Chapter 1

Introduction — Experiences from a Global Survey

Risk and time are central to the understanding of economics. In today's colorful and multicultural world, it is therefore only natural to wonder how and why attitudes toward risk and time differ internationally.

Furthermore, risk and time preferences are also a fundamental ingredient of financial decision-making. Financial markets, however, are nothing else but the result of many individual instances of financial decision-making and their interactions. Knowing how risk and time preferences differ between countries can therefore help one understand why and how financial markets differ — why, for example, the equity premium, the value premium, dividend payoffs or saving rates are higher in one country than in another.

In a certain sense, this line of research that has emerged over the last decade is a natural extension of behavioral finance: wherever behavioral finance finds an influence of individual biases or (more general) of decisions that deviate from the classical assumption of a “homo economicus”, there follows the natural question whether the magnitude and the kind of these deviations differ between countries and cultures.

This emerging field has been called “cultural finance” and it is the topic of this book.

Like in most fields of finance, research in cultural finance needs data. While data on the outcomes of financial markets are readily available¹ most of the time, there was a severe lack of data on international variation in risk and time preferences, the main parameters of many models in behavioral finance.

This was the motivation for the global expedition on which we embarked one autumn day, sitting in an office at the University of Zurich. Three researchers attended that meeting: Thorsten Hens, professor and director of the Swiss Banking Institute, an already well-established economist; Mei Wang, assistant professor at the institute, who had graduated in social and decision science from Carnegie Mellon University; and Marc Oliver Rieger, Mei's husband and still a postdoc at ETH Zurich in mathematics, but soon after switching to Thorsten's chair to join his growing behavioral finance group.

In this fateful meeting, Thorsten suggested an idea that seemed very natural, given that the team already had quite a lot of experience in prospect theory — the most widespread behavioral model of decisions under risk, introduced by Daniel Kahneman and Amos Tversky (1979) and a major reason for the awarding of the Nobel prize to Kahneman in 2002: why not measure prospect theory preferences in different countries? And not in two or three, but in as many as possible, maybe even 30 countries. Because then, we could find statistical patterns in the data, and we could run reliable regressions to determine what drives differences in risk attitudes: economic or cultural parameters. Moreover, one would finally have a reliable dataset as a starting point for research in cultural finance, so applications for these data seemed unlimited.

¹At least for researchers at wealthy universities who can afford the high fees that data providers charge for their financial data. Free datasets, like Yahoo Finance, are usually not considered adequate as data sources for serious publications in finance, even in cases where their quality would be sufficient. How much this fact unnecessarily limits the global research output in finance is an interesting question with worrying implications.

Collecting the data was the key idea, but Thorsten also had a plan that made this goal feasible: over the years, he had built up a worldwide network of colleagues (collaborators, former students and colleagues and many more) and they could be contacted for help. Maybe they could conduct a short survey on risk preferences during their lecture with their students. Such data would be excellently suited, because one would avoid the usual self-selection bias. (Nearly all students in the class would participate.) It would also provide comparable groups of test subjects across countries. This was an important point: if we compare, for example, an average person in a developing country with an average person in a highly developed country, there would be many differences that do not have much to do with culture — in particular, the educational and professional backgrounds would likely be very different. If we compare, however, university students of both countries, these two factors are mostly controlled. This makes it much easier to look for actual cultural differences.

The plan was therefore to design a short questionnaire, translate it into various languages, send it to colleagues in as many countries as possible and then let them distribute it in class to collect as many answers as possible. Thorsten drafted a list of 24 countries where he might be able to establish contacts, and Mei and Marc took the task to design a questionnaire. Progress on this went surprisingly smoothly, given that the time for research had to be shared with taking care of little babies: Thorsten and his wife Britta's daughter Annabell and Mei and Marc's daughter Angelika had both been born in 2006 and demanded their share of attention, not caring too much about their parents' research projects.

When not busy with the babies, but thinking about the design of the survey, we soon noticed that the questionnaire should not only include typical questions in the style of prospect theory but should also measure ambiguity aversion, i.e., the aversion to situations where probabilities are not clear. It should also measure time preferences,

using behavioral models like the quasi-hyperbolic model. Finally, the survey should also entail a reliable measure for cultural differences. The “gold standard” for that was the Hofstede cultural dimensions theory that (in the most up-to-date form at that time) would fit neatly into 20 questions on attitudes about work and life.

The complete package would allow one to simultaneously elicit risk and time preferences and cultural dimensions in an international sample — a prerequisite for determining the influence of culture on such economic decisions.

The main point of the survey, however, was still risk, and thus we decided on a shorthand name for our survey: INTRA — International Test on Risk Attitudes. We also drafted a time plan, which must have been ridiculously optimistic in its time dimensions (as it was ridiculously *modest* in the amount of data we hoped to collect). INTRA was more proof in the history of humankind for the first rule of every big project: it takes twice as long as scheduled.

After drafting the questionnaire, pretests were made with Zurich undergraduates and the design improved. In the meanwhile, Thorsten contacted his network of international colleagues. We also applied for external funding for this endeavor. A Ph.D. student working dedicatedly on this project would have made things progress much faster. Unfortunately, our funding application was not successful: the project seemed too ambitious for the faint-hearted referee who concluded that “there is nothing that proves that this project can succeed”. Maybe at the time of writing this seemed indeed to be the case, but now, looking back at it, the judgement has fortunately been proven to be overly pessimistic: the results that we obtained have been published in a number of journal articles, were heavily cited and have led to various follow-up works. The goal of this book is to summarize these results.

Then, the survey started. Many of Thorsten’s contacts gladly agreed to run the survey for us; for other countries, foreign students at the University of Zurich or friends who visited the countries collected data; and finally, to cover countries where we did not have

Table 1: The years when data were collected in the various countries.

2007		2008		2009	2011	2012
China	Angola	Georgia	Norway	Germany	Luxembourg	Belgium
Ireland	Argentina	Greece	Portugal		Netherlands	Finland
Japan	Australia	Hong Kong	Romania			France
Switzerland	Austria	Hungary	Russia			India
Taiwan	Azerbaijan	Israel	Slovenia			Poland
Thailand	Bosnia-Herz.	Italy	South Korea			Sweden
Turkey	Canada	Lebanon	Spain			
	Chile	Lithuania	Tanzania			
	Colombia	Malaysia	UK			
	Croatia	Mexico	USA			
	Czech Rep	Moldova	Vietnam			
	Denmark	New Zealand				
	Estonia	Nigeria				

Note: In some countries, additional data were collected at later points in time.

personal contacts, we even wrote emails to unknown colleagues — sometimes even successfully.

The experiences we obtained while collecting data are impossible to quantify, but they showed plenty of anecdotal evidence for cultural differences, at least in time preferences around the globe. This sometimes made it very smooth to obtain data, sometimes hard and occasionally impossible. There were countries like Japan, where everything worked as it should according to all the (positive) stereotypes about this country: fast, efficient and effortless. We obtained the 274 neatly filled in questionnaires from Japan in record time with attached translations for all handwritten answers to open-ended questions like the subject of study. Japan was definitely not the only country where everything went without a problem, but this did not apply to all countries: sometimes, even good old friends seemed to disappear completely when we asked for help. That finally led to one continent being a bit less represented in our sample than we had anticipated and some countries arriving much later in our dataset than expected (see Table 1 for the dates when the survey was first conducted in the various countries).

This bad experience was outweighed, however, by some colleagues working hard for us, even under harsh conditions: one email was sent from a professor in an African country who apologized for the delay by pointing to strikes and riots that had forced the university to shut down for a while. He promised to continue the survey after everything went back to normal — and kept his word. Experiences like that helped us appreciate what we usually take for granted as professors in a wealthy and stable country.

Then, there was the other end of extremes: the countries where things were not so disorganized that collecting data was difficult or that colleagues did not care about our inquiries, but countries that were *too* organized to work efficiently. One example was the US.

Not everywhere though, we have to hastily add! There are happy places of freedom in the US where asking students some innocent questions about risk and time is handled as innocently and easily as it should be (at least in our opinion). And then there are other places, and “human subject experiment approval committees”. While we totally agree with the necessity for such committees in fields like medicine, we somehow could not see the necessity to fill in and sign 19(!) copies of a human subject experiment approval form (as it happened at one US university) and wait forever for a reply that insisted that the lecture’s professor should not collect the filled in surveys, but that they were to be collected in an opaque box outside the room. Well, at least, we were allowed to do the survey, but we hope sincerely that America is not setting the global trend in making economic surveys a bureaucratic nightmare.

Another difficult country was — surprisingly — Germany, at least in some places: some German professors were very afraid that a 15-minute experiment would steal away precious and irreplaceable lecture time from their students, and thus it was particularly difficult to convince some of them to participate. The behavior is still puzzling, although by now all three of us have either been or are currently professors in Germany.

Again, however, the problem was minor: at the end, we could collect data; it just took longer than anticipated. That was still better

than in two countries, where data collection failed due to political reasons: Cuba and Belarus. In both cases, local professors wanted to help us, but had no chance to obtain permission for that. Trying to conduct a survey in a country can tell you a lot about how free it is.

In general, our experience, however, was that smaller countries were the most willing to conduct the survey for us. It seemed that participating in an international survey was much more exciting for countries like Estonia, Georgia, Slovenia or Moldova than for big countries like France or Brazil.

While the data collection was progressing, an increasing number of countries entered our list: sometimes, a foreign student could collect data for us, while sometimes, a new contact was established, and finally we reached 45 countries.² At this point, we started the data analysis more seriously, but since the analysis and the subsequent publications turned out to be a lengthy endeavor, at some point, new opportunities for data collection appeared and we used them to add eight more countries to the list, including important but difficult to study countries like France and India.

During the most hectic phase of data collection in the years 2007-2009, another problem occurred: professors are often not the best-organized persons, so we have to confess that without the help of our brilliant student assistant, Julia Buge, the survey would not have worked out well. She brought structure into the chaos, keeping track of translations, sending out the questionnaires, reminding colleagues to conduct the survey and entering and archiving the data. She also actively approached her own networks as well as approached new academic contacts all over the world to enrich our dataset.

In the end, the data included nearly 7000 participants from 53 countries and it still takes quite some shelf space in the archive of the University of Zurich's Department of Banking and Finance (as

²In this book, we always write about “countries” even when we sometimes mean regions, for example, Hong Kong is politically a part of China nowadays, but since it is still separated by a border and has its own cultural identity, we treat it as a separate “country” and want to make clear that we do not intend to hurt national feelings with it. It is just easier than to write “countries and regions” all the time!

Figure 1: Countries for which risk and time preferences have been measured in the INTRA study (light grey).

the institute is called today). Figure 1 shows a map of the countries covered by INTRA.³

In the other chapters of this book, we present the results of this huge effort and its subsequent analysis. More than 12 years after the initial meeting in Zurich that started this long-term project, not only have our babies grown into young women but the research on the INTRA data has also grown from just a nice little idea into a substantial number of scientific articles stretching from theory to applications. To give an overview, we have structured the book into four parts: First, we take a look at time preferences and their dependence on culture (Part I), then at risk preferences (Part II). Afterward, we see how the INTRA data can inform us about cultural differences on the financial market level (Part III). The INTRA data also enabled some other applications, and following our work, other researchers have in the meanwhile collected similar datasets. We will discuss these topics in the Epilogue.

³The complete list of participating countries and a list of supporting colleagues and students who conducted the experiments can be found in the appendices of some of our papers reprinted in Chapters 2 and 6.

We hope the reader will find this overview on the insights into the relation between risk, time, culture and finance as fascinating as we did throughout the last couple of years.

But now, we have talked enough about the making of our INTRA survey: it is time to talk about time. . .

We hope you enjoy the book!

Thorsten Hens

Marc Oliver Rieger

Mei Wang