This special issue of TI Magazine is one very tangible way that Tinbergen Institute is celebrating its 25th anniversary. By its nature, an anniversary seems to call for reflection, taking stock, looking back and looking forward. And as it is generally agreed that it’s hard to escape the call of nature, we at the editorial board have decided to just graciously give in. We hope that you will enjoy the result in the pages that follow.

The previous anniversary issue provides a beautiful account of the history of Tinbergen Institute up to 2007 – stretching back to the mid 1980s, when plans started to take shape to found an interuniversity institute. It describes at some length the fight for power between the three participating universities, the obstacles its founding fathers encountered, the delicate choice of location, and the incredible dedication of TI’s staff and directors to make it all happen. Also detailed are the developments that followed, including the evolution of the criteria for becoming a TI research fellow and the start of a two-year program of coursework as the first part of a full-fledged PhD program.

This anniversary issue provides an account of how the graduate program and the research institute have developed further over the past five years. But beyond this, we also wanted to present some interesting and important dimensions of the full 25-year history of Tinbergen Institute. We thus invited a total of 25 people, including (former) directors, staff, (honorary) fellows and alumni to share with us their views on TI, or to send us some anecdotes. We identified 25 papers written by former or present TI fellows that have been cited many times, and we asked the authors of ten of these papers to reflect briefly on their paper. We’ve had a careful look at our database, with information on TI’s more than 500 alumni, and have compiled a number of interesting statistics. All this, and much, much more, is covered in this issue. We hope that reading it gives you a sense of what has been accomplished thanks to fellows, lecturers, students, staff, the members of TI’s various boards, and the administration of the three Schools.

We are very grateful to the staff of TI for providing us with the data needed to write a number of the features in this TI Magazine. And by the way, if you enjoy reading this issue perhaps you should consider joining the editorial board.

The editorial board
A short history of recent changes at Tinbergen Institute

This special issue of the magazine would be incomplete without a brief history of recent changes at Tinbergen Institute. This account is organized around three themes: resources, quality and visibility.
Finally, and again around the same time, Barclays was considering taking over the ABN-AMRO bank. As part of the takeover, the UvA would get a substantial amount of money to strengthen its position in Finance.

Depending on whom you talk to, the details of what happened next differ somewhat. But it is a fact that Barclays did not take over ABN-AMRO, and that the financial industry was quite pleased with the idea that a financial education and research institute would be able to use the strong reputation of an established institute like TI with ample experience in providing graduate training. Kremers had also taken steps to ensure that the city of Amsterdam took an interest in the initiative. A tangible outcome of this interest was that the city offered to assist in finding and securing an appropriate location. Thus, when the Duisenberg school of finance (DSF) was set up as a joint initiative of HFC, the financial industry and four Dutch universities (EUR, UvA, VU and Tilburg), it was also decided that TI would be responsible for the organization of a PhD program in finance. By the time a final decision was made on the location (the newly developed Zuideras in Amsterdam), years had passed, and Janssen had already been succeeded by Herman van Dijk. Dirk Schoenmaker became the dean of DSF.

The agreement signed by DSF and TI was ambitious: DSF would contribute substantially to the financing of five cohorts of in total 36 PhD students, including their educational program, thereby spearheading Tinbergen Institute’s graduate program in finance. The total value of the contract covering 2008-2012 exceeded 5 million euro. Such an ambitious program required special attention, and a Director of Graduate Studies (DGS) for the Finance program was sought. Andre Lucas of the VU became the first DGS of the Finance program. Erik Plug, of UvA, succeeded Jaap Abbring as the DGS of the Economics program.

The financial crisis hits TI
One of the many repercussions of the financial crisis that started in 2008 was that the ambitious plans envisioned became increasingly difficult to realize. DSF struggled to find new industry sponsors, while existing sponsors reconsidered their contributions. As a result, in February 2011, TI received a letter from DSF announcing that DSF would have to substantially reduce the annual contribution – per immediately. Reiterating that DSF was committed to a long-term partnership with TI, the letter also stated that DSF aimed for a return, eventually, to the original level of contribution.

This was an unpleasant surprise. Bauke Visser had been the new general director for just over a month, and also the chairman of TI’s Supervisory Board, Coen Teulings, was newly appointed. The signatories of the letter, Jos Streppel and Dirk Schoenmaker, were invited to provide additional background information, and a meeting was arranged at Teulings’ office in The Hague. Streppel, chairman of DSF’s Supervisory Board, described in greater detail the severity of the financial situation, and explained that DSF deeply regretted these drastic cuts, but considered them inevitable. They emphasized that these cuts should be considered as temporary measures. After the DSF delegation departed, Teulings and Visser reasoned that if somebody like Streppel – a former CFO of a large insurance company – said that he was unable to secure additional funding from industry, then getting the funding must be nigh impossible. Meetings then followed
TI’s mission is to further improve the quality and international visibility of the research conducted at its three founding faculties.

with the deans of the three TI faculties, with the board of directors and the supervisory board of TI. Visser continued his discussions with Schoenmaker. These talks led to some reduction in the cuts. In the end, Tinbergen Institute accepted the (reduced) cuts for 2011 and 2012, on the condition that DSF would renew the contract after the expiration of the original five-year contract, and that the annual value of the new contract would be at least 1 million Euro. The letter that was sent to DSF explained that as a result of the cuts, TI could only accept six students for its Finance MPhil program, and it concluded that such a number was considered to be the minimum to ensure a viable, dedicated MPhil program in Finance. By the summer of 2011, the net outcome was a smaller MPhil program in Finance, and lingering doubts in the minds of some people about whether this really was the end of contract renegotiations.

**TI-Amsterdam on the ZuidAs**

In the meantime, other problems had to be addressed. The decision to move TI’s Amsterdam office from the Roeterstraat to the ZuidAs was not uncontroversial. Throughout the second half of 2010, TI staff members in Amsterdam had spent extraordinary amounts of time preparing the move to the recently completed Symphony building. Nevertheless, operational problems of all sorts continued to emerge well into the spring of 2011. Moreover, some groups of fellows, especially those at the University of Amsterdam, were opposed to moving the location of their seminar series from the Roeterstraat to the outskirts of Amsterdam. Of course, it was rather odd to require the experimental and behavioral economists of CREED, based at the UvA, to hold their seminars at the ZuidAs, as there was no experimental group at the VU. Why compel them and the seminar speaker to mount their bikes or take the metro to a venue some considered to be a “forlorn place for bankers and lawyers”?!

In the end, TI decided that it would continue financing seminar series in Amsterdam, even if they were not held on TI premises – but only in situations like CREED, where there is no clear counterpart at the other university with a similar research interest. As a result, TI stopped financing the finance seminar led by UvA-based fellows, as they refused to move their seminars to the new premises. The VU-based TI fellows in Finance integrated their TI seminar activity with the DSF finance seminar series. The result was a well-running seminar series organized every Wednesday on the shared TI–DSF premises. Although a few students who had known TI’s previous location were not immediately won over by the obvious advantages that the new location offered in terms of facilities and space, Tinbergen Institute students nowadays are very enthusiastic about the new premises.

**Reducing risks**

January 2012 proved that the skepticism of some had been justified. DSF sent a second letter, stating that its Supervisory Board had decided to further cut its contributions to TI. Although the contribution of DSF remains very substantial, even after the cuts, the fact that this was the second time that DSF decided to revise the terms of the contract made one thing clear to TI’s management: a fundamental change in the nature of the contract with DSF would be necessary. As TI (the faculties, really) had been using the DSF contribution to pay for grants and salaries, it faced something akin to a maturity mismatch: long-term liabilities that were being financed by an income stream that might change considerably in the short run. To reduce the associated risk, TI and the deans decided not to accept new groups of students for its MPhil program in Finance from September 2012 onwards, and to use the contributions of DSF first to finance their existing commitments. This essentially meant that the separate MPhil program would be terminated. Instead, in the future, TI would organize a series of field courses in Finance. Moreover, only when sufficient money had been obtained to completely finance DSF’s part of a PhD position in Finance would a new PhD position be made available. These developments were very unfortunate, as a great deal of energy had been poured into the venture by a number of persons over several years at TI and DSF to expand the number of PhD positions in Finance.

TI depends on several sources of funding. Grants from DSF and NWO are a second important source of funding over and above the money provided by the three faculties participating in TI. In 2011, Tinbergen Institute successfully applied for a large NWO Block Grant to finance five PhD positions. The Directors of Graduate Studies have been able to use the combination of these funds to design a system of grants to attract a steadily increasing number of highly talented students.

**Visibility and Quality**

TI’s mission is to further improve the quality and international visibility of the research conducted at its three founding faculties. Traditionally, this involves offering a graduate program, setting quality standards (in terms of publications for researchers at the three faculties), and organizing an array of activities for those that are selected as fellows.

**Graduate Program**

The organization of the graduate program is one of Tinbergen Institute’s core activities. The DGS is the academic leader...
Faculties now hire more extensively on the international market. As a result, junior faculty who become TI fellows often do not know TI, and typically have only limited knowledge of the fellows with whom they share research interests.

of the graduate program. Over the past five years, his (thus far, only men have taken on this role at TI) responsibilities have ranged from leading the selection process to overseeing the placement process – and everything in between. When TI started to organize an MPhil in Finance, it was clear that a second DGS was needed. Erik Plug became the DGS of the Economics program and Andre Lucas of the Finance program. Well before the end of their terms, both decided to step down, citing the workload as an important reason. This left Herman Van Dijk, who had succeeded Maarten Janssen as the general director, with the task of identifying two new DGSs. Ton Vorst, a professor of the VU who had been a member of TI’s supervisory board in the past, was willing to take up the position of DGS of Finance, while Adriaan Soetevent, of the UvA, became the new DGS of Economics.

New Initiatives
Under their direction, Tinbergen Institute initiated further improvements to the quality and scope of the graduate program. The International Peer Review Committee led by Richard Blundell wrote an important report as part of TI’s re-accreditation process in 2009-2010. One of the recommendations of this Committee was to address the differences in standards used for doctoral work. Although the graduate program with its two-year MPhil program of academic courses had been in place since 2003, there were still people at the faculties that wrote their dissertation under appointment in the traditional Dutch four-year “AIO” position instead of in the new Masters/PhD construction. While fairly uncommon at the University of Amsterdam, quite a number of these appointments were still available at the VU University Amsterdam, and especially at Erasmus University. TI has recently increased its efforts to ensure that these students also participate in a structured way in TI’s educational program. Starting September 2012, TI will offer these “old-style” PhD students the opportunity to participate in a limited program of PhD courses that will lead to a TI Research Qualification. This program is tailor-made to the needs and educational background of individual students, while maintaining some of the key characteristics of the full-fledged MPhil program, such as intense training in the core of economics and specialization in a major field. This is in line with the Blundell committee, which noted that “despite having a long tradition, the single year masters is not sufficient for a PhD study at TI” and recommended that “the practice of PhD students following a selection of additional courses from the MPhil program should be enhanced and formalized”.

A Fast Track for Selected Students
Starting in September 2012, TI offers a new route towards an MPhil degree – available for the best research-oriented MSc students in econometrics at the three TI faculties. This Fast Track program allows selected students to participate in courses offered by Tinbergen Institute in their MSc year and to complete the full MPhil requirements in one additional year. Last but not least, TI has recently developed – together with some of its fellows – an honors course for Bachelor students in the three faculties, in order to arouse their interest in economic research at an early stage.

Job Market Preparation
Following the recommendations of both the Jorgenson and Blundell committees, TI also started to step up its efforts in the realm of job market preparation and placement. Wouter den Haan, Giovanni Facchini, and currently Jose Luis Moraga, have all led this process with the help of the DGS and the TI office. Although it is too early to measure the impact of these efforts, Tinbergen Institute is utterly convinced about their importance.

Research Institute
Tinbergen Institute is also a research institute, and has taken several steps in recent years to strengthen the focus on the quality of research carried out by TI fellows and to increase visibility in the academic community. In this connection, TI recently revisited its fellowship requirements. Not so long ago, discussions as to qualifications of fellows had been limited to measuring their output according to the specific journals on the TI journal list. The list – and the inclusion, promotion or demotion of the journals on it – had become all-important. By 2011, it was deemed necessary to reconsider the requirements more fundamentally. One of the most important changes at the participating faculties is the growing presence of tenure track positions. This led to a re-definition of the TI candidate fellowship: everyone in a junior position and working in economics, econometrics...
and finance could join TI as a candidate fellow. A second important change is the growing importance of the international job market in the faculties’ hiring process. To be successful in the international market, a further emphasis on research impact and quality is essential. This point was also raised by the International Peer Review Committees led by Blundell and Jorgenson. As a result, it was decided to limit the number of publications that could be submitted to five. Moreover, “acceptable” journals were no longer classified as either AA, A or B, but by their Article Influence Score (AIS). This measure of impact had recently been introduced by the VU University Amsterdam in its own research evaluation process. The advantages of using this method included removing a degree of subjectivity that had always characterized the division into three categories, the fact that these scores tried to take into account differences in citation behavior between different areas, and the ease with which new journals and journals from other fields could be included. But where the VU had decided to virtually get rid of the differences in journal scores (and to keep only their order), the outcome of the various meetings Bauke Visser held with TI’s Research Council, deans and Supervisory Board was that TI would keep these differences.

The Changing Composition of TI’s fellow base

Traditionally, many PhD students at the three faculties had also done their undergraduate studies at the same faculty. Moreover, a substantial share of new faculty had done their PhD at one of the three faculties. As a result, new fellows were acquainted with TI and knew most of the other fellows. Over the years, however, these patterns have changed. Most students that enroll in the TI program nowadays come from distant places. Faculties now hire more extensively on the international market. As a result, junior faculty who become TI fellows often do not know TI, and typically have only limited knowledge of the fellows with whom they share research interests. An obvious task for TI is then to make sure that new fellows attain a certain visibility in TI’s community of students and fellows. TI intends to continue pursuing this aim through several avenues: better information on TI’s website, development of a regular newsletter, and annual meetings of (junior) fellows with similar research interests. Some of these tools can also be used to present the new students to the fellows. As not all TI fellows teach in the MPhil program, many fellows do not have easy access to information about the research interests and qualities of the students.

Strengthening the Organization

Because Tinbergen Institute is an inter-university institute, the demands on TI’s administration and management have typically been substantial. Unfortunately, its organization and (information) systems have sometimes had to struggle to meet these demands. When Visser became the general director at the start of 2011, one of his decisions was to focus part of TI’s energy on strengthening the internal and administrative organization, and the relations that TI has with its three founding faculties. A number of actions were taken, including the one-year appointment of Margaretha Buurman of the EUR to address a number of specific organizational issues, a structural increase in the personnel budget of TI, and attempts to align some of TI’s processes with those of one of the three faculties. Such measures were clearly needed to make sure that TI’s organization could continue supporting an exceptional graduate program and to increase the visibility of its research fellows.

Conclusion

Many of the challenges that Tinbergen Institute has encountered along its path in recent years stem from the fact that the graduate program it offers is already of very high quality – a “luxury problem”, some might say. As the IPRC led by Blundell wrote in their 2010 report, “The committee found the graduate program to be excellent. It provides teaching and research training at a level equivalent to leading institutions worldwide”. To take the program the next step further, then, requires constant energy and dedication. The same holds true for the research environment TI offers. Luckily, the IPRC also noted that the most important stakeholders, including PhD and MPhil students, Research Fellows, TI Directors, TI Board members and the Deans of the three parent universities, showed, without exception, an “extremely positive attitude towards TI,” and expressed “a strong desire to work together in consolidating the important achievements of the TI and take the institute to an even higher position at the world stage”.
In his book *Images of Organizations*, Gareth Morgan presents a fascinating account of the many different ways in which organizations can be viewed. It is enriching to collect different perspectives of an organization, and to arrange the various views next to each other in order to get a better understanding of the organization. While there is typically one official history of an organization, there are many personal ones.

For this special issue of *TI* magazine, we approached 25 persons and asked them to provide a brief overview of their current or past activities at Tinbergen Institute, as well as one or two anecdotes or recollections. This collection of personal accounts shows that TI has become what it is today thanks to the dedication of many different people to one common cause: stimulating high-quality research through collaboration among three universities. Below, you’ll read accounts written by (former) directors, board members, staff members, honorary fellows, and current fellows who are TI PhD alumni.

**Directors**

Every organization needs its figureheads. For Tinbergen Institute, the general directors and directors of graduate study (DGSs) have fulfilled the role of representing TI to students, faculty and media alike. During the past 25 years they have also played a major role in determining the direction of TI as both a research institute and a graduate school. This section contains the recollections of TI’s longest-serving general directors and DGSs.

**Herman van Dijk** was general director of TI in 1992-1993, in 1998 and from 2008 to 2010, and served as chair of the board of directors from 1993 to 1998. Currently, he is professor of Econometrics at VU University Amsterdam and emeritus professor of Econometrics at Erasmus University Rotterdam. He is also an honorary fellow of Tinbergen Institute.

“Tinbergen Institute can be characterized as an excellent graduate school with instructors selected from the participating institutions because of their cutting-edge research. Such an accomplishment could only be achieved in the Netherlands by combining the talents of three publicly funded universities. This has enabled TI to play a major role in the European ‘Champions League’ of Schools of Economics. A future challenge facing TI is to improve frontier research: for instance, by establishing more permanent links with the professional world – such as the link with the Duisenberg school of finance. Starting up and stimulating the growth of TI’s Graduate School has been a pleasure and a challenge that I have shared with many people. I name but a few: my colleagues Jan van Ours, Rick van der Ploeg, Ton Vorst and Adriaan Soetevent – and TI Board members Jeroen Kremers, Jean Frijns and Casper de Vries.”

**Jan van Ours** was DGS and scientific director from 1993 until 1998. Currently, he is professor of Labor Economics at Tilburg University.

“I left Tinbergen Institute a long time ago. Good memories remain – well, mostly good, in any case. I remember one Sunday afternoon during which a whiteboard at the Keizersgracht in Amsterdam gave birth to four research themes. That was sort of the start of the successful institute as we know it today. However, as it is commonly known, success has many fathers, while failure is an orphan. Looking back, I think that the history of TI resembles the tale of Baron van Münchhausen – in which he pulled himself out of a swamp by his own hair. Painful, but he did not have much of a choice.”

**Maarten Lindeboom** was DGS from 1998 to 2003. Currently, he is professor of Economics at VU University Amsterdam.

“Before my appointment in 1998, Jan van Ours had already restructured TI in such a way that it was ready for a full-fledged US-style graduate program. While we all had the intention to do this quickly, it took us more than three years to put together a two-year program that looked like the current one. It was a fun time, during which we had to convince the Deans to...”
give us more money, the lecturers to adapt to the new standards and the students to work hard—very hard. The last part was not too difficult, even though we initially faced a student revolt ("The program is too demanding!!").), led by my own (highly valued) PhD student. At this time, it was not uncommon for me to enter the office at around 10am (when tenured professors arrive) to see the pale faces of students who had worked all night. Most of them currently hold excellent jobs, some at prestigious research institutes. I am proud that I was given the opportunity to be part of this.”

Maarten Janssen was general director of Tinbergen Institute from 2004 to 2008. Currently, he is professor of Microeconomic Theory at the University of Vienna.

“In 2004, when I joined as a director, TI already had a structured PhD program but it did not have regular scholarships for research master’s students. This placed Tinbergen Institute at a comparative disadvantage vis-à-vis competing programs in Europe. The attribution of TI fellowships based on research output was already in place, but also showed some defects. Young researchers focused so much on the TI journal list that some tended to substitute quantity for quality. As Dale Jorgenson rightly remarked at the time, tenure appointments at Harvard are not driven by quantity, but are based on whether the researcher has made a significant contribution to his or her research area. When Nobel laureate Clive Granger received a part-time appointment at Erasmus University, I had to evaluate whether he could become a TI fellow. Based on his research output, the answer would have been “No”. I really appreciated at the time that we had just created an alternative channel to become TI fellow based on overall achievement.”

Board Members
The success of every organization depends on the willingness of its members to contribute to public goods. Members of TI’s supervisory board, board of directors, admissions board and educational board have worked tirelessly on advancing TI’s causes and ensuring a high level of performance in students, directors and research fellows alike. This section provides the recollections of the board members who have spent the most time as member of one of these boards over the years.

Coen Teulings was general director of Tinbergen Institute from 1998 to 2004. Currently, he is chairman of TI’s supervisory board, professor of Economics at the University of Amsterdam and director of CPB Netherlands Bureau for Economic Policy Analysis.

“Being director of Tinbergen Institute—a joint venture of three universities—was an interesting experience. Suppose you had just had a successful meeting with the three Deans. In order to obtain a written confirmation of the decision, you needed to write letters to each university. To the VU you would write: “Dear Dean, on our last meeting we decided ABC. Can you please reconfirm this decision?” A week later you would receive a confirmation. This wouldn’t have worked for UvA—a reply would never have come). Hence, you would have written: “If we don’t receive a letter to the contrary by next week, we will assume that you agree to this interpretation.” To EUR, ‘the enterprising university’, you would write: “EUR can benefit from this decision, and Tinbergen Institute is happy to support you.” Within a week you would get a phone call asking whether the whole thing had already started.”

Maarten Janssen was general director of TI from 2004 to 2008. Currently, he is professor of Microeconomic Theory at the University of Vienna.

“...”

Frans van Winden is a co-founder of TI, and served as a co-director and a member of TI’s supervisory board from 1987 to 1992. Currently, he is professor of Economics at the University of Amsterdam.

“In trying to find a place for TI, I remember several site visits in 1990 to beautiful estates where we imagined a lot of intellectual buzz, ’esprit de corps’ and revolutionary ideas would arise! Alas, it has thus far never materialized, but who knows...

I also cherish a memory of a meeting in the famous brown pub in Amsterdam (Hoppe) together with the chairman of the Board of the UvA, pleading for support for Tinbergen Institute. Although the Dutch, and certainly people from Amsterdam, are not very fond of any pomp, even for us this was an unusual place to meet officially. The reason for the change in venue was that we were kept outside of the University building by dissatisfied students who had just occupied it. Fortunately, this move served us well—as the Board agreed to financially support our initiative!”

Frank den Butter was a member of the supervisory board and the board of directors from 1989 to 1996. Currently, he is professor of Economics at VU University Amsterdam.

“When, in the early 1990s, Tinbergen Institute’s graduate school had to be transformed into a research institute in order to qualify for official recognition as a “research school” by the Royal Netherlands Academy of Arts and Sciences, a good acronym and name for the institute was needed. My proposal was to focus on the disciplines of Jan Tinbergen’s expertise. So I suggested ‘Tinbergen Research Institute for Policy and Development’, with TRIPOD as acronym. It would have been a good trademark for the Institute, nicely referring to the three participating universities. However, our francophone member of the board, Jean-Marie Vlaene, challenged my
Rotterdam had plans to start a top-notch school in the Netherlands; it has a strong reputation in the world, has an excellent staff and excellent students, and can and should compete with the best. This requires TI to be more than the sum of the three faculties. All in all, TI has made good progress and is well positioned for the future.

**Staff Members**

No organization has ever been successful without a committed support staff. Tinbergen Institute’s staff members have been instrumental in facilitating the transformation of TI into what it has become today. Since the start of TI, there have been 24 staff members who were employed at TI for at least two years. This section highlights the experiences of some of the most experienced staff members, who have seen many generations of students, directors and fellows come and go.

**Jan Willem Gunning** was a member of the board of directors from 1996 to 1998, of the supervisory board from 2002 to 2008 and of the admission board from 2004 to 2008. Currently, he is professor of Development Economics at VU University Amsterdam.

“Tinbergen Institute now is a remarkably successful institution, but it took a long time to get there. For quite some time it was not clear what exactly TI was supposed to do, and whether it could become an attractive alternative to the NAKE network for graduate teaching.

We have come a long way in the last fifteen years. I see two crucial changes: the introduction of the MPhil program (a well-structured teaching program at an international level, which none of the departments could have offered individually) and high entrance requirements combined with a more rigorous process of admission. The Admission Board played an important role in this. The high standards set by TI have made it very attractive for outstanding students, both from The Netherlands and from abroad. Increasingly, we are able to be very selective because we have acquired an excellent reputation: TI has become a brand name.”

**Joop Hartog** was a member of the supervisory board from 1998 to 2004 and of the admissions board from 2004 to 2006. Currently, he is emeritus professor of Economics at the University of Amsterdam.

“TI was initiated as an attempted coup from the banks of the river Maas. Rotterdam had plans to start a top-notch graduate school by adding selected scholars from other universities to the cream of their own crop. They met resistance in Amsterdam: lending your top teachers to Rotterdam would leave Amsterdam second rate. A joint venture between Rotterdam and Amsterdam proved more viable. Tilburg tried to escape the trap by securing a big grant in The Hague and started a national network. I vividly remember the confusion, the debates, the strategic games that were played and the choices that had to be made – with UvA faculty divided between those who wanted to participate in Tinbergen Institute, those who wanted to participate in the national network and those who felt left behind. Remarkable in what chaos a world-class institution was born. As if, after the roaring rumble of the waiting audience, dashing against the harsh discordant noise of tuning up, the silence graciously filled with a high and elegant symphony. Bravo!”

**Jeroen Kremers** was a member of TI’s supervisory board from 2001 to 2011. Currently, he is vice-chairman and chief risk officer at the Royal Bank of Scotland NV.

“When I joined the Board in 2001 my interest focused on TI’s strategic ambitions. The Netherlands ranks amongst the richest and most competitive countries in the world, with a prominent academic tradition. Thus, Tinbergen Institute should strive to be amongst the world’s top economics schools – no less than that. This has not always been easy. I recall hearing one of the Deans of the TI faculties who (when talking about TI’s ambitions) drew a parallel with the Rotterdam football club Feyenoord, which ‘consistently fills its stadium but would never again win the Champions League’. I disagree with this analogy. Tinbergen Institute is the top school in the Netherlands, it has a strong interaction takes place.”

**Elfie Bonke** was secretary at TI Amsterdam from 1993 to 2000. Currently, she is secretary for the department of Spatial Economics at VU University Amsterdam.

“Looking back, I remember a PhD student from Sri Lanka who was going to meet his supervisor for the first time. He wanted to ‘dress to impress’, so he bought himself some new clothes. After the meeting with his professor he returned to TI. Proudly he showed me his T-shirt with an imprint of the national plant of Sri Lanka. ‘I was so lucky to find this in Amsterdam,’ he said. ‘You might be mistaken’, I replied. ‘That is a Marihuana plant’. The student nearly died of embarrassment – though he should not have worried. His professor probably just smiled at the ‘intercultural goof’. It’s a fine illustration, actually, of how Tinbergen Institute provides an opportunity to learn from each other beyond academics – creating a place where friendships develop and supportive interaction takes place.”
An experience that marked my time at TI in the early nineties was the conversion from typewriters to word processing. Letters used to be dictated and newsletters sent by mail. Communication wasn’t always up to date. What a difference technology has made!

In its early history, TI Rotterdam was on the move. From Woudestein campus to Oostmaaslaan – and then back again. It seemed as if packing and unpacking were essential parts of the job description. It now looks like TI has become the hub at the Erasmus School of Economics."

Arianne de Jong has been working for Tinbergen Institute since 1997. "In 1997 I was invited by Jan van Ours and Herman van Dijk to join Tinbergen Institute. I decided to take the chance and have (almost) never regretted this decision. TI is and has been at the forefront of several academic developments in the Netherlands, and is constantly on the move. This leads to a lively working atmosphere where staff members together with the Directors are challenged to take bureaucratic hurdles and where tasks and duties have evolved during the years. This, together with the day-to-day contact with ambitious and enthusiastic students makes working at TI never boring.”

Carine Horbach was secretary at TI Rotterdam from 1998 to 2006, has been student affairs officer at TI Rotterdam since 2006. "Having joined Tinbergen Institute in 1998, I’ve been working at TI for more than 14 years. It doesn’t feel like such a long time, though, as there have always been developments and changes in tasks. When I started, for example, the educational program consisted of a number of courses meant for PhD students only. This changed when one year later (in 1999) the MPhil in Economics program started and the first 11 students were admitted. Unlike today’s version it was a one-year program, and the graduation ceremony took place on January 31, 2001 in Rotterdam. The first TI MPhil graduates received their diploma from Prof. F. van der Ploeg, former TI director and at that time Undersecretary of Culture. In 2003 the set-up changed again, and since then TI has offered the two-year MPhil program."

Dave van Rutten was Financial Administrator at TI from 2001 to 2007. Currently, he is administrator at the Erasmus Academy for Postgraduate Education. "What I really enjoyed during my time at TI was being in direct contact with PhD students – approximately half of whom came from outside the Netherlands. One of my tasks was to check the reimbursement forms they sent me. Although most reimbursements were perfectly legitimate (for conference visits, for example), some of the students had a more liberal view of which costs could be reimbursed for ‘external representation’ purposes. I recall receiving reimbursement requests for the costs of hairdressers and new suits, among other things. During my time at TI, I was also part of a TI PhD indoor football team in the Erasmus University league. Although we didn’t win any prizes for our football, I still enjoyed interacting with students in a sportier context. Overall, I thoroughly enjoyed my time at Tinbergen Institute and am pleased that TI celebrates its 25-year anniversary this year.”

**Honorary Fellows**

Tinbergen Institute’s six honorary fellows have contributed in major ways to cementing the position of economics within Dutch academia. They have also put Dutch economic research in general – and TI in particular – on the world map. This section contains the recollections of five honorary fellows. Since the sixth honorary fellow – Herman van Dijk – also served as a director for many years, his thoughts are included in the directors section.

**Ine Driessen** has worked as a secretary at TI Rotterdam since 1993. “An experience that marked my time at TI in the early nineties was the conversion from typewriters without becoming the hub at the Erasmus School of Economics."

**Mars Cramer** is emeritus professor of Econometrics and Mathematical Economics at the University of Amsterdam and an honorary fellow of Tinbergen Institute. “I am much indebted to Tinbergen Institute, which has granted me more favours than I can possibly return – and I hope it will thrive for another twenty-five years and more. My first and closest association with TI was in the earlier years. After my retirement in 1996 I was generously given a desk and a computer with which to do my research in the splendid Institute building at the Keizersgracht. I shared the room with young postdocs who kindly helped me along with such new inventions as Altavista, a search machine that preceded Google. Later, the Board made me an honorary fellow for reasons that have never been disclosed. It is another gift much appreciated – the more so, as I would never qualify as a regular fellow.”

**Teun Kloek** is emeritus professor of Econometrics at Erasmus University and an honorary fellow of Tinbergen Institute. “During the period that I worked on my dissertation at the Netherlands (now Erasmus) School of Economics (1959-1966), no MPhil courses were offered and I was an assistant professor with a serious teaching load. In the first part of my professorship (1967-1987) this construction continued, albeit with me in a different role. Inspired by a new law adopted in The Hague, Tinbergen Institute was founded in 1987 – and my first PhD student was Philip..."
Hans Franses. I had the pleasure of being the advisor of four PhDs in the years 1987-1997, but during that time TI’s course program had little substance. It took a great deal of perseverance to give TI its present shape. Finally, I might add that it has made me happy to learn that the Heij et al. book on econometric methods – to which I contributed some chapters – is still used in the TI MPhil program today.”

Jean Paelinck is emeritus professor of Theoretical Spatial Economics at Erasmus University and an honorary fellow of Tinbergen Institute. “I was keenly interested in the theoretical spatial economics of Jan Tinbergen; it wasn’t a major subject of his work, perhaps – but still a very illuminating one, indeed. One of Jan’s characteristic intellectual features was his ability to distil very simple but path-breaking ideas. In my 1975 book with Peter Nijkamp, we conducted further research in what we then called TBS, Tinbergen-Bos Systems (after Henk Bos, who wrote his PhD dissertation on the Tinbergen approach). This led to a large number of publications in the years to follow. Just anecdotally, I was in the habit of sending Jan our articles, and he liked to comment on them in his delicate handwriting.”

Bernard van Praag is co-founder of Tinbergen Institute and served as chairman of both the supervisory board and the board of directors from 1987 to 1992. Currently, he is emeritus university professor at the University of Amsterdam and an honorary fellow of Tinbergen Institute. “TI started officially in 1987 at Erasmus University, where some professors (such as Ritzen, Bomhoff and Kloek) and I were dreaming of a full-fledged research-oriented institute. I was appointed as project leader and later on as (the first) chairman. We had a very hard time, as there were brilliant ideas but not much capacity or funding. Moreover, we had fierce competition from Tilburg University, who had founded CentER as a response. We soon understood that it would be too difficult to create TI as a Rotterdam-only institute. Moreover, we feared that the two Amsterdam universities would start a similar initiative.

Cooperation with the two Amsterdam faculties served to eliminate this problem, but introduced two others. First, each university was claiming the lead, resulting in endless meetings and telephone conversations (my telephone bill amounted to an astronomical €350). Second, the idea of a single location proved impossible to achieve. In the first year we hired an energetic director with a PhD in economics, Annemarie Rima. She translated our ideas into reality, and TI took off in the second half of the eighties.

In 1992 I was rather exhausted by the organizational difficulties generated by three faculties combined in a mariage de raison; I was appointed as professor at UvA and rounded off my administrative responsibilities at TI. I am proud of Tinbergen Institute’s present situation and reputation, for which my successors deserve all credit.”

Henk Tijms is emeritus professor of Operations Research at VU University Amsterdam and an honorary fellow of Tinbergen Institute. “It is difficult for me to say what factors have led to TI’s success. It has largely been a story of gradual progress driven by the efforts of a number of excellent directors supported by an excellent staff. The formation of the MPhil program has proven to be a golden move that has helped TI to become a top-level player in the quantitative parts of economics. Indeed, when I attended a seminar at TI a few months ago I was once again struck by the large number of PhD students from all over the world that have been brought together by TI, and by the animated discussions between these students and TI fellows. The sparkling energy radiated by TI and its young PhD students is something that only the top schools in the US can currently match.”

Alumni

Part of TI’s success can be seen in the large number of alumni who have made the transition from PhD student to research fellow. In total, there are 25 full and three junior research fellows who started their academic careers as TI PhD students. Interestingly, of these 28 alumni fellows, 20 are still employed at their alma mater. Erasmus University has the largest number of fellow alumni (with 12). Special mention must go to TI fellow Josse Delfgaauw, who has two TI PhD alumni in his ‘family tree’ – with academic father (Robert Dur) and grandfather (Otto Swank).1 For this section of “the 25 views”, we approached five fellows corresponding roughly to the 10th, 25th, 50th, 75th and 100th percentile. This section describes their thoughts.

Philip Hans Franses (TI alumnus 18) graduated from TI’s PhD program in 1991. Currently, he is professor of Applied Econometrics, professor of Marketing Research and Dean of the Erasmus School of Economics at Erasmus University. “After interviews with Professors Teun Kloek and Bernard van Praag, I was hired as a PhD student and started my project in September 1987. My thesis supervisor in Groningen wisely advised me not to get involved in solving 4-dimensional integrals, as my average grade was only a modest 7. I enjoyed every moment of the subsequent four Tinbergen years! In those days, the
number of students was small and we followed many courses together with PhD students from Amsterdam. We even set sail together to attend the Econometric Society conferences in Bologna and Munich. We shared offices with three other students – and if you were keen on moving furniture, these four desks would have fit exactly into the current H-building offices. We usually started to work around seven in the morning – but not before we had coffee in Carien de Ruiter’s office. Those were the days!”

Mirjam van Praag (TI alumnus 106) graduated from TI’s PhD program in 1996. Currently, she is professor of Entrepreneurship and Organization at the University of Amsterdam.

“Tinbergen Institute has changed tremendously since 1992 when I started my PhD. At that time, no one believed that TI could contribute much to students with a master’s in econometrics. As a result, I obtained my certificate by following only a few light – though interesting – courses. This would nowadays be unimaginable. Not only have the course offerings and the processes guiding the setting of exam standards been improved tremendously, so too has the selection of students and, as a result, their work attitude. When I was a student at TI, it was just fun; now, it is exhausting, both mentally and physically. However... the students seem to be not only inspired and fulfilled, but also very promising and well-trained researchers. It is a treat to have TI around.”

Dick van Dijk (TI alumnus 201) graduated from TI’s PhD program in September 1999. Currently, he is professor of Financial Econometrics at Erasmus University.

“Having started as a PhD student at Tinbergen Institute in June 1995 and continuing to be affiliated as a research fellow until today, my involvement with TI covers more than two-thirds of its existence. During this period, TI has changed in many respects – ranging from the venues (transferring from the cozy environments at the Keizersgracht and Oostmaaslaan to the cold(er) high-rise buildings at the Gustav Mahlerplein and the Burg. Oudriaan) to the teaching program (coming from the informal suggestion to take a number of courses during your first PhD year to the current professional MPhil program). Most of these changes (fortunately!) are for the better, and I am convinced that Tinbergen Institute will continue to improve during the coming 25 years.”

Albert Menkveld (TI alumnus 276) graduated from TI’s PhD program in 2002. Currently, he is associate professor of Finance at VU University Amsterdam.

“Twenty-five years of TI – and I’ve been fortunate to have experienced half of it! As a PhD student, TI made me feel a member of a community of very smart, hard-working and driven people. But it also meant having pizza and beer on the roof of an Amsterdam canal house in the summer. As junior faculty, Tinbergen Institute gave me access to world-class visitors. Now, it still gives me all of that but also a way to contribute to further building its reputation as one of the world’s top-class graduate schools – TI deserves no less. Thank you, TI, for all you have been, are, and will be!”

Silvia Dominguez Martinez (TI alumnus 403) graduated from TI’s PhD program in 2007. Currently, she is assistant professor at the University of Amsterdam.

“In the ten years that I have been affiliated to Tinbergen Institute (first as a PhD student and currently as a Junior Research Fellow) I have seen several changes. One particular improvement is the increased attention to job-market candidates. In my final year as a PhD student I basically had to figure out – on my own – how the international job market worked (although fortunately I was in the same boat with other PhD students from my department who also had to learn to navigate the waters). I learned a lot from the experience, but was completely unprepared. I think that a good preparation is very important to be successful on the job market. Therefore it is very good that Tinbergen Institute now pays more attention to equipping job-market candidates.”

References


Notes

1) Otto Swank (TI alumnus 1) described his recollections in the spring 2007 issue in ‘letters from alumni’.

Tinbergen Institute now pays more attention to equipping job-market candidates.”
Academics can have an impact in many different ways. Ways that readily come to mind include the students they have lectured and supervised, the advice they give to organizations and policymakers, their publications in academic journals, their appearances in important media, and the leadership roles they assume in academic societies. One simple and, therefore, often-used metric of an academic’s impact is a count of the citations of his or her publications. We asked the Leiden-based CWTS to compile a list of the 25 most-cited publications that were authored by current and former fellows since the birth of Tinbergen Institute in 1987.¹² The key criterion for inclusion in the list was that the author was a TI fellow at the time of publication. We split the 25 years into five periods of five years, in order to give more recent publications a fair chance.³ Next, for each period we approached the authors of the two most-cited papers, and asked them to write a small piece about their article. Here is what they told us.
1. “A Pricing Method for Options Based on Average Asset Values” by Ton Vorst (with A.G.Z. Kemna) – 98 citations

Ton Vorst (VU University Amsterdam):
“This paper is joint work with Angelien Kemna, who currently is Chief Investment Officer at APG, one of the largest pension fund investment managers in the world. The paper is about describing and pricing a new kind of option, the so-called Asian option. We first submitted the paper to the Journal of Finance, where one reviewer was enthusiastic but the second very negative because he thought that pricing was trivial. Next we tried the Journal of Banking and Finance, which was one of the top-5 journals in finance at the time (unfortunately, this is no longer the case). The paper was much later selected for a book published by RISK books, which contains many classic papers in option pricing, including the Black-Scholes paper. This is the only non-North American paper in the volume. According to Google Scholar, the paper has been cited nearly 500 times, which is perhaps due to the fact that the methodology described in the paper has been heavily used in the finance industry. At the same time, the methodology of the paper could also clearly be improved, which explains the large number of citations containing additions and adjustments to the original methodology.”

2. “Ordinal and Cardinal Utility – An Integration of the Two Dimensions of the Welfare Concept” by Bernard van Praag – 64 citations

Bernard van Praag (University of Amsterdam, Emeritus):
“In 1971 I started my research on the empirical estimation of income utility functions or, as I called them, the individual Welfare Function of Income (WFI). Evidently, in those days it was a highly uncomfortable subject, as the vast majority of economists proclaimed that making such an estimation was impossible. The empirical trick I used was to ask individuals which income levels they associated with the terms ‘good income’, ‘bad income’ and so on. I translated those terms into numerical values. My critics said that this translation required the assumption of cardinal utility. In this paper I asked respondents to make the translation of verbal terms to numerical values without any reference to income. The paper showed this to be possible, and the answers were in line with my earlier ‘translation assumption’. I expected that the paper would become successful because it opened an empirical analysis of utility – or of ‘happiness’, as it is called nowadays. Actually, the recognition came later. Given the fact that my stand was rather unpopular and opposed to the prevailing mainstream – and consequently did not fit in with contemporaneous research – I was extremely happy that the Journal of Econometrics accepted the paper for a special volume.”
subsequently into banking. Still, the boon of the paper for me was that it gave me the academic credibility to serve on TI’s Board a decade later!”

2. “On Bias, Inconsistency, and Efficiency of Various Estimators in Dynamic Panel Data Models” by Jan Kiviet – 238 citations

Jan Kiviet (University of Amsterdam and Nanyang Technological University): “This paper started out as an improvement and extension of a paper by Stephen Nickell (published in Econometrica in 1981). During a research visit to the US in 1992 I met and discussed the paper with Cheng Hsiao and Badi Baltagi, two of the most prominent panel data researchers. When in the next year Badi Baltagi was preparing a special issue on panels for the Journal of Econometrics, he showed interest in this paper. This issue, which was published in 1995, contains several other well-cited works. That mine fared well and still does is due to several reasons, the first being that the bias correction formula it contains became available in a widely used software package. Therefore it is cited not only in theory papers but especially in empirical papers. Another reason for its success must be that the estimator it puts forward usually has a much smaller estimated standard error than the competing method of moments estimators. However, only few of those who refer to the paper will realize that a proper estimator of its variance has not yet been derived. For almost 20 years now I have been regularly thinking about this problem – but thus far without success.”

3. “Environmental Levies and Distortionary Taxation” by Lans Bovenberg (with R.A. de Mooij) – 208 citations

4. “The All-Pay Auction with Complete Information” by Casper de Vries (with M.R. Baye and D. Kovenock) – 119 citations
Published in: 1996, Economic Theory, 8(2), 291-305.

expectations framework has now been widely applied in (behavioral) finance (starting with the asset pricing model with heterogeneous beliefs in our JEDC paper) with investors switching between fundamental and chartist trading strategies. The Center for Nonlinear Dynamics in Economics and Finance (CeNDEF) has since 1998 tested the theoretical heterogeneous expectations framework extensively in empirical time series data and laboratory experiments with human subjects. The BH’97 heterogeneous expectations framework may serve as a behavioral alternative to the rational expectations hypothesis, and provide a new expectations paradigm for more realistic economic dynamic models with boundedly rational agents.”

3. “A Noncooperative Model of Network Formation” by Sanjeev Goyal (with V. Bala) – 197 citations
Published in: 2000, Econometrica, 68(5), 1181-1229.

Sanjeev Goyal (University of Cambridge):
“In 1993, I began thinking of social networks as an economic construct: networks arise because individuals find it profitable to form some links and not others. These ideas were formally developed and published in 1993 in a Tinbergen Institute Discussion Paper titled ‘Sustainable Communication Networks’. I submitted this work to one economics journal, but the outcome was not positive. Perhaps the time was not right! In 1996, Venkatesh Bala and I then joined forces and started working on a more systematic theory of network formation. Ventraksh and I are friends from our undergraduate days (in Delhi), and we were housemates while in graduate school at Cornell. We had already published some of our work on social learning on networks by then. We submitted a draft of our paper on network formation to Econometrica in 1997, and were fortunate to have Drew Fudenberg as the editor. He was very demanding but also very supportive, and we were absolutely delighted when he accepted the paper in 1999. I see this paper as a culmination of the work on social interaction and learning that I started in my doctoral research at Cornell and carried out through the 1990s.”

4. “Understanding Productivity: Lessons from Longitudinal Microdata” by Eric Bartelsman (with M. Doms) – 187 citations

5. “Relationship Banking: What Do We Know?” by Arnoud Boot – 175 citations

2002 • 2006

1. “Disentangling the Incentive and Entrenchment Effects of Large Shareholdings” by Stijn Claessens (with S. Djankov, J.P.H. Fan and L.H.P. Lang) – 316 citations

Stijn Claessens (International Monetary Fund and University of Amsterdam):
“This paper was a lucky coincidence in many ways. I was working at the World Bank and had just moved to the East Asia region when the Asian financial crisis started in 1997. It was clear to me – pretty early on – that the crisis was in part due to weaknesses in corporate governance, partly related to ownership structures. I was fortunate to find my former PhD classmate at Wharton, Larry Lang, interested to join me and others at the World Bank for a year to work on collecting...”
ultimate ownership data for many corporations in nine East Asian countries. It was a massive undertaking, with many RAs helping. The paper was unique in the data and its hypothesis, but was not an easy sell with the journals, in part as it was on emerging markets, which were then not as fashionable. Still, with much perseverance, we succeeded in getting it published. And we have gotten a good ride out of it: the paper has inspired many others, and still today has the aura of being among the first to highlight how differences between cash-flow rights and control rights can affect firm valuation and performance.”

2. “How important is Methodology for the Estimates of the Determinants of Happiness?” by Ada Ferrer-i-Carbonell (with P. Frijters) – 221 citations

Ada Ferrer-i-Carbonell (Institut d’Anàlisi Econòmica):
“To a certain extent we already expected this paper to have a relatively large impact on the literature, as it provided a new econometric tool to correctly estimate subjective life-satisfaction questions, a growing literature that uses subjective questions to estimate individuals’ preferences. An important contribution of this article is that it showed how important it is to control for individual time-persistent personality traits – something that is as relevant now as it was eight years ago when the article was published. In addition, we provided an econometric estimation technique that made it possible to control for these time-persistent effects without having to assume cardinality of the subjective measure of utility. This technique is still used by many economists using subjective questions today. The paper also generated substantial media coverage outside academia. The article was discussed in (among others) The Times, the Financial Times, BBC News, The Independent, The Guardian, Yahoo! News, and several non-English language newspapers. It also led to an interview by BBC Radio.”


Published in: 2004, Journal of Money Credit and Banking, 36(3), 563-583.

5. “Financial Development, Property Rights and Growth” by Stijn Claessens (with L. Laeven) – 84 citations

2007 • 2012

1. “Catastrophic Payments for Health Care in Asia” by Eddy van Doorslaer (with O. O’Donnell and 21 other co-authors) – 46 citations
Published in: 2007, Health Economics, 16(11), 1159-1184.

Eddy van Doorslaer (Erasmus University Rotterdam):
“This is one of several papers deriving from an EU-funded research program on equity in the finance and delivery of health care in Asian-Pacific countries. As it involved researchers with access to representative household survey data from 14 Asian countries, publication agreements led to several multi-authored articles published in journals like the World Bank Economic Review, Journal of Health Economics, the Lancet, Journal of Development Economics and Social Science and Medicine. The paper basically applied a method developed in a 2003 paper by Adam Wagstaff and myself; its main finding was that, even though most health care in the region is still paid for out-of-pocket by users of care, the distribution of catastrophic levels of such spending varies depending on the arrangements in place to shield low-income groups. That it generated so many citations so quickly, and has now been applied to many more countries all over the world, must stem from its relatively simple methods and the publication of a book (O’Donnell et al., 2007) and accompanying Stata code made available for free by the World Bank. While I do not regard this as one of my best articles, its large and rapid impact suggests that it did appeal to a wide audience.”
2. “Trust and Trustworthiness across Different Age Groups” by Martin Kocher (with M. Sutter) – 36 citations
Published in: 2007, Games and Economic Behavior, 59(2), 364-382.

Martin Kocher (Ludwig-Maximilians-University Munich):
“The paper started out with the opportunity to conduct economic experiments with school kids. Matthias Sutter and I thought that it would be interesting to study differences in trust and trustworthiness/reciprocity across different age groups. Later we added sessions with adult participants and retirees. Given the large scale of the project, we had high hopes to publish the paper in one of the top-five journals. In hindsight, we probably were not experienced enough at this stage to give the design of the project the necessary twist to propel it into the top-five. In the end, the paper found a very good home at Games and Economic Behavior. For Matthias and me, the most important aspect of the paper was the learning effect that the project brought about. We became experts in conducting economic experiments with kids. Matthias Sutter and I now have several promising working papers on differences in economic behavior across different age groups. At the time of writing this abstract, the first one (together with Daniela Rützler and Stefan Trautmann, a Tinbergen alumnus who I met during my time at UvA/CREED) has already been accepted for publication at the American Economic Review.”


5. “Behavioral Heterogeneity in Stock Prices” by Peter Boswijk and Cars Hommes (with S. Manzan) – 31 citations

Other References


Notes
1) Please note that CWTS limited its search to papers published in two Web of Science Journal Categories (Economics, and Business and Finance) which were cited in publications indexed in the Web of Science database. The above-mentioned categories thus do not include Marketing and Operations Research journals, for example. Cross-checking with a database of articles published between 2001 and 2011 in journals that together form the former “TI journal list” (the AA-A-B-list), we noted that there is at least one paper that would have been in TI’s top 25 had CWTS used the latter list. That paper is Strategic Bundling of Products and Prices: A New Synthesis for Marketing, a survey paper by TI fellow Stefan Stremersch and Gerald Tellis, which appeared in the Journal of Marketing in 2002 (87 citations).

2) Citations include self-citations. Numbers and rankings would not have changed dramatically if self-citations had been excluded from the analysis.

3) Since the TI Fellowship was only created in 1992, for the period 1987-1991 we considered faculty members employed by one of the three universities who later became TI Fellows.
Which types of econometrics papers get the most citations?
Philip Hans Franses, professor of Applied Econometrics and professor of Marketing Research at the Erasmus School of Economics (ESE), Erasmus University Rotterdam, has been a TI fellow since 1993. His research interests span a number of different areas, including the development of new models that enable more accurate forecasts – with a specific focus on seasonal time series and marketing metrics. His interests also include economic growth and business cycles as well as the Euro. His research aims to address practical questions with answers substantiated by modern econometric models – models often newly developed by him and his team.

An important measure of the impact of scientific work is the number of citations the research receives in the literature. When colleagues cite your work, this can be interpreted as confirmation that this research is relevant to theirs. While various measures can be used for citations (for a recent survey, see Chang et al., 2011), one that combines both publication output and citations is the h index, which is frequently used to evaluate and rank the performance of an individual scholar.

Informal discussion amongst scholars often centers on the specific features of an article that make it worthy of citation. In an exploration of some of these features, Fok and Franses (2007) find that survey-type papers, and papers with several co-authors, may have a longer-lasting track record of citations. These authors, however, do not address the particular characteristics of the content of the papers and their potential impact. This is, of course, due to the difficulty of data collection – as it effectively would imply reading all of the papers and assigning values to attributes. This contribution attempts to add to the current literature by analyzing 200 of my own papers, of which I obviously do recall various attributes. One of the attributes I take into account, for example, is whether the paper concerns the analysis of special data that were collected just for that particular paper – as is done in articles such as the above-mentioned Fok and Franses (2007). Of course, my analysis concerns an N = 1 case – but even so, the results may yet prove informative.

This contribution proceeds as follows:
After first presenting some basic statistics of these papers, I estimate some simple models to see which features of the papers lead to the most citations. The article wraps up with an external validity check examining the impact factors of various econometrics journals.

A first impression of the data
The data are drawn from the ISI Web of Science database, and data collection took place on November 1, 2010 (as by then, the total number of ISI-recorded publications exactly equaled 200). The publications cover the period from 1989 up to and including 2010. Table 1 presents some key statistics. The minimum number of citations is 0, and this occurs for 51 of the 200 papers. Hence, about one out of four papers has never been considered relevant enough to get cited.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total citations</td>
<td>6.635</td>
<td>3</td>
<td>0</td>
<td>68</td>
</tr>
<tr>
<td>Average citations per year</td>
<td>0.684</td>
<td>0.365</td>
<td>0</td>
<td>756</td>
</tr>
</tbody>
</table>
Each of these papers is next characterized according to four attributes. The scores on these attributes are either 1 or 0. The first attribute is whether the paper focuses on an empirical test of an economic theory or hypothesis. This is taken in a broad sense, as some of the papers look at issues in marketing science—and also there one can test theories. An example is Verhoef et al. (2002), The effect of relational constructs on customer referrals and number of services purchased: Does age of the relationship matter?, which tests a hypothesis that follows from the marketing knowledge base. The second attribute has to do with whether the paper collects and analyzes special data—as in Fok and Franses (2007), Modeling the diffusion of scientific publications. The term ‘special data’ refers to new survey data that may be collected specifically for that paper, while ‘non-special data’ may, for example, include stock market returns data. The third attribute has to do with whether the paper develops a new econometric model or a new methodology. An example is Fok et al. (2005), A multi-level panel STAR model for US manufacturing sectors. Finally, the fourth attribute registers whether an available econometric model is applied in an innovative way. An example of the latter would be to put a univariate time series in a multivariate perspective—which then allows for novel insights for the univariate series; see Franses (1994), A multivariate approach to modeling univariate seasonal time series. Table 2 summarizes for all papers the percentage scores of not only these four attributes, but also a few interactions. Clearly, most papers concern either a new econometric model or a new methodology. An example is Fok et al. (2005), A multi-level panel STAR model for US manufacturing sectors. Finally, the fourth attribute registers whether an available econometric model is applied in an innovative way. An example of the latter would be to put a univariate time series in a multivariate perspective—which then allows for novel insights for the univariate series; see Franses (1994), A multivariate approach to modeling univariate seasonal time series. Table 2 summarizes for all papers the percentage scores of not only these four attributes, but also a few interactions. Clearly, most papers concern either a new econometric model or a new methodology. An example is Fok et al. (2005), A multi-level panel STAR model for US manufacturing sectors. Finally, the fourth attribute registers whether an available econometric model is applied in an innovative way. An example of the latter would be to put a univariate time series in a multivariate perspective—which then allows for novel insights for the univariate series; see Franses (1994), A multivariate approach to modeling univariate seasonal time series. Table 2 summarizes for all papers the percentage scores of not only these four attributes, but also a few interactions. Clearly, most papers concern either a new econometric model or a new methodology. An example is Fok et al. (2005), A multi-level panel STAR model for US manufacturing sectors. Finally, the fourth attribute registers whether an available econometric model is applied in an innovative way. An example of the latter would be to put a univariate time series in a multivariate perspective—which then allows for novel insights for the univariate series; see Franses (1994), A multivariate approach to modeling univariate seasonal time series. Table 2 summarizes for all papers the percentage scores of not only these four attributes, but also a few interactions. Clearly, most papers concern either a new econometric model or a new methodology. An example is Fok et al. (2005), A multi-level panel STAR model for US manufacturing sectors. Finally, the fourth attribute registers whether an available econometric model is applied in an innovative way. An example of the latter would be to put a univariate time series in a multivariate perspective—which then allows for novel insights for the univariate series; see Franses (1994), A multivariate approach to modeling univariate seasonal time series. Table 2 summarizes for all papers the percentage scores of not only these four attributes, but also a few interactions. Clearly, most papers concern either a new econometric model or a new methodology. An example is Fok et al. (2005), A multi-level panel STAR model for US manufacturing sectors. Finally, the fourth attribute registers whether an available econometric model is applied in an innovative way. An example of the latter would be to put a univariate time series in a multivariate perspective—which then allows for novel insights for the univariate series; see Franses (1994), A multivariate approach to modeling univariate seasonal time series. Table 2 summarizes for all papers the percentage scores of not only these four attributes, but also a few interactions. Clearly, most papers concern either a new econometric model or a new methodology. 

Some modeling results

As 51 of the 200 papers never received any citations, I use a censored regression model to analyze the impact of the papers’ attributes on citations. The dependent variables are the natural log of the average citations (after adding 1, to allow taking logs) and the natural log of the total citations (idem). Table 3 presents the estimation results. The models also contain a time trend, as more recent papers have relatively less chance of being cited.

Table 3: Estimation results of censored regression models.
Sample size is 200 (p values based on Huber/White QML in parentheses). Parameters significant at 5% are in boldface.

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Log (Average citations +1)</th>
<th>Log (Total citations +1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.134 (0.219)</td>
<td>-0.703 (0.008)</td>
</tr>
<tr>
<td>Test of theory</td>
<td>0.478 (0.000)</td>
<td>1.122 (0.000)</td>
</tr>
<tr>
<td>New data</td>
<td>0.078 (0.332)</td>
<td>0.307 (0.113)</td>
</tr>
<tr>
<td>New model</td>
<td>0.285 (0.001)</td>
<td>0.926 (0.000)</td>
</tr>
<tr>
<td>Novel application</td>
<td>0.096 (0.318)</td>
<td>0.498 (0.036)</td>
</tr>
<tr>
<td>2010-year</td>
<td>0.018 (0.038)</td>
<td>0.100 (0.000)</td>
</tr>
<tr>
<td>Scale parameter</td>
<td>0.503 (0.000)</td>
<td>1.217 (0.000)</td>
</tr>
</tbody>
</table>

A closer look at the significance and the size of the estimated parameters reveals clearly that the most relevant attributes for more citations are a test of an economic theory or hypothesis and the introduction of a new econometric model or methodology. A binary probit model for the variable “yes” or “no” citations has parameters with similar ranks in sizes as those in the columns of Table 3.

External validity

To examine whether the estimation results in Table 3 have any external validity, I consider six academic journals that usually publish specific econometrics articles. Table 4 provides the scores on the attributes of typical articles in these journals, based on my own observations and experience (and with the help of various colleagues). Table 5 indicates the predicted average citations for an article published in 2011, using the estimates of Table 3; the second column of Table 5 reports the actual Article Influence Score AIS in 2011. The correlation between the numbers in the two columns in Table 5 is 0.675. Hence, it seems that the estimation results in Table 3 do have some external validity.
Acknowledgements

Thanks are due to Peter Boswijk, Dick van Dijk, Dennis Fok, Richard Paap and Michael McAleer, four anonymous referees and the Editor of TI Magazine for helpful discussions. The results in this paper are however the full responsibility of the author and any errors are his.

References


Table 4: Attributes of typical articles in six econometrics journals

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Journal</th>
<th>Theory</th>
<th>Data</th>
<th>Model</th>
<th>Application</th>
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<td>J of Applied Econometrics</td>
<td>0</td>
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<tr>
<td></td>
<td>J of Business and Economic Statistics</td>
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<td></td>
<td>Econometric Reviews</td>
<td>0</td>
<td>0</td>
<td>1</td>
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</table>

Table 5: Estimated average citations for 2011 article and AIS

<table>
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<th>Journal</th>
<th>Average citation</th>
<th>AIS</th>
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<tr>
<td>Econometric Theory</td>
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<td>J of Applied Econometrics</td>
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<td>J of Econometrics</td>
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<td>3.016</td>
</tr>
<tr>
<td>J of Business and Economic Statistics</td>
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<tr>
<td>Econometric Reviews</td>
<td>0.750</td>
<td>1.346</td>
</tr>
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</table>

Conclusion

The main conclusion from this study is that econometrics papers that put an economic hypothesis (or theory) to an empirical test using a newly developed econometric model or method seem to have the most impact, in terms of citations. Newly collected data and a novel angle to an existing method also have positive effects – but to less of an extent than the other two attributes. ○

“Econometrics papers that put an economic hypothesis (or theory) to an empirical test using a newly developed econometric model or method seem to have the most impact, in terms of citations.”
20 facts about Tinbergen Institute students
Students who decide to join Tinbergen Institute’s graduate school typically start with the MPhil program. Later, most of the students who pass the coursework proceed with the PhD track in one of the departmental research groups in order to concentrate on thesis research. Even after the defense of the PhD thesis after five years of research and coursework, a portion of TI Alumni remain within TI and continue their academic career at one of the participating universities. This contribution to the special issue explores some statistics in order to find out more about TI’s students: what characterizes them, and what directions do they take after graduating from TI? There are many things we would like to know, but data restrictions compel us to focus only on the following statistics.

Fact #1: Number of students
The graph presents the total number of MPhil students admitted each year. Starting with academic year 2008, the MPhil program was split into two tracks: Economics and Finance. Increasing numbers of students are coming to TI! The number of Finance students is, however, relatively small. What happened in 2006, to give such an outlier? This might have been caused by an increased interest from the Dutch students. Also, in 2005 a scholarship program was introduced and attracted a lot of students. However, in 2007 the numbers had to fall due to budget restrictions.

Fact #2: Distribution of students across TI universities

The graph shows how MPhil students are affiliated with three participating TI universities. Although some fluctuations can be seen over the years, UvA accommodates the most students, generally speaking, while EUR the least (most of the courses take place in Amsterdam, which makes it sometimes less convenient for a student from Rotterdam – although this may change with the new and more accessible location of TI-Amsterdam in the ZuidAs …).
Fact #4: Males vs. females

**Gender of MPhil students**

The graph shows the percentages of males and females admitted each year. Although the proportion is not constant every year, it might not escape notice that males seem to dominate the ranks. On the basis of the graph alone, it’s difficult to identify any trend.

Fact #5: Background

**Academic background MPhils**

The graph shows the structure of degrees of the entering students. All MPhil students hold at least a bachelor degree; many already hold a master degree (MSc, one-year master program). Most of them still find TI’s courses very demanding. For Dutch students, the route from an MSc to TI’s MPhil is (practically) blocked, since the annual tuition fee for enrolment in a second Dutch master program will be raised considerably (for TI: €9,200). Most students have an educational background in economics (nearly 90%); others are trained in, for example, computer sciences, mathematics or operations research.

Fact #6: MPhils place of origin

The map indicates the places of origin of TI’s MPhil students. The colors reflect the numbers of students from a country over the period 2003-2011, and indicate whether more (or fewer) students come from that particular country over time (see the legend for more information). The Netherlands and Turkey are very large “contributors” – but also the proportions of Dutch and Turkish students have decreased over time. Note the greater numbers of students coming from China, Germany and Poland.

Fact #7: MPhil Dropouts

The graph indicates the numbers of students who dropped out from each cohort; the numbers are split per track when possible. Very few students are unable to finish the program, and the ones that do stop usually drop out in the first six months. This illustrates that the selection procedure – introduced in 2005 – has been successful in choosing the most motivated and gifted applicants. Obviously, the higher number of dropouts for cohort 2006 is related to a much higher inflow of MPhils compared to other years.

Fact #8: Time until graduation

The graph illustrates how long it takes for MPhil students to graduate from the program, which formally is a two-year program. After 30 months students are discouraged to continue in the program, so most of them finish within this time. Many students have a small delay due to vacation of one or more members of the MPhil thesis committee during the summer, and end up defending their thesis in September. Thus far, eight students from the cohorts 2006-2009 have needed the maximum period of 30 months, with some four students (slightly) exceeding the deadline of 30 months.
**Fact #9: After MPhil**

**Career after the MPhil**

The graph illustrates what MPhil graduates do after they get their degree. Tinbergen Institute offers a two-year master program as part of a five-year PhD track. The willingness of students to continue in a PhD track at one of the departments participating in TI is one of the criteria for admission to the program. Together, the three departments have committed 20-22 three-year PhD positions annually to the outflow from the MPhil program – and most of the students follow along this road. However, TI does not have any formal instruments to keep students from accepting PhD positions elsewhere.

**Fact #10: Continuing with the PhD program**

Which of the TI universities registers the most MPhil students continuing with their PhDs? How students make their choice of university is not something that a graph can easily show, but it is correlated with their choice of PhD supervisor: students might meet their potential PhD supervisors as lecturers in the courses, during some formal meetings, at seminars, or during conferences. Only in three cases were students unable to find a match with a supervisor. It is still too early to measure the effects of the MPhil program in PhD thesis completion rates. The program started in September 2003, and during the first years the cohorts were relatively small. Out of the MPhil graduates who started a PhD in 2003 to 2007, 20 students (34%) completed and defended the PhD thesis within four years. In comparison: for all PhD students at the departments this was only 14%.

**Fact #11: Number of PhD defenses**

The graph shows an increase in the number of successful TI PhD defenses. Clearly, the strong increase from about 20 defenses from 1987-1991 to about 110 in the period 1992-1996 reflects the fact that TI PhD research started only in 1987. Still we can see a steady increase up to recently, which goes hand-in-hand with the other developments of TI that have strengthened its position as the graduate school of the three participating universities during the last 25 years.

**Fact #12: PhD defenses across TI universities**

Having a closer look at which university the TI PhD students graduate reveals an interesting pattern. While at the beginning of TI’s 25-year history most PhDs graduated from Erasmus University (about 60%), the relative share of the two Amsterdam-based universities has increased over time — such that during the last five years each of the three universities had about the same number of PhD defenses.

**Fact #13: How many females are there among TI graduates?**

The following chart shows the evolution of the percentage of females among all TI graduates. While overall, women seem to be underrepresented, compared to the overall population, we also see that the share of females increased from 18% in the beginning of TI’s 25 years up to 24% during most recent years. This figure is also in line with the female share among MPhil students.
Fact #14: Where do TI graduates get their first job?

**First employment after graduation**

A look at the overall placement records during the last 25 years reveals that more than half of TI graduates continued to work at university. This is a positive sign, as TI primarily aims to prepare its students for an academic career. Also, amongst the 11% that went into the public sector – and the 36% that went to the private sector – many work as researchers in central banks, public research institutes or companies.

Fact #15: Where do TI graduates get their first job (part II)?

Having a closer look at the dynamics of the first position after graduation reveals two interesting things. First, the percentage share of graduates that stayed at university increased from 36% during the beginning of TI’s history to 61% in recent years. Second, the share of people that took up positions in the private sector decreased – as can be seen from the graph. This also confirms the view that TI does well in positioning itself as an institute preparing students for academic careers.

Fact #16: University placements

The following graph shows that about 43% of all graduates that continued their career at university did so at one of the TI universities. Another 24% took up a position at another Dutch university. Only about 33% continued their career at a university not located in the Netherlands.

Fact #17: University placements (staying at “home”)

It is also interesting to see what percentage of graduates stayed at the same university where they obtained their PhD (e.g., a student who obtained the PhD at EUR and got a post-doc position at EUR). Note that except for the first five-year period, the percentage is quite similar across universities and stable over time, at about 10%. The different figures during the period 1987-1991 are less informative, belonging to the start-up period of TI.

Fact #18: University placements (all “home”)

The following graph shows the percentage of all graduates that stayed at the same university where they obtained their PhD. The remarkable thing about this graph is the very high percentage of students that continued their career in the private sector, fluctuating between 34% and 53%. This is a clear indication of the high demand for graduates in this sector.
Fact #18: Where do TI alumni work now?
The ‘facts’ above considered the first placement record of TI graduates right after obtaining the PhD. However, TI also strives to keep track of their graduates and to follow them in their further career. The following graph shows the current position of all TI graduates (restricted by data availability). Of course, recent graduates might currently still be in their first position after graduation, while alumni from older cohorts might have experienced several job relocations. We can see that more than half of all TI alumni are still working at university, and amongst those 13% are full professors. Further, 35% of all alumni work now in the private sector and 12% in the public sector – many of them in prestigious research departments of central banks and international organizations, such as the Federal Reserve Bank, the ECB, the World Bank or CPB.

Fact #19: At which universities do TI alumni work now?
Given that more than half of all TI alumni still work at universities, we wanted to have a closer look at what universities they are working. The following graph reveals that 43% of those still at university are actually affiliated with one of the three universities participating in TI. TI manages to tie its graduates to the institute, and graduates prefer to stay in the world of TI. Another 34% of graduates work at a foreign – e.g., non-Dutch – university, including universities in the United States, Canada, Asia and Europe.

Fact #20: At which universities do TI alumni work now?
The three participating TI universities offer an array of research groups that cover most fields of modern economics. The following graph presents the relative number of TI PhD students during the last 25 years for the different research groups. These numbers are not clustered by university but by subject; all three universities, for instance, have research groups in econometrics. A look at the graph thus shows that almost 18 percent of all PhD graduates during TI’s history graduated in finance. Also the research groups on ‘Labour, Health, Education’ and ‘Spatial, Transport and Environmental Economics’ are quite popular, as well as the research groups on ‘Macroeconomics and International Economics’ and ‘Econometrics’. These figures also represent the relative strength (measured by faculty) of the different fields.

**PhD affiliation to research groups**

- Finance
- Labour, Health, Education
- Spatial, Transport and Environmental Economics
- Macroeconomics and International Economics
- Econometrics
- Organizations, Markets and the law
- Operations Research
- Behavioral Decision Making and Experimental Economics
- Development Economics
- Other

**Current employment of TI alumni**

- 53% University
- 12% Public sector
- 35% Private sector

**Current employment at universities**

- 43% TI University
- 34% other NL University
- 23% Foreign university
The collaboration network of Tinbergen Institute
Before TI was established, professors from different universities in the Netherlands rarely cooperated with each other in joint research. In fact, some professors even went so far as to instruct their students not to cooperate with researchers from other universities – in order to prevent them from getting ‘strange ideas’. As a result, when TI was originally established as a graduate school in 1987, it presented an excellent opportunity to lower some of these barriers and provide a means to achieve greater academic collaboration between the participating universities. **TI’s 25th anniversary provides us with the perfect occasion to look back and ask: has the TI network indeed resulted in more collaborative research between different universities?**

**Methodology**

Investigating collaboration patterns between researchers naturally leads to the use of network analysis. Network analysis is currently a booming research topic in economics, which is well exemplified by Matthew Jackson having taught the TI Economics Lectures 2012. Network analysis allows us to look at the structure of a network of researchers and to investigate how interconnected the researchers in that network are.

This contribution follows Goyal, Van der Leij and Moraga-González (2006), and uses EconLit data to study the evolution of TI’s research network over time. We look at TI fellows affiliated with one of the three participating universities publishing at least one article in a journal indexed in EconLit. To look at the evolution of the TI research network over time, we divide TI’s 25-year history into five-year periods and compare the structure of the network between these periods. We start our analysis in 1992, the year that the TI fellowship was first instituted.

**Network graphs**

Has the inception of TI increased the collaboration between the participating institutions? The data seem to say ‘yes’. Figure 1 depicts the network existing between research fellows at TI faculties, during two five-year periods of time: the first five-year period of the TI-fellow network (1992-1996) is thus contrasted with the most recent five-year period (2007-2011). Examining the left-hand panel of the figure shows the structure of the network of TI fellows in 1992-1996. Each node in the network represents a TI fellow affiliated with one of the three participating universities who managed to publish at least one article in an EconLit-indexed journal in the years of his or her fellowship. The lines between nodes represent links between fellows; two fellows are linked if they were co-authors in at least one article published in 1992-1996. The figure shows that the network back then was essentially a set of isolated nodes with a couple of small clusters. Fast-forward to 2007-2011 – and a completely different picture emerges. The right-hand panel reveals how the network during this period featured many more
Network analysis is currently a booming research topic in economics.

Links between nodes; in other words, the number of publications coauthored by different combinations of TI fellows greatly increased from 1992-1996 to 2007-2011. Interestingly, a big cluster (or ‘giant component’) emerged spanning all three universities and covering a substantial part of the network of fellows (35%). Such a big connected cluster of nodes is typical for large complex networks, and suggests that TI’s research network has indeed become much more integrated over time.

However, as Goyal et al. (2006) demonstrated, this increase in collaboration and integration seems to be a general trend in the economics community. Thus, the emergence of a giant component in TI’s network may simply be the result of this general trend, rather than an outcome of the establishment of TI as a research institute. To figure out the extent to which TI played a role in creating a more integrated network, we compare the evolution of TI’s network with the evolution of the network between three control universities: the universities of Tilburg, Maastricht and Groningen (or TMG). On a basic level, the TMG universities share many of the characteristics of the universities participating in TI, except for the fact that they do not have their own overarching research centre. This makes TMG a natural choice as a control group.

Figure 2 shows the TMG network for the two corresponding periods. The level of integration in the TMG network increased to

Figure 1 TI Network: Collaboration network of economists affiliated with University of Amsterdam (red), VU University Amsterdam (green), and Erasmus University Rotterdam (blue) in 1992-1996 (left) and 2007-2011 (right). Size of the node is proportional to its research output: for the largest/medium/smallest nodes the levels of the best publication in the period according to the old TI journal rankings were AA, A and B, respectively. Label of a node (1, 2, 3, 4, 5) is the node’s betweenness centrality rank, according to Table 1.
a much lesser extent than that in the TI network. In particular, the size of the giant component of the TI network increased by 25 percentage points, whereas the size of the TMG giant component increased by only 10 percentage points.

The larger integration of the TI network does not seem to be due to an increase in the average number of links per node (or average degree) per se. Indeed, figure 3 shows that the average degree increased at a similar rate in both networks. Instead, it seems that TI has been successful in connecting the three universities together. Whereas the TMG network consists of four separate main components — each covering mostly a single university — the giant component of TI network intriguingly covers all three participating universities.

**Explaining the increased integration**

What has driven this integration? One possibility is that TI fellows — across the board — collaborated more with fellows from the other two TI faculties. However, although interfaculty collaboration within TI has increased in absolute terms, in relative terms it has decreased slightly. The fraction of TI fellows working with other TI fellows from a different TI faculty was 10% in the period 1992-1996, 9% in the period 1997-2001, but only 6% in the periods 2002-2006 and 2007-2011, respectively. Thus, in relative terms, interfaculty collaboration within TI declined slightly during the last decade.

A closer look at Figure 1 suggests that the integration of the TI network was driven by a small set of key players, without whom the TI network would have been almost as disconnected as it was in the beginning of TI. This is consistent with the finding of Goyal et al. (2006) that the network of economists has an ‘interlinked star’ structure; it is kept together by a small set of highly connected nodes linking groups that would not have been connected otherwise.

Table 1 identifies the key players (or ‘stars’) of the Tinbergen Institute network. It provides a ranking of TI fellows in terms of ‘betweenness centrality’ in the networks of Figure 1. This centrality measure (Jackson, 2008) counts how often a particular node lies on the shortest network path between any pair of nodes.

---

**Figure 2 TMG network:** Collaboration network of economists affiliated with Tilburg University (purple), Maastricht University (yellow), and University of Groningen (black) in 1992-1996 (left) and 2007-2011 (right). Size of the node is proportional to its research output: for the largest/medium/smallest nodes the levels of the best publication in the period according to the old TI journal rankings were AA, A and B, respectively.
In the period 1992-1996, betweenness centrality was rather low, as the network was mostly disconnected. In the period 2007-2011, the betweenness centrality of TI’s ‘stars’ was much higher, with Joep Sonnemans, professor of Behavioral Economics at the UvA, as the top ‘star’. Over the entire five-year period, Joep Sonnemans not only collaborated with members of his own research group (the Center for Research in Experimental Economics and Political Decision Making), but also created connections between other fellows from the UvA, such as Cars Hommes, Randolf Sloof and Hessel Oosterbeek, as well as Peter Wakker from EUR and Bas van der Klaauw from VU. Without Joep Sonnemans and Bas van der Klaauw, the giant component would have been split in three parts, none of which would be as large as TMG’s giant component. Also interesting are the high rankings of Cars Hommes and Peter Boswijk, both of them UvA professors. They did not collaborate extensively with TI fellows in this period: Peter Boswijk had three TI collaborators and Cars Hommes five. However, their collaborations were crucial for linking the Econometric Institute at EUR to Joep Sonnemans and the rest of the UvA and VU – and thus creating the giant component.

<table>
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<tr>
<th>Authors</th>
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<td>2. Ben Heijdra</td>
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<td>3. Bernard van Praag</td>
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<td>5. Geert Ridder</td>
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<tr>
<td>1. Joep Sonnemans</td>
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<td>4. Peter Boswijk</td>
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<tr>
<td>5. Philip Hans Franses</td>
<td>456</td>
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</tr>
</tbody>
</table>

Table 1: The most central authors in the Tinbergen Institute networks. Betweenness centrality counts how often a particular node lies on the shortest network path between any pair of nodes; degree is the number of links.

In the period 1992-1996, betweenness centrality was rather low, as the network was mostly disconnected. In the period 2007-2011, the betweenness centrality of TI’s ‘stars’ was much higher, with Joep Sonnemans, professor of Behavioral Economics at the UvA, as the top ‘star’. Over the entire five-year period, Joep Sonnemans not only collaborated with members of his own research group (the Center for Research in Experimental Economics and Political Decision Making), but also created connections between other fellows from the UvA, such as Cars Hommes, Randolf Sloof and Hessel Oosterbeek, as well as Peter Wakker from EUR and Bas van der Klaauw from VU. Without Joep Sonnemans and Bas van der Klaauw, the giant component would have been split in three parts, none of which would be as large as TMG’s giant component. Also interesting are the high rankings of Cars Hommes and Peter Boswijk, both of them UvA professors. They did not collaborate extensively with TI fellows in this period: Peter Boswijk had three TI collaborators and Cars Hommes five. However, their collaborations were crucial for linking the Econometric Institute at EUR to Joep Sonnemans and the rest of the UvA and VU – and thus creating the giant component.

**Ti’s position in the world of economists**

It is also interesting to compare the position of TI fellows within the broader network of all economists. Figure 4 provides some statistics about the average degree of TI fellows and TMG top economists within the network containing all economists. In the first two of the four periods, 1992-1996 and 1997-2001, the number of collaborators (i.e. the average degree) of TI fellows was on average higher than the corresponding number for the top TMG economists. However, for the last two periods, TMG’s top economists outperformed TI fellows.

![Figure 3: Average degree (i.e. the average number of links per node) for Tinbergen Institute (TI) fellows, and for top economists from Tilburg University, Maastricht University, and University of Groningen (TMG) within their respective networks.](image)

![Figure 4: Average degree (i.e. the average number of links per node) for Tinbergen Institute (TI) fellows, and for top economists from Tilburg University, Maastricht University, and University of Groningen (TMG) within the network of all economists.](image)
economists collaborated, on average, with a larger number of people in the global network than TI fellows did. This decay in the average number of collaborators of TI fellows relative to the TMG is accompanied by a decrease in the centrality of TI fellows. This is visible in Figure 5, which presents the median betweenness centrality of TI and TMG economists in the giant component of the network of all economists. On average, TI fellows are more central in the giant component network than TMG economists for the network periods spanning 1992 to 2001. However, in the most recent two periods, TMG economists have become more central than TI fellows in the giant component of the network of all economists.

Conclusion

All in all, it seems that Tinbergen Institute has had a positive impact on the integration of the research community of the three participating universities. This integration was not necessarily caused by an institute-wide shift, but rather was driven by a few TI fellows who, consciously or unconsciously, took the role of connecting other fellows together. At the same time, outside of the TI network, TI fellows seem to have become less central in the network of all economists – at least compared to top economists from Tilburg University, Maastricht University and the University of Groningen.

Further research on this topic would be beneficial – investigating, for instance, whether researchers self-select into TI depending on their research area. That may have to wait for the 50th anniversary, though.

References


Notes

1) See the spring 2007 issue of this magazine, which describes the history of TI and its research school in detail.

2) We kept the size of the TMG network equal to the TI network by picking only the best economists (based on the number of publications and the old TI journal rankings) in these universities.

Figure 5: Median betweenness centrality for Tinbergen Institute (TI) fellows, and for top economists from Tilburg University, Maastricht University and University of Groningen (TMG) in the giant component of the network of all economists. Betweenness centrality counts how often a particular node lies on the shortest network path between any pair of nodes.
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Labour, Health, Education, and Development


Financial Economics


Macroeconomics and International Economics


Behavioral Decision Making and Experimental Economics


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Organizations and Markets


Spatial, Transport and Environmental Economics


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Cooperative Behavior, Strategic Interaction and Complex Systems


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11-175/DSF28 Pawel Janus, Siem Jan Koopman, André Lucas, VU, Long Memory Dynamics for Multivariate Dependence under Heavy Tails


12-007/4 Suncica Vujic, University of Bath, UK, Jacques Commandeur, Siem Jan Koopman, VU, Structural Intervention Time Series Analysis of Crime Rates: The Impact of Sentence Reform in Virginia

12-008/4 Siem Jan Koopman, VU, Thuy Minh Nguyen, Deutsche Bank, London, Fast Efficient Importance Sampling by State Space Methods


12-018/4 Martin Scholtus, Dick van Dijk, EUR, High-Frequency Technical Trading: The Importance of Speed

12-020/4 Siem Jan Koopman, André Lucas, Marcel Scharth, VU, Predicting Time-Varying Parameters with Parameter-Driven and Observation-Driven Models

12-025/4 Rodney Strachan, Australian National University, Herman K. van Dijk, EUR, VU, Evidence on Features of a DSGE Business Cycle Model from Bayesian Model Averaging


12-059 Francisco Blasques, Siem Jan Koopman, André Lucas, VU, Stationarity and Ergodicity of Univariate Generalized Autoregressive Score Processes

12-067 Bert de Bruijn, Philip Hans Franses, EUR, What drives the Quotes of Earnings Forecasters?

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