

NEKST

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EVA LEE

"PASSION IS WHAT
DRIVES YOU"



ALSO FEATURING

- ▶ PRACTICAL REPORT: OPTIMIZING BLENDS
- ▶ SPECIAL: MILLENNIUM PRIZE PROBLEM
- ▶ SCIENTIFIC ARTICLE: NETSPAR BRIEF

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Als starter ligt de wereld voor je open. Zeker bij APG. De functie waar je op binnenkomt, is een startpunt. Om te onderzoeken waar je kracht precies ligt, en waar je persoonlijke en vakmatige ontwikkeling je brengt. Doorstromen is vanzelfsprekend bij ons. Zowel opzij als omhoog. En als trainee krijg je ook nog een persoonlijke coach mee.

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To the Nekst Level



Hereby I proudly present this year's final Nekst issue. Once more we have tried our very best to come up with the most inspiring articles, interviews and specials, so you will not get bored this summer holiday. We even made a special summer section with a mathematical flavored horoscope and our Summer Photo Contest, so make sure you do not forget to bring your Nekst on your vacation. Besides, for those of you who are in need of money, one of the Millennium Prize problems is explained, so take your shot at winning that one million dollars!

Obviously, we also offer more formal items. First of all, we have interviewed Prof. Dr. Eva Lee, who is the Director of the Center for Operations Research in Medicine and Healthcare. Furthermore, Netspar offers us insights in their venture via two Netspar Briefs and Donald van de Hoogenband shares his experiences at Holland Malt, a subsidiary of Bavaria. Furthermore, we visited study association VESTING in Groningen, we dived into the world of lifeguards, and of course we covered a whole bunch of Asset | Econometrics activities.

Before finishing my final preface, I would like to give a big thanks to my wonderful committee. All the editors have put a great amount of time, work and enthusiasm in their articles and our magazine certainly could also not have been published without the help of Ashley Beringer and Anouk Claassen. Finally, I would like to present to you the new Nekst team of 2015-2016: Stefan ten Eikelder as Editor-in-Chief and Lotte van Bakel as lay-out editor. I wish them the best of luck and I am sure they will take our magazine to the Nekst level!

Ennia Suijkerbuijk
Editor-in-chief

COLOPHON

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LEVT

This September, Asset|Econometrics will organize the National Econometricians Football Tournament. The LEVT committee explains about both their serious and less serious tasks.

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Midpage

Take some time this summer holiday to update your CV. We have written some useful tips and created a sample CV to help you.

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We visited the study association for econometrics in Groningen, to find out all about their city, committees and board members.

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E M A S

A NEW GENERATION OF ACTUARIES

De vraag naar deskundige actuariële experts groeit. Onderscheid jezelf daarom met een actuariële kwalificatie en een internationaal erkend MSc-diploma en groei uit tot een autoriteit die op effectieve wijze risico's beheerst.

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030 - 686 61 50 of mail sandra.oudejans@ag-ai.nl.

ACTUARIS: BESTE BEROEP 2010-2011-2012-2013-2014 (ELSEVIER/SEO)



Dear Members,

This will probably be my last contribution to Nekst for a while, and is certainly my final contribution to this section. I loved being your chairman and whole-heartedly hope that my board achieved something that touched upon your lives. In whatever way, we hope to have made Asset | Econometrics just a little bit better.

Maybe you became an active member this year, maybe you purchased one of our very first guidelines or maybe you simply visited one of our activities and had a great day together with your friends from EOR. Regardless, it is time for the 36th board of Asset | Econometrics to retire. This might leave you wondering: "What is next?"

For most people, the holidays are next. You could use this time wisely to thoroughly relax from a stressful year, or you could do something grown-up and responsible, such as a summer internship. If you ever catch yourself bored during the break, be sure to check all the following items off your bucket list:

1. Participating in the Nekst Summer Photo Contest with our free summer promotion item.
2. Building a rocket, fighting a mummy or climbing up the Eiffel Tower.
3. Devising a master plan for the rest of your life.

The summer is the ideal time to think about what you want out of life and answer the following question for yourself: what are you going to do to make your studies the best time of your life and to stand out from the crowd? You could start small and just visit the Asset In-house Days, to get an idea of the sector you like and to chat with some recruiters. You could become active or even think about applying for a board year if you wish to learn how to organize events and cooperate in a team. If you are ambitious in a different way, you might even consider visiting www.Asset-Econometrics.nl/CareerPortal and finding yourself a student job.

While you enjoy your summer, we will prepare for the new academic year. Throughout the summer, we will carefully train our new recruits, better known as the candidate board. They have the eagerness to make next year even better than this year and we will make sure that they have the skills and knowledge to do so. If you have missed the candidate board announcement du-

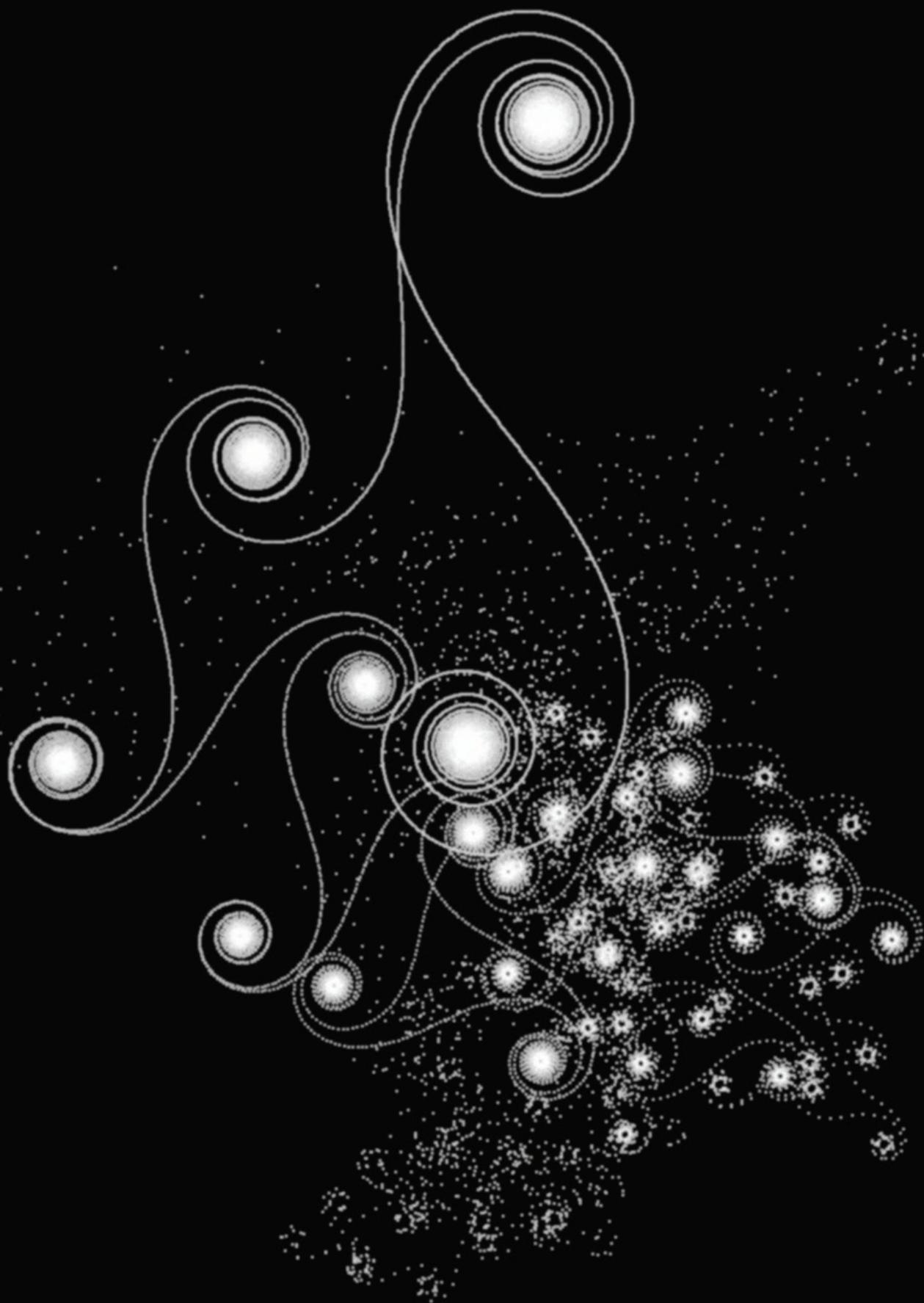
ring our drink, on our Facebook page and on YouTube, peek out from under that stone and pay close attention. The candidate board consists of Thijs Kramer (Chairman), Ennia Suijkerbuijk (Secretary), Thomas Coenraad van Manen (Treasurer), Ashley Beringer (External Affairs) and Björn Floor (Internal Affairs). We are 100% sure that they will do an amazing job and I hereby wish them the best of luck during their board year.

Last but not least, I would like to thank all our (active) members and other patrons for their enthusiasm and contributions to our association. You have made this a great year for both Asset | Econometrics and me personally.

On behalf of the board,

Cleo Mauritsz
*Chairman Asset | Econometrics
2014-2015*





Riemann's Zeta Function

Unsolvable Enigmas

Mathematicians love brain cracking enigmas that can keep them busy for a long time, especially because the feeling when finally solving such a complicated puzzle is just such an amazing one. Now, you might think that you are a very bright econometrician, gifted with an impeccable brain, which I am not denying, but the probability that you will solve the problems described in this new series is pretty much equal to the determinant of a singular matrix. I present you with a problem that has yet to be solved: Riemann's Hypothesis.

Text by: Mike Weltevrede

These problems, known as the Millennium Problems, are very interesting to solve. I dare to say it is one of the most difficult ways to get rich, that is to earn one million dollars. The Clay Mathematics Institute has established seven problems that they stated to be Prize Problems. These enigmas were, amongst others, meant to stress the importance of a solution to these problems and that the solution will most probably have a historical impact. To anyone that is able to solve any of the puzzles a one million dollar prize is presented. Presently, only one of the Millennium problems has been solved. The problem in question is the Poincaré Conjecture, solved by Grigoriy Perelman in 2002. Unbelievably, he actually turned down the one million dollar prize and has been famous for that ever since.

Riemann's Zeta Function

We all know that prime numbers are an interesting and useful phenomenon. It is however not known yet how many prime numbers there are up to some specified limit. What Bernhard Riemann thought of in 1859 was that the frequency of prime numbers can be approximated by a certain function, as their behavior seemed to be related. This led to the famous problem that is perceived to be the most difficult

of the remaining six enigmas. The function that I present you with is the Riemann Zeta Function, which is given by:

$$\zeta(s) = \frac{1}{1^s} + \frac{1}{2^s} + \frac{1}{3^s} + \dots,$$

where s may be any real number greater than 1. One can easily check this, since filling in $s = 1$ in the Zeta Function yields a divergent series. There may actually be other singularities of this function, but so far $s = 1$ is the only one found yet.

In the critical strip, which is the region in the complex plane for which the real part lies in between zero and one, the Riemann Zeta Function satisfies the following (functional) equation:

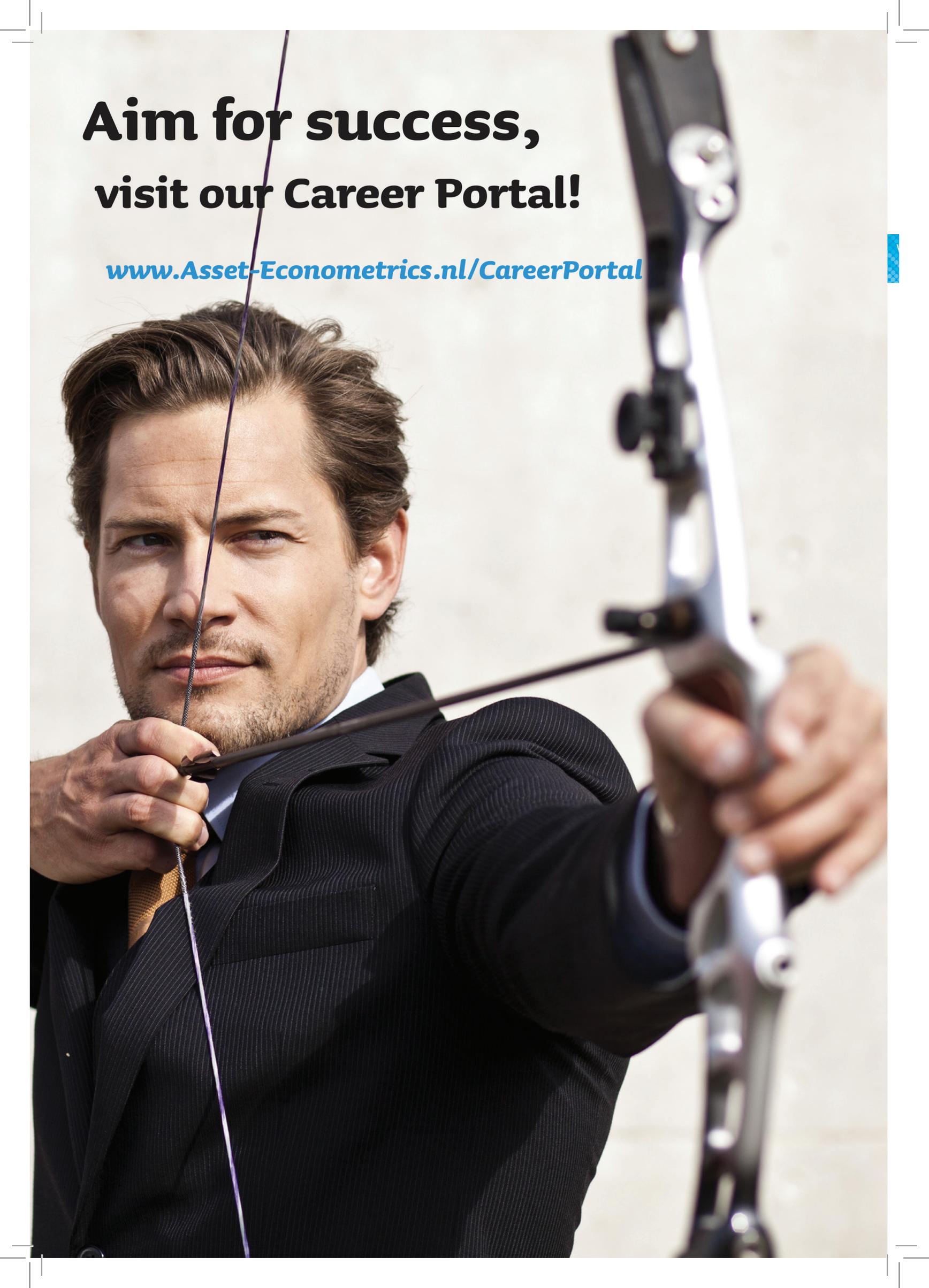
$$\zeta(s) = 2^s \pi^{s-1} \sin\left(\frac{\pi s}{2}\right) \Gamma(1-s) \zeta(1-s)$$

If we assume that this equation holds outside the critical strip as well and let s have a non-positive real part, then we can define $\zeta(s)$ for all remaining non-zero complex numbers.

In this case, we can find that the trivial zeros are the negative even integers, being $-2, -4, -6, \dots$, since $\sin\left(\frac{\pi s}{2}\right)$ then equals zero. It is actually known that all non-trivial zeros are in the critical strip. The Riemann hypothesis then states that all non-

trivial zeros of the Riemann Zeta Function have real part equal to $\frac{1}{2}$. Stated differently, all of these non-trivial zeros lie on the line $\frac{1}{2} + it$, which is called the critical line.

Now that you have had an insight in your ultimate goal in life, I would like to wish you good luck in becoming the mastermind able to solve this mystery. Do not crack your brain too much on it though, as some of the world's most esteemed mathematicians have tried to do the same, only leading to the enigma utterly baffling them. However, if you need something to do during your holidays besides enjoying the amazing weather and all sorts of amazing things, then perhaps you can glorify your name as the world's greatest mathematician ever. ●

A man with brown hair and a light beard, wearing a dark pinstriped suit jacket, white shirt, and brown tie, is aiming a compound bow. He is looking intently towards the left. The background is a plain, light-colored wall. The text is overlaid on the top left of the image.

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Aegon
DEN HAAG

Worden er in de toekomst meer of minder mensen arbeidsongeschikt? Wat gebeurt er met de balans van Aegon als al onze klanten een jaar langer blijven leven? Welk risico moeten wij herverzekeren? Hoe optimaliseren wij onze kapitaalspositie? Als jij een uitdaging ziet in dit soort vragen, ben je als (junior) Quantitative Risk Analyst bij Aegon op je plek. Jouw taak is het verkrijgen van inzicht in de verzekeringstechnische risico's op het gebied van pensioen-, leven- en/of schadeverzekeringen.

Contact information Paul Visser | corporate recruiter (a.i.) op 06-10756612 | paul.visser@aegon.nl



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Contact information Jacqueline Reijn | 088-543 3000 | jobs@towerswatson.com



Advisor WO/Werkstudent

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Contact information Isabel Vermeulen | 088-4078489 | isabel.vermeulen@nl.ey.com



Optimizing the Blending

Econometricians and beer, a combination almost as inseparable as babies and milk. Nearly every fellow econometrician has drunk a beer, and developed his own preference. While one likes the typical lager beers, another prefers a high fermentation specialty beer with a bitter after-taste. Whatever you may prefer, it likely has to do with the key ingredient of beer, called malt. Often, multiple malts are blended together to create a certain quality which is suitable for a particular brewery. The blending of these malts is a challenging task. In this article I will explain my model which optimizes the blends of malt, which is also the subject on which I wrote my master thesis at Holland Malt, a subsidiary of Bavaria.

Developing the model

The problem that I solved, is to create a proposal for the planner on how to blend the malts in stock for a certain target quality. A target quality is a list of properties on specifications and varieties imposed by a customer. A specification is a property of a malt, such as the "pH value", while a variety determines the behavior of a malt during the brewing process. Malts are stored in silos to keep them from spoiling. When malts are blended they are transferred to delivery silos, from which they are dropped in a truck or transported to a ship. Now that the definitions are clear, the next step was to do research on other blending problems. Unfortunately, only the paper of Mutangi et al. [1] is found which deals with a blending problem in the malt industry. In other industries far more research is done, for example in the paper of Ashayeri et al. [2], where a model was made to solve the blending problem of a producer of chemical fertilizers. These papers provided insight on how to develop my model.

In order to create a suitable model, it is needed to know the exact restrictions of a blend. There are two types of restrictions which have to be met. Firstly there are the customer restrictions, which are requests on specifications and varieties of the delivered malt. Requests on specifications include bounds on the final mixture of malt, blending limits and aim values. Final mixture bounds mean that for example for the specification "Moisture", representing the percentage of water in the malt, the value should be between 0 and 4.5 in the final blend. Blending limits are imposed to give a bound on the used malts in a blend. So for example malts with a value of 85 or lower for "Friability", the crumbliness of malt, should not be used. Aim values determine a preferred value, such as a value of 1.55 for "viscosity", called "stropenigheid" in Dutch. Also variety conditions are imposed by customers, such as whether the used malts may be spring or winter malts. More examples are the allowed number of different varieties and the minimum and maximum percentage of certain varieties used in the blend. Secondly, there are company restrictions, which are divided in physical constraints and preferred conditions. An example of

the first category is that silos from different silo blocks can not be used in the same blend, because it is physically impossible. But the most important physical restriction is about streams. A stream is a subset of silos which can replace one another. A maximum of four silos can be blended at the same time, and a blend has to stay homogeneous. Therefore, when one of the four used silos is emptied, a replacement silo has to take its place. This replacement silo has to be in the same stream, with maximally one other replacement silo. Since maximally four streams can be used, the total number of silos that can be used in a blend equals twelve. Check for yourself that this can only happen if eight silos are emptied. To model this a lot of artificial variables are needed, which is why it is not discussed furthermore in this article.

There are nine preferred conditions, also referred to as objectives. These include the amount of time malt is in a silo, the general quality of the malt, the reservation of the malt, the quantity of a silo, the number of empty silos, the violations on final mixture values, blending limits and aim values and the amount of used priority silos. These objectives often vary in importance per order, even for orders for the same target quality. One of the generally more important objectives is the reservation of malt, since some malts are reserved for certain target qualities, which are preferred not to be used for any other target quality.

In order to establish a solvable model which still approaches reality, multiple assumptions are needed. In total fourteen assumptions are made. One of those is that all specification values of a malt mixture are a linear function of the corresponding specification values of the individual malts. For some specifications, such as "Filtration speed", this is not entirely true in practice. However, since large outliers in values are rare, this assumption is not that unrealistic. It also means a multi-objective mixed integer linear program can be solved.

Explanations of the model

The complete model uses around 2,500 variables and 50,000 constraints. These constraints are written in 67 different lines.

of Malt at Holland Malt

Indices

n	$N = [60, 120]^*$	Silo
d	$D = 92$	Target quality
s	$S = 23$	Specification
r	$R = 29$	Variety

* varies between 60 in the summer and 120 in the winter.

Variables

x_n	the percentage of malt taken from silo n
y_n	1 if silo n is used, 0 otherwise
$e1_s$	violation variable of specification s for $FMAXV_{sd}$
$e2_s$	violation variable of specification s for $FMINV_{sd}$
$e3_s$	violation variable of specification s for $UMAXV_{sd}$
$e4_s$	violation variable of specification s for $UMINV_{sd}$
$e5_s$	violation variable of specification s for $AMAXV_{sd}$
$e6_s$	violation variable of specification s for $AMINV_{sd}$
$e7_r$	violation variable of variety r for RR_{rd}
$e8_r$	violation variable of variety r for RR_{rd}
v	1 if a silo from silo block B or C is used, 0 otherwise

Parameters

U_n	1 if silo n can be used in the current order, 0 otherwise
AKO	amount of Kg ordered by the customer
K_n	the amount of Kg present in silo n
ZW_n	1 if the malt in silo n is spring malt, 0 otherwise
$MINZW_d$	minimal percentage of spring malt for target quality d
$MAXZW_d$	maximal percentage of spring malt for target quality d
SV_{sn}	specification value for silo n and specification s
$FMAXV_{sd}$	final max. value for target quality d and specification s
$FMINV_{sd}$	final min. value for target quality d and specification s
$AMAXV_{sd}$	aim max. value for target quality d and specification s
$AMINV_{sd}$	aim min. value for target quality d and specification s
$UMAXV_{sd}$	usable max. value for target quality d and specification s
$UMINV_{sd}$	usable min. value for target quality d and specification s
B_{rn}	1 if variety r is inside silo n , 0 otherwise
RR_{rd}	aim value of variety r for target quality d .
DSB_n	1 if silo n is in silo block A, -1 otherwise

Constraints

$\sum_{n=1}^N x_n = 1$	
$x_n \leq y_n$	$\forall n \in N$
$1000 * x_n \geq y_n$	$\forall n \in N$
$x_n \leq U_n$	$\forall n \in N$
$AKO * x_n \leq K_n$	$\forall n \in N$
$\sum_{n=1}^N (ZW_n * x_n) \geq MINZW_d$	$d = d^*$
$\sum_{n=1}^N (ZW_n * x_n) \leq MAXZW_d$	$d = d^*$
$\sum_{n=1}^N (SV_{sn} * x_n) - e1_s \leq FMAXV_{sd}$	$\forall s \in S, d = d^*$
$\sum_{n=1}^N (SV_{sn} * x_n) + e2_s \geq FMINV_{sd}$	$\forall s \in S, d = d^*$
$\sum_{n=1}^N (SV_{sn} * x_n) - e5_s \leq AMAXV_{sd}$	$\forall s \in S, d = d^*$
$\sum_{n=1}^N (SV_{sn} * x_n) + e6_s \geq AMINV_{sd}$	$\forall s \in S, d = d^*$
$SV_{sn} * y_n - e3_s \leq y_n * UMAXV_{sd}$	$\forall n \in N, s \in S, d = d^*$
$SV_{sn} * y_n + e4_s \geq y_n * UMINV_{sd}$	$\forall n \in N, s \in S, d = d^*$
$\sum_{n=1}^N (B_{rn} * x_n) - e7_r \leq RR_{rd}$	$\forall r \in R, d = d^*$
$\sum_{n=1}^N (B_{rn} * x_n) + e8_r \geq RR_{rd}$	$\forall r \in R, d = d^*$
$\sum_{n=1}^N (DSB_n * x_n) + 2 * v \geq 1$	
$-\sum_{n=1}^N (DSB_n * x_n) + 2 * (1 - v) \geq 1$	
$x_n \geq 0$	$\forall n \in N$
$e1_s, e2_s, e3_s, e4_s, e5_s, e6_s \geq 0$	$\forall s \in S$
$e7_r, e8_r \geq 0$	$\forall r \in R$
$y_n \in \{0, 1\}$	$\forall n \in N$
$v \in \{0, 1\}$	

A smaller version of the complete multi-objective mixed integer model.

Due to space restrictions only some are displayed and explained. The main variable in the model is x_n , which indicates the percentage of malt taken from silo n . The first constraint makes sure the percentages of all silos sum up to 1.

The next two constraints define the relation between the binary variable y_n and x_n . When a positive percentage of silo n is taken ($x_n > 0$), the value of y_n is 1. When silo n is not used ($x_n = 0$), then $y_n = 0$. Moreover, these constraints make sure that when a silo is used ($y_n = 1$), the value of x_n must be at least a small positive number. The next constraint depends on U_n . If $U_n = 0$, it means that silo n may not be used in the blend ($x_n = 0$). The following constraint is about the quantity of malt inside silos. The amount of kilogram taken from silo n , ($AKO * x_n$), should be smaller or equal than the amount of kilogram available in silo n .

The following constraints are all discussed in pairs. For some target qualities it is important to deliver for example a mix of 50% spring malt and 50% winter malt, meaning that the parameters $MINZW_d$ and $MAXZW_d$ should both be equal to 0.5. Note that ZW_n is 1 if the malt in silo n is spring malt and 0 otherwise. So $0.5 \leq \sum_{n=1}^N (ZW_n * x_n) \leq 0.5$ means that exactly 50% spring malt (and thus also 50% winter malt) is included in the solution.

The next constraints contain violation variables, which are included in the objective of the problem, since violations on final mixture values, blending limits and aim values should be minimized. $\sum_{n=1}^N (SV_{sn} * x_n)$ gives the value of specification s in the final blend. Since it is preferable that this value is between the final mixture bounds ($FMINV_{sd}^*$ and $FMAXV_{sd}^*$), these constraints are included. Should it be impossible or non-optimal to remain within these bounds, the variable $e1_s$ or $e2_s$ becomes positive. The same kind of restrictions are needed for the aim values on specifications, for which deviations are generally less important than for final mixture values.

Next, the constraints on blending limits are provided. If silo n is used ($y_n = 1$), the specification of the malt in silo n is preferred to be within blending limits ($UMINV_{sd}^* \leq SV_{sn} \leq UMAXV_{sd}^*$), should this be optimal. Notice that if the value of either violation variable is positive for a certain specification, it is equal to the difference between the corresponding bound ($UMINV_{sd}^*$ or $UMAXV_{sd}^*$) and the specification value of the used silo which deviates the most from this bound. The following constraints are included to take into account aim values on varieties. Notice that $(\sum_{n=1}^N (B_{rn} * x_n))$ gives the percentage used of variety r . Because RR_{rd}^* gives the preferred percentage of variety r for target quality d^* , these constraints make sure to approach the preferred percentages. The corresponding violation variables ensure that every variety percentage can occur, should this yield better results in the objective. The final constraints which are discussed →

in this smaller version of the complete model, make sure the physical restrictions on silo blocks are dealt with. $\sum_{n=1}^N (DSB_n x_n)$ is 1 if all used silos are from silo block A, -1 if all used silos are from silo block B and C, and anywhere in between -1 and 1 otherwise. Since v is a binary variable, you can check for yourself that these constraints can only be both satisfied if $\sum_{n=1}^N (DSB_n * x_n)$ is -1 or 1. This means that if silos from silo block A are used, no silos from B or C can be used, and vice versa. The remaining constraints are just non-negativity and binary constraints.

Optimizing the model

The objective function of the complete model consists of multiple terms, including terms depending on the sum of violation variables. Each term is assigned its own objective weight. For equal objective weights, each term contributes an approximately equal share to the optimization process. However, by adjusting objective weights, one can give priority to for instance aim values for one target quality, while blending limits could be important for another.

The complete model also contains some objective constraints. These constraints can be used to get more control on the final solutions. For instance, an objective constraint is $\sum_s (e1_s + e2_s) \leq (1 - \beta) * M$, where M is a large number. This means that if $\beta = 0$, this constraint does nothing, while $\beta = 1$ means that the final mixture values must be satisfied. In this way the objective terms depending on $e1_s$ and $e2_s$ do not contribute anymore, and the focus can be put on other objectives, given that the final mixture values are satisfied.

Next to the provided model, multiple extensions were build. Examples are the usage of previous solutions and automation of input parameters. These extensions make sure that the quality and computation time of solutions increase greatly, which is the goal of using a model for this problem.

Results of the model

By blending manually, which was done until now, it could take around fifteen minutes of intensive work to generate a proper blend. Using this model requires less effort and reduces the computation time of most blends to less than ten minutes. Since multiple blends have to be made per day, using the model is indeed significantly time saving. Figure 1 shows that the correlation between the order size and computation time is quite high. This can be explained because of the stream constraints (not provided in this article). When an order increases in size, much more possible streams (silo combinations) can be used, which takes time to evaluate. Therefore, a small order of about 30.000 kilogram (30 ton) is often done in a matter of seconds, while large orders differ greatly in computation time per target quality.

The quality of a solution is difficult to measure, since a solution has many performance indicators. Of course the top priority is to satisfy the customer, but for instance emptying silos to be able to store new malt is often also very important. The model provides a way to generate a blend according to the users needs and should not be used by someone without the proper knowledge of the final solutions. Sometimes a solution seems good, while in fact the best malt in stock is used, which gives an enormous problem one week later. Therefore, at all times a close eye should be kept on the current inventory. A promising recommendation is to expand upon the provided model. The blending of malt is only one subproblem of the entire supply chain of Holland Malt. Calculating which barleys

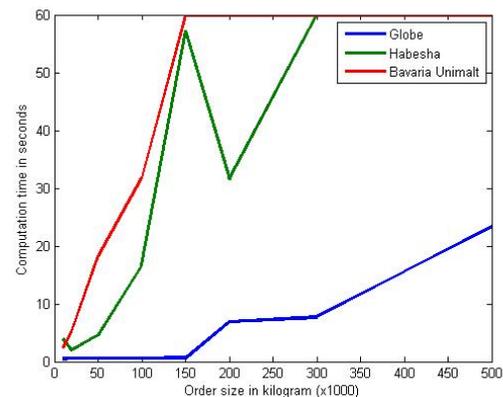


Figure 1: Dependency of order size on computation time

should be malted into malt, and which barleys to buy, is still not automated, and it would be very interesting to provide a model in these areas as well.

The planner at Holland Malt has already used the complete model with success. Multiple real-life optimizations are done and the solutions of most of these optimizations are actually used in practice. So now it is clear to me why econometricians and beer are inseparable. Not only because we enjoy drinking beers, but also because we are the ones who can develop and implement extensive mathematical optimization models in the beer industry. ●

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Donald van de Hoogenband
Age: 23
Began studies in 2010

Actuary: the Best Entry-Level Job!

On April 1, the Actuary Day of Tilburg took place. The previous edition of this event was three years ago and I participated back then as well. However, at that time I was only a second-year student and so I had no idea what an actuary actually does.



Nienke Marcus

AGE: 23

Began studies in 2010

Three years ago, they told us that actuaries, despite being known as a boring profession, was ranked among the three best occupations for many years. I learned a lot that day, but was not yet convinced that becoming an actuary was what I wanted. Now that I am doing the MSc program Quantitative Finance and Actuarial Science and work part-time at a consulting firm focused on retirement solutions, I have become quite enthusiastic about becoming an actuary. Therefore, I was definitely looking forward to the ADT this year.

The day started with a very lively presentation of Jeroen Breen, the managing director of the Actuariel Genootschap. He told us that the work field of an actuary is very broad, since it basically covers any situation where risk is involved. Afterwards we had a presentation by Alfred Slager of TIAS, who told us very enthusiastically about the Executive Master of Actuarial Science (EMAS).

In the morning, the company presentations by Aegon and Triple A were planned. Sanne van Helvert, who is a former active member of Asset I Econometrics, now works at Triple A and joined them on their trip to Tilburg to inform us all about her current job. It was nice to see her again and hear that she enjoys to work at Triple A. During lunch I joined Aegon and got to know a totally different side of actuarial science. You often hear about consultancy firms, but Aegon as an insurance company has lots of other risks and regulations to deal with.

In the afternoon the cases of EY and Towers Watson took place. I participated in a very fun and diverse case of EY. They tried to show us all aspects of their actuary advisory department. We were presented with three small cases about a spouse pension, risk hedging and reinsurance. For every case we had to discuss all aspects that would have an impact, for example mortality rates, interest rates or risk averseness, and we had to discuss what decisions we would make based on the information we received. Furthermore, we had to come up with our own financial product. Me and my team thought of a tutoring insurance for first-year students. We did our very best and in the end we even won the case! As a prize we received a very nice dopper.

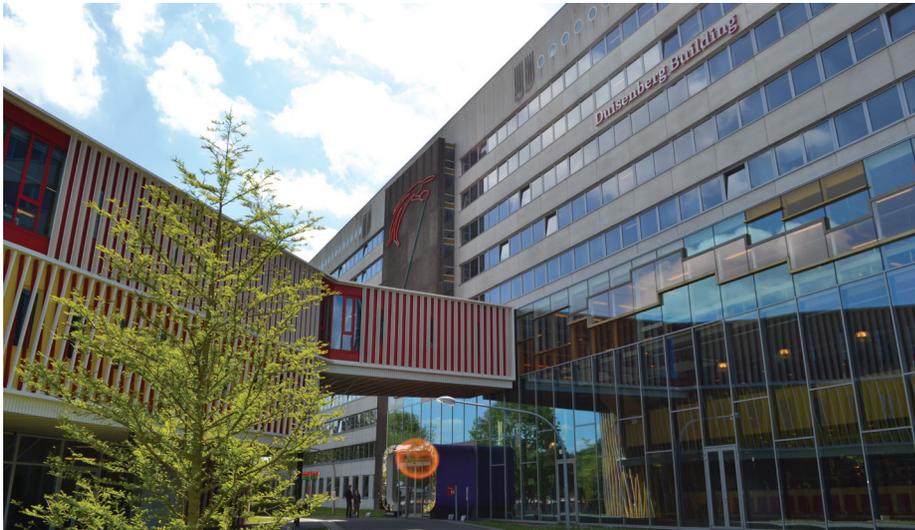
Afterwards we had another case by Netspar. They gave us a very interesting case that is quite a hot topic nowadays. We received information about a pension fund that either had to cut the pensions right now, or very likely, had to cut the pensions next year. Our job was to determine how much we should cut right now and how much to cut next year, and also how to communicate this to the pension funds participants. I noticed that quite some students did not yet have the knowledge of interpreting the information we got. However, the most important aspect that the people of Netspar wanted to hear is that you have to communicate clearly and honestly to your participants about what is happening and what the risks are for them. Since me and my team did this right, we won the case!

The day ended with a drink with some of the companies still present. Among the employees of Towers Watson, some former active members and former econometricians were present as well. So, for me, the day ended nicely by catching up with them while enjoying a glass of wine. ●

VESTING Reveals the North

Text by: Roxanne Beerkens

Anouk and I prepared for our journey to Groningen, which is quite a long train ride. We both had enough to do to kill the time, at least for the first three hours. The fact that this would be a long ride was not very surprising, for as Groningers put it themselves: 'Er gaat niets boven Groningen', since there is practically nothing north of Groningen.



In all honesty, during the last hour of our train trip to Groningen, there was almost nothing else to see than the country side and some sheep. However, once you are there it truly feels like a student city. We were somewhat early so we had the opportunity to see a bit of the campus, which is filled with modern, colorful buildings. Once we had found the room VESTING is settled in, we could start our interview with Lidewey (External Affairs) and Jorrit (Secretary). A bit later Pim (Vice Chairman and Treasurer) and Jeroen (Chairman) joined. Unfortunately, we did not have the pleasure of meeting Lise (Internal Affairs).

VESTING originally stands for 'Vereniging voor Econometriestudenten STuderende IN Groningen'. It was actually brought to life after their magazine, GAXEX. The magazine currently exists 38 years and

VESTING will celebrate its fifth lustrum in October. The board has not always consisted of five members, as in the past, some boards consisted of six or seven members. Pim explains to us that at first there were not as many committees as they currently have and therefore the board had to do much more themselves. Jeroen enlightens us about a special characteristic of VESTING, namely that you have the possibility to contribute to the association even when you are no longer a student, via 'Vriend van VESTING'. You are able to be a 'Vriend van VESTING' under the condition that you donate more than 25 euro to VESTING. Once you have become a donator, you will receive a golden nametag which will be placed upon a shield. There is even one duo that really likes to be on top, so much that they are prepared to pay whatever it takes to remain at this position.

Since Groningen is rather far away from just about everything, we wonder what it is like to be a student here and why you have chosen to study here?

Jorrit: Groningen is one of the nicest student cities, you can go out every night.

Lidewey: We have two streets where there are so many nice bars. You have enough choice and you will find students there the entire week. There is even a sort of schedule for the week: Monday is committee evening, Tuesday is house evening, Wednesday is the evening for your association, Thursday is just a general party evening and on Friday most of the students will be going home. We also have a lot of sport associations.

Pim: I come from Amstelveen, so actually Amsterdam would have been a more logical choice. I have doubted for quite a while, but I have chosen for Groningen, since it is a bit smaller and more of a student city. It is indeed a sort of island, which ensures that almost all students live in lodges.

Jeroen: I just come from the province of Groningen, even from the same village as Janinke Tol, one of your old board members.

Lidewey: It is just very nice that it is smaller and that you are able to know the professors quite well.

Jorrit: Yes, that is perhaps just something from the north: being easy to approach.

VESTING also makes sure that you can enjoy a good party. They organize a

drink once every two months in their pub 'De blauwe engel', which is quite a famous and notorious pub. At these drinks beer costs only fifty cents, so they are very well attended. They also have a final party at the end of the year, and this year's theme is full moon. Obviously, the lustrum will be a great party as well, but unfortunately they cannot share details about this. Lidewey tells us they have a lot of formal activities as well, of which the most successful is their congress. A surprising formal event of VESTING is their 'Sleepless Night', which is a very popular event where students will visit a company and try to solve a case. They will sleep in the neighborhood of the company and end this wonderful experience by having breakfast with the company.

When did you become active and do you like being the board of VESTING?

Lidewey: I have become active in my first year in the sport committee and after this I have been a mentor at our introduction camp and I have organized the career days.

Jorrit: In my first year I was still living at home, which is only half an hour away. In my second year I joined the same committee as Lidewey.

At VESTING there are three moments at which it is possible to join a committee,

unlike with Asset | Econometrics, namely in September, February and May. However, at VESTING you need to apply for a specific committee. Now since our interviewees have only just begun as a board member, we wonder how they like it so far.

Lidewey: It really is a lot of fun and you learn so much: from being more efficient to having unique opportunities at companies.

Jorrit: And you go to places you would normally not be able to go as a student.

Jeroen: You just dive in and it is rather a big switch between student and board member, certainly because you immediately have a constitution drink where you get to know so many new people.

Jorrit: It all goes by so fast.

Pim: Actually you just have no clue what you started with.

Is there anything else we should know about VESTING?

First of all, they are all very proud upon the fifty cent candy shop they have and I must confess it is a rather impressive assortment they have. They have a huge fridge filled with all sorts of soda and you can pay with your university card. However, when we talk a bit longer we slowly get to the more juicy details of VESTING. Obviously, we cannot address all their escapades, but we will dive into

their constitution drinks, since there are some nice differences between these drinks in Groningen and Tilburg.

Jeroen: I believe our consti's are a bit wilder.

Pim: We will also 'bras', meaning we will try to steal something from the new board. This can be the 'pedelstaf', the guestbook or just a board member and every board that comes to congratulate you will tell a story and give you a present. Jeroen will get three random words of us to put in his story.

Jeroen: It works as follows, you are being announced by means of the 'pedelstaf'. Then you indeed have your little story and you give a present to the new board. Usually, we give Pisang with beer, such that your beer will have the color of VESTING. Once we gave as a present a broken dishwasher and therefore received a bed in return.

After this lovely interview it was time for Anouk and me to travel back south. However, we made sure to make a nice day of it and decided to lunch at the center of Groningen. I would like to thank Lidewey, Jorrit, Pim and Jeroen for their time. I look forward to seeing them on the Board Integration Day and wish them a great year. ●

From left to right: Lise, Jorrit, Jeroen, Pim and Lidewey



“Failure is not the End, it is the Beginning”

Text by: Ennia Suijkerbuijk

She is Director of the Center for Operations Research in Medicine and HealthCare, Professor at Georgia Institute of Technology, and Distinguished Scholar in Health Systems, Health System Institute, Georgia Tech/Emory University. An interview with Eva Lee about mathematics, passion and planning. “You never have enough time. You have to make the time yourself.”



Eva Lee
Director Center for Operations Research in Medicine and HealthCare

What did you study?

My undergraduate degree in pure mathematics comes from Hong Kong Baptist University. I did a minor in computer science, as I love algorithms. My PhD degree in Computational and Applied Mathematics is from Rice University.

What is it about mathematics that attracts you?

I have always loved mathematics. I am fascinated by the numbers, their patterns, the theory, and everything about it. I remember that when I was three years old, my kindergarten teacher asked me to add the numbers four and five, but by that time I could already add numbers with five digits.

Can you explain what projects you are currently working on, and how do you engage students?

I prefer to work with multi-disciplinary teams of investigators, including practitioners, along with graduate and undergraduate students. I like diversity. Students approach me quite often as they want their work to have meaningful impact beyond the classroom and publication. I select those who are passionate and hard-working. I work closely with my students; usually each of them investigates some parts of a much bigger project. They may work in groups or individually under my supervision. Some projects focus on early disease diagnosis. For example, we look very, very closely at early indicators of cancer. Sometimes, when cancerous cell behavior occurs, it is already too late to intervene. We explore early genomic changes in the body to predict the looming cancer; this may open up opportunities for gene therapy.

We look hard at evidence-based treatment design. This means that for each individual patient, you investigate how best to design customized and individualized treatments. We also research vaccine designs. We ask ourselves: how do you predict which vaccines will work for which individuals? There are projects that relate to big-data analytics for decision and risk assessment. For example, we analyze millions of patient data to uncover

evidence and patterns of effective treatment, polypharmacy, and identify potential areas of predictive health to improve outcome. We cover many projects in public health emergency response and homeland security defense areas as well.

One of the projects Eva has contributed to is the software system RealOpt. This is a decision support system to aid pandemic and bio warfare public health mass dispensing and emergency planning. It is designed to take the guess work out of mass dispensing of medical countermeasure. Lee's work has become an integral part of White House and Department of Homeland Security planning and discussions for preventing and pre-empting health care threats. She also works with White House Biodefense Policy and Medical Preparedness Policy Directors on matters related to emergency response, mass casualty mitigation, medical preparedness and policy, and her work on RealOpt.

Why did you make the transition from mathematics to healthcare?

I have never left mathematics. Mathematics is my lens and window into health care. I expanded my theoretical and computational horizon to include real-world applications. I have always loved medicine and even took some pre-med courses as an undergraduate. When I was a PhD student, I thought of attending medical school and

earning an MD/PhD, but my passion for mathematics did not give me time to embrace that opportunity. It was a chance encounter that I met Dr. Marco Zaider when I started my first job as an assistant professor at Columbia University. I was very fortunate to be trained by him and other oncologists for several years. It gave me much appreciation of the medical challenges and how mathematics is so intertwined with many medical technologies. I view mathematics as a vehicle to enhance and advance medicine.

‘Use your talents to contribute to society’

Of all the projects you have ever done, which one did you like best?

I love all the projects that I am working on, or else I would not do them. My work is more passion than duty. I care a great deal about their impact to society and to humankind. But on a more personal note, one ‘project’ that I loved best was raising a baby sparrow that I rescued after it fell out of its nest. It was just a couple of days old and had not even opened its eyes yet. This bird, which I named Sweetie, changed my life and taught me many things. I love nature very much and she was a perfect teacher. She was precise, passionate, tender and extraordinarily sweet. But she was so tiny; every bite I fed her, I was afraid she would die from suffocation. I had her for nine years. She was not one of my professional projects, but she holds a big part in my heart. When you take on a project, independent of its contents, it becomes part of your character.

Over the past few years, you have won quite some awards. You won the Whitaker Foundation Biomedical Grant for Young Investigators, you have been selected as one of the Extraordinary Women Engineers, and you have even won the prestigious Franz Edelman award. What accomplishment are you most proud of?

It was an honor to receive the Whitaker Foundation Biomedical Grant for Young Investigators, as the Whitaker Foundation is instrumental in funding the establishment of all the top

biomedical programs in the United States. It offers very competitive funding support to young investigators who are engaging in cutting-edge biomedical research. As it happens, I was the first and only OR/IE recipients for this grant, which was amazing and gratifying. Forgive me, but I also think it was smart for the Foundation to recognize the growing importance of mathematics in biomedicine.

Being selected as one of the Extraordinary Women Engineers and winning the Franz Edelman award were

unique and wonderful experiences. I give huge credits to Dr. Zaider for winning the Edelman award. He had the insight and the belief in me and what I can do, and he was the one who used the technology developed in the clinical setting. Winning awards is great, but I give my collaborators a large share of the credits. Beyond the awards, I am truly happy and grateful to be pursuing projects that have an impact on people’s lives and to work with and learn from a very diverse group of collaborators. I learn so much from collaborating with researchers and practitioners in many different fields. I make real friendships, too. We have intense passion and work really hard together. The fact that they accept me and we work so well together is something I am forever grateful for and that I value more than winning competitions, no matter how prestigious they are.

What would you still like to achieve?

More.

Who is your role model?

I have two role models. First of all, there is my father. Not a single day passes that I do not think about him. He was a man with few words, but I learned so much from him, even in his silence. Secondly, there is my mother; she was the invisible force. Since she was severely ill ever since I was born, she gave me the strength in understanding and accepting things and the perseverance to handle adversity. She showed me

how fortunate we are. You do not need tons of money, as long as you have your family, health and education.

How do you feel about working in a mainly man-dominated research field?

I do not like this question. No one ever asks the sex of an equation. When I was in college studying mathematics, there were a hundred male students and four females. So I am pretty used to working with men. Most of the time, people are eager to work with you and they focus on the work that needs to be done, rather than our gender. Yes, there are people who prefer working with their own sexes. I will not make judgement on that. We have to respect each other. There are some differences between the two sexes. Women may appear more passionate. Some men, for instance, do not like talking about their feelings. However, that does not mean that they do not care. Let me give you an example. I had a very strong bond with a medical director who treated me like a daughter. This one time, one of his patients had a heart attack during a knee operation. On the surface, he did not seem to be affected. However, that night we attended a party, he did not speak a word during the entire evening. Just because people react differently from what you expect does not mean that they feel differently or do not care. People have different ways to express themselves.

Do you yourself also ever feel guilty that you cannot save every single life?

Oh my gosh, yes!

How do you cope with that feeling?

You have to accept that you will not be able to save everyone, but meanwhile you should realize that you can make a difference. If you lose control when a disaster strikes, you lose very valuable time. I am a very emotional person, but conserve my feelings for later moments. You cannot stop people from dying, but you can minimize that number and that is what I aim to do. In some of the medical work, we see patients dying, it truly makes a mark in my heart, and I am more determined to make things work, to make up for the loss.



Are you afraid of failing?

We are all human, which means that at some point we all make mistakes. I notice that my students are very afraid of making mistakes and if they do, they become depressed. However, I believe that failure is not the end. It is the beginning. You have to accept that you did something wrong, so that you can learn from it and make sure that it will not happen again. You have to turn the negative energy around in order to make things better. When you encounter challenges, do not be

because I am so fascinated by nature, I managed to fit two hundred different plants in there. This might seem strange to many people, but I think that you have to surround yourself with things you are fond of. That is also why my husband and I house countless 'rescue' birds. Some are orphans who could not survive on their own; others got injured. Birds are really precise and have much better instincts than humans. I love them!

A couple of years ago, my birds suddenly became uncomfortable in the

How do you combine your busy professional life with your passions and hobbies, any advice for us?

I do not sleep a lot. Sometimes I just skip a night in order to have more time. Nevertheless, I never use the term 'busy'. I believe that there is never enough time if you do not make the time yourself. I think that students should not be so obsessed with the amount of "friends" they have on their Facebook, rather they should focus on what really matters – those family and friends around them. Ten years from now, life will be more difficult, or more complex. Being an undergraduate student is your honeymoon. Enjoy it while you can! Make some genuine friends and share some life experience together.

We want to thank Eva Lee for her interesting stories, visions and advices. ●

'When you find something you are truly passionate about, your life immediately gets better'

afraid; know that you can learn from failure and become stronger. The most important thing is to be able to get back up and move on from it.

Do you have any other advice you would like to give?

You should follow your passion and find something you really love to do. Personally, I love gardening, art work, dancing, music, reading, and especially nature. When I was a PhD student I had a small studio room, but

middle of the night and started making loud noises. Twenty minutes later, an earthquake took place, and they had been able to sense it long before it happened. I am not saying that you have to share my passion for nature, but when you find something you are truly passionate about, your life immediately gets better. Follow your passion and find something you love to do, because in the end, passion is what drives you. Try to use your talents to contribute to society.



Saving Lives with Operations Research

On April 30, after a morning of classes with very low attendance, Asset | Econometrics' Symposium kicked off. The organization seemed to be quite nervous as every speaker on the Symposium was welcomed by giving them 'a warm hand', but the day turned out to be well-organized and informative.



Robin Galjouw

AGE: 22

Began studies in 2012

The symposium started at 12:00 with a free lunch. Having a free lunch in the Netherlands might not have been the best idea. With sentences such as 'It is free!' and 'I paid for it!' (referring to the Asset contribution paid at the start of the year) the drinks, sandwiches and pieces of fruit quickly disappeared.

After lunch and a quick introduction by Chairman of the day Hein Fleuren, it was time for the first speaker: Prof. dr. Lee. She is a professor at Georgia Tech who recently worked together with the U.S. Centers of Disease Control and Prevention (CDC). She explained that each disaster needs a different approach. An example of this is that in Haiti there is still significant damage from the earthquake visible, while in Fukushima it only took half a year before everything was back to normal. Dr. Lee explained that finding an 'optimal' approach of the CDC is not easy. This was backed up by a slide showing a mixed-integer-

nonlinear-programming-problem where several parameters are determined by sets of differential equations. Lee said that in practice her colleagues are often quite interested in mathematical models even if they do not understand them.

The second speaker was Dr. H. Monsuur, who works in the field of Military Operations Research. He explained the origin of Operational Research and its influence on modern military operations. An application of OR on military operations is finding an optimal defensive strategy for a naval base. Monsuur said that when you work in the military, your solutions need to be readily understandable. For the naval base, a visualization of the model made it look the same as an advanced game of Battleship.

When Dr. Monsuur was done speaking, it was time for a (free!) coffee break. During this break the possibility was given to talk to the speakers. Afterwards, it was time for Koen Peters, a PhD student who is also working for the World Food Program (WFP). An example of a constraint in the optimization problem of the WFP is that a donator can decide on the area where his money/supplies must be distributed. The WFP also has to decide on how to transport the food over different parts of a network (e.g. by plane, boat, car, camel, cow, etc.). One important advice Koen gave to the students at the end of his talk was: learn

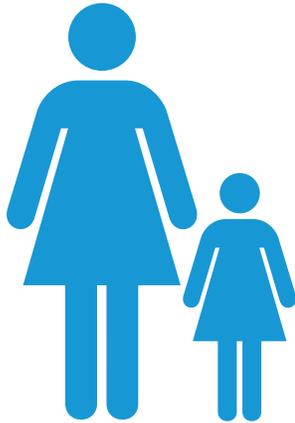
to use free software, since after your master your Matlab, AIMMS and Stata skills might become irrelevant.

When Koen was done speaking, it was time for the company presentations/case study. I attended the company presentations of SAS and EyeOn. This was quite useful, since nobody seemed to know these companies (the person next to me thought SAS was an airline company). It quickly became apparent that SAS is a software company, since most of their presentation was focused on how to buy and use SAS software. EyeOn is a company that is specialized in forecasting and from their presentation it became clear that anyone who likes forecasting should consider working there.

Finally there was a presentation by Building Blocks concerning data mining. This had little to do with OR and even less with saving lives. The reason this was included was that they have a new building in Tilburg and are looking for new employees. Afterwards, there was a closing ceremony with the conventional bottles of wine and once more many 'warm hands', followed by a drink. ●



**THE MOTHER OF...
KRISTEL VAN DE RIET**



Culture Clash with Brabant

Text by: Stefan ten Eikelder

On the day after Ascension Day, Max and I left Tilburg and ascended north, to the city of Arnhem. At the train station we were welcomed by Jeanine, the mother of Kristel van de Riet. Before dinner we were even invited to visit CITO, a hot topic these days during the high school exams.

The CITO

Arriving at the CITO, we immediately noticed that it looks more interesting from the inside than from the outside. Well, immediately, that is after Max and I struggled with opening the gates using the keycards we were provided with. History tells us that many people show interest in the tests made by CITO, so this building is of course not very easy to get inside of. When we went inside, we found that the building has a partially glass ceiling, resulting in a very open atmosphere. Apparently, the building is very new and we found that many concepts of flex-working have been implemented. The most important one is that nobody has their own desk, not even the directors. This results in several interesting features in the building. Desks are adjustable in height, many designer furniture can be found everywhere and everything looks very tidy, as nobody has an own desk where they leave things lying around. A downside of this we experienced very early on during the tour: as everything looks so similar, even different floors, we would have been lost if it was not for Jeanine.

Aside of being a tour guide just for today, Jeanine works as a manager of the group of employees responsible for tests for adult and higher education. Most Dutch people will know the CITO institute as being responsible for the CITO-test at the end of primary school and the exams in the last year of high school. However, Jeanine revealed that CITO is doing much more, such as developing tests for foreigners learning the Dutch language and mathematics tests for nurses.

When we arrived at their house, we could already see the delicious chicken legs in the oven, and everything was well taken care of. After enjoying our dinner, we started the interview.

Jeanine

Jeanine Treep was born in Alkmaar, but spent most of her youth in Utrecht. Although she also spent some time in Amersfoort, she returned to Utrecht when she started studying didactics (the theory behind education). As of now, Utrecht and Arnhem are approximately on a tie, when looking at the number of years of residence. Jeanine was the middle child in a family with five children.

She had, and still has, a good relationship with her brothers and sisters, who now live all across the country. During her student life in Utrecht she joined a student association. Jeanine: "I was a member of Biton, a somewhat alternative student association. It was a relative small association, which allowed its member to show own initiative." She really enjoyed being part of this association, and it was also within this student association that she met Erik, her husband.

Jeanine's hobbies are painting and making music. Both of these are visible in the living room, as several of her paintings are displayed, as well as a guitar and a piano. Jeanine plays the flute and guitar, while the piano is mostly used by Kristel. As Kristel also played violin, there is at least some music vibe present in the family, although Erik mentions that making music is not one of his talents. During their student time, Jeanine and Erik were a member of the Utrecht student choir and Jeanine even joined the student orchestra. Jeanine: "We really enjoyed this and we still regularly go to concerts, choral music as well as classical music."



The young Kristel

When asking what Kristel was like as a child, Jeanine does not have to think long before an answer comes to mind. "Kristel was a very happy, cheerful and confident girl." Already very early on, Kristel knew what she wanted and she always went straight for her target. When studying for school, she developed a particular strategy for remembering how to distinguish between words which are spelled with 'ei' and words with 'ij'. She remembered all words with 'ei', so if she did not know a word, it must be a word with 'ij'. For a particular set of words, this is indeed very convenient, but later on this turned out to be less useful.

Both Kristel and her two year older sister Suzanne agree that their relationship as children was good. Suzanne: "Aside of the typical struggles, it all went pretty harmoniously." Kristel generally did not give her parents a hard time either as a kid, being very cheerful. However, occasionally her confidence gave her parents a bit of a headache. During their trip to Thailand, she was impressed by all the big Buddha temples and she decided that her guinea pigs deserved one as well. Jeanine: "As a result, we spent the entire holiday discussing which temple would be suitable to build small-scale for Kristel's guinea pigs."

As a child, Kristel was not interested in mathematics or sciences in general. As Jeanine puts it: "Why would you learn the multiplication tables when you can also play with your Barbies?" It was only in high school that she started displaying interest in mathematics and obtained high grades for mathematics and sciences. This did not mean that she knew she wanted to study something related to this though, her main criteria was simply a study program with not too many books. Choosing the right study program was quite a time-consuming process. Programs such as biomedical engineering were also considered, and in the end she opted for econometrics. Erik studied physics, which of course also includes a considerable amount of mathematics, so in some way mathematics was already present in the family. During dinner, Erik and Kristel regularly discuss econometrics, a topic which also touches upon Erik's work. This then leaves Jeanine and Suzanne with puzzled faces. More often though, medicine, the study program of Suzanne, is discussed as this is a more understandable topic for everyone.

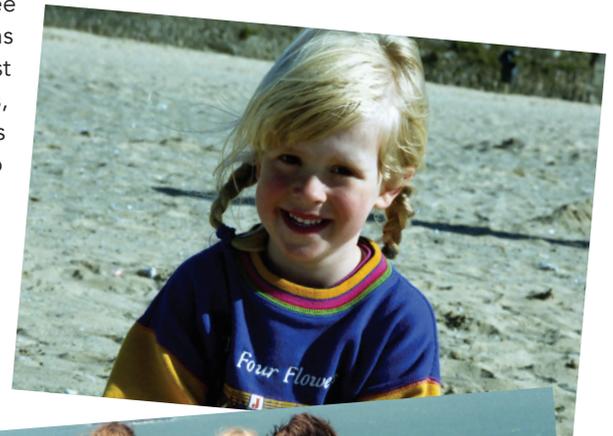
The family nowadays

Now that both daughters are living in lodges, family moments are becoming scarcer. An evening like this is not an exception, but during the weeks, Jeanine and Erik usually do not see their daughters. Jeanine mentions that this is a logical thing: "It is just like the time before we had kids, which was also nice. And students should not stay at home, but go live in lodges." Naturally, they are interested in how Kristel spends her time in Tilburg. During their visit to the Parents Evening last year they noticed an important difference between Arnhem and the south of the Netherlands in an unpleasant way. The evening started at 19.00 and Asset I Econometrics assumed that everyone had already had dinner before this time, which is rather customary in Brabant. Unfortunately, Jeanine and Erik discovered this too late. Jeanine: "We were very hungry when we arrived and we had to manage with a cup of coffee and some snacks."

Both Jeanine and Erik like traveling to locations situated far away, so a couple of those are still to be planned. They would also like to combine this with seeing an eclipse, such as in the USA in 2017.

Max and I are very grateful that we could visit the CITO, as it was a nice opportunity to gain some

insight in this well-known institute. As proven by the many laughs we shared over dinner and during the interview, we enjoyed this evening and want to thank the family Van de Riet for this. ●



Great Variation in Retirement Savings Among Dutch Households

Marieke Knoef, Kees Goudswaard, Jim Been, Koen Caminada (all: Leiden University)

This Netspar brief considers the issue of how much money Dutch households are saving for retirement and how this compares to their retirement goals. We do this through an extensive empirical study of all the sources that contribute to a retiree's financial position. We then compare the adequacy of Dutch pensions and retirement savings plans to those of other countries. It is important to understand the adequacy of pensions and retirement savings when making decisions about the future of the pension system, and as such this brief contributes to the national pension dialogue.

Major Findings

1 Dutch people, on average, are saving well for retirement. When you take only their social security benefits (AOW) and supplementary retirement savings (both occupational and private plans) into account, the average household with people in the age group 35 to 64 is projected to receive a gross pension of 71%, or net pension of 84%, of their current income. When you add in other private savings and home equity, the average net replacement rate is as

high as 101%. Total savings will drop as a result of the enactment of limits on tax-deductible pension contributions (the so-called Witteveenkader), but this will be compensated in part by people working longer.

2 There are vast disparities in retirement savings. Approximately 30% of households will have a pension of less than 70% of their current income, and approximately 20% of people will fall short of what they have indicated to be their minimum spending needs. There is

a relatively high likelihood of insufficient pension among certain groups of people, such as the self-employed and divorcées/divorcés. In addition, people with high incomes often see their incomes reduced by a relatively high percentage upon retirement.

3 One group of people is saving a great deal. Over one fourth of households are projected to have as much net income after retirement as before. For half of these people, post-retirement income will be at least 18% more than what they have indicated they will need. These could be considered cases of sub-optimal distribution of lifetime consumption; the people may have been better off if they had saved less for retirement and had more money to spend during their working lives.

4 Pension outcomes will remain relatively high in the Netherlands, even in the future, compared to countries such as France, the United States and Norway. That was the finding from an international comparison study based on data on individual savings plans.

5 The fact that we see so much variation in retirement savings between groups and that people's retirement



ement Savings ds

desires differ so widely presents an argument for introducing greater flexibility and individualization in the system for saving for retirement. A transition toward personal pension accounts for capital accumulation, which the Dutch Social and Economic Council (SER) plans to further explore, would provide better options in this regard. This will necessitate having a good choice architecture in place to prevent people from making the wrong decisions and failing to save enough for retirement.

A Netspar Brief spotlights certain research findings to bring them to the attention of a wide circle of pension professionals, policymakers and academicians. The point is to supply the building blocks for a well-informed debate on the Dutch pension system. In this new medium, research in the areas of pensions and aging is summarized, with a particular focus on analysis and interpretation. Here you can read the summaries of two Netspar Briefs. The full version of the Netspar Briefs can be found on the Netspar website: www.Netspar.nl

International Comparison of Pension Systems: Options Could Be Expanded

Marcel Lever (CPB), Eduard Ponds (APG/TiU), Ryanne Cox (DNB) and Manuel García Huitrón

What can the Netherlands learn from other countries about funded pension systems? That is the central question in this Netspar Brief. Internationally, the role of the government, the social partners, and the individual plan participants varies. This Brief looks at four particular prototypes: the Provident Fund model (Malaysia, Singapore), with heavy government regulation; the Social Partners model (Netherlands, Switzerland, Scandinavia), with a combination of self-regulation by the social partners and regulation by the government; the Regulated Choice model (Australia, Chili), in which the government mandates savings requirements for individual workers and regulates the pension providers; and the Induced Choice model (New Zealand, UK, US), with a great deal of leeway for individual choice combined with standard options (so-called defaults).

Major Findings

1 Having more options in terms of contributions and payouts in supplementary pension plans would allow participants greater flexibility in spreading out their income and consumption over their lifetime. It could also help in terms of better accommodating their specific circumstances and preferences. Freedom of choice could be expanded by giving participants the option of accruing fewer pension rights or of withdrawing a portion of their pension savings all at once in one lump sum. This freedom of choice →



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would need to be limited to avoid the problem of selection risk and ensure life-time income distribution. Providing more freedom of choice during the savings stage would require eliminating the uniform contribution and accrual system. Having more options in terms of contributions and payouts is important for the Netherlands in part because the mandatory savings levels are relatively high, even given the lower savings limits and sober prospects for indexation.

2 The foreign systems that have freedom of choice are increasingly instituting default options that offer participants help in terms of saving, investing, and drawing down their pension capital. Employees and independent contractors in the Netherlands who are not currently obliged to participate in a collective scheme would be able to be automatically enrolled in a default scheme, such as NEST in the UK. Members would be free to end their enrollment (opt-out).

3 The experience of other countries shows that allowing individual participants complete freedom in choosing pension plans without any further regulation does not always work well. Active involvement on the part of either the government, social partners or employers usually aids in controlling costs and ensuring transparency.

4 Dutch pension funds share more of the investment risk to future generations than most of the funded pension systems in other countries. While intergenerational risk sharing does occur in some defined benefit (DB) plans, it is rare to unheard of in defined contribution (DC) ones. Countries with DB systems are gradually shifting to DC systems. Part of the policy discussions in the Netherlands include an examination of the advantages and disadvantages of shifting investment risks to future generations. ●



Time to Boost Your CV

Your CV is the first possibility you get to impress a potential employer and it can either make or break your chances of getting hired. Therefore the process of creating the best possible CV is worth spending time on, even in your summer holiday.

You might include the title of your master thesis, important additional courses, etc.

You can also include the month: 08/2011 – 08/2014

Only include your profile/courses if they truly add value to your desired function.

Explain the tasks corresponding to your function, as a function title on itself is meaningless

Avoid abbreviations: write Public Relations instead of PR

Do not include basic programs such as Word/PowerPoint

Do not add too many hobbies!

Only include a language when you are capable of having a professional conversation in it

Personal information

Name: Henk de Jong
 Address: Prof. Cobbe
 Postal code and city: 5037 DB Tilburg
 Phone number: +314 15926
 E-mail: henkdejong@
 LinkedIn: http://www
 Date of birth: January 1, 1980
 Place of birth: Tilburg
 Nationality: Dutch
 Sex: Male

Education

2014 – today **MSc Quantitative Economics**
 Tilburg University
 Expected graduation: 08/2014

2011 – 2014 **BSc Economics**
 Tilburg University

2005 – 2011 **Voorbereidend**
 Sint-Odulphuscollege

Professional experience

05/2015 – today **Junior consultant** (12 hours per week)
 • Applying development of media & marketing strategies
 • Presenting and explaining the environment of a company

07/2013 – today **Student recruitment** (10 hours per week)
 • Finding and recruiting students

Associated activities

09/2014 – today **Editor Nekst**
 Tilburg University
 • Planning and editing articles
 • Checking articles for quality

05/2013 – today **Active member** (2 hours per week)
 • Organizing and participating in events
 • Secretary of the association

Additional skills

Computer proficiency: Matlab, Java
 Courses: English (MSc)
 Hobbies: Playing the guitar
 Languages: Dutch: native
 English: fluent

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Quantitative Finance & Actuarial Science
University (TiU)
graduation date: January 2016
Econometrics & Operations Research
University (TiU)
Identificatie Wetenschappelijk Onderwijs (VWO)
Gymnasium

Consultant, Pointlogic, Rotterdam (32 hours per week)
developed methods and models to issues in the field of marketing
providing solutions and results in the context of the needs of the client
Recruiter, ImpressiveGreenApple, Den Haag (8 hours per week)
recruiting and introducing talented students

Journalist, study association Asset | Econometrics, University (2 hours per week)
writing and editing articles
writing articles of other editors
Member, student hockey association SHOT, Tilburg (8 hours per week)
organizing the annual international tournament
member of the Public Relations committee

Programming: Java, AIMMS
Languages: Dutch (Malta), English (Cambridge), English (Canterbury)
Hobbies: playing the guitar, traveling, hockey and diving
Languages: Dutch (native)
Languages: English: fluent

Only include your LinkedIn when your profile is up-to-date

Your marital state and BSN are not noteworthy

Give an estimation of the amount of hours per week/month you spend on it

State your activities and responsibilities in bullet points

Try to be as precise as possible in your job description

Additional tips

Your CV should not be longer than two pages

A photo is usually not necessary, but might be worth including. In case you do choose to include a photo, make sure that it is a business-like one

Be consistent and stick to an anti-chronological order (start with your most recent experiences)

Recommendations on your CV are only required when specifically asked for.

Less relevant side jobs/committees can be mentioned as 'multiple activities besides the study'

The One and Only Astrics Cantus

I am delighted to tell you about the beautiful evening with the one and only Astrics Cantus on April 7. This night would be particularly special, as it might rain beer and everyone would crawl home at the end of the evening. At least, that was what I was expecting when I found my way towards Café Boulevard, already half-drunk. This was my first alcoholic activity with Asset | Econometrics and it was time to test these econometricians.



Quirien Raat

AGE: 20

Began studies in 2012

At the moment I entered it was already a success: the first guests were sitting at the tables in a nice, large room. After waiting for what felt as days, with a lack of beer, some movement happened. The Astrics Cantus committee introduced themselves: Björn Floor, Erwin van Oosten, Pepijn van den Brink, Tom Scholtze, Masum Rahman and Bas van Wely. But most importantly, the bar opened and the first golden liquid was flowing in the pitchers. Every table received several pitchers and so our plastic cups (yuck, this fake stuff) could be filled for the first time.

It was really nice: promises were kept and there was plenty of beer, so everyone was happy ("People say that humans are complicated beings, I say give them beer and they are happy. Simple as can be"). As it should be,

everybody rose when the Dutch anthem sounded. We placed a hand on our hearts (which is on the left, people) and we sang the Wilhelmus. A tear rolled down as I saw how much the econometricians love their homeland by knowing the Wilhelmus by heart *cough cough*. This weak performance did not matter, because the song 'Ein Prosit' started. Finally, we could start drinking our first beer. When I looked across the room, I saw several cups that were only half-empty. God bless that my neighbors did put empty cups on the table. At that point the evenings was speeding up, maybe because of the full cups.

as the song '√(-1) will survive' (my compliments to the unknown creator). However, some people did not drink enough, as they could still dance at the end of the cantus. When we were wiped out of Café Boulevard the real die-hards moved on towards Café de Boekanier, whereas many people could no longer cope and crawled (or biked for the weak drinkers) home. When almost no one was left, I decided to grab what was left of me, searched for my coat and found my way home. Mr P decided to join me toward my room, where I introduced him to the abandoned church of Tilburg. After crawling through several tunnels,

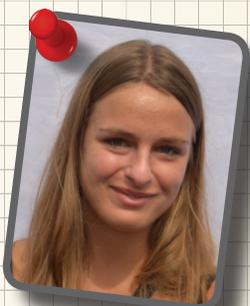
'There was plenty of beer, so everyone was happy'

The first penalties were given for prematurely visiting the toilet, which was totally fair to be honest. Afterwards, the committee members of the International Business Tour (IBT) were asked to the stage, because they drunk too little, which was also fair. However, this was all a cover-up to announce the destination of the IBT 2015 (Capetown!), but I did feel that the IBT committee should really start drinking more/faster.

The night is moving on and many unknown songs are started, such

we crossed a flooded basement, which was also the moment that Mr P discovered that his smartphone is not that good at swimming. The deep fryer was turned on, in an attempt to tackle the hangover before we headed home.

The next morning the hangover was still horrible, but as real econometricians (almost) everyone was at the lectures, except for the students participating in the Outreaching program, as they were visiting Hong Kong. ●



Jeannine Beker

AGE: 21

Began studies in 2012

We started off with a warming-up. One exercise was to try to hit the partner you teamed up with. I have not thrown many snowballs for a while, so this exercise was already quite challenging. After the warming-up we were divided into four groups and I was teamed up with Julia de Kogel, Lotte van Bakel, Kristel van de Riet, Bart de Peuter and Bas van Wely. We then played a couple of games, each game was one team versus another. In between the games you could prepare the snowballs for the next snowball fight or you could hang out on very comfortable couches on the side-line. I secretly preferred the second option.

There were four games. Everyone named Tim was doomed in these games. Are you wondering why? Tim Laurensse and Tim van der Heijden were the only ones that fell. In the first game, the field was divided by a line and there were three people from one team allowed on their side of the field. The other team members were making snowballs and handing those to the players in the field. Once someone was hit, the other team received a point and he or she had to leave the field for someone else to step in. Switching had to be fast, because otherwise the other team had an advantage. My team owned the first game with a final score of 11-6.

The second game's aim was to capture the flag, a game you probably already know. To be certain I will give a short explanation. Each team has a flag on their side of the

field which the other team tries to capture and brings to their side of the field. When a player was holding the flag in his/her hands and got hit with a snowball, the player had to drop the flag. At some point I thought it was a good idea to run very fast towards the flag and see what would happen. I got hit from three different sides, so it was not my best move. Although we had talked about some tactics before the game, it did not matter. We lost our flag not once, but twice.

The third game was quite similar to the first game, but now you had to leave the field once you were hit. In this game I walked to the front and after throwing my snowballs I decided to hide behind a wooden box, where I was less likely to get hit. There was a problem with this: I was cornered and

could not see what our opponents were doing. This game ended fast, it was a loss for us. The last game was the same as the third game, but it was to decide if we would be placed as third or fourth. Although we ended fourth, we had the most fun team. After the games were finished, Bart and Bas tried to throw a bucket of ice over Thijs, who noticed it just in time. They also tried this with Björn, which did not go any better.

After this activity we went to Café Roefus to get a bite to eat. I ordered a schnitzel, simply because I always like to eat schnitzels. Some of the others ordered chicken, probably because they like to eat chicken. Or because they dislike schnitzel, I did not ask them. Some of us still had room for dessert and went to Intermezzo to get an ice cream. It was a sweet ending. ●

Ice Ice Baby

For the General Members Day we went to Skidôme Rucphen. The activity was a snowball fight, which was kind of ironic on a nice summer day. I was holding ice in my hands, ready for a snowball fight, while I was wearing a T-shirt and gloves.



THE PASSION OF... ELLES TEMPELMAN



After attempting to schedule an interview for some time, because of study and sickness, my fellow interviewer Stefan and I finally met Elles for my second interview of the day. This interview was again about a passion in the water, just like in the previous Nekst. We met at the Asset rooms, as she is also an active Asset | Econometrics member. Elles was very prepared as she had brought a map with information about her passion with her and she already searched for photos for the article beforehand. This was the beginning of a very informative interview.

Text by: Jesson Einmahl

A quick introduction

Elles Tempelman is a twenty-year-old, first-year econometrician. She has been an active member of Asset | Econometrics since the beginning of her first year and she is a fanatic rescue swimmer. The latter is what this article is about. She started swimming lessons at the age of five, like most kids, and she has always liked it. She continued with rescue swimming and this will be her fifteenth year of swimming! In total she has obtained about forty swimming diplomas in her life, among which snorkeling and survival diplomas, which also required a lot of studying as shown by the thick map she brought.

The beginning

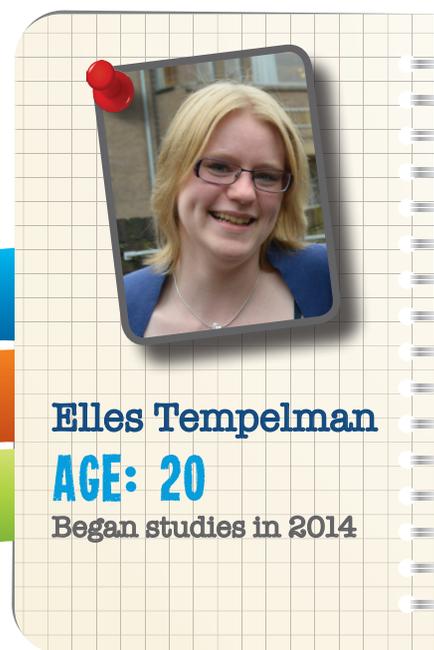
Elles Tempelman was born on February 21, 1995, here in Tilburg and she lives at home in the west of Tilburg. She went to the close-by high school Odulphuslyceum before university, but during high school she already followed a course for mathematics D at the campus. She has already been swimming from the age of five and began with rescue swimming at the age of thirteen.

As her father had already been a volunteer for a long time at the Amarant foundation, and swimming lessons were offered by the staff association, she began swimming there. All the parents of the children knew each other as well and even until today, they remain a tight group! She liked to obtain diploma after diploma as an aim, and until the age that most of the group obtained their driver's license she swam at Amarant. Afterwards, they all continued with the lifesaving club, but as this required a twentyfive meter pool, the group moved to the swimming pool in the Reeshof. Over there she swam twice on Saturday, both at 07.30 hours and 16.30 hours, and on Mondays she went to the Drieburcht swimming pool in the Northern part of Tilburg. However, as she is currently working at 'de Efteling' theme park, she cannot always be there on Saturday. She also has a subscription at the sport center and she attempts to swim on Wednesday and Fridays as well.

Moving on

When Elles heard last year that she could do voluntarily work for a week as a lifeguard at the lifesaving club on Texel in the summer, she was very interested. She had already finished her high school exams, and so she figured

“An Official in the Sun”



Elles Tempelman

AGE: 20

Began studies in 2014

she would have extra spare time in the summer. As she searched the internet for more information, she ended up at the lifesaving club at Den Helder in the very north-west of the Netherlands, which is three hours by train. This was a paid job and she could directly sign up. She would work for ten weeks in the summer, but as she also had received a year contract at de Efteling, she worked three days per week at de Efteling and three days per week, voluntarily after all, on the beach at Den Helder during the summer. She is still working on her lifeguard beach certificate, which she should have obtained last year, but she did not make enough hours. She also teaches kids swimming and theory this year and has first aid meetings twice a month. Elles: “All in all, my passion takes me six hours per week on average, but it can be combined with my study.”



The beach

The Den Helder beach is a 7.2 kilometers beach with seven entrances and three posts. Elles: "These posts are barracks with a first aid space, showers, beds and changing rooms for the lifeguards on the first floor, a general space with a small kitchen on the second floor and a communication room and an observation point on the top floor. The guarded area per post is 600 meters of beach by 500 meters sea inwards, as a requirement, and the sea is divided in three areas of 200 meters by dams. As the three posts do not cover the total of 7.2 km beach, there are less guarded areas and it is recommended to swim in the guarded areas."

Furthermore, the lifesaving club also provides walking and driving patrols on the beach, sailing patrols at sea with

motorboats which cover the whole 7.2 km and a beach ambulance. The shifts change among the lifeguards. They also take care of first aid emergencies and jellyfish stings. Elles is planning to obtain the boat license required to sail the boats as she is not allowed to sail at sea yet. On a crowded summer day, twenty out of the total of forty lifeguards are active. During the summer season, which lasts ten weeks, they guard from 10.00 till 18.00 hours and in the pre- and postseason they guard in the weekends, but on a quiet day at the beach they sometimes walk with a waste picker. On Monday nights there is also partying with the group! Last summer Elles worked for twenty full days.

Events

Outdoor events are also organized for promotion and guarding. Events like this include a historical weekend at the harbor with old cars and ships, where Elles was on a boat guarding the water, a kite-running event on the beach with a rescue demonstration, and they are even involved in the entrance of Sinterklaas in the Netherlands! At events there is also a promotion wagon for donations, on which they are very dependent.

Every summer there is a selection weekend to show if you still have stamina, possess skills and if your first aid knowledge is still fine. As there is much cooperation, this weekend is also intended to see how the group develops and if you still match the others. In Tilburg she also attends many events at the swimming pool as guard

for swimming competitions. She does this in Eindhoven as well and is asked to guard the world championship next year. She has even guarded Ranomi Kromowidjojo in the past!

Rescues

There are also competitions for rescue swimming where you perform rescues as fast as possible, for instance with a dummy, with eight contestants as a relay, but unfortunately both the lifesaving club in Tilburg and Den Helder do not participate, although Elles would like to join a competition. Her cousins also do rescue swimming and they do participate in competitions, as they are part of a bigger lifesaving club.

Elles: "When I was on walking patrol shift, I rescued a kid who was very far in the sea while the parents were not watching. Last year there were many missing children, but often they are still on the beach." Elles reveals they have a very interesting method to find the children back. Depending on the wind and the sun they determine which direction they expect the children to be. When asked how this works, she explains girls with long hair prefer to walk against the wind, for otherwise their hair will end up in their faces. Boys prefer the wind and the sun in the back.

"An official in the sun"

We ask Elles whether she recommends rescue swimming and why: "Certainly. It is about responsibility and working as a group." She jokes: "Who does not want to be an official in the sun, with an office on the beach?" The lifesaving club is one of the four auxiliary services in the Netherlands and therefore she is an official, she explains.

Future

In the future she wants to join the lifesaving club in Breda as it is a bigger lifesaving club, so there are possibilities to obtain more diplomas. This summer she will be a lifeguard on the beach at Den Helder again. Furthermore, she wants to obtain boat license this summer, as well as a license for driving the tractor for transport of the boats, and she even wants to extend her first aid skills to giving oxygen! ●



University of Victoria (UVic)

Imagine an island with the country's second highest crime rate, the highest average age and a Mediterranean climate. No, it is not Sicily. It is Victoria, Canada. No wonder Leonardo DiCaprio chose this as his destination for a holiday, and so did I for my exchange.

Why Victoria?

Just take a minute to look up Vancouver Island and you will understand why: jaw dropping beaches, an extraordinary wildlife and a beautiful view of the Olympic Mountains. Well within reach of Vancouver, Seattle and the rest of the Western United States, Victoria provides the perfect starting point for exploring this part of the world.

Needless to say, I was very excited to hear in December 2013 that I had been selected to go to Victoria for my exchange, not realizing how long a year of waiting could be.

Arrival and first impression

A fellow econometrician, Pieter-Jan van Kessel, was also selected to go on exchange in Victoria. Traveling with him, and meeting another Dutch exchange student on the ferry from Vancouver to Vancouver Island, made it much easier to adapt to the new environment in Victoria.

Our classes started two days after arrival, which did not give us much time to discover either Victoria or the campus. However, there is one thing we experienced right from the start, and that is that Canadians are almost too polite and nice. I believe that 'sorry' is the most used word in Canada and 90% of the time it is not necessary.

While taking our first bus from the ferry to downtown Victoria, we noticed that literally every individual greets the bus driver when getting in and thanks him when getting out. Besides, making

small talk with people is very common in Canada. While, often you ask yourself whether people are truly interested in your story or are only being polite, I believe that most Canadians are sincere. I can tell you that it was not hard to feel at home very quickly.

University life

During my exchange I lived on campus, resulting in meeting a lot of great people from all over the world, from fellow Europeans to Asians to Canadians. Getting to know them and learning more about their cultures by grabbing a drink, having dinner or exploring the island together was an amazing experience. I made friends for life, and I am sure that I will have a place to stay in almost every part of the world.

Like me, most of the exchange students were excited to go party with new people in a new location. Because the nightlife in Victoria downtown was not very exciting and very expensive (six to eight CAD for the cheapest can of beer), we spent most of our evenings on campus. Parties were organized in the 'clusters' (this is how UVic calls the on-campus apartments), where there is only one rule: BYOB (Bring Your Own Booze) and where beer pong was the most popular game. A lot of my fellow exchange students were not used to drinking more than one or two beers, which clearly resulted in a lot of fun nights.

Just like in Tilburg, I also had to study. I chose to take four courses: Entrepreneurship in Small Businesses,



Diederik van de Wiel

AGE: 23

Began studies in 2010

the Environment of International Business, Leadership Strategies and Strategic Management. The course Entrepreneurship in Small Businesses taught me how to write a business plan and how to start my own business, while in the Environment of International Business classes I learned more about international trade in general. A successful entrepreneur lectured both of these courses, and he is now investing in start-ups himself. Leadership Strategies taught me more about the characteristics of a good leader and was taught by a war veteran. An ex-consultant for large banks in the U.S. lectured Strategic Management. Here I learned more about how businesses apply different strategies and we were tested by having to run our own business in an online simulation. These courses were very interesting and I enjoyed learning more about these topics and business in general.

Just like most North American universities, the University of Victoria has a passion for sports. The Varsity athletes of UVic are called the Vikes. Being able to join the Varsity field hockey team during their second half of the season was a great enrichment of my exchange. Making Canadian friends with whom I traveled biweekly to Vancouver for our road games often resulted in celebrating our win or drowning our sorrow on the way back. Taking second place in an indoor tournament, scoring in my first

outdoor game and the end-of-the-year Varsity banquet with the entire team were some memorable events during my exchange.

Traveling around British Columbia

Besides studying and playing field hockey, I was spoiled enough to have had enough time to travel around British Columbia. Vancouver Island is about the size of the Netherlands and offers plenty of beautiful places for exchange students to discover.

At the end of January, thirteen friends and myself went to Tofino, known for being one of the most unique surfing spots in the world. Waves up to eight meters are no exception here and it was the perfect spot to learn how to surf. This, in combination with the rainforest and stunning beaches, make this one of my favorite spots on the island.

In February there is a so-called reading break, which is a holiday week for the entire university. It is called the reading break, because a lot of midterms take place after this holiday. Fortunately, I did not have any midterms after this holiday and could use this week to welcome a fellow econometrician, Daniël Schotanus, in Canada with whom I went surfing in Tofino, skiing in Whistler (the largest skiing area in North-America) and visiting Vancouver.

Due to the fact that the courses I chose had no finals but group projects instead, my semester ended as early as April 4. Even though I finished studying this early, I did not immediately return to the Netherlands, as I wanted to see more of this part of the world.

Therefore I started discovering the northern part of Vancouver Island where bears, wolves and cougars are more common than people. I went here with four friends and we visited treasures of nature, such as beaches comparable to those in the TV-show *Lost*, stunning lakes, hidden caves and snow-capped mountains. Furthermore, we ran into a black bear, which quickly escaped into the woods. Following him into the dense Canadian forest led to a once-in-a-lifetime experience: seeing a bear in its natural habitat.

Crossing the border

After North Vancouver Island, I stayed for a couple of days in Vancouver with a friend from my hockey team and his family before flying to Hawaii. Hawaii is (almost) unreachable from the Netherlands (24 hours of travel time) and it was therefore a unique opportunity to visit these famous islands from Victoria (only six hours). Although I traveled to Hawaii at the end of my semester, it is also a very popular location to visit during the reading break

with the same temperature and climate all year round. While I expected Hawaii to be beautiful with fantastic beaches and palm trees everywhere, it was so much more than just that. Hawaii consists of five islands from which I only visited one, but already on this island there are more volcano craters than we could climb in just one week, there are rainforests used in movies like *Jurassic Park*, beautiful waterfalls that starred in *Lost* as well as in the *Hunger Games*, and breath taking reefs. We spent our days visiting Pearl Harbor, hiking, surfing, snorkeling, tanning and skydiving, but there were so many more places to discover and this will definitely be a place I will return to in the future.

The day I came back from Hawaii, three friends I met during the exchange semester picked me up from the airport. A month earlier we had bought a car together with which our six-week road trip started that day from Vancouver. The first day we drove down to Portland, from which we continued to San Francisco, Yosemite National Park, Redwood National Park, Los Angeles, San Diego and finally Tijuana, Mexico. I loved finally visiting the places you hear so much about. Highlights were the Yosemite Falls, visiting Alcatraz, going to a San Francisco Giants game, going to a Jimmy Kimmel show and going out in Hollywood, Los Angeles. →





However, the most impressive was the drive alongside the West Coast from San Francisco to Los Angeles: marvelous beaches surrounded by cliffs and huge waves. We chose to stop regularly to play some soccer or American football and relax during the drive.

While writing this article, I am in the middle of the second part of our road trip, in which we drive from Los Angeles to Las Vegas and then through Arizona and Utah to Yellowstone, finishing with a stop in Seattle, Washington, to end our trip back in Vancouver, where we hope to sell our car again. On the road to these places, a lot of national parks are located. We visited Joshua Tree National Park, Death Valley, The Grand Canyon, Monument Valley, Antelope Canyon, Zion Canyon, Bryce Canyon, Capitol Reef, Arches National Park and Yellowstone. While all parks were very impressive, beautiful and unique, Grand Canyon's immensity was the most impressive, Bryce Canyon was the most beautiful, and watching the sunrise at the Delicate Arch in Arches National Park was the most unique. However, America's first national park, Yellowstone, amazed me the most. We stayed here for a couple of days and spotted a coyote, hundreds of oversized buffaloes, and finally three grizzly bears. Add half the world's geysers, the country's largest high-altitude lake and a plethora of blue-ribbon rivers and waterfalls, all sitting atop a giant super volcano and you will understand why this was my favorite national park.

Future trips

The first of June I will return from the road trip with my friends and my parents will arrive in Vancouver, with whom I will discover the final part of my trip along the West coast of North-America. We will do this the Canadian way; rent an RV, and sleep in the national parks. We will start our travels on Vancouver Island. Here, I will show them around Victoria and Tofino so they can see where I have been living for a semester. Furthermore, Victoria is a very famous place to see killer whales. Since I have not been able to do a guided orca tour while living here, I will do this with my parents. Afterwards we will continue on the mainland to the famous national parks Jasper and Banff, where I am hoping to see more breath-taking landscapes and wildlife comparable to Yellowstone and North Vancouver Island. ●

Econometrics and Behavior

Neoclassical economics assumes that agents are rational. In line with this paradigm many econometric models assume that agents maximize well-defined utility functions. Reality is different. Over the last twenty years many real life phenomena have shown that human behavior is a lot more complex than standard models assume. A well-known example is the so called 1/n rule in asset allocation. Suppose, e.g., that an agent can invest in two different mutual funds: a risky (equity) one and a less risky (bond) one. The neoclassical model provides tools how to construct an investment portfolio here, e.g. Markowitz mean variance theory as taught in the first year. Now suppose an additional investment opportunity arises, a second equity fund, that is, apart from its name, identical to the first one. Markowitz theory suggests that the asset mix investment should stay as it was, say 50% in equities and 50% in bonds. Reality is different though, as many investors will tend to move to a 33% allocation to the first equity fund, 33% to the second, identical, equity fund and 33% to the bond fund. This is the 1/n allocation rule where n is the number of alternatives.

Knowledge of how people actually behave when confronted with choice options is vital to provide valuable advice to policy makers or individuals. In the pension domain econometric models can outline the significant welfare gains of saving for later timely, as at a young age. Nevertheless, all countries

around the globe provide evidence that such information cannot convince individuals to start current saving voluntarily. A much better alternative is to ask individuals to commit themselves to save a substantial fraction of future salary increases, the so-called SMART (save more tomorrow) design. Alternatively one could enroll them automatically in a pension scheme that saves for them unless they actively opt out. The latter is implemented for example in the United Kingdom (the NEST initiative) and is currently seriously considered in the Dutch policy debate as well. It could be a valuable remedy for the self-employed who do not have mandatory participation in pension funds. Using knowledge about human behavior, the econometric expertise can be set to work in much more fruitful ways than denying it or forcing oneself to work only with "true" models that would take all aspects of human behavior into account.

The limitations of neoclassical economics are often also seen as one of the key ingredients of the financial crisis. Monty Python's Terry Jones and Dutch economist Theo Kocken have recently completed a very informative, but also entertaining movie on the common drivers of all financial crises (see www.boombustclick.com). Many well-known economists support Hyman Minsky's view that economies are inherently unstable because stability breeds overconfidence, which triggers de-regulation and additional risk taking and thereby creates

a new bubble. Stated in more technical terms: they emphasize that towards the 2008 crisis all kinds of investment risks were so often repackaged and sliced again that the holders of the extreme risk quantiles had no idea of the actual risk level of their holdings. Their bankruptcy subsequently triggered that of others.

In pensions one of the main dangers of human behavior is that individuals tend to select pension products on the basis of their pay-off in next period rather than on the basis of long-run properties such as adequate income also if they get very old. In the United Kingdom the pension legislation has recently been changed and individuals are now allowed to spend all their pension capital as of the age of 55. In the discussion on Dutch pension reforms insurance of longevity risk is (in my view fortunately) still strongly supported by almost all. At the same time though, Netspar researchers (including myself) support the government in their search for more adequate risk sharing products, which also allows higher pension income in the first retirement years.

Careful econometrics will be required to balance the realities of financial markets and adequate risk management with human behavior. ●



Theo Nijman

Theo Nijman is chaired professor in the Econometrics of Financial Markets, as well as Pension Provision and Risk Management. He is also Scientific Director of Netspar.

An Evening of Solving Mysteries



Walter ten Eikelder
AGE: 20

Stefan and I both like to play (board) games, so we decided to participate in the Brothers & Sisters Evening. I made my trip to Tilburg by train, after which we cycled to the university. When we arrived at the Esplanade building, I met some active members and their brother(s) and sister(s). There were a few small rooms in which we could take a seat and we heard that approximately thirty to forty people would participate in the activity. We ate some pizza, after which we went to the Prisma building for the interactive games.

Before the games really began, the participants were divided in groups of five or six people, where brothers and sisters were kept together in one team. Every team got an envelope with some information for the first round. The envelope said to which room you had to go and what kind of an answer you should find there. Then the countdown timer was set at 7.5 minutes and the first game started. Almost every team calmly walked to their first room and started to find some clues.

Our team went to a room where one of our team members saw a Nekt magazine and a few moments later, we had found six magazines spread across

the room. As the envelope told us that our answer should exist of some dates, we looked into the magazines, hoping that we would find dates. After a few minutes of searching we found a marked date in each magazine, after which we placed the magazines in order of time of publication and combined the found the dates. Satisfied we headed back to the lecture hall to hand in our answer. Unfortunately, the given amount of time had already come to an end. However, as we were not the only team that arrived too late, the time for the tasks was raised from 7.5 minutes to 10 minutes.

The games that evening were both diverse and challenging. I remembered one game where we had to find a name of a student in the Book of Faces. By means of several clues, we found the correct answer in just a few minutes.

This was very good teamwork! However, there also was a task where we had to find a letter in a deck of cards. Within just one minute, we realized that one of the aces was missing from the deck. Obviously, we thought that the answer was the letter A and so we went back to the lecture hall. Sadly, the answer was not correct, which meant that our way of thinking was way too simple.

In the end we had accomplished five of the eight given tasks. All teams received some materials for every correct answer, and the goal was to build as many buildings with these materials as possible. We could build around five buildings, but sadly that was not enough to win the game. Nevertheless, I have experienced an original and amusing activity at Tilburg University with my brother. ●



'Sometimes Ice Cream is Simply Better than a Woman'



Dennis van der Pluijm

AGE: 31

Graduated in 2009

So this is what it feels like to get old... Walking into the backyard of restaurant San Siro in Utrecht, not recognizing a single face of the former active members already present. But, as we soon would find out, some things only get better with age, so I still counted myself lucky.

After a long period of silence (from my part) with respect to activities of Asset I Econometrics, or TEV as it was used to be called back in my days, I got really enthusiastic when it was announced

that fellow former active member Paul Adriaansen would organize a wine tasting workshop. Oh, would it not be nice to relive those memories with other OAL'ers (FAMs) of my generation, to look back at those good ol' days? Yes, of course it would, but on April 18 it turned out that this FAM activity had attracted a younger generation, one that had just left (or was still present at) the campus. Paul and I looked at each other, barely holding a sigh of nostalgia, and both said "Thank goodness, a familiar face". Luckily for me, one other familiar face entered the backyard shortly after me, and he was able to cross the generation gap between me and the young ones.

Another thing that was very helpful to quickly erase generational misunderstandings and form new (Dijkstra's) shortest paths between us, was the wine itself of course. Paul introduced himself as a wine connoisseur and told us about how – after buying ridiculously expensive wines with his first paycheck after graduating – he has learned a thing or two about wine. Today, he would try and teach us how to taste wine – other than just saying "I like it or not". Apparently, wine can smell like dog or fungus, but can still taste great... Paul had really outdone himself: he had arranged some nice bites to go with the wines and set up the tasting in a rather unusual way. He presented two wines at a time, allowing us to smell and taste the differences between the two really well.

Moreover, he divided the group of 20-25 FAMs into four teams, and started a wine quiz.

Part of the game was that every team had to make a pitch for one of the wines: what did we see, smell and taste, and could we guess what kind of wine (i.e. which grape, country or even specific region) we were dealing with. This turned out to be hilarious, especially after having emptied the first glasses of wine. Paul had brought various wines – Sauvignon Blanc, Viognier, Riesling, Chardonnay, Mommessin, Negroamaro, Cabernet Sauvignon, Tempranillo – from various countries, such as New Zealand, France, Germany, USA, Italy and Spain. Unfortunately, it was never a Merlot from France, despite all our (guessing) efforts... But then, finally, when dinner was served, Paul proudly presented the Merlot, which was well-enjoyed. All in all, we had an amazing (tasting) experience!

After the wine and dinner we obviously had to get some ice cream, especially after the legendary Quatsch "Sometimes ice cream is simply better than a woman" was said during dinner. Finally, we had some drinks at the Neude, but by then the fancy wines had been traded for some Belgian beers. Surprisingly, I was more or less the last man standing. Not too bad for an old chap! ●

**THE
TEACHER**



Tour de Charlier

Text by: Max Kaumo

On April 29, Mike and I met up for the interview with lecturer Erwin Charlier. We were both quite stoked because this was an opportunity for us to hear the story behind the lecturer of Introduction in Actuarial Sciences, a course that we are both currently following.

Academic or practical career?

Erwin Charlier was born on December 18, 1969, in Weert (Limburg) and is currently living in 's-Hertogenbosch together with his wife and two children. In 1988 he started his study Mathematics at the University of Eindhoven, where he received his diploma in the field of operations research. In the program of operations research there was one course, Econometrics, which Erwin liked so much, that he decided to do every Bachelor and Master course in the field of Econometrics at Tilburg University in one year. While his graduation was getting closer and closer, he knew that this was not the end of his academic curiosity, so he stayed around a couple

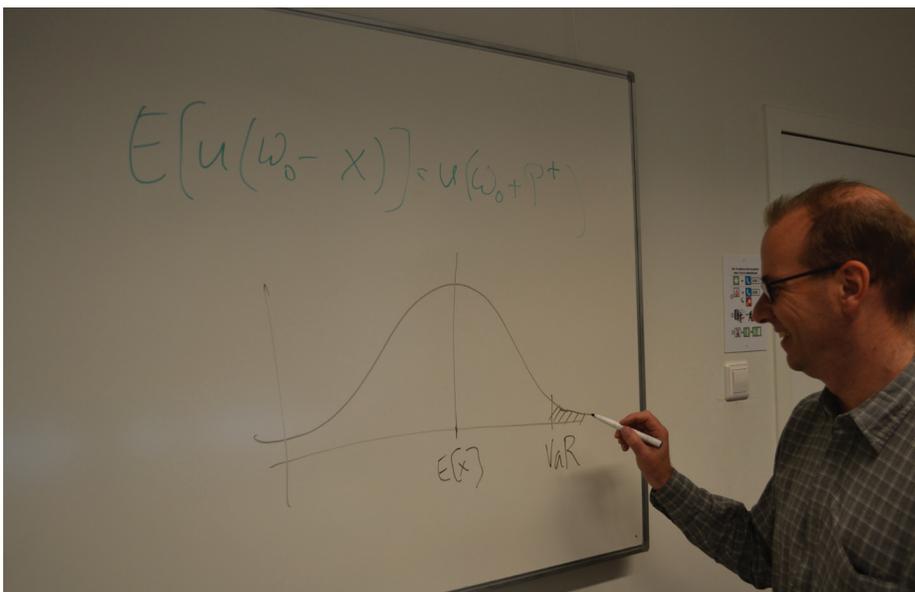
of years to write his PhD thesis. During this time he had a lot of freedom with regard to his research. In 1997 Erwin defended his PhD and he had to decide how he wanted to continue his career.

An academic career was something he really took into consideration, but at that time such a career required some international experience. This was not really an option and he still had the desire to see the applications of his expertise in practice, so he chose a career in the business sector. APG, the asset manager of the Pension Fund for Public Employees in the Netherlands, was where he started. It was a full-time job, but optimistic as he is, Erwin

thought he could do the revising of his thesis in his evening hours. Erwin: "It took me a year to realize that this was not really effective if I ever wanted to publish the papers in my thesis, so I chose to exchange one day at APG for one day at the university to finish it." This was not the only thing he was engaged with at our university; he also taught, and still teaches, two courses, which gives him a sense of satisfaction every single day. At one moment in time, he drew the conclusion that with one day a week at university, he could not put as much time and effort in research as he wanted to. Besides, Erwin really liked giving lectures and being in touch with students, so he chose to freeze his research career, not certain if he will ever defrost it.

Perfectly balanced

Currently Erwin has a managerial position at Vivat Verzekeringen in Utrecht, the insurance branch of SNS REAAL. REAAL and Zwitserleven are the two most renowned brands. He has to make quite a switch when he returns to his role as lecturer; at Vivat he does not have to compute integrals of stochastic variables or anything similar to that. Furthermore, he really keeps his two jobs as separate as possible. "There was one hectic year, some time ago, when I had to participate in conference calls, while being at TiU." You can imagine that this was not helpful for the quality of his teaching,



so therefore he now makes sure that he can focus. Nevertheless, his work in the business sector has given him a nice and full backpack of practical experience, which he benefits from during the lectures. Erwin: "It gives me the opportunity to have more in-depth conversations with students who are interested in practice."

To predict the business cycles and changes of the future, Erwin is always looking ahead at his job at Vivat. I myself was curious to find out if he had been giving some thinking-time to his own future as well. Erwin: "I actually think my life is pretty well-balanced now. I would not want any more/less days at university or Vivat, and I do not have any career plan focused on going abroad." To put this very briefly, Erwin is very content with the way things are going, and how he manages his time.



Erwin Charlier
Lecturer

Spare time

In any spare hours Erwin has during his week, you can find him with his family. Every Saturday he visits the soccer club to support his children, who both play soccer. One might expect that a lecturer prefers to read a bunch of books in his spare time, but Erwin gives a brief and clear no, when I asked him if he likes to read. Erwin: "I use my eyes so much during the day that I want to give them as much rest as possible, whenever I can. When I really want to read a book, I will buy a listening book, ranging from management books up to Dan Brown."

When all of this hard and alternate work makes some room for vacation-time, Erwin and his family prefer to go south and sunny for about three

weeks. Ideally, he splits up his holiday in activities and resting. Together with his two children and his wife, they have found a way to please everybody. They use a 1:1 ratio of relaxing-days and activities-days. Additionally, Erwin has a passion for riding the biggest mountains on his race bike. He tries to aim for one week a year in a mountain region such as the Alps or the Pyrenees, where he can put all of his working-stress onto the asphalt through his bike pedals. In preparation for these

'Erwin really liked giving lectures and being in touch with students, so he chose to freeze his research career'

trips he often rides the tour-version of the Amstel Gold Race in the south of Limburg. Furthermore, he rides his bike around twice a week to retain his level of fitness.

Studying

"A fantastic time" are the words Erwin uses to describe his college years. Nevertheless, he admits, and I think most of us can relate, that he found the first couple of weeks extremely hard. Six weeks in as freshman, he had his first examination for which he had scored a rather ruthless three out of ten. The fact that this grade was the average of his class was a small consolation. After this little setback, he picked himself up and his grades improved a lot. You could say that he got the hang of studying and Erwin decided to fill his spare time with playing futsal at the Eindhoven student futsal association 'Total Loss'.

Surprisingly, Erwin's choice of study was not influenced by some childhood-dream to become an expert in Actuarial Sciences, but merely by his interests during high school. He loved mathematics and the many applications of it, and this also really was the only thing he cared about while choosing his study: no big future plans or American dreams, just his passion at that moment in his life.

As an econometrics student, I find it quite interesting to see what fellow econometricians like most in our study

program. For Erwin, this concerns combining several theoretic models, mostly of microeconomics, in the form of data or statistical techniques, to draw conclusions or even to predict certain situations. To summarize this difficult sentence in a nutshell; the application of theoretical models is what interests him the most.

To end this article the same way we ended our interview, I am going to state the lesson Erwin wanted us to share

with every econometrician: "Make sure you have a good quantitative basis and maintain a critical view." We would like to thank Erwin Charlier for the interview and his time, and we wish him the best of luck in his career! ●

Bert & Ernie Questions

Bert or Ernie?
Ernie

Education or research?
Education

Theory or practice?
Practice

Student or scientist?
Scientist

Beer or wine?
Beer

Kebab or pizza?
Pizza

Company or university?
Company

Glow-in-the-dark Miniature Golf: a Must-do!

D&A activities always seem to come at the right moment. It was a quiet, yet pleasant evening in April, and for many of us it was about time that we gave our masterminds some rest, and our creaky bones some physical activity. An exciting night awaited us.

In the beginning of the evening, a decent group of econometricians gathered at café Karel. It appeared that it was not the thunder that had been disturbing the peace in Tilburg. Simply the rumbling tummies of around fifty young people was enough to produce an deafening noise. But seriously, everyone was quite hungry. We took place at the first floor of the café and ordered some drinks. The table was soon filled with big bowls of salad, which were highly disrespected by Anouk, who immediately started fishing out all the tomatoes, cucumber and other good stuff. Luckily, the waitresses were already busy serving the main plates, and who needs salad when you have fried fish and French fries? All in all, the food tasted very good and it was a sociable dinner. The groups for the main activity were announced, and it was time for us to grab our bicycles and move on to the Dolfijn.

The main event of the evening was something I think not many of us had ever heard of before: glow-in-the-dark miniature golf. Upon arrival, I immediately stole the show by wearing a fluorescent pink vest, which lighted up like a Christmas tree. We wandered

into the golf course, which was entirely dark except for the decorations and obviously the golf courses itself. It was all very pretty, and some bright minds soon noticed that every two or three holes represented another country. For example, hole 13 and 14 were in the style of Italy: one of them had the tower of Pisa hanging over it, and the other one required the (obviously also fluorescent) golf ball to travel through the Colloseum. Despite my disturbingly awful golf skills, I think I can speak for the entire group when I say that this activity was original and very entertaining.

Of course, after this wonderful Activity, the D&A committee only had one more job in order to live up to its initials: it was time for some Drinks. After a short pit stop at Intermezzo (gosh, they do have good ice cream), we gathered in Café de Nachtwacht and got ready for the lecture drink. We were accompanied by two men from the Actuarieel Genootschap, who challenged us with a pub quiz. By the way, I suspect that these gentlemen are great fans of us, as this was already the third time in two years that I encountered the exact same duo during an Asset I Econometrics event.



Denise Lighthart

AGE: 20

Began studies in 2012

The quiz was won by Thijs Kramer, who turned out to have wicked mental calculation skills – even after a few beers. After a big applause, we rotated 180 degrees in order to face the bar and started enjoying our beloved free beer and wine. The drink itself was cozy as ever: we chatted, laughed and up until the point where Thijs and Tom got their hands on the DJ panel, the music was quite good. Altogether, the evening was well-organized and a lot of fun. A big thank you to the Drinks & Activities committee for organizing this enjoyable night! ●



Stefana Ghiurco

AGE: 19

Began studies in 2014

It is 18.40 hours and I am standing in front of the train station. I am supposed to meet some people here, but I have no idea who, so now I am searching in the crowd for familiar faces. The heavy backpack together with my sleeping bag and a mattress do not ease my search at all. At some point, I see a girl that is carrying a sleeping bag, so I take it that is a good sign. After I get past my shyness, I walk towards her. Fortunately, she is here for the same reason!

Her name is Kristel and she is very friendly. Soon I find out from her that she will be the one cycling next to me while I will be running. What a relief! Soon enough the other people from the 'morning team' arrive and we get on the train. My excitement is growing as we exit the city and by the time we arrive in Enschede, I am getting to know the people from my team, which makes me feel more comfortable and helps me get past the anxiety I felt in the beginning.

As the train stops in Enschede, some lights let us see the city. Even though it is late in the evening, the city is animated by the students celebrating the race that was about to start at midnight in Nijmegen and end here, tomorrow around dinner time.

We make our way through the campus of Twente University and we soon arrive at the sports center. Here, we camp in a huge sports hall, where we lay down

our mattresses and sleeping bags and rest for a couple of hours, until we go to the place where we will run our stages. What a feeling to sleep on the ground of a sports hall in a room with a hundred people!

We are woken up by an alarm around 04.00 hours and still sleeping, we get dressed to go running. We get on one of the many buses and, as the sun rises, we arrive at the beginning of the second stage. Unfortunately, the rain makes its

appearance, a thing that makes me very worried and nervous. This feeling goes away for a while when we meet the night team that just finished their stages. They are tired and hungry, but they give us the motivation we need to continue what they started.

My heart is pumping really hard and I am very excited and nervous at the same time. Before I know it, I am already running. I cannot feel the rain anymore, and the adrenaline in my body keeps me going. The feeling you get out there is amazing; it is nothing like running on the treadmill, struggling to keep in shape. Out there, you are running for your

team, which makes this feeling unique. It felt like two minutes ago I started running and now I am at the finish line, exhausted. All I remember is that it happened really fast...

Back at the sports hall, full of hungry and sweaty people, the party starts to get color. I never thought that I would have to wait one hour to take a shower and enjoy it, but the atmosphere there was so enjoyable that nothing could bother you.

'My heart is pumping really hard and I am very excited and nervous at the same time'

Later we gathered at the finish line to watch all the crazy outfits the runners were wearing, representing their teams. We saw everything possible, from a guy carrying a lodge to people running in pajamas, swimsuits and formal suits. As the last runner crossed the finish line, the party had already started...

In the end, this was a once-in-a-lifetime experience that I will never forget and will keep close to my heart. Thank you, dear Asset Elite team, for making me part of your team! ●

Yo-ho-ho and a Bottle of Beer

On May 8, a bunch of students gathered at Tilburg central station where, after some surprised faces, random people already asked us what was going on. We explained that it was time for our yearly costume party: Asset | Econometrics' Active Members Weekend!



Anouk Verhagen

AGE: 20

Began studies in 2013

The weekend's theme was 'It's a kind of magic!' and there were eight different teams with their own subtheme: werewolves, angels and demons, fairies and elves, unicorns and dragons, dwarfs and trolls, wizards and witches, vampires and, last but definitely not least my own group, the pirates! On the Monday before the AMW took place, us pirates gathered to show our creative skills and we made our own beautiful flag. First we tried to set fire to our flag, but since it was made entirely out of cloths, it was not possible to give our flag a 'burned' look. Instead we burned the edges a bit and we made a beautiful treasure chest and a very own map. The big 'X' represented the small village Nutter, since the location of the AMW always remains secret until we actually arrive there.

At the train station, all the team captains received information about the Assassin Game that would last the entire weekend. In this game, everyone had his/her own target that they had to kill by making them say a particular word. For example, I had to kill Cleo with the word 'punniken'. After everyone received his/her own target, Masum explained that all the team captains would get a text when everyone would be on the train, and that they would receive a quiz with questions about the online questionnaire that everyone had to fill in in order to register for the weekend. We had to know how many participants were 'proppers', what percentage first put on his/her right sock instead of the left one and we had to match stories with students. Within a few minutes, we had filled in all the questions

and we were pretty sure that we aced it. We already knew three questions for sure, because three of the questions originated from my own group. As it happens, Ridho saw a customer taking a poop in the supermarket, and Tom's personal motto is: "Waarom ik mijn zonnebril bij heb op stap? Ik ga zuipen tot de zon opkomt natuurlijk".

Before we really went to Nutter, we first had to do seven clusters with all kinds of assignments. We received the first cluster in the train. We made a nice selfie in the bathroom, we build our own ford and we managed to get some blackmail material for some of our teammates. While most passengers wondered why we were all dressed up and why everyone was running around in the train, not everybody found this annoying. When the conductress came to see whether we had all checked in, she even came up with a slogan for us: "Are we pirates? Yes we arrrrrrrrrrrrrrrrrrrgh!"

When we arrived in Deventer, we had some time to perform the tasks of the other clusters. Before our group started with the second cluster, we first went to the AH to get some beer. Not all the people in Deventer agreed with this decision, since we received the question why pirates would drink beer instead of a bottle of rum twice. When we had filled our treasure chest with some beers, we enthusiastically began with the clusters. Here are a couple of our tasks. We rolled





Ridho in toilet paper, turning him into a mummy. Ashley and I made a selfie with the most hairy person we saw. Unfortunately for Willem, we saw this hairy person first, so he failed to take his selfie with the same person. Tom had a dragon drawn on his belly and Bas ate raw meat, which was pretty disgusting to see. After we completed most of the tasks it was time to go back to the train and to our final location: Nutter. In the evening we decorated a piece of cake for Kristel's birthday, we played some beer games and we enjoyed the traditional AMW cantus.

After a few hours of sleep, it was time to stand up and eat some breakfast. Next, we had some time for ourselves since the committee was very busy preparing the outdoor games. In this time our last teammate Nienke arrived, so the pirates were finally complete! We explained the Assassin Game to Nienke and we told her that nobody had received the golden bucket so far, since no one had vomited yet. When the committee was finished preparing, they gathered everyone and the games could begin. There were four games: blind volleyball, a go-kart race, a blindfolded game and a track through a bouncy castle.

After we lost the first two games, we went to Kristel, who explained us what route we had to drive with our go-karts. She also told us that it was a relay race and that the time of your entire team was the only thing that mattered. Unfortunately, Bas did not listen very well and thought that it was one-against-one, so the second player of the opposite team had already started a while when Bas finally came back.

After this failure, it was time for our final game. The committee had placed balloons filled with water and tennis balls in it. One team member was blindfolded and had to gather as many items as possible, but you should not pick up any orange balloons, as they gave you negative points. There were three rounds in this game. During the first round, you could say/scream everything you wanted, but in the second round you were only allowed to say three words in order to guide your mate around the field. In the last round, you could only make three sounds. As pirates we, of course, used "arrrrrrrrgh". It was very fun to do, but probably it was even more fun to observe what kind of strange noises everybody screamed and yelled towards each other.

Then it was time for all kinds of indoor games. We were really motivated to win everything, since we did not do so well in the outdoor games, and we succeeded! We won almost everything, from balancing a slinky on your head to blowing a ping pong ball in other cups and back again. They also invented a game where you first had to dip your nose into Vaseline, after which you had to push your nose into a cup with cotton wool. Next you had to walk to the other side of the room to drop the cottons into a box, all without using your hands. Although Rick from the opposing team was very good in this game, we were able to beat our opponents! After we had finished all those random games and we had had dinner, we headed to the city center of Ootmarsum. When everybody had drunk enough, it was time to go home again. It was a very long walk but Erwin had his



own music, a song of six seconds with "Hocus pocus, iedereen kan toveren!" Most people found this really annoying, but Jeannine could not be happier. Those words still cheer her up.

The final day had come and after we played the final game and had packed all our belongings, it was time to go to the swimming pool. After a very touristic route and a near-bus crash, we finally arrived at the pool and swam for a couple of hours. Next we headed home and while everybody was relieved to safely arrive in Tilburg, the amazing weekend had come to an end. There are two important lessons that I learned during this weekend: firstly, you can always cheer up Jeannine with that song of six seconds. Furthermore, you should never trust your fellow econometricians or you will be dead. Of course this only is valid for the Assassin Game, so that is a relief! ●

No Strikes at Quintiq



Sander Siemons

AGE: 21

Began studies in 2011

On Thursday May 21 an informal activity with Quintiq was organized, where some representatives of Quintiq were present. After a presentation of the company and a buffet, all participants joined a game of bowling. A great opportunity to get to know more of the company in a relaxed atmosphere, something that seemed to fit Quintiq well.

Having the honor to be driven by our Asset I Econometrics chairman, we arrived at the Voltage, a large indoor entertainment center which offers laser gaming, go-karting and much more. Even a game of soccer using bumper cars belongs to the many possibilities. It was here that we met up with the other participants. Eventually seventeen students would join in on the activity.

'Quintiq seeks professional puzzle solvers'

The afternoon was kicked off by a presentation from three representatives of the company, who introduced themselves as Arjan, Dori and Lieke. While Arjan is responsible for recruiting, the two ladies both have a background in Econometrics and more specifically in Operations Research, which is also what Dori studied at Tilburg University. As such, they work at Quintiq as optimization experts. The affiliates of Quintiq expressed that the company is involved in world-wide projects and has offices all over the globe. This already became quite obvious when they requested if it would be any problem for the presentation to be held in English, even though everyone present was Dutch, as this felt more natural to them.

The presentation gave a quick introduction to the company, especially

concerning the functions which might be interesting for Econometrics students who lean towards Operations Research. Quintiq seeks optimization experts or, as the company often calls it, 'professional puzzle solvers'. As a key signature, they stressed the relaxed atmosphere which is custom at Quintiq, allowing employees to walk around barefoot or play some table football during working

hours. This is something that really appealed to me personally and seems characteristic for the Brabant way of life. The representatives addressed this relaxed atmosphere as one of the main reasons that makes working at Quintiq so great. Their passion and love for the company were certainly contagious.

Immediately after the presentation, dinner was served, which consisted of a selection of different pastas with meatballs and salads. During dinner there was plenty of opportunity to learn more about the company and the relaxed setting triggered everyone to participate in the nice discussions and stories. Dinner was followed by a game of bowling. After quite a rough start for most of us, the spares and strikes soon became less and less extraordinary. Still, the first round was completed without

anyone breaking the triple digits. Luckily, there was time left for a (partial) second round such that this goal, which became quite an obsession, was nevertheless achieved.

The evening was closed with a drink, which turned out to be quite a cliché for Econometrics students and showed that the term used by Quintiq 'professional puzzle solver' certainly seems appropriate. It took only a few minutes before a selection of puzzles and riddles was introduced. One of which tricked the brain of a dozen of the participants for almost half an hour. Curious to see if you are smarter than us? The riddle is as follows: using only addition, subtraction, multiplication and division come up with an expression that results in the number 24, using each of the following number precisely once: 1, 3, 4 and 6. Seems easy right? A hint: multiplication and addition are actually not needed. Still no clue? Google knows the answer, just try "1 3 4 6 24 riddle." Good luck! ●



Esmee Lucassen

AGE: 21

Began studies in 2012

Treats, Beer and a Football

One of the committees of Asset | Econometrics that started in February is the LEVT (National Econometricians Football Tournament). This committee cannot be compared to other committees, as the LEVT is only organized by Asset | Econometrics once in every six years. Other study associations who are also members of the LOES (the organization of all econometrics study associations in the Netherlands) organize the LEVT in the other five years.

The LEVT committee consists of five members, one of which is a coordinator from the board of Asset | Econometrics. Together we will organize the national econometricians football tournament in Utrecht on September 15, 2015. To make sure this is the best event LOES has ever seen, we meet approximately once every two weeks. During meetings it is important to stay motivated and that is where pie and cool refreshments come in handy.

Knowing that the committee itself is special, and that the members are very special, what is it that we do besides going to all the Asset activities with a beer safely captured in our hands? The LEVT is a football tournament for econometricians, including a

barbecue. All of this, obviously, needs to be arranged. The LEVT is just a day of fun, where you will meet fellow econometricians from other cities in the Netherlands. Companies will be present as well, thus an ideal way to get to know several companies in a more informal way than most econometricians are used to.

To finance the event, sponsors are needed. These sponsors are companies that are interesting for econometricians, and thus there is also the opportunity for the students to get in contact with these companies and recruiters. There are several ways in which companies can participate in the LEVT. These include flyers, logo exposure, and sending a company team which will participate

in the football tournament and will be present at the barbecue. Indeed, the students have great benefit of the participation of the companies, since they can think about their future while kicking a ball with their friends and fellow econometricians. The LEVT is a great way to get in contact with companies informally.

The LEVT is a great success year after year. To make it even better and more fun for the ladies and guys who feel they lack in football-skills, we introduce a new concept. This is the first year that there will be a women's pool, where they can righteously battle for victory. So there is no good excuse left for women not to participate. Like previous years, there will still be a men's and mixed (recreation) pool, where the competitive guys have worthy opponents.

From left to right: Thomas, Thijs, Thomas, Esmee, Cleo



Finally, after all the decision-making and discussions about the LEVT took place during daytime, we are ready to forget what it is like to be decent in the evening. This includes a committee member suddenly hanging on a metal stick in a certain bar in Tilburg at night, another committee member not being able to cycle home and thus falling off his bike, and the list does not stop here. Make all our hard work worthwhile and sign up for the LEVT on September 15, 2015. See you then in Utrecht! ●

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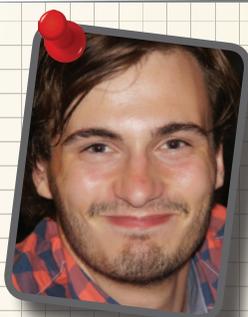
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Lawless Laser Gaming



Hans de Ferrante

AGE: 20

Began studies in 2014

We gathered and dined at Café Brandpunt, where most of us enjoyed our drinks and our steaks/hamburgers and others regretted being vegetarian, since they received a perhaps not so haute cuisine risotto. The risotto perhaps put aside, Brandpunt was a great choice of convening, where we could enjoy each other's company and a presumably endless amount of French fries.

The mood was already great when we set out for De Zeven Geitjes. Located in the vast woodland better known as the Wandelbos, De Zeven Geitjes was incredibly hard to find for two econometricians - who shall remain nameless, the shame... - and they got lost. Fortunately, Cleo functioned as a rescue line, armed with Google Maps in her hands, and in no less than thirty so minutes they arrived at De Zeven Geitjes. Luckily for the rest of us, the waiting time flew by thanks to the entertainment to be found at De Zeven Geitjes, including chicken lovebirds and a dynamic goat called Marieke who turned out to be a horse.

After they arrived, we were ready to obtain our laser gaming equipment. In contrast to other laser game facilities, the targets were located on a ring of lights, which had to be attached to your hat. This was good for the game since it makes targets harder to hit, but it is bad for the blood circulation to your brains, since these hats were way too tight for

big-headed individuals, myself included. We were further delayed in obtaining our equipment, since many of the equipment's batteries were dead, some of the guns had no crosshairs and the Velcro attaching the lights to our hats suffered from failures. Fortunately, most of these problems could be solved by De Zeven Geitjes' employee and soon enough we were ready to fire lasers at each other.

The game itself could only be described as utter chaos (not in the least because of the fact that within the first five minutes of the first game, the rules of the game were thrown overboard). Think of econometricians firing with laser guns at their own team members and joggers - a single individual even at trains -, laser guns dying on us and some laser targets not responding to lasers. But in this utter chaos, much entertainment could be found. Some stormed compassionately across the field shooting lasers at each other, others snuck silently around the horse meadow to strike at the back of their opponents. Econometricians hugged trees in full conviction, dove sentimentally on the ground or found shelter virtually anywhere where shelter could be found.

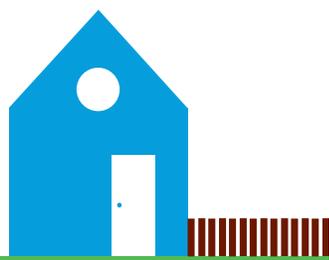
Soon enough, an apparent whistle from the employee indicated that the game had ended. After a little while, we all emerged from our hiding places, all disappointed that the game was already

over. It was not until a second whistle, however, that lonesome ranger Christel appeared, who had stumbled upon the great idea to go solely through impassable terrain, defying nettles on her way. Once again complete, we were ready to set out for our final destination for the Beer Race Drink.

Due to the massively built-up delay, the laser game was followed by a rat race to the beer race drink. Having arrived at this annual Asset I Econometrics activity, we could watch and compete with hardened econometricians, experienced in the art of ad fundum. Unfortunately, the first-year performance was quite lackluster (but so was the board's - shame on you, Roxanne!). Luckily, the atmosphere was nothing short of amazing, such that we did not need chickens, horses and the likes to be entertained. It was perhaps due to this great atmosphere that many of us freshmen left late in the night, trying to catch an acceptable amount of sleep for a vibrant early lecture in finance.

All in all, it was a tumultuous but terrific activity to end a streak of successful freshmen activities. A big shout out is due to Tom, Christel, Bart, Lars, Ridho and Cleo for their hard work this year. ●

LIVING IN LODGES



On a sunny Friday morning Jesson and I went to a house of four well-known econometricians, also known as 'de soepele boys'. Curious to all exciting tales we interviewed Tom Scholtze in order to get a better view of what is generally going on at Conservatoriumlaan 173. What followed was an interesting story about four fellow students in the midst of their student lives.

Text by: Tom van Ool

After Jesson and I gathered at the rooms of Asset I Econometrics we had to cycle for just a couple of minutes, which already shows one of the advantages of the house in Tom's opinion, its location. He clearly states that he prefers to have both the university and the sports center close, rather than a lodge located in the center of Tilburg. Additionally, it is important to note that a bike ride of fifteen minutes should definitely not be perceived to be bad at all after a night going out. After entering the corner house, the first thing that attracted our attention was the position of the two couches in the huge living room. They were placed in a way like you enter a cinema, probably a result of the games of FIFA that were played before. After some restructuring, all of the furniture was back in its original position and we could finally start asking our questions at Tom.

Tom.

In the beginning of February, Tom eventually made his decision to start living in lodges. As a third-year student he mainly traveled to Tilburg by car from his parent's place in Berkel-Enschot. After hearing great stories of living in Tilburg from other

B&E in Real Life



Tom Scholtze

AGE: 21

Address:

Conservatoriumlaan 173

Rent: € 300,-



students and a great offer with respect to any living standards, he now lives together with Björn Floor, Pepijn van den Brink and Emile Kragten. This transition happened very fluently, as he is very familiar with the city and already knew a lot of people. Furthermore, since he lives so close to Tilburg, it does not take much effort to go home from time to time; in general he lives in Berkel-Enschot during the weekends. Furthermore, Tom states how delighted he is with the housemates he has. When Björn asked him to live together with them he immediately was very enthusiastic and after some thinking all four of them moved into the house at the same time. With respect to studying, they actually never study together, but it clearly is very useful to always be able to ask others about any problem, particularly since there is not a single course Tom attends that is not attended by at least one of the others. Furthermore, they do many other activities next to their studies. We all know they attend many activities of Asset I Econometrics and for example Tom, Björn, and Pepijn were all present in the committee of the legendary Astrics cantus.



Regarding dinner at Conservatoriumlaan 173, Tom perceives this as a great ritual of the house and it partly shows the unity of the housemates. Obviously, it is often the case that at least one of the four has something else to do, but the other guys present do groceries together and subsequently they cook and do the dishes together as well. Moreover, to compensate for absent housemates, Tom emphasizes that a lot of times they have guests for dinner. The door is always open and many people have already found their way to the house. By the way, in order to eliminate the honorable task

of doing the dishes, Tom would like to kindly remind Björn of his task to order a dish washing machine, something he should have done already four months ago. In this way, all guests will enjoy joining dinner at this place even more.

Continuing on the cleaning subject, every Friday a cleaning woman takes care of the ground floor in order to keep this part of the house as clean as possible. This interview was taken on a Friday morning and the woman had not arrived yet, but I can honestly say that I have seen much dirtier places than this one. Therefore, this cleaning help can definitely be seen as addition to what they do themselves.

Related to decoration in the house, two crucial things cheer up the wall in the living room. Firstly, there is a Buddha, which is painfully asymmetric. Secondly, a red deer is present right next to the Buddha. Hilariously, the house full of econometricians is called B&E, referring to Buddha and 'Edelhart' (red deer). I think it is not necessary to stress out what this makes every single econometrician think of when they hear B&E, but for those of you really do not know: Bain & Engelhardt.

In the interest of giving a full description of the house it is important to note that a relatively large yard is available as well, which is used for several different purposes. One of them is being a storage place for many crates of

beer, as a result of the famous official housewarming party that was given. Moreover, a closet full of alcoholic beverages came to existence, as many guests surprisingly chose this as a gift. As already a lot is said about the ground floor, where one big space is used as kitchen and living room, the only thing left is upstairs. After you have taken the last step of the stairs, you are in front of a symmetrically divided upper floor with the bathroom right in front of you and two rooms to your right, and two to your left. Tom's room is dominated by a large double bed, a huge desk and last but not least a beautiful green washbasin. Now that a full description is given I can imagine that, if you have never been there, you are really curious to this place. Let us say that if you kindly approach one of them, I think that they will not reject you without any valid reason.

All in all we would like to thank the guys for their hospitality and we were impressed by how they live together at the B&E house. Finally, if anyone needs a little advice about a possible present for Tom's room, his greatest desire is a large mirror in his own room. ●



Beach Volleyball with Asset | Econometrics



Michiel van Erp

AGE: 21

Began studies in 2011

That is to say, we played volleyball in the sand, as the organizing committee found it too costly to drive all the way to Bloemendaal just to play for a few hours. However, nobody really noticed the absence of waves and Pamela Anderson. Instead, immediately after having arrived at the sports site I felt like being at Ibiza, because of the great temperature, awesome blue skies, and our lovely chairwoman Cleo wearing sportswear.

After everybody had arrived, the sports committee, under the inspirational leadership of chairman Ferry, started off with stating the rules of the game and dividing the sportive econometricians into different teams; the one team even better than the other. Luckily, I was assigned to an awesome team, because my own volleyball competency is already diminishable when playing indoor, let alone with twenty centimeters of sand under my feet.

Many awesome smashes, services, aces and rallies followed after the kick-off, and everybody was getting very eager to win. In

Last March, after being an Econometrics student for four years, my first sport activity with our lovely association finally, took place. Actually I did not hesitate at all, as the program, that had been composed by the Sport committee, was too attractive to skip. Namely, we were going to play volleyball. However, as if this was not already exciting enough, we were going to play beach volleyball!

between games, there was room for some chitchatting and small talk, but in the sandy arena opponents could actually drink each other's blood. However, the committee had foreseen this vampire-like situation and therefore they visited the Albert Heijn the morning before the activity took place, where they bought some cool drinks to quench our thirst. Also, they had thought about keeping our beach bodies in shape so they ordered some healthy snacks, such as bananas, apples and chicken fingers. In between matches, there was some room for the players to drop by the organizing committee to rest in the shadow.

The activity progressed very smoothly and before I noticed it, we were already at the end of the day. Unfortunately, all the other teams were playing at such an astronomically high level that we did not end up in the first place ourselves. Maybe it might have been a good idea

to actually drink our opponent's blood to make them a bit less strong. However, this defeat was not a big deal for us, as we knew that we had fought like lions and we had great fun playing together. After all, participating is more important than winning, which is always a wise thing to say when you lose, obviously.

After the final rounds had been played, the most sportive committee of our association kicked off the awarding ceremony, which was done by chairman Ferry. Everybody congratulated the winners with their once-in-a-lifetime achievement, and we can only wish for a new beach volleyball tournament to be organized in the near future in order for me and my team to get our revenge! In the end, I can only say that I had a very nice afternoon, and I really regret that I had never participated in any sports event of Asset | Econometrics before. ●





Thijs Kramer

AGE: 20

Began studies in 2012

Finally, the Day Arrived!

After hearing the news of being part of the candidate board for upcoming year, it had to be kept secret for the rest of the outside world. This resulted in secret meetings in different far-off rooms all over the campus. Until June 11.

Luckily, this year's Announcement Drink was one of the first, so the chance of being seen at one of the announcements of other Asset departments was relatively low. Nevertheless, we still had to keep it a secret until June 11. Because our announcement was that early, we were only able to join the announcement of 'De Smeetskring' before having our own. Even though the current board told us ours would not be the same as theirs, I have to admit that it scared us a little bit, as the candidate board members were all very wasted.

'We were finally allowed to tell everyone!'

Finally, June 11 arrived. We gathered around 12.00 hours at 'Sportpark Merlinello', the complex of TSVV Merlijn, where the Asset | Econometrics Football Tournament was held. Right after arriving we received our lunch and had about an hour to enjoy it, as well as the sun, before exhausting ourselves during intense football matches.

The organization had decided to create one pool of seven teams, so that every team had to face every opponent at least once. After having faced each opponent, which resulted in all different kinds of results, such as a 5-1 win over the board team and a devastating

7-0 loss to the Tjoepentrekkers, we forwarded to the semi-finals in which we had to face last-mentioned team again. After an exciting first two minutes, which led to a 1-1 score, our resistance broke and we lost to them, again. It was not a shame, taking into account that they had won the tournament several times before and it turned out that they would win the tournament this year once more.

After the final round, it was time for the barbecue. During that barbecue the question "Who will be part of the candidate board" arose. Some were

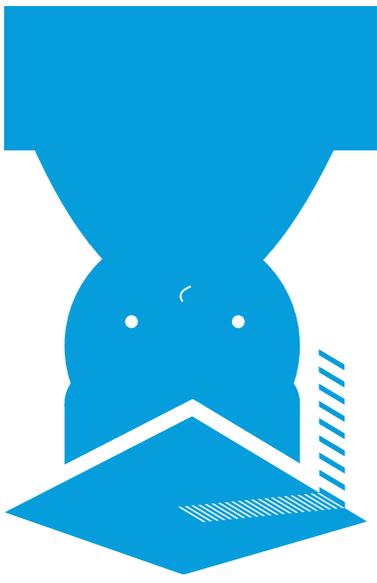
making allusions to upcoming night, but it still had to be kept secret. It was a relief to finally go home, take a shower and change clothes for the drink, while being far away from questions about upcoming night.

At café Qwibus, the questions started all over again. It goes without saying that it was a huge relief when we were finally officially announced, and we finally were allowed to tell everyone! The announcement was in a more decent way than what we had experienced a few days before. A great movie complemented by 'charming' pictures of us was our introduction,

followed by an instantly growing line of people who wanted to congratulate us.

During the night, we figured out that there is an inverse relationship between the level of drunkenness of two people and the length of a conversation between those two, hence the conversation became shorter and shorter as time passed by. After shaking hands and chatting with everyone, we could enjoy the party ourselves. When the party came to an end, we enjoyed some more 'delicious' drinks at Ernst's place before going home. At that moment, I already felt that it was going to be a very tough morning.

When I woke up three hours later my presumptions were confirmed, dealing with the consequences of the amount of beer that I had been drinking the night before. It turned out I was not the only one feeling not very well. We spend big parts of the day remembering stories of the previous night and, even though we all did not feel very well that day, we agreed that it was an amazing night. ●



Asset | Econometrics congratulates...

Name: Stephanie von Schwartzberg
Title: Improvements on Existing Worst Case Robust Optimization for Prostate HDR Brachytherapy with Delineation Uncertainties
Supervisors: Prof.dr.ir. D. den Hertog, M. Balvert

Name: Michal Chojnowski
Title: "Can trust in others make you healthier?": analysis of trust's influence on one's reported health by use of instrumental ordered probit model with moving thresholds
Supervisors: Dr. M. Salm, Prof.dr. B. Melenberg

Name: Yannick Jacobs
Title: Constructing a breathing network for DPD (Nederland) B.V.
Supervisors: Prof.dr. G. Kant, Prof.dr.ir. H.A. Fleuren

...on obtaining their Master's degree.

Horoscopes

Aquarius: January 20 - February 18

You have reached a critical region in your life. You are on edge and have about reached your limit. Seek a new group of friends that possess the communicative and transitive property.

Pisces: February 19 - March 20

On the surface, today will seem like an irrational day, continuously full of problems, but the day will be less negative and more normally distributed than it first appears. Stay to your regular routine and minimize any quadratic variation.

Aries: March 21 - April 19

Luck might not have used Dijkstra's shortest path algorithm to find you, but it is certainly on its way! Those happy days you are waiting for are already in your ϵ -neighborhood.

Taurus: April 20 - May 20

Your friends are all happy couples, but unfortunately, your significant other is just as imaginary as $\sqrt{-2}$. Try using this catchphrase: "What is your sine? It must be $\pi/2$, because you are the one."

Gemini: May 21 - June 20

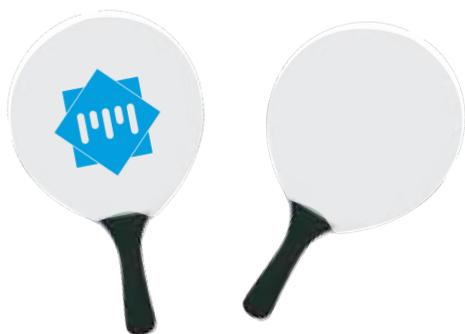
Your qualities might seem unimpressive, so find out what makes you special: find your Eigenfactor! Try the amazing new sport Stackelberging, visit a σ -field or start playing the Poisson-flute.

Cancer: June 21 - July 22

People find it difficult to be a perfect matching with you, so stop being closed and bounded. Try to relax your constraints and you will see: the sky is the limit!

Summer Photo Contest

As the summer holiday is finally approaching, or might already have started for some of you, the time has come for our very own Summer Photo Contest. You get the opportunity to win the desired prize – a crate of beer or a pie – by picking up Asset | Econometrics' beach tennis set for free at E1.10 and taking a picture of you using them. The most original photo wins!



Rules for entry

- Entries are to be sent to Nekst@Asset-Econometrics.nl before September 25, 2015.
- All recipients of Nekst are allowed (and encouraged) to enter the competition.
- Entries should show both the person entering the contest and the beach tennis set.
- It is forbidden to edit your submission with Photoshop or any other photo-editing software.
- Entries will be assessed on originality by this year's and next year's Editor-in-Chief.
- Entering a submission to this competition constitutes acceptance of the rules.

Leo: July 23 - August 22

Stop differentiating and start Lebesgue integrating with your peers. Explore night time and find the maximal amount of beer you can drink before you lose your communicative state.

Virgo: August 23 - September 22

Passing Statistics might seem as impossible as proving $\mathcal{P} = \mathcal{NP}$ but do not give up hope! Partition the problem and reduce it to an Echelon form, such that you will find the optimal solution.

Libra: September 23 - October 22

Today life will throw you a curve. You and your loved one will diverge, after which your lives will never intersect anymore. Life can be as unpredictable as a Brownian Motion.

Scorpio: October 23 - November 21

You are looking for the Cramér to your Rao, for the Lehman to your Scheffé, the Black to your Scholes. Enjoy the singleton time while you can, before you use the Lagrangian multiplier and have kids.

Sagittarius: November 22 - December 21

Do not focus too much on that one thing you want, but let go of Brouwer's Fixed Point Theorem and start exploring and exploiting. Discover this beautiful, convex world and seek its boundaries.

Capricorn: December 22 - January 19

Lately you have been feeling lonely, so go out and buy a top dog or a puppy dog. If you want to reach that maximal likeliness, then consider buying a fat cat.

Quatsch!

Roxanne Beerkens: 'Je mag niet drinken onder invloed.'

Mike Weltevrede: 'Magnums smaken echt beter als ze in de Bonus zijn!'

Erwin van Oosten: 'Als iemand je wilt verkrachten, is dat eigenlijk best wel een compliment.'

Thomas van Manen: 'Als Dr. Phil nog net iets trager zou praten, dan zou hij achteruit praten.'

Wise words of ...

Prof. dr. ir. Ashayeri: 'Cannibalization can cause a lot of damage.'

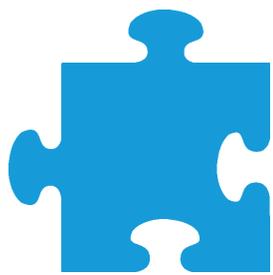
Ernst Roos: 'BC staat helemaal niet voor 'Before Christ', maar voor 'Before Coenraad'.'

Zeger van Nieuwehoven: 'Soms moet ik gewoon minder denken en meer slaan.'

Michiel van Erp: 'Wordt Thijs Kramer nu Thijs Hamer, omdat hij voorzitter wordt?'

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 is right around the corner, which means that weeks filled with sunshine, spare time and vacations are almost upon us. For those of you who cannot stand the idea of not having lectures concerning mathematical problems, we have created an interesting puzzle concerning a somewhat peculiar topic: the flu.

To celebrate the start of the summer holidays, company X organizes a great feast for its hundred employees. Right before dinner starts though, it turns out that their main chef has the flu. Unfortunately, while preparing the first course - a delicious broccoli soup – the chef sneezes and exactly fifty droplets of nasal discharge find their way into the soup.

As there is no time to prepare another soup, the chef decides to serve the broccoli soup anyway. He stirs it one more time, making the droplets disperse randomly through the soup, after which he gives a bowl of soup to all of the hundred employees. No soup is left in the soup pot. Now the question we wish to answer is: what is the expected amount of bowls that will be infected, i.e. the number of bowls that have at least one droplet of nasal discharge in it?

Please send your solution to Nekst@Asset-Econometrics.nl before October 1. 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



Stan Albers is the winner of the previous puzzle. As a reward, he can come and pick up a crate of beer or a pie at room E1.10. The solution of the previous puzzle was **unspecified**. If you want to know more, visit www.Nekst-Online.nl.

Agenda

Summer 2015



Tilburg University Cantus

Monday August 31

The Tilburg University Cantus, the perfect start of a new academic year! Enjoy unlimited beer, while singing together with all other study, student and sport associations of Tilburg. Since this event is always very popular, make sure you reserve your ticket in time.

Department Members Meeting & Drink

Wednesday September 2

During the Department Members Meeting, the current board will look back on the past academic year. Furthermore, the candidate board will introduce themselves and will be installed by the DMM. After the DMM we will have our monthly drink, during which you can catch up with your fellow econometricians.

Introduction Activity

Tuesday September 8

To make sure freshmen students get in touch with our department, we organize the Introduction Activity. While playing different games, they will get to know more about our study association and get to know their peers. We will end the day with a barbecue.

LEVT

Tuesday September 15

This year the LEVT is organized by Asset | Econometrics, which is an extra reason to attend this football tournament for sure. If you want to show off your football skills to the other econometrics students in the Netherlands, save the date and start practicing!

Asset Party: Kick Off

Wednesday September 16

To kick off the academic year together with all other Asset students, Asset organizes the Kick-Off. During this great party there will be many liters of free beer, so make sure you do not miss it!

Hart van Brabantloop

Saturday September 26

The third and last sport activity of this year will take place in week 20. Sadly, we cannot divulge the activity at present. However, every sportive econometrician should make sure he/she will not miss it.

Business Dinner

Wednesday September 30

During a luxurious dinner, you can get in touch with several companies in the field of Quantitative Finance and Actuarial Sciences. Before the dinner, an interesting workshop will take place which will prepare you to meet and impress your future employees.

LotYA, Game Afternoon & Drink

Tuesday October 6

Did you already vote for the Lecturer of the Year Award? On Tuesday October 6, we will hand out the awards to our teachers. After the Lecturer of the Year Award, our yearly Game Afternoon with free pizzas will take place. We will end the evening all together at our monthly drink.



Books 4 Life Tilburg

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For more than a decade, Books 4 Life works on a better world by donating the profit from selling secondhand books to several organisations that commit themselves to improve human rights and to fight poverty.

Besides major organisations as Oxfam Novib and Amnesty International, that receive a donation every year, we support lots of smaller, single projects.

We sell our books — novels, study books, children's books, informative books — through the internet (Bol.com, Boekwinkel-tjes.nl and Marktplaats.nl), special markets and our shop. Main part of our stock is in Dutch, but we have a collection of books in foreign languages (mainly English) too. In the shop prizes range from € 0,80 to € 8,00.

The shop is located in the basement of the Cobbenhagen building (C045)

www.books4lifetilburg.nl

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