over and I decided to go to the pool party a little while later. We went there

'It is safe to say my vision regarding hynoptism turned around 180 degrees that day'

After that we had to gather for dinner at Vidar. It turned out to be quite a long bike ride, but it was worth it, because we got some food in our stomachs before the fourth night. Lil' Kleine was performing at the Boekanier so we went to his show. I was actually kind of looking forward to it, despite not finding him being that good. My prejudice was found rightly so, because his performance was kind of bad and the audience was not that excited either. We therefore decided to finish our pub crawl instead. We had five more places to visit and five more shots to drink. It was a treat. We did not go to Philip due to the long queue in front of it, so we spent a great part of our evening in the Skihut. It was great fun, because we could dance on the bar and everybody joined in. After we went to the Skihut we visited

at around 14.00 hours which appeared to be a good idea, because the weather was really beautiful. It was very nice. After the pool party we had diner at St. Olof where we also had a good time. Afterwards we went to the home of one of our mothers where we had a few beers before we took off to the party at the Koepelhal. I personally liked this final party a lot. Afterwards we cycled to Vidar to end the amazing week. I believe it was around 7.00 hours when I finally laid down in my bed and closed my eyes, looking back on a wonderful week. What made it wonderful was my enjoyable group and of course the mothers that took care of me this week. ●

bad and had to go home. Since we had already done so much that evening and a lot of our group members had also left for home when we came back to Philip, we decided to call it a night at around 2.00 hours.

Thursday

The next day we attended a hypnosis show, which I was not really looking forward to, because I never believed in hypnotism. I was extremely tired because we had to get up really early. Well, it is safe to say that my vision regarding hypnotism turned around 180 degrees that day. It was really awesome to see it being done and I was truly amazed.

Improving passenger satisfaction at NS when dealing with wait-depart decisions

A relatively small train delay can already put a transfer at risk. If a transfer is indeed at risk, two decisions can be made; either the connecting train departs according to schedule, causing some passengers to miss their transfer, or it waits, propagating delay further through the network. The latter option prevents relatively large delays due to a missed transfer. Dealing with these decisions is known as Delay Management.

The Netherlands has an extensive railway network that is highly utilized every day. The main part of this network is operated by Netherlands Railways (NS). NS operates approximately 5,200 trains each day to transport over 1.2 million travelers within the Netherlands. Over the years, NS' focus has shifted more and more towards passenger satisfaction and the aim to minimize overall passenger inconvenience. Hereby, the general notion that higher delays cause increasingly more inconvenience for passengers is adopted. In addition, due to the high utilization of the railway network, the Dutch government takes special interest in NS' performance. This interest is also focused on passenger satisfaction and the government requires NS to maintain a high level of passenger punctuality; the percentage of passengers that arrive at their final destination with a delay less than a certain norm. The emphasis of both the government and NS itself on passenger satisfaction is what lead to my thesis topic. During my internship at NS, I was asked to conduct research that would give NS insight in ways to implement the focus on passenger satisfaction with respect to Delay Management, specifically wait-depart decisions.

Theory

The majority of the research on Delay Management has been focused on solving the Delay Management problem with respect to minimizing total passenger delay. This objective is quite straightforward and only takes delays into account in a linear fashion. Therefore, the theoretical part of this research consists of introducing new types of objectives for the De-

lay Management problem, such that passenger satisfaction is incorporated.

In introducing the different objectives, we use the notation of Dollevoet et al. [1], because this Integer Programming (IP) formulation of the Delay Management problem is used as base model for this research. In this IP formulation, it is assumed that passengers always take the fastest route to their destination. Passengers that share the same origin, destination and starting time of their journeys thus travel exactly the same route and consequently suffer the same delay. Therefore, in order to determine total passenger delay, it suffices to calculate the delay per OD-pair and multiply this delay with the number of passengers that share this OD-pair (w_p). The objective of minimizing total passenger delay can thus be denoted by:

$$\min \quad \sum_{p \in \mathcal{P}} w_p(t_p - SP_p) \qquad (1)$$

Here, SP_p indicates the arrival time of a passenger with OD-pair p in the case that there are no delays. t_p stands for the arrival time of a passenger after delays are introduced in the network and corresponding optimal wait-depart decisions are taken. The term between brackets thus indicates the delay suffered by all passenger corresponding to OD-pair p.

The first alternative objective is minimizing the sum of maximum passenger delay. This objective can easily be rewritten such that the corresponding Delay Management problem can also be formulated as Mixed Integer Programming (MIP) problem.

$$\min \quad \max_{p \in \mathcal{P}} (t_p - SP_p) \qquad (2)$$

The second alternative objective is minimizing the sum of all squared passenger delays.

$$\min \quad \sum_{p \in \mathcal{P}} w_p (t_p - SP_p)^2 \qquad (3)$$

Finally, we introduce the objective of minimizing the sum of all dis-utilities.

$$\min \quad \sum_{p \in \mathcal{P}} w_p f_p(t_p) \qquad (4)$$

Where $f_p(t_p)$ is a piecewise linear function:

$$f_p(t_p) = \begin{cases} \alpha_{1p}(t_p - SP_p) + \beta_{1p} & \text{if } b^0 \le t_p - SP_p \le b^1 \\ \alpha_{2p}(t_p - SP_p) + \beta_{2p} & \text{if } b^1 < t_p - SP_p \le b^2 \\ \quad \vdots \\ \alpha_{kp}(t_p - SP_p) + \beta_{kp} & \text{if } b^{k-1} < t_p - SP_p \le b^k \end{cases}$$

Here, interval i consists of all passenger delays between b^{i-1} and b^i. In addition, the α's and β's represent the slope and constant term of the linear functions on each interval, respectively. Both parameters can not only differ per interval, but also per passenger. Dependent on the shape of the dis-utility function, different rewriting methods are used to ensure that the corresponding Delay Management problem is a MIP problem.

Data
In order to solve the Delay Management problems that correspond with the introduced objectives, we need data on passenger streams. This is provided in the form of OV-chip card data (OVCP data). This data includes the location and time of passenger check-ins and check-outs and the type of OV-chip card used. Despite the fact that OVCP data can be used to monitor passenger streams, NS cannot link this data to specific individuals. Data of an OV-chip card provides only information on the trip made and the type of OV-chip card, not on the passenger making the trip. The same person traveling twice on the same day is thus seen as a different person and is counted as a passenger twice.
From July 9, 2014, all passengers traveling with NS are obligated to check-in and check-out with an OV-chip card. This implies that almost all passengers traveling through the network are accounted for. Up until now, research with respect to Delay Management at NS has only included data from before 2014. This makes this research highly relevant to NS, as we work with a more accurate view on passenger streams. In addition, using the type of the OV-chip card, we can assign each passenger to one of three main passenger groups: commuters, students and social travelers. Though there is no way of knowing a passenger's true dis-utility when suffering delay, we can try to estimate such a function for the three passenger groups. This is done using passenger satisfaction grades. We define two types of dis-utility functions; one where passengers are seen on time up until three minutes delay and one where passengers are seen as on time up until five minutes delay.

Steffie de Roover
Age: 23
Began studies in 2010

This is in line with the current discussion on what to set as norm for passenger punctuality. At NS an attempt to define a passenger dis-utility function has never been made before, which makes the dis-utility definition in this research another aspect that makes it relevant to NS.
For this research the amount of data available is substantial, due to the amount of passenger that travel by train in the Netherlands every day and the use of the OV-chip card. Therefore only a part of the entire Dutch railway network is considered. Roughly said, the considered network concerns the railway network between the stations at Utrecht, Arnhem, Nijmegen, 's Hertogenbosch, Eindhoven and Tilburg. Furthermore, OVCP data on passengers traveling through this network on one specific day was used. Even then, the amount of data is substantial and network reduction techniques have been applied to make it more manageable.

Practice
Ideally, each decision is taken using an exact Delay Management model. However, this is too complex to be used in practice. Therefore we aim to introduce simple rules based on the Delay Management models introduced, such that they can be implemented in practice and perform well with respect to passenger satisfaction.
Multiple trains travel the same trajectory during the day. Think for example about the local train going from Tilburg University to Breda. It departs every hour at 18 and 48 minutes after the whole hour. A transfer thus also occurs multiple times a day. The collective term for all transfers that occur during the day between two trains, is a connection. Figure 1 shows a connection between two trains on a workday, according to the 2015 timetable. For each transfer of this connection, it is indicated up until which time it is optimal for the connecting train to wait. We clearly see that which time is optimal, i.e. the optimal threshold time, differs per objective that is considered. Basing a rule-of-thumb on these optimal threshold times thus gives a rule-of-thumb that is likely to perform well in terms of the considered objective.
First, we consider a rule-of-thumb introduced before by De Lugt [2]. This base rule-of-thumb, the ROT, defines for three threshold times per connection, i.e. three times up until which the connecting train waits for the feeder train. Figure 1 shows a division between the transfers by a dashed vertical line. For each interval, the ROT takes the median of all optimal $\longrightarrow$

threshold times and this is the threshold time that applies to all transfers within an interval. Thus yielding three threshold times.

Next, we consider more general rules-of-thumb. The connecting train involved in the transfers displayed in Figure 1 can also be the connecting train for other transfers. One connecting train can thus have different threshold times in the same interval, depending on which feeder train is delayed. We therefore develop new rules-of-thumb, but instead of being connection specific, they are connecting train specific. Put differently, a threshold time of the ROT defines the maximum waiting time of a connecting train for a *specific* feeder train, while a threshold time of any of the other rules-of-thumb defines the maximum waiting time of a connecting train for *any* feeder train. These other, general, rules-of-thumb are; MinROT, MaxROT, MedROT, DweightROT and IntWeightROT. The first three take the minimum, maximum and median of all ROT threshold times of one connecting train, respectively. The DweightROT and IntWeightROT take a weighted average of the ROT threshold times, based on daily or interval occupancy rates respectively. In terms of difficulty in appli-

compare the rules-of-thumb in a realistic situation. Contrary to our expectations, numerical results show that the ROT does not always perform best. A possible explanation for this is that all rules-of-thumb are based on optimal threshold times, which are based on a single source delay. The fact that multiple delays are present in the scenarios therefore might interfere with performance of the rules-of-thumb. In general, the MaxROT and MedROT are shown to perform second best to the ROT in different scenarios. A possible explanation for the first however is the choice of train series that are delayed. The MinROT perform worst in all cases.

From this research, we concluded that the ROT indeed performs best, though performance of the majority of the other rules-of-thumb is relatively close. Therefore, it is recommended for NS to use general rules-of-thumb, as the much easier implementation goes paired with relatively good performance. Moreover, especially in cases that have a short transfer time, a rule-of-thumb can make much difference as the current policy of NS performs poor here. In order to make a recommendation for which general rule-of-thumb that should be implemented, more research is needed. In particular, more
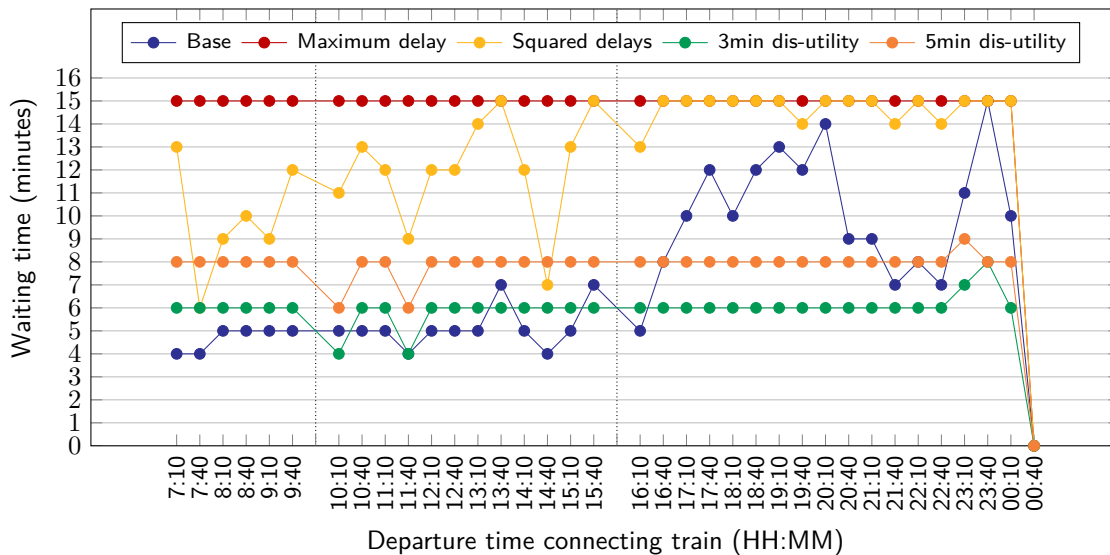

Figure 1: Optimal threshold times under different objectives

cation, the general rules-of-thumb are easiest to apply and the ROT the most difficult. Despite difficulty in application, the ROT is the most specific rule-of-thumb and therefore expected to perform best.

Results

Numerical results in this research have been obtained considering three scenarios. These scenarios entail the presence of a single source delay, two source delays and multiple delays in the network. Based on computation time and overall performance, we find that the Delay Management models with the objectives of minimizing the sum of all delays and the sum of all dis-utilities are most promising. All are expected to perform well when it comes to passenger satisfaction, but using the dis-utility objective can, in some cases, improve performance with respect to dis-utility considerably.

The scenarios that entail more than one delay enable us to compare the rules-of-thumb in a realistic situation. Contrary

delay cases and scenarios should be considered. Finally, note that though this research is relevant for NS, results cannot be implemented in practice directly. This has to do with a simplifying assumption that is made; the infrastructure capacity is not taken into account when deciding upon which trains should wait and which should depart according to schedule. Though this is a substantial simplification of reality, it was a necessary assumption as including capacity is more of a PhD topic than a Master thesis topic. ●

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Dining and Wining

Michiel van Erp

AGE: 21

Began studies in 2011

On October 30, the yearly Business Dinner of our study association took place in Sociëteit de Philharmonie. Everything went well and all the students grabbed their chance to get in touch with the companies that were present. However, prior to the event a lot of effort had been put in the event by the committee.

As a member of the Business Dinner committee, I experienced the event extra intensively, as I felt like it was more or less our responsibility to make sure that everything went smoothly. Also, the program started a bit earlier for us, committee members. We gathered at the Asset | Econometrics room around 12.30 hours, in order to collect all the items that had to be transported to the Philharmonie.

We started our committee work in March, with Roxanne and Ernst serving as members from the board at the time. Our weekly meetings were very entertaining, as we actually spent a lot of our time evaluating our weekends and drinks while discussing the agenda point "Any Other Business". Also, we had a very cool committee activity, the Escape Room 'Jan van Tilborg', in which we had to break out of Mr. Van Tilborg's room, who was an electrical engineer.

Another great activity with our committee was the board dinner we had in May. The dinner was served at my place, and we ate a delicious meal consisting of nachos, silver lake prawns and potato sausage rolls amongst others. However, as the weeks passed by, we had to start working on our event. As such, the meetings became longer and longer, and we started to discuss more and more important things. In the summer, when the board changed, Ernst and Roxanne were replaced by Ashley and Thomas.

Thomas, as the treasurer of the Asset | Econometrics board, also served as the treasurer of the committee. Ashley acted as committee member, and her work was very much appreciated by the rest of the committee!

A great achievement of our committee was arranging student consulting association 'De Kleine Consultant' for our workshop. This organization gave an interview case training. The workshop, which was presented to us by Emile Kragten and his two colleagues Susan de Graaf and Jelle van 't Ooster, gave us insight in how to crack a case and cope with different types of people you want to interview. The major lesson Susan gave us was to always make clear to the person you are interviewing why he or she should actually help you, or, stated differently, 'What's in it for me?'

The case was fun and in the end all of the groups presented their outcomes. The case was won by the team that was represented by Ruud Beks, which made me and all the other participants envy his team the rest of the day. At the end of the afternoon, the Business Dinner committee showed that they had actually experienced a very steep learning curve, because by giving a nice bottle of Chateau d'Ássêt, the committee proved that it was aware of the adagium 'What is in it for me?'

I look back on a nice event and a very fun committee, and once again, I would like to thank my dear committee members Lotte, Ashley, Thomas and Tim for the nice cooperation! ●

The Magic of Valorization

Text by: Aurel Macias Minambres

On September 29, Stefan and I had an interview with Henk Norde, the head of department of Econometrics and OR since 2013. He has been a professor at Tilburg University for a long time and was program coordinator before he became head of the department. A man with a long history in Tilburg, and therefore the perfect person to interview!

Student life

Henk Norde was born in Warnsveld, near Zutphen, a town in the province of Gelderland. In his student days he actually went to Nijmegen, the biggest city of Gelderland and the university city of the province. Over there he studied mathematics, initially just because he liked it because there is always the option to become a teacher in mathematics, Henk felt it was justified to study it mainly for this reason. After his studies, Henk did a PhD in Nijmegen before he came to Tilburg. Henk: "I came to Tilburg because of the possibility to teach mathematics as a substitute for military service. This was not yet an option at the university in Nijmegen, so it would have been a hassle to arrange it right there." He therefore did not hesitate to come to Tilburg, for he wanted to do this substitution above all else. Afterwards, he stayed at Tilburg University. He still lives in the neighborhood of Nijmegen though: in the town of Wijchen, with his wife and two dogs.

Henk loves to practice sports, and already did so back in his university days. He practiced soccer back then (for almost 35 years) and did that up until five years ago at the same team near Nijmegen. At the moment, he mostly practices tennis and cycling. In his university days there were no genuine study associations; Desda, the mathematics study association in Nijmegen, was just founded when he was at the end of his studies. For that reason he did not join a study association, and Henk just sticked to the students' soccer team in Nijmegen.

Back in the time, mathematics was a very theoretical study program. There was little room to do a graduation paper outside of the university and internships were not very frequent. But even if Henk would have had the chance to do such a thing, he probably would not have done it anyway: "There is more than enough room to specialize yourself in the meantime." All in all, Henk is very happy about his study period, as he thinks they were five of the best years of his life. He also still sees many of his fellow students, most of whom turned fifty recently. Parties with them sometimes felt like a little reunion, as sometimes ten of his old classmates turned up. Also, two of Henk's colleagues at Tilburg University actually studied mathematics in Nijmegen at the same time he did.

Current occupations

At the moment Henk has a full-time job at the university. He is head of the department at the moment, but also still gives lectures. He teaches courses such as Mathematical Analysis to Econometrics freshmen, but also mathematics-related courses to non-Econometrics students, such as International Business Administration students. In the meantime, he also works on his research. Henk: "In the first semester of the year I do not give that many lectures, but in the next period I give quite a few more; it fluctuates between the periods." Henk really searches for some balance between the
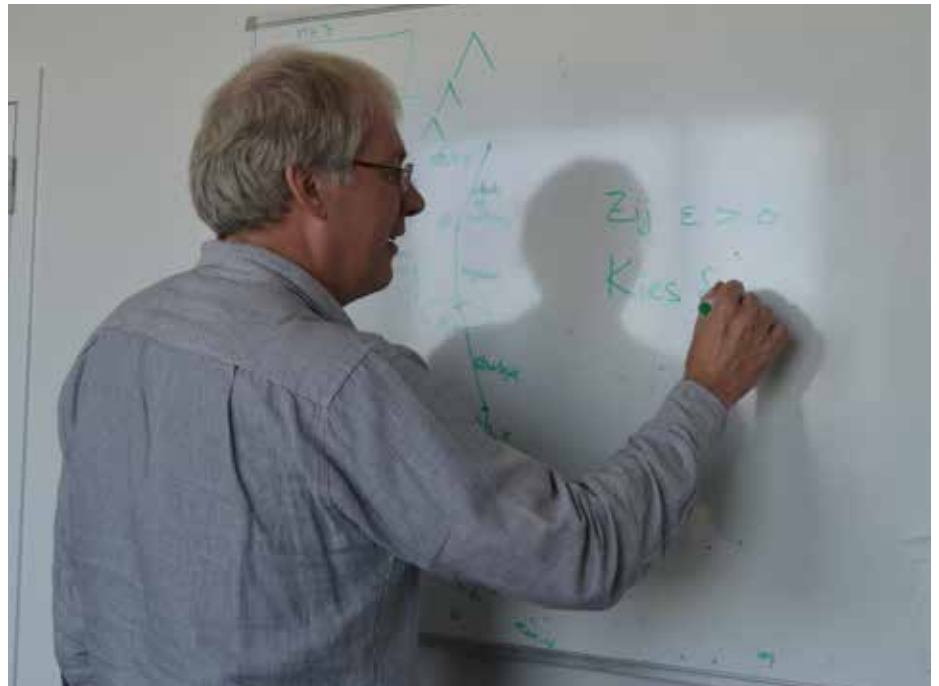
three parts of his job. He really likes the contact part of his job, especially when he sees that students learn something when he educates them about a certain mathematical subject.

As the head of department, Henk basically needs to supervise and make sure that everyone does the tasks he/she is assigned to do, and that they also do them the right way. There is a major education component this; getting the Bachelor Econometrics and Operations Research and its associated Master programs up and running, as well as taking care of the mathematics and statistics education in other programs. He also has a task in leading the pathways in research, to assure the university will get higher up in the research rankings. Henk: "In education and research, I also have the task of coordinating the valorization, which is a magical word. Valorization means explaining and justifying how the education and research of the department is actually useful to society." All in all, Henk likes his job but he does not think of himself as a real workaholic; he wants to find a good balance between working and other things in his life.

Spare time
In his free time Henk is, as stated, especially fond of sports and has little time for many other hobbies. Last year he tried to read a book, but he found that he had too little time to actually finish it. Another thing he has too little time for is cooking. Cooking is, according to Henk, a task he needs time for to do. Henk: "I need around an hour to prepare a meal I am satisfied with, while my wife can prepare the same meal in half the time." In the weekend he takes up his duties and cooks once, as he has more time to do so. He also walks his two dogs frequently in his spare time, and on top of that he participates in the famous 'Vierdaagse' (Four Days Marches) of Nijmegen. If he had more spare time, he would like to cycle and walk more, but he definitely would always make sure he has something to do; he would surely not end up in a black hole. "I do not watch television very frequently, for the only thing I actually really like to watch from time to time is sports." He is also not really a traveler of sorts;

Schiermonnikoog is just as fine as, or even better than, going far and wide. However, Henk would really like to go to the USA one day. For work-related reasons he sometimes travels abroad. For example, he went to a congress in Paris last year.

Henk tries to read Nekst frequently, but now that he is the head of department it is harder to find sufficient time to do so. Henk: "I feel like it is more interesting to read it when one is closer to the students, because the articles have more power when you know the people behind all the stories. When I was program coordinator, I felt closer to the students than in my current position." Henk also had his thoughts about our proposal to do an interview for Nekst. He thought: "How did they pick me, was there nobody else who would be interesting?", but at the same time he recognized that it was a long time ago (more than ten years ago, r.) that he did an interview for Nekst. However, he did talk with Nekst about his then-new function as program coordinator which he started four years ago, which you can read all about in Nekst 1 of 2004-2005.

For the new and upcoming students reading Nekst, Henk has good advice: "Do what you like. If you like mathematics and to use mathematics on practical problems, then Econometrics could be the study for you." Henk

caresses his old love mathematics, but he thinks it prepares you less well for practice than Econometrics does. ●

Bert & Ernie Questions

Bert or Ernie?
Ernie

Tilburg or Nijmegen?
Nijmegen

Calculator or mental arithmetic?
Mental arithmetic

Cinema or theater?
Cinema

Asia or America?
America

Fries or pancakes?
Fries

'What's in it for me?'

The Business Dinner offers the opportunity to meet some interesting companies while enjoying a dinner. As a master student the moment of graduation is getting closer, so this was a nice opportunity to obtain some more information about possibilities on the job market. Before the dinner started we first attended an interview workshop by De Kleine Consultant.

Juul van de Kruijs
AGE: 23
Began studies in 2010

I arrived just in time at 15.00 hours at the Philharmonie, located close to the Willem II stadium, after some problems with my bike. Luckily I managed to remove the dirt from my hands, because I immediately received a handshake from Emile to welcome me to the interview workshop. This workshop was given by De Kleine Consultant, a non-profit student consultancy organization. First three of their consultants introduced themselves and told us about their organization, then all participating students introduced themselves. Most of them were fellow students from the QFAS master, but I also met a couple of new people.

After some information about interviewing, the group was divided into four smaller groups. We had to conduct a couple of interviews to give advice about the ideal country for a Dutch webshop builder to expand its activities to. The first interview was with an old webshop developer in some imaginary country Alpha, which was a candidate country for expansion. This role was played by one of the consultants of De Kleine Consultant, something she did really well. The difficulty of these interviews became clear immediately. The old developer talked extensively, but not directly about things we were interested in, which was problematic because our time was very limited. In my group, Pepijn luckily managed to interrupt her in a polite way. After this we had a second

interview with a competitor, who was not immediately willing to share information either. Answering the question 'What's in it for me?' was crucial in this case. The workshop ended with the presentation of an advice to the board of the webshop company.

During the break I had some time to discuss the 'Hart van Brabantloop', which took place the weekend before, with some of the participating econometricians. I really hope to recover soon from my running injury so I can join them with the Batavierenrace.

When the representatives of the four participating companies (Aegon, EY, ING, KPMG) arrived, everyone took seats at the table of one of these companies. At the different courses of the dinner we switched tables such that we met three companies during the dinner. I had my appetizer of shoulder tender

at the Aegon table. The two Aegon representatives talked about their job and the structure of Aegon. One of them was responsible for hedging liabilities of a minimal payoff in pension products for example. He said that he was glad that Aegon decided in 2007 to hedge all interest rate risk, which I think was an understatement. In the next round I saw a familiar face at the new table. It was nice to hear that Hans de Mik from EY recognized me from actively participating in his guest lecture in the course Life Insurance last year. I also had a nice conversation with the guys from ING when I told them I am employed as working student at Rabobank. The dinner itself was also delicious, especially the salmon was exceptional.

At the drink afterwards I made Ennia happy by promising to write this article. She probably expected a response such as: 'What's in it for me?' ●

The Rose Bed of EOR Students

The life of an EOR student is not a bed of roses. For instance, did you ever encounter the following situation? Suppose you are going to a birthday party and you are preparing a gift at your parents' place. Your mother asks you whether a certain person will also come to the party, since she is quite fond of that person. You reply by telling her that this person is from a different friend group and that those friend groups are disjoint. She gives you the look an EOR student would give when he sees someone trying to construct a proof by means of an example rather than hard core mathematics: her jaw drops and she wonders whether you have been drinking again this week, instead of studying. Courageously you try to explain her the definition of disjoint sets, but your attempts are due to fail; probably Saint Nicholas will have something to say about that this year. These situations remind us of the fact that we, EOR and mathematics students, are a special kind of humans: nerds.

The look from your father was not that different either when you explained him that the number of his gray hairs grows exponentially, but should converge in the end. Despite his self-announced disinterest in the topic, he replied by showing you all of his still colored hairs. Proudly he reminds you of the fact that his father was growing gray hair at a much younger age. Unfortunately he does not seem to understand when I explain him I have difficulties with the cross-generational consistency in his argument. Nevertheless, I could easily provide him a counterexample, something I will probably remind him of when I will write him for Saint Nicholas. Side note: I am not sure if my risk aversion allows me that. Yeah, those situations are the collateral damage of studying Econometrics and Operations Research.

Luckily my study friends do understand when it is claimed that studying EOR is a sufficient but not a necessary condition to become wealthy and rich. My brother however, would not understand that this is not an 'if and only if'-statement. This is of course due to the fact that this group of study friends is sufficiently biased.

Lately, Nick tried to elaborate on the happiness of a random dog. He thought that, ceteris paribus, its happiness would be very discontinuous. Whenever a member of the pack enters the room an instant process jump of joyfulness takes place in its brain. Marieke argued that such a relation should be very continuous, but may seem discontinuous like a Random Walk. Perhaps the relation could be heteroskedastic and depends on the breed. We concluded that these things are just hard to say, ex-ante.

Or, do you remember that moment when your housemate saw your lecture notes for the first time, and wondered whether you were not just reading your book upside down? By then you had learned that there exists a probability that for every attempt you make in explaining someone, some will just not learn. Hence, your optimal reaction curve dictates: it is better to just tell them they are right.

Finally we do wonder whether the state dependency of wickedness is caused by the number of years of studying EOR or the number of ECTS. Hopefully, most of you now wonder whether it is right to talk about causation and not correlation. If so, then this implies you are truly one of us and there is no turning back. We are very sorry, we are with you. ●

Nick Huberts & Marieke Musegaas

Marieke Musegaas and Nick Huberts are PhD students at the Department of Econometrics and OR. Marieke's field of research is cooperative game theory and especially OR–games. She likes doing sports, playing board games and going on holidays. Nick's field of research applies game theory to a Real Options setting which analyzes strategic investment decisions under uncertainty. He likes to play (board) games, discover the secrets of Europe's beautiful nature, attend festivals and study Hermetic and Thelemic traditions.

Board
2015-2016

BOARD TO BOARD

Text by: Ennia Suijkerbuijk

Precisely one week after Cleo, Anouk, Ernst, Bas and Roxanne had officially been succeeded by the new board, it was time to find out what their opinions are regarding last year. What were their highlights and their favorite drinks? What weird characteristics do they have? Read on for more insights in the Asset | Econometrics' board of 2014-2015!

Bas
- Hard worker
- Sportive
- Adventurous
- Calm
- Skeptical

Well, old boardies, spill the beans! What were your favorite committees this year?

Anouk: That is a difficult question, since I had quite a couple of committees. Perhaps the Symposium, or otherwise the Nekst. No wait, the International Business Tour 2014.

Cleo: I only had two committees this year and I really liked both of them, but my favorite one is the Landelijk Econometristen Voetbal Toernooi (LEVT). Come on, we had pie and beer at every meeting! Who would not want that?

Ernst: My favorite committee was certainly the IBT 2015. The 2014 committee was great as well, but we were only present in the committee for a short while. For 2015's edition to Cape Town, I was also present for determining the location and that made it a wonderful experience.

Roxanne: I preferred the Active Members Weekend committee. It was a very creative committee and the meetings were simply so much fun! We also had pajama parties and we even still meet sometimes.

Bas: My first thought was the Finance Expedition, but the cantus committee was also really cool. However, I think I liked the Hitchhiking Trip committee the best. It was a great weekend and the committee members were very enthusiastic.

When I asked what the ultimate highlight of the past year was, the five old board members remained silent for a moment. You could see them going back in time, trying to remember what activities they all organized. However, once they started bringing up events, they could not stop. They mentioned the amount of participants at the Secret Activity, their extraordinary result in the Batavierenrace, winning the Asset Champions League, the collective decision for this year's IBT destination, the brothers & sisters evening, having snowball fights with 30°C during the General Members Day, etcetera; too much to write down. Below you can find a few of their highlights.

Anouk: I thought the Symposium was really amazing. The amount of participants was great, the speakers were great and the committee was very enthusiastic.
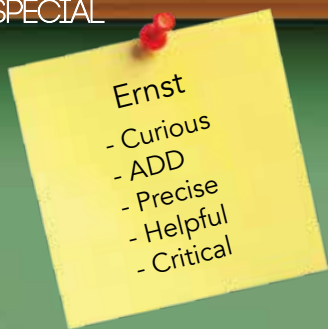
Roxanne: That was indeed awesome! I

Cleo
- Proud
- Precise
- Responsible
- Lady-like
- Stubborn

Anouk
- Workhorse
- Cheerful
- Party animal
- Selfless
- Modest

Ernst
- Curious
- ADD
- Precise
- Helpful
- Critical

remember just how surprised we were when we had sent an email to Dr. Eva Lee, who lives in the USA, whether she wanted to be in the Symposium's board of recommendation and she responded that she would like to be a speaker and that she would not mind flying over here. The entire experience was so great.

Ernst: For me, the cantus was really a climax. There were so many members present, and without any promotion! It was also an activity we had not come up with ourselves, but that a few active members approached us with. We responded that if they could find a date in our year planning we would agree, and I am so glad that it worked out.

Cleo: The hitchhiking during this year's Trip was also one of my highlights. Beforehand, I did not even know whether I dared hitchhiking. It was so incredible to just stand at the side of the highway and know that you have to end up in Germany, just with the two of you.

Bas: I am actually still surprised that it all worked out. Of course, we had a back-up car for stranded participants, but I was still concerned that not everyone would arrive.

What was your favorite drink?
Ernst: The New Year's Drink, definitely the New Year's Drink!
Anouk: I am sure you are right, but I can truly not recall anything from that night.
Ernst: After our drink, we went to Café Studio and when it closed at 04.00 hours around fifteen econometrics students were still present. That was also the night that I took your coat home, Bas, since you left without it and mine was stolen.
Bas: I was not sober enough to realize that I even had a jacket, so I just left without it, after which I went to snack bar Tropical and stole part of Ennia's pizza. I even dropped it on the floor and then continued eating it. Yeah, that must have been a great night. Just like the evening of the second Freshmen Activity, when we went clubbing afterwards. For some

reason I decided it would be a great idea to jump over an advertisement-board, which obviously did not work out.
Cleo: How is it going with the corresponding dent in your head?
Bas: Well, the doctor told me that it could be visible for five entire years. Up until that moment what had happened did not really matter to me, but five years would have been awful.
Roxanne: Well, luckily, you can hardly see it anymore.

Clearly, Bas can be a party animal sometimes. But what is his best character trait? And what about the others?
Ernst: I admire Bas' indifference. That may sound weird, but it is good to have someone in your team who puts everything in perspective.
Anouk: I think Cleo's best characteristic is her perseverance. Whether she is tired, annoyed or things get difficult, she will deal with it and do what needs to be done. I think that is an admirable trait.
Cleo: What I like about Anouk is that it is impossible to become angry at her. She is always enthusiastic and happy.
Bas: Just like Roxanne, she is also almost always cheerful.
Cleo: That is true! You had to explain what committees Asset | Econometrics has a hundred times during active member conversations, but you never got bored. That is a very rare characteristic and great for our Internal Affairs.
Roxanne: Do you know what I liked best about Ernst this year? Seeing him in a tutu on the gift we received from the new board!

What is the most important thing you have learned last year?
Anouk: The most valuable lesson I have learned is about giving some priority to my own needs as well; sometimes you just need to do something for yourself.
Roxanne: That is true, you did not do that at the beginning of the year. Personally, I have gained quite some flexibility by cooperating with others and consequently, my level of communication also improved.
Ernst: This year, I sometimes said that I had lost all confidence in the human race. Of course, that is a bit simplistic, but I have realized that everybody makes mistakes, in all sorts of organizations,

and that you should not become too frustrated; you just have to deal with it. I have gained better understanding for organizations and for other people.
Bas: I realized that you have to be clear in your communication and straight to the point. Furthermore, I have become somewhat immune to stress and I have learned how to solve problems on very short notice.
Cleo: For me, the most important thing I learned was to trust on others. In the beginning it was hard for me to give tasks to other people, but during my board year I learned to confide in others to do their job.

What is the weirdest characteristic of your fellow old board members?
Roxanne: Anouk really despises dresses.
Cleo: And physical contact!
Roxanne: Especially inappropriate physical contact while wearing a dress.
Cleo: Oh, and Bas always puts everything into his mouth.
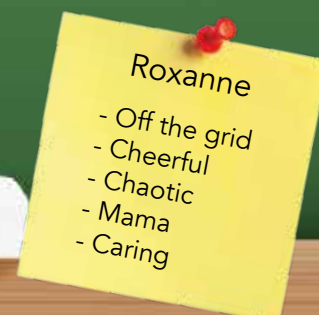Bas: I have heard that before.

Subsequently, Bas begins telling a distasteful story about how one time, a pen spiral got stuck in his throat. Once he swallowed it, it had gone to his stomach, but for quite a long time he kept thinking that he could hear the spiral clinging whenever he coughed. Eager to hear more fascinating stories, I continued my interrogation.

Are there any other stories you wish to share?
Roxanne: Ernst came up with the idea to introduce flexible office spaces, but he was the only one who was socially awkward enough not to want to switch desks.
Ernst: It is actually really inconvenient! As treasurer I needed to be close to the official papers and closet.
Anouk: Ernst somehow found a way to break every computer mouse within three days. Nobody could use the mouse on his desk, except for himself. Oh, and his bike was also always broken! ⟶

Roxanne
- Off the grid
- Cheerful
- Chaotic
- Mama
- Caring

Next, I asked them the final, simple question: 'Where do you see the others ten years from now?', which can also be found in most children friend books.

Unfortunately, they were not capable of giving a simple answer. It took them more than twenty minutes to come up with an answer for all five of them, but then again, their answers were pretty detailed descriptions. Collectively they decided that ten years from now:

- Cleo will have been a strategy consultant for quite a couple of years, after which she has become a manager. She will, of course, live together with Laurens (her current boyfriend) and will have two children. Together they will live near Utrecht/Geldermalsen and she will definitely have a fat, fluffy rabbit named.

- Anouk will still live in Brabant together with her amazing husband. She will have one baby (probably a ginger) and will be a data-analyst for a medium-sized company. When her child/children will

be older, she will be a very enthusiastic and active parent who is part of a primary school advisory board and she will also be a volunteer at the local hockey club.

- Ernst will be a professor at Tilburg University, probably full-time, but it might also happen that he works two days for a company such as TNO. His hobbies will still be rather feminine and he will still be together with his current girlfriend Audrey, but he will not have more than one child. What is certainly clear, is that they will not have any pet animals.

- Bas will have dogs, no doubt about it. He will live in the Randstad and will have one child, which makes his life rather busy, as he will also be a quantitative consultant. He will be rather strict about his kid's sports abilities; if he/she does not perform well, he/she will have to sleep outside.

- Even though Roxanne is very caring, she will not have any children, as she

despises babies. To compensate for this emptiness, she will have a cat and she will live abroad together with her current boyfriend Wouter. Furthermore, she will be a business consultant at a firm such as Quintiq.

After these slightly long descriptions, my questionnaire had come to an end. I want to thank Cleo, Anouk, Ernst, Bas and Roxanne, not only for this interesting interview, but also for all their efforts during the past year. They have been an amazing board and took Asset | Econometrics to an even higher level.

I speak on behalf of the Nekst committee, the new board and I think also on behalf of all of our members when I say: thank you! ●

	Cleo	Anouk	Ernst	Bas	Roxanne
First to arrive or last to leave	First to arrive	Both	Last to leave	Neither	Last to leave
Favorite 50ct candy shop article	Kinder Bueno	Kinder Bueno	Stroopwafels	Bits	Kinder Bueno
Music at the rooms	Guilty pleasure	No preference	Singer songwriter	Nothing	Pop/Jazz
Favorite promotional item	The new pens	Sports bags	Sports bags	Jogging pants	Sports shirts
Type of breakfast	Knäckebröd with sunflowerseeds	Yoghurt	Bread	Nothing	Bread
Send emails or make calls	Send emails	Send emails	Send emails	Send emails	Send emails

On Board!

Thomas van den Hurk

AGE: 21

Began studies in 2012

After the well-deserved holiday, it is time to start a new academic year. Along with a new year, the new board of Asset | Econometrics is appointed during the Department Members Meeting. Afterwards, there was a constitution drink at Café Qwibus.

Together with my roommate Tim I went to the Department Members Meeting at De Heuvel Gallery. Since this was actually my first DMM I was not sure what to expect. Although there were not many people present, we were told that the attendance was quite high for a DMM. During the first half of the meeting the board discussed the reports of last year. This included an overview of the committees and their accomplishments. Next to that, the finance monitoring committee approved Ernst Roos' work as treasurer.

During the break we all received the famous cherry turnover either with or without whipped cream and a drink. Since I was informed about this treat in advance I could prepare for this one, and it was as good as I expected. Everyone enjoyed their snack and it was time for the second part of the meeting. During this part the candidate board presented themselves. Each of them talked about themselves, the work they did in previous committees and their committees and responsibilities for the upcoming twelve months. The voting took place and since no one voted against the appointment of the candidate board, the new board was approved and appointed.

After the new board took their seats they presented their goals and ideas. They want to make everyone feel home at the Asset | Econometrics rooms, especially the 'passive' members. To accomplish this, the board will organize game evenings at the rooms, both for the active and passive members. Furthermore, there will be new concepts such as the Operations Research Conference and Options for the Future.

Another great part on the agenda of the DMM was AOB (Any Other Business). Traditionally, the old board mentions a few facts about each member of the new board. For instance, it was pointed out that Björn needs to watch videos on YouTube for over an hour to tie a tie and Thijs was told that not everyone has the song of the Socialist Party as their favourite. The DMM was a nice opportunity to get more insight in the association and to learn more about the plans for the upcoming year. I would like to encourage everyone who wants to know more about the plans and accomplishments of the board of Asset | Econometrics to visit the DMM the next time!

After the meeting many members and boards of other associations gathered at Café Qwibus for the Constitution Drink.

The new board prepared some slides in the format of 'Opsporing verzocht', where they marked the old board members as criminals. With some funny remarks and pictures they thanked the board for all their work during the past year. Also, the old board hid the keys of the Asset | Econometrics rooms of which they could obtain the location by placing letters in the right order. It turned out that they only gave six of the seven letters. However, at the end of the drink, they managed to solve it and they found the word 'freezer'. We can now officially congratulate Thijs Kramer, Ennia Suijkerbuijk, Thomas van Manen, Ashley Beringer and Björn Floor and wish them all the best for the upcoming year. ●
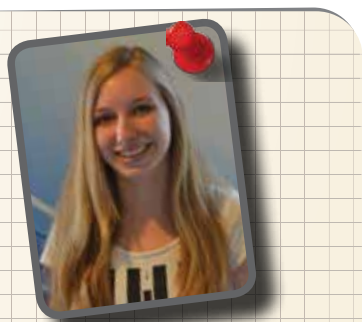
In Love with a Tiny Ball

Text by: **Mantas Satkevicius**

When considering who could be the interviewee for this article, there were no doubts that Eline Gelderman, a nineteen-year-old freshman, would fit it perfectly! Her extraordinary passion for table tennis has brought her to the top of this sport and she is not thinking of stopping. Regardless of her strictly planned schedule, Claire and I found a date to meet this talented person.

Eline was absolutely confident about her studies; her strong attraction to mathematics paved the way to econometrics. But then the obstacle of combining both studies and her passion arose. According to Eline, at first it was especially difficult to deal with demanding studies and her love for the tiny ball, but she thinks she has found a balance. Of course, Eline had to waive something: instead of three practices each week she is now only doing one. However, this optimistic person believes that one day she will find more time to defeat someone at the table.

what a serious opponent she would have been to everyone if not for the unfortunate injury.

Eline is absolutely loyal to table tennis. She is not so keen on other sports and she has never thought about quitting. Quite the contrary is actually true; sometimes she even dreams about table tennis! Moreover, it seems that this sport fits Eline perfectly. When asked if there is a rule in table tennis that she would like to change, she instantly replied that she is 100 percent satisfied with current rules and loves table tennis as it is. As her own words say: "I want to play

Eline Gelderman

AGE: 19

Began studies in 2015

'I want to play table tennis forever'

How did it start?
Just after high school Eline decided to leave the beautiful and lovely city of Maastricht and enrolled at Tilburg University. The first year econometrician cannot hide her smile while talking about her passion. It all started when Eline was eight years old and she followed her older brother's footsteps by going to a table tennis training. A little girl who came to training only for fun was quickly recognized as a raw talent and she eventually fell in love with this sport.

After a few years of permanent and grueling training she managed to become one of the top ten players in the Netherlands of her generation. Unfortunately, the young talent injured her shoulder when she was twelve years old and that stopped her for a whole season. Despite that Eline returned to a high level fast, so we can only imagine

table tennis forever". And this sentence comes from her mouth especially confidently. She also adds that table tennis is a sport that you can practice at any age. If you are skilled enough, you can be the captain of the table who takes full control of what is happening, so it is up to you how intensive or at which level you want to play.

Table tennis revealed
In the "table tennis world", players assign themselves to one of the two prevailing playing styles: defenders or attackers. If you guessed that Eline is an attacker, well, you have good luck today. Playing as an attacker actually means that you play more aggressive; you keep on attacking whenever there are possibilities to do so. Eline does not have any special rituals before matches, instead of that, she always does a good warm-up and tries to focus her mind

only on that game. Our right-handed attacker knows that there is no space for negative thoughts or nervosities at the table. She is a calm player, during her long career she has not broken any of her rackets (breaking a racket is common for extremely emotional players, who light up easily if they lose important points). Eline just takes her time, controls her breath and starts playing with passion.

Although one against one matches are most common, doubles are also quite popular among "ping pong" lovers. Eline enjoys those, sometimes it might be harder but the emotions that you can share with your partner after a superb victory are simply priceless. Nonetheless, there are no doubles tournaments in the majority of competitions, so she specializes in playing singles.

This prospective econometrician has won lots of prizes in tournaments and competitions, but her proudest moment was surprisingly not so long ago. Only one week before the interview Eline won a match against a top player in the eredivisie (the top division in the Netherlands). When she was asked to tell about emotions and thoughts that came into her head straight after the match, Eline barely said a single word: "It was amazing!" What makes that victory even special, is that Eline managed to win despite being 0-2 behind in the beginning. Eline's victory helped her team to keep the opponents behind and was one of the key factors which let them celebrate victory.

Eline Gelderman is a member of two clubs, TTC Kluis and TTV Heerlen, where she plays in the highest league for women. Table tennis clubs are not the only associations she is interested in though. She is an active member of student association Vidar and she is planning to join a sorority soon. Although Eline's time is not endless and she is familiar with the taste of skipping Friday night's activities due to training or tournaments, she is a person that never settles down. She is the kind of player for which a second place is a disaster; her personal motto shows it best: "Never give up!"

Future goals
Nobody could argue that is the most popular sport here in the Netherlands, but table tennis also has its place under the sun. Regardless that the average level of table tennis in the Netherlands is not that high, there are some really good and talented players. It is not a surprise that one of Eline's goals is to be among the most elite players. She has actually already played with top fifteen players in the Netherlands, so that is something to be proud of!

Moreover, we cannot forget to mention that she has even played abroad. One year ago, Eline participated in a championship in Turkey. As she declares it was an unforgettable trip, because she not only gained valuable experience but also made new friends from abroad. That is the true beauty of sport, is it not? From the early beginning until now Eline has always felt huge support from her family and friends. Since her brother is also a table tennis player they play a lot with each other. He helps her to prepare for the tournaments and knows how to motivate her best out of anyone. Unsurprisingly, her biggest fans are her parents and friends. They support her during home games and her father takes her to tournaments and competitions whenever necessary.

It might be surprising, but table tennis is not the cheapest sport. Those who decide to take it up seriously have to invest not only their time but also quite a bit of their money. If you want to play it at the highest level, you must be well equipped. Because of her top performances, Eline has to change her rubbers rather often. Likewise, she has changed several rackets. Just think about an outfit and other things… Of course it costs a bit of money, but it is always worth it to make this sacrifice for your passion.

Eline does not plan to make a living from table tennis, but she would not mind to take a trainer's job as a hobby. She thinks that table tennis is absolutely

suitable for everyone, no matter how old or flexible you are. You can actually enjoy this game in almost every school or university, cause there lots of "ping pong" tables all around. Table tennis is one of those sports where there is always room for improvement, making it especially challenging. Moreover, table tennis helps people to develop some useful skill that comes in handy in everyday life. For example, Eline has noticed that her reflex speed has increased quite a lot, and of course any sport in general is always a good idea for everyone. So it is up to you what sport to choose, but if you asked Eline she would recommend only one option. ●

Discovering Data Science

After my last exam I realized that two months of vacation would be an awfully long time. Luckily, I was saved by a message on Blackboard about LINK Summer School. LINK Summer School promised to be a unique opportunity to explore what a Data Scientist does in two weeks. I decided to apply and after an interview via Skype from my holiday destination I heard that I was one of the twelve students that were selected to participate in the Summer School.

Lisanne den Hoed
AGE: 21
Began studies in 2011

On Monday morning August 3, the Summer School started. On the bus from railway station Naarden-Bussum to the SAS residence I already met some of my fellow students for the next two weeks. Since all the SAS employees were driving nice cars, it was easy to conclude that people who got out at the bus stop, carrying big bags, laptops and suitcases, would be fellow participants of the Summer School.

After a short walk we arrived at the SAS residence, which is pretty impressive for those who have never been there. Most of the other participants had already arrived and I concluded that Tilburg was well represented. On the badges I could see that Mitchell Dingemans still needed to arrive, but Ruud Beks was already present. We started the Summer School with an introduction round. By means of two objects we brought with us, a personal object and an object that reflects your affinity with data science, we got to know each other. Mitchell even brought his Asset | Econometrics sunglasses as personal object, but unfortunately he broke it after our first night out. I think he would be happy to tell you the story behind it. Most of the participating students had

a background in Econometrics, but there were also several Aerospace Engineering students, from TU Delft. Besides the twelve students there were also three professionals that participated in the Summer School. Those professionals joined us during the first week, in which we acquired more knowledge about Data Science. In the second week, they guided us during the business case, in which we needed to apply our knowledge. The professionals were working at Eneco, NedTrain and NS Stations.

Daily topics

The first day continued with a short introduction on Data Science. In the afternoon, there were presentations about Big Data & Ethics, Data Visualization and Communication. Therefore, the first day mainly focused on soft skills, which was great to start with. The presentations were very interactive and during some small cases we needed discuss subject-related questions in groups, which made it possible to get to know each other better. After a delicious meal at SAS we headed to our hotel, which was situated in Bussum. Roommates were found easily and since the weather was very nice, we quickly went to the hotel terrace. The price of a beer turned out to be a little high for us, students, so we decided to look for a nice bar in the neighborhood. After a short walk, we found a nice place where we concluded the day with some cold beers.

On Tuesday we focused on Open Source Tools. Vincent from GoDataDriven started his presentation by showing us how beautiful the life of a Data Mining Scientist is. He showed us pictures of his

offices all over the world, since nowadays your office can be everywhere. As long as you have an internet connection, your office can be a hotel room in New York but also a sunbed on the beach of Bali. He easily caught our attention with his pictures and enthusiasm about his job and continued with an introduction in Rstudio. As you learn most from trying yourself, we got different 'fun datasets' to practise with. At the end of the day we worked on a little case about disruptions at NS, in which we had to find a pattern and give some actionable recommendations. Did you know that most of the disruptions are due to trains that break down? If it would be possible to predict which train has the largest probability to break down, this train could be taken out of service, which would result in fewer delays. This was actually the topic of the NedTrain case.

We explored SAS software on Wednesday. Since SAS offers a wide range of tools, we looked into various stages of a project, namely Data Preparation, Data Visualization and Predictive Modeling. Longhow Lam, a SAS employee, showed us some of his research on restaurant analytics, using review data of IENS. On Valentine's Day there were 1.7 times more reviews than on a normal Saturday. You are probably wondering where you need to bring your date next Valentine's Day. Well, according to the data, most couples visit a Chinese restaurant on Valentine's Day... I hope that our male econometricians are putting more effort into it.

Teradata joined us on Thursday to upgrade our knowledge on Data Warehousing. Their presentation started

with the Marshmallow Challenge. I was in the same team as Mitchell and he was convinced that we could win this challenge. He already practiced during the Active Members Weekend, so I had high expectations. Unfortunately, these were not fulfilled. Despite our creativity, our structure was not even strong enough to hold the marshmallow. We continued with learning about Aster, the software of Teradata, which is mainly SQL based.

On Friday, Unicef and Leeruniek were present. Under the guidance of people from TriFinance we investigated how Unicef could reduce the amount of donations that were expected, but could not be taken off the accounts. The reason why it was not possible to withdraw the donations is not communicated, and could for instance be a wrong account number or an account balance that is not sufficient. Leeruniek develops software for elementary school students, in order to let them do their exercises on a tablet. They wanted to predict when a child needs extra guidance, based on the results of the exercises. These small cases needed to prepare us for the second week in which the business cases were presented. I think that we all felt sad that we needed to head home for the weekend. We were already used to the delicious food that was made for us at SAS, but even more to being together as a group. A park easily replaced the bar of the first night and we mixed among the 'hangjeugd' of Bussum. Carrying beer crates from the supermarket to the park and back to the hotel even became a daily routine. At the end of the night, we gathered in one of the hotel rooms to play cards. Luckily, we would stay in the hotel for two more nights in the second week.

Practical visits

In the second week, we visited NS and NedTrain in Utrecht and Eneco in Rotterdam. They all presented a business case to us. All business cases were based on current challenges within the company, basically without simplifying it. The business cases were different in nature, but the same approach was needed to solve them. Eneco asked us to create a Virtual Solar Meter: a service that estimates the production of energy by solar panels. The number of households that have solar panels installed increases,

but not all households choose to buy a meter that measures the performance of the solar panels. Two approaches were proposed: physically modeling the solar production using meteorological data and modeling the solar production based on the measured output of installations nearby.

As described before, NedTrain wanted to investigate the possibility to predict which train has a high probability to break down, so this train can be taken out of service before it actually breaks down and causes delay. Besides the damage to the public image, the costs of unscheduled maintenance are incredibly high. The NedTrain team could use sensor data from the Dutch Sprinter Light Train, the latest Sprinters of which the performance is monitored using sensors. NS Stations wanted to make use of available OV-chipkaart and data of sensors that were installed on various places in Utrecht Central Station to optimize the locations of shops. Nowadays shops are still arranged based on gut feeling and that needs to change. Monday evening I heard that I would work on the NS Stations case for the remainder of the week, together with three teammates including Mitchell.

On Tuesday, each team went to its respective company in order to get a better picture of the business problem. During this day, we had the opportunity to discuss our problem with professionals from NS Stations to ensure that we would focus on the issues that are important for them. The datasets were handed out to the teams and we discussed the plan for the coming week. Typical questions that needed to be answered were: what is the problem statement? What is the scope

of our research? What challenges may we encounter during the process? We specified our goals per day and made a division of responsibilities within the team.

From Wednesday onwards, we were back at the SAS residence to work on our case. We explored the data, decided what data we would use and started with the data preparation. In the afternoon, the conference calls with the professionals to discuss our progress were scheduled. On Thursday, we worked on the descriptive analysis of the data and at the same time, we thought about the visualization of our results. Did you know that, compared to other shops, the highest fraction of passengers is willing to deviate from their route to go to Smullers? On Friday morning, we had some time to finish our optimization model. We developed a model that is able to determine the optimal location at Utrecht Central station for a number of shops, given the passenger flows and the willingness of passengers to deviate from their route to visit a shop, among other things. Unfortunately, we had to make major assumptions in order to build this model due to the restrictiveness of our data. Besides the optimization model, we invested a lot of time in making an animation that represents the passenger flows over the day. Luckily, the jury liked our presentation in the afternoon just as much as we did and our team was voted as winner. We concluded the Summer School with a delicious BBQ, after which this amazing experience came to an end. I am already looking forward to the reunion! ●

Kick Asse(t)s

Steffi van den Hanenberg

AGE: 20

Began studies in 2013

On October 6, the annual event Lecturer of the Year Awards took place at Tilbury's, where four professors were honored for their outstanding teaching during the academic year 2014-2015. This was followed by the Game Afternoon, where competitive students (and professors) could try to beat each other's asses with their board gaming skills. The evening was topped off by Asset | Econometrics' monthly drink at Café De Nachtwacht.

Lecturer of the Year Award

The Education committee welcomed us at Tilbury's with some snacks and drinks, and soon after all students and the nominated professors arrived, Tobias Klein started the afternoon with a presentation. He introduced Big Data and Data Science and informed us about the new Bachelor and Master programs that will start in Den Bosch next study year. For this project Tilburg University and Eindhoven University of Technology cooperate and offer a nice opportunity for us econometricians to connect one of the most promising developments in today's business with the econometrics curriculum.

After the presentation, the awards for the Most Interactive Lectures, the Best Bachelor Lecturer, the Best Master Lecturer and finally the Most Passionate Lecturer were allocated to Bertrand Melenberg, Edwin van Dam, Bas Werker and Hans Schumacher, respectively. All four of them received a medal, an official certificate, a gift and obviously a round of applause.

Game Afternoon

After the elections we gathered at the Academia building to complete the nice afternoon with board games, snacks, drinks and pizza for dinner. Approximately ninety students applied, so there were a lot of people and hence we had lots of fun. There were tons of games to choose from: Halli Galli, Wie ben ik?, Kolonisten van Catan, 30 Seconds and many more.

Personally, because of the party poopers at home that refuse to play board games with me, I really liked the idea of coming together with other students that actually do like board games and participate in some serious (and some less serious) games. Together with some fellow students I played the game 'Paul de Leeuw OnvoorSPELbaar' for the first time in my life. This involved doing assignments such as blind drawing to try to earn more and more 'bitterballen' until you have collected enough of those to exchange them for a 'bamischijf' - my favorite! My general knowledge concerning topics such as celebrities is horrible, but that could not spoil the fun; we all had a blast. My friend Lieke turned out to be the OnvoorSPELbaar queen and kicked our asses bigtime.

Later that afternoon, the game Twister – the #1 youth engagement game - caught my eye, and I just could not help myself challenging some friends. All of us had not played it in ages and probably will not play it in the upcoming years either, so why not just do it now? Unfortunately, this did not turn out to be a lost talent of mine either, and Nicole's yoga skills definitely proved to be very helpful during the game.

Drink at Café De Nachtwacht

We decided to meet each other later that evening at Café De Nachtwacht for the monthly drink. It was nice to have an informal chat with our fellow students,

'I just could not help myself challenging some friends'

and enjoy some drinks and music. As promised there was some free beer, and although I am not a beer drinker I was lucky to get my wine for free as well. As I would not be able to catch the latest train home I slept over at Lieke's place and as outstanding students, we attended - looking fresh – our Game Theory class at 08.45 hours the next morning. ●

Marijke Dijkstra

AGE: 20

Began studies in 2013

Running is not the Hardest Part!

After a pleasant summer evening with my econometrics friends, I had to travel back by train, together with Amy. During this trip, I mentioned that I wanted to participate in a five kilometer run once in my life. At that moment I had never run five kilometers, but I was close and wanted to show that I was able to do so.

A couple of weeks later Amy showed me an email from Asset | Econometrics, in which they asked for people who wanted to participate in the third edition of the Hart van Brabantloop, on September 26. We subscribed and from then on there was no way back.

The preparation was fun, even though things did not always go smoothly. For example, sometimes there are some paving stones that are a bit higher than others, which can be very dangerous. However, September 26 came closer and closer. Amy and I kept updating each other about our progression, and I started to feel ready for the run. However, the week before the run I read the description of my track, which told me that it was a 'heavy track'. That made me a bit worried, but as already mentioned there was no way back.

The first out of three groups had to gather at 06.45 hours, but fortunately I had subscribed for the 12th stage out of 15 in total, which meant I had to gather at 11.00 hours with the afternoon group. We met at the Kwantum, where we could hear the results of the first group and prepare ourselves for our upcoming runs.

First I helped Erwin out by encouraging him during his 9.6 km run on my bicycle. Since it was a re-start, Erwin had to run the first kilometer on his own after which I had to find him. Fortunately this was no problem. Surprisingly, Erwin could still

talk during his run, so we had some nice conversations. Since he had to run two laps, we thought about spectacular ways to finish, because I thought he deserved that. With the supporting crowd on his back, he managed to do an incredible final sprint. For me however, the finishing part did not go that smooth, since I forgot that I was actually driving a men's bike.

Another restart took place at 14.30 hours, and I knew that there were only two runs to go before mine. The runner before me, Masum, turned out to be incredibly fast! Luckily I was already running before I could become nervous. On a side note, it is very difficult to put on the yellow jacket during running, something worth practicing. During my run I was accompanied by Stefana. I felt sorry for her, since I am not a good conversation partner while running. However, she was still able to motivate me and help me finish my 5.5 kilometer lap.

After my run we cheered for the other runners. Sometimes cheering can be difficult though. We decided to go for a drink at the place where we could see Tim's finish. While chatting and laughing I heard the announcer shout something about 'Econometrics'. It turned out that Tim was so fast we did not even expect him yet and therefore we could not cheer for him during his finish. I am still sorry Tim. Fortunately, we were on time at the Sport Center to cheer for Anne and Thijs, who both completed the last five kilometers very fast. With 52 participating teams we were very satisfied with finishing in sixteenth place.

After this, some of us went home for a quick shower and came back later to enjoy a well-deserved meal at Café Bolle, where I heard the most terrible econometrics jokes. ●

Leaving for Haiti

On a rainy Tuesday afternoon, Stefan and I traveled to Nieuw-Vennep; the hometown of Zeger van Nieuwenhove. Being invited to the almost entirely empty house, now solely inhabited by Petra, would prove to be the start of a nice evening full of interesting conversation and a delicious meal.
Text by: Pepijn Wissing

Not to worry, they are not being evicted from their home. On the contrary: the emptiness of the house marks the start of a very exciting period in Petra's life. Soon, she will step on a plane to join her husband Pauwel in Haiti, where he has been living for the past three months. Pauwel is chief to Heineken's latest brewery on Haiti, which has opened recently. After almost twelve years in the same house, Petra cannot help but feel excited about the change of scenery.

A moving life
In her 47 years, she has moved around quite a lot. She has studied mathematics in Eindhoven, then got her first job in Belgium, where her parents were living at the time. Since then, she has had several job assignments and even more places to call home, usually not for much longer than three consecutive years. This has had everything to do with her husband's career at Heineken; Pauwel would be assigned to a new location every once in a while. Clearly, not much has changed over the years.
Since her first job in Belgium, Petra has

changed jobs about five more times. All of Petra's jobs have involved planning, albeit in different categories. Most of them have been in the industrial sector, involving day-to-day planning of production and similar matters, whereas her latest job involved planning in child-care. Again, Petra welcomed the change; she enjoyed working with people that have a very different attitude from what she was used to from her time in the corporate sector.

Now, just two short weeks from her departure to Haiti, Petra is preparing herself for what might very well be the biggest change of her life. To her comfort, she knows that she will be well set up by Heineken: there is a house she can just move into, they will have a car with driver available to them, and so on. Even though she has been reading books and watching videos about the Haitian culture, and while she has visited the country together with her daughter Merel, she is quite anxious to find out what everyday life will be like, over there.

She will start her stay with a well-deserved vacation from the past few months, which have been rather hectic due to all of the arrangements that had to be made, Merel moving out, and the selling of their current house. What she will be doing a few months from now, she does not know yet. "Haiti is a country of great challenges." she says. "The economy is quite weak and there are lots of humanitarian operations that may prove to be interesting."

Dutch free spirits
That said, Petra is not so sure that her Dutch free spirit that is used to being able to do what she wants, when she wants to do it, is able to cope with

the unavoidable dangers of living in a developing country. "Haiti is not all that dangerous, as long as one does not wear jewelry publicly and avoids certain neighborhoods." is how she describes it. But still, being Caucasian, simply riding her bicycle to whichever cozy restaurant happens to be the first that she runs into will likely not be possible.

When moving thousands of miles away, perhaps the most impactful change for any mother is the change in contact with her children. Of course, the internet has made the world a lot smaller; Petra and Pauwel currently Skype every day. Though, specifically where it concerns Zeger, contact will be different, simply because he does not seem to value calling to chat about every little detail of his day that much. Once, when Zeger was going on a school trip to Greece, Petra tells, she specifically told him that she wanted to receive a text message when he had landed safely. Thus, a while after Zeger had left, she did indeed receive a message. It contained exactly one word: "Arrived."

His sister Merel, she continues, could not be more different in that regard. Petra compares Merel, who has recently moved out to go live in Eindhoven, to a waterfall: she talks about absolutely everything, down to the contents of her lunchbox. "Much like myself, Merel is

rather energetic and impulsive, whereas Zeger, going after his father, almost always appears at ease, to the untrained eye at least", she continues. Yet even though Zeger and Merel do have rather different personalities, they have been the best of friends all throughout childhood. As Zeger had just moved to Tilburg, when he came home for the weekend, he would first chat with Merel for at least an hour, before doing anything else.

By now, one thing has become very clear: Zeger is definitely his parents' child. Looking mostly like his mother, Zeger has inherited the most character traits from his father. According to Petra, they both have a certain easiness in their ways: they tend to not be all that bothered by other people's opinion regarding stuff they do not consider important, all the while standing strongly whenever they do have a point to be made. A political approach, Petra calls it.

Meaningful looks

In a similar laid-back spirit, Zeger was not all that bothered by the impending end of his time at high school and the necessity of finding a university to continue his studies. At the end of his sixth year of high school, Pauwel took Zeger to go along for a tour through all the different departments of Heineken, to give him some perspective on the wide array of job prospects. By the end of the tour, Pauwel, a true technician, who cannot really be bothered by numbers, himself, was quite disappointed to hear that Zeger found the finance department to be the most interesting. Petra, on the other hand, admits that she did understand what Zeger found interesting: at the end of the day, the money flows are what matters most to a company.

If we fast forward a few years, Zeger has almost fulfilled the requirements for the Bachelor's degree in Econometrics and OR and has mostly abandoned the financial aspects; instead, he is leaning towards the operations research side of econometrics. What he wants to do after his studies is still up in the air. While Petra thinks that Zeger probably does not aspire a job in consultancy, Zeger does not want to rule anything out. A few remarks and equally many meaningful looks between mother

Zeger van Nieuwenhove
AGE: 20
Began studies in 2012

Petra van Helvoort
AGE: 47
Residence: Nieuw-Vennep

and son later, Petra does have to admit that he did inherit his father's patience and talent for office politics, and that she may have been voicing her own opinion on working for consultancies too much; she would not like to have to deal with a new case every few months.
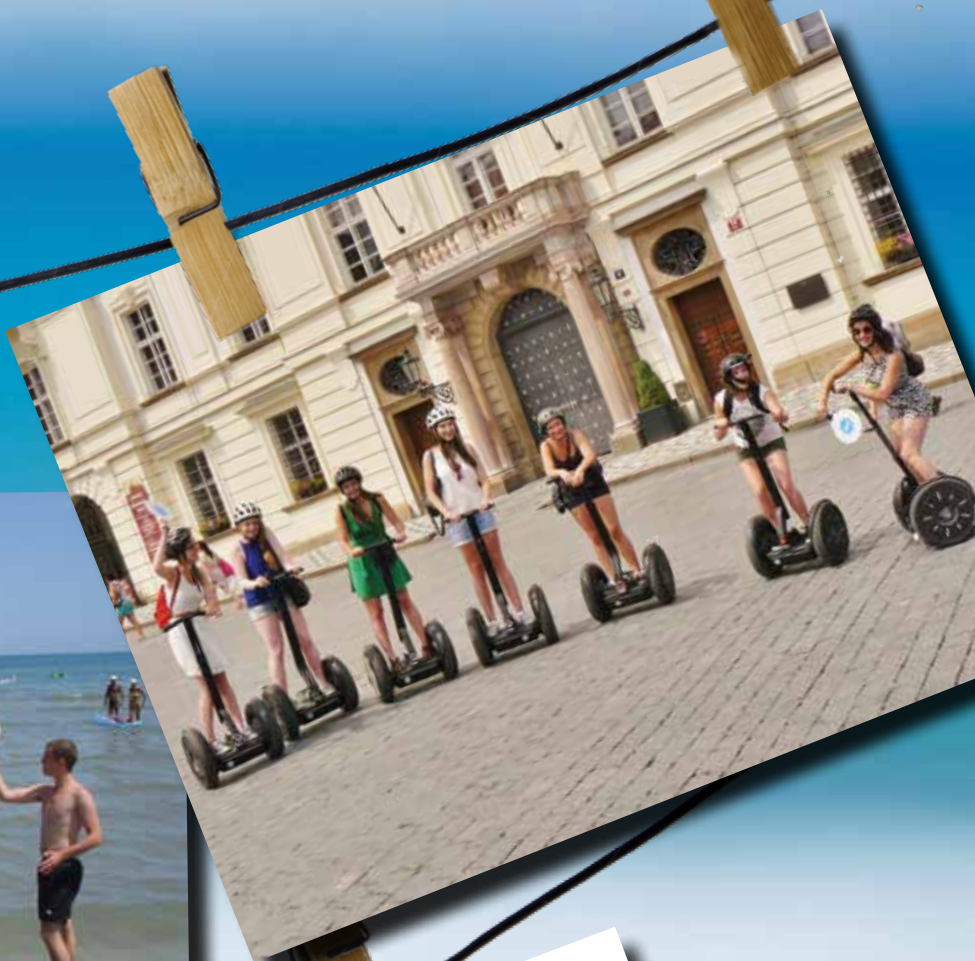
Gorgeous smells had been filling the room for a while, and the beeping of the oven finally marked the moment of truth. A friendly word of advice: should you ever find yourself in Haiti with an empty stomach, Petra's homemade lasagna tastes as good as it smells. We would like to thank Petra and Zeger for their kindness and hospitality. ●
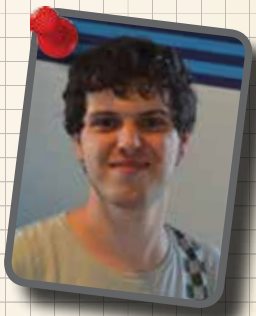
SUMMER FUN!

At the end of last academic year, all recipients of this magazine were invited to participate in the summer photo contest. This year the submitted photos had to involve the Asset | Econometrics beach tennis set in an orginal way. Some of the entries are displayed on these pages, and we have chosen a winner as well. Together with last year's Editor-in-Chief, it was decided that Max Smedts, Thomas van den Hurk and Tim van der Heijden are the proud winners of this year's contest! Next to using the beach tennis set, they even managed to draw the logo of our association. Congratulations, we would like to reward you for this with a pie or a crate of beer, which you can pick up at room E1.10.

WINNER

Fun, Food and Friends

It is always nice to know more people, especially for freshmen partaking in a new study activity. The TOP-week is, for most students, a way to get to know your fellow students in a week of fun and games, but Asset | Econometrics also offered an introduction activity for EOR freshmen. Consisting of several activities and a barbecue, the introduction activity was held when the lectures had already started for a week. Another way to get to know even more people!

Aurel Macias Minambres

AGE: 22

Began studies in 2015

The lectures themselves are not a great way to get in touch with most of the fellow students, as everyone clings to their group of friends from the TOP-week before the college year. The introduction day by Asset | Econometrics was a perfectly suitable way to break some of these chains, encouraging the participants to work together with students they barely know yet. After the morning lectures, the activity started with a lunch and a short speed-dating format with the purpose of quickly getting some information about the twenty-something participants and the organizing committee. Afterwards, everyone was divided into four groups that would compete in solving a murder case around the campus.

To know who the murderer was, the groups had to compete in different games, such as collecting photos of locations on the university campus like the very intriguing art objects around the campus, trying to guess the ingredients of a very unique cake (such as onion, garlic powder and syrup) and using flag signs to pass on the sentence "The murderer is in the elevator" to fellow group members. Also, there were games in which groups competed with each other, such as a cradle race, a game based on a combination of Charades, Pictionary and 30 Seconds and a walking game where everyone's shoelaces were tied. After winning or passing a game, a team would get a

clue to what the name of the murderer was. Most of these games required some teamwork and were a lot of fun.

Although after all of these games all groups knew who the murderer was, there were still some mysteries unsolved. In the final act of the day the groups had to look for the 'corpse' (it actually was a kind of fake skeleton) on and around the campus. They would each get a vital clue to where the location was, and the groups who got better results in the earlier games on the campus received the clue earlier than the groups who had the name of the murderer right later on. The clue was a coordinate with a missing digit the teams have to find. After inputting the missing digits, the teams knew where

the skeleton was and there was a race for the prize. The corpse turned out to be at the sports center, but incidentally, that was not all there was...

...as the barbecue was also held at that exact location. Victory or defeat, for everyone there was something to celebrate right there. After an already long day, in which everyone participated actively, everyone was in the mood for some food and (especially) drinks. The set-up of the day seemed to work out as the groups were much more blended than they were at the start of the day; everybody really seemed to know some of their fellow students better. All in all, it was a very fun day in which everyone participated together and really got to know each other better. ●

A Cold, Rainy Day in Utrecht

It was the start of a new college year and a group of econometricians carrying sports bags was gathering at the railway station one early morning. This could obviously only mean one thing: the LEVT (National Econometricians' Football Tournament) was about to go down! Obviously, with the talented teams that we had, if this was a sunny day in Brazil we could even win the World Cup. So the LEVT should be no problem, right? However, as this took place in the Netherlands, I was wondering: "But can we do it on a cold, rainy day in Utrecht?"

Ridho Hidayat
AGE: 21
Began studies in 2013

We took the train to Utrecht, went to the football club by bus, and changed clothes to get ready for our first game. With an enthusiastic mixed team that was committed to make it as far as possible in the tournament, we stepped on the pitch for our first match against the men's team of Building Blocks. We knew beforehand that this would be an incredibly difficult game, so the plan was to defend our goal with all we had and try to score some goals ourselves from a few quick counter attacks.

As expected, the opponents had control over the match, but luckily for us they did not seem to find an opening to score a goal. So after another failed attempt on goal from their part, I ran forward towards their goal. Rogier noticed this and went for a long pass. Now I had a clear passage as their defense was still scattered from their last attack. It was a one-on-one situation against their goalkeeper, in which I managed to slip the ball past him and score the first goal. Against the odds we were now in the lead. Unfortunately it did not take long for them to score the equalizer and so we tried to play a bit more offensively to get back in the lead. Luck was not in our favor, as our shots got stopped and even hit the post, and for that reason we were not able to score another goal. What usually happens in football is that if one team does not finish the chances, the other team will. There

was no exception to that rule in our match either, because the opponents managed to score another goal and finally win the match.

Where other teams might have gotten demotivated because of this unfortunate loss, we kept our spirits

high, and this led to some really fun and exciting matches during the rest of the tournament. In the first of the three remaining matches the teams were evenly matched, thus the game resulted in a draw. The second match looked like we had it in the bag, but the opponents scored the equalizer in the very last minute. In the final match we got a great victory, in which almost everyone got to score a goal. Unfortunately, this was not quite enough to make it to

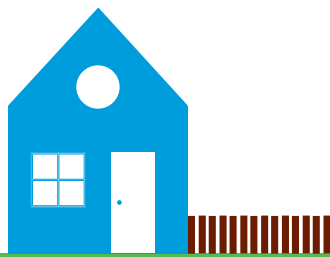the next round, so this was where the tournament ended for our team.

To conclude this great day, we first had an extensive and well-deserved barbecue that filled our stomachs with all kinds of delicious meat. As the sun went down, we played some nice rounds of beer pong and watched the Champions League match between PSV and Manchester United for a while, which (coming from an Ajax fan), luckily turned out to be an incredible and important 2-1 victory for the Dutch club.

Most of us were tired after this long day, so we decided to head back home to Tilburg. After a good night's sleep, I woke up with some severe muscle aches. However, looking back at the great day that I had, it actually felt very satisfying and I cannot wait to step back on the pitch again. ●

A Brand New Start

Linda Torn is an active freshman econometrician who moved to Tilburg five weeks ago, but she is already making waves both at Asset | Econometrics and in the lecture rooms. Jesson and I had the pleasure of interviewing her to find out more about her and her room, as she is already living in lodges this year.
Text by: Gailius Praninskas

A quiet corner

As we biked through the neighborhood of Linda's new home here in Tilburg, I noticed it was one of the coziest places here. The autumn mood is absolutely fitting for this corner of the city. Envision an old couple playing with their grandchildren and you will get the feeling I felt as we approached our interviewee's shared apartment. But even though it feels so peaceful, her new home is very conveniently situated, since it is about a twenty minute bike ride to get to the university and the city center is only a five minute bike ride away. This makes Linda's apartment the best of two worlds, as someone living here can either lead a quiet life or be a party animal.

Linda Torn
AGE: 18
Address:
Winkler Prinstraat 67-2
Rent: € 370

Linda told us that finding this place was not easy; she spent two to three weeks extensively searching for a room here in Tilburg and went to six or seven open houses before moving here. The difficulty was worth it though, as the room is not too expensive and looks much better than some of the other rooms she had seen.

The house and its facilities

As our host welcomed us into her home the first thing we saw was a huge open area and two other people. This is nothing special as Linda shares her home with six other people, so there is always plenty of action in the flat. They share the kitchen and living room and come from all kinds of backgrounds. This makes the apartment a great environment when you want to socialize and relax with your housemates, so she does not mind. However, as Linda noticed, quite luckily they each have their own bathroom. For her this seems like one of the biggest advantages and I think most of us can agree that your own bathroom is an amazing thing in shared apartments.

The first impression you get as you enter Linda's room is that it is truly a student's flat. All the furnishings are from IKEA, it looks recently put together and is self-designed. This gives the room a particular charm and gives the impression that someone young and interesting is living here. The bathroom is also especially spacious. Even though the room is nice our host says that she does not spend much time here, instead she spends most of her time either studying at the library or out in the city, and only comes here to rest.

Our host also told us some detailed information about the more personal side of her room. First of all, she has a stuffed Miffy toy, as she has liked to hold stuffed animals when she sleeps since childhood. The Miffy toy is not her favorite though, but she did not want to get her most loved toys to get destroyed by the hectic student life. Miffy does have his advantages, though - he glows in the dark. Linda also informed us of a

superstition she has: before exams she likes to sleep with books underneath her pillow, so she does better at the exam.

Although Linda has what she says the most important part of a room is - a bed, there are still some things she would like to get. Soon, her parents are going to bring her a refrigerator, as everyone in the flat has their own. She is also missing a normal mirror because she only has a small one in the bathroom, but that is not enough. For her the room still feels quite empty, but as she says she's only been here five weeks, so that is natural. She plans to get more and more stuff as the year goes along and hopefully make her room even better than it is now.

Changes in Tilburg
Since Linda comes from a small village near The Hague, a city about twice as big as Tilburg, there are a lot of changes to get used to. The city here is more peaceful and quiet compared to the livelier The Hague. However, our interviewee has been enjoying her life in Tilburg so far. She says that because this city is way more compact and small, it is easier to see people that you know, something she likes a lot. Moreover, there is also the benefit of the distances being smaller here. Besides, she does not miss her home town too much, since she visits her parents every weekend. So, all in all, the transition to life in Tilburg has not been too difficult for our host.

Linda has spent all her life here in the Netherlands and has never thought of

moving to another country. Although she has been to other places, she enjoys the way of living here and right now she does not see a reason to move abroad. In fact, the only thing she dislikes about this lovely country is the weather: as most would agree it is too cold and, of course, it rains too much for her liking.

Although Linda has been in Tilburg for five weeks now, she finds it funny to admit that she has done very little cooking thus far. Most of the time she either has dinner at the Mensa or she has a quick bite somewhere on the side with her friends. Yet it would be wrong to think that she does not enjoy cooking. Linda told us that she used to cook all the time back home and even has a favorite dish, pasta with spinach, which was taught to her by a friend. She guarantees that anyone who tries it would love it and, being friendly, invites us to eat it next time she cooks.

Balancing studies and being active
Linda says that most of her housemates are very active, so they do not spend a lot of time in the flat. She is also no exception, because she does a lot of extracurricular activities herself. She has already signed up for our association, is active in a committee and has been to most of the parties and gatherings. Unsurprisingly, being an econometrics student she also devotes a lot of her time to studying. Most of the time she studies at the library and sometimes she even stays there until 21.00 hours. Since she puts in so much work, it is easy to

understand that Linda expects not to have much trouble with her study.

Unfortunately for Linda, she had to lose some things to become the active student she is today. Besides having much less free time, she also had to quit her job as a cashier in her hometown The Hague. She simply did not want to be busy all the time. However, she believes it was all worth it. According to Linda you have to enjoy your student life as much as possible.

Leaving Linda's flat, the neighborhood looked even more quiet and peaceful as it was getting somber outside. All there is left to say is that there really is a magic to this cozy place and if you ever have the pleasure of meeting Linda, I definitely recommend you to see her lodge. ●

Quatsch!

Denise Ligthart: 'Ik doe alles voor één euro!'

Björn Floor: 'Hij voelt de bal al hangen.'

Jonas de Boo: 'Eerst hebben we nog Labmat.'

Jochem Bruijninckx: 'Ik kon pas in groep zeven mijn eigen naam spellen.'

Thomas van Manen: 'Ik ga met mijn huis op vakantie.'
Michiel van Erp: 'Woon je in een woonwagen dan?'

Ernst Roos: 'Ze mogen me best wel martelen, zolang het maar nodig is.'

Zeger van Nieuwenhove: 'Vrouwen maken wel vaker schoon, maar ze maken dingen ook vaker vies.'

Willem Jongen: 'Als daar een bekertje had gestaan was hij raak.'

Mike Weltevrede: 'Polariseren is het toenemen van ijsberen in de samenleving.'

Michiel van Erp: 'Die diamanthaas is wel wel erg zacht voor diamant.'

Wise words of ...

Dr. Vera Lizcano: 'That is the nice thing about mathematicians, they prove stuff but you do not know why they do it.'

Quatsch?

Over the past few months, the editorial staff of Nekst received many quotes that relate to the study of Econometrics and to the activities organized by Asset | Econometrics. Therefore, we present to you a selection of some striking and funny quotes! Please mail all remarkable quotes you have heard to Nekst@Asset-Econometrics.nl!

PUZZLE

The summer holiday lies behind us and we have all gradually adjusted back to university life. Indeed, some of us might already be getting nervous for the exams. This edition's puzzle considers exactly that, although from a slightly different perspective.

An econometrics student has an appointment with a professor for an oral exam in a university building with seven floors. However, just before his arrival, he loses confidence and decides to leave. Unfortunately for him, a thunderstorm appears outside the building, so leaving is not an option. The professor has noticed the student entering the building and starts looking for him.

Suppose the professor does not know at which floor the student is when he starts his search. The student can use the stairs to move up or down one floor. He makes such a move every minute. The professor takes the elevator and can move to any of the seven floors (including the one he is currently at) every minute. The professor is unaware of the whereabouts of the student, unless they find themselves to be at the same floor. The professor and the student perform their moves simultaneously. Is there a sequence of floor visits which the professor can perform, to be certain that he finds the student in a finite amount of time? If so, on which floor should he start and what should his floor visit sequence be?
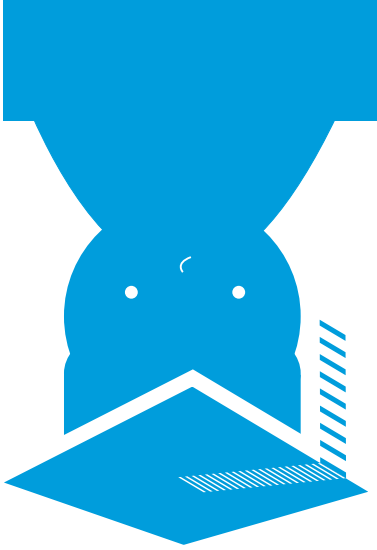
Please send your solution to Nekst@Asset-Econometrics.nl before November 20. A crate of beer or a delicious pie, whichever the winner prefers, will be waiting for whoever has the best (partial) solution. Please note that, as before, every recipient of this magazine is eligible to send in their solution, so members of the department are invited to participate as well. Good luck!

For elaboration visit
NEKST-ONLINE

Asset | Econometrics congratulates...

Name: Pieter Meeuws
Title: Optimization of the Warehouse Management System of Bavaria
Supervisors: Dr. J.P.C. Blanc, Prof.dr.ir. D. den Hertog

Name: Erwin van Oosten
Title: Bootstrapping the Lasso and the Elastic Net in practise
Supervisors: Dr. O. Boldea, Prof.dr. B. Melenberg

Name: Caspar Croonen
Title: Choosing the optimal sample fraction for the estimation of extreme quantiles and the marginal expected shortfall
Supervisors: Prof.dr. J.H.J. Einmahl, Y. He MSc.

Name: Maartje Verhoek
Title: Causal impact estimation of paid search using the Bayesian Structural Time-Series Model Field experiment on non-branded search effects
Supervisors: Dr. T.J. Klein, Dr. G. Knox

Name: Janinke Tol
Title: Gender and country coherent mortality modeling based on the Lee-Carter model: An application to the Netherlands, Poland and France
Supervisors: Dr. B. Drepper, Prof.dr. B.J.M. Werker

Name: Johan Bonekamp
Title: Gradual retirement of men in the Netherlands: analysis of trends with an age-period-cohort model
Supervisors: Prof.dr. A.H.O. van Soest, Dr. B. Drepper

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Title: A Value-Based Approach to Pension Plan Redesign in Canada
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Title: Optimizing the blending of malt at Holland Malt
Supervisors: Prof.dr.ir. D. den Hertog, Dr. J.P.C. Blanc

Name: Tom Brouwers
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Supervisors: Prof.dr.ir. H.A. Fleuren, Dr.ir.ing. M.J.P. Peeters

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Name: Allard Camphuis
Title: Long-term Optimal Investment Choice, the Term Structure of Risk and Parameter Uncertainy for European Investment Opportunities
Supervisors: Prof.dr. B. Melenberg, Prof.dr. J.M. Schumacher

Name: Katarzyna Musters
Title: Cross-Border Electricity Interconnection: a Real Options Approach
Supervisors: Prof.dr. P.M. de Kort, Prof.dr. A.J.J. Talman

Name: Laurens Janssen
Title: Financial Risk Exposures and Implicit Asset Allocations in Dutch Collective Pension Contracts
Supervisors: Prof.dr. Th.E. Nijman, Dr. R.J. Mehlkopf

Name: Robert Rott
Title: Credit Risk Contagion Between Banks and Governments in Europe: an Event Study
Supervisors: Dr. F.C. Drost, Dr. B. Drepper

...on obtaining their Master's degree.

Agenda
Autumn 2015

D&A Activity & Drink Tuesday November 3

The first activity of the Drinks & Activities committee takes place on November 3, which gives you the perfect opportunity to meet new people and make new friends! The activity will be followed by a drink at Café De Nachtwacht, so we hope to see you there.

Econometrics Orientation Day

Thursday November 12

Do you want to learn more about your possible future employer? Then participate in the Econometrics Orientation Day, where firms corresponding to the three Master tracks will give presentations and cases in order to give you more insights into your (future) career.

Finance Expedition
Tuesday November 17 – Thursday November 19

The Finance Expedition is the perfect opportunity for students interested in Finance to meet possible future employers. Five fascinating firms will give lectures, drinks and interactive sessions during which you get insight in their day-to-day projects. Participation is free of charge and includes a stay in the luxurious Royal <Amsterdam Hotel.

KOALA
Friday November 28 – Sunday November 30

This November, the notorious Kansloos Oud Actief Leden Activiteit (KOALA) will be organized for all our Former Active Members. During this weekend, memories will be retrieved and friendships will be renewed.

Evening of the Committees

Thursday November 5

On November 5, a new event will be organized for all active members: the Evening of the Committees. Multiple trainings, for instance concerning leadership and teamwork, will be given to further develop their qualities and, of course, to improve the bond between active members and committees even more.

Freshmen Activity

Tuesday November 10

The first activity especially for first-year students will be organized on November 10. While the activity itself is not known yet, we can assure all freshmen that it will be a memorable evening where new friendships will be made. Make sure you save the date!

Asset Gala
Tuesday November 17

It is time to clean your dance shoes and find your suit, for the Asset Gala takes place on Tuesday November 17! All members of Asset are welcome and we hope to see you all there.

Active Members Meeting & St. Nicholas Drink
Tuesday December 1

All active members are invited to give their opinion, feedback and ideas in order to further improve Asset | Econometrics during the Active Members Meeting. Your input is very much appreciated and we hope to see all our active members on December 1. Afterwards, the famous St. Nicholas Drink will take place at Café De Nachtwacht, where we might even be visited by St. Nicholas himself!

VILLA PARDOES

TOWERS WATSON