

1 - 2013/2014

# PerVectum

magazine of study association

SCOPE | Vectum

Maartje's Study Abroad  
in Australia

Article of AI

Research Article by  
Artem Duplinskiy

Report of the  
Members Weekend





**We are looking forward to offer you a year full of great fun and interesting experiences.**

*President* Jim Bemelen  
*Vice-President* Marie Koorneef  
*Secretary* Fabiënne Verwey  
*Treasurer* Ellissa Verseput

# Word from the President

Dear Econometricians,

After a long holiday full of fun, working and relaxing the academic year 2013-2014 started for all of us. On behalf of the SCOPE | Vectum board I want to welcome you all back and present to you the first edition of the PerVectum for this academic year.

I would like to give an extra warm welcome to all our new students. I am pleased with the fact that a growing number of students choose for both the bachelor and master Econometrics and Operations Research in Maastricht, and as a direct result of this SCOPE | Vectum is also growing. This year will again be full of challenges and opportunities for all our students. Our first-year students are starting a new chapter in their life. Next to their new studies, they also have to adapt to a new living environment which can be very demanding in this first period. The second-year students are still enjoying that they survived the first year, and are now deciding which destination will be their new home for the first semester of next academic year. Our third-year students already made that decision last year, and are now enjoying their exchange experience. The master students realise that student life is



coming to an end. They have to decide whether they want to make the leap to the labour market or stay in the academic world by choosing a PHD or a second master. Not only for our students but also for SCOPE | Vectum a new year has started. We are ready to cope with all the challenges and to seize all opportunities to assure that this will be again a successful year for SCOPE | Vectum and our members. We are looking forward to have a great year with all of you.

In June of the last academic year the yearly board change took place. I would like to seize this opportunity to



thank and congratulate Sean, Michiel, Michael and Maartje with their great work and achievements last year. Their passion and hard work, which resulted in another successful academic year for SCOPE | Vectum, is an example for us and upcoming boards. Next to that I want to thank the old board and all active members for successfully organizing several activities and events. During our GMA last June, Marie, Ellissa, Fabienne and I were installed as the new SCOPE | Vectum board of the academic year 2013-2014. Fabienne is our secretary, she is responsible for the design and content of the PerVectum and makes sure our website is up-to-date. Marie is our vice president, she is responsible for our external relations. Next to this she will organise the SCOPE | Vectum Congress together with her committee. Ellissa is our treasurer and activities coordinator. She makes sure that our association stays in a financially healthy position and together with her committee she will organise some great social activities for you, so be prepared. Finally, my responsibility as president is to maintain a good overall condition of SCOPE | Vectum. Together with my committee, I will organise the Business Trip in January where we will visit interesting companies. Looking back to recent years, our board has a remarkable composition as SCOPE | Vectum has not seen such a Dutch and feminine

board for a long time. From my own experience I can now say that it is a pleasure to work with these ladies and I am looking forward to the rest of the year. I want to stress that despite of our Dutch background English will be the language of communication within SCOPE | Vectum.

SCOPE | Vectum tries to evolve every year and tries to adapt to all the wishes of their partners and students. Our partners indicated that they had more interest in an online magazine. Next to that, we see that more and more students use a tablet. Therefore we decided to introduce an online magazine instead of our printed magazine. By working with an online magazine you create an interactive way of reading. If the reader is interested in for example a company or a job that he just read about he can immediately go to their website by clicking on the link. Beside that, we also think about our environment.

Time goes by so fast when you are having fun. The first block is coming to an end and we can look back at some successful events and activities. In this first block we had three events which were organised for the first time in the rich history of SCOPE | Vectum. This year the LEVT was organised in the third week by SCOPE | Vectum. I want to congratulate our association for



making this a successful day. A word of thanks goes out to all our active members who helped us with the organisation of this event and especially to Suzanne who was the leading force behind this event. In the first week, the traditional annual BBQ was a great success and we want to thank Annora for the use of her garden. We were glad that a lot of first year students showed up so that they could mingle among fellow econometricians. In the second week we had the Scavenger Hunt where our members did some teambuilding by completing crazy tasks in the inner city of Maastricht. Two weeks later we had a research lecture by Professor Pfann about Job Security in the Netherlands. We want to thank him for his research lecture and that he joined us afterwards for an informal drink with the students. In the fifth week we had the already legendary SCOPE | Vectum's Oktoberfest including the traditional costumes, sausages and music. A week later we had a more exhausting activity: Indoor Climbing.

Next to the articles about our past events, including last year's members' weekend, we have other interesting articles in this issue. Maartje Keulen will take us Down Under where she will share her exchange experience with us. The research article is written by Artem Duplinskiy about the Wald-type test under nonregular conditions.

In this issue we also have an exclusive interview with Gildas Blanchard, our beloved tutor who is responsible for the Finance part of the second year course Macro and Finance.

To conclude my first word of the President, I would like to wish you all the best of success for the upcoming year and hope you will have, together with SCOPE | Vectum, a both enjoyable and interesting academic year. In case you have any questions, remarks or suggestions, please feel free to contact me or any of my fellow board members. I hope you will enjoy reading this first online edition of the PerVectum and hope to see many of you at our upcoming activities in the second block.

Jim Bemelen

President SCOPE | Vectum 2013-2014

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Econometrics students  
at Maastricht University

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# Members Weekend 2013

by Suzanne de Boef

**Friday the 14th of June. It was time again. Expectations were high. SCOPE | Vectum's Members Weekend 2013 was about to begin.**

That afternoon Fabienne, Bas and me gathered at the SBE gate. Others left at different times and from different locations. We were waiting for our party car to arrive. When it did, a reorganisation of the car was necessary to fit in the girls' suitcases. Us girls apparently had plans.

The party auto people were in a good mood having sing-along songs on the radio, eating chup-a-chups and on our way to somewhere in Belgium. That we took the wrong highway did not matter, our mood was indestructible. At some point we passed the 'Grotten van Han' (yay!), the place we visited last year and we still have the best stories about that historic place. Could this weekend even live up to our expectations?

When we arrived at the weekend house – as one of the latest – the atmosphere was great. Preparations for the barbecue were made and more importantly:



Preparations for the 'Bonte Evening'. Since this was a new flashy event during the Members Weekend, the Bonte Evening promotion committee (Celine and me) made an introduction movie and we actually hope everyone enjoyed it just as much as we did.

The evening took off by a KUS (known from 'topje van mijn zus' and many more floor killers) medley and soon everyone gathered their selves and some booze in the living room. Ready for some amazing shows. It was a big success thanks to the remarkably high number of acts. Most noteworthy acts were from the Lama's, BackAlley Boys, Pretty Boys and the Hotties. And not to forget: The (at that time) current and future Vectum board represented their selves in a memorable way.

Of course Fabienne, Celine, Kaya, Maartje and me – better known as the hotties – performed as the Spice girls. We knew all the lyrics by heart anyways. We had a super cool dance prepared and incorporated aluminium foil as microphones. And, as it should be, we all ended the evening with nice (slow)dances in sparkling disco lights. Not too late, because another big day was coming up tomorrow.

Waking up the next morning wasn't as tough as usual (I've made it through two members' weekend's before). Experienced as we are, we know what to do by now. We were up for the challenge. We were prepared. Because we knew the activity is the most challenging part of the Members Weekend. We dressed up in clothes that may (but hopefully would not) get wet and packed our lunch packages in waterproof bags. We got into the cars and drove to the river Lesse.

Some showed off their peddling skills. Others tried to hijack kayaks. Celine and I had enough troubles just not to drown. Eventually we began to understand how to kayak and we even developed our own kayak routine: Peddle to the left. Peddle to the right. Peddle to avoid a tree. Peddle to recover. We never gave up and with an end sprint.. we defeated Michiel and Sean! They had quite some trouble getting back

on land again. Getting lost between empty kayaks, not a lot of people have been in this situation.

We all were happy to know that enough showers were waiting for us. And after some super spicy pasta, the second and last evening could begin: The beer cantus! It might be clear that if you are a real Vectum member, you need to love singing.

Then it already became Sunday morning. Only one thing left to do: Big house cleaning. It was a weekend where new friendships were made. The Vectum spirit came through to another set of new members. Even though our expectations were set high, this Members Weekend was another one not to forget!



# Impressions from the GMA





# Scavenger Hunt

A strange activity that I never would have wanted to miss

by Florian Maassen

My first week at the university was a success, but what did the second week have to offer? Besides long lectures and tutorial groups, there was a completely different item on my agenda, hosted by Scope | Vectum: The Scavenger Hunt. I had no clue what it was about (If only I had known before!). Knowing that Scope | Vectum activities can't be anything else than fun, I decided to join the scavenger hunt with a couple of fellow first-year econometricians. It was a rainy night, what could we possibly be going to do?

After the groups were formed, we dropped all the stuff we did not need at the office, and off we went! The idea of the scavenger hunt is that every team has a list of tasks that they have to complete in order to gain points. The team with the highest score obviously wins, but it wasn't all that obvious when I saw the list of possible tasks. Tasks ranged from "Run across the Vrijthof in your underwear" to "Wear nothing but tights and do some ballerina moves". On top of that, everything had to be captured on camera in order to prove that we really completed the tasks!



I went with our group to Celine's place to complete the first tasks. I can only say that the start of our "quest" was great. We took some pictures of the whole group in a bed while wearing sunglasses. The first points were in the pocket! Next up, we headed to the Vrijthof to walk down 5 stair steps on hands and feet. This was not as easy as it sounds, so the ones on the Vrijthof were perfect. Shortly after that, we found someone crazy enough to run across the Vrijthof in his underwear! While attracting a great deal of notice from tourists, we scored our first 50-pointer. In the meantime, trees were climbed and lions were petted. The points really started to add up, same as our hunger! Luckily, there was a suitable task on the list for us: order a Big Mac menu, but when you're be-

ing asked for anything else, you may only reply with “yes, diet or large”. Knowing this, Jeroen went to order a menu and the people at McDonalds have probably never been more confused, but the fries tasted well and we got the points!



Time passed swiftly and as we had to be back at 22:00 at the Preuverij, we stopped by Fabienne’s place to complete some more tasks. Beers were chugged, and yes, even Kaya (who never drinks beer) couldn’t resist the urge to drink the liquid gold! Moments later, before I even realized, I was doing complicated ballet moves while wearing nothing but shiny gold tights. Luckily we got 50 points for that! While keeping track of time, we went back on the road. After we had all posed in front of the statue at the market, strangers came in handy when contact lenses had to be found, mustaches had to be drawn on faces and chewing gums needed to be spat in one of our team members’ hands. While passing the Vrijthof again, we were

able to complete a very romantic flash mob, which included a marriage proposal. Furthermore, Jim commanded our team to do push-ups on the middle of Sint Amorsplein. Everything for the points!

With only 5 minutes left, we raced to the Preuverij, completed the last task (do a handstand in a bar) and went upstairs. With more than enough pictures and video’s to watch, the jury, formed by Annora and Marloes, had a hard time choosing the winner. Both teams were able to do a lot of crazy stuff, so the final result was very close... 323 versus 320 points, we had won! The joy was incredibly great and the prize we earned was more than deserved! After the jury’s decision, it was time to talk about what happened tonight downstairs in the preuverij. I believe that all participants of the Scavenger Hunt can look back on yet another fun, extremely extraordinary and atmospheric night with Scope | Vectum!



October 2013

## Impressions from Welcome Party



## Impressions from Research Lecture





# Wald-type test under nonregular conditions

by Artem Duplinskiy

It is good that the PerVectum is a magazine for students following the econometrics or operation research tracks, because I feel free to start with the model right away! Before I come to the introduction, please have a look at the following VAR(1), described by equation (1).

$$\mathbf{x}_t = \mathbf{A}\mathbf{x}_{t-1} + \mathbf{u}_t, \quad t = 1, \dots, T,$$

where  $\mathbf{x}_t$  is a vector of  $n$  time series  $\mathbf{x}_t = (x_{1,t}, \dots, x_{n,t})'$  and  $\mathbf{u}_t \sim N(\mathbf{0}_n, \Sigma)$ . This model is fairly simple and I think most of you are familiar with it. This is very good, because I could go on with the introduction, while you are already busy thinking about this fascinating VAR(1) process.

In this article I will be discussing hypothesis testing regarding the parameters of matrix  $\mathbf{A}$ , for which there are square-root  $T$  consistent estimators available. Let us stack the parameters contained in the matrix  $\mathbf{A}$  in the vector,  $\boldsymbol{\alpha} = \text{vec}(\mathbf{A})$  and formulate the hypotheses of interest as follows,

$$H_0 : \mathbf{R}' \boldsymbol{\alpha} = \mathbf{c},$$

$$H_A : \mathbf{R}' \boldsymbol{\alpha} \neq \mathbf{c},$$

here you can think of  $\mathbf{R}$  being a  $n^2 \times r$

matrix and  $\mathbf{c}$  is a  $r \times 1$  matrix of known constants. Naturally, there are several standard tests available for testing such hypotheses, namely, Wald, score and likelihood-ratio tests could be used. The following expression describes the Wald statistic, that will be the focus of the coming lines

$$W = T (\mathbf{R}' \hat{\boldsymbol{\alpha}} - \mathbf{c})' (\hat{\Sigma}_{\mathbf{R}' \boldsymbol{\alpha}})^{-1} (\mathbf{R}' \hat{\boldsymbol{\alpha}} - \mathbf{c}),$$

and  $\hat{\Sigma}_{\mathbf{R}' \boldsymbol{\alpha}}$  is a consistent estimator of the variance of the restriction. This test statistics has a  $\chi^2(r)$  distribution, provided the inverse of the weighting matrix exists. Suppose however, that it does not exist and the matrix  $\hat{\Sigma}_{\mathbf{R}' \boldsymbol{\alpha}}$  is of reduced rank. First of all, the fact that the covariance matrix has reduced rank implies that several restrictions examine the same information, therefore some of the restrictions are *redundant*. Secondly, in terms of properties of the matrix, such redundancy implies that in the eigen decomposition

$$\hat{\Sigma}_{\mathbf{R}' \boldsymbol{\alpha}} = \mathbf{U} \boldsymbol{\Lambda} \mathbf{U}',$$

some of the entries of the matrix

$$\boldsymbol{\Lambda} = \text{diag}(\lambda_1, \dots, \lambda_n) \text{ are zeros.}$$

## How shall we deal with such a case?

This problem has been studied in the literature and there are several solutions. The first one is to use something similar to the inverse of a ma-

trix, which accommodates for possible rank deficiency. For example, Gouriéroux and Monfort (1989) apply the generalized Moore-Penrose inverse, whereas Lütkepohl and Burda (1997) set the small eigenvalues in  $\mathbf{A}$  to zero to produce a consistent estimator for the rank of the population matrix.

Alternatively, the other solution, also proposed by Lütkepohl and Burda (1997), is to ensure the full rank of the covariance matrix by adding a noise term. Note that in this case we obtain a full rank matrix at the cost of adding irrelevant information to our data.

Finally, Dufour et al. (2011) use a new class of regularized inverses to resolve the issue. The idea behind regularized inverses is quite similar to the first approach of Lütkepohl and Burda (1997), however, there are some substantial differences. Firstly, the regularized inverse,  $\Sigma_{Reg}^{-1}$ , is a continuous transformation for a given matrix  $\Sigma$ ; and continuity is a very desirable property of the function, because it allows to apply the continuous mapping theorem. In other words if there is an estimator,  $\hat{\Sigma}$ , of  $\Sigma$  available, we are sure that  $\hat{\Sigma}_{Reg}^{-1}$  is not far off  $\Sigma_{Reg}^{-1}$ . Secondly, they modify the small eigenvalues that fall below a certain threshold  $c$  so that their inverse is well defined, whereas Lütkepohl and Burda (1997) set them to zero.

I suggest an alternative approach that

could be summarized in the following way. Suppose we consider another statistic instead of  $W$ . Denote a version of  $W$  with the inverse of the variance-covariance matrix omitted by  $W_1$ . Alternatively one could view this statistic as the regular Wald test with the identity weighting matrix,

$$W_1 = T (\mathbf{R}' \hat{\alpha} - c)' (\mathbf{R}' \hat{\alpha} - c). \quad (2)$$

Think of the standard t-statistic, then the motivation for this approach comes from the following question: *"Why do we have to put the standard deviation of the estimate in the denominator at all?"*

There are several obvious comments to be made about this statistic. On the one hand, its distribution is full of nuisance parameters. This is an important issue and was an even more important issue in the past, when our colleagues normally had been using tables to look critical values up and could not rely on computers to calculate the required distribution of the test statistic. The application of simulation based methods, such as Monte Carlo methods and bootstrap, was limited if at all feasible. However, computers are very powerful now and the life of researchers is, in this regard, easier than in the past.

On the other hand, calculation of  $W_1$  avoids usage of the inverse of the covariance matrix and therefore could be considered as a cure for the reduced rank of  $\hat{\Sigma}_{R' \hat{\alpha}}$ . Moreover, it turns out

that  $W_1$  is also continuous with respect to  $\Sigma_{R'\hat{\alpha}}$  which is very desirable as I argued above. First of all, it resolves the issue of having a singular variance-covariance in the original Wald statistic. Secondly, continuity allows us to get the asymptotic distribution of the test statistic, using both first order asymptotic approximation and bootstrap techniques. So let us discuss possible ways of obtaining the asymptotic distribution of the statistic of interest.

I use two types of approximation. The first relies on the asymptotic distribution of the elements of the vector  $(R'\alpha - c)$  in the quadratic form and uses parametric bootstrap to approximate the asymptotic distribution of  $W_1$  by drawing from the asymptotic distribution of  $(R'\alpha - c)$  with an estimated covariance matrix. The second applies residual bootstrap to obtain the distribution of  $W_1$ . I refer to the working paper Duplinskiy (2013) for details.

In order to see whether usage of  $W_1$  worsens the result, suppose I am inter-

ested in testing a very simple hypothesis. Consider a univariate model in (1). Hence  $u_t \sim N(0, \sigma)$ , and the matrix  $\mathbf{A}$  boils down to just one parameter, let us say  $\rho$ . Denote by  $\rho_0$  the true value of  $\rho$ . In this case the hypotheses  $H_0 : \rho = \rho_0$  could be tested evaluating a t-statistic  $t_\rho$ , which is just the square root of  $W$ . Alternatively, one could follow the approach presented above and calculate  $W_1$ . Provided the number of replications is large enough, we expect the approaches to give similar results. In fact, even 10000 repetitions is enough, as the results in table 1 indicate. The empirical rejection frequencies for both statistics are close to the nominal level except for a small distortion for very small sample sizes and quite similar to each other. However, if the covariance matrix is of reduced rank, the standard approach fails, whereas  $W_1$  performs quite well. The results in Duplinskiy (2013) show that  $W_1$  controls empirical size and displays good empirical power even in small samples.

Table 1: Empirical size for univariate and bivariate cases with no rank deficiency

T	15	25	50	100	500	1000	2000	5000
$W_1$	0,060	0,060	0,051	0,055	0,051	0,050	0,050	0,052
$W$	0,059	0,060	0,052	0,055	0,052	0,049	0,050	0,051

Note: Reported sample sizes are 15, 25, 50, 100, 200, 500, 1000, 2000 and 5000. The first line corresponds to the alternative approach I propose, whereas the second line corresponds to the traditional approach. The nominal size is 5 %.



## Conclusions

In brief, the test statistic  $W_1$  controls size better than the approach proposed by Lütkepohl and Burda (1997) and Dufour et al. (2011), when the critical values obtained by residual bootstrap are used, but lacks size-adjusted power in some cases comparing to Dufour et al. (2011), suggesting that the two statistics could be used as complements rather than substitutes.

In general, the usage of simulation based methods could be very useful to obtain new solutions to well established problems. The approach discussed in this article could easily be applied to other statistics such as the Lagrange multiplier statistic, or the likelihood ratio statistic.

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# A new generation of actuaries

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by Actuarial Institute

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In response to this need the Executive Master of Actuarial Science (EMAS) has been developed. EMAS is a winning collaboration between two Dutch institutions: the Dutch Actuarial Institute (AI) with its close ties to the Royal Dutch Actuarieel Genootschap and international actuarial communities (such as the International Actuarial Association (IAA) and the Groupe Consultatif) and top-ranked TiasNimbas Business School. Together they deliver an excellent MSc-accredited (NVAO) programme with unparalleled career impact.

**Risk is the possibility that an undesirable event will occur**

The future is uncertain and full of risk. Risk is the possibility that an undesirable event will occur, but risk also means an opportunity. That's exactly where actuaries come into the picture.

Risk comes in many forms. Everyone and every organization faces risk. Actuaries are especially knowledgeable in measuring and managing risk, ergo without good risk management programs, our economy cannot thrive.

Actuaries come from all sorts of backgrounds, though clearly they share a love of maths. As problem solvers and strategic thinkers they have a deep understanding of financial systems. To illustrate a few of the problems actuaries solve:

- They determine how much an insurance company should charge for auto insurance, taking into account many factors such as the car that is being insured and details about the driver;
- They develop insurance products so that you can for instance enjoy adventurous recreational activities such as rock climbing or kite surfing while feeling secure that if something happens the possible loss or costs are being taken care of;
- Actuaries also help and advice companies and pension funds establish their retirement plans;

- And last but not least actuaries advise insurers and pension funds in managing their assets and liabilities and develop ways to manage financial risk.

In a nutshell: risk is at the heart of the problems actuaries solve.

### **Why should you become an actuary?**

As an actuary you have the opportunity to work in specialist areas of insurance, pensions, benefits, healthcare, investments and banking, or for any large organisation where risk management plays an important role, or for a consultancy advising on all sorts of different projects.

As mentioned earlier actuaries solve problems in tune with what's happening in business through their interpretation of statistical data and knowledge of social and economic systems. The unique skills you develop as an actuary are often of key importance behind many high-level strategic decisions made by large companies and govern-

ments. These decisions have on many occasions a positive impact on legislation, businesses and individuals.

In other words: actuaries combine good business sense with safeguarding the public's financial interests, upholding the highest professional standards. Once you're qualified, actuarial skills can take you anywhere in the world.

### **Career opportunity**

For the fourth year in a row Dutch magazine Elsevier (June 14 2013) has chosen the profession of actuary as best job in the Netherlands. The Dutch survey Studie en werk 2013 of Elsevier and SEO Economic Research, shows that the actuarial profession scores best for a top level job/career for starters (higher professional education (HBO) and university education (WO)). With a rating of 8.1 the profession ranks first in the top 12 of best jobs in 2013 in the Netherlands before credit analyst and dentist. The survey yearly ranks 12 jobs that provide an optimal mix of six characteristics of a good job: income, employment outlook, attractive benefits, a function on graduation level, overall satisfaction and a work week that is appropriate to the desired number of hours. SEO examined how graduates of higher professional education and academics perform compared to recent graduates with a similar training in the same sector.





### **EMAS, actuarial science meets the profession**

The Executive Master of Actuarial Science (EMAS) started for the first time in september 2010. In January 2014 EMAS 4 starts. Participants to EMAS often have a Bachelor's or Master's degree in Actuarial Science or in Econometrics or (Applied) Mathematics. Depending on their previous education, they have completed one or more modules in the Premaster programme offered by the Dutch Actuarial Institute in order to meet the entry requirements for the EMAS programme. In case of the Master Econometrics and Operations Research, track Actuarial Sciences (Maastricht University) direct admission to EMAS is possible.

EMAS is aimed at young professionals who are active at an academic level and who are looking for ways to broaden and deepen their knowledge. One of the main goals of the programme is to make full use of the opportunities that arise in such a situation. The curriculum mixes concentrated lectures and tutorials with case-based learning in which students work together in small groups and is rounded off by thesis work on an individual basis. The programme is structured in such a way that it is indeed possible for participants to combine work with study and to optimize the cross-fertilization between working and learning. Experience on the job can be incorporated into courses and case studies. Insights developed in the educational pro-

gramme are translated back into practice, giving rise to further reflection. EMAS is accredited as an Academic Master by the Dutch-Flemish Accreditation Organisation (NVAO). Upon completion, you receive the (inter)nationally recognised MSc title. Furthermore EMAS prepares you to gain a full Actuary AG (AAG) qualification which is granted by the Royal Dutch Actuarial Association (AG). AG is the professional association of actuaries and actuarial specialists in the Netherlands, of which nearly all actuaries are member.



### **Link between theory and professional life**

The EMAS programme provides in-depth coverage both of the body of actuarial knowledge and the required competences. In particular, the EMAS programme provides participants with the knowledge and competences associated to the status of a fully qualified actuary.

Participants monitor their progress by feedback they receive from instructors

and by regular meetings with a mentor who is assigned to them specifically for the purpose of monitoring personal development. In this way it is ensured that participants not only become familiar with state-of-the-art academic knowledge and insights, but also develop the competencies required to apply these insights in practice.

### **Broaden and deepen your actuarial knowledge, start EMAS**

Are you interested in starting EMAS? Or do you want to receive more information? Please do not hesitate and contact us at:

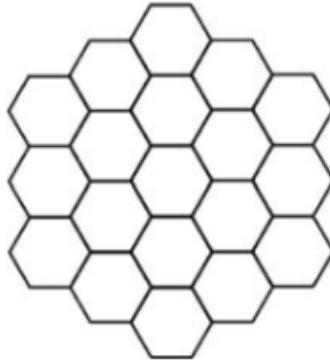
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# Puzzle

Your task is to place the numbers from 1 to 19 in the hexagons so that any straight line of three, four or five cells, in any of the three directions, add up to the same magic constant, which I can reveal must be 38.



## Solution to the Puzzle

PerVectum issue 4, 2012-2013

<b>9</b>	<b>1</b>	<b>8</b>	<b>6</b>	<b>3</b>	<b>7</b>	<b>5</b>	<b>2</b>	<b>4</b>
<b>7</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>9</b>	<b>1</b>	<b>3</b>	<b>8</b>	<b>6</b>
<b>6</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>8</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>9</b>
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<b>1</b>	<b>5</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>9</b>	<b>6</b>	<b>4</b>	<b>7</b>

# Impressions from Oktoberfest



# Meet the Professor

## Gildas Blanchard

by Bram Vandermeulen

### Can you introduce yourself?

As you know, I am Gildas Blanchard. A name that sounds pretty French, which is probably because I am French. I was born in Northern France but I grew up in the South, close to Marseille. When I reached the age of 18, I moved to Nice to study at the university. In fact, I studied in France and England simultaneously, a so-called ‘double degree’: one in Bristol in ‘Strategy’ and one in Nice in ‘Business Finance’, so not technical yet. Because I liked the atmosphere in the UK, I decided to stay there and continue with my MSc in Finance at the University of Durham. MSc Finance can be best explained by a mix between MSc Econometrics and MSc Financial Economics. That was a big jump for me in terms of technical skills, so I had to catch up for a lot of things.

### How was your life as a student?

I really enjoyed my life in the UK, especially compared to France. Because in France it’s all very business-orientated. So you learn a lot of everything, but not in detail. Furthermore, if you compare France to the UK, it is way



less multicultural as there are mainly French students. That is probably because it’s hard for foreigners to study in French, mainly because of language issues. So what I liked the most about the UK, was the large number of different nationalities. Of course you can open a book and learn about different cultures and nationalities, but that’s not half as good as meeting someone who has been actually living in this country. I enjoyed meeting a lot of people; people who were used to be in the



army, people who were doing medical research before, and so on.

**What made you actually choose for finance?**

At first, to be honest, I have been pushed by my parents to do business since I did not know what to do (I was not very mature...). They chose this because business is quite broad, and since it would probably give me a job eventually. So I started studying business, however I thought it was a lot of 'blabla', a lot of talking. The only thing I liked in fact was finance, as there were more material figures involved. So I oriented myself towards finance. At first I did some placements within risk analysis, financial analysis for small and medium enterprises. When you do this, you have the chance to work in companies, and you see how start-up companies work. It was a bit in a comfortable situation, since I could see how the companies were taking risks, without taking any risk myself. That was when I realised that my quantitative skills were not strong enough, which is why I chose to do market finance.

**Did you come directly to Maastricht after your studies?**

I actually did not know what to do; I was hesitating between the industry on the one hand and doing a PhD on the other hand. So I took a gamble.

In 2008 I only applied to one firm. I thought: if I get in, I'm in. Otherwise, I will go for a PhD. I was not in, so I started looking for a PhD. I got a proposition for doing a PhD in the UK, but the thing is that my fiancé could not join me over there. And then I decided to come here, to Maastricht where she joined me and she graduated here in Maastricht as well. That's the reason why I ended up here. And I must say that I don't regret having done that!

**My next question was (you already partly answered it) – as you are quite young, the female econometricians among us will certainly appreciate this question – whether you have a girlfriend?**

Yes, so actually I have a fiancé. I am 27 and we have big plans, we are getting married next year, in France!

**What do you do here in Maastricht apart from teaching?**

Besides teaching, I am trying to do as much as I can since I used to do quite a lot: I used to do football, running, and so on. Unfortunately I'm skiing not enough or at least I try to, but it is so far away. Next to that, I hang out quite a lot with the PhD students, as it is one of the last moments in life where I am able to be and act like a student. Furthermore, doing the PhD takes loads of time! I have to be honest: I watch a lot of football! I follow my team, Mona-

co, tightly. And I try to travel to see my family, or I invite them to come over here for a week or so.

**Besides travelling to see your family, do you travel in your free time?**

Well, there is not a lot of time available. But, as you might know, going to conferences also means traveling. Last year for example, I went to Miami. The year before, I went to Chicago. I find it really cool to have these chances.

**If you compare the way of living in the Netherlands to that in France, what do you like and what do you dislike the most?**

On average I am positive about living in the Netherlands. If you ask me: 'Do you want to go back to France now?' I would say 'No.' since there is a reason why I came here. Sometimes I was not too satisfied with the environment in France. So what do I like about the Netherlands? Honesty! In France you have to polish every sentence that you're going to make. Everything tends to be more formal in French than in English, so you have this 'overpoliteness'. And then when you want to say something, you always need to wrap it into a certain way of making it fluent. Here, things are direct. If you have a question, you say it. Nothing which involves a lot of problems, no misunderstandings, and so on. What

else do I like? Auch, this is a tough question... Freedom! So you have this cultural freedom here, you can do whatever you want to. On the contrary, in France, there is much more social pressure. I think here you'll be much more accepted for anything you do, it's fine, it's your choice and I think that's great! The negative aspect here is maybe that the relationship between people is often driven by their very own interest, way more than in other countries. This is probably explained by the trading character the Netherlands possesses. Maybe I am biased but that is the feeling I have after having lived three years here now.

**What is your PhD about?**

My PhD, if I give you a big perspective, is about 'risk management'. So far it was not too much about finding a trading strategy or whatsoever, it was way more about measuring risk. And what I have been doing in the first part was looking at option pricing model and the methodologies around. Not too much what pricing models are doing best, but more how to compare these models, how to evaluate fairly.

**Do you have any intension to return to the 'real business world' after having finished your PhD?**

Well, that is exactly the question I am asking myself. Even yesterday I had a meeting about it but I am still not sure.



To be honest with you, the academic work is getting increasingly tough. If I compare the work I do to the work my friends, who are traders, are doing now, they do less hours and we don't get the same wage. Now imagine that I have finished my PhD, I have been working pretty hard, like you guys also are doing, but then you are in this position where you don't have a tenure. This means in three years you will have to find as many applications as you can in order to have a stable job later on. So there is a lot of uncertainty involved and I do not know whether I want to deal with that. Of course I love what I am doing, but it comes at a certain cost, and I have to ask myself whether it will be worth it.

**What do you think about Econometrics & OR and the way Macro & Finance fits in there?**

Let's start with E&OR. I actually discovered Econometrics when I came to the Netherlands. It is not widespread, I don't think you have it in the UK, nor in France, so just very few countries have it. My first impression was: I am teaching the students and I am highly impressed. Highly impressed by the level of econometrics students and what is required from them. This is an extremely high level and I think I could not have been doing that. It is really tough and congratulations for doing it! So where does Macro & Finance fit in?

Congratulations for having such great technical skills, but at some point you have to make an intuitive sense out of it. In M&F we are bringing the technical skills together with some meanings. And especially me, with my background, I am an extremely empirical person who likes to have dirty data and not too much theories. That is what I try to emphasize in the course, so getting slightly closer to real life even though you apply technical theories.

**Last question already! Do you have any advices for your fellow students in order to be successful?**

Well, I think usually you ask all the professors that have been quite successful in their lives. But I am in a very early stage of my career so it's hard to say whether I am successful or not. I actually don't think I am successful yet. I think finishing this course is one part of the task and you already made that choice, all Econometrics students in fact already made that choice. So well done, congratulations, but keep working! But at the other hand, always try to ask yourself: 'Am I really enjoying this?'. Maybe it looks a plain comment but you will realize that in the long-term it does really matter. You can try to do something you don't like for three years maybe, but certainly not for eight years or even longer.

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# Landelijk Econometristen Voetbal Toernooi 2013

by Nadja Herbst

**On Thursday, September 19, it was up to SCOPE | Vectum to organize the LEVT, landelijke econometristen voetbaltoernooi. This year it was held in Elinkwijk, a sport centre near Utrecht. We faced competitors from Groningen, Amsterdam, Rotterdam and Tilburg.**

When I signed up for this event, I did not know what to expect exactly. During one of the first lectures of this year the board of SCOPE | Vectum informed us about this tournament. The moment I heard the word ‘football’ I was sold, I decided to sign up for the LEVT. If it is football, it can only be fun, I thought.

It started rather early, we took the train at 8.30 in order to be in Elinkwijk on time. In the train we had still 2 hours to discuss the best tactics, get a good breakfast and to get ready to win! During the train ride I already got to know a lot of new people from higher years. When we arrived in Utrecht, we were guided to the right bus. We arrived at Elinkwijk and faced some of our competitors. In the so called “Vectum-toeren” we received our red LEVT T-



shirts, and it was time to get dressed appropriately for the matches. SCOPE | Vectum was represented by 4 teams this year: “Het Vectum meisjesteam”, “Rood is geen roze”, “Rood is het nieuwe roze” and “Het beste team”. As the name suggest, you might think that “het Vectum meisjesteam” consist of only girls, but actually I was the only girl playing in this team. After some proper warming up, we were ready to win the cup!

It was time to start. My team had to play the first match. We were confident that we would win. But unfortunately, we already lost our first match. The schedule was made in such a way that there was always one match to play and then a little break. So after our first match, we went to cheer for the other teams.



After a couple of matches, which we unfortunately all lost, it was time for the lunch. Again this was a great opportunity to get to know the other players a bit better. After the lunch it was time for the second round. We still had some matches to play, and we were determined to win them. Fully recovered from the first couple of matches we started the second round. But also here we faced some minor difficulties. We again lost our match, and on top of that, Dennis got injured. We now also missed one of our players. Luckily, as SCOPE | Vectum is one big family, we got some help from other teams. At the same time, the other teams were also losing their matches.



In the meantime, SCOPE | Vectum decided to add something new to the tournament, the Deloitte Penalty Shootout. Every team had to go to the Deloitte field once. Every team had to shoot 5 penalties, while the goalkeeper was a employee of Deloitte.



The two associations who scored the most on average had to play in the big finale. VSAE and Kraket were the lucky ones. Both scored the most on average, after the final penalty shootout the winner was determined. VSAE won!

In the meantime the last matches of SCOPE | Vectum were played. We finally won a game! Unfortunately, this was not enough to get in the winners group. My team was out of the competition. It was time to shower, and cheer for the only team of SCOPE | Vectum that got to the next round, “Het Beste team”. Since they did not expect that they would still have to play a game, some of their team members were already in the showers preparing for the BBQ, members of the crew and members of other teams were very happy to help them out. They won via penalties! Unfortunately this was only for the 5th place. Nevertheless, they were happy with their victory! Then it was time for the big finale! It was up to the



“Amsterdamsche Godezonen” from VSAE against “Simplex the Best” from Kraket to win the cup. After an exciting match it ended in a win for the “Amsterdamsche Godezonen”. Again VSAE won. They had to bring 2 cups back to Amsterdam.

It was time for the third Part. After such an exhausting day the beer and BBQ tasted great. It became a great evening; we laughed, drank, and chatted with the other teams. At the end of the night we still had to get our train to get back to Maastricht. We were happy that we could sit for 2 hours and give our legs some rest.

All together, it was a great day! Whether you like football or not, it is a very nice day and I would definitely advice all people to go next year!



# Studying Down Under

## Exchange Semester in Brisbane

by Maartje Keulen

After hearing all these awesome stories about studying abroad, I could not wait to go. From the beginning I knew I wanted to go to Australia: nice weather, an English speaking country and beautiful nature. Therefore I was really happy when I heard I was allocated to QUT in Brisbane!

At the 4th of July I left to Bangkok together with Bas, a fellow econometrician. This week was great, shocking and impressing at the same time. As I left directly after the skills period, I did not have time to do any research about Bangkok. I expected it to be different from Europe, but this huge city and its totally different culture overwhelmed me. There are people everywhere, they approach you all the time and you do not know if they want to help or trick you. People are living, cooking and selling things at the sidewalks, it smells everywhere, the food is different and the weather is too hot to do anything. This is basically how I thought about Bangkok after walking around there for two days. After spending a day at the swimming pool and recovered from the jetlag I got more used to this crazy city. I started to appreciate all the beautiful temples,



markets and great experiences the city has to offer. This was definitely a good start of my exchange!

I arrived in my hostel in Brisbane on a Friday, which meant I had to wait the whole weekend before I could go to university. I did not have a room yet, so I tried to use this weekend to find one. That did not really work out. I gave up after I missed most of the viewings on Saturday because I got lost all the time. I decided to buy a sim card with internet instead and waited until Monday to find an accommodation togeth-



er with QUT. Since then, life has been totally awesome. On Saturday evening I met some Norwegians at my hostel who happened to be exchange students at QUT as well. A few days and some parties later I was sharing a room in a big student house with one of them. I think this is the best decision I have ever made. We are living together with 24 exchange students, mainly Europeans. There are always people to hang out, eat or travel with and it is like we are just a big family.

Brisbane is a really nice city to live in. People are extremely relaxed, friendly and always willing to help. The facilities are even better than in the Netherlands. Some examples are the barbecues in every park which you can

use for free, and an artificial beach and swimming pool at the riverside in the middle of the city. Although I arrived in the middle of the winter, it has only been sunny and above 20 degrees since I got here. I must say, it was not that hard to adapt. In my first month I almost got hit by cars a couple of times though. Cars drive on the left side, and it took me quite a while before I got used to looking to the right when crossing a road. Another thing that I am still not used to is that there are weird animals everywhere: possums and lizards in our garden, pelican look-a-likes waddling around at campus and birds that sound like monkeys. I am afraid to ride my bike because magpies regularly attack cyclists and peck at their face and eyes to protect their nests. And not



to forget: the animals you have to see when you visit Australia. At the introduction camp from university I saw the first wild kangaroos, and last week I finally spotted some koalas and wallabies as well.

Brisbane is a good location to travel from, and this is basically what I have been doing during the 2,5 months I have been here now. We make trips almost every weekend and I have already seen many beautiful places. In the introduction week QUT organized an introduction camp for exchange students at Stradbroke Island. This was a great way to meet new people, get a first impression of the beautiful nature Australia has to offer and we even had our first surfing lesson! It is quite hard, but you should definitely try it if you have the chance! It felt awesome when I finally managed to stand on my board.

The next weekend we went to Surfers Paradise with a big group of exchange student and we tried to surf again. It turned out to be much harder without the help of the surf dudes, but it was still fun! A week later we made a day trip to a rainforest close by, we organized a awesome house party with 150 exchange students partying in our house and we went to an Australian football game. Although I did not understand that much of the rules, it was still fun to watch some big guys running and tackling each other.



I skipped some classes to join the Red Frogs trip to Fraser Island, the biggest sand island of the world. This trip was unforgettable! We camped on the beach for four days and saw wonderful things. It was the first time I spent time with locals, which was pretty awesome as they knew exactly what to do and where to go. On our first day we drove through sand along the ocean for hours and saw a fisherman catching a shark from the beach. Now I can say I touched a living shark!

During the rest of the days we also saw whales, dolphins, turtles, stingrays and dingoes. We did some swimming in a creek and in lakes, some sand boarding at sand mountains, some fishing and ate the fish we caught. In the next weekends I spent some days at the beach at Coolangatta (few hours south of Brisbane) and Noosa (few hours





north), where we did some hiking along the coast as well. We got tickets for the rugby game Australia against South Africa in Brisbane. It was totally different from a soccer game in Europe: the stadium was totally sold out, but everyone was just watching the game silently.

Another great experience was the weekend I spent at Moreton Island together with nine housemates. We just went on the ferry with some tents, can food and 10 liters of water per person and camped a few nights on the beach. It was awesome to snorkel around the shipwrecks to see thousands of exotic fish, so I cannot wait to see the Great Barrier Reef! One day we hiked inland to climb the highest mountain of the island. It was extremely hard to walk

in the loose sand and the heat made it even more exhausting, but the view on top of the mountain was totally worth everything!

In the evenings we could watch the dolphins catching fish: amazing how fast these cuties are. Last weekend I saw a totally different side from Australia. We rented two cars and drove with ten people to Lamington National Park, a rainforest in the mountains in the Gold Coast hinterland. We hiked there for three days in between colossal trees, listening to funny birds, passing impressive waterfalls and being afraid for snakes. I finally saw a koala and wallabies, so I can actually say I have been to Australia now.

In between all these trips I actually also have to study sometimes. I did not

really think about the university itself when choosing for QUT, I chose for Brisbane. I turned out to be lucky, as the courses at QUT are ridiculously easy compared to Maastricht. I was able to schedule all my classes on Tuesdays and Wednesdays, so that explains why I have plenty of time to travel! I already handed in all assignments for the rest of the semester and I passed my midterms. As the Spring break is coming up it is time for our first big trip: a road trip along the East Coast for two weeks. We rented a camper van and will drive down from Cairns to Brisbane and visit the Great Barrier Reef, the Whitsunday Islands and all other places we find interesting. When I come back I will leave immediately

again to Melbourne and afterwards I have only one week of school and the final exams in November left. Time is flying!

To all first and second year students in Maastricht: Look forward to your study abroad, it will be an amazing experience in which you will develop yourself in other ways than just your academic skills.

Looking forward to seeing you all in the Preuverij in February!



October 2013

# Upcoming Events

## *October 29<sup>th</sup>* **Research Lecture & Block Drink**

On October 29, SCOPE | Vectum organizes its second research lecture of the year. Afterwards, we will go to the Preuverij for our usual block drink together with the other SCOPE associations.

## *November 5<sup>th</sup>* **Pubquiz**

We will form teams and find out who can win the title!

## *November 12<sup>th</sup>* **Karaoke Evening**

Show us your singing skills. Are you the new Robbie Williams or Beyoncé?  
Or maybe the new Justin Bieber?

## *November 19<sup>th</sup>* **Cycling Dinner**

By bike you will visit several places where you can enjoy different courses prepared by our members.

## *November 28<sup>th</sup>* **Winterball**

SCOPE, along with the other study associations is organizing a huge gala for everyone at the SBE! More information will follow soon.

## *December 3<sup>th</sup>* **Ice Skating**

We will go Ice Skating at the Vrijthof and get into the Christmas spirit!

*Dates may be subject to changes.*

*Please check [www.scope-vectum.nl](http://www.scope-vectum.nl) for updated information and subscription forms.*