

Middlesex University Research Repository:

an open access repository of
Middlesex University research

<http://eprints.mdx.ac.uk>

Kubascikova-Mullen, Jana, 2013. Adult numeracy and the conversion to the euro in the Slovak Republic. Available from Middlesex University's Research Repository.

Copyright:

Middlesex University Research Repository makes the University's research available electronically.

Copyright and moral rights to this thesis/research project are retained by the author and/or other copyright owners. The work is supplied on the understanding that any use for commercial gain is strictly forbidden. A copy may be downloaded for personal, non-commercial, research or study without prior permission and without charge. Any use of the thesis/research project for private study or research must be properly acknowledged with reference to the work's full bibliographic details.

This thesis/research project may not be reproduced in any format or medium, or extensive quotations taken from it, or its content changed in any way, without first obtaining permission in writing from the copyright holder(s).

If you believe that any material held in the repository infringes copyright law, please contact the Repository Team at Middlesex University via the following email address:

eprints@mdx.ac.uk

The item will be removed from the repository while any claim is being investigated.

Middlesex University
Business School London



**Adult Numeracy and the Conversion to the Euro in the
Slovak Republic**

A Thesis Submitted to Middlesex University in Partial Fulfilment of
the Requirements for the Degree of Doctor of Philosophy

Jana Kubascikova-Mullen
Economics and International Development
Student Number: M00521833

Middlesex University, London
May 2013

Declaration of Originality

I hereby declare that this project is entirely my own work and that any additional sources of information have been duly cited.

I hereby declare that any internet sources and any published or unpublished works from which I have quoted or draw references have been referenced fully in the text and in the contents list. I understand that failure to do this will result in the failure of this project due to Plagiarism. I understand I may be called for a viva and if so, must attend. I acknowledge that it is my responsibility to check whether I am required to attend and that I will be available during the viva period.

Signed

Dated

Name of Supervisors

Dr Hafiz Khan

Dr Jeff Evans

Dr Marian Rizov

ABSTRACT

This thesis investigates Slovak citizens' attitudes towards the Euro changeover and the numerical demands imposed on them in the context of the currency change. The numerical demands varied considerably from country to country depending on the simplicity or complexity of the conversion rates.

This research into currency change follows in the tradition of economic psychology. A number of studies have examined the problems with currency conversion, including the development of price intuition, using this approach (Marques and Dehaene, 2004; Ranyard *et al.*, 2003; Hofmann *et al.*, 2007). The present research draws on this, and in particular on ideas from the 'Psycho-Social' (Hofmann *et al.*, 2007) approach within the economic psychology and from Adult Numeracy tradition (Evans, 2000; Lave, 1988). The model used here studies the relationship between cognitive performance and affective variables, an approach based on Evans (2000).

This account of the currency changeover emphasises the importance of the context in which numerical thinking takes place, and aims to study the adult learner with conversion/calculation tasks in everyday life contexts. In order to illustrate the support given by the state, organisations and communities on national and local levels to guide the currency conversion, descriptions of various documents are presented.

This repeated cross-sectional study elicits responses from a series of representative samples of citizens in the Slovak Republic on their attitudes to the Euro, their context-specific conversion strategies (Hofmann *et al.*, 2007), and the development of 'price intuition' (Marques and Dehaene, 2004). Respondents were selected based on a tightly-designed quota sampling method, controlling for region, age and gender to collect the required number of responses from each group. The research was conducted at five

different points in time: the ‘pilot study’ was conducted before the introduction of the Euro in April 2008; Phase 1 took place during the dual circulation in January 2009, Phase 2 in August 2009; and Phase 3 in January 2011. All four phases used primary survey data. Additional clinical interviews were conducted in July 2012. Some results are compared to the Eurobarometer surveys conducted in other EU countries to place the findings in a broader context.

A key idea is that of *an adaptation strategy*. Hofmann *et al.*, (2007) proposed that there were four different forms of adaptation: a conversion strategy, an anchor strategy, a marker value strategy, and an intuitive strategy.

At the beginning of the Euro changeover, the conversion strategy was the most frequently used strategy by all socio-economic groups and none of the other strategies were used very often. However, two years after the changeover citizens became more selective and used different adaptation strategies for different problem solving tasks with the intuitive strategy being the most frequently applied. Furthermore, Slovak citizens share some common concerns with citizens of other countries, such as the perception that prices in the Euro currency appear cheaper; something known as the ‘Euro Illusion’. The illusion was stronger when people started to rely on intuition to make purchasing decisions. Overall, the empirical results show that the Slovak citizens adapted rather well to the new currency and the policy makers managed to avoid unexpected price increases which were common in other Eurozone countries.

The experience and lessons learnt could be informative and supportive for new entrants and policy makers, as the Euro is likely to be introduced in other countries, particularly Central and Eastern European countries. Since this study has been done the Euro has been introduced in Estonia and Latvia could be joining as early as January 2014 followed by Lithuania in 2015.

Acknowledgements

First of all I am grateful to Dr Jeff Evans for giving me the opportunity to start a PhD and his esteemed guidance during these last five years. Also, I am very grateful to Middlesex University for providing funding and resources to support this project. Middlesex is an intellectually stimulating, culturally diverse and interdisciplinary university; a great place to do a PhD!

I am grateful to many people who have helped me to complete this thesis. My deepest gratitude is to my supervisors: Dr Jeff Evans, Dr Hafiz Khan and Dr Marian Rizov. Their support has been invaluable on both an academic and a personal level. Thank you for your support and encouragement in producing this project and for your excellent feedback.

Thank you to all PhD colleagues and friends for providing a wonderful research environment, not only for all their useful suggestions but also for being there to listen when I needed it. I will miss all the enjoyable lunch breaks. A special thank you to: Hanna, Anya, Lin, Emine, Katerina, Alma, Sarah, Ghulam and many more.

A big 'Thank You' goes out to the 375 people who participated in this study. Without them this research could not be completed.

Finally, it would have been impossible to complete this project without the kind support and help of my family. Thank you for allowing me to pilot test my questionnaires on you; you have been a constant source of strength and inspiration.

Contents

ABSTRACT	III
ACKNOWLEDGEMENTS	V
LIST OF TABLES	XI
LIST OF FIGURES.....	XIII
ACRONYMS.....	XIV
CHAPTER 1	1
1 INTRODUCTION TO THE PRESENT RESEARCH	1
1.1 GENERAL BACKGROUND TO THE STUDY	2
1.2 SLOVAK REPUBLIC: BACKGROUND CHARACTERISTICS	3
1.3 RATIONALE FOR THIS STUDY	7
1.4 OUTLINE OF THE THESIS.....	9
1.5 SUMMARY	11
CHAPTER 2	12
2 LITERATURE REVIEW	12
2.1 INTRODUCTION.....	12
2.2 NATIONAL CURRENCY CHANGEOVER	15
2.3 DEVELOPMENT OF RESEARCH QUESTIONS.....	21
2.3.1 <i>General demands and citizens' reaction to currency change</i>	23
2.3.2 <i>Affective responses</i>	24
2.3.3 <i>Coping with numerical demand during major currency change</i>	29
2.3.4 <i>Development of price intuition</i>	34
2.3.5 <i>Euro Illusion</i>	36
2.4 RESEARCH QUESTIONS	39
2.5 THE THEORETICAL FRAMEWORK	40
2.5.1 <i>Economic psychology</i>	41
2.5.1.1 Numerical cognition approach.....	42
2.5.1.2 Psycho-social approach.....	43
2.5.2 <i>Adult numeracy approach</i>	44
2.5.2.1 Adult numeracy in the wider sense	47
2.6 THE EURO CONVERSION PROCESS DESCRIPTION	48
2.7 SUMMARY	49

CHAPTER 3	51
3 METHODOLOGY	51
3.1 INTRODUCTION	51
3.1.1 <i>Methods used</i>	53
3.2 QUANTITATIVE METHODOLOGY	54
3.2.1 <i>Research validity and reliability</i>	55
3.3 MEASURING CONCEPTS, DEVELOPING INDICATORS AND DESIGNING THE QUESTIONNAIRE	56
3.3.1 <i>Questionnaire design</i>	61
3.3.1.1 Questionnaire number 1 (April 2008 Pilot Study)	62
3.3.1.2 Questionnaire number 2 (January 2009 Phase 1)	63
3.3.1.3 Questionnaire number 3 (August 2009 Phase 2)	64
3.3.1.4 Questionnaire number 4 (January 2011 Phase 3)	64
3.3.2 <i>Fieldwork</i>	67
3.3.3 <i>Data collection</i>	67
3.3.4 <i>Transcription</i>	68
3.3.5 <i>Sampling</i>	68
3.3.6 <i>Response rate</i>	71
3.4 DEVELOPING A COMPLEMENTARY QUALITATIVE METHODOLOGY	71
3.4.1 <i>The schedule of the qualitative interviews</i>	72
3.4.2 <i>Concepts and developing indicators</i>	75
3.4.2.1 Concept 1: Affective responses towards the Euro currency	76
3.4.2.2 Concept 2: Numerical demand (ability to convert/calculate)	77
3.4.3 <i>Sampling method</i>	81
3.4.4 <i>Transcribing and translating the interviews</i>	84
3.4.5 <i>Ethical considerations</i>	85
3.5 SUMMARY	85
CHAPTER 4	86
4 EURO CONVERSION PROCESS DESCRIPTION	86
4.1 INTRODUCTION	88
4.1.1 <i>Why this is important</i>	89
4.1.2 <i>Aims/research questions</i>	90
4.2 TEACHING OF THE EURO IN FORMAL EDUCATION	90
4.3 SUPPORT PROGRAMMES IN PLACE TO AID THE TRANSITION ON NATIONAL LEVEL	92
4.3.1 <i>Information campaign</i>	92
4.3.2 <i>Control of price increases</i>	93
4.3.2.1 Dual pricing	94
4.3.2.2 Conversion rate display	95

4.3.2.3	Code of conduct.....	97
4.3.3	<i>Summary of measures taken to protect citizens.....</i>	98
4.4	LOCAL SUPPORT PROGRAMMES.....	98
4.5	EXPECTED AND UNEXPECTED EVENTS BEFORE AND DURING THE CHANGEOVER AND HOW THE AUTHORITIES DEALT WITH THE SITUATIONS	102
4.6	SUMMARY	105
CHAPTER 5	108
5	CITIZENS' EXPERIENCES OF THE CONVERSION FROM THE SLOVAK CROWN TO THE EURO	108
5.1	DESCRIPTIVE STATISTICS	109
5.1.1	<i>Sample characteristics</i>	109
5.1.2	<i>Socio-demographic analysis</i>	112
5.2	SUMMARY OF DESCRIPTIVE STATISTICAL ANALYSIS	119
5.3	THE GENERAL EXPERIENCE OF THE SLOVAK PUBLIC WITH THE CONVERSION TO THE EURO [RQ1]	120
5.3.1	<i>Experience with the Euro coins and notes [RQ1(a)].....</i>	121
5.3.2	<i>Citizens' experience of dual circulation [RQ1(b)].....</i>	122
5.3.3	<i>The types of difficulties citizens' experienced [RQ1(c)].....</i>	124
5.4	A DISCUSSION ON THE ANALYSIS OF THE GENERAL EXPERIENCE OF THE SLOVAK PUBLIC WITH THE CONVERSION: [RQ1] 129	
CHAPTER 6	130
6	ASSESSMENT OF THE EURO SWITCHOVER IN THE SLOVAK REPUBLIC.....	130
6.1	CITIZENS' AFFECTIVE RESPONSES TOWARDS THE EURO CHANGEOVER [RQ2]	131
6.1.1	<i>Some aspects of the Euro currency and the national identity</i>	132
6.1.1.1	A discussion on the analysis of national identity	135
6.1.2	<i>Euro currency and the economic aspect</i>	135
6.1.2.1	A discussion on the analysis of the economic aspect	137
6.1.3	<i>Euro currency and benefits associated at personal level.....</i>	138
6.1.3.1	A discussion on the analysis of the benefits associated at personal level	139
6.1.4	<i>What are people's perceptions and beliefs concerning price rises? [RQ2(a)].....</i>	140
6.1.4.1	Discussion on the analysis of perception of price increases	142
6.1.5	<i>Correlation.....</i>	142
6.2	A DISCUSSION ON THE ANALYSIS OF CITIZENS' AFFECTIVE RESPONSES TOWARDS THE EURO CHANGEOVER: [RQ2] ...	145
6.3	HOW DO CITIZENS COPE WITH THE NUMERICAL DEMANDS REQUIRED TO DO CONVERSION? (RQ3)	146
6.3.1	<i>Citizens' ability to convert [RQ3 (a)].....</i>	149
6.3.1.1	A discussion on the analysis of citizens' ability to convert: [RQ3 (a)]	156
6.3.2	<i>Which conversion method people use? [RQ3 (b)].....</i>	157
6.4	A DISCUSSION ON THE ANALYSIS OF HOW CITIZENS COPE WITH THE NUMERICAL DEMAND: [RQ3]	165
6.5	HOW DO PEOPLE DEVELOP PRICE INTUITION OVER THE PERIOD FOLLOWING CONVERSION? (RQ4).....	167

6.6	A DISCUSSION ON THE ANALYSIS OF HOW PEOPLE DEVELOP INTUITION: [RQ4]	172
6.7	'EURO ILLUSION' [RQ5]	172
6.8	A DISCUSSION ON THE ANALYSIS OF THE 'EURO ILLUSION': [RQ5]	176
6.9	SUMMARY	176
CHAPTER 7		179
7	QUALITATIVE STUDY: LEARNING TO COPE IN SITUATIONS OF NATIONAL CURRENCY CHANGE	179
7.1	INTRODUCTION	179
7.2	CONDUCTING THE INTERVIEWS	180
7.3	SAMPLING METHOD	180
7.4	QUALITATIVE DATA ANALYSIS	181
7.4.1	<i>Self-completion questionnaire</i>	182
7.4.1.1	Socio-demographic analysis	184
7.4.2	<i>Interview results</i>	187
7.4.3	<i>Personal experiences using the Euro currency</i>	188
7.4.3.1	Theme I: The economic benefits and disadvantages of the Eurozone membership	188
7.4.3.2	Theme II: Symbolic meaning of the Euro currency	190
7.4.3.3	Theme III: People's ability to make sound decisions and the Euro Illusion	191
7.4.3.4	Theme IV: Political value system	193
7.4.4	<i>Personal experiences using the Slovak currency</i>	194
7.4.4.1	Theme I: Economic benefits and disadvantages of the Slovak Currency	194
7.4.4.2	Theme II: Symbolic meaning of the Slovak currency	195
7.4.4.3	Theme III: People's ability to make sound decisions in Slovak currency	196
7.5	WAYS OF ADAPTING TO THE NEW CURRENCY: THE USE OF STRATEGIES	197
7.5.1	<i>Ways of Adapting to the new currency: the use of strategies</i>	201
7.5.1.1	Development of Price awareness: Anchor Strategy	201
7.5.1.2	Adaptation to Euro values: Marker Value Strategy	204
7.6	ABILITY TO MAKE SOUND DECISIONS	206
7.7	DISCUSSION ON THE ANALYSIS OF THE INTERVIEW RESULTS	207
CHAPTER 8		209
8	MAJOR FINDINGS AND CONCLUSIONS	209
8.1	INTRODUCTION	209
8.2	THE SUMMARY OF KEY FINDINGS	210
8.3	CONTRIBUTIONS TO KNOWLEDGE	219
8.4	LIMITATIONS OF THE STUDY	220
8.5	FUTURE RESEARCH DIRECTIONS	221
8.6	RECOMMENDATIONS	ERROR! BOOKMARK NOT DEFINED.
REFERENCES		223

9	APPENDIX	237
9.1	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH NATIONAL IDENTITY: AUGUST 2009	239
9.2	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH HAPPINESS: AUGUST 2009.....	243
9.3	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH REGULAR SHOPPING: AUGUST 2009	246
9.4	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH EXCEPTIONAL PURCHASES: AUGUST 2009 ..	249
10	APPENDIX	251
10.1	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH NATIONAL IDENTITY: JANUARY 2011....	251
10.2	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH CONSEQUENCES FOR SK : JANUARY 2011 253	
10.3	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH HAPPINESS: JANUARY 2011	257
10.4	CORRELATIONS MATRIX AND MEAN	261
10.4.1	<i>Partial correlation results</i>	263
10.5	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH REGULAR SHOPPING: JANUARY 2011 ...	265
10.6	CROSS-TABULATION OF SOCIO DEMOGRAPHIC CHARACTERISTICS WITH LEARNING PRICES: JANUARY 2011	268
10.7	CROSS-TABULATION OF CONVERSION TASK WITH AGE.....	270
11	APPENDIX: QUESTIONNAIRES	271
11.1	PILOT STUDY.....	271
11.2	QUESTIONNAIRE 1	274
11.3	QUESTIONNAIRE 2	277
11.4	QUESTIONNAIRE 3	280
12	APPENDIX : QUALITATIVE STUDY	283
12.1	APPENDIX C: INTERVIEW SCHEDULE	283

List of Tables

TABLE 1.1	IMPORTANT DATES FOR THE SLOVAK REPUBLIC AND FIELDWORK FOR DATA COLLECTION FOR THIS STUDY	6
TABLE 2.1	CAUSES OF SUBJECTIVITY IN ASSESSMENT	14
TABLE 2.2	STRATEGIES FOR DEVELOPMENT OF INTUITION FOR NEW CURRENCY (AUSTRIA).....	31
TABLE 2.3	STRATEGY USE BY SOCIO-DEMOGRAPHIC CHARACTERISTICS (AUSTRIA)	32
TABLE 2.4	CONVERSION (MENTAL CALCULATIONS) TACTICS (FRANCE).....	33
TABLE 3.1	RESPONSES USED TO INFER ATTITUDES	58
TABLE 3.2	INDICATORS FOR AFFECTIVE RESPONSES	59
TABLE 3.3	WAYS OF ADAPTATION	59
TABLE 3.4	ABILITY TO MAKE SOUND DECISIONS.....	60
TABLE 3.5	EURO ILLUSION.....	60
TABLE 3.6	VARIABLES DESCRIPTION.....	65
TABLE 3.7	SAMPLING FRAME FOR THE QUALITATIVE STUDY.....	82
TABLE 4.1	TOOL RECOMMENDATIONS; AGE GROUP: 14-18YEAR OLDS.....	91
TABLE 5.1	VARIOUS PHASES OF CROSS-SECTIONAL SURVEYS AND SAMPLE SIZE	109
TABLE 5.2	SLOVAK REGIONS	111
TABLE 5.3	GENDER % DISTRIBUTION FOR EACH SAMPLE	113
TABLE 5.4	AGE OF RESPONDENT (%) FOR THE STUDY.....	114
TABLE 5.5	HIGHEST COMPLETED EDUCATION (%) FOR THIS STUDY	116
TABLE 5.6	ANNUAL GROSS INCOME IN EURO (%) FOR THIS STUDY	117
TABLE 5.7	REGION (% OF RESIDENCE OF RESPONDENTS TO FOUR WAVES OF STUDY)	119
TABLE 5.8	HAVE YOU SEEN/USED THE EURO? (APRIL 08).....	121
TABLE 5.9	DO YOU CHECK WHETHER YOU HAVE BEEN GIVEN THE RIGHT CHANGE? (% DISTRIBUTION)	123
TABLE 5.10	CONFUSE TWO COINS/BANK NOTES OF DIFFERENT VALUE? (% DISTRIBUTION).....	123
TABLE 5.11	DISTINGUISHING AND MANIPULATING EURO CASH. (% DISTRIBUTION)	124
TABLE 6.1	DID THE SLOVAK REPUBLIC LOSE A GREAT DEAL OF ITS IDENTITY BY ADOPTING THE EURO CURRENCY? (%)	133
TABLE 6.2	THE EURO INTRODUCTION WILL HAVE/HAS HAD POSITIVE/NEGATIVE CONSEQUENCES FOR SKK? (% DISTRIBUTION)	136
TABLE 6.3	THE REPLACEMENT OF THE SKK BY THE EUR WILL CAUSE YOU PERSONALLY A LOT OF INCONVENIENCE. (APRIL 2008)	137
TABLE 6.4	HOW HAPPY/UNHAPPY ARE YOU, PERSONALLY; THAT THE EURO HAS BECOME OUR CURRENCY? (% DISTRIBUTION)	138
TABLE 6.5	CHANGES IN PRICE DEVELOPMENT IN THE SLOVAK REPUBLIC.(% DISTRIBUTION)	141
TABLE 6.6	ATTITUDE QUESTIONS FOR THE 4 DIFFERENT FIELDWORKS (% DISTRIBUTION).....	145
TABLE 6.7	WHEN PURCHASING, DO YOU COUNT MENTALLY IN EURO/SLOVAK CROWN? (% DISTRIBUTION)	148
TABLE 6.8	HOW MUCH 5 EURO IS IN SLOVAK CROWN?	149

TABLE 6.9	HOW DID YOU GET THE RESULT? AUGUST 2009.....	150
TABLE 6.10	HOW MUCH 100SKK IS IN EURO?	150
TABLE 6.11	HOW DID YOU GET THE RESULT? AUGUST 2009	151
TABLE 6.12	BASIC CONVERSION TASK DIFFERENCES IN MEAN VALUES FOR AUGUST 2009 AND JANUARY 2009.....	152
TABLE 6.13	HERE IS AN ITEM PRICED IN SKK, ABOUT HOW MUCH SHOULD IT BE IN EURO? BREAD 31.50SKK.....	153
TABLE 6.14	HERE IS AN ITEM PRICED IN SKK, ABOUT HOW MUCH SHOULD IT BE IN EURO? DVD 499SKK.....	153
TABLE 6.15	HERE IS AN ITEM PRICED IN EURO, ABOUT HOW MUCH SHOULD IT BE IN SLOVAK CROWN? MILK 0.83EUR	154
TABLE 6.16	HERE IS AN ITEM PRICED IN EURO, ABOUT HOW MUCH SHOULD IT BE IN SLOVAK CROWN? MOBILE 183EUR... ..	155
TABLE 6.17	CONVERSION TASK	156
TABLE 6.18	CONVERSION STRATEGIES USED IN SLOVAKIA FOR THE FOUR TASKS DISCUSSED IN SECTION 6.3.1	158
TABLE 6.19	STRATEGY USE ACROSS DIFFERENT TYPE OF CONVERSION TASKS.	160
TABLE 6.20	CROSS-TABULATION CONVERSION TASK AND ACCURACY AUGUST 2009	160
TABLE 6.21	CROSS TABULATION TASK AND AGE: ADAPTATION STRATEGY SELECTION FOR PHASE 2 AND 3	161
TABLE 6.22	STRATEGIES FOR THE ASSESSMENT OF EURO VALUES (ADAPTED TABLE; FOR THE ORIGINAL SEE TABLE 9.3).....	163
TABLE 6.23	KEY FINDINGS FOR THE ADAPTATION CONVERSION STRATEGIES IN THE SLOVAK REPUBLIC.....	165
TABLE 6.24	HOW OFTEN DO YOU CONVERT SKK TO EURO AND EURO TO SKK WHEN DOING REGULAR SHOPPING?.....	168
TABLE 6.25	HAVE YOU LEARNT THE PRICES OF REGULARLY BOUGHT PRODUCTS IN EURO? (SELF REPORTED QUESTION)%....	169
TABLE 6.26	DO YOU CONVERT SKK TO EURO AND EURO TO SKK WHEN DOING SHOPPING? (% DISTRIBUTION).....	170
TABLE 6.27	FREQUENT/EXCEPTIONAL PURCHASES (% DISTRIBUTION)	171
TABLE 6.28	SPEND LESS/MORE EURO MONEY THAN YOU WOULD HAVE IF YOU HAD BEEN USING SKK? ERROR! BOOKMARK NOT	
	DEFINED.	
TABLE 6.29	DO YOU WITHDRAW LESS/MORE MONEY?	174
TABLE 6.30	SPENDING LESS/MORE MONEY IN € THAN YOU WOULD HAVE IF YOU HAD BEEN USING SKK? (% DISTRIBUTION)	174
TABLE 6.31	HOW DID THE AMOUNT YOU WITHDRAW COMPARE WITH THE AMOUNT YOU WOULD HAVE WITHDREW IN SKK.	175
TABLE 7.1	CONTROLLING VARIABLES FOR THE QUALITATIVE STUDY	181
TABLE 7.2	DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE.....	182
TABLE 7.3	SELF-REPORTED ATTITUDE QUESTIONS	183
TABLE 7.4	GENERALLY SPEAKING, DO YOU THINK THAT HAVING THE EURO IS A GOOD OR BAD THING FOR THE COUNTRY? . ..	184
TABLE 7.5	AND FOR YOU PERSONALLY, DO YOU THINK THAT HAVING THE EURO IS A GOOD OR BAD THING?	185
TABLE 7.6	HOW HAPPY/UNHAPPY ARE YOU, PERSONALLY: THAT THE EURO HAS BECOME OUR CURRENCY?.....	186
TABLE 7.7	HOW EASY/DIFFICULT IT IS FOR YOU TO UNDERSTAND THE VALUE (THE PRICES) IN EURO.....	186
TABLE 7.8	SUMMARY OF THE THEMES FOR THE QUALITATIVE PHASE OF THE STUDY: THE EURO CURRENCY.....	188
TABLE 7.9	SUMMARY OF THE THEMES FOR THE QUALITATIVE PHASE OF THE STUDY: THE SLOVAK CURRENCY	194
TABLE 7.10	PERSONAL EXPERIENCES USING CURRENCY	196
TABLE 7.11	STRATEGIES USE.....	198
TABLE 7.12	PRICE OF BREAD AND MILK.....	201
TABLE 7.13	STANDARD COLOUR TV	203
TABLE 7.14	5 EUR ABOUT HOW MUCH SHOULD IT BE IN SKK, IF THE ORIGINAL EXCHANGE RATE IS USED?	205

TABLE 7.15	600 SKK ABOUT HOW MUCH SHOULD IT BE IN EUR, IF THE ORIGINAL EXCHANGE RATE IS USED?	205
TABLE 7.16	1.80 EUR ABOUT HOW MUCH SHOULD IT BE IN SKK, IF THE ORIGINAL EXCHANGE RATE IS USED?	206
TABLE 7.17	1 300SKK ABOUT HOW MUCH SHOULD IT BE IN EUR, IF THE ORIGINAL EXCHANGE RATE IS USED?	207
TABLE 9.1	CONVERSION RATES OF EUROZONE COUNTRIES	237
TABLE 9.2	CROSS-TABULATION CONVERSION TASK * AGE	238
TABLE 9.3	STRATEGIES FOR THE ASSESSMENT OF EURO VALUES (THE ORIGINAL TABLE)	238
TABLE 9.4	DID SLOVAK REPUBLIC LOSE A GREAT DEAL OF ITS IDENTITY BY ADOPTING EURO CURRENCY?	239
TABLE 9.5	DID SLOVAK REPUBLIC LOSE A GREAT DEAL OF ITS IDENTITY BY ADOPTING EURO CURRENCY *AGE	240
TABLE 9.6	DID SLOVAK REPUBLIC LOSE A GREAT DEAL OF ITS IDENTITY BY ADOPTING EURO CURRENCY *EDUCATION	241
TABLE 9.7	HOW HAPPY/UNHAPPY ARE YOU, PERSONALLY: THAT THE EURO HAS BECOME OUR CURRENCY?	243
TABLE 9.8	CROSS-TABULATION: HAPPINESS *AGE	244
TABLE 9.9	HOW OFTEN DO YOU CONVERT WHEN MAKING REGULAR SHOPPING?	246
TABLE 9.10	DO YOU CONVERT SKK TO EURO AND EURO TO SKK WHEN DOING YOUR REGULAR SHOPPING? REGION	247
TABLE 9.11	DO YOU CONVERT SKK TO EURO AND EURO TO SKK WHEN DOING YOUR REGULAR SHOPPING? AGE	248
TABLE 9.12	DO YOU CONVERT SKK TO EURO AND EURO TO SKK WHEN DOING YOUR REGULAR SHOPPING? INCOME	248
TABLE 9.13	CROSS-TABULATION SPECIAL PURCHASE? * AGE OF A RESPONDENT.	250
TABLE 10.1	DO YOU AGREE/DISAGREE, THAT SR LOST A GREAT DEAL OF ITS IDENTITY BY ADOPTING THE EURO?	251
TABLE 10.2	EURO CONSEQUENCES FOR THE SR	253
TABLE 10.3	HOW HAPPY/UNHAPPY ARE YOU, PERSONALLY: THAT THE EURO HAS BECOME OUR CURRENCY?	257
TABLE 10.4	HOW OFTEN DO YOU CONVERT WHEN MAKING REGULAR SHOPPING?	265
TABLE 10.5	HAVE YOU LEARNT THE PRICES OF REGULARLY BOUGHT PRODUCTS?	268

List of Figures

FIGURE 1:	CONCEPTUAL MAP FOR THIS STUDY.....	57
FIGURE 2:	REGIONS	111
FIGURE 3:	DIAGRAM ANALYSIS (CORRELATION ATTITUDE)	143
FIGURE 4:	CONVERSION STRATEGY JANUARY 2011 AND AUGUST 2009 (%)	159

ACRONYMS

AN	Adult Numeracy
CSK	Czechoslovak Crown
DG ECFIN	The Directorate-General for Economic and Financial Affairs
DK	Don't Know
ECPD	Euro Conversion Process Description
EMU	Economic and Monetary Union/European Monetary Union It is the agreement among the participating countries of the European Union to adopt a single currency, the Euro, and a common monetary policy set by a common central bank, the European Central Bank.
ERM II	Exchange Rate Mechanism
EU	European Union
EUR	Euro (European Monetary Unit)
NC	Numerical Cognition
PSA	Psycho-Social Approach
SKK	Slovak Crown
SR	Slovak Republic
V4	V4 or Visegrád Four is an alliance of four Central European states – the Czech Republic, Hungary, Poland and Slovakia. The purposes of their cooperation are to obtain easier access to other European markets and to further European integration.

CHAPTER 1

1 Introduction to the Present Research

‘.....future member states of the European Monetary Union should prepare their population in a better manner than the existing member states did (Isengard and Schneider , 2004, p.5).

The thesis studies the numerical demands imposed on Slovak citizens in the context of the currency change and their affective responses. Each chapter concentrates on different aspects of the switchover. This first chapter focuses mainly on the background to the study and gives a brief overview of the central characteristics of the Slovak Republic. The primary aim is to put the study in context. The structure of the thesis is outlined at the end of this chapter.

I began this study of conversion to the Euro during an exciting period for the European Union (EU) back in early 2008. Many researchers had outlined how the currency changeover required citizens to adapt in various ways, including Hofmann *et al.*, 2007 and Gamble *et al.*, 2002. Some of these researchers were discussing conversion strategies (Hofmann *et al.*, 2007), between currency conversions (Lemaire, 2007; Strazzari *et al.*, 2005), citizens’ experiences of the Euro (Ranyard, 2007), developing intuition for prices (Marques and Dehaene, 2004), or the psychological effect of the Euro (Jonas *et al.*, 2002).

1.1 General background to the study

In recent years, there have been major currency reforms in the European Union. More are expected to follow as soon as the remaining EU countries become eligible for Eurozone membership. The conversion of twelve¹ first wave countries' to the Euro resulted in a large number of studies in this area.

A large subcategory of these, based on 'economic psychology' theories, analyses the effects of the conversion on citizens' ways of developing or failing to develop intuition in the new currency, the Euro. Other studies focus on (i) *affective response towards the changeover* (Meier-Pesti and Kirchler, 2003; Ranyard *et al.*, 2005), (ii) *price intuition and the 'Euro Illusion'* (Jonas *et al.*, 2002; Gamble *et al.*, 2002), (iii) *learning strategies* (Hofmann *et al.*, 2007; Ranyard, 2007; Kirchler and Meier-Pesti, 2001; Fessel GfK, 2004) and; (iv) *calculation tactics* (Lemaire, 2007; Strazzari *et al.*, 2005). Researchers are also interested in the (v) *process of the changeover* (Eurobarometer Surveys) and have collected various data before, during and after the switchover to be able to detect the various changes over time, as well as to estimate the time needed for citizens to become comfortable using the new currency.

There are many reasons for a country to change the national currency such as the devaluation of currency², political changes³ or as a result of deciding to join the monetary union⁴. Changing currency may be challenging for some citizens especially if the country changes not just the design of the currency as seen in Slovakia in 1993⁵, but also the value

¹ Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, and Spain.

² Devaluation of currency is a reduction of the value of a country's currency, which to some extent may be seen as a sign of weakening of the economy. In such a case a country may decide to issue a new currency to replace the old currency as seen in the case of Turkey, Romania, Poland etc.

³ The political changes in the former Czechoslovakia led to currency change after the two countries become independent states.

⁴ Monetary union is where two or more countries have a single currency, for example the Eurozone.

⁵ After the independence of the Slovak Republic the Czechoslovak notes were overprinted (stamped) so they could be used in Slovakia. Later new notes were printed for use in Slovakia with national symbols.

of the currency as seen in Europe during the 2002 – 2011 period. Citizens must not only adapt to the currency's design but also to the new value system. Although the state is providing some rules and regulations to guide citizens and businesses, there are other challenges to citizens in adapting to the Euro currency. The emphases in this thesis are placed on the social aspects of the currency changeover rather than the technical aspects. The summary of relevant research that has already been conducted in the countries within the Eurozone and countries which are considering becoming members is presented in more detail in chapter 2, the literature review. To understand the context of the thesis a brief review of the background characteristics of the Slovak Republic is given below.

1.2 Slovak Republic: background characteristics

This study focuses on the conversion process in the Slovak Republic. It is therefore appropriate to say something about the country and the key historical events related to this research. It is possible that some of the experiences of previous currency conversions and decimalisation may help us to understand the public response to the Euro currency changeover as individual experiences lead to different beliefs and cultures, resulting in differences in thinking and feeling (Isengard and Schneider, 2004).

The Slovak Republic is a central European country. In terms of population (about 5.5 million) and geographical size (49, 035 square kilometres), it comprises the six smallest countries (in decreasing size: Slovakia, Estonia, Slovenia, Luxembourg, Cyprus, and Malta) in the Eurozone. For years Slovakia shared a state with neighbouring nations i.e. with the Hungarians for over 800 years and with the Czechs for 68 years (1925 till 1993). On the 1st of January 1993, the Slovak Republic peacefully split up from the Czech Republic and became an independent state.

On 1 May 2004, eight former communist countries⁶ including the Slovak Republic, together with two Mediterranean countries, Cyprus and Malta joined the European Union. By 2005 these countries (except for Poland, Hungary and the Czech Republic) joined the exchange rate mechanism (ERM), which is the condition for Euro area entry. The Slovak Republic joined the European Union with an agreement to become a member of the Eurozone upon meeting the Maastricht criteria (Sikulova and Okali, 2009).

The Slovak Republic was monitored by the EMU to comply with the strict Maastricht criteria which were successfully met in July 2008, an important milestone in Slovak history and the lives of Slovak citizens. The qualifying criteria and technical preparations included price stability, monitoring of the fluctuation of the exchange rate and sustainability of public finances. During this year, Slovakia went through significant changes such as increasing growth and decreasing inflation rates. The fulfilment of expectations connected with the Euro has been evaluated and analysed by Klucka *et al.*, (2009). The exchange rate was amended three times and finally fixed at 30.1260SKK/1€.

The national currency, the Slovak crown, had been replaced by the Euro on the 1st January 2009. Slovakia officially became the 16th Eurozone country and the first of the Visegrad countries⁷. While the accession to the Euro boosted business and investors' confidence, feelings among Slovak citizens were mixed. Some were worried about being cheated, high prices and loss of national identity. Others were excited about economic development and the improved standard of living. A council of the Slovak Republic approved a 'General act on the Euro and implementing regulations' code 659/2007 on the introduction of the Euro

⁶ Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia.

⁷ V4 or Visegrad Four, is an alliance of four Central European states – the Czech Republic, Hungary, Poland and Slovakia – the purposes of cooperation are to obtain easier access to other European markets and to further European integration.

currency in the Slovak Republic to safeguard the transition and to provide protection of the economic interests of citizens.

Throughout its history, Slovakia had experienced several changes to the currency (six since 1919). However, the Euro changeover is very different from the previous currency changeovers (Spectator, 2008). The previous currency changes (except the one in 1953⁸) were exchanged in ratio 1:1. Following the introduction of the Euro, however, the exchange rate was €1=30.126 SKK. Therefore, all aspects of the unit of currency changed: appearance and design, value as well as the name of the currency.

According to Kovac (2008) the earlier currency changeovers since 1989 could be forgotten; however, the one in 1953 was difficult and affected Czechoslovakians. A household could exchange for one person a maximum of 300 crowns in ratio 5:1 and the rest was exchanged at 50:1. Savings were exchanged between 5:1 and 10: 1; however, all linked term deposits were voided. This currency exchange led to huge disappointments and in some cases it led to tragedies (Kovac, 2008).

The short lived Slovak crown (SKK) was established in February 1993 (Spectator, 2008). Prior to 1993 Slovakia shared a currency with the Czech Republic the Czechoslovak Crown (CSK). When the CSK was replaced by the SKK, it was only the design that changed, not the nominal value, although the political and economic changes since 1989 (the end of communism) were followed by difficult economic and social crises. The currency had fallen in value due to inflation⁹ followed by enormous price increases and a deep decrease in real wage. However, prior to the Euro introduction, the Slovak economy was the fastest growing economy in the EU and the Slovak crown increased in value by as

⁸ In 1953 (the most controversial currency change) the currency was exchanged at the ratio 1:5 only for the first 300 crowns and further exchange was at the ratio 1:50.

⁹ According to the Statistical office of the Slovak Republic the total inflation rate in the period 1990-1998 reached 226%; in housing services for the period 1991-1999 the inflation reached 382% (Olexa, 1999).

much as 14% against the Euro (BTI, 2010). Table 1.1 briefly summarises the important dates in Slovak history before the Euro changeover, followed by some important dates after the changeover as well as indicating the fieldwork timeline for this project.

Year	Brief Slovak History	Fieldwork for this study
1939 -1945	Slovak Crown used as a national currency	
1945 -1993	Czechoslovak crown used as a national currency	
1989 (November)	Velvet Revolution in Czechoslovakia(fall of communist regime)	
1993 (January)	Slovakia becomes independent state	
1993 (February)	Introduction of Slovak crown	
2004 (May)	Slovakia becomes a member of the European Union	
2005 (November)	Slovak crown included in the Exchange Rate Mechanism II (ERM II)	
2008 (April)	8 months before the currency changeover	Data collection (Phase 0 / Pilot Study)
2008 (August)	Start of "Dual Pricing Display"	
2009 (January)	Slovakia adopts the single European currency Euro Start of 'Dual Circulation'	Data Collection (1 st Phase)
2009 (16 th January)	End of 'Dual Circulation'	
2009 (August)	8 Months after the currency changeover	Data Collection (2 nd Phase)
2009 (December)	End of 'Dual Pricing Display'	
2010 (December)	End of price monitoring	
2011 (January)	Two years after the currency changeover	Data Collection (3 rd Phase)
2012 (July)	Three and half years after the currency change	Data Collection (4 th Phase)

The government approved the single-step transition to the Euro, known as the “Big Bang” scenario, where cash and non-cash transactions were introduced simultaneously (European Commission, 2009). This approach was more acceptable, as Euro bank notes and coins were already in circulation and Slovak citizens had had an opportunity previously to see or perhaps use the Euro in other Eurozone countries. However, with respect to educating the public this approach offered fewer learning opportunities to adapt to the Euro in comparison to the first 11 Eurozone countries which had dual circulation up to 3 years.

1.3 Rationale for this study

This thesis is about affective responses and numerical demands imposed on citizens in the context of the Euro change. The preliminary work began with a much broader problem regarding currency affective responses and conversion learning strategies and latter towards much better-defined issues concerning cognition and affect. To investigate the broader problem the study proposes a suitably designed structured questionnaire, analysed using quantitative methods to meet our aims and objectives. As the research developed it becomes more apparent that the concepts needed to be developed more fully, particularly the learning conversion strategies and the conversion tasks needed to investigate the relationship between the learning strategies and the affective responses. I revised the results from the structured questionnaires and developed an interview schedule to better understand the Slovak citizens’ affective responses to the Euro currency and their adaptation processes through ‘clinical’ interviewing. There is some discussion as to whether affect is a part of an attitude or attitude is a part of an affect. This study adopts the position that affect is a component of attitude. An attitude is a disposition to respond favourably or unfavourably to an object, person, institution, or event (Ajzen, 2005). Katz

and Stotland (1959) and Rosenberg (1968) have pointed out that all true attitudes have cognitive and affective content. This is further discussed in chapter three, the methodology.

The aim of this study is to review the background of currency changeover, adapt and apply a theoretical framework, assess people's affective responses to the Euro currency and evaluate the currency adaptation process.

The objective is to produce a systematic review of research into the Euro changeover, particularly focusing on:

1. *citizens' affective responses towards the Euro,*
2. *range of currency learning strategies,*
3. *numerical demands in currency conversion situations and,*
4. *the 'Euro Illusion'*

Furthermore, the intention is to contribute fully to the understanding of the currency conversion within adult numeracy context by taking into account the different types of situations before, during and after the transition, in order to make the transition more sensitive to national and local needs. We also hope to collect repeated cross-sectional data using structured questionnaires, to study the effects of the introduction of the Euro as a single currency in Europe.

In addition, the repeated cross-sectional survey data and 'clinical' interviews were designed to enhance the understanding of Slovak citizens' affective responses to the Euro currency and their adaptation processes three and half years after the changeover.

The *affective responses* to the new and the old national currency were investigated by designing general attitudinal questions as well as researching respondents' own accounts

of experiences with both currencies, the Slovak crown and the Euro. *Cognitive skills* were investigated through real conversion tasks to see how people solve conversion problems and how comfortable they feel thinking in the new currency, the Euro. Drawing on previous work reported by Hofmann *et al.*, (2007) the aim was to establish which conversion strategy citizens use by: a) direct question: asking how people adapted to the Euro; b) asking respondents to solve simple tasks to see which adaptation strategy they apply.

The plan was to design real conversion tasks situated in a relatively natural setting to understand how people do conversions/calculations in everyday situations such as shopping. The interviews have been conducted in a shopping centre for a reason. A shopping centre is a place where people engage in purchasing and financial decision making, providing a great setting for the interviews. In addition, the question wording was carefully designed to position the respondent in a realistic setting.

This repeated cross-sectional study takes advantage of the real life European experiment to investigate the affect of a major currency change on citizens. With this in mind I constructed the questionnaire and interview schedule for this study. See the fuller description in the methodology chapter.

1.4 Outline of the thesis

This thesis is organised into eight chapters. Chapter 1 includes background, a brief profile of the Slovak Republic and our rationale. Chapter 2 deals with the literature review on the Euro currency changeover. It reviews the Euro transition process in other Eurozone countries and looks at different aspects of a currency changeover which play an important part in this conversion process. This section also presents the theoretical framework and

the research questions. Chapter 3, outlining methodology and methods, is separated into two parts. The first part describes the methodology and methods for the quantitative research. It presents the scientific approach underlining this study, the rationale for selecting a broadly positivist approach to study the currency changeover. Furthermore, this chapter deals with the questionnaire design, sampling method and data collection. The second part describes the methodology and methods for the qualitative part of this research, explains the development of concepts and ideas, and describes the selection of interviewing methods and the development of the interview schedule. Chapter 4 presents an overview of the Euro transition process in the Slovak Republic and explores a number of matters, such as the support programmes in place to aid the transition and expected and unexpected events during the changeover. It also includes an overview of articles published by various sources before, during and after the changeover. Chapters 5 and 6 present the analyses of the data. Each research question is presented separately and the effect of the Euro changeover is observed over time. Further, comparison is made with the Eurobarometer survey 2004-2009 when possible in order to put the findings into broader context. Chapter 7 presents the results of the qualitative interviews. It seeks to explain how different aspects of the currency changeover are interrelated; in particular, how affective responses are related to individual's ability to cope with the currency conversion. In particular, it combines people's approval of the Euro currency and their ability to cope with the Euro adaptation. Finally, the main findings are summarised and conclusions are drawn in chapter 8.

The implementation of a different currency is nothing new; however, the Euro changeover can be described as the largest single currency change in history. Although the introduction of the Euro in the new member states should not be as complicated as in the

first Euro entrant countries, the experience and lessons learned in each country should be investigated and revised to advise and support the new Euro entrants.

This investigation provides an interesting case study in the demands made on adults' numeracy during the process of currency conversion. It may also, provide opportunities for collaborating in future research focused on the conversion to the Euro in a number of European countries.

1.5 Summary

This chapter has described the importance of this study in relation to currency changeover in the Slovak Republic. A brief overview of the history of the Slovak Republic is outlined in order to give a clear understanding of the study area. There has been research in the Slovak Republic but little is known of how the second wave countries including Slovakia adapted to the new value of the Euro currency. I was fortunate: the timing was just right to undertake this research. Slovak Republic is more industrial in comparison to e.g Slovenia, Malta. This research should be helpful in supporting the 3rd wave entrants and so that experiences can be compared in the future to the wave 3 countries. The following chapter focuses on the literature review.

CHAPTER 2

2 Literature Review

'Little is known about the time course of learning and adaptation to changes such as this and further evidence is important for the development of theories in both economic psychology and numerical cognition' (Ranyard *et al.*, 2003, p.2).

The main objectives of this chapter are (i) to produce a review of research into the Euro currency change, and more specifically on the use of learning strategies and affective responses in the context of currency change; (ii) to formulate research questions; and (iii) to develop a theoretical framework based on existing literature, and using insights from Adult Numeracy (AN).

Before I review the important literature, it is necessary to give a short introduction explaining the consequences of the currency changeover on people's lives. As mentioned in the introduction, the Euro changeover has created new opportunities for economic research, economic psychology, and psycho-social research, which I wish to discuss here.

2.1 Introduction

Today the Euro is officially national currency to 17 Eurozone countries (see Appendix Table 9.1) and a further seven European Union countries (Bulgaria, Czech Republic, Hungary, Latvia, Lithuania, Poland and Romania) are bound to adopt the Euro once they comply with the criteria set by the Treaty of the EU. The Euro is the second most

important international currency and is currently used by more than 329 million citizens living in the Eurozone countries (European Commission, 2009).

The introduction of the common European currency led to significant changes in the global economy, markets, monetary policies and the everyday lives of citizens. Researchers such as Hofmann *et al.*, (2007); Marques (1999); Ranyard *et al.*, (2003) study the challenges for citizens during and after currency changeover.

When a country enters the Euro, citizens engage in currency conversion tasks in everyday activities such as shopping, evaluating their wage/salary, and tipping. It is essential in order to understand the actual change of the values in the former national currencies into Euro values, to undertake everyday tasks such as making different money related decisions, evaluating how much to pay for certain products or services or just deciding how much money to withdraw from a cash machine. Based on these experiences people learn, i.e. develop cognitively, and also form attitudes.

The Eurobarometer survey shows that the acceptance of the new currency varies widely from country to country (various Eurobarometer Surveys) and that the lowest proportion is observed in countries which are not participating in the EMU such as Denmark, Sweden and the UK (Isengard and Schneider, 2004).

It is unclear how people cope with newly introduced currency and how their everyday financial decisions are affected. It is understandable that financial decisions are based on price intuition, acquired and developed over a long period of time. When the currency changes and people cannot rely on price intuition, their ability to plan, negotiate and make decisions in daily financial transactions are affected. According to Marques (1999) using psychological literature on numerical cognition some of the difficulties can be predicted, for example problems with: (i) conversion/calculation; (ii) price intuition/price knowledge

and; (iii) evaluation of price differences. In addition, Burgoyne *et al.*, (1999) suggest a number of other areas which need to be taken into consideration such as: (i) the symbolic meaning of money; (ii) expectations, concerns, beliefs; (iii) information campaign and attitude change. These issues will be discussed in more details later in the chapter.

According to Raghurir (2006) people subjectively value prices and money depending on their individual characteristics, price perception, monetary characteristics and context. The table below (2.1) adopted from Raghurir (2006) further explains the causes of subjectivity in assessment:

Perception	Biases in assessing the subjective value of money and prices
Inferences	Whether consumers use price information to make other judgments
Affect	The feelings and emotions associated with spending and saving
Memory	Biases in recall of money and prices
Information Integration	The manner in which consumers integrate costs and benefits to make decisions of whether, when, how much, and what to spend on

Source: Subjectivity in Assessment by Raghurir (2006, p.1054)

Research has shown that developing intuition is a long process and studies from different Eurozone countries show that the adaptation process varies from country to country and from individual to individual (Hofmann *et al.*, 2007; Ranyard, 2007; and various Eurobarometer Surveys). It is possible that some citizens fear or question their abilities to adapt to the new currency. Various factors play important parts in the adaptation process such as people's attitude towards the new currency, in terms of attachment to the national currency, the exchange rate and the difficulties associated with conversion; as well as socio-demographic variables such as education, income, age and gender.

2.2 National currency changeover

There has been a fair amount of research done on currency changeover, but most of it appears to focus on the first wave of entrants to the Eurozone in 2002, except for the Eurobarometer surveys, conducted on a regular basis in each EU member state. Current literature about the transition to the Euro for the 2002 Eurozone entries provides a good source of relevant information for all the recent and potential entrants, but more research is needed in all Eurozone countries to better reflect the heterogeneity of their national context and current situation and possibly identify new areas of research. One key difference between the earlier entrants (2002) and the new entrants (2007-2009) is that Euro coins and notes are already in circulation in Eurozone countries. According to the Eurobarometer survey (European Commission, September, 2008a), prior to the changeover 82% of Slovak respondents had seen Euro coins and notes and 50% had used Euro coins and notes, something the first Eurozone entrants could not do.

Gallup Europe is responsible for conducting Eurobarometer surveys on a regular basis (twice a year) for the European Commission in all new EU member states¹⁰. Eurobarometer surveys are either focused on the changeover in a single country or in all Eurozone countries (a cross-country study). The aim of the survey is to investigate people's perceptions regarding the introduction of the Euro currency. The first regular Flash Eurobarometer survey for the new member states was carried out in 2004. It is a large scale survey with about 1,000 respondents per country using both phone and face-to-face interviews and it is representative for people aged 15+. There are four main issues investigated in the Eurobarometer report; (i) *people's experiences and knowledge relating to the Euro*; (ii) *the main information channels and how informed citizens feel*; (iii)

¹⁰ The new European Union countries which joined the EU in 2004 and 2006.

people's perceptions about the Euro; and (iv) citizens' expectations and fears. The Eurobarometer survey sums up the Euro changeover process before, during and after the changeover to identify changes and progress. Furthermore, comparisons are made to the other countries and the EU averages. Although this quantitative approach provides a good series of snapshots of the situation, it is important to produce literature review of the Euro changeover using other surveys and academic research.

First wave countries have been the subject of a number of studies; the following section will give some examples: To begin, Austria Hofmann *et al.*, (2007) describes four adaptation strategies observed during this process of conversion (a) 'Conversion Strategy'; (b) 'Intuitive strategy'; (c) 'Anchor Strategy'; and (d) 'Marker Value Strategy'. Indicators of these strategies can be used to evaluate the learning process, since some can positively contribute to the development of price intuition in Euro. The choice of a strategy is also related to the attitudes toward the Euro. This is an area I intend to focus on and will describe in more detail later in the chapter.

France (e.g. Lemaire, 2007; Banque de France, 2002): Lemaire (2007) used concepts from cognitive psychology to investigate how people convert specific amounts from French Francs to Euro and from Euro to French Francs. This research shows that French people used six different conversion methods to convert. Following Lemaire's (2007) research, my own research will employ this concept in a Slovak context and investigate the conversion tactics before, during and after changeover in the Slovak Republic.

Ireland: Ranyard (2007) describes the Irish experience with the currency transition by addressing different aspects of the currency changeover such as adaptation strategies, attitudes and feelings etc. and compares these findings with other Eurozone countries, Italy, Austria and Portugal, something I also intend to do.

Italy: (Strazzari *et al.*, 2005; Cestari *et al.*, 2007); Strazzari *et al.*, (2005) investigates how Italian people solved conversion tasks from Italian Lira to Euro and vice versa one and a half year after the transition. The results show that Italian people find it difficult to convert the Euro amounts and in some cases even use the incorrect conversion/calculation. The second study looks at price memory of cinema tickets. The research investigates the accuracy of recalled prices in comparison to the actual price. Furthermore, this study is trying to determine whether people retrieve the prices of cinema tickets from memory or through calculation. The results show that the recalled prices are actually much lower than the actual prices of cinema tickets, leading to the conclusion that some people have distorted memory for prices.

Spain: McWilliams (2007) focuses on the impact of the media on Spanish people's attitudes. The study concluded that the media has a big effect on the formation of attitude but is only one of many factors contributing to the positive acceptance of the Euro and European identity.

Portugal (Marques and Dehaene, 2004; Santos *et al.*, 2002): Marques and Dehaene (2004) evaluates the development of price intuition after currency change. The development of price intuitions is explained by testing two hypotheses, re-scaling (dependence on mental calculation) and re-learning (retrieving prices from memory). The results show that people will not use re-learning unless the process of re-relearning (price retrieval) is faster and easier than re-scaling which requires arithmetic calculation. Santos (*et al.*, 2002) investigates the effect of the currency changeover on prices. This study concludes that some price increases have been caused by rounding (using simplified exchange rate of 200PTE/€) as well as 'convenient pricing' (attractive pricing for example 0.99€).

Germany (Jonas *et al.*, 2002): this study investigates perception of salaries in Germany after the Euro transition. The findings show that German people tend to estimate higher prices in the new Euro currency and are less willing to travel long distance to work when pay is offered in the Euro currency.

Netherlands (Folkertsma *et al.*, 2002; Van Everdingen and Van Raaij, 1998): The research of Folkertsma *et al.* (2002) focuses on price increases after the Euro changeover. The main findings suggest that prices have increased due to the changeover as retailers passed the cost of the transition on to the consumers in addition to the attractive pricing (prices such as 0.99€). Van Everdingen and Van Raaij (1998) focus on people's attitudes towards the Euro currency.

Finland (Aalto-Setälä *et al.*, 2003) this study examines people's price knowledge. The study finds out that because of the variation in the market price of certain products people do not know the prices. However, for products with less variation in market price the price knowledge is actually quite accurate.

Greece (Kokkinaki, 1998) this study examines Greek attitudes towards the European integration. The results show that Greek people have positive attitudes and are optimistic about the consequences of the single Euro currency.

Some studies compared different countries, such as that of Marques and Dehaene (2004) who investigated the changeover in Portugal and Austria, and Luna-Arocas *et al.*, (2001) who investigate national identity in Spain and Portugal. This shows a variety of research topics addressed in the first Euro entrant's countries. Many of these studies will be reviewed and referenced to latter in this chapter.

The second wave countries (2007-2011) have also been the subject of interest in the past. For example, in Slovenia, Rudez and Bojnec (2010) investigate the attractiveness and competitiveness of the Slovenian tourist industry after the changeover. In Slovakia, Kovac (2008) and Hufner and Koske (2008) speculate on the effects of the currency changeover, while Matovcikova (2010) describes how people cope with the newly introduced currency. Malta (Romina, 2007): this study observes changes in consumers' price perception and behaviour, while Allam and Goerres (2008) investigates people's attitudes towards the Euro in post-communist countries. In addition, the European Commission has conducted surveys with the aim of assessing Euro area citizens' attitudes towards the Euro currency and its effects. The Eurobarometer survey provides the main source of information for entrants during 2007-2010 as far as assessing the perceptions of citizens after the introduction. The amount and scope of research conducted in the original twelve countries in comparison to the joiners in 2007-2011 indicates a lack of academic research in the area of development of price intuition. In the absence of comparable studies in this area with either Slovak citizens or the new Euro entrants (2007-2010) I have considered this research problem in a wider context, drawing from experiences of all Eurozone countries.

In particular, the research conducted so far in the Slovak Republic is minimal. In an article published in an economic magazine entitled 'On the Psychological Aspects of Euro-Conversion in Slovakia' by Kovac (2008), the author briefly explains money's role and how people perceive money and its influence on people's behaviour. A brief description is given of Austrian citizens' experiences with currency conversion. This article does not report any pertinent findings as it was published before the actual Euro conversion in Slovakia. Furthermore, Hufner and Koske (2008) published a report on: 'The Euro Changeover in the Slovak Republic: Implications for Inflation and Interest Rates'. This report was published again before the Euro changeover. Its objective is to speculate as to

the possible impacts of the Euro currency on inflation, interest rates, price increases and house prices. Lalinsky (2010) investigates business competitiveness after Euro adaptation in Slovakia and reports significant worsening of economic and financial indicators following the Euro adoption; however, the decrease in price and cost competitiveness was only temporary. Another article available is published by Matovcikova, (2010) investigating Slovak citizens' general knowledge of the EU and tipping practices. It is a well designed study over irregular periods of time, using a self completion questionnaire on a sample of students (approximately n=128 for each wave) before and four months after the Euro conversion. Attitudes are measured in reports of perceived advantages and disadvantages of the Euro currency, the conversion process is evaluated by expected/experienced difficulty with the Euro currency and the 'Euro Illusion' is measured by asking respondents what is an appropriate tip without any specific context, in both the Slovak crown and the Euro. The results in 2009 show that 75% of respondents did not have difficulty with the currency changeover and that only 16% of respondents felt nostalgic about the Slovak crown. The majority of respondents prefer to tip in Euro, and in general tend to leave larger tips in the Euro currency. This study was conducted in 2009 and therefore does not offer sufficient findings on conversion strategy use, an area I intend to focus on.

As we can see, the Euro generated a number of studies in various social science disciplines, but so far this literature is uneven. The earlier research presents a diverse collection of surveys and reports published by official institutions like the European Commission, European bank, national bank and government as well as academic research with broader methodological and theoretical settings. However, very few of these studies provide a picture of the changeover for the subsequent Euro-Entrants (2007-2011). Furthermore, other researchers, myself included, have identified a gap in literature on the adaptation

process, particularly on the actual development of price intuition for the Euro e.g. El Sehity (2001); Lemaire (2007); Marques and Dehaene (2004); Hofmann *et al.*, (2007).

Research is therefore needed to address the adaptation process in the 2nd wave of entrants, to make accounts of the changeover more country sensitive as well as to add to knowledge of how citizens from different countries with different exchange rates respond to these changes. It is expected that different countries with different levels of conversion difficulty will experience different numerical demand.

2.3 Development of Research Questions

Before developing research questions it is important to note some of the key developments in the current literature in the area of currency conversion.

As early as 1998 the Journal of Economic Psychology (volume 19) published a number of articles in the area of the Euro currency changeover. These articles provide extensive research on attitudes towards the Euro currency and monetary union. They show national differences in people's attitudes which are affected by various factors including perceived advantages and disadvantages of the Euro currency, and ideas of European identity and national identity. In 1999 Marques speculated about possible problems people may face after the introduction of the new value currency using the insights from 'numerical cognition'. One of the problems identified in this study is the difficulty people may experience with converting the Euro. In 2001 Lemaire *et al.*, (2001) conducted a study to investigate how people cope with converting the Euro to French francs and vice versa. The various techniques of converting different amounts were recorded to identify how people perform the calculations. In 2002 Dehaene and Marques (2002) carried out a number of experiments to investigate people's price knowledge in familiar and unfamiliar currencies.

The findings show that French respondents overestimated prices while Portuguese respondents underestimated them and the Irish respondents overestimated the cheaper products but underestimated the more expensive products. After the currency change this topic of price knowledge was investigated further to understand how people develop price intuition after the currency is introduced. To be able to explain price intuition development Marques and Dehaene (2004) tested two hypotheses, re-scaling and re-learning. The re-scaling is a form of mental calculation and re-learning is based retrieving prices from long term memory in the new currency. The key findings show that people will not use re-learning unless the process of re-relearning (price retrieval) is faster and easier than re-scaling, which requires arithmetic calculation. These two proposed hypotheses were later expanded to four learning adaptation strategies by Hofmann *et al.*, (2007): the Conversion Strategy, the Anchor Strategy, the Maker Value Strategy and the Intuitive strategy. These can provide some indication of the level of adaptation to the new currency. This topic was further developed to understand the influence of nominal values on price evaluation. For the majority of Eurozone countries, the transition to the Euro meant that their national currencies were replaced by much lower nominal value currency e.g. 30 Slovak crowns replaced by 1 euro. Gamble (2007) outlines techniques adopted to investigate to what extent citizens are influenced by the nominal representation of prices rather than the 'real' value of the Euro currency, something called the 'Euro Illusion'.

So far research in different countries has been reviewed and important developments and directions noted to help explain contextualise the work that I want to do in this thesis. The review gives a strong base for the development of more research specific literature to support the development of the research questions for this thesis.

2.3.1 General demands and citizens' reaction to currency change

As mentioned earlier, the key difference between the 2002 joiners and the 2007-2009 is that citizens familiarised themselves with the Euro prior to the changeover. The existing literature on people's attitudes towards the new currency shows that the extent of knowledge can influence people's attitudes (Meier-Pesti and Kirchler, 2003) and that highly informed people have a more positive attitude towards the Euro (Isengard and Schneider 2004). The level of knowledge is central as the ability to cope with the new currency is somewhat more important than individual approval of the new currency (Isengard and Schneider, 2004). Prior to the changeover in Slovenia about 94% of citizens (the highest percentage of all EU countries) had seen Euro coins and notes (European Commission, September, 2006). Perhaps this is one of the reasons why the Euro currency was rather positively received in Slovenia; however, there is no evidence to support this, because of the small amount of research on the 2007-2011 Eurozone entrants, thus:

The first RQ1 is: What is the general experience of the Slovak public with the conversion to the Euro currency, and did they have any prior experience with the Euro coins/notes before the changeover?

It is difficult enough to deal with one currency but during the dual circulation people had to deal with both the old national currency and the new Euro, therefore we further have investigated:

RQ1A People's experience of the dual circulation, especially focusing on handling the two currencies.

In respect to the initial difficulties this study focuses on the longer rather than shorter term difficulties which may be attributed to the currency change; these are more cognitive in nature. As cited in Ranyard (2007, p.320) people often make errors in their everyday financial dealings and transactions. The inaccuracy may escalate during the changeover

period when citizens start to use newly designed banknotes and coins in addition to the value of the money changing (1€= 30.1260SK), therefore, we asked respondents what types of difficulties citizens may have experienced, mainly focusing on errors in financial transactions, budgeting and spending.

2.3.2 Affective responses

The Eurobarometer surveys show that the attitudes of citizens towards the new currency varied widely from country to country and over time. Muller-Peters *et al.*, (2001) found that people's attitudes depend on whether citizens expect the introduction to have positive or negative consequences, either for them personally or for their country. Recent Eurobarometer surveys in the new member states (European Commission, May, 2008) have found that about 50% of citizens foresee positive consequences at the national level (47% at the personal level). Citizens' support of the Euro is highly important as is the legal obligation of the EU country to accept the Euro currency¹¹. However, the Eurobarometer survey (European Commission, May, 2008) shows that a vast majority of respondents (65%) from the new member states were not aware of this obligation.

According to Kokkinaki (1998) understanding attitudes and the determinants is important, as they influence people's decisions and actions; they provide a valid indicator of the strength to affect individuals' intentions and actions.

A number of other domains have been identified by Muller-Peters *et al.*, (1998) as possible determinants of people's attitudes towards the Euro changeover:

- Involvement and knowledge concerning the Euro
- National identity, national pride and European identity
- Tendency towards certain financial behaviours

¹¹ With the exception of the UK, Denmark and Sweden.

Burgoyne *et al.*, (1999) claim that the Euro currency is more than just a unit of exchange, it is a means by which citizens experience a sense of belonging. Currency can generate emotional attachment and, if not handled sensitively, it can generate negative attitudes, e.g. as seen in Germany. Various papers on national identity have been published by social psychologists. Some of the main theoretical approaches are social identity theory Müller-Peters (1998) and Meier and Kirchler (1998).

The Eurobarometer survey (European Commission, May, 2008) shows that about 53% of respondents in the new member states¹² claimed that the introduction of the Euro will make them feel more European; 55% in Slovakia. Canova and Manganelli (2003) explored some of the effects of the Euro adoption in Italy on the attitude towards the single currency, as well as on feelings of national and European identity. The research was conducted in three stages to cover the period just before the changeover, during and after in 2001, 2002 and 2003 respectively. The results show that the Italians were very positive about the Euro and strongly identified with it before and shortly after the changeover. The study goes further to explain that in 2002 (at the beginning of the changeover) Italians were so enthusiastic about the Euro that some accepted even negative consequences of the changeover such as price increases. However, in 2003 the study shows a decline in identification with the Euro, which could be due to decline in positive attitudes towards the Euro and perceptions of a worsening economy. The Euro Working Group Report (Dejemeppe, 1999) shows also that a person's job affects the individual's need to use the Euro; for example people who travel may develop genuine interest in the Euro. Another study, in Ireland, found that the focus of people's attitudes after the changeover can also change. The study claims that after the changeover the focus was more on the economic

¹² Poland, the Czech Republic, Hungary, Bulgaria, Romania, Latvia, Estonia, Lithuania and Slovakia.

and practical aspects rather than on the symbolic meanings of the currency (Ranyard *et al.*, 2005) because people were expecting the Euro to result in economic growth and a higher standard of living.

Until the Euro changeover Slovakia enjoyed rapid growth and the fastest growing economy in the EU, but growth has since slowed down due to low global demand. This has affected the whole of Europe. The Slovak economy relies heavily on exports to Europe and due to the economic crisis the car manufacturers had to cut down on production and other businesses had to limit their activities; the housing market is at a standstill and unemployment has rapidly increased from 9.7% in January 2009 to 11.1% in May 2009 (Eurostat, 2009). The unfavourable economic developments in Slovakia may trigger some negative attitudes towards the newly introduced currency. As the literature points out people's attitudes before the changeover were affected by different factors such as European Identity, National identity and the symbolic meaning of the currency: However, after the changeover citizens tend to be effected more by the economic development in their country.

Thus the second research question (RQ2) is: what were the citizens' attitudes towards the Euro before and after the changeover?

Attitudes influence citizens' economic behaviour. According to Meier-Pesti and Kirchler (2003) positive attitudes towards the currency can encourage savings and investments in home countries. On the other hand negative attitudes decrease citizens' trust in the economy and people start to invest abroad.

Furthermore, the earlier experiences of transitions from the national currencies to the Euro led citizens to believe that prices increased as a consequence of the Euro transition. Numerous explanations for this phenomenon have been proposed by researchers such as:

Fluch and Stix (2005), Dziuda and Mastrobuoni (2009), Hufner and Koske (2008), and Ranyard (2008). Several potential explanations have been proposed such as 'Euro Illusion', gap between officially measured inflation and perceived inflation and complexity of exchange rate. Furthermore, Lamla and Lein (2010) claimed that the media influenced people's perceptions of price increases.

In order to try to meet citizens' concerns in this regard, the Ministry of Economy agreed on regular price monitoring for two years and businesses were encouraged to sign up to a voluntary code of good practice and pledge not to increase prices due to the Euro changeover. According to the Eurobarometer survey (European Commission, September, 2007) carried out in Slovakia, 72% of Slovak citizens were worried that they would be cheated during the changeover; slightly higher than the average figure for the new member states which was 69% (European Commission, September, 2007). One year on the 69% decreased to 63% (European Commission, September, 2008b).

Here I expand the second research question (RQ2A), and investigate people's perceptions and beliefs concerning price rises before and after the changeover.

To put this study into a broader context this thesis attempts to extend earlier research such as the Eurobarometer Survey. During last 10 years a number of studies have examined citizens' attitudes towards the new euro currency and replicating these studies can tell us a lot about how different countries seek to explain euro area attitudes and how they evolved over time. Understanding the support for the euro currency in the EU is important as the majority of EU countries have legal obligation to adopt the single currency. It is expected that individual attitudes towards the euro are influenced by economical, political and historical characteristics of each country - simply weighting the costs and benefits of adaptation of the euro currency is not sufficient. According to Allam and Goerres (2008)

in Central and Eastern Europe individual are more supportive of the euro in smaller countries with more prosperous economics and larger state deficit. However, due to the euro crisis the new countries are increasingly hesitant to adopt the euro currency and according to the report the new member states are not so welcomed.

Following the research criteria on examining citizens' attitudes towards the euro currency I repeat the study in Slovak context during the period of three years. The Eurobarometer survey shows that the acceptance to the new currency differs between the states. A study by Roth *et al.*, (2012) show how citizens' support developed in European Union countries between 1990 and 2011 as shown in figure 1;2 and 3.

FIGURE 1 SUPPORT FOR THE EURO IN NINE EA-12 COUNTRIES, AUTUMN 1990- AUTUMN 2011

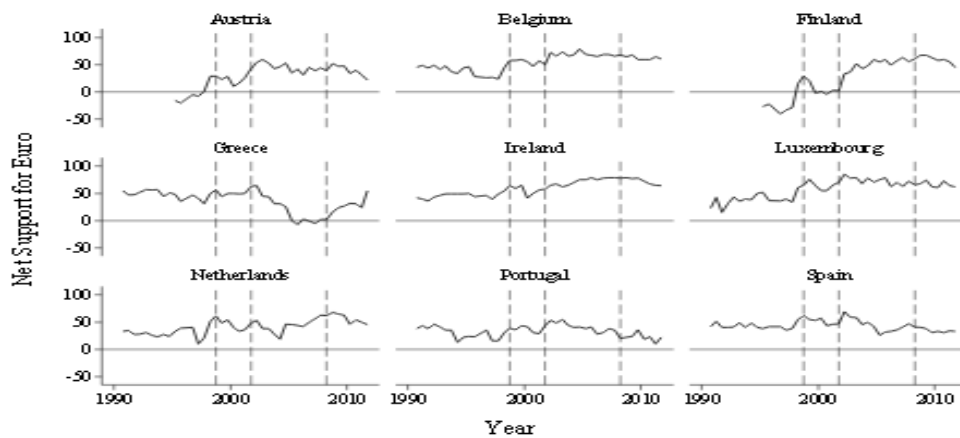


FIGURE 2 SUPPORT FOR THE EURO IN FIVE EURO AREA COUNTRIES THAT JOINED EMU AFTER 2001, AUTUMN 2004 - AUTUMN 2011

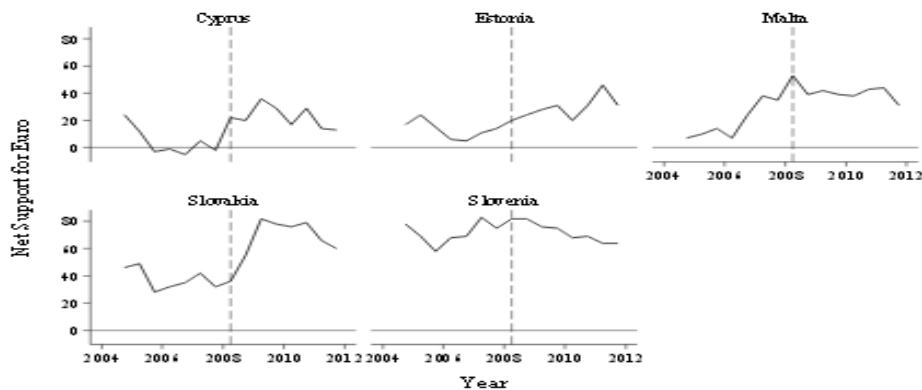
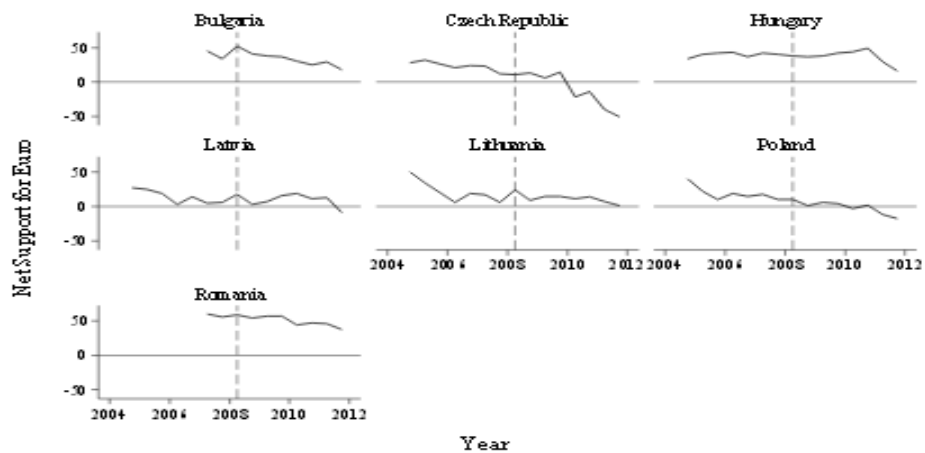


FIGURE 3 SUPPORT FOR THE EURO IN THE SEVEN TRANSITION AND NON-EURO AREA COUNTRIES, AUTUMN 2004 – AUTUMN 2011



Slovak citizens' attitudes towards the euro currency have developed in similar way as the attitudes of other Eurozone citizens. Although, Slovak citizens had the opportunity to see and use the euro currency before it was introduced it does not guarantee a smooth changeover. According to Burgoyne et al., (1999) currency is a very powerful symbol and a political, economic and social entity.

To enhance the understanding of Slovak citizens' attitudes in comparison with the other countries I ask the question (*RQ2B*), *how it compares to other countries in general?*

2.3.3 Coping with numerical demand during major currency change

There is limited research into how people accomplish conversion from one currency to another and how appropriate the particular conversion is. When people travel, study or work abroad they have to use unfamiliar currency, just as they do if the country decides to join the monetary union. This means that they have to adapt their intuitive value system to the new currency. Existing research on conversion strategies (tactics) which the consumers use is rare. For example the French study shows how people performed the conversion calculations and how they selected between different strategies in different situations (Lemaire, 2007; Lemaire et al., 2001).

It is important to distinguish between the two different meanings of the word ‘Conversion’. Sometimes I will be using the word in a broad context to mean the more general process of conversion (a change in which one adopts new currency). The second meaning is narrower since it is the act of performing a calculation from one currency to another using an exchange rate.

The literature provides a conceptual framework to study and to understand how consumers learn the value of the Euro and develop the intuitive price system. It is probably the most important aspect of the currency change, because without understanding of the new currency the changeover process cannot be successfully completed. Previous findings show that the learning process is not straightforward and that people do need to do conversion (Marques and Dehaene, 2004; Lemaire, 2007; Hofmann *et al.*, 2007) to be able to understand prices in the new currency. According to Marques (1999) the problems that consumers usually face are: evaluating if something is cheap or expensive; and comparing prices of different brands of the same product. These changes affect the citizen’s ability to manage finances. The study carried out by Ranyard *et al.*, (2003, p.1) “Living with the Euro but Thinking in Punts?” shows that when “citizens are faced with unfamiliar currency they lose the frame for assessing fair play and value for money, become confused and feel vulnerable”.

According to Hofmann *et al.*, (2007) there are four strategies people use to learn the value of a currency so they are able to accomplish everyday tasks and financial transactions. (i) ‘Conversion strategy’ (ii) ‘Intuitive strategy’ (iii) ‘Anchor strategy’ and (iv) ‘Marker value strategy’ (see Table 2.2 for more information).

Table 2.2 Strategies for development of intuition for new currency (Austria)

Strategy	Description
Conversion Strategy	Converting (calculating) the entire Euro prices into the old currency. The calculation can be exact or rule of thumb. (Similar to conversion tactics described by Lemaire, 2001 in France)
Marker Value Strategy	Specific values are learned for example how much 5€, 10€, 20€ is worth in Austrian Shilling. When needed the specific values are retrieved from memory rather than converted as described in the conversion strategy. This is a form of re-scaling as proposed by Marques and Dehaene (2004)
Anchor Strategy	Learning (remembering) prices, mostly the regularly bought products for price evaluation. For other (similar) products the remembered prices are used as an anchor. This is a form of re-learning as proposed by Marques and Dehaene (2004)
Intuition Strategy	No conversion or comparison of the Euro to the old currency. People rely on developed intuition and retrieve it when needed.

SOURCE: BASED ON STRATEGIES FROM HOFMANN, ET AL., (2007, P.373)

Before the Euro introduction participants were asked how they intend to adapt to the new value of the Euro currency. Hofmann *et al.*, (2007) have reported these findings of the focus group from Fessel GfK (2004).

The main finding of the Hofmann *et al.*,(2007) study shows that the choice of strategy is affected by level of income, level of education, age and it also differs in different purchasing situations (everyday/exceptional), as well as being affected by a respondent's attitude towards the Euro changeover (see Table 2.3). This research points out the importance of citizens adapting their intuitive value system so they are able to accomplish everyday tasks and financial transactions. Furthermore, the research compares the four strategies and explains why some are more suitable than others. For example, citizens using the Intuitive strategy and the Anchor strategy do not refer back to the old national currency; therefore, they can slowly develop the price intuition in the new currency, the Euro. It is reasonable to assume that over time if citizens do not use the old remembered reference prices (in the old national currency) they will slowly forget the prices and will have to rely more on the new reference prices, the Euro prices.

Table 2.3 Strategy use by Socio-demographic Characteristics (Austria)

Strategy	Findings
Conversion Strategy	Older people 50+, low income and education, likely to hold negative attitudes towards the Euro
Intuition Strategy	Younger under 20, women, highly educated, likely to hold positive attitudes towards the Euro
Anchor Strategy	No socio-demographics relations
Marker Value Strategy	Similar to intuitive strategy, younger and educated

SOURCE: KEY FINDING BY HOFMANN ET AL., (2007)

The Conversion strategy can be explained as the habitual use of calculation from the old currency to the new currency and *vice versa*. Lemaire (2007) explores how French people do between-currency conversions (what he calls strategies I call tactics) as well as how accurate they are, how people execute and choose between them, how long people need to do them and what the mental constraints are. Lemaire compares the frequency usage of various conversion strategies before the Euro changeover and 5 years after the changeover. The main point of this article is to understand how people perform the conversion/calculations and how they select between different tactics in different situations. As identified by Lemaire *et al.*, (2001) there are six tactics to convert French Francs to Euro (1 €=6.56 FF) see Table 2.4.

Table 2.4 Conversion (mental calculations) tactics (France)

Strategy	Description	Illustration
Transformation	Transforming the to-be-converted amount before multiplying the transformed amount by 6 or 7.	For 9 €, participants did $10 \times 6 = 60\text{FF}$
Direct Calculation	Multiplying the to-be-converted amount by 6.6 or 6.56.	For 12 €, participants did $12 \times 6.6 = 79.2\text{FF}$.
Decomposition	Separately and successively multiplying the decade and unit digits of the to-be-converted amount.	For 82 €, participants did $(80 \times 6) + (2 \times 6) = 492\text{FF}$.
Multiplying by-six	Multiplying the to-be-converted amount by 6, then add 10% to this product.	For 72 €, participants did $72 \times 6 = 432 + 43 = 475\text{FF}$.
Truncation	Neglecting the unit digit of the to-be-converted number and multiplying the resulting number by 6 or 7.	For 92€, participants did $90 \times 6 = 540\text{FF}$.
Retrieval	Participant's retrieved solution directly from long-term memory.	For 15 €, participants retrieved 100FF directly from long-term memory.

SOURCE: LEMAIRE (2007, p.385)

Lemaire's main finding (2007) is that, five years after the currency conversion, French people are still executing conversion, although their accuracy and speed have improved and they are using fewer strategies. Other research also shows that people spent significant amounts of time converting (calculating) to work out how much things might cost in the old currency (Marques and Dehaene, 2004).

Thus the third research question (RQ3) is: How do citizens cope with the numerical demand required to do conversion?

The Slovak conversion rate was fixed at $\text{€}1 = 30.126\text{SKK}$. This could be rounded down to 30 and used for mental conversions. This conversion may look simple but previous research showed that at the beginning people used multiple conversion strategies. Vulnerable groups, such as older adults, often use idiosyncratic strategies which may be less efficient (Lemaire, 2007). Here we expand the third research question and investigate citizens' ability to convert (to do useful calculation). Other research shows that in Italy people used the wrong conversion tactic (Strazzari *et al.*, 2005). For example, when converting from lira to Euro ($1\text{EUR} = 1,936.27\text{ Lira}$), people divided by 2000 and then

subtracted a little instead of adding a little. El Sehity (2001) found in his study that the French and the Austrians used an exchange rate significantly higher than the official rate, thus calculating lower Euro prices.

The development of price intuition is a very slow learning process affected by factors such as the simplicity of the conversion and the regularity of purchase (Marques and Dehaene, 2004). Price intuition is defined by Marques and Dehaene as direct retrieval of prices from memory; the price is recovered directly from the memory and no conversion is used to estimate price of a specific product. The four strategies identified by Hofmann *et al.*, (2007) are reasonable indicators of development of price intuition.

Therefore (RQ3A): I investigated which conversion strategy people use in order to assess the progress of adaptation to the new price system.

2.3.4 Development of price intuition

There are different ways citizens can adapt to the value of the new currency, the Euro. They can choose to use one of the four strategies proposed by Hofmann *et al.*, (2007) or the two techniques proposed by Marques and Dehaene (2004) *re-learning* and *re-scaling*. Re-scaling is a form of mental calculation where the respondent relies on mental calculation to estimate prices in Euro. First the respondent needs to retrieve the price estimate from long term memory in the old national currency and then re-scale (transform) to Euro to understand the new currency. This form of re-scaling can be linked to the marker value strategy (as identified by Hofmann *et al.*, 2007). Re-learning is based on automatization, deriving from Logan's theory (1988) on the acquisition of automaticity. In this instance, respondents retrieve the Euro prices (mainly for the frequently bought products) from memory without reference to the old currency. Hofmann *et al.* (2007)

compared re-learning to the anchor strategy based on the fact that people using the anchor strategy use the remembered prices and anchors to evaluate prices of similar products.

Regarding the model of development of price intuition, a relatively reasonable predictor can be formulated: if the learning strategies as identified by Hofmann *et al.*, (2007) depend preliminarily on whether people refer back to the old currency or not then we should be able to assess the learning process by merging the strategies of Hofmann *et al.*, (2007) into two strategies: one that leads to learning or assists the development of price intuition and one that does not lead to this type of learning. The first strategy is the intuition, anchor and marker value strategy. The second, the strategy that does not assist the learning process, is the conversion strategy. The reason why the marker value strategy is classified as a learning strategy even if the strategy is a form of conversion (mental calculation), requiring citizens to retrieve prices in the old currency, is that people using this strategy are basically trying to learn the new value system as a whole by rescaling their previous value system (Hofmann *et al.*, 2007). In other words the intuition, the anchor and the marker value strategy rely on memory by retrieving information (prices and specific values) from memory. The conversion strategy relies on performing cognitive task. According to Missier *et al.*, (2007) if people are not able to adapt to the new currency they may 're-activate' prices in their old national currencies and start relying on the conversion (especially if this is easy, as in the case of Slovakia 1EUR=30.126SKK). Obviously, this slows down the adaption process and leads to anchoring bias in intuitive price estimation, particularly when the reference prices represent the implausible anchors. To establish whether the nominal value of a currency is plausible or implausible depends on the exchange rate between the two currencies. For example the Irish punt is considered to be a plausible anchor ($\text{€}1=0.787564$) because the punt has value close to the euro; and the Italian lira an implausible anchor ($\text{€}1=1936.27$) because of the large difference.

Thus the fourth research question (RQ4) is: how do people develop their price intuition over the period following conversion?

In order to make the results more meaningful the results of this study are compared to other countries to better understand how Slovaks developed price intuition in comparison to how other country develop it; *(RQ4A) is how citizens in other countries developed price intuition?*

2.3.5 Euro Illusion

The transition to the Euro meant that the Slovak national currency was replaced by a currency where a single unit is worth more than the original unit. 1€ is worth 30 times more than the SKK. Consumers could be subject to what economists call the ‘Money Illusion’ a tendency to think in the ‘nominal’ rather than the ‘real’ value of money (Shafir *et al.*, 1997). For the purpose of this study we adopted the term ‘Euro Illusion’ coined by Gamble *et al.*, (2002).

The ‘Euro Illusion’ is caused by the difference between the nominal value of two different currencies (for example the Euro and the Slovak crown). For example a bill for 5€ may possibly appear lower than a bill for 150.60SKK although the ‘real value’ is the same. On the other hand, a salary of 8,398€ will possibly appear much lower than a salary of 253,000 SKK¹³. Dealing with a currency which has a higher or lower value than one is accustomed to requires an understanding of the ‘nominal value’ of money.

Thus the fifth research question (RQ5) is: To what extent are Slovak citizens influenced by the nominal representation of prices rather than the ‘real’ value?

Researchers have used various techniques to study the ‘Euro Illusion’, including interviews and experiments. Gamble *et al.*, (2002) investigated its effects on people’s

¹³ According to the Eurostat, the average gross annual earning in the Slovak Republic for the year 2007 in industries and services.

perception of salaries. Some of the factors found to account for the extent of the 'Euro Illusion' experienced by subjects are: familiarity with the conversion technique, attitude towards the currency and the complexity of the conversion strategy (Gamble, 2007).

Gamble *et al.*, (2005) carried out three laboratory experiments with Swedish students. In the first and second experiment, fictitious currencies were used, one small-unit and one large, to see in which currency the participants make payment and in which currency they choose to obtain salary. In the third experiment, respondents selected between cheap and expensive products priced in small and large-unit currency. The participants chose to pay for products in large unit currency and obtain their salary in small-unit currency. In the third experiment the majority of participants decided to purchase a product whose price was expressed in large-unit currency. According to Ranyard (2007) Irish citizens did not experience this bias; however, some price increases have been recorded¹⁴. Another study by Missier *et al.*, (2007) compares Italy and Ireland. This study is interesting due to the extreme difference in exchange rates. The Irish punt represents the plausible anchors and the Italian lira an implausible anchor. In the case of Slovakia, a cup of coffee costs about 1.50 Euro: therefore the reference price of 45SKK (which is approximately 1.50€) is considered to be an implausible anchor for Slovak consumers. The influence of plausible anchors on price estimation has been proven (Jonas *et al.*, 2002), but the effect of implausible anchors on price estimation is not clear. As such, further research is needed to investigate the implication of implausible anchors (Missier *et al.*, 2007). The 'Euro Illusion' may last a long time, and it is not known which factors promote and which hinder the adoption process. According to previous studies the size of the exchange rate is not a good predictor of the adaptation process (Amado *et al.*, 2007), although evidence shows that citizens cope better if they can re-scale rather than re-learn prices.

¹⁴ It is important to mention that unlike most pre-Euro European currencies, the Irish punt had a greater value than the Euro.

Existing research into the “Euro Illusion” in price estimation refers to memory retrieval process and reference price (Ranyard *et al.*, 2001). Several theoretical explanations have been suggested to explain the ‘Euro Illusion’: (a) the ‘Accuracy-Effort Trade-off’; as the effort invested in the conversion increases the ‘Euro Illusion’ decreases. (b) The ‘Compression Effect’; the differences between prices appear smaller. (c) ‘Anchoring-and-Adjustment Heuristic’; the estimates are influenced by an anchor (starting point), in such a way that the estimates are insufficiently adjusted away from the anchor.

2.4 Research questions

From the above discussion the following research questions are developed:

1. What is the general experience of the Slovak people with the conversion to the Euro currency?
 - Prior experience with Euro coins and notes, especially focusing on dealing with receiving change.
 - Experience of dual circulation, especially focusing on handling the two currencies, e.g. distinguishing different denominations of Euro coins.
 - The types of difficulties citizens' experienced, focusing on errors in financial transactions, budgeting, spending and how they coped with these problems?
 - What support was available to people on national and local levels?
2. What were citizens' affective responses towards the Euro currency before and after the changeover?
 - What are people's perceptions and beliefs concerning price rises?
 - How does it compare to other countries in general?
3. How do citizens cope with the numerical demand required to do conversion?
 - What is citizens' ability to convert?
 - Which conversion method do people use?
4. How do people develop their price intuition over the period following conversion?
 - How did citizens in other countries develop intuition?
5. To what extent are Slovak citizens influenced by the nominal representation of prices rather than the 'real' value, i.e. the Euro Illusion?

These research questions guide the development of the theoretical framework for this study, which is described in the next section. The theoretical framework developed fully in the course of the fieldwork.

2.5 The theoretical framework

This section aims to explain the different approaches used in this study and how they work together. According to El Sehity (2001) the Euro changeover has been examined from the economic psychology approach and on the macro-economic level (e.g. the European Commission). Furthermore, Strazzari *et al.*, (2005) divided the transitional problems into numerical cognition and a psychological approach. In addition, I wish to incorporate the field of Adult Numeracy to examine how adults use numeracy in everyday life particularly in the context of currency changeover. In Adult Numeracy there is an emphasis on affect, context of thinking and social class. Adult Numeracy suits this study because it is more sensitive to context and social differences. Lave (1988) produced a series of studies in adult mathematics in settings outside the school. Numbers are central to many everyday situations, such as calculating, budgeting and handling money.

How a person adjusts to the Euro currency depends on their understanding of its nominal value (Kirchler and Hölzl, 2006) (one Euro corresponds to 30.126SKK) and perceptions of the currency, which is influenced by attitudes. In this particular case, the citizen will have to rely primarily on the results of a conversion, and as such adjusting to the new Euro currency requires some level of numerical problem solving skills to convert values (Strazzari *et al.*, 2005; Lemaire and Lecacheur, 2001; Marques and Dehaene, 2004) and to make purchasing judgements or decisions (Gamble *et al.*, 2002).

Economic psychology has focussed on the introduction of the Euro, generating a number of articles to show the public and governmental institutions how citizens perceive money and currency change, and what strategies might be applied to gain citizens' acceptance for change: Marques and Dehaene (2004); Ranyard *et al.*, (2003); Hofmann *et al.*, (2007); Gamble (2007). Thus the two main approaches (which will be addressed) are '*Economic*

Psychology', (more specifically the 'psycho-social' and 'numerical cognition' approach) and '*Adult Numeracy*'.

2.5.1 Economic psychology

Economic Psychology is considered a relatively new discipline, drawing ideas from social psychology, economics and consumer research with recognition of business, marketing and psychology.

In the last few years researchers have become more accepting of this approach and come to believe that combining economics and psychology will benefit both disciplines (Webley *et al.*, 2001). Akerlof and Shiller (2009) have recently published a book to demonstrate how feelings, behaviours and actions can affect economic outcomes. They both recognise that a psychological perspective is needed in economic analysis (Gärling *et al.*, 2009). Their book attempts to explain why economic theories alone are insufficient as a measure of how the economy is doing and suggests that other factors which also drive economies need to be accounted for such as people's psychological behaviours and actions.

One of the research topics developed through Economic Psychology is the process of currency conversion, in particular as it regards the Euro. This allows researchers to analyse a.) *price perception* (Ranyard *et al.*, 2008) and *price knowledge* (Marques and Dehaene, 2004), Euro Illusion (Gamble, 2007), b.) *conversion strategies* (Hofmann *et al.*, 2007; Kirchler and Fessel GFK, 2001^{a,b} and 2002^{a,b}) and other aspects, including people's attitudes towards the Euro and currency representation. Economic psychologists investigating the changeover are likely to use the Anchoring-and-adjustment heuristic theory developed by Tversky and Kahneman (1974) or Logan's (1988) theory on automatization, both concerned with the way decisions are made.

A number of researchers (Marques and Dehaene, 2004; Ranyard *et al.*, 2003; Hofmann *et al.*, 2007; Gamble, 2007) examined the problems of currency conversion using the economic psychology approach. The economic psychology literature can help us understand how people deal with major currency change and how they develop a number sense for the new currency. In the next section I compare the work of Marques and Dehaene (2004) and Hofmann *et al.*, (2007).

2.5.1.1 Numerical cognition approach

They both take the economic psychology approach, but Marques and Dehaene's work is more about innate cognitive ability using the 'Numerical Cognition' (NC) approach. 'NC' researchers tend to be psychologists and use experiments and quasi-experiments to explain issues such as: the development of price intuition in the new currency and the 'Euro Illusion' (Gamble, 2007).

'Numerical Cognition' is a branch of cognitive psychology focused on how humans process *numerocity*, in their abilities to process/perform calculations. In the context of currency conversion researchers are interested in how people develop intuition for prices and which conversion tactics they use to do so. The (NC) approach (Marques and Dehaene, 2004) can be used to study a problem of conversion (calculation) of prices to Euro. Researchers such as Lemaire and Lecacheur (2001); El Sehity (2001); Mussweiler and Englich (2003); Strazzari *et al.*, (2005); Marques and Dehaene (2004); have placed emphasis on the cognitive skills and adopted the numerical cognition approach to study the conversion of Euro prices. One of the limitations is that much NC research is done in laboratory experiments primarily conducted with students or children.

Marques and Dehaene (2004) conducted an experimental study with Portuguese and Austrian students to investigate development of price intuition by testing the re-scaling and

re-learning hypothesis, where *re-scaling* is dependent on mental calculation. In the case of the Euro changeover, consumers retrieved price estimates from long-term memory in the former national currency and then rescaled (transformed) them to estimate prices in Euro. *Re-learning*: is based on automatization which derives from Logan's theory (1988) on the acquisition of automaticity. Consumers rely on memory to retrieve prices in Euro. According to Marques and Dehaene (2004), people will not use re-learning unless the process of re-learning (price retrieval) is faster and easier than re-scaling which requires arithmetic calculation.

Lemaire *et al.*, (2001) conducted an in-lab experiment with younger and older adult students (n=96) to investigate people's tactics to convert French francs into Euro, making a contribution to the body of knowledge about age related differences and similarities in the context of currency conversion. Respondents were asked to perform conversion in a laboratory problem solving task. This study was repeated five and half years later to see how conversion tactics changed, but this time only with younger students. The second study revealed differences in the execution of the conversion task. According to Lemaire (2007) the findings concerning the between-currency conversion task are interesting as they contribute to cognitive psychology on numeric problem solving.

2.5.1.2 Psycho-social approach

Hofmann *et al.*, (2007) use the psycho-social approach (PSA) which emphasises learning abilities but also pays attention to attitudes and motivations. Psycho-social (PS) researchers have produced a diverse literature on people's attitudes towards the Euro and how attitudes were influenced by national and European identity i.e. Kokkinaki (1998); Ranyard (2007); Meier and Kirchler (1998); Müller-Peters (1998); Pepermans and Verleye

(1998); Routh and Burgoyne (1998); El Sehity *et al.*, (2003); Van Everdingen and Van Raaij (1998); Canova and Manganelli (2003).

Psycho-social researchers tend to be psychologists with a background in cognitive, social or educational psychology. They tend to use both quantitative and qualitative approaches to explain issues such as the development of price intuition in the new currency (Ranyard *et al.*, 2003; Hofmann *et al.*, 2007) and the effects of the Euro adaptation on the attitude towards the new currency (Canova and Manganelli, 2003; Müller-Petters *et al.*, 1998). In comparison to NC researchers, the PSA uses broader samples and a wider range of methods.

People have used a variety of approaches to deal with the consequences of currency change. Marques and Dehaene (2004) proposed that two learning approaches, the re-learning and re-scaling approaches expanded by Hofmann *et al.*, (2007) be joined by a further four learning conversion strategies: a Conversion, a Marker Value, an Anchor and an Intuitive strategy (as described earlier) which are related to Euro attitudes. Ranyard (2007) suggests that the changing role of currency conversion is an apparent indicator of the learning process and that the persistence of the use of conversion (calculation) may be a barrier to learning Euro values.

2.5.2 Adult numeracy approach

Currency conversion is an area of study which will be addressed using the Adult Numeracy approach. I was attracted by this approach because it brings in range of attitudes, different levels of context of thinking and range of social differences such as age, gender, education. I acknowledge economic psychology and draw on it but in EP less attention is paid to the range of attitudes, context of thinking and social difference. Adult learning has been much studied during recent decades (Merriam and Cunningham, 1989; Sheared and

Sissel, 2001) and is further being developed by mathematics educators, often working alongside other professionals.

Reflecting on the limitations of Economic Psychology, Hofmann et al., (2007) look at attitudes but Adult Numeracy brings in range of attitudes for example, beliefs; emotions. The role of affect in adult learning and adults' 'numerate practices' has been explored by Evans (2000). In AN there is emphasis on affect including attitude, context of thinking and social difference, which I wish to include in this study. Furthermore, some of the EP work has been carried out in lab experiments with students' samples and this study wants to better reflect the reality.

Many researchers in this field have discussed various challenges which people face during major currency change; however, my concern is with adult numeracy in the context of everyday activities such as carrying out realistic conversion tasks in street interviews. Adult numeracy aims to investigate the relationship between cognitive and affective variables as well as effects of social difference (e.g. Evans, 2000; Coben *et al.*, 2000).

Several researchers in adult numeracy emphasise the context of numerate activity as central to any attempt to specify or to measure numeracy (Evans *et al.*, 2013). The different contexts investigated in adult numeracy include: everyday life, employment, financial literacy, etc. and I aim to add the context of currency conversion, as exemplified both in national conversions, such as that to the Euro within Europe, and in the individual activities of tourists. The Cockcroft report (1982) points out the need to use mathematical skills to cope with the certain demands of everyday life and the present change to the Euro illustrates the need to have broader general problem solving skills.

The intention is to bring together the evidence regarding the adaptation process to a new currency system and the types of numerical demands made on adults in more natural

settings. Over the years numeracy had become very important and the demand for numerical skill in citizens' everyday life is increasing. Key reports such as the Cockcroft Committee Report (1982) and PIAAC¹⁵ (2009) have pointed out the growing concerns with numeracy. Both reports are international and have been designed to measure numeracy to assess policy.

Adult Numeracy focuses on how adults routinely use numeracy and on the transfer of knowledge from school mathematics to its use in everyday life. The term numeracy is understood in different ways by researchers (see e.g. Coben, 2003; Evans, 2000). According to Wedge and Evans (2006), to make sense of the various definitions of numeracy it is important to consider the dimensions across which the definitions vary, for example the level of numeracy and contextuality (using mathematics in different settings/context) e.g.

The *Adult Literacy and Lifeskills Survey* defined numeracy as:

*the ability to interpret, apply, and communicate mathematical information
(National Centre for Education Statistics, 2002).*

This definition had been developed further by PIAAC, with more dimensions added. The PIAAC (2009) definition of numeracy is defined as:

'the ability to access, use, interpret, and communicate mathematical information and ideas, to engage in and manage the mathematical demands of a range of situations in adult life'. (PIAAC, 2009, p.5)

This definition attempts to account for the different types of context in which mathematical thinking can take part and is made up of cognitive skills, motivations, attitudes and other non-cognitive components.

¹⁵ *The International Assessment of Adult Competencies (PIAAC) has been developed for the international assessment of adult literacy, numeracy, and problem solving skills.*

2.5.2.1 Adult numeracy in the wider sense

Adult Numeracy (AN) researchers are mainly educators and tutors who use survey and qualitative methods to investigate people's ability to do useful calculations and make appropriate decisions. Adult numeracy also emphasises the full range of affect and emotions and looks at effects of social differences. AN research benefits from combining the quantitative and qualitative research methods, using case studies, ethnographies and surveys.

It is appropriate here to give a definition of an adult. Adults are understood as people aged 15 and over who are or could be engaged in a range of social practices such as working, seeking work¹⁶, shopping, budgeting, planning etc. This definition is wide and inclusive of adults over 65¹⁷. It makes sense to focus on adult people of a range of ages. Almost all adults have to solve issues that involve numerical judgement. However, in a time of transition, such as currency transition, numerical demand increases.

This research aims to contribute to current thinking about the role of currency change in adult numeracy by examining the effect of people's attitudes on conversion/calculation tasks, in particular involving calculating Euro prices using the exchange rate. These tasks are encountered daily, for example, when adults have to make sense of Euro values to decide what an appropriate price is for a product or service. This approach towards numerate thinking emphasises people's attitudes and emotions as part of the 'charge' of an activity (Evans, 2000). In this situation, national currencies have symbolic and emotional meaning and may influence people's attitudes towards the Euro. McLeod (1992) has argued that beliefs and attitudes in this regard are relatively stable, consistent with positive

¹⁶ Currently in Slovakia anyone aged 14- 17 is allowed to take up a part time job. Students can leave compulsory education after 10 year of schooling or after their 16th birthday, whichever is first.

¹⁷ For comparison reasons it was also important to use the same age range as the Eurobarometer survey. Part of this thesis is compared to the Eurobarometer survey results.

or negative responses to coping with mathematical tasks. Earlier, attitudes were predominately measured by questionnaires, but as the research methodology developed researchers become more flexible by applying other research methods, including interviews.

2.6 The Euro Conversion Process description

To describe the setting of the currency transition in the Slovak Republic an account of the Euro changeover (the Euro Conversion Process Description) is presented using a ‘case study’ approach. The Euro changeover can be described as a ‘natural experiment’ which took place within a national macro-economic context.

The study aims to investigate what the authorities thought the appropriate social support could be for citizens before during and after the currency change. It investigates the research questions: how did people cope with problems they did not know they were going to have? And, what support was available on the national and local level? Using the qualitative approach, this part of the study gives the opportunity to learn about how the government planned the changeover and the problems that the country had to deal with during this major currency change. Furthermore, it provides the opportunity to analyse the steps taken by the Slovak authorities to address citizens’ problems and concerns.

The Euro Conversion Process Description seeks to offer a unique insight into the Euro transition in Slovakia by analysing various documents published by the government, banks, European Commission, Eurobarometer (public opinion surveys), newspapers articles, websites, academic journals and price watch reports.

In addition, I have used clinical interviews to collect further information. I have made my conversion tasks reflect real life environments to obtain a better understanding of the

issues associated with the currency change. I believe that the data collected in a natural setting more reliably reflects people's real life behaviours, difficult to uncover without this type of research. According to Ranyard (2007) '*qualitative study explains the meaning of experience, actions and events as they are perceived by participants in the contexts in which they normally take place*' (Ranyard, 2007, p.314).

2.7 Summary

Taking advantage of the Euro transition, a real-life situation to study how people adjust to the new currency helped me to collect information that would not be otherwise possible. Applying structured interviews and clinical interviews allowed for better understanding of the issues associated with the currency change and exploration of how people developed or failed to develop price intuition in the new currency and the affect attitude plays in the learning process (adaptation process).

The key methodological contribution which makes this thesis explicit and novel is the 'Adult Numeracy' approach. I was attracted by this approach because it brings in range of attitudes, different levels of context of thinking and range of social differences such as age, gender, education.

Adult numeracy is concerned with people's ability to do useful calculation and make appropriate decision in real life context especially: everyday activities like shopping, work and travelling. The currency changeover made different sorts of demands on the way of thinking and people frequently used range of day-to-day calculations to be able to make sense of this new currency. AN emphasises the social, rather than the individual, basis of numerical thinking (Lindenskow and Wedege, 2001) therefore, I look at social differences like gender, age and education.

As for the data production method the main contribution is the design of the ‘real conversion task’ posed in street interviews and later on explored through clinical interviewing method to better understand how people are thinking and what are they thinking.

I was attracted by this approach because it brings in range of attitudes, different levels of context of thinking and range of social differences such as age, gender, education.

Each country should be assessed in the context of its individual situation, and the Slovak case can make a significant contribution to the knowledge through showing in more depth the learning process and attitudes to something as fundamental as currency. Thus, this study aims to capture unique information about the price learning process in the Slovak Republic. This thesis presents evidence from quantitative and qualitative study, involving a non-student sample interviewed in a natural setting with realistic tasks.

In this chapter research questions are developed by extensive literature review in the relevant areas. The discussion will continue in the next chapter with a special emphasis on the data, methodology and methods. Furthermore, the conceptual map for this study will be presented.

CHAPTER 3

3 Methodology

The general aim of this chapter is to describe the data, methodology and methods used in the quantitative study as well as for the qualitative study. In the previous chapter a combined research method is recommended for this study. According to Ranyard *et al.*, (2003) researchers should go beyond the basic information that can be investigated through surveys and use other methods, such as semi-structured interviews. The qualitative and quantitative research methods address specific types of research questions. While the quantitative methods provide facts and figures, the qualitative methods allows investigation of the complexity of the phenomenon (Williams, 2007).

This chapter is divided into two parts. The first describes the methodology and methods for the quantitative research. It presents the scientific approach underpinning this study, the rationale for selecting a broad post-positivist approach to study the currency changeover. Furthermore, this part deals with the questionnaire design, sampling method and data collection. The second part describes the methodology and methods for the qualitative aspect of the research. It explains the development of concepts and ideas, and describes the selection of interviewing method and the development of interview schedule.

3.1 Introduction

This section focuses on presenting the methodological approach which forms the basis for this research. The present research employs mixed methods with a broadly post-positivist

approach, due to the nature of the research questions and the way this research was conducted. Post-positivism has developed from the approach of positivism, the view that supports the application of the methods of the natural sciences to the study of social reality and beyond (Bryman and Bell, 2007). The post-positivist approach is used by both quantitative and qualitative researchers because it better reflects understanding regarding the 'nature of reality' and social and behavioural research (Reichardt and Rallis, 1994).

This study investigates citizens' attitudes. It takes the view that people have attitudes which are stable and can be measured by certain means such as national identity/ European identity or level of attachment to the national currency. The literature review shows that attitudes can be measured through multiple questionnaire items using scale measurements. Respondents' respond to certain statements and indicate to 'what extent they agree or disagree with each statement'. This concept of measuring attitudes can be found in areas such as social psychology or social sciences.

The Euro changeover created opportunities for researchers to study the effects of major currency change on the everyday lives of citizens in natural settings. This study was designed to collect a reasonably representative number of responses from Slovak citizens using face-to-face structured interviews combined with clinical interviews. The intention was to investigate people's way of adapting to the new Euro currency, their ability to develop price intuition in the Euro currency and their attitudes, with the emphasis on their degree of attachment to the formal currency in natural setting.

Generally, the post positivist approach emphasises the need for multiple measures to account for different types of errors and mixed methods to get a clearer view of what is happening.

3.1.1 Methods used

The present study was designed to explain Slovak citizens' experiences with currency change, which was somewhat different from the first 12 Eurozone entrants. A structured questionnaire was designed to collect street interviews from a moderately large sample of Slovak citizens at different points in time, in addition to a less structured clinical interview which was used for a much smaller sample. Both the structured questionnaires and the interview schedule included some self reporting questions as well as real problem solving tasks.

In the literature review chapter, the conceptual framework for this study was presented. It reviews the different approaches used in this area of study and explains how they work together. The conceptual map is discussed latter in this chapter to show the key variables studied in this research and how they are expected to interact. The conceptual map is adapted from that of Evans (2000, p.55) itself a slightly simplified version of the original presented by Fennema (1989, p.217).

It was important to collect moderately large samples, samples that represent the Slovak population according to social differences such as age, gender and education. The existing literature on the Euro transition reveals social variables to be good predictors. Although it is not possible to change citizens' existing level of education to help with the adaptation to the Euro, it is possible to provide vulnerable groups with the extra support that they may need. Thus, it was important to approach a reasonably representative sample in order for this study to be reliable and reach generalisable conclusions for the country's population.

Both the face-to-face structured interviews and the clinical interviews provided the information needed to investigate how people develop price intuition and how they move from using conversion (mental calculation/conversion) to other strategies such as anchor

strategy (learning the prices of regularly bought products) or intuitive strategy (relying on intuition without the need to refer to the old currency).

3.2 Quantitative Methodology

Some reactions to the Slovak preparations for the Euro currency were summarised by the Eurobarometer survey. This study adopted some questions from the Eurobarometer survey so that results could be compared and asked questions which the Eurobarometer survey could not.

The key research questions investigated in this thesis are: (1) *citizens' general experience with the conversion to the Euro*, (2) *citizens' attitudes to the new currency*, (3) *citizens' ability to do useful calculations* with a particular attention on (4) *the development of price intuition after the changeover*, (5) *and the 'Euro Illusion'*.

The present study asked a relatively similar set of questions to collect the data before, during and after the transition to the Euro in the Slovak Republic in order to monitor changes over time. Respondents were interviewed face-to-face, the interviews in each stage carried out in shopping centres. Respondents were selected in such a way that the sample reflects the socio demographic characteristics of the Slovak population according to the Slovak census 2001.

The methodological approach for this research plan is very important since it affects the extent to which the results can be generalised and applied. The aim of this survey is to answer some important questions about the Slovak population, as well as to provide information to other Member States about these issues. Poland, for example, has recently joined the EMU and consequently plans to introduce the Euro currency. It is expected that this thesis will provide useful information for future countries joining the Eurozone.

3.2.1 Research validity and reliability

A number of concepts are crucial to research design such as: validity, reliability, and replicability (De Vaus, 2002; Bryman and Bell, 2007). I am concerned with research quality indicators such as measurement validity, reliability and external validity.

Measurement validity is the extent to which the concept is really measuring what it should be measuring (Bryman and Bell, 2007). It can also be described as investigating whether the concept is valid. This study is based on primary data, therefore it is important to ensure that the concepts and indicators developed are valid; the quality of this research depends very much on this, and any mistakes could affect the quality of the research. One way of assuring the validity of the concepts and indicators is using techniques used successfully in previous studies. This study has adapted some questions from previous studies, i.e. Hofmann *et al.*, (2007); Ranyard (2007). In some cases slight adjustments have been made to the questions so that it can provide answerers to the specific research questions. A more detailed description of the variables appears in the table 4.6.

Reliability is seen as an attempt to discern whether the same result would be obtained if the research was repeated or conducted by someone else. Sometimes it is difficult to test reliability, especially when the questions involve people's attitudes and feelings, as these can change. Also the question can rise as to how soon after the first test the second test should be carried out when testing reliability. If too much time is left between the first test and the second the concepts measured may generally change, but on the other hand if not enough time is left between the tests people may still remember the answers from the first one.

External validity is concerned with the extent to which findings can be generalised. As mentioned before, this is an important part of the research, as it aims to investigate

something about the Slovak population or at least about the majority of the Slovak population. To improve the external validity, a moderate-sized sample was selected as well as comparison made with the large scale survey, the Eurobarometer survey, to check for any inconsistencies in results.

These issues of validity, reliability and generalisation were taken into consideration when the study was designed and conclusions made.

3.3 Measuring concepts, developing indicators and designing the questionnaire

The aim of this section is to provide essential background to the questionnaire design. It presents the key concepts for this study and the suitably designed indicators for the questionnaire to understand the effect of the currency change and the problems it created for people in their everyday lives.

Adapting to the new currency is a long process and studies from different Eurozone countries show that this process varies from country to country and from individual to individual. Various factors play important parts in the adaptation process such as people's attitude towards the new currency, ways of adapting to new currency and people's ability to make sound decisions as well as socio-demographic variables such as education, income, age and gender.

The key concepts explored in this study in the context of currency change within adult numeracy context are:

(1) *citizens' affective responses,*

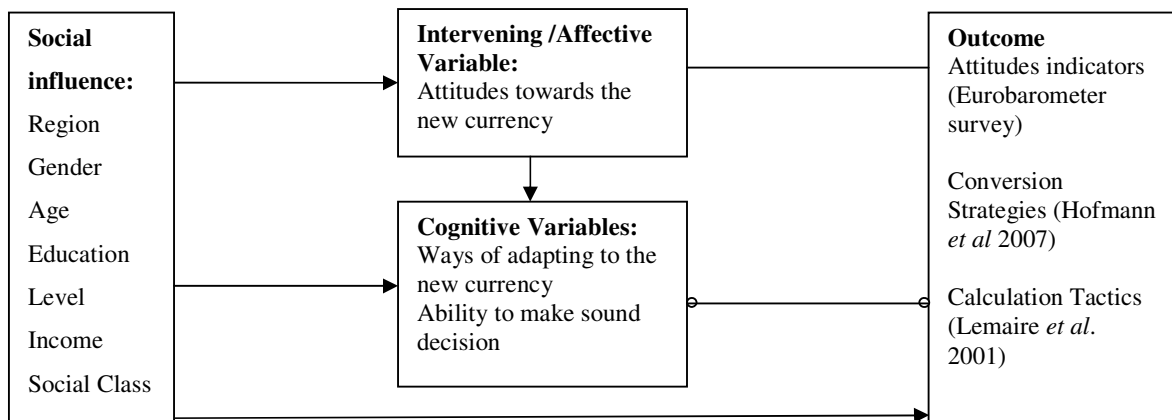
(2) *ways of adapting to the new currency,*

(3) ability to make sound decision,

(4) the 'Euro Illusion'

Various models have been proposed to study the relationships between attitudes and cognitive performance. The one used in this study is Evans (2000), which relates to the cognitive and affective variables.

Figure 1: Conceptual Map for this Study



SOURCE: ADAPTED FROM EVANS (2000, P.55)

This conceptual map forms the basis for studying the currency changeover process, more specifically the relationship between affective variables and cognitive performance. This map explains the link between the concepts studied, the outcome variables and the presumed relationship between them.

It is important to clarify the term 'attitude'. Attitudes are an important social-psychological construct with a wide theoretical tradition (Allport, 1954; Chaiken and Stangor, 1987). An attitude is a disposition to respond favourably or unfavourably to an object, person, institution, or event (Ajzen, 2005). Responses can be affective, cognitive and conative. Katz and Stotland (1959) and Rosenberg (1968) point out that all true attitudes must have both cognitive and affective content, although they do not need a conative component. In

this study the focus is on verbal responses, mainly the cognitive and affective responses, but it is important to be aware of conative and the non verbal responses too.

Table 3.1 Responses used to infer attitudes

Cognition		Affect
Verbal	Expression of beliefs about attitude object	Expression of feelings towards attitude object
Nonverbal	Perceptual reactions to attitude object	Physiological reactions to attitude object

Source: Adapted from Ajzen 2005 p.4

Attitudes are complex, so it is important to develop a number of statement/questions to assess attitudes. Attitudes scales attempt to determine what an individual believes, perceives or feels. Attitudes can be measured toward self, others and a variety of other activities, institutions and situations (Gay, 1996). Several types of scales have been developed to assess attitudes, such as the semantic differential scale. All the different methods used for measuring attitudes have their strengths and limitations.

The preliminary work began with a broader problem with currency affective responses and conversion learning strategies. I developed a suitably designed structured questionnaire based on literature reviewed in chapter 2. These are some of the ideas explored in the literature review to guide the questionnaire development for this study:

Concept 1: Citizens' affective responses:

Table 3.2 Indicators for affective responses

Concept's aspects	Measure used to measure concept Indicators(examples)
<p>Before the Changeover Economics (benefits associated on personal level and national level) exchange rate stability, inflation cross border shopping, employment opportunities.</p> <p>National Identities (historical) national identity and European identity</p> <p>Politics (National political system, political corruption, welfare system and information campaign informing citizens about Euro, people's knowledge relating to Euro) (Eurobarometer survey)</p> <p>After the Changeover (all of the above) Evaluation of learning process (Ability to understand the Euro value, price increases and Euro Illusion</p>	<p>Overall, the introduction of the Euro will have positive/negative consequences for the Slovak Republic?</p> <p>The replacement of the Slovak crown by the Euro will cause you personally lot of inconvenience. How strongly do you agree/disagree with this statement?</p> <p>Here is a statement: Slovak Republic lost a great deal of its identity by adopting Euro currency. How strongly do you agree/disagree with this statement?</p> <p>The use of the Euro instead of the Slovak crown will probably make us feel more European than now? How strongly do you agree/disagree with this statement?</p> <p>Have you already used/seen Euro coins/notes?</p> <p>How happy/unhappy are you, personally: that the Euro has become our currency? Very happy /Rather happy /Neither happy/Unhappy /Rather unhappy /Very unhappy</p> <p>Open ended question: If I asked you to describe your personal experience using the Euro nowadays, using one or more adjectives (descriptive words), what would you say? (Prompt: Are there any other?)</p>

Concept 2: ways of adapting to new currency:

Table 3.3 Ways of adaptation

Concept's aspects	Measure used to measure concept Indicators(examples)
<p>Hofmann's strategies Marques and Dehaene Ranyard</p>	<p>Do you know the exchange value of specific Euro amounts? For example do you know approximately how much 5 Euro is in Slovak crowns?</p> <p>You mentioned that you know the value of specific Euro amounts, how often, if at all, would you use it to make purchasing decision? Always /Often /Sometimes /Rarely /Never</p>

Concept 3: Ability to make sound decisions:

Table 3.4 Ability to make sound decisions

Concept's aspects	Measure used to measure concept Indicators(examples)
Lemaire 2007 and Strazzari <i>et al.</i> , 2005 tactics (performance task) and Self report indicators (Eurobarometer survey and Ranyard, 2007)	Here is an item which was priced in SKK, about how much should it be in Euro now, if the proper exchange rate is used? DVD priced at 499SKK _____ € How did you get the result? Today, when purchasing, do you count mentally: Always in Euro /Most often in Euro /As often in Euro as in SKK /Always in SKK /Most often in SKK ?

Concept 4: 'Euro Illusion':

Table 3.5 Euro Illusion

Concept's aspects	Measure used to measure concept Indicators(examples)
Gamble 2006 Effects of currency and income on evaluations of prices Price Estimation: Missier <i>et al.</i> , (2007) Prices in Euro perceived more/ less expensive: Ranyard 2007 Ranyard <i>et al.</i> , 2003	In general, what type of problems have you experienced with the Euro? Do you withdraw less/more money out of the bank in Euro than you would have if you had been using the Slovak crown. Do you spend less/more Euro money than you would have if you had been using the Slovak crown?

3.3.1 Questionnaire design

This section gives more details about the design of the questionnaire. The copies of the 4 questionnaires are included in the appendix. Basically, very similar versions of the questionnaires were used for each phase of the interviews, with small differences in wording to reflect the period during which the data were collected. It was important for the questions to remain unchanged to be able to detect the changes over time.

To investigate this complex phenomenon structured face-to-face interviews were used. The main advantage of face-to-face interviewing was a much higher response rate in comparison to other methods such as postal questionnaires and the opportunity to ask some complex questions. The face-to-face interviewing method allowed me to clarify some complex questions during the interview which otherwise might have resulted in missing values.

While designing the questionnaire a decision was made to adopt and use questions from previous studies. The advantages of pre-designed questions are that they save a lot of time and provide the degree of construct validity which allowed me to compare my results to previous studies. The literature reviewed for this study provided the primary sources of questions and some useful tips and hints. Some of the studies include the actual question and structure of the interviews as well as the sample size.

This study adopted some questions from the Eurobarometer survey and Ranyard's study (2007). To find out more about the learning process the learning strategies identified by Hofmann *et al.*, (2007) were used. After the questionnaire design and before the data collection, translation and piloting followed to test the reliability and validity of the questions.

3.3.1.1 Questionnaire number 1 (April 2008 Pilot Study)

The first questionnaire (pilot study), used before the introduction of the Euro in the Slovak Republic, asked respondents about their previous experience with the Euro in other Eurozone countries. This opportunity, which the first Eurozone entrants did not have, should make the changeover less of a challenge when the new currency is introduced. These questions (indicators) were adapted from the Eurobarometer survey and they allowed me to compare my results to this large scale survey.

The next sets of questions (indicators) were designed to measure people's attitudes towards the changeover and the new currency [RQ2]. In this study various indicators were used to measure people's attitudes, including National Identity, European Identity, attachment to national currency, and people's expectations on the personal and national level. Some of these questions were adapted again from the Eurobarometer survey.

The next set of questions was designed to investigate whether citizens had been in situations when they had to cope with unfamiliar currency and, if so, how they learnt the value of the new currency [RQ1]. In cases where citizens did not have previous experience with unfamiliar currency I asked them how they will get to know the value of the new currency, the Euro. The aim was to see if the four strategies identified in Austria by Hofmann and her colleagues could be found in Slovakia.

Furthermore, respondents were asked some general questions to investigate their shopping habits before the Euro changeover. These questions were adapted from Ranyard's study (2007) and have been designed to identify some relatively common mistakes like confusing two different values of coins/notes.

More detailed description of the variables description and measures is given later in the table 4.6.

3.3.1.2 Questionnaire number 2 (January 2009 Phase 1)

Questionnaire number 2 was very similar to questionnaire number 1 with the difference that the Euro currency had been just introduced. The fieldwork was carried out during the short 16 days dual circulation and Slovak citizens were interviewed as they were making the first purchases with the new currency, the Euro. After a short introduction of the study and after region and gender was recorded each respondent was asked some attitude questions. They were not asked as many as they had been in the first questionnaire, as more questions were added to get some idea how people coped with the dual circulation. The indicators developed to investigate the type of errors citizens experienced with unfamiliar currency remained unchanged, although new questions were added to investigate the 'Euro Illusion'. The 'Euro Illusion' questions were adopted from Ranyard's (2007) study.

Now that citizens had the chance to use the new currency I asked questions about how they had been familiarising themselves with the Euro, again having in mind the four strategies by Hofmann *et al.*, (2007). This time the questions were much more developed than in the first questionnaire.

To investigate the respondents' ability to do simple conversion/calculation respondents were asked if they know the exchange value of specific Euro amounts, followed by a further four questions which required the respondent to convert the price of specific items from Euro to the Slovak crown and vice versa. Each respondent was presented with four items priced either in the Slovak crown or the Euro and asked how much it should be if the proper exchange rate was used. It was the aim of the study to make this

conversion/calculation task as real as possible, analogous to when people pick up an item in the shop with a price tag to decide if it is a good buy or not.

3.3.1.3 Questionnaire number 3 (August 2009 Phase 2)

The third data collection was in summer 2009, 7 months after the changeover. In the interim citizens had time to get accustomed to the new currency and the excitement of the change had settled down. This time even fewer changes were made to the questionnaire as it was important not to change the question due to the comparative element.

Some of the new questions were on the perception of price rises and the ‘Euro Illusion,’ and the questionnaire required to record how people did the calculation/performed the conversion which was partly adapted from Lemaire *et al.*, (2001) study.

3.3.1.4 Questionnaire number 4 (January 2011 Phase 3)

The last survey data collection was in January 2011, two years after the Euro conversion. The main purpose was to highlight the changes since the Euro introduction. Two years after the currency was introduced the aim was to investigate whether citizens were still experiencing difficulties with understanding the real value of the Euro, whether the Euro was used as a benchmark currency, and whether the strategy use had changed. At this point the dual display of prices was finished, so it was important to see how people were coping.

Table 3.6 **Variables description**

Variable	Description of measurement
Attitudes (national identity aspects)	<p>Here is a statement: The Slovak Republic lost a great deal of its identity by adopting the Euro currency. How strongly do you agree/disagree with this statement?</p> <p>The use of the Euro instead of the Slovak crown will probably make us feel more European than now. How strongly do you agree/disagree with this statement?</p>
Attitudes (economic aspects)	<p>If I asked you to describe the experience of using the Euro nowadays, using one or more adjectives (descriptive words), what would you say? (open ended question)</p> <p>Overall, for you personally, do you think the introduction of the Euro will have positive/negative consequences?</p>
Benefits associated on: Personal level	<p>The replacement of the Slovak crown by the Euro will cause you personally a lot of inconvenience. How strongly do you agree/disagree with this statement?</p> <p>How happy/unhappy are you, personally: that the Euro has become our currency? Very happy /Rather happy /Neither happy/Unhappy /Rather unhappy /Very unhappy</p>
Benefits associated on: National level	<p>Overall, the introduction of the Euro will have positive/negative consequences for Slovak Republic?</p>
Attitudes (citizen's knowledge relating to Euro)	<p>Have you already seen Euro coins?</p> <p>Have you already seen Euro bank notes?</p> <p>Have you already used Euro coins?</p> <p>Have you already used Euro bank notes?</p> <p>In general, what type of problems have you experienced with the Euro, during the changeover? (open ended question)</p> <p>I would like to ask you, how often, if at all, you use: Calculator/Conversion chart /Dual pricing display</p>
Ways of adapting to the Euro	<p>I know the conversion rate and I use the exact or approximate conversion to evaluate prices. Always /Often /Sometimes /Rarely /Never</p> <p>I know the value of the Euro currency and I do not refer back to the Slovak crown to evaluate prices. Always /Often /Sometimes /Rarely /Never</p> <p>I know some prices of regularly bought products and I use the remembered prices to evaluate prices. Always /Often /Sometimes /Rarely /Never</p> <p>I know some specific values, for example how much 5,10,20 Euro is worth in the Slovak crown and I use these values to evaluate prices. Always /Often /Sometimes /Rarely /Never</p> <p>Today, when purchasing, do you count mentally: Always in Euro /Most often in Euro /As often in Euro as in SKK /Always in SKK /Most often in SKK</p>
Attitudes (public perceptions) Fear	<p>Here is a statement: I am afraid of abuses and cheating on prices during</p>

	the changeover. How strongly do you agree/disagree with this statement?
Attitudes (public perceptions) Price increases	Now, thinking over the past six months: How did the prices develop prior to the Euro changeover? Very much increased/increased/slightly increased/neither increased or decreased/slightly decreased/decreased/very much decreased.
Euro Illusion	<p>Could you please think about the range of transactions in shops, etc that you have made since 1st of January 2009?</p> <p>In general what types of problem have you experienced with the Euro?</p> <p>Withdraw less/more money out of the bank in Euro than you would have if you had been using Slovak crown?</p> <p>Spend less/more Euro money than you would have if you had been using Slovak crown?</p> <p>How do you feel prices in Euro compare with those in the Slovak crown?</p> <p>Can you please think about a time when you received your salary /other income. How did the money you received seem to compare in value in what you received in Slovak crown?</p>
Slovak Crown to Euro Conversion Task	<p>Bread 31.50SKK.....EUR /How did you get the result?</p> <p>DVD 499SKK.....EUR /How did you get the result?</p> <p>100SKK.....EUR</p>
Euro to Slovak Crown Conversion Task	<p>Milk 0.83EUR.....SKK; /How did you get the result?</p> <p>Mobile 183EUR.....SKK /How did you get the result?</p> <p>5EUR.....SKK</p>
Region	<p>Bratislava (the capital of the Slovak Republic)</p> <p>Trenčín</p>
Gender	<p>Male</p> <p>Female</p>
Age	<p>Young adults 15- 29</p> <p>Adults 30- 59</p> <p>Elderly 60+</p>
Highest Completed Education	<p>Basic education (approximately 8-9 years of schooling)</p> <p>Secondary education (further 2-3 years of schooling)</p> <p>Secondary education with Matura (examination equivalent to A levels) University</p>
Annual Gross Income in EUR	<p>0-4 000</p> <p>4001-10 000</p> <p>10 001-20 000</p> <p>20 001+</p>

3.3.2 Fieldwork

The four versions of the questionnaires have been piloted on family members and friends prior to the data collection. The first data collection in April 2008 was used as a pilot study for this large project, but the data are of good quality and provide a reasonably good snapshot of the situation in the Slovak Republic just before the Euro changeover. Therefore, I have used the data in the data analysis but have clearly indicated that it was the pilot study.

At the beginning of this study I was already an experienced interviewer (from my work at the Office for National Statistics) with ability to approach and converse with a wide selection of people to gain respondents' interest and co-operation, therefore I did not have any difficulty recruiting people.

3.3.3 Data collection

At each stage I personally interviewed all the respondents face-to-face. Each time the fieldwork lasted about 10 days. The data were collected during the week and the weekends, at different times of the day to avoid any biases. Interviews were conducted in two regions, the Trenčín region and the Bratislava region, in large shopping centres. The reason for collecting the data in shopping centres was because during winter months the temperature in Slovakia is very low and it is impossible to interview people outside on the street. The Trenčín and Bratislava region were selected for convenience purposes; it is where my family lives and I am personally familiar with the area. However, both regions are very important in terms of contribution to the economic growth, competitiveness, location etc. This study has been replicated in total 4 times and each time the same selection process was applied to avoid any unnecessary variation in the sample due to sampling. The

interview lasted on average about 25 min, but some lasted slightly longer and developed in to longer discussions which helped with the development of the qualitative part of this project.

Each interview started with a short introduction of the purpose of the study and the respondent's region and gender was recorded. In general the first set of questions asked the respondent about their attitude towards the Euro, price perceptions and level of adaptation to the new currency. These questions were followed by some open ended questions about the problems experienced during the changeover. Once a good cooperation was established with the respondent some basic conversion tasks were asked followed by slightly more complex calculations. The interview finished with some personal questions such as age, level of education and income.

3.3.4 Transcription

The questionnaires were designed in English and translated into the Slovak language. This was a difficult task as translating is not so straightforward and care had to be taken not to change the context of the questions. Each questionnaire was piloted on a small group of people to make sure the questions were clear and easy to understand. Although the back-translation was not, used a colleague who is teaching in the Slovak Republic and is also doing a PhD on a similar topic provided very good feedback. The feedback covered the structure of the questionnaire as well as the translation.

3.3.5 Sampling

It was the aim of the study to have a reasonably representative sample of the urban population and to accurately reflect socio demographic characteristics. Due to time and cost constraints the data were collected only in two regions, Trenčín and Bratislava.

Respondents were selected using a tightly designed quota sampling method. It is a non-probability sampling method which is widely used by researchers and very useful in situations where a researcher needs to reach a targeted sample quickly. There are similarities with the stratified sampling but the quota sampling is non-random. At first, specified sub-groups of the population were identified, namely by region, age and gender, then the required number of respondents for each group were interviewed.

I considered random sampling methods as well; however, these are time consuming, expensive and it is difficult to create a sampling frame for them. However, they do produce a more representative and accurate sample and better quality research. Due to lack of resources and time the random sampling method was not used. However, I am aware of the limitations of this study and the results are interpreted with care, taking into account the non-random sampling method. To limit other biases the data were collected at different points of entrance (the car park entrance and the main entrance used mainly by people using public transport or walking to the shopping centre), at different days and times.

Study (controlling variables)

Samples socio-demographic characteristics %

	Controlling variables							Annual Income € 000's							
	Region		Age			Gender		Education							
			15-29	30-59	60+	M	F	Basic	Secondary	Secondary with Matura (equivalent A levels)	University	0-4	4-10	10-20	20+
Study	Bratislava	Trenčín													
Pilot study April 2008 n=86	41	59	35	47	18	47	53	0	9	51	40	29	38	24	9
Phase 1 January 2009 n=102	40	60	34	47	19	45	55	11	34	38	17	45	39	13	3
Phase 2 August 2009 n=89	43	57	35	51	14	45	55	17	17	51	15	52	39	6	3
Phase 3 January 2010 n=88	47	53	50	35	15	44	56	12	10	61	17	54	29	12	5

3.3.6 Response rate

Overall, I did not experience any major problems during data collection. People were helpful and happy to participate in the study. The number of refusals and the reasons for refusal was not recorded on the schedule, but I estimate that on average $\frac{1}{3}$ of people opted out. Mostly the reason for refusal was lack of time and the fact that the Euro changeover was being discussed extensively amongst politicians, and the daily press, TV and radio and some people just did not want to talk about the Euro.

3.4 Developing a complementary qualitative methodology

'Interview evidence on currency adaptation can be very important in the cross-validation and triangulation of findings from surveys and experiments.' (Ranyard et al., 2003, p.1)

This section briefly explains the concepts which will guide the data collection and analysis in this second phase of qualitative empirical research and discuss the aims and methodology. It will also systematically link the first and the second phases in terms of achieving the research goal.

The preliminary research idea began with a much broader problem with currency affective responses and conversion learning strategies. However, as the research developed it became more apparent that I needed to develop the concepts more fully, particularly the learning conversion strategies and the conversion tasks, to investigate fully the relationship between conversion strategies and the affective responses. The results of the quantitative data analysis from the semi structured questionnaires guided the development of a suitably designed interview schedule to further enhance the understanding of Slovak citizens'

affective responses to the Euro currency and their adaptation processes through clinical interviewing.

Comparing the quantitative study with this qualitative study should further support the findings and provide better evidence on Slovak citizens' affective responses to the new currency and their adaptation process. Qualitative research is more descriptive and focuses on the depth and details of people's experiences (Denzin and Lincoln, 1998). Bringing together the findings from the quantitative empirical study with those from this qualitative empirical study is important as we can see in studies conducted by Ranyard 2007 and Hofmann *et al.*, 2007 to investigate the currency conversion.

Researchers often focus on a single aspect of the changeover; in this study I would like to investigate how different aspects of the currency changeover are interrelated and in particular, how affective responses are related to individual's ability to cope with the currency conversion. In particular, the study attempts to combine people's approval of the Euro currency and their ability to cope with the Euro adaptation in these interviews. A person's inability to cope with the new currency and the strain on their cognitive skills caused by constant conversion/calculation could possibly trigger negative attitudes towards the Euro currency (Marques and Dehaene, 2004).

3.4.1 The schedule of the qualitative interviews

This section investigates two aims: *affective responses* to the new and the old national currency. Each interview collects the respondent's general attitude towards the Euro currency as well as a description of their experiences with both currencies.

The first four attitudinal questions examine the economic and practical aspect of the currency changeover. A result from an earlier study from Ireland shows that after the

changeover people focus more on the economic and practical aspects rather than the symbolic meanings of their currency (Ranyard *et al.*, 2005); people are expecting the Euro to result in economic growth and a higher standard of living. According to Allam and Goerres (2008), a thriving economy positively affects the individual's support for the Euro.

The additional two attitudinal questions aim to capture people's general experiences with the old and new currency. The shaping of attitudes towards the Euro currency is complex and cannot be explained by just one factor; therefore, these two open ended questions were designed to encourage full, meaningful answers using respondents' experience to reflect their attitude towards the currency. The aim is to search for themes associated with attitudes towards both currencies. Some of the domains identified by Muller-Peters *et al.*, (1998) to measure people's attitudes towards the Euro changeover include involvement and knowledge concerning the Euro, national identity, national pride and European identity, and financial behaviour. Other studies such as the Eurobarometer survey focus on economic future, political-economic issues, concerns and fears.

In general Slovakia has gone through a lot of changes, threatening and challenging Slovak national identity. A survey within the European Union in 2004 shows that among the 25 Members about 78% of Slovaks are proud to be European; in the EU25¹⁸ study this feeling is shared by only 68% of citizens. On the other hand, Slovaks are slightly less proud to be the citizens of their country than the EU25 average (European Commission, December, 2004). The Slovaks seemed to quickly distance themselves from the Slovak crown: in

¹⁸ In 2004 the European Union consisted of 25 countries. Later in 2007 Romania and Bulgaria joined the European Union (EU27).

August 2009, 50% of respondents reported themselves happy about the Euro currency (my earlier results)¹⁹.

ii) *cognitive skills*: how people solve conversion problems and how comfortable they feel thinking in the new Euro currency. Drawing on previous work reported by Hofmann *et al.*, (2007) the study attempts to establish which conversion strategy citizens use by: a) directly asking which strategy of adaptation participants use in general, b) asking participants to solve simple tasks so that the strategy applied can be identified. Based on experience from other Eurozone countries (Hofmann *et al.*, 2007; Marques and Dehaene, 2004; Del Missier *et al.*, 2007; Ranyard, 2007), citizens go through a long process of adjustment to the new value of the Euro currency. In January 2009, the results show that nearly 44% of Slovak respondents reported using calculators (adding always/often/sometimes), which could be the indicator of conversion strategy. Barely 21% of citizens claimed to have used the conversion chart to make sense of the new value of the Euro currency which could be the indicator of marker value strategy. In addition, the results show that in January 2009 respondents did not appear to be using the anchor strategy which is understandable as they did not have time to learn the prices in Euro currency and about 85% of respondents relied on dual pricing. However, in December 2009 the compulsory dual display of prices came to an end, so it is expected that three and half years after the changeover, citizens are reasonably well adapted to the Euro value and moving towards strategies which lead to development of intuition such as the intuition and the anchor strategy.

To investigate the concepts further the clinical interviewing method has also been applied. It offers the opportunity to use interviewing skills to probe participants. Respondents are allowed to use pen and paper (if they need to) to carry out calculations. Otherwise, probing

¹⁹ The answer to the question: How happy/unhappy are you, personally: that the Euro has become our currency? Very happy/rather happy; neither happy/unhappy; Rather unhappy/very unhappy

questions will be used to clarify their thoughts so the conversion strategy applied to perform the task can be identified. Lemaire and colleagues (Lemaire and Lecacheur, 2001; Lemaire *et al.*, 2001) show that participants use different ‘strategies’ as the authors called them; I refer to them as tactics. These tactics are used to convert prices and are related to the amount of time participants are willing to spend on particular tasks. The word ‘strategy’ is a key term in this research. Therefore, it is important to distinguish between the different meanings.

3.4.2 Concepts and developing indicators

Joining the Eurozone offers many benefits to a country and its citizens; if it did not, countries would not be willing to join. Previous research has explored people’s experiences with the changeover (Routh and Burgoyne, 1989; 1990; Ranyard, 2007; Kühberger and Keul, 2003; Hofmann *et al.*, 2007). Some of the key findings show that people need to convert/calculate prices; they tend to spend money more quickly; they find themselves accidentally thinking in the old currency; they experience general difficulties in everyday transactions and in learning to evaluate prices etc.

This study follows on from a quantitative study which investigated the conversion adaptation process, people’s attitudes towards the Euro currency and the way in which they had changed overtime. The aim of this qualitative study is to investigate the relationship between affective variables and the adaptation process, pay more attention to attitudes and emphasise learning strategies.

The model which formed the basis of the quantitative study (see figure 1 p.56) was used to study the currency changeover process, more specifically the relationship between affective variables and cognitive performance. Conceptual maps for qualitative studies tend to be quite complex. Therefore, this conceptual map will be used but not in such a

structured way. This map serves the purpose of helping to link the key factors and the presumed relationship between them.

3.4.2.1 Concept 1: Affective responses towards the Euro currency

According to a literature review, various factors play important part in determining people's attitudes towards the new currency: the symbolic meaning of the national currency, political factors, economic factors, the exchange rate and the difficulties associated with conversion.

For the purpose of this study I have adopted four questions from the Eurobarometer survey to assess respondents' attitudes. This is a direct way of measuring people's attitudes using a structured interview by developing multiple items.

Generally speaking, do you think that having the Euro is a good or bad thing for the country?

And for you personally, do you think that having the Euro is a good or bad thing?

How happy/unhappy are you, personally: that the Euro has become our currency?

How easy/difficult it is for you to understand the value (the prices) in Euro?

The additional two questions have been developed to assess people's attitudes. Taking into consideration the advantages and disadvantages of the Euro introduction it is important to investigate how the experience of Slovak citizens with the Slovak crown compares to their experience with the Euro currency. The clinical interviews aim for in-depth exploration of people's feelings and experiences. People's attitudes towards the Euro currency can be observed in the way that interviewees speak of their experiences. Another goal, then, was identifying themes which were associated with the new currency and identifying themes

which were associated with the old currency and comparing the similarities/dissimilarities (See Question 1: a; b).

Q1: a) If I asked you to describe your personal experience using the Euro now, what would you say?

b) If I asked you to describe your personal experience using the Slovak crown, what would you say?

There are various factors influencing citizens' attitudes towards the Euro. The most common reasons for accepting the Euro currency are that adopting the Euro would eliminate the risk of devaluation of a currency; provide currency stability; generate foreign investment; promote European integration; increase the standard of living and create jobs. The most common reasons to reject the Euro currency are primarily based on concerns about unfair price increases; fear of being cheated; loss of national identity and inability to adapt to the new value system of money.

Researchers in several disciplines have realised the importance of affective factors, especially in mathematics education. In this study I want to emphasise the importance of affective responses during currency change. People with positive attitudes towards the Euro currency might find it easier to learn and cope with the situation better. This evidence can be important for better understanding of Euro currency consumer's related behaviours.

3.4.2.2 Concept 2: Numerical demand (ability to convert/calculate)

Drawing on my earlier quantitative empirical work on 'Adaptation strategies', participants were: a) asked in street interviews to perform a conversion task so their answer could be categorised according to which adaptation strategy they used b) the questionnaire items (indicators) were developed to measure how often each conversion strategy was used. The findings are reported in chapter 6 (Data analysis part 2). The fieldwork was carried out

in April 2008, January 2009, August 2009 and January 2011. Now, three and a half years later, further information is collected on 'adaptation strategies' to gain a clear understanding of how individuals really cope with the cognitive demands made on them and which adaptation strategies people are applying by conducting clinical interviews.

As noted by Hofmann *et al.*, (2007) half a year before the Euro introduction, participants of focus groups were asked about the way they intended to accommodate Euro values (Kirchler and Meier, 2001). Based on these focus group results, questionnaire items were developed. Hofmann *et al.*, (2007) reported the results from Fessel GfK (2004) and Kirchler and Fessel GfK (2001a, b; 2002a, b). The following questionnaire items were used to determine how consumers in Austria develop intuition in the Euro currency:

Thinking of your current shopping behaviour, which currency conversion approach are you using, personally?

- 1) I know the value of the Euro currency and I do not need to refer back (to the old national currency) to evaluate prices*
- 2) I calculate the exact price using a calculator or conversion table.*
- 3) I remember the prices of some regularly bought products, and continually learn new prices.*
- 4) I know some specific exchange values (such as 5 or 10 Euro) and I estimate the prices in between.*

To explain the 'Adaptation Process' of Slovak citizens this study adapts the four adaptation strategies reported by Hofmann *et al.*, 2007 (Q2:a,b). The evidence from Hofmann *et al.*, 2007 shows that the use of strategy depends on purchase type such as frequent vs special purchase. Therefore, the questions in my interviews schedule are:

Q2: a) In general while making everyday purchases at the moment, can you tell me whether or not you personally are using a currency conversion approach (between SKK and Euro)- and , if so, can you describe it? By everyday purchases I mean bread, milk, toothpaste and other products that you buy frequently.

Respondent does not convert the prices; just buys what he/she needs.

Respondent calculates the exact price using a calculator or does mental calculation.

Respondent remembers the prices of some regularly bought products, and continually learns new prices.

Respondent knows some specific exchange values (such as 5 or 10 Euro) and estimates the prices in-between.

Other (please describe).

All of these.

b) In general while making special purchases at the moment, can you tell me whether or not you personally are using a currency conversion approach (between SKK and Euro) - and, if so, can you describe it? By special purchases I mean when you buy a TV, DVD and other products - even a car or house - that you do not buy frequently.

Respondent does not convert the prices; just buys what he/she needs.

Respondent calculates the exact price using a calculator or does mental calculation.

Respondent remembers the prices of some regularly bought products, and continually learns new prices.

Respondent knows some specific exchange values (such as 5 or 10 Euro) and estimates the prices in-between.

Other (please describe).

All of these.

The questions in my questionnaires are very similar to those of Hofmann *et al.*,(2007), with the difference that in the current study when a respondent is using conversion table as a tool to help with the currency conversion it is assumed that the respondent is using the marker value strategy. The conversion table shows how much specific values are in the other currency- and that is in line with the description of the market value strategy. Also it is important to mention that the question was read out and no options were given. It was

important for the respondent to describe the way of adaptation. The possible alternatives were used only as a prompts and to assist with the coding.

In seeking to develop the numerical conversion problem which respondents relate to everyday life, the following performance task was developed (c and Q3) in addition to the self reporting question (Q2: a and b).

c) I am going to ask you the prices of some products. Please give me the answer in EUR. If you cannot give me the answer in EUR can you please give me the answer in Slovak crown.

A loaf of Bread ___€ ___SKK

One litre of Milk ___€ ___SKK

A Standard colour TV ___€ ___SKK



Q3) : a) 5 EUR approx. how much should it be in SKK, if the original exchange rate is used?

How did you get the result? _____

b) 20 EUR approx. how much should it be in SKK, if the original exchange rate is used?

How did you get the result? _____

c) 1.80 EUR approx. how much should it be in SKK, if the original exchange rate is used?

How did you get the result? _____

d) 600 SKK approx. how much should it be in EUR, if the original exchange rate is used?

How did you get the result? _____

e) 1300 SKK approx. how much should it be in EUR, if the original exchange rate is used?

How did you get the result? _____

To capture the changes in the context of economic change it is important to see if the Euro crisis did have an effect on people's attitude towards the Euro currency. Thus question 4 is:

Q4) In the last 2 years has there been any news or external event which may have affected your attitude towards the Euro currency?

Could you please tell me what are you thinking of?

3.4.3 Sampling method

Researchers often face a problematic gap between the resources available to carry out a study and the complexity of methods needed to select a representative sample of the targeted population (Welch, 1975). The targeted population for this study is Slovak citizens. Studying the Slovak population has more advantages than focusing on a subgroup of a population. In the earlier quantitative study, the quota sampling method was prompted to allow the findings to describe the changes in people's attitudes and thinking in the context of currency conversion changes in the Slovak Republic. Now, however, due to the nature of the interviewing method, the interviews need to be recorded, and so the quota sampling method is not appropriate. There were issues with finding an appropriate place to record the interviews and gaining people's agreement to do so, and for a practical reason the use of the snowball sampling procedure is prompted. With this approach to sampling according to Bryman and Bell (2007) the researcher makes initial contact with a small group of people who are relevant to the research topic and then uses these to establish contacts with others.

The snowball sampling procedure according to Welch (1975) can result in undersampling isolated members of the community and oversampling those with more extensive contacts and acquaintances; a sample biased at the educational level, social class and income level. The example the researcher gives is that people with higher education and income may have a wider circle of friends and acquaintances and, therefore, are more likely to be selected. The author being aware of these disadvantages of the snowball sampling, the aim was to try to select a sample which would be reasonably representative of the whole Slovak population in terms of gender, age and urban/rural area. The plan was to gain access to a wide range of individuals relevant to this research.

Initially starting with 10 contacts and satisfying the designed quotas, each respondent was asked to nominate one or two people from different demographics to them: for example, a young male from an urban area would be asked to provide a contact for an older female living in a rural area. The intention was to follow up these referrals until the quotas were fulfilled. At the time this appeared to be a sufficient and effective approach to selecting the respondents for this study.

Table 3.7 Sampling Frame for the Qualitative Study

Area		Urban		Rural		Total
Age		<i>15-59</i>	<i>60+</i>	<i>15-59</i>	<i>60+</i>	
Gender	<i>Female</i>	5	2	3	2	12
	<i>Male</i>	5	2	3	2	12
Total		10	4	6	4	
Total		14		10		24

Another issue was selecting an appropriate sample size for this study. The research questions, the objectives, the sampling method, data collection and analysis of this study determine the number of interviews necessary for this. Identifying commonalities and differences in the population of interest helped me draw an adequate sample.

People's attitudes and thinking in the context of currency conversion was observed through in depth clinical interviews. The aim was not to generalise or to collect complex data but to illuminate important themes about the role of currency conversion and the specific demands made on adults' numeracy during the process, drawn from the perspective of an individual. Differences were difficult to identify with a small sample, therefore the aim was to select the sample on the basis of the important variables such as age and gender, variables found to be important in previous studies on currency changeover. The main variable split was going to be by age group working population (15-59) and elderly (60+) and each subgroup should have representative number of males and females.

In seeking to explain age and gender differences it was important to select the sample based on the above criteria. Some previous findings show that younger people might respond better and quicker to changes while older people may experience some difficulty. The possible differences in gender could be caused by the general belief that men are better at maths than women. Although, the gender differences tend to be in countries where they have gender inequalities, however, this study will consider gender differences in mathematical performance as it is strongly emphasised in 'Adult Numeracy' literature.

A sample of 24 clinical interviews was judged fairly sufficient to answer the research questions. It was thought that using clinical interviews should help me to better understand how people are thinking, what they are thinking and how they describe their thinking. The Clinical interview method would allow a respondent to better describe (in more depth) their experiences of the currency conversion.

The clinical interview can provide a kind of 'thick description' of the mind (Geertz, 1973). The interviewer is constantly engaged with the respondent and can ask follow up questions

to challenge/query what the respondent says. Each interview can be modified to suit the individual needs. This method of interviewing contrasts with traditional standardised interviewing methods. The standardised methods often fail to provide adequate insight into cognitive function; they are not effective techniques for understanding a thought process (Ginsburg, 1997).

The aim was to develop a set of questions allowing us to study people's thinking and their experiences with the new currency. The interview needed to be long enough to collect sufficient information, but not too long to deter people from participation. Therefore, the interview was designed to last between 25-35 minutes.

The questionnaire uses a lot of open ended questions to allow the respondent to fully respond and expand on the answers. Some prompt questions were prepared but the interview was designed to flow naturally without too much interruption from the interviewer. The interview deeply explored the respondent's point of view and feelings. The use of a tape recorder was prompted as it allowed me to focus more on non-verbal behaviour which is very important. After each recording the interview was transcribed capturing as much information as possible, making notes from observations, feelings and reflections of each participant. It is very important to understand the information in as much detail as possible.

3.4.4 Transcribing and translating the interviews

Recordings of the interviews were transcribed and analysed. Each interview was transcribed as soon as possible after the interview as it was easier to remember what went on during the interview. The interviews were carried out in the Slovak language and are therefore transcribed in the Slovak language.

3.4.5 Ethical considerations

The key considerations in this study were as follows. The confidentiality of each respondent was respected and the information collected was only available to people who are directly involved in this research. Participants and the information collected remained anonymous. The data was analysed in such way that an individual's identity could not be disclosed to the public. Participation in the survey was voluntary and could be terminated at any time. No harm was caused to any participant.

3.5 Summary

The conceptual map for this thesis was based on an adapted version of Evans (2000). It included basic variables of region, age, gender, education and income. The outcome variables are conversion strategies, calculation tactics and attitude measures. The intervening variables are affective and cognitive variables. The importance of the context was emphasised by attempting to design a conversion task in a context of everyday life.

This study elicited responses from a substantial number of adults in Slovak Republic. The sample size was approximately 400. The samples were selected based on a tightly-designed quota sampling method, namely region, age and gender to collect the required number of responses from each quota. The data were collected in five different points in time: before, during and three times after the currency changeover. The set of completed face-to-face interviews was judged to be acceptably representative of the working age population.

In this chapter the data, methodology and methods are presented. The discussion will continue into the next chapter with the emphasis on the Euro conversion process.

CHAPTER 4

4 Euro Conversion Process Description

This chapter presents an account of the Euro changeover in the Slovak Republic using a ‘case study’ approach. The primary focus is on the support offered by the state, organisations, and communities on national and local levels to guide the conversion to the much higher value currency the Euro. This section describes the tools developed to serve/guide the needs of the general public such as calculators, dual display of prices, conversion tables, starter packs etc; and the support designed to address local needs with high levels of cultural contextualisation. This should help to understand how state/organisations/communities can assist the public to access the resources and how the resources can meet the needs of the learners they are intended for.

The objectives are to investigate what the authorities thought the appropriate social support was for the citizens before, during, and after the currency change. I investigate how people coped with the problems they did not know they were going to have; and the support offered on national and local levels. This part of the study explains how the government planned the changeover and the types of problems that the country had to deal with during the major currency change. This also gives the opportunity to describe the steps taken by the Slovak authorities to address citizens’ problems and concerns.

A basic case study requires detailed and intensive analysis of a single case (Bryman and Bell, 2007). In this study the single case is *a single event*; the 2009 Euro currency changeover in the Slovak Republic. Knights and McCable (1997) suggests that in a case study several qualitative methods can also be combined, thereby avoiding reliance on one

single approach. The Euro conversion process description (ECPD) describes the context of the Euro conversion using case study analysis. This chapter further provides the basis for the qualitative interviews to explain people's ability to do useful calculations and make appropriate decisions in the new value currency, the Euro. In mathematics, adult numeracy research position 'mathematics in context' and assess problem solving related to everyday practices. It is about how adults use mathematics to cope with range of everyday situations related to mathematics. The ECPD describes the macro economic, social and cultural context and the qualitative interviews assess the ability to solve the conversion tasks. The results of the qualitative interviews are discussed in chapter 7.

The rollout of the Euro currency involved detailed organisation and planning. The National Bank of Slovakia and Ministry of Finance shared these responsibilities. A pedagogical project had to be developed first to identify vulnerable groups and then to design appropriate tools to help the public become competent with the Euro currency. The information campaign targeted the whole population, but special focus was dedicated to ethnic minority groups i.e. Romanian and Hungarian, citizens with special needs (blind, deaf, ill, disabled), children in residential care, pensioners, homeless people and prisoners. Based on the need identified, appropriate equipment, tools and support were provided.

The civil society can be examined from different perspectives, focusing either on institution or individual. This study focuses firstly on the part played by the state in educating/supporting adults in the currency transaction process. With the help of available published and unpublished documents it presents a description of what happened and explains how the support provided was transformed into resources when people really needed them. The qualitative interviews (further discussed in chapter 7) are focused on individuals to examine how the support offered by the state, organisations and

communities turns into resources to guide/help people become competent with the new currency. Thus, the emphasis of this project is on both the state and the individual level.

4.1 Introduction

I had the opportunity to be part of the Euro currency changeover in January 2009. I was in Slovakia to observe and learn the way people adapted to this new currency and made use of the available tools designed to assist them. Together with thousands of other people we waited patiently at the town centre square in Bratislava for the arrival of the new currency, the Euro, and the New Year.

As the finishing fireworks lit up the sky, people rushed to the nearby shops to use their first Euro. Shortly after midnight, Prime Minister Robert Fico withdrew 100 EUR from an ATM bank machine and officially said goodbye to the Slovak currency (Balogova, 2009). People showed enthusiasm for participation in the Eurozone as it finally became a reality.

Over the next few days, however, the enthusiasm for the new currency was confronted with reality. Reports about the new currency were quickly overshadowed by news about the economic and financial crisis that Europe was facing. Lalinsky (2010) shows that during the period of transition to the Euro (in 2009) Slovakia experienced a significant decline in industrial production. On the other hand, during 2008 Slovakia enjoyed a steady economic growth. Just after New Year 2009, Slovak businesses (mainly manufacturing) issued reports for employees to take extra time off and mass layoffs became very common. According to the Eurobarometer Survey in Slovakia (European Commission, September, 2008a) 50% of respondents expected the Eurozone to protect the country from the effects of the international financial crisis (20% answered DK). However, three years after the

Euro changeover, citizens fear that the situation is not improving and the existence of the Euro is uncertain.

Evidence shows that before, during and after the Euro changeover, citizens were bombarded with huge amounts of information. Leaflets and media advertisements were used as support methods to motivate citizens to learn about the new currency. The availability of the internet and other advanced forms of media has made information more accessible to citizens.

This section analyses some documents published by the government, banks, the European commission, public opinion surveys, newspapers articles, websites, academic journals and price watch reports. This part of the study addresses how experts planned and designed the changeover. I start by describing the support available on (a) *national level*, (b) *local level* and (c) *unexpected events*.

4.1.1 Why this is important

Using a qualitative approach in this part of the study gives the opportunity to find out how the government planned the changeover and the types of problems that the country had to deal with during this major currency change. Addressing these issues in the context of the Euro changeover could make the other European Union countries facing transition more sensitive to national and local needs. Presenting this constructive representation of experiences of the demands made on adults' numeracy during the process of currency conversion should be beneficial to future Eurozone entrants. Given current problems with the Euro, this study can offer a framework for citizens to deal with conversions.

4.1.2 Aims/research questions

This case study is intended to describe the context of the conversion process in the Slovak Republic. It also aims to describe what the authorities thought the appropriate support could be for citizens before, during and after the currency change. This would suggest investigating research questions [RQ1] such as the following:

- how did people cope with the problems they did not know they were going to have?
- what support was available on national and local levels?

4.2 Teaching of the Euro in formal education

The Directorate-General for Economic and Financial Affairs [DG ECFIN] identified resources to provide pedagogical material for teachers and pupils to help with Euro integration (European Union, 2010). This report on ‘The Educational Study on the Euro and EMU’ considers the teaching curriculum in primary and secondary schools and identifies relevant and existing subjects which have the potential to integrate teaching about the Euro and the EMU. The objective of the study was to develop teaching materials that would allow the Euro to be perceived in more positive way. This complex study was carried out in the 27 EU member states using multi methods i.e. desk study, online consultations, focus groups and interviews. The report considers subjects such as Citizenship/Civics education, History, Geography and Social studies with some very modest attention paid to Mathematics. The report briefly mentioned that ‘in mathematics pupils learn to understand and work with money and at a higher level some economic ideas such as inflation’ (European Union, 2010).

Table 4.1 Tool recommendations; Age Group: 14-18year olds

Subject	Learning outcomes	Tool themes and formats
<p>Economics Mathematics Citizenship</p>	<p>Compare the basic notions and milestones of the EMU</p> <p>Have discussions on basic notions relating to the Euro</p> <p>Define the Euro as a product of European cooperation/EU integration</p> <p>Evaluate the benefits of the Euro and debate drawbacks</p>	<p>Section on the Euro and EMU integrated into economics teaching. Worksheets will address the topic in different levels of complexity. Thus teachers can choose material according to the ability of their class (with younger pupils likely to only cover the basic worksheets).</p> <p>Section 1 (14 – 16): Home Economics - Pupils learn about managing money and personal finances</p> <p>Worksheet 1: Pupils manage a family household. They have to make decisions on how to spend money – i.e. weighing up the costs of long term investments vs short term needs.</p> <p>Worksheet 2: Pupils learn about the roles of banks and make calculations on interest rates and investment decisions.</p> <p>Section 2 (16-18 / Vocational schools): What is the EMU?</p> <p>Worksheet: Pupils learn about the different stages of the Euro and the EMU, the conditions of joining the EMU and governance of the EMU – including Member States and EU actors (European Council, European Commission, Council of Europe, the Euro group, ECB). The worksheet includes a range of questions including simple facts and questions for discussion and debate. (This section could also be linked to the ECB’s children’s page to explain concepts such as inflation).</p> <p>Worksheet 3: Governments and their budgets, and how they work together under the EMU. Section 3 (16-18): The economic crisis and Europe’s management in the context of the EMU</p> <p>Worksheet: Pupils are encouraged to research economic management in the press and identify the key actors in the management of the Euro currency.</p> <p>A press pack (of clippings or links), as well as links to the DG ECFIN website should be provided to assist this task.</p> <p>An activity could be to construct a time-line of the economic crisis, identifying the actions taken by European actors at different stages, and to compare the impact on the Euro to that of other currencies.</p> <p>Online activity: A final task could focus on a ‘pseudo stock-exchange’ whereby pupils are allocated with a sum of money that they must invest in companies or currency markets on the DG ECFIN educational site. The class would monitor how their investments grew over time, and how prices would react to trends in buying and selling. The markets could also experience sudden shocks whereby the class loses money. The activity could be performed over the course of a single lesson or several. The programme relies on DG ECFIN being able to develop a fairly sophisticated programme.</p>

SOURCE: EUROPEAN UNION, 2010, P.69-72.

4.3 Support programmes in place to aid the transition on national level

Transition to the Euro posed a challenge for every Eurozone country. Slovakia had the advantage of being able to evaluate the changeover processes of previous Euro entrants and prepare its own. A lesson was learnt from the earlier entrants about planning an information campaign and putting the correct measures in place for a smooth changeover.

For example, dual display of prices and code of conduct are useful in avoiding price increases²⁰. These tools were central to the success of the currency changeover in allowing citizens to become competent with the new currency. The next section looks at each of them in more detail.

4.3.1 Information campaign

As part of the efforts to guide the introduction of the new currency in Slovakia an information campaign was designed before the rollout of the Euro, as early as 2007. The information campaign depended on technologies such as electronic communication and information circulation, from telephone, radio and television to the internet. McWilliams (2007) claims that examining Euro media coverage in a specific country can explain the formation of people's attitudes towards the new currency depending on how ideas about Europe are presented and discussed. According to the Eurobarometer survey (European Commission, January, 2009a) in Slovakia television was seen as the most efficient mode of communication followed by Euromena website at 11%. The Euromena website was designed by the national bank of Slovakia in collaboration with the European Union.

²⁰ *The Euro cash changeover in the first 12 Eurozone countries triggered perception in almost all countries that the currency changeover increased prices (Hüfner, F. and I. Koske (2008) OECD No. 632). In September 2008 65% of Slovak citizens feared increase of prices (European Commission, 2008a).*

The government, in cooperation with other organisations (i.e. regional authorities, European institutions, commercial banks and the central bank) ensured that the public had access to the information, advice and assistance needed before during and after the changeover. The information campaign was designed to protect and educate citizens about the consequences of currency change. In January 2009, nearly 81% of Slovaks mentioned the media as the first preferred channel of information (European Commission, January, 2009a). On the other hand, in Slovenia and Cyprus it was public administration with 72% and 60% respectively.

The experience of earlier Euro entrants showed that countries which invested more time in preparation for the currency change were rewarded (Almunia, 2005). According to the Euro Working Group (1999) a person's job may affect their need to use the Euro; for example, people who travelled frequently, particularly those who travelled within the Eurozone, developed a natural interest in the Euro. However, people who did not have any experience of using foreign currency were not fully aware of the impact and needed to be encouraged. Thus, it was necessary that the information campaign was targeted at a specific group, be it young people or the elderly and the disadvantaged, the information tailored to the specific needs of each group and conveyed by an appropriate communication channel. According to the Eurobarometer survey (European Commission, 2008a) about 80% of people felt to be informed about the changeover (the total of "well" and "rather well" informed). Slovakia invested a lot of time and effort into preparation.

4.3.2 Control of price increases

It is well known that citizens of several countries (the first wave countries) blamed the Euro for increasing prices (European Commission, November, 2006) and Slovakia had a difficult task in winning over citizens' trust and assuring them that there would be no

abuses or price cheating during the changeover. Meier and Kirchler (1998) shows that social knowledge communicated through media and discussions can affect attitudes. Individual perceptions and expectations of price changes and inflation have been studied over many years (Ranyard, 2008a). The Journal of Economic Psychology published a number of articles related to how price changes and inflation are perceived and formed. The results show that consumers have a limited ability to remember prices and even succumb to bias (Ranyard, 2008). If people feel that the new currency increases the risk for the economy, endangers economic growth or increases unemployment and inflation, the greater the possibility that the Euro will not be accepted (Van Everdingen and Van Raaij, 1998). Cross-national surveys show that attitudes can be partially determined by national identity. However, there are also significant differences within a country (Isengard and Schneider, 2004). Therefore, the question is raised of what support and protecting was made available to citizens.

4.3.2.1 Dual pricing

The dual pricing started in August 2008 and was mandatory through the changeover in January 2009 till the end of that year. In January 2009 the usefulness of dual display was evident. According to the Eurobarometer survey (European Commission, January, 2009a) one month after the changeover, about 90% of Slovak respondents considered the dual price display useful. The dual pricing was put in place to help consumers avoid overpaying for goods and services, to avoid any unnecessary price increases and also to support learning and familiarisation with Euro prices. According to the Eurobarometer survey (European Commission, January, 2009a) 88% of respondents in Slovakia thought that the dual display of prices was 'very useful' or 'rather useful'.

The Eurobarometer Survey (European Commission, September, 2008a) shows that in September 2006, 73% of Slovaks feared being cheated during the changeover; however, the percentage of people afraid of potential price increases had decreased to 63% by September 2008. The prices of goods were monitored by Slovak Trade Inspection, checking for any unjustified price increases and mistakes in the dual display of prices. Furthermore, citizens were strongly encouraged to report any unfair price increase. Any unjustified increases in prices were treated as a legal violation resulting in heavy fines or even in prison sentences. The government kept its promise: the prices were strictly controlled before and during the changeover.

The compulsory dual display of prices ended one year after the transition, although three and half years after the changeover some shops continued to display prices in both currencies. Dual display of prices is surely beneficial at the beginning; later on, it may play a part in delaying the adaptation process. Looking at what happened in the UK after 'metrification' (measures expressed in terms of meters, kilograms and litres) shows that, many years after, people still had difficulty understanding the new system (Burgoyne *et al.*, 1999).

4.3.2.2 Conversion rate display

The conversion rate (€1=30.126SKK) had to be clearly displayed in every shop. The conversion rate could not be shortened or rounded up or down and all the prices had to be converted using the exact conversion rate, although, the final figure was rounded up or down to the nearest cent. All shops were encouraged to round prices in a way that would not disadvantage the consumer. In addition, all social security benefits were rounded up to the nearest cent to the advantage of citizens and all payments to the government rounded

down. The government made it clear how important it was for all parties involved to respect the conversion rules.

The Slovak Republic has a reasonably easy to convert exchange rate, €1=30.126SKK which can for the purpose of approximate mental calculation be rounded to €1=30SKK. For example Austria's exchange rate was 1 Euro =13.7603 schillings. The calculation involved in converting the Slovak crown to the Euro is much easier than the Austrian shillings to Euro; for that reason according to Marques and Dehaene (2004) the Slovaks are more likely to use conversion/calculation to convert prices in comparison to countries with a higher difficulty in exchange rate, such as the Austrian case. Citizens from countries with difficult exchange rates tend to rely more on learning prices in the new currency, eventually developing price intuition.

It is in all countries' interest to help the public start thinking and calculating in Euro. Citizens are extremely sensitive and susceptible to price movements during this period, so it is important that they are supported and guided throughout this process and that people are using the correct method to convert/calculate. Even if the execution of conversion does not yield a precise result, as long as the application and complexity are reasonable and people use the most efficient procedure to convert amounts from one currency to another they can achieve a reliable result or estimate. Previous empirical research in arithmetic showed that when the problem increases, the participants' performance (i.e., solution latencies, error rates) decreases (Duverne and Lemaire, 2005) and the complexity of conversion method and the frequency of use influence the size of the "Euro Illusion" (Gamble, 2007). Therefore, it is highly important to educate the public and inform them about appropriate conversion techniques which are easy to compute and equate.

Vulnerable populations such as older adults are more likely to use idiosyncratic strategies which may be less efficient (Lemaire, 2007).

The opportunity for individual countries to make the changeover less challenging is to have some central idea from the state or other national institution, which gives guidance on conversion and recommends to the public a conversion method or methods which can be used by people who are not mathematically orientated. France has adopted this approach and focused their campaign on informing the public how to do conversion, from French franc to Euro and from Euro to French franc. After the Euro changeover people used fewer strategies to convert and calculations become faster and more accurate (Lemaire, 2007).

4.3.2.3 Code of conduct

Prior to the transition, businesses were encouraged to sign, voluntarily, the 'Ethical Code' of conduct. This code was created to build trust between consumers and businesses during and after the changeover process and sets the basics of fair conversion rules. The government commitment was that the 'Euro will not raise prices'. The logo promoting the currency change was 'ménime menu, nie cenu' meaning 'we are changing currency not price'.

The government had considered freezing of prices for the period of two years, which has been later rejected as this could result in huge price increase after the two year period. It is believed that it is better for the country to take account of the inflation and adjust prices accordingly rather than freeze prices for period of time and then have rather steep increase of prices. There is no reason for prices to increase due to the currency change. However, surveys have shown that prices of some services have increased, for example in restaurants, hairdressers, car parks and cafes, due to low competition in these areas of business.

4.3.3 Summary of measures taken to protect citizens.

Slovakia was well prepared for the changeover and did very well to prevent unjustified price increases as well as to minimise the effect of perceived inflation. The development of prices was closely monitored by approved bodies and published. Citizens could report any price increases to appropriate authorities. Other measures like dual price display, the state rounding in favour of citizens, the 'ethical code' and the information campaign have all contributed to building trust among citizens.

4.4 Local support programmes

'Social exclusion of the Roma population in Slovakia is a serious problem that has formed in an extensive historic process since the arrival of the Roma people in Europe and Slovakia'. (Mladek and Pukacova, 2010, p.43).

The majority of the local support programmes were designed to help groups with limited access or no access to information, such as the elderly, children, the visually impaired and economically weaker groups, mainly the Roma population. In addition to the above techniques designed to guide the conversion, tools were developed specifically for the vulnerable groups i.e. leaflets in different languages, extra publications, radio plays, DVDs in sign language, theatre performances, music CDs, TV programmes, the training of multipliers (Times Tables) and the training of teachers. The Ministry of Education developed a special project for primary and secondary schools called 'Euro to schools'.

From the psychological point of view the transition to the Euro currency was associated with fear of rejection of the new currency in society, fear of unjustified price increases and inflation, loss of social security, jobs and national identity, decline in living standard and calculation anxiety.

The local authorities have provided extra seminars for the elderly to educate and inform them about the new currency, with special attention paid to pensioners' clubs and retirement homes. Some local authorities gave out the Euro starting packs to pensioners as a present.

The Slovak Blind and Partially Sighted Union organised training sessions to show people how to use the specially designed tools such as brochures in Braille, talking cards and calculators, a cash test tool and CDs.

The Ministry of Education allocated time in the curriculum for teachers to help students understand the new currency using different games and learning tools and also by attending educational concerts with Euro content.

A particular focus of local support programmes was to reach citizens living in remote areas. The majority of these are Roma people living in secluded settlements. Slovakia has the largest Roma minority in the entire Eurozone area. In the census data (2001) about 1.7% (89,920) of the population was reported to be Romany and two thirds of them consider Romany language to be their mother tongue (Marushiakova and Vasselin, 2004). A large proportion of the Roma population live on unemployment and social benefits, segregated from other populations, in territories called 'colonies' without road access, electricity, gas or even drinking water, clustered in the east of the country i.e. in regions of Košice and Prešov (Mladek and Pukacova, 2010). Most of the Slovak Roma population live in poverty and suffer great discrimination with limited prospects of employment and education. As many as 90% of the Roma fail elementary education and the majority of children end up in 'special needs schools' designed for children with learning difficulties. The official unemployment level is as high as 90% among the Romany population (Mikulova, 2008).

The information campaign had to find a different or more creative way to catch the attention of the Roma population, using TV programmes, theatre performances and DVDs and radio plays. The campaign focused on training Romany community workers to inform the Roma community. Teachers were provided with extra training to educate children, so they can later pass the information to parents. Special training was provided to teach the Roma how to convert (calculate) from the Euro to the Slovak crown and vice versa. Financial help was received from the European Commission to support these activities.

Special seminars were arranged by the VUB Bank to teach Roma females so that they can then pass the information to Romany communities. People are encouraged to answer simple questions about the Euro and in return, were rewarded by small promotions gifts from the bank. Kohutikova, the initiator of this idea, said that it was ‘important *to teach Roma females and tell them what the Euro will mean to them and how to convert the Slovak crown to the Euro and vice versa*’ (Romsky Novy List, 2008a). The objectives of the seminars were to provide basic information about the Euro and advice on how to budget income as well as to work out how much money people owe. Borrowing and lending money is common among Roma communities, so it is very important that people are able to accurately convert the amounts they borrowed or lent into the new currency.

The National Bank of Slovakia came up with a different idea of how to pass information to ethnic minorities, focusing on the Roma population: through theatre performance. The National Bank of Slovakia supported Romathan Theatre, the only state funded Romany theatre in Europe (Chalupa, 2003). The Romathan Theatre performed, all together, 40 plays throughout different Slovak regions, focusing on the regions with the highest proportion of Roma population (east Slovakia). The purpose of the play, called “Sly Family”, was to provide information about the Euro (Romsky Novy List, 2008b).

The 'Euro Roma Rap' was part of general national Euro-campaign dedicated to educate Romany children and teenagers about the new Euro currency. To be able to capture Roma's children attention the campaigners adopted a slightly different approach, using rap and hip hop music. Many Roma people participate in music and dance, so children were given information about the Euro and were then asked to write a slogan about the Euro, which they performed in rap and hip hop style. The purpose of this campaign was to teach children so they can pass this information to their families and friends (Romsky Novy List, 2008c.).

It has been recognised that, in the learning of numeracy, drama can be a useful learning tool (Giffiths and Kaye, 2011). It allows the learner to engage in an activity through performing arts and it allows for a range of cultural perspectives. Considering the huge amount of information available from sources such as television, radio, internet, press etc., it is important that people with different backgrounds are able to select a learning activity that suits their own learning style.

The main goal of the Euro promotion was to design a campaign that captures real-life problems, problems which citizens are likely to experience after the currency changeover. One of the challenges is to make a sense of the new value currency by performing calculations. People who do not receive the right help and support may not develop confidence and competence and may struggle to make everyday decisions. Therefore, it is important that people are assisted in developing these vital skills.

4.5 Expected and unexpected events before and during the changeover and how the authorities dealt with the situations

On the 25th November 2005 the Slovak Republic entered the Exchange Rate Mechanism II (ERMII) and the central rate of the Slovak crown was set at 38.4550 crown/1EUR (European Union, 2005). In March 2007, at the request of the Slovak government, the central parity rate was lowered to 35.4424 crown/1EUR (European Union, 2007) and further to 30.126 SKK/EUR on 28th May 2008 (European Union, 2008a) due to excellent economic results.

On 1st December 2008, Slovakia began selling starter packs to citizens and small businesses. Right from the start the demand proved very high and banks did very little to guarantee that every household had the opportunity to buy a starting pack. A report from Brussels (European Union, 2008b) shows concern that 1.2 million starting packs is not sufficient for the 2 million households in the Slovak Republic, the population being 5.4 million. The report points out that, according to previous research, on average every household buys one starting pack. People were seen queuing long before the banks opened to buy the starter packs of Euro coins containing 45 Euro coins worth €16.60/500 SKK (SITA, 2008). Some newspaper reports blamed the elderly people for causing the pre-Euro panic and shortage in Euro starter packs (SITA, 2008), other reports claimed that people bought Euro starter packs to later sell them on e-bay for profit (Klucka *et al.*, 2009). The purpose of the Euro starting packs was to provide familiarity with the new currency and give people the opportunity to use it for cash payment in the first few days of the changeover, as well as cash front-loading for sole traders. However, reports show that people and employers used them as a Christmas present/bonuses to family, friends and

employees. The shortage of the Euro starting kits could have been avoided by providing small entrepreneurs with special packs.

Due to panic, and businesses overloading with Euro coins, banks were faced with problems in counting and processing coins (Strakova, 2009). Afterwards, citizens and entrepreneurs wanted to change the coins for bank notes and brought back the unused starting packs. Other reports show that people brought the coins in sacks (Bariak, 2009). Although this problem could have been avoided, as the report from Brussels (European Union, 2008b) states: ‘the amounts of banknotes ordered by commercial banks so far are relatively low: only 27% of a total of 188 million estimated to be needed by the NBS, compared to 90.5% in Malta and an average of 67% for the first group of Euro area countries at a similar point in time.’

Banks faced processing tons of coins. They said this was costly and time consuming. The fee for processing coins (one cent for a coin) did not cover the actual cost. Citizens and businesses refused to pay the charges and put pressure on the government to scrap them. The government said that if the banks did not scrap the charges for processing the coins they would introduce a law to stop them from charging (Dovciakova, 2009).

Furthermore, entrepreneurs requested 1 and 2 cents be withdrawn as they were of no value. They claimed that bringing coins to the bank was too expensive as the charges were in some cases higher than the actual value of the coins (Onufer, 2009). The lowest value coin Slovakia had prior to the changeover was 50 halierov (approximately 2 cents). One cent is equivalent to approximately 30 halierov. The smallest Slovak note was the 20 (approximately 66 cents); the smallest Euro is the five.

This problem could have been avoided by giving people the opportunity to buy starting packs consisting of notes as well as coins. People tend to have more difficulty using coins

rather than notes, but, the notes have a larger value and it is therefore equally important to be familiar with them. The notes have different security features and people have to familiarise themselves with them to be able to recognise counterfeit notes.

According to the rules of the Euro changeover all of the payments due from the state for example pensions and social benefits had to be rounded up and amounts due to the state had to be rounded down (to the nearest cent) costing the state about 23 million Euro (TASR, 2009).

In an attempt to ease the negative effects of the transition and perhaps to maintain changeover enthusiasm, the government made a decision to increase pensions as early as 1st January as opposed to 1st July and some regions even gave out free starting packs to elderly people.

According to records, Slovakia is one of the weakest countries economically in the Eurozone. Although the cost of living is in fact approaching the Eurozone countries, household incomes are well behind. The government should not focus just on the economic and social aspect but also to try to improve the quality of life.

Overall, Slovakia learnt a lot from the transition approach of other Euro entrants and as a result experienced a smooth transition. The Euro campaign started earlier than planned and the government allocated extra €15 million more than originally committed. The campaign continued after the changeover to advise citizens how to exchange money and protect citizens from unjustified price increases. In the short term the Euro crises affected neighbouring countries and resulted in depreciation of their currencies, while Slovakia enjoyed the stability of the Euro currency. The economic development of neighbouring countries may have contributed to low inflation and price stability.

Furthermore, the banking sector responded very well, offering extended hours and increasing the number of staff and managed to convert the majority of cash machines on the first day. After a long debate, banks agreed to reduce charges for processing coins. The banking sector benefited from the changeover as they saw a large increase in cash deposits and card payments, still quite rare in Slovakia in comparison to the UK.

4.6 Summary

This chapter examined the support offered by state and organisations to guide Slovak people through the euro currency changeover. This chapter identified the things that did work and things that did not work so well.

The evaluation of Slovak measures to support the introduction of the euro shows that the 'big-bang' scenario worked rather well in the Slovak Republic. The euro currency was in circulation for almost ten years in 16 different European countries thus, people had the opportunity to see and use the euro before its introduction. The 16 days dual circulation gave enough time for people to spend the remaining cash which they preferred not to exchange.

In order to prevent people from unjustified price raises the government made dual display of prices compulsory from August 2008 until December 2010 and ordered compulsory strict price monitoring which worked very well. The dual display of prices eased the comparability of prices and allowed for gradual development of price intuition.

The Slovak Republic did rather well in targeting vulnerable groups of population and designed campaign and supporting material to suit their specific needs. For example, professional Roma theatre was recruited to explain to the Roma population the adoption of the new currency in comical but informative way. Using songs and videos, the campaign

explains to the people what the new euro looks like, the prices of some regularly bought things, and where in Europe they can use the currency. Slovakia was the first country with a large Roma minority to introduce the euro currency however; other countries are expected to follow such as Romania and Bulgaria and these performances could be useful.

Furthermore, it is important to mention things that did not work so well and could be avoided in future currency changeovers. The interest in the 'euro starter kits' proved to be very popular and people bought multiple packs moreover, small shops used them for sub-frontloading with coins, as a result the post offices run out of starter packs. After the end of dual circulation the bank experienced significant problems with processing huge amount of coins which people did not want any more. This suggest that the number of 'euro starting packs' which can be purchased should be limited to one or two per household.

It is important that the tools designed to support citizens are dedicated more to users' needs. In some cases people reported that they were not able to use the calculators as they were too small. In Greece calculators appeared to be very popular and accompanied everyday small-scale purchases. They were available in shops, cafes, on folding tables on street corners (Malaby, 2003).

In France, citizens were shown how to convert and calculate the French franc to Euro and vice versa. As a result people used fewer strategies to convert and calculations became faster and more accurate (Lemaire, 2007). Clarifying these strategies as they were used in Slovakia is one of the aims of this discussion. It should be beneficial to the public to inform them about the range of possible conversion strategies and develop effective conversion method(s) which can then be clearly communicated through the media. This is the opportunity for the individual countries to make the changeover less challenging for people who prefer to use mental calculations to re-learn the new currency.

This chapter described the Euro conversion process and the challenges the country and people had to deal with during this process. The next chapter will describe the data collected through street interviewing and provide answer to the first research question.

CHAPTER 5

5 Citizens' Experiences of the Conversion from the Slovak Crown to the Euro

Research can be divided into three main categories, namely explanatory, descriptive and causal (Ali, 1998:7).

This chapter describes the data sets and prepares the data for further analysis. It is divided into two parts. The first part provides detailed descriptive statistics of the primary data, in particular the pilot study and the three follow up phases. It assesses how the samples reflect the characteristics of the Slovak population using information from the Slovak census 2001. It describes the basic features of the data and provides simple statistical summary by performing cross-tabulations and graphs. Missing values, extreme values, and outliers are checked thoroughly during the data analysis stage. Furthermore, it describes characteristics of the Slovak population using the data from census 2001 and shows how it compares to this sample to justify the representativeness and reliability of this project.

The second part provides an answer to research question 1, which investigates the Slovak public's general experience with the conversion to the Euro currency. This section investigates how the level of knowledge about the new currency can help with adaptation. Furthermore, this section puts the results into broader context by comparing them to those of other Eurozone countries, using the information published by the Eurobarometer survey.

The path to the Euro has not been easy but Slovak citizens strived to achieve international recognition and to become part of something better and bigger, something that offered hope for a better future. It is important to note that the data for this study has been

collected in a period of economic crisis, financial crisis and most importantly the Euro crisis. We investigate the changeover process in the context of these economic changes which have influenced economic growth, unemployment and salaries. These changes meant that the government and citizens had to face challenging times.

5.1 Descriptive statistics

This repeated cross-sectional sample surveys were conducted in April 2008 (pilot study)²¹, and followed up in January 2009 (phase 1), in August 2009 (phase 2) and January 2011 (phase 3) see Table 5.1 for more details. The follow up design of this study offers the possibility to trace changes in people's attitudes and adaptation process over time. The aim was to collect about 100 responses for each phase. However, due to time and the length of each interview this was not possible. Street interviews were used to collect the information.

Table 5.1 Various phases of cross-sectional surveys and sample size

Study	Time	Sample (n)
Pilot Study (before the changeover)	April 2008	86
Phase 1 (during the dual circulation)	January 2009	102
Phase 2 (7 months after the changeover)	August 2009	89
Phase 3 (2 years after the changeover)	January 2011	88
Total		365

5.1.1 Sample characteristics

The adaptation to the new value system might cause some difficulty to specific groups of people, for example the elderly. Therefore, it is important that the samples are chosen in

²¹ It is important to use the 'pilot study' data in this thesis as it shows the situation in Slovakia before the currency changeover. Never the less it is important to stress the questionnaire was piloted prior to data collection. .

such a way as to represent the population based on gender, age, level of education and income level, identifying any differences between these groups.

This study began by identifying groups by age, gender, education levels, income levels and proportions. Each group is represented within the population using the census 2001 data. The information helped to collect the required number of responses for each group. The social difference variables were used as basis for quotas.

This study did not collect data on ethnicity. However, it is important to account for the whole Slovak population. The census data shows that the majority (85.8% of the population) in Slovakia are Slovaks, while 9.7% are Hungarian, 1.7% Roma, 0.8% Czech, 0.4% Ruthenian and 0.2% Ukrainian. The ethnic minorities, especially Hungarians (the largest ethnic minority group in Slovakia) could be slightly underrepresented as they tend to live in the southern part of the country along the Hungarian border, and this study did not collect data in this region. The questionnaire was designed only in the Slovak language; as many people from ethnic minorities living in Slovakia, speak Slovak.

The four studies conducted before, during and after the changeover had to be similar in the terms of socio-demographic characteristics and sample size so that comparison could be made to identify the changes over time. In repeated cross-sectional studies it is important to use the same methodology, definitions of variables, wording and methods of data collection throughout the study, therefore, the same sample selection criteria have been applied to all samples to minimize sampling errors.

Table 5.2 **Slovak Regions**

Region, SR	Surface area in km ²	Population as of Dec. 31	Population density per km ²	Number of municipalities		Rate of urbanisation ²²
				Total	Of which Towns	
Bratislavský	2 053	616 578	300,4	73	7	82,30
Trnavský	4 147	559 934	135,0	251	16	48,57
Trenčiansky	4 502	599 859	133,2	276	18	56,80
Nitriansky	6 344	706 375	111,3	354	15	46,80
Žilinský	6 809	696 347	102,3	315	18	50,30
Banskobystrický	9 454	653 697	69,1	516	24	53,47
Prešovský	8 974	803 955	89,6	666	23	49,25
Košický	6 755	775 509	114,8	440	17	55,72
SR Total	49 037	5 412 254	110,4	2 891	138	55,03

Source: Statistic Office of the Slovak Republic

The data were collected in two regions, Bratislava and Trenčín, using structured face-to-face street interviews. The Bratislava and Trenčín regions were selected for convenience purposes to keep the cost and travelling to minimum, but also it was important to select regions that to some extent represent the Slovak population. Both regions have higher rate of urbanisation and are rather prosperous regions. See Table 5.2 for more details. To better understand the data, a brief discussion follows of Slovakia and the two selected regions selected for this study.

Figure 2: Regions



²² The proportion of city inhabitants to the total population

Since 2002 Slovakia has been divided into the 8 regions shown above. The east part of Slovakia (Prešov and Košice region) is the least developed with the highest unemployment level and unskilled labour force. According to a previous study by Matejkova *et al.*, (2008) the 8 Slovak regions can be grouped into 3 clusters based on GDP per capita and the level of unemployment. The first identified cluster is Bratislava region on its own. The second cluster consists of Trnava, Nitra, Trenčín, and Žilina and the third cluster, Banská Bystrica, Prešov and Košice. The first two clusters represent about 60% of the population and, most importantly, the majority of the economically active population (Matejkova *et al.*, 2008).

The Bratislava region is in the southwest of Slovakia with a population of 616 578. It is the smallest region by area but this region accounts for almost a quarter of the Slovak GDP. Bratislava is the capital city with a population of 425,459. Bratislava provides excellent business links as well as easy circulation of goods between the Czech Republic, Hungary and Austria. It has the smallest unemployment level, the largest number of University graduates and almost 40% of all Slovak students study in Bratislava.

The Trenčín region is in the northwest of Slovakia with a population of 599 859 and by population density is the second most populated region after Bratislava. The region provides excellent rail network links between Austria, Hungary, Poland and the Czech Republic, has a well developed industrial sector in machinery, textiles, electronics, and chemistry and a highly skilled labour force which perhaps contributes to the low unemployment level (4.66% in 2007).

5.1.2 Socio-demographic analysis

Although the tightly designed quota sampling method with quotas for gender age and region was used, the samples are not exactly the same size (see Table 5.1). This is due to the fact that I had limited time to interview the targeted number of respondents, to select

them and persuade them to take time to answer the questions and also to approach respondents with particular characteristics to fill in quotas such as gender, age and region.

This section looks at the extent to which the four samples are comparable and whether they reflect the characteristics of the Slovak population such as gender, age, education and income level by using information from the Slovak census 2001. The significance test is used to demonstrate whether there are differences between the population proportion and a sample proportion. In this repeated cross-sectional study it is important to identify whether the differences between samples are caused by differences in sampling or genuine changes in responses over time.

In the questionnaire the following variables were included: gender; age; educational level (using a 4-point scale: basic, secondary; secondary with final exams, university); annual income in EUR ($\leq 4\ 000$, $4\ 001 - 10\ 000$, $10\ 001 - 20\ 000$, $20\ 001 \leq$); and region (Bratislava, Trenčín). These are the key variables used to explain differences or similarities identified from previous literature.

Table 5.3 Gender % distribution for each sample

Gender	Phase 3 Jan 11	Phase 2 Aug 09	Phase 1 Jan 09	Pilot Study Apr 08	Census 2001
Male	44	45	45	47	49
Female	56	55	55	53	51

In seeking to explain differences or similarities between genders it was the aim to collect a representative sample for both genders. In order to accurately detect opinion differences between men and women the sample has to reflect gender characteristics as they exist in Slovakia. Men and women are expected to have somewhat different opinions on different

aspects of the changeover. For example Hofmann *et al.*, (2007) found that women are more likely to use the intuitive strategy.

The Statistics Office of the Slovak Republic published census data from 2001 showing the resident population by gender. The census results show 49% of male (see Table 5.3) and these samples are on average about 45%. To see if these samples are different from the population proportion (census) the statistical test is carried out. The test shows that the weighted sample proportion (45%) is not significantly different from the population proportion of men 49%.

Therefore, it is concluded that the samples selected have similar gender characteristics to the Slovak population. The samples are reasonably similar at each phase, suggesting that one should not be worried about the samples being selected in different ways. No missing value was found for gender variable.

In seeking to explain differences or similarities between different age groups it was the aim to collect a representative sample based on age. Some variation was expected in citizens' opinions and ability to adapt to the new currency i.e. elderly people may experience more difficulties to adjust to the new currency.

Table 5.4 Age of Respondent (%) for the study

	Phase 3 Jan 11	Phase 2 Aug 09	Phase 1 Jan 09	Pilot Apr 08	Census 2001
Young adults 15-29	50	35	34	35	Working age population 77.0
Adults 30-59	35	51	47	47	
Elderly 60 +	15	14	19	18	Elderly (Male 60+ Females55+) 23.0
Total	100	100	100	100	

The phase 3 sample consist of 50% of young adults aged 15-29 which is slightly higher than that in the other samples. The reason for this could be because the data were collected during the school holiday and it is possible that at the time of data collection there was a larger number of young people in the shopping centre²³. However, the other samples seem to be reasonably similar. There is only one missing value for the age variable.

In my sample the age for elderly population is 60 years or more (equally for both genders), however, the census 2001 accounts for the different retirement age for women and men. Although, my questionnaire breaks the age groups into smaller groups (15-17; 18-24; 25-29; 30-39; 40-49; 50-59; 60-64; 65+), it is not possible to split the sample to account for the different retirement age as was seen for the census data. The statistical significance test revealed that the population proportion (77%) is not significantly different from the sample proportion 85%.

In seeking to explain differences between different education groups it was my aim to collect representative sample based on education. However, this was not possible with the quota sampling as this question was one of the last questions in the questionnaire due to sensitivity. It is expected to test variation in citizens' attitudes and their ability to adapt to the new currency based on the level of education respondents achieved, i.e. it is expected that educated people have more knowledge and perhaps better understand the reasons for the Euro introduction.

²³ *We did not get the same effect in January 2009 because reports show that many small businesses were worried about the dual circulation and did not have the resources to operate in both currencies and decided to open after the end of the dual circulation.*

Table 5.5 Highest Completed Education (%) for this study

	Phase 3	Phase 2	Phase 1	Pilot	Census 2001*
Basic	12	17	11	NA	27
Secondary education	10	17	34	9	30
Secondary with Maturita (equiv.to A levels)	61	51	38	51	33
University	17	15	17	40	10
Total	100	100	100	100	100

*Source: The Statistics Office of the Slovak Republic: census data from 2001 resident population by sex, age and education.

The table 5.5 shows the breakdown of the samples and the highest completed education²⁴. The phase 3 results show 12% of respondents completed the basic level of education, 10% secondary education, 61% secondary education with Maturita and 17% university. The 2001 census shows that 27% of the population completed basic level of education, 30% completed secondary level of education, 33% of the population completed secondary education with Maturita and 10% has completed university education. The phase 1, 2 and 3 samples could come from a population with a proportion of basic level of education 27%, secondary education 30%, secondary education with Maturita 33% and University 10%. However, the pilot study reflects the characteristics of the Slovak population only to a certain extent. As we can see, people with a university education are overrepresented but note that when we did the pilot study we included students currently studying at university. This does not necessary mean they will complete their education, therefore, the figure of 40% is already an overestimate. After the problem was identified the appropriate change to the question wording was made for the remaining phases. In all 4 samples there are 11 missing values all together for the education level variable.

²⁴ In Slovakia children usually start school in the year when they turn 6. Standard primary schools are for 9 years (age 6-15) followed by secondary education (age 16-19). There are two types of secondary schools: non-vocational and vocational. After finishing secondary school some students take an exam called 'Maturita' (similar to A levels here in UK). The exam is prerequisite for higher education such as University.

Table 5.6 Annual Gross Income in Euro (%) for this study

	Phase 3	Phase 2	Phase 1	Pilot Study
0-4 000 ²⁵	54	52	45	29
4 001-10 000	29	39	39	38
10 001-20 000	12	6	13	24
20 001 +	5	3	3	9
Total	100	100	100	100

Table 5.6 shows the breakdown of the samples and the percentages of people's income levels. The results of the phase 3 study show that 54% of respondents earn 4 000€ or less, 29% between 4 001€ - 10 000€, 12% respondents earn between 10 001€ - 20 000 and further 5% of the sample earns more than 20 001 per year (see Table 5.6). The respondents in phase 1 and 2 have similar income. There are altogether 37 missing values for this income level variable which is quite understandable as it is quite a sensitive question to ask and some people prefer not to disclose their income. Missing data are a part of almost every research, and decision has to be made how to deal with them. The literature review proposes a number of alternative ways of dealing with missing data i.e. analysing the data available and ignore the missing data; as done in this study or to replace the missing values by imputing the mean value.

According to the Statistical Office of the Slovak Republic median gross monthly earnings in 2010 were 7 812€ per year (The Statistical Office of the Slovak Republic, 2010). In all three samples, phase 1, 2 and 3, about 50% of people said that they are earning up to 4 000€. However, some of the respondents in my study are working part-time, some are

²⁵ The national minimum wage was 327.00EUR per month which is 3 924 EUR per year in 2012. Therefore people in this group earn just the minimum wage or less.

pensioners and also students with part time jobs. This could be the reason for the slightly lower median figures in my samples.

To make the Slovak annual income more meaningful for the reader and to give some information on how the income is spent, the Statistic Office of the Slovak Republic provides some summary information on expenditures of private households by economical activity per head of the household in 2007. An economically active household spends (in EUR, per person, per year) about 765 on food and non-alcoholic beverages, 631 on housing and utility bills, 365 on other expenses, 349 on transport, 289 on miscellanies goods and services, 256 on recreation and culture, 222 on clothing and foot wear, 203 on hotels and restaurants plus others. Therefore, it suggests that an income of 4,000 – 10,000EUR is a reasonable and comfortable income for an individual.

This study was not limited to just one area. To achieve a better representation of the Slovak population the street interviews were conducted in two regions, Bratislava (the capital city) and Trenčín. The interviews were carried out in two shopping centres²⁶ because they ensured good control of the survey conditions and good co-operation from the shopping centre management staff.

The aim was to get an equal number of responses from both regions; however, this was not possible. Prior to interviewing, permission had to be obtained from the shopping centre management team who only provided a limited time so as to avoid unnecessary disruption to consumers.

²⁶ *Shopping centres have their own characteristics and draw customers from a specific geographic area surrounding it, and their shop profile also influences the type of customers they attract. These characteristics may sometimes differ from the target population and create a non-representative sample, and for that reason I selected 2 different shopping centres in different regions.*

Region	Phase 3	Phase 2	Phase 1	Pilot study
Bratislava	47	43	40	41
Trenčín	53	57	60	59
Total	100	100	100	100

The above table shows that 47% of respondents are from Bratislava region and 53% of respondents are from Trenčín region (phase 3). It is quite similar to phase 1 and 2. See Table 5.7. This sample represents mainly the urban population. However, according to the national statistics, about 57% of the Slovak population lives in urban areas.

In general, it can be concluded that the results show that the samples were, in fact, selected in a similar way.

5.2 Summary of Descriptive Statistical Analysis

This chapter presented the descriptive statistics for this repeated cross-sectional survey study. This 32 month-long study of the conversion to the Euro in the Slovak Republic has been collected at four different points in time to capture the situation before during and after the changeover. The pilot study for this research (n=86) was carried out in April 2008; phase 1 study at the end of the dual circulation period in January 2009 (n=102); phase 2 in August 2009 (n=89) and phase 3 in January 2011(n=88). The data were collected in two regions, Trenčín and Bratislava using face-to-face street interviews. All three samples were selected under the same criteria using the quota sampling method to reflect characteristics of the Slovak population such as gender and age and compared with the census 2011 to justify the representativeness of the Slovak population.

5.3 The general experience of the Slovak public with the conversion to the Euro [RQ1]

This section investigates the first research question and tests the hypothesis and provides some evidence for the findings. Where possible comparison is made to the large scale Eurobarometer survey.

From the literature review it is known that the extent of knowledge about currency change can determine whether people accept the new currency (Meier-Pesti and Kirchler, 2003). Furthermore, it shows that informed people have a more positive approach towards the Euro (Isengard and Schneider, 2004). Slovak citizens had the opportunity to see and use the Euro currency before the changeover day. It is considered to be a great advantage, having the opportunity to familiarise oneself with the Euro, something the 1st Eurozone entrants could not do. This issue has been described earlier in the chapter 4, the ECPD, describing the state and local arrangements to help people grow familiar with the Euro.

This research investigates the general experience of the public after the currency change from the Slovak crown (SKK) to the Euro (EUR) thus, the first research question is:

RQ1: What is the general experience of the Slovak public with the conversion to the Euro currency?

The focus is on citizens' experience with the Euro coins and notes just before the changeover. Prior to the changeover the Euro was already legal tender in 15 Eurozone countries, giving citizens great opportunity to see and use the currency. Although the first Euro entrants did not have the opportunity to see or use the Euro before the changeover, on the other hand, they had three years of transitional period²⁷ plus up to one year of dual

²⁷ *Transitional period: the period starting on 1 January 1999 and ending on 31 December 2001, the period between the introduction of the Euro in accounting and the cash currency.*

circulation period²⁸ in comparison to Slovakia with no transitional period and only 16 days of dual circulation, therefore we divided the RQ1 into three more specific questions:

RQ1(a): *Experience with the Euro coins and notes, especially focusing on dealing with receiving change.*

RQ1(b): *Experience of dual circulation, especially focusing on handling the two currencies, e.g. distinguishing different denominators of Euro coins.*

RQ1(c): *The types of difficulties citizens experience, focusing on errors in financial transactions, budgeting, spending.*

5.3.1 Experience with the Euro coins and notes [RQ1(a)]

The respondents in the pilot study (April 2008) were asked whether they have seen and used Euro coins and bank notes prior to the Euro changeover and whether they used the currency, in order to investigate citizens' awareness and familiarity with the Euro currency before the changeover.

	Have you already seen Euro bank notes/coins? %	Have you already used Euro bank notes/coins? %	Eurobarometer survey results May , 2008 (European Commission, 2008) %	
Yes	88	66	Seen Euro notes/coins	77
No	12	22	Used Euro notes/coins	49
NA	0	12		
Total	100	100		

The results show that 88% of respondents had already seen both the coins and notes (see Table 5.8) eight months prior to the Euro conversion. According to the Eurobarometer survey (European Commission, May, 2008) conducted in Slovakia, 77% of Slovak respondents have seen Euro bank notes/coins. The reason the figure is higher in

²⁸ Dual circulation is a short period immediately after the introduction of the Euro, both Euro and national currency are in circulation. This period is used for withdrawing the old national currency from circulation.

comparison with the Eurobarometer survey is probably because data has not been collected in the remote areas where citizens are less likely to see the Euro.

Regarding the use of the Euro currency about 66% of Slovak citizens had already used the Euro currency (pilot study April 2008) eight months before the actual Euro conversion. To compare this to the Eurobarometer survey (European Commission, May, 2008) conducted in Slovakia approximately 49% had used the Euro bank notes/coins. Again this can be explained by this data better representing the economically active population which is more likely to use the Euro coins and notes. One of the Eurozone countries (Austria) lies on the border with Slovakia and the capital cities are only 40 miles one from another; it is very common for Slovak citizens to live in Bratislava and work in Austria. Also, in 2007 Slovenia switched to the Euro currency, followed by Cyprus and Malta in 2008; all three countries are very popular travelling destinations for Slovak citizens.

To compare the present results to those from Slovenia, who accepted the Euro in January 2007, nearly 94% of Slovenians had seen the Euro and 84% had used the Euro four months prior to the changeover. The high percentage of Slovenians who had seen or used the Euro could be due to the fact that Slovenia is a well known European tourist destination and is adjacent to Italy and Austria (both Eurozone countries since 2002). Furthermore, many Slovenians were holding their savings in Deutschmarks when Slovenia was part of Yugoslavia and after the Deutschmark was replaced by the Euro the savings were kept in Euro accounts.

5.3.2 Citizens' experience of dual circulation [RQ1(b)]

According to Ranyard (2007) even under normal circumstances people make errors in their everyday financial dealings and transactions. It is not easy to distinguish and manipulate new currency at the same time as trying to make sense of the new Euro prices, and it was

expected that during the first few days of the Euro changeover citizens may experience some problems with financial transactions, including relatively common mistakes like receiving incorrect change²⁹ or confusing two different values of coins or notes due to the new design. To investigate these issues we asked citizens in April 2008: a) Do you check whether you have been given the right change? b) How often do you confuse two coins/bank notes of different value?

Table 5.9 Do you check whether you have been given the right change? (% distribution)

	Before Changeover (April 08)	After Changeover (Jan 09)
Always/Often/Sometime	74.0	88.0
Rarely/Never	26.0	12.0
Total	100.0	100.0

According to the Eurobarometer survey (European Commission, May, 2008), about 68% of Slovak people were worried that they would be cheated during the changeover. We found out that the percentage of people checking their change before (April 08) and after (Jan 09) the changeover slightly increased from 74% to 88% (see Table 5.9). This could indicate that the new Euro currency made people more vigilant at the time of the changeover.

Table 5.10 Confuse two coins/bank notes of different value? (% distribution)

	Before Changeover (April 08)	After Changeover (Jan 09)
Always/Often/Sometime	22.0	26.0
Rarely/Never	78.0	74.0
Total	100.0	100.0

The Slovak crown is a relatively new currency. Although it has been in circulation for the past 15 years, this study confirms that 22% of respondents sometimes (always/often/sometimes) confuse two coins/notes of different values (see Table 5.10). This increased slightly to 26% after the changeover. The majority of people reported that they had adapted to the new design of the Euro currency relatively quickly.

²⁹ During the dual circulation citizens had the choice to pay either with Euro or with Slovak crown; however, change could only be given in Euro.

To sum up, the responses to the two questions show that some people at the time of the interview have experienced minor problems with distinguishing Euro cash, which could also explain the slight increase in the percentage of people who check whether they have received the correct change. Small change (coins) was one of the key problems and escalated into an even bigger problem after the changeover and some citizens and entrepreneurs asked the government to abolish the 1 and 2 cent coins claiming that they are difficult to distinguish and have a small value. This issue is described in more details in the chapter 3, the Euro Conversion Process Description.

Table 5.11 Distinguishing and manipulating Euro cash. (% Distribution)

	Jan 09 Coins Rather/very difficult	Jan 09 Notes Rather/very difficult
Slovakia	31	14
Malta	21	9
Cyprus	17	3
Slovenia	26	5

Source: European Commission. (2009). Flash EB No259 –Slovak Euro Introduction, Ex-Post Citizen Survey

Based on the experience of previous Eurozone countries, the table above (see Table 5.11) clearly shows that the Slovak citizens had more difficulty with distinguishing and manipulating the Euro cash than the three member states that joined the Euro one or two years before Slovakia.

5.3.3 The types of difficulties citizens' experienced [RQ1(c)]

The study asked people '*what type of problems they have experienced with the Euro during the dual circulation*' (phase 1 January 09). This was an open-ended question and respondents had the opportunity to mention as many issues as they wanted, although the majority have only mentioned one or two.

In regards to the above question, 41 respondents (n=102) did not experience any problems and felt well prepared for the new currency, 14 people mentioned that they were confused

or worried and another 14 people mentioned that they had to queue or wait a bit longer, 11 were stunned by how little (change) they received, 10 complained about too many coins, 7 said that they had to convert all the time and 9 mentioned that they did not know how, or find it difficult to check whether they received the correct change.

During the dual circulation people could pay in the shops with the Slovak crown but change was only given in the Euro. When people received only a handful of coins they were stunned by how little they got back. Under the old currency, coins did not have much value, and thus when people saw only coins they had the impression that they had received the wrong change. To explain this problem this example is given: A lady goes to the shop with 500SKK (€16.60) to do her daily shopping. The shopping comes to 350SKK (€11.61) and she is expecting 150SKK back in change, all paid in bank notes, but instead she receives €4.98 (all in coins). Furthermore, from my own experience and other reports (this was discussed earlier in the Euro Conversion Process Description) there were too many coins in circulation and not enough notes during the dual circulation especially 5, 10 and 20 EUR notes. This meant that even 20 EUR was given in one Euro coins.

To sum up, the responses to the above questions show that about 40% of respondents did not experience difficulty; however, citizens who did experience problems tended to mention a couple of issues. The concern is not about the long queues as this problem is short-term but issues such as feeling confused and worried or finding it difficult to check whether one has received the correct change could be a long-term problem if not addressed properly. And, indeed, table 5.11 shows that the percentage of people who reported difficulty with distinguishing and manipulating Euro cash is highest between the new Eurozone entrants.

To examine how the situation developed 2 years after the currency changeover respondents were asked respondents to '*describe their personal experience*' using the Euro, using one or more descriptive words. This was an open ended question in phase 3, January 2011 and respondents generally mentioned a couple of aspects of the changeover.

Overall, 21 respondents (n=88) mentioned the word 'European', considering the Euro currency as a symbol of European identity and necessary for the EU integration. Citizens are increasingly proud to be identified as European and associate the Euro with developed European countries. It was the aim of the single currency Euro to unify the countries of the European Union and the Euro has been carefully designed, so it appears uniform to all the European countries and their citizens.

A further 18 respondents described the currency positively: e.g. good, better, easy to use, and were happy and satisfied. Individuals who described the experience of using the Euro positively may have a more optimistic attitude towards the new currency and, therefore, it is expected that they adapt to the Euro in more positivist manner.

Few people (13) mentioned easy travelling, no exchange fees and easy price comparison. Some people think that the single Euro currency makes travel easier inside the Eurozone as there is no need to exchange money and they find it easier to budget and compare prices. Previously, people used the Slovak crown, which at one point was a non-exchangeable currency outside of Slovakia. Later, when the currency was exchangeable outside of Slovakia, people were charged high commission fees for exchanging the currency.

Some respondents mentioned that the Euro currency provides better opportunities for business and possibly higher salaries (9). The single currency Euro has higher credibility which should lead to more trade and investment and the creation of new jobs.

Up to now only the positive aspects experienced by citizens have been presented, and so now some concerns are mentioned. The results show that 10 respondents used a negative word to describe their experience with the new currency, such as 'bad', 'chaotic', 'confusing' or 'silly'. A further 15 people used the word 'expensive'. These public perceptions of price increases were a major concern in many other Eurozone countries and are one of the major challenges for the EU. Slovakia had some very effective policies in place to monitor unjustified price increases, but even these policies were not able to fully address citizens' concerns regarding price rises.

Some people (about 4) mentioned that they had problems with budgeting. 6 people declared that they did not understand the currency at all. One possible affect of the Euro changeover is temporary loss of sense of value of the new currency. This could lead to overspending and poor budgeting.

Furthermore, two years after the Euro currency changeover, 8 people said the Euro was something they still needed to get used to. The adaptation process, as is known from the previous research, is a long one and varies widely from country to country and individual to individual. This problem is also affected by the complexity of the exchange rate which is considerably easier in the case of Slovakia than in most of the other Eurozone countries (see Table 9.1 in Appendix). However, simple conversion rates can hinder the learning process according to Marques and Dehaene as people are more likely to convert than to learn the new value of the currency.

Phase 2 from August 2009 shows that respondents generally mentioned a couple of things. For the most part respondents described their experience of the Euro as 'good', 'satisfying' and 'positive'. Some respondents described their experience of using Euro less positively. For example, saying that it was something that they needed time to get used to or that they

had to convert (calculate) and also that they spent Euro money much quicker. Very few respondents used negative words like 'complicated', 'angry', 'bad' or 'chaotic'.

The results from January 09 (phase 1) were similar where generally respondents described their experience of using the Euro positively. For example, as good or that the Euro currency makes them feel more European and proud. Some people mentioned that they need time to adapt to the new currency and a few people described their experiences of using the new currency as not good, chaotic, complicated and that they have to convert.

To sum up citizens' experiences with the Euro currency, the results generally show an increase in negative responses over time. In phase 3 (two years after the changeover) we had many more negative comments about the new currency. For example, problems which were not mentioned before such as difficulty budgeting, a feeling that prices are cheaper, difficulty discerning the real value of Euro, slow reaction to price increases and increase of prices in service sectors (such as plumbing, decorating...) were only mentioned in the phase 3. Some of these issues could perhaps be linked to the 'Euro Illusion'. It was expected that two years after the changeover the citizens' concerns would slowly decrease, but in fact they increased over time.

The changeover to the Euro currency posed a challenge to businesses and citizens. Based on the results it appears that the majority of citizens adapted reasonably well to the new currency; however, two years after the implementation of the new currency, some citizens were still experiencing difficulties. It is necessary that these concerns are addressed soon and that citizens who have concerns about their ability to cope with this new currency keep receiving appropriate support.

5.4 A discussion on the analysis of the general experience of the Slovak public with the conversion: [RQ1]

This chapter seeks to explain the general experience of the Slovak public with the conversion to the Euro and this study concludes that Slovak citizens adapted rather well to the new currency and more than half of respondents (66% in April 08) claimed that they have used the Euro currency prior to the changeover, something the first Euro entrants could not do. Also, the majority of citizens claimed that they did not experience difficulties during the changeover. Those who did only cited minor problems such as long queues, too many coins, feeling confused and anxious. However, in comparison to the Eurobarometer survey the results from the 2007-2010 Euro entrants show that Slovak citizens were more likely to experience difficulty in distinguishing and manipulating Euro money and developed a rather negative attitude towards the Euro coins. This issue is discussed in more detail in chapter 4, the ECPD.

Furthermore, the results for January 2009, August 2009 and January 2011 show that citizens described their experiences rather positively, mentioning their association with Europe and how it makes them feel more European. However, an increase in the number of concerns was seen among people after the conversion, especially 2 years after the transition, such as difficulty budgeting, a feeling that prices are cheaper, difficulty discerning the real value of Euro and slow reaction to price increases. This is further investigated in chapter 7, the qualitative study.

Drawing from the descriptive statistics in this chapter the following chapter will test some hypotheses and provide answers to the remaining research questions.

CHAPTER 6

The currency transition...was a singular mass event that led to widespread cognitive, emotional, and behavioural effects (Kühberger and Keul, 2003, p.1).

6 Assessment of the Euro Switchover in the Slovak Republic

This chapter presents the results of the quantitative research carried out in Slovakia at four different points in time to capture the changes in people's attitudes towards the common currency as well as to evaluate the development of adaptation to the new currency. This repeated cross-sectional sample survey conducted since 2008 took advantage of the European real life experiment to investigate the affect of a major currency change on citizens.

As described in chapter 5 (section 5.1 descriptive statistics) this study was conducted in April 2008 (pilot study), January 2009 (phase 1) and in August 2009 (phase 2) and January 2011 (phase 3), before, during, and after the Euro conversion to capture specific moments in time and thus explore the effect of the currency change on attitudes, and citizens' ability to develop intuition in this new currency. The following research questions will be analysed in detail:

RQ2: Citizens' affective responses towards the Euro currency before and after the changeover?

RQ2(a): What are people's perceptions and beliefs concerning price rises?

RQ3: *How do citizens cope with the numerical demand required to do conversion?*

RQ3(a): Citizens' ability to convert?

RQ3(b): Which conversion method do people use?

RQ4: *How do people develop their price intuition over the period following conversion?*

RQ5: *Euro Illusion: To what extent are the Slovak citizens influenced by the nominal representation of prices rather than the 'real' value?*

This chapter is the key part of this thesis as it provides the answers to the research questions, tests the hypotheses and, where possible, comparison is made to the Eurobarometer survey, the EU's regular public opinion survey to put the findings into broader context.

6.1 Citizens' affective responses towards the Euro changeover [RQ2]

One of the determinants of acceptance or rejection of the common European currency is often attachment to the national currency. Symbols such as national currency, the flag, the language and so on form part of citizens' national identity. The Eurobarometer survey shows that support for the new currency varies widely from country to country. During the transition, citizens are exposed to a huge amount of marketing information either produced by their home country or by the European Union. In some countries citizens were prepared to abandon their national currencies but not in other countries. For example we have seen some Euro-sceptics here in the UK. British people are proud of the British currency, the 'pound', which has a long history and a good reputation and is strong in value. It is not known why some countries reject the Euro currency but it could be due to cultural,

economical or maybe even political reasons. This study hypothesis is: the stronger the currency and economy, and the deeper historical roots, the stronger the attachment to the national currency may be. Thus, the first chapter presents the history of the Slovak crown. The historical background may help with the interpretation of the results. The aim is to investigate whether the replacement of the national currency has affected citizens' feeling of national identity and, in general, how the Euro was accepted by its citizens.

Researchers tried to discern whether it is the identity based approach or the economic based approach which is more important in determining people's attitude towards the new currency. This study briefly investigates both the identity and economic approaches as they are believed to be important contributors towards changing attitudes towards Euro.

6.1.1 Some aspects of the Euro currency and the national identity

This section investigates the national identity as a determinant of attitudes towards the single European currency. According to Isengard and Schneider (2004) money is more than just a form of exchange, a store of purchasing power or a factor of evaluation, it is connected to the symbolic identification of a nation. The Eurobarometer survey shows that the support for the new currency varies from country to country. The acceptance level of the new currency seems to be higher in countries where citizens are less emotionally attached to the national currency.

Table 6.1 Did the Slovak Republic lose a great deal of its identity by adopting the Euro currency? (%)

Identity Variable	Phase 3 Jan 11	Phase 2 Aug 09	Phase 1 Jan 09	Pilot Study ³⁰ Apr 08
Strongly Agree/ Rather Agree	35	28	25	21
Neither Agree/Disagree	21	12	23	NA
Rather Disagree/Strongly Disagree	44	60	52	79
Total	100	100.0	100	100

To consider the strength of my findings of the change over time and also taking into consideration the cross sectional design it is important to take into consideration the large confidence intervals. For example, for the purpose of this comparison using the phase 1 data in table 6.1. I calculated 95% confidence interval for strongly agree/rather agree that Slovakia lost a great deal of its identity by adopting the Euro currency. This is the estimate of the population proportion of who strongly agreed/rather agreed at the time and the range for the population proportion is 16% - 33%.

This section examines the extent to which citizens' attitudes towards the Euro changed over a period of two years, a period which covers pre and post Euro crisis. In response to the question: "*How strongly do you agree/disagree, that the Slovak Republic lost a great deal of its identity by adopting the Euro currency?*" about 35% of respondents agreed with the statement (January 2011). The table 6.1 shows that there has been a slight (but also steady) increase in concern about the loss of national identity over time. For example, two years after the introduction 35% of respondents claimed that Slovakia lost a great deal of its identity in comparison to 25% in January 2009 and 21% in April 2008 respectively.

³⁰ The 'Pilot Study' question was: *To what extent do you agree or disagree with the following statement "Adopting the Euro will mean that Slovak Republic will lose a great deal of its identity", but I did not have the Neither Agree/Disagree option.*

The apparently low percentage of people who agreed (35%) that Slovak national identity will be affected with the introduction of the new currency Euro can be explained by the fact that the Slovak crown was used as a national currency for a rather short time. The new independent state Slovakia was established in 1993 and at the same time the Slovak crown was introduced as the national currency which may not be associated strongly with national identity. National identity is formed through various different channels such as culture, language, traditions etc and in some cases through currency.

In August 2009, the analysis of people's attachment to the national currency revealed that Slovaks, who claimed that Slovakia has lost a great deal of its identity by adopting the Euro are predominantly elderly people aged 60+, with a lower level of education (secondary education without Matura). No gender, regional or income level differences were found. (Detailed analyses attached in appendix 9.1). Chi squared analyses have been carried out with the January 2011 sample and this time no association was found between people's attitudes about the loss of national identity and social influence (full analyses are included in appendix 10.1).

The Eurobarometer survey results for September 2008 (European Commission, 2008a) show a figure of 37% in comparison with the present study's 21% (April 2008). This survey does not fully represent the east part of Slovakia while the Eurobarometer survey represents the whole country. This difference can perhaps be explained as the difference in people's attitudes between the west of Slovakia, which is more economically developed than the east, where there is a very high level of unemployment. To put the findings into broader context the Eurobarometer survey 2008 (European Commission, 2008) reports that a vast majority 54% of respondents in the NMS9 countries do not believe that adopting the

Euro would cause a loss of national identity³¹. Thus the Slovak Republic was well above average (in comparison to the NMS9 countries) with 79% of respondents claiming that the Euro currency would not cause a loss of national identity.

6.1.1.1 A discussion on the analysis of national identity

To sum up, the majority of respondents did not think that Slovak national identity was affected by the changing of the national currency although it is found that the number of respondents who felt somewhat more sentimental after the extinction of the national currency has slightly increased. The Slovak crown was officially launched in February 1993 and was replaced by the Euro in January 2009. Euro is a much stronger and stable currency than the Slovak crown. The Euro currency was carefully designed to represent national identity and at the same time promote specially the European identity. Each Eurozone country was allowed to personalise the Euro coins to represent their own national identity using symbols, historical events or national heroes. Slovakia's decision to adopt the Euro currency is seen as a great achievement which led to many political and economical changes. Citizens have already benefitted from the reforms that took place well before the introduction of the common European currency, reforms which were obligatory for joining the Eurozone.

6.1.2 Euro currency and the economic aspect

This section explores the link between economic factors and public attitudes towards the single European currency, linking the expected economic performance of the country to the level of support for the Euro currency. Economic factors were found to have stronger affects; for example, in Germany. Muller-Peters *et al.*, (2001) found that people's attitudes

³¹ In the report, these countries; Poland, the Czech Republic, Hungary, Bulgaria, Romania, Latvia, Estonia, Lithuania and the Slovak Republic are referred to as the NMS9.

depended on whether citizens expected the introduction to have positive or negative consequences, for them personally or for their country.

In response to the question: *“Overall, the introduction of the Euro will have/has had positive/negative consequences for the Slovak Republic?”*

Table 6.2 The Euro introduction will have/has had positive/negative consequences for SKK? (% distribution)

	Phase 3 Jan 11	Pilot Study April 08
Very Positive/Rather Positive	59	79
Neither Positive/ Negative	12	NA*
Rather Negative/Negative	29	21
Total	100	100

*Please note that the Neither Positive/Negative option was not available in April 2008

In April 2008, before the Euro introduction, the majority of respondents, 79%, believed that the introduction of the Euro currency would have positive consequences for the Slovak Republic. However, in January 2011, two years after the currency changeover, about 59% of respondents agreed that the Euro had positive consequences for the Slovak Republic, a decrease of 20 % (see Table 6.2). However, it is important to mention that the option of neither positive/negative was not available in April 2008.

To further investigate people’s attitudes the chi-squared analysis is performed to test whether respondents’ views can be explained by social influence such as region, gender, age, education level and income level. In April 2008, no demographic difference was found to be significant; however, column percentages suggest that adults (30-59 years old) were more likely to agree that the introduction of the Euro would have positive consequences for the country. In January 2011, the results showed that adults aged 30-59 were more likely to agree that the Euro had positive consequences for the Slovak Republic.

On the other hand respondents from Bratislava and males were more likely to say that the Euro currency had negative consequences for the Slovak Republic. (Full analyses are included in appendix 10.2).

In addition, respondents were asked to indicate to what extent they agreed or disagreed with the following statement “*The replacement of the Slovak crown by the Euro will cause you personally a lot of inconvenience*”.

Table 6.3 The replacement of the SKK by the EUR will cause you personally a lot of inconvenience. (April 2008)

	Frequency	Valid Percent
Strongly Agree/Agree	28	36.8
Disagree/Strongly Disagree	48	63.2
Total	76	100.0
Missing 0	10	
Total	86	

37% of people agreed or strongly agreed that the replacement of the Slovak crown by the Euro would cause them great personal inconvenience (see Table 6.3).

The chi squared test shows that no significant differences were found between age, gender, level of education, income level and region and how strongly people agreed or disagreed that the replacement of the Slovak crown by the Euro would cause them personal inconvenience. However, the column percentages suggest that females are more likely to agree that the changeover will cause them a lot of inconvenience. For further research age should also be considered, but my findings only suggest that the difference exists, however, the chi-squared test was not significant.

6.1.2.1 A discussion on the analysis of the economic aspect

To sum up, a majority (63%) of respondents did not expect the Euro transition to cause them personal inconvenience and the majority of respondents were looking forward to

positive consequences for the Slovak Republic. Since April 2008, some changes can be observed in data but taking into account the difficult circumstances after the Euro changeover, the change can be justified. Shortly after the introduction of the Euro, the impact of the global economic downturn hit Slovakia. The general worsening of the economic and financial position perhaps influenced citizens' attitudes towards the new currency. This follows the findings from the literature review. Attitudes are expected to change as a result of experience (Tesser, 1993). Earlier studies show that people's attitudes after the changeover tend to focus more on the practical aspect of the currency changeover than on the symbolic meaning of the old national currency (Ranyard *et al.*, 2005). People expected the changeover to result in positive consequences for them as well as for the country; therefore, it is important to keep monitoring people's attitudes after the changeover.

6.1.3 Euro currency and benefits associated at personal level

This part investigates how people emotionally adapted to the new currency two years after the changeover. This question was aimed to measure general satisfaction of respondents with the new Euro currency. We asked respondents *how happy/unhappy they were personally that the Euro has become their currency*.

Table 6.4 How happy/unhappy are you, personally; that the Euro has become our currency? (% Distribution)

	Phase 3 Jan 11	Phase 2 Aug 09	Phase 1 Jan 09
Very Happy/ Rather Happy	39	49	45
Neither Happy/Unhappy	38	42	43
Rather Unhappy/Very Unhappy	23	9	12
Total	100	100	100

In January 2009, just two weeks after the Euro introduction, 45% of respondents were happy that the Euro was introduced with an increase to 49% in seven months after the

changeover. However, two years after the changeover in January 2011, the percentage of respondents who were happy that the Euro was introduced decreased to 39%, the lowest level since this study began. See Table 6.4.

The chi-squared analysis of how happy/unhappy people were with the new currency in August 2009 reveal that there is no significant difference between 'degree of happiness' and selected variable: gender, region, level of education or income level; though those who claimed to be 'rather unhappy' are predominantly aged 60+. In general, older people find it more difficult to adapt to changes. The younger generation has already benefited from European integration especially with a better quality of life, higher wages and more freedom to work in other EU countries, but the Euro it does not bring many benefits to the elderly people. The German Institute for Economic Research has found that those who benefit most from the currency have lower concerns regarding the Euro currency (Isengard and Schneider, 2004). This could perhaps explain why elderly people are more likely to be unhappy about the introduction of the Euro. See detailed analyses attached in appendix 9.2.

January 2011 data were tested using the chi-squared analysis to investigate respondents' views and whether they claimed to be happy/ unhappy about the introduction of the new currency and selected variable such as region, gender, age, education level and income level. The results show that respondents on higher income (10 000EUR +) and respondents from Trenčín are more likely to claim that they are happy about the Euro currency. (See appendix 10.3). However, the differences between regions need to be interpreted with caution as sample is not representative of different regions.

6.1.3.1 A discussion on the analysis of the benefits associated at personal level

Overall, it is concluded that the Euro currency was welcomed in the Slovak Republic and is still popular to some extent even two years later. It is evident that the responses have

changed between August 2009 and January 2011. At the beginning people felt overwhelmed by change and willing to change the currency. However, when their expectations were not fulfilled; after a longer period of time some people were found to resist the change. Similar results were found by Ranyard *et al.*, (2005) in the Republic of Ireland. The study claims that after the changeover people focus more on the practical aspect of the changeover and expect the Euro to result in economic growth and higher standard of living.

Attitudes towards the Euro depend on various factors such as economic expectations and social and economic changes. Since 1998 Slovakia has completely changed the centrally planned economy to a free market economy. This process has been extremely difficult. The difficult economical and political changes could have contributed to the positive reaction to the European currency which offers economic growth, lower unemployment, better standard of living and currency stability.

6.1.4 What are people's perceptions and beliefs concerning price rises? [RQ2(a)]

This section presents results on how the prices developed just before and after the Euro changeover in the Slovak Republic. In January 2009 (during the dual circulation) respondents were asked: *how did the prices develop prior to the changeover* and the majority (58%) of respondents answered that prices have increased. In August 2009 (7 months after the changeover) respondents were asked: *how did the prices develop from January 2009* and 51% answered that prices have increased (see Table 6.5).

Table 6.5 Changes in price development in the Slovak Republic.(% distribution)

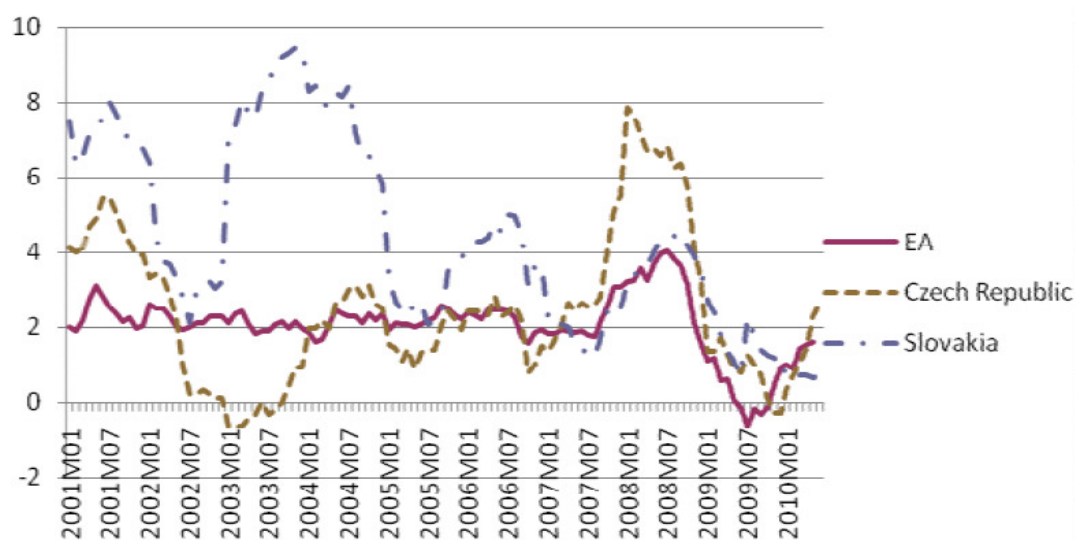
	Phase 2 Aug 2009 How did the prices develop from January 2009?	Phase 1 Jan 2009 How did the prices develop prior to the changeover?
Prices increased	51	58
Prices about the same	41	36
Prices decreased	8	6
Total	100	100

The results show that the majority of respondents perceive price increases, but there is not a significant change in respondents' answers before and after the introduction of the new currency which is satisfactory in this case³² (see Table 6.5). The intention was to shed some light on the issue of perceived price changes before and after the currency changeover and no significant change was detected. The Ranyard (2007) study found general belief among Irish citizens that price increases followed the Euro changeover.

To put the findings into broader context it is important to link this finding to official statistic on the actual inflation as well as the perceived inflation. The data from Eurostat shows that the actual inflation as seen in figure 4 fluctuated a lot before the euro changeover; however, in 2007 the inflation was much lower and closely followed similar trend as the inflation in the European area. The rate of inflation between January 2009 and July 2009 decreased; however, the prices were still going up. The results show that the Slovak people are more unlike other people in the Eurozone see e.g. Germany, Ireland. The Slovak people are more optimistic about inflation. These results cannot be presumed here but it is interesting finding.

³² Although here I am comparing different questions I was interested to see if people's perceptions of prices changed after the changeover.

Figure 4 HICP³³ inflation in Euro area, Czech Republic and Slovak Republic from 2001 - 2010



Source: Eurostat

6.1.4.1 Discussion on the analysis of perception of price increases

Slovakia did well in addressing citizens' concerns with regard to price increases and introducing a range of measures to monitor prices such as price monitoring by publishing a code of ethics and other measures. Citizens were encouraged to report any unjustified price increases and the outcome of each investigation was reported. Furthermore, the low inflation and recession have perhaps contributed to price stability; however, it is expected that inflation will gradually increase, which may impact on citizens' perceptions of price increases.

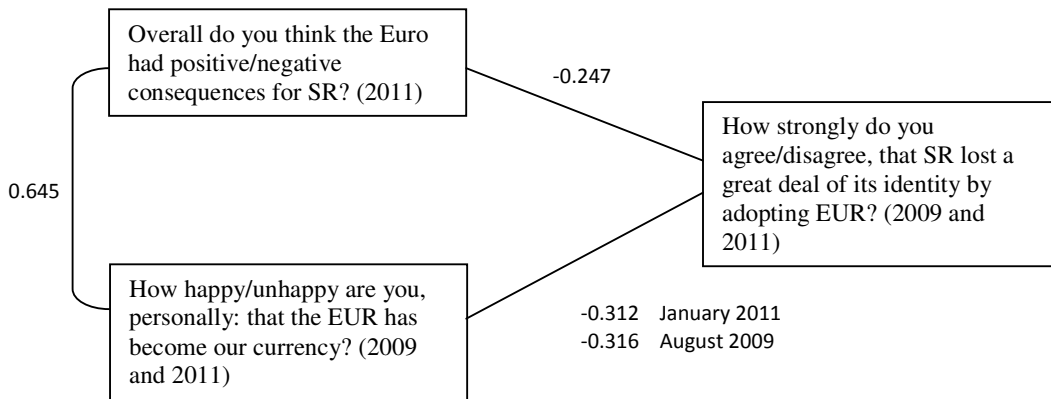
6.1.5 Correlation

This section examines the correlation between public 'happiness', the economic expectations of the Euro and attachment to the old national currency. The connection after the introduction of the new currency is analysed between (a) the national identity,

³³ HIPC is index which is commonly used for comparison in the European Union.

satisfaction and general happiness for January 2011 and (b) national identity and general happiness for August 2009. It is expected that both the identity factor and the economic factor to explain people’s attitudes towards the Euro.

Figure 3: Diagram Analysis (Correlation attitude)



Description and measurement for selected variable:

There is a negative correlation between how strongly respondents agree or disagree with the statement that Slovakia lost its identity by adopting the Euro currency, where 1 is ‘agree’ 2 is ‘neither agree or disagree ‘ and 3 is ‘disagree’ and:

(a) how happy or unhappy respondents are that the Euro became their currency where 1 is ‘happy’, 2 ‘neither happy or unhappy’ and 3 ‘unhappy’.

(b) whether the introduction of the Euro had positive or negative consequences for Slovakia where 1 is ‘positive’, 2 is ‘neither positive or negative’, 3 is ‘negative’.

The results show what was expected. Citizens who feel that Slovakia lost a great deal of its identity by adopting the Euro currency tend to claim that they are unhappy about the fact that Euro became their currency, both in January 2011 and in August 2009. (Full analyses in Appendix 10.4). Several studies present similar findings; individuals or countries with

higher levels of national identity tend to have lower levels of support for European currency (Eichenberg and Dalton, 1993; Deflem and Pampel, 1996). The second correlation suggests that citizens who feel that Slovakia lost a great deal of its identity by adopting the Euro currency tends to claim that the Euro had negative consequences for the Slovak Republic. The Eurobarometer survey demonstrates that the support for the new currency varied widely from country to country. Some countries' currencies had a longer history in comparison to the Slovak crown (as mentioned earlier in the first chapter). In some countries citizens were prepared to abandon their national currencies but in some not e.g. Britain, Sweden, Denmark.

Furthermore, there is a moderate positive correlation between people's opinion whether the Euro currency had positive or negative consequences and how happy or unhappy they are about the new currency in January 2011 (see figure 4). There are no data available for August 2009; therefore it is not possible to test for correlation. The January 2011 results show that people who claimed that the Euro had positive consequences for the country tend to say that they are happy about the introduction of the Euro. It is expected that the Euro will result in a good economic growth which can create jobs and improve standards of living.

To further expand on the figure 3 in the analysis of the correlation I considered controlling for the underlying demographic variables. The full partial correlation analyses between these variables are attached in appendix 10.4.1. The results for the correlation coefficients between the national identity, satisfaction and general happiness in January 2011 after controlling for the effects of gender, age, education and income are very similar, therefore did not report the individual partial correlations.

6.2 A discussion on the analysis of citizens' affective responses towards the Euro changeover: [RQ2]

During the two year period we investigated how people's attitudes towards currency have changed. The Euro was been accepted rather well by majority of respondents although the recent developments within the Eurozone and uncertainty about the future of the Euro had a large impact on people's attitudes. Some may argue that the Euro has not exactly lived up to people's expectations. Like in other countries, expectations were high in Slovakia before and during the changeover, but a decline in acceptance of the Euro currency was recorded in just two years after its introduction. Slovakia undeniably benefited from joining the European Union; as well as the monetary union, however, right after the changeover Slovakia faced challenges no any other country experienced during their changeover: the economic and financial crises. Although the economic and financial crises affected all countries, Slovak citizens were still getting to grips with the new currency.

Table 6.6 Attitude questions for the 4 different fieldworks (% Distribution)

	Phase 3	Phase 2	Phase 1	Pilot Study
How strongly do you agree, that SR lost a great deal of its identity by adopting EUR?	35	28	25	21
The introduction of the Euro had negative consequences for SR?	33	NA	NA	21
How unhappy they are personally that the Euro has become our currency?	23	9	12	NA

The results show that despite everything, Slovak citizens seemed to quickly distance themselves from the national currency and developed a rather positive attitude towards the Euro. The table 6.6 shows that people's attitudes were gradually changing after the changeover. In January 2011, about 35% of respondent felt that Slovakia lost its identity, which is still rather small. Nevertheless, some individuals perceive that they will be viewed as part of the 'developed' Europe, a direction they would like to move toward.

The second part of the results shows that there is a general tendency for Slovak citizens to perceive positive consequences for Slovakia. The Slovaks are proud of the currency changeover and think that it is a positive change that will bring a better future for all. On the other hand 33% of respondents became rather critical of the Euro by January 2011 and claimed that the Euro had negative consequences for Slovak Republic.

The third part of the result shows that, before the changeover Slovak citizens were rather enthusiastic about the Euro currency and a part of the population accepted the Euro rather well. According to Müller-Peters *et al.*, (1998, p. 670) people with more optimistic life attitudes are more open concerning social, political or economic change. The 12% of respondents who claimed to be unhappy about the changeover slightly increased to 23% in January 2011. Ranyard *et al.*, (2005) found out that after the changeover people were expecting to feel the supposed benefits, but the Euro failed to boost jobs and provide stability for citizens.

6.3 How do citizens cope with the numerical demands required to do conversion? (RQ3)

This part examines the numerical demands created when a country changes the unit of currency, focusing on citizens' ability to do useful calculations and also to see which conversion strategy people use as identified by Hofmann *et al.*, (2007). To begin this study investigates how citizens convert/calculate from one currency to another by asking respondents to perform 6 conversion tasks, three for Slovak crown to Euro and three from Euro to Slovak crown. The answer is recorded as well as the technique used to solve the problem, drawing on Lemaire's study (2007). Secondly this study applies the four strategies identified by Hofmann *et al.*, (2007) to assess the learning process and

understand how people select between these strategies. The conversion strategies are described in chapter 2, the literature review.

According to psychologists such as Marques (2007) and Ranyard (2007) over time people acquire price intuition and without too much effort they can decide whether a product is expensive or not. However, when the currency changes people cannot rely on intuition anymore and need to do conversion: converting prices from the new currency to the old national currency to be able to understand the prices or make a decision whether a product is expensive or not. From previous research it is known that citizens start to convert the new currency to the old national currency and that some people adapt quicker than others. Various factors play part in adaptation such as complexity of the conversion rate. Some countries have had simpler exchange rates between the national currency and the Euro and some fairly difficult (see Table 9.1 in the appendix.)

The Euro changeover presented a challenge for every citizen in the country, and this study assesses citizens' abilities to make sound decisions and calculations. It is important that citizens use appropriate calculations to convert amounts from one currency to another to achieve reliable results or estimates. Previously empirical research in arithmetic showed that when task difficulty increases, the participant's performance (i.e., solution latencies, error rates) decreases (Duverne and Lemaire, 2005) and vulnerable population such as older adults are prone to use idiosyncratic strategies which may be less efficient (Lemaire, 2007).

The exchange rate in Slovakia was fairly simple, 1EUR=30.126SKK compared with Austria 13.7:1 and France 6.5:1 – but more difficult than Germany 2:1. According to the Eurobarometer survey (European Commission, January, 2009a) about 76% of respondents found it easy to convert from Slovak crown to Euro; however, my study further

investigates citizens' ability to convert and instead of asking 'how easy or difficult it is to convert', respondents are asked actually to perform the conversion. Self-reporting can be quite subjective; collecting the data using task performance problems better reflects citizens' ability to do the conversion.

The aim was to create a 'realistic' setting or rather a situation similar to those citizens face every day after a major currency change, therefore the data were collected in shopping centres which helped me to create such a setting as the respondents were already shopping or just window shopping, familiarising themselves with the new currency and perhaps trying to understand the prices in the new currency. All respondents were allowed as much time as they needed to answer each question.

Before the conversion tasks, respondents were asked which currency they use as a benchmark. This was a self reporting question: *When purchasing, do you count mentally in the Euro or the Slovak crown?*

Table 6.7 When purchasing, do you count mentally in Euro/Slovak crown? (% distribution)

	Phase 3 Jan 11	Phase 2 Aug 09	Phase 1 Jan 09
Always in Euro	15	8	11
Most often in Euro	21	13	7
As often in Euro as in SKK	42	36	33
Most often in SKK	19	35	22
Always in SKK	3	8	27
Total	100	100	100

The results in January 2009 showed that 49% of respondents counted mentally in the Slovak crown (adding 'most often' and 'always' in SKK) and only 18% counted in the Euro currency. In August 2009, the majority, 43% of respondents, still claimed to think in the Slovak crown (adding 'always' and 'most often' in SKK). Eventually, two years after the changeover, the majority of respondents, 36% (adding 'always' and 'most often' in

Euro), claimed to count in the new currency, the Euro (see Table 6.7). This shows a significant improvement in the adaptation process since January 2009; however, the currency adaptation process is still far from complete. Converting prices is acceptable as a short term solution but in the long term the disorientation and everyday hassle with converting may lead to rejection of the new currency; therefore, it is very important to help citizens adapt to the new value of the Euro currency.

6.3.1 Citizens' ability to convert [RQ3 (a)]

For the 'Euro to Slovak crown conversion' we asked respondents whether they *know the approximate value of 5EUR in Slovak crown*. (See Table 6.8).

Table 6.8 **How much 5 Euro is in Slovak crown?**

Conversion Task	Phase 2 Aug 09	Phase 1 Jan 09
	n=89	n=102
	%	%
150.00-151.00	87	79
155.00	1	3
Total	88	82
No Answer .00	12	18
Total	100	100

The majority of respondents, 79%, answered accurately 150SKK-151SKK (5EUR=150.63SKK) in January 2009 with an increase to 87%, 7 months after the changeover. Furthermore, a decrease of missing values was observed, from 18% in January 2009 to 12% in August 2009. When a respondent failed to give a value it was coded as no answer. Perhaps some respondents were afraid of giving the wrong answer or maybe they did not know how much 5EUR was in the Slovak crown therefore they optioned not to answer. The lower percentage of missing values in phase 2 (7 months after the changeover) could indicate that over a period of time people become more comfortable

with repetitive mental calculations or simply remembered the values of specific coins and notes and therefore did not need to convert.

Table 6.9 How did you get the result? August 2009

		Frequency	%	Valid %	Cumulative %
Valid	Multiplied by 30	44	49.4	55.0	55.0
	Multiplied by 30 +ADDED a little	4	4.5	5.0	60.0
	Recalled from memory	31	34.8	38.8	98.8
	Other	1	1.1	1.3	100.0
	Total	80	89.9	100.0	
Missing	0	9	10.1		
Total		89	100.0		

Furthermore, this study investigates how respondents calculated the results. 39% of respondents claimed that they recalled the value from their memory (see Table 6.9). This could indicate the presence of the “Marker Value Strategy”, as identified by Hofmann *et al.*, (2007). This means that respondents learn the specific values of the new currency in the old national currency and then use it to estimate other values. This question was not included in phase 1; therefore, comparison cannot be made.

Table 6.10 How much 100SKK is in Euro?

		Phase 2 Aug 09	Phase 1 Jan 09
		n=89	n=102
		%	%
Valid	3.00-3.20	15	21
	3.30-3.33	66	58
	3.50-10.00	6	9
	20.0-33.00	3	2
	3000.00 -3012.60	2	0
	Total	92	90
Missing	.00	8	10
Total		100	100

For the ‘Slovak crown to Euro’ conversion we asked respondents if they knew *how much 100SKK is in Euro*. The table 6.10 shows that in August 2009 the majority of respondents

66% answered very accurately between 3.30EUR – 3.33EUR (100SKK= 3.32EUR). In January 2009, 58% of respondents answered correctly. This indicates a slight improvement in the adaptation process over 7 months. Furthermore, the results show that 54% of respondents claimed to recall the value from their memory (see Table 6.11). Again this shows that people are learning specific values of the Slovak crown to be able to understand the Euro currency, something we call the ‘Marker Value Strategy’. However, it is not possible to compare these results with the January results as the question was not included in the phase 1 questionnaire.

Table 6.11 How did you get the result? August 2009

		Frequency	%	Valid %	Cumulative %
Valid	Divided by 30	26	29.2	32.5	32.5
	Divided by 30 and subtract a little	5	5.6	6.3	38.8
	Recalled from memory	48	53.9	60.0	98.8
	Other	1	1.1	1.3	100.0
	Total	80	89.9	100.0	
Missing	0	9	10.1		
Total		89	100.0		

The above result shows that when the conversion is simple like in the ‘Euro to Slovak crown conversion’, where respondents simply multiplied 5x30, they tend to rely more on calculation but in the other case the ‘Slovak crown to Euro conversion’ when the conversion is more difficult 100/30 they tend to remember the specific value (35% in comparison to 54%). The second important finding is that over period of time calculations become slightly more accurate. This follow the result from Lemaire study (2007).

To further investigate the change in people’s ability to convert some basic values such as the 5EUR and 100SKK, table 6.12 shows the mean values for each period. For the first conversion task (5EUR) the mean values are about the same; however, the standard

deviation is much smaller in August 2009, which indicates that seven months after the changeover the conversion became more accurate.

Table 6.12 Basic conversion task differences in mean values for August 2009 and January 2009

How much is 5EUR in SKK? Correct Answer 150.60SKK	N	Min	Max	Mean	SD
August 2009	78	150.00	155.00	150.10	0.59
January 2009	84	150.00	160.00	150.27	1.26
And how much is 100 SKK in EUR? Correct Answer 3.32EUR	N	Min	Max	Mean	SD
August 2009	82	3.00	3012.60	77.54 ³⁴	465.96
January 2009	92	3.00	33.00	3.98	3.68

In the second conversion task, ‘how much is 100SKK’ in the Euro, we can see that in August 2009 we had two extreme values therefore the 5% trimmed mean was used and the result show that the trimmed mean is 3.60EUR in comparison to 3.98EUR in January 2009.

To sum up, the above results suggest that the majority of Slovak citizens can fairly accurately convert (calculate) some very basic amounts from the Euro currency to the Slovak crown and vice versa. These basic skills can be used to assist people in the short term to understand how much things cost in the new and old currency, although in the long term citizens need to understand and use this new currency without referring to the old currency.

To investigate people’s ability to convert larger sums and to examine which conversion they use, four conversion task items were designed. Two products were priced in Slovak crown and two priced in Euro. Two items were classed as regularly bought product of small value (bread and milk) and two as exceptional products (not frequently bought products) of higher value (DVD and mobile phone). The price of the items was more or less accurate as to the real price of that particular product.

³⁴ The 5% trimmed mean is 3.60

Table 6.13 Here is an item priced in SKK, about how much should it be in Euro? Bread 31.50SKK

		Phase 3	Phase 2	Phase 1
		Jan 11	Aug 09	Jan 09
		%	%	%
Valid	Less than 1EUR	1	0	0
	1.00-1.10EUR	83	91	84
	1.11-1.60EUR	16	4	11
	Total	99	95	95
Missing	0	1	5	5
Total		100	100	100

The first task was the regularly bought product bread. Respondents were asked to say how much *a loaf of bread priced at 31.50SKK should be in Euro*. A large number of people (83%) were able to give us a fairly accurate figure³⁵ between 1.00 - 1.10 EUR and 16% of respondents answered 1.11 – 1.60 EUR. To compare the results with previous phases, the results show that the calculations were more accurate in August 2009 (see Table 6.13). The percentage of people who overestimated the price of bread in August 2009 (4%) increased in January 2011 to 16%. Some respondents overestimated the price by almost 50 cents; a margin of almost 50%.

Table 6.14 Here is an item priced in SKK, about how much should it be in Euro? DVD 499SKK

		Phase 3	Phase 2	Phase 1
		Jan 11	Aug 09	Jan 09
		%	%	%
Valid	13.00-13.90 EUR	3	0	0
	14.00-15.70 EUR	15	13	20
	15.80-17.40 EUR	60	67	53
	17.50-18.20 EUR	17	6	4
	Total	95	86	77
Missing	0	5	14	23
Total		100	100.0	100.0

³⁵ The cut-off was calculated $\pm 5\%$ using the exact figure. For example the bread priced at 31.50 divided by the exact exchange rate 30.1260 equals 1.05€ $\pm 5\%$ (1€;1.10€)

The first exceptional product was a *DVD priced at 499SKK*. We asked respondents in January 2011 about how much should it be in Euro and 60% of respondents answered fairly accurately between 15.80 - 17.40 EUR (see Table 6.14). If the proper exchange rate is used for conversion 499SKK = 16.56 EUR. The results show a slight increase in the number of correct answers between phase 1 and 2 and a decrease in the number of missing values. However, if phase 1 and 2 are compared to phase 3 we see that the number of people who tended to overestimate the prices in the new currency increased from about 6% to 17%.

For the ‘Euro to Slovak crown conversion’ the first task was to say how much milk priced at 0.83 EUR should be in Slovak crown if the correct exchange rate was used.

Table 6.15 Here is an item priced in Euro, about how much should it be in Slovak crown? Milk 0.83EUR

		Phase 3	Phase 2	Phase 1
		Jan 11	Aug 09	Jan 09
		%	%	%
Valid	16.00-22.00 SKK	15	6	29
	23.00-26.00 SKK	75	76	55
	27.00-30.00 SKK	9	10	10
	Total	99	92	94
Missing	0	1	8	6
Total		100	100.0	100.0

In phase 3, 75% of respondents answered reasonably accurately when asked how much milk priced at 0.83 EUR would approximately cost in Slovak crowns in comparison to 55% in phase 1(see Table 6.15). The percentage of people who overestimated the price of milk in the Slovak currency is about the same (10%) in all three phases.

For the second ‘Euro to Slovak crown conversion’ the task was to say how much a mobile priced at 183 EUR should be in the Slovak crown if the correct exchange rate was used.

Table 6.16 **Here is an item priced in Euro, about how much should it be in Slovak crown? Mobile 183EUR**

		Phase 3 Jan 11 %	Phase 2 Aug 09 %	Phase 1 Jan 09 %
Valid	2 000-2 900 SKK	3	0	0
	3 000- 5100 SKK	27	14	28
	5 200-5 800 SKK	53	71	54
	6 000-8 000 SKK	13	3	5
	Total	97	88	87
Missing	0	3	12	13
Total		100.0	100.0	100.0

In January 2011, 53% of respondents answered accurately, when asked how much a mobile phone priced at 183 EUR would approximately cost. There is a decrease of 18% in accurate answers between phase 3 and 2 (see Table 6.16). A large number of respondents (30%) underestimated the prices in January 2011. The January 2011 results are very similar to phase 1 (January 2009).

To further investigate the changes in conversion accuracy over the period of two years the summary is provided in the table 6.17. The table shows that the mean price for the first conversion task the bread priced at 31.50SKK in January 2009, August 2009 and January 2011 are very similar (1.15€; 1.05€, 1.08€). For the second task the DVD the mean in January 2009 is much higher (33€) in comparison to the other periods (17.90; 16.30€). This is caused by a large mistake in the answer 1.650€ instead of 16.50€. One respondent incorrectly moved the decimal point. However, the 5% trimmed mean is 16.20€ so it is concluded the mean price for all three time periods is approximately the same. For the Euro to the Slovak crown conversion, the results show that the mean price for milk is approximately the same and fairly close to the exact value of 25.00SKK for all three time periods. In the last task, the mobile phone priced at 183€, the mean is slightly lower in comparison to the true value of 5 513.10 SKK which means that respondents rather underestimated the price of mobile phone in the Slovak currency. This could mean that Slovak people might experience a perception that the price of mobile phone is cheaper.

Table 6.17 Conversion task

Here is an item which was priced in SKK, about how much should it be in Euro now, if the proper exchange rate is used? Bread 31.50Skk

	N	Min	Max	Mean	SD
January 2011	87	.95	1.6	1.08	0.1
August 2009	85	1.0	1.5	1.05	0.1
January 2009	99	1.0	9.0	1.15	0.1

Correct Answer 1.05 EUR

Here is an item which was priced in SK, about how much should it be in Euro now, if the proper exchange rate is used? DVD 499SKK

January 2011	86	5.00	35	16.3	2.6
August 2009	80	1.60	169	17.9	17.2
January 2009	95	4.00	1650	33.4 ³⁶	167.7

Correct Answer 16.56EUR

Here is an item which was priced in Euro, about how much should it be in Slovak crown, if the proper exchange rate is used? Milk 0.83EUR

January 2011	87	17.0	30.00	24.3	2.6
August 2009	84	2.0	28.00	24.2	3.6
January 2009	97	10.0	28.00	23.3	3.3

Correct Answer 25.00SKK

Here is an item which was priced in Euro, about how much should it be in Slovak crown, if the proper exchange rate is used? Mobil 183EUR

January 2011	86	55	6000	5173	932
August 2009	80	33	8000	5215	1044
January 2009	92	1000	7500	5112	938

Correct Answer 5 513.10SKK

6.3.1.1 A discussion on the analysis of citizens' ability to convert: [RQ3 (a)]

This study shows that the majority of citizens interviewed did not have any major difficulty converting some basic amounts from the Euro to the Slovak crown and vice versa. However, in January 2009 a larger amount of missing values was observed, due to the fact that respondents did not answer the question. This could be because they were worried about giving the wrong answer or maybe did not know how much it was. In

³⁶ The 5% trimmed mean is £16.16

general, respondents found the ‘Slovak crown to Euro’ conversion slightly more difficult as they had to (a) divide by 30 and (b) larger numbers were involved (100/30 in comparison to $5 \cdot 30$). Mental arithmetic is generally considered more difficult with larger numbers (e.g. Lemaire *et al.*, 2001).

6.3.2 Which conversion method do people use? [RQ3 (b)]

To investigate which strategy people use after the changeover the 4 strategies identified by Hofmann *et al.*, (2007) were applied to assess the learning process. To investigate which ‘Adaptation strategy’ people use we asked people *how they performed the task conversions* (calculation). When the respondents said that they performed calculation to get the results it was coded as the ‘Conversion strategy’. When the respondents knew the specific values for example if they knew how much 5, 10, or 100 Euro is in the Slovak crown and used this information to estimate the price of the product it was coded as ‘Marker Value Strategy’. If respondents knew the price of other products and used this information to estimate price of the product we showed them it was coded as the ‘Anchor Strategy’. The ‘Intuitive strategy’ was very difficult to identify because it meant that respondents did not compare prices of products to the old national currency, but we asked respondents to estimate the price of a product in new or the old currency. When respondents said that they did not convert (calculate) and simply just estimated the price of the product or just guessed, we coded the response as the ‘Intuitive strategy’.

Table 6.18 Conversion strategies used in Slovakia for the four tasks discussed in section 6.3.1

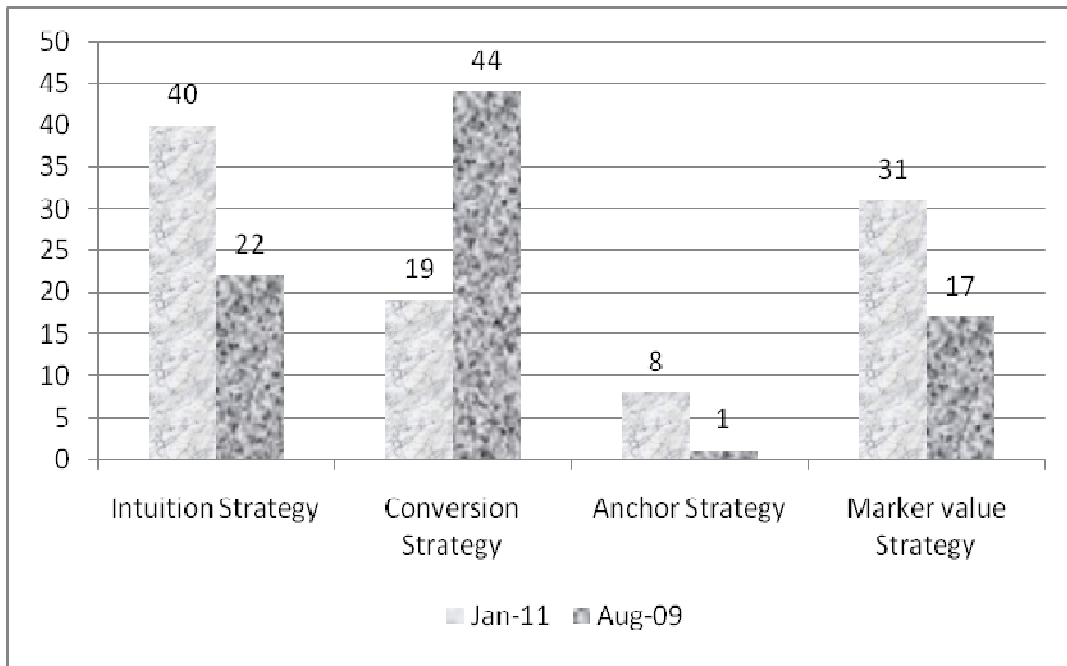
		Frequency		Percent	
		Jan 11	Jan 11	August 09	August 09
Valid	Intuitive Strategy	146	42	80	22
	Conversion Strategy	67	19	156	44
	Anchor Strategy	29	8	3	1
	Marker value Strategy	102	29	61	17
	Total	344	97	300	84
Missing	0	8	2	56	16
Total		352**	100	356*	100

* $n = 89 \times 4 \text{ tasks} = 356$

** $n = 88 \times 4 \text{ tasks} = 352$

Although it is seen from table 6.18 that in Slovakia citizens used all four strategies, the frequency of usage of each varies. The largest decrease occurred in conversion strategy. In August 2009 the majority of respondents used the ‘conversion’ adaptation strategy (44%); however, 2 years after the changeover the ‘intuitive’ adaptation strategy was the most frequently used (42%). The usage of ‘Intuitive’ strategy has almost doubled between August 2009 and January 2011 and also the percentage of respondents who now use the ‘Marker Value’ strategy increased from 17% to 31%. To better explain the development of price intuition see figure 4 which presents the adaptation strategies use in August 2009 and January 2011.

Figure 4: Adaptation Strategies use January 2011 and August 2009 (%)



**Note: Valid %*

In summary, the use of ‘conversion strategy’ significantly decreased; however, 19% of the respondents are still using the conversion strategy 2 years after the introduction of the Euro currency. Although there is nothing wrong with converting/calculating, previous literature shows that people who use the conversion strategy for many years after the changeover may perceive higher price increases as it is difficult to adjust prices for inflation; therefore, the anchor and intuitive strategy could be more appropriate. According to Ranyard (2007) neither the intuitive nor the anchor strategies, involve reference to the former currency therefore there is no need to retrieve prices from long term memory and adjust them for inflation. The two strategies do not require mental calculation, thus are less time consuming and help with development of price intuition.

This part investigates the usage of adaptation strategies across different type of conversion task. As mentioned before, I used two frequently purchased products (bread and milk) and two exceptional products (DVD and Mobile).

Table 6.19 Strategy use across different type of conversion tasks.

Strategy	Frequently Bought Products %		Exceptional Purchases %	
	Jan 2011	Aug 2009	Jan 2011	Aug 2009
Intuitive strategy	48	34	37	19
Conversion strategy	18	48	21	56
Anchor strategy	10	1	6	1
Marker value strategy	24	17	36	24

The results show that for frequently bought purchases the majority of respondents in August 2009 used the conversion strategy (48%); however, in January 2011 the intuitive strategy was the most frequently used at 48% (see Table 6.19). The invisibility of the anchor strategy is a bit surprising. The expectation was that more people would have learnt the prices of regularly bought products, such as bread and milk, by January 2011, and use the remembered prices to evaluate the prices of similar products, however, this has not happened yet.

For exceptional purchases again in August 2009 conversion was the most frequently used strategy, but in January 2011 it was the intuition and marker value strategy which were mainly used.

The results confirm that the intuitive strategy was used more often for estimating regularly bought products of a small value, such as the price of bread (31.50SKK) and milk (0.83€) and respondents tend to estimate the prices fairly accurately for these products (see Table 6.20).

Table 6.20 Cross-tabulation conversion task and accuracy August 2009

Intuitive strategy			Accuracy			Total
			Overestimates	Correct	Underestimates	
Conversion task	Bread 31.50SKK	Count	4	10	8	22
		% within Conversion task	18.2	45.5	36.4	100.0
	DVD 499SKK	Count	2	1	11	14

		% within Conversion task	14.3	7.1	78.6	100.0
	Milk 0.83 EUR	Count	3	17	10	30
		% within Conversion task	10.0	56.7	33.3	100.0
	Mobil 183 EUR	Count	3	5	6	14
		% within Conversion task	21.4	35.7	42.9	100.0
Total		Count	12	33	35	80
		% within Conversion task	15.0	41.3	43.8	100.0

Moreover this study investigates how people select between strategies based on the conversion task they performed and their age. Below is a table showing the most frequently chosen strategy based on task and age. (See Table 6.21).The full table is in appendix 10.7.

Table 6.21 Cross tabulation task and age: adaptation strategy selection for phase 2 and 3

	Young Adults 15-29		Adults 30-59		Elderly people 60+	
	Phase 3	Phase2	Phase 3	Phase2	Phase 3	Phase2
Bread 31.50SKK	Intuitive 77%	Marker Value 46%	Intuitive 52%	Conversion 48%	Intuitive 39%	Intuitive 50%
DVD 499SKK	Intuitive 48%	Conversion 50%	Marker Value 41%	Conversion 60%	Marker Value 41%	Conversion 50%
Milk €0.83	Intuitive 48%	Intuitive 46%	Conversion 40%	Conversion 62%	Conversion 46%	Conversion/ Intuitive 44%
Mobile €183	Intuitive 46%	Conversion 54%	Marker Value 43%	Conversion 57%	Conversion 67%	Conversion 57%

The majority of young adults (15-29) tend to select the Intuitive strategy indifferently to the task they performed (phase 3 results). Adults and elderly people are now (phase 3 results) more flexible in the type of adaptation strategy and the task they performed in comparison to phase 2, when they frequently relied on conversion strategy. In conclusion, two years after the transition people seem to be more flexible in selecting adaptation strategy and take the opportunity to use not just the conversion strategy but also the other adaptation strategies which should in long term help with the development of intuition in the new currency.

Furthermore, the results for January 2011 show that only 1% of respondents applied all four Hofmann's *et al.*, (2007) strategies to solve the conversion tasks. This is due to the fact that the Anchor strategy is very rarely used by Slovak citizens. A further 13% of respondents applied up to three strategies and it was mostly in combination of the intuition, the marker value and the conversion strategy. Most respondents applied two strategies (37%) and it was mostly the combination of the Intuitive and the marker value strategy (about one third of them used this combination), and 49% of respondents applied just one strategy and it was mostly the Intuitive strategy (almost half of them used just the Intuitive).

Earlier in table 6.18 it was reported that all strategies were used; however, not equally often. Similar finding was reported in Hofmann *et al.*, (2007). To put this finding into a broader context the comparison between Austria and Slovakia is made. In order to be able to compare my results to the Austria case the original table, as seen in appendix 9.3, was converted so that the column percentages add up to 100%.

Before comparing these two countries it is important to mention some important differences in terms of the Euro transition in each country. In the terms of conversion difficulty Slovakia had a much easier conversion exchange rate in comparison to Austria (1€=30.126SKK; 1€=13.7603öS) additionally, Slovak citizens had the opportunity to see and use the Euro currency prior to the conversion especially people who travelled in the Eurozone.

The comparison is made as follows:

1. The data for September 2002, collected nine months after the changeover in Austria, are compared to the data for August 2009, collected eight months after the

changeover in Slovakia. The data comparison is appropriate here as it reflects a similar time period after the changeover.

2. The data for August 2005 collected more than two and half years after the changeover in Austria are compared to the data for January 2011 collected two years after the changeover in Slovakia. In this case Austrian citizens had a slightly longer learning period in comparison to the Slovaks. This needs to be taken into account when comparing the data.
3. Austria is considered to be first wave country and the Slovak Republic is considered to be second wave country. The main difference that needs to be taken into account is that the second wave countries had the opportunity to see and use the euro coins and notes before the currency was introduced. It should be seen as an advantage and it is expected that the development of price intuition for the second wave countries should be slightly easier especially for citizens who had prior experience with the euro currency.

Table 6.22 Strategies for the assessment of Euro values (adapted table; for the original see Table 9.3)

Strategies	Habitual Purchases Austria		Habitual Purchases Slovakia	
	%		%	
	Sep 02 ³⁷	Aug 05 ³⁸	Aug 09	Jan 11
Intuitive strategy	34	36	34	48
Conversion strategy	5	3	48	18
Anchor strategy	32	30	1	10
Marker value strategy	29	31	17	24
Total	100%	100%	100%	100%

Strategies	Exceptional Purchases Austria		Exceptional Purchases Slovakia	
------------	----------------------------------	--	-----------------------------------	--

³⁷ Kirchler and Fessel GfK (2002a)

³⁸ Fessel GfK (2004)

	% ³⁹		% ⁴⁰	
	Sep 02	Aug 05	Aug 09	Jan 11
Intuitive strategy	13	14	19	37
Conversion strategy	35	27	56	21
Anchor strategy	18	17	1	6
Marker value strategy	34	42	24	36
Total	100%	100%	100%	100%

Source: Hofmann et al., 2007 p.374

There are noticeable differences (see Table 6.22) in the conversion strategy selection between the Austrian citizens and the Slovak citizens (see Austria September 2002 and Slovakia August 2009). While the Slovak citizens were relying mostly on the conversion strategy at the beginning of the currency changeover the Austrian citizens appear to be more flexible with the selection of conversion strategy even in the early months of the currency conversion. This pattern was seen to be the case in Austria and Portugal. Marques and Dehaene (2004) conducted a study in Portugal and Austria between November 2001 and June 2002 and have found that the Austrians tend to rely on retrieving prices from memory because the arithmetical calculation are more complicated, and the Portuguese rely more on mental calculation due to the simple conversion between escudos and Euro (1EUR =200.482 escudos and 1 EUR =13.7603 schillings).

In the first instance it appeared that the Austrians had adapted rather well to the new currency with a flexible approach to currency usage as well as relying more on conversion strategies which are believed to speed up the learning process; however, the results are rather inconclusive in the long term. Two years after the changeover it appears that some Slovak citizens stopped converting amounts and claim to be using the Intuitive strategy and in fact rather significantly more often than the Austrian citizens.

³⁹ Kirchler and Fessel GfK (2002a)

⁴⁰ Fessel GfK (2004)

In this case I can conclude that the simplicity/complexity of the exchange rate has effect on the process of development of price intuition and to some extent determines which adaptation strategies are more likely to be used. The results suggest that in countries with difficult exchange rates people are more likely to rely on the anchor strategy and therefore dual display of prices can be considered to be very important. On the other hand countries with a simpler exchange rates can expect majority of citizens to rely on conversion/calculation and therefore it is important to direct the information campaign in the way that informs people how to easily convert between currencies but also informs citizens about the possible problems it is likely to lead to when they do not develop intuition in the new currency. These results are important for policy makers.

6.4 A discussion on the analysis of how citizens cope with the numerical demand: [RQ3]

Probably the most reliable indicator of the adaptation process is the use of strategies when evaluating the learning process. The results for this study show that the Slovak citizens routinely used the conversion strategy to make sense of the new currency at the beginning of the changeover as found by many researchers in other Eurozone countries (Ranyard, 2007; Hofmann *et al.*, 2007; Marques and Dehaene, 2004). Substantial differences have been noted in conversion methods between exceptional and regular purchases.

The key finding on the adaptation strategies are summerised in table 6.23.

Table 6.23 **Key findings for the adaptation conversion strategies in the Slovak Republic**

Strategy	Findings
-----------------	-----------------

Conversion Strategy In August 2009 this strategy was the most frequently used by all groups, but two years after the currency changeover the usage of the conversion strategy had significantly decreased for both frequently bought product and exceptional purchases. This was the largest decrease recorded between August 2009 and January 2011. This decline in the usage of the conversion strategy could indicate improvement in the adaptation process.

It is known that people who persist to convert (calculate) all the prices into the Slovak currency increase the cognitive demands of everyday financial transactions and this is likely to lead to things like a negative attitude towards the new currency, perception of price increases, and the 'Euro Illusion' etc.

Intuitive Strategy This was the second most popular strategy in August 2009. However, it was not used very often. This strategy was used more often for estimating regularly bought products of small value, such as the price of bread (31.50SKK) and milk (0.83€) and respondents estimated the prices fairly accurately for these products.

In January 2011 the use of this strategy has increased and more respondents were found to use this strategy even for the more expensive products. This was the largest increase recorded between August 2009 and January 2011.

Anchor Strategy The least favourite strategy used by many respondents in both time periods was the anchor strategy. Only a tiny fraction of people applied this strategy. The anchor strategy requires some basic knowledge of prices in the Euro currency, which are more likely to be the regularly bought products of small value such as bread and milk and in this case it can be seen that for the regularly purchased product the usage of this strategy has increased.

Marker Value Strategy From August 2009 to January 2011 the frequency for the marker value strategy has slightly increased, but there has not been any significant change.

6.5 How do people develop price intuition over the period following conversion? (RQ4)

The Eurobarometer survey (European Commission, January, 2009) claims that one third of the Slovak citizens have already mentally switched from the Slovak crowns to the Euro⁴¹. This figure appears to be rather high as the fieldwork for the study was carried out between 16-20th January 2009, therefore, just 16 days after the changeover. This study supplements that (phase 1 collected during the same time as the Eurobarometer) with further interviews with the public 7 months after the changeover (phase 2) and 2 years after the changeover in January 2011.

To further evaluate the learning process I asked respondents how *often if at all they convert 'Slovak crown to Euro' and 'Euro to Slovak crown' when making (a) regular shopping, (b) exceptional purchase* (purchasing something of a higher value such as a car). These are self-reported indicators.

The reason behind the difference in regular purchases and exceptional purchases is because it is expected that over time people will learn some prices of regularly bought product and use them to evaluate prices of similar product. Consumers decrease the amount of conversion they perform daily and start to rely on prices they remember in the new currency, the Euro. To further evaluate the learning process I asked respondents *how often if at all they convert 'Slovak crown to Euro' and 'Euro to Slovak crown' when making regular shopping?*

⁴¹ Respondents were asked which currency they used as a mental benchmark.

Table 6.24 How often do you convert SKK to Euro and Euro to SKK when doing Regular Shopping?

	Phase 3 Jan 11	Phase 2 Aug 09	Phase 1 Jan 09
	Regular Shopping %	Regular Shopping%	Regular Shopping%
Always	9	29	51
Often	22	24	24
Sometimes	29	16	14
Rarely	33	14	7
Never	7	17	4
Total	100	100.0	100.0

As can be seen from the table 6.24 the number of people who always/often convert has significantly decreased over the period of 2 years from 75% (January 2009) to 31% (January 2011). This shows nice continuous improvement. This is what one can expect.

To further investigate the learning process the chi-squared analyses were used to test whether respondents' tendency to convert (calculate) can be explained by social influence such as region, gender, age, education level and income level. The cross-tabulation revealed that in August 2009 (phase 2) respondents from Bratislava region were more likely to claim that they 'do not convert' or 'just rarely convert' (calculate) when doing regular shopping in comparison to respondents from Trenčín. Again as mentioned before the sample is not represented based on different regions, however, the results suggest that it is important variable. Furthermore, younger adults aged 15-29 were less likely 'to convert' or just 'rarely convert' (calculate) in comparison to adults aged 30-59 and elderly people aged 60+. Both tests were significant. The cross tabulation also shows that people on higher income are less likely to convert but the chi-square test was not significant as more data is required (detailed analysis in appendix 9.3.) In January 2011, chi-squared test shows that adults aged 30-59 and people on higher incomes (10 000EUR+) are least likely to convert (full analyses in Appendix 10.5).

Acquisition of knowledge of product prices is one of the steps taken by citizens to understand the value of the new currency. Hofmann and her colleagues (2007) refer to this strategy as the Anchor strategy. To investigate the usage of the anchor strategy in Slovakia I asked respondents whether they *have learnt the prices of regularly bought products in Euro*. The results in January 2011 show that 38% of respondents said they have already re-learnt all/many of the Euro prices of the regularly bought product and the majority 58% of respondent have learnt ‘Some’ product prices and 4% ‘Hardly any’ (see Table 6.25).

Table 6.25 Have you learnt the prices of regularly bought products in Euro? (Self reported question)%

		Phase 3	Phase 2	Phase 1
		Jan 11	Aug 09	Jan 09
Valid	All of them	6	7	1
	Many of them	32	18	5
	Some of them	58	61	35
	Hardly any	4	10	18
	None	0	4	41
Total		100	100	100

To further investigate the acquisition of knowledge of product prices the chi-squared analysis were used to see whether acquisition of knowledge of product prices can be explained by social influence such as region, gender, age, education level and income level. The results show that there are not significant associations between this variable and any other socio-demographic variables (See appendix 10.6 for detailed analysis.)

To further evaluate the learning process, respondents were asked how *often if at all they converted ‘Slovak crown to Euro’ and ‘Euro to Slovak crown’ when making an exceptional purchase* (purchasing something of a higher value such as a car).

Table 6.26 Do you convert SKK to Euro and Euro to SKK when doing Shopping? (% distribution)

	Phase 3 Jan 11 Regular Shopping	Phase 3 Jan 11 Exceptional Shopping	Phase 2 Aug 09 Regular Shopping	Phase 2 Aug09 Exceptional Shopping	Phase 1 Jan 09 Regular Shopping	Phase 1 Jan 09 Exceptional Shopping
Always	9	30	29	49	51	74
Often	22	21	24	19	24	9
Sometimes	29	17	16	9	14	2
Rarely	33	13	14	6	7	3
Never	7	5	17	3	4	3
Not yet Purchased	0	14	0	14	0	9
Total	100.0	100.0	100.0	100.0	100.0	100.0

The results (phase 2) for regular shopping show that a large number of respondents about 30% report that they always convert and 17% never converts, on the other hand in comparison to exceptional purchases when 49% always converts and 3% of respondents never convert to the old currency. (Table 6.26)

To compare the result with phase 3 data, collected two years after the changeover, nearly seven percent of respondents claimed that they never converted when doing regular shopping in comparison to 17% in August 2009. The results show that two years after the changeover more people did convert in comparison to August 2009. This is found to be consistent with earlier findings by Missier *et al.*, (2007) which shows when people are not able to adapt to the new currency they may 're-activate' prices in their old national currencies and start relying on the conversion.

In both the exceptional and the regular shopping improvements in data are visible between January 2009 and August 2009. This is what one can expect as the frequency of purchase increases the number of people who regularly convert to the old currency (the Slovak crown) will decrease. Citizens start to use the 'Anchor strategy' which means that citizens

start to rely more and more on prices they learnt in the new currency (instead of converting) and use them to evaluate prices of similar products. However, data for January 2011 suggest that some people may be reactivating the reference prices in the old national currency rather than learning the prices in the new currency, the Euro.

The chi-squared test was used to investigate whether there is an association between how often, if at all citizens convert when doing exceptional purchases and the socio-demographic characteristics (region, gender, age, education and income). None of the findings were found to be significant, however, the column percentages suggest that elderly people aged 60+ are most likely to convert (detailed analysis in appendix 9.4).

Table 6.27 Frequent/Exceptional Purchases (% distribution)

	Special Purchases Eurobarometer Jan 09	Everyday Purchases Eurobarometer Jan 09	All Purchases Phase 1 Jan 09
Most often in Euro	31	33	18
Most often in crown	41	40	49
As often in Euro as in crown	23	25	33

The Eurobarometer survey 2009 (European Commission, 2009) data did not find any differences between the percentages of people who count/calculate in the Euro/Slovak crown when doing regular or exceptional purchases (see Table 6.27). It was also recognised as unusual, since the differences have been detected in previous studies carried out in other Eurozone countries. A comparison is made between these findings and the Eurobarometer survey, but in this study distinction was not made between the frequent and the exceptional purchases. The results in January 2009 show that the majority of respondents (50%) count in the old national currency in comparison to Eurobarometer survey of about 40%. However, the distinction between the ‘everyday’ and ‘special’ purchases was investigated by asking further question ‘How often, if at all, do you convert Slovak crown to Euro and Euro to Slovak crown when doing your Regular

Shopping/Exceptional Shopping?’ and the results show a difference between the percentage of people who convert (calculate) when doing ‘everyday’ or ‘special’ purchases in both Phase 1 and Phase 2 (see Table 6.26). For example, the phase 1 data exceptional shopping 82% of people convert (collapsing together ‘always’ and ‘often’) in comparison to regular shopping 75% and the difference is even more noticeable in phase 2 where 69% of respondents convert (calculate) ‘always’ or ‘often’ when doing exceptional purchase in comparison to 53% for everyday shopping.

6.6 A discussion on the analysis of how people develop Intuition: [RQ4]

Probably the most reliable indicator of the adaptation process is the use of strategies when evaluating prices. Previous research stated that after a major currency change citizens routinely convert/calculate to make sense of the new currency (Ranyard, 2007; Hofmann *et al.*, 2007; Marques and Dehaene, 2004). Using mental calculation to compare prices is time consuming, liable to result in mistakes and does not assist learning. It is important that people start to use strategies which lead to learning such as the ‘Anchor strategy’ which requires using the remembered Euro prices of regularly bought products when making decisions or the ‘Intuitive Strategy’ which mean understanding the new currency. Both of these strategies do not refer back to the old national currency.

6.7 ‘Euro Illusion’ [RQ5]

This section investigates the effect of the ‘Euro Illusion’ and attempts to explain the extent to which Slovak citizens are influenced by the nominal values rather than the real prices. The majority of Eurozone countries replaced their national currencies with much lower nominal value currency as in the case of the Slovak Republic (1EUR=30.126SKK). The

conversion rates for all the Eurozone countries are included in appendix 9.1. The 'Euro Illusion' is caused by the difference between nominal value of the two different currencies (for example the Euro and the Slovak crown), despite the fact that the real price is the same (Gamble, 2007). The old prices which people remember in their old national currencies may affect the estimates people make in the new currency, the Euro. Anchoring-and-Adjustment Heuristic (Raghubir and Srivastava, 2002) and the Compression Effect (Marques, 1999; Soman *et al.*, 2002) are two hypotheses which account for the 'Euro Illusion' according to Gamble (2007). According to Marques and Dehaene (2004) the level of 'Euro Illusion' plays an important part in the development of price intuition and depends on the frequency of purchase as well as the simplicity of the conversion method (Marques and Dehaene, 2004). The 'Euro Illusion' can be used to assess the learning process and a strong 'Euro Illusion' could be an indication of an incomplete adaptation.

This study extends the work of Ranyard *et al.*, (2003) on the 'Euro Illusion', more specifically the way that prices expressed in the Euro currency are perceived as less expensive. The questionnaire asked citizens whether they spend less or more in Euro than they would have if they had been using the Slovak crown. In January 2009, the majority of respondents (72%) reported no change, 10% of citizens believed they spent less, and 18% believed they most often/always spent more than they would have if they had been using the Slovak crown (see Table 6.29).

To further examine what evidence exists of the 'Euro Illusion' we asked people whether they withdraw less or more money out of the bank in the Euro than they would have if they had been using the Slovak crown. In January 2009, the majority of citizens (17%) believe they withdraw less money and 19% believe they withdraw more money than they would

have if they had been using the Slovak crown (see Table 6.28). A large number of people 32% had not withdrawn Euro at the time (January 2009, two weeks after the changeover).

Table 6.28 Do you withdraw less/more money?

January 2009	Frequency	Valid Percent
Always less/ Most often less	12	17.4
The same	44	63.8
Most often more/ Always more	13	18.8
Total	69	100.0
NA	33	
Total	102	

To sum up the situation in January 2009 (2 weeks after the changeover), in both cases the results about the existence of the ‘Euro Illusion’ were inconclusive; the data were collected in the early days of the switchover, so citizens did not have enough time to grasp the consequences of the currency change.

Evidence for the ‘Euro Illusion’ was not conclusive in January 2009 and the fieldwork in January 2011 suggested that the euro illusion needed to be investigated using different method. Therefore, the study used ‘clinical interviews’ to provide further evidence for this research question [RQ5].

Table 6.29 Spending less/more money in € than you would have if you had been using SKK? (% distribution)

	Phase 1 Jan 09	Phase 2 Aug 09	Phase 3 Jan 11
Always less	0	2	2
Most often less	10	7	3
The same	72	45	16
Most often more	16	38	47
Always more	2	6	31
DK	0	2	1
Total	100.0	100.0	100.0

This section presents the data for August 2009 and January 2011. The results show a significant change in the amount of money people spent in comparison to what they would have spent in the Slovak crown. The table 6.29 shows that in August 2009 eight months after the changeover the majority of respondents claimed that they were spending about the same in the new currency Euro as they would have been in the old currency; however, two years after the changeover in January 2011 the majority of respondents claimed to be spending more in the new currency. Although, right after the changeover, people did not feel the Euro illusion but by January 2011 the data suggest that the ‘Euro Illusion’ is felt by some respondents.

In August 2009 respondents were asked again how does the amount they withdraw in Euro compare to what they would have withdrawn in the Slovak crown; and the majority answered that they withdraw the same amount (see Table 6.30). This question was not used in the last phase, therefore, it was not possible to make the comparison. However, when the comparison was made to January 2009 (see Table 6.28), there has not been any significant change.

Table 6.30 **How did the amount you withdraw compare with the amount you would have withdrew in SKK.**

August 2009	Frequency	Valid Percent
Always less	6	7.0
Most often less	15	17.4
The same	41	47.7
Most often more	15	17.4
Always more	3	3.5
DK	6	7.0
Total	86	100.0

6.8 A discussion on the analysis of the ‘Euro Illusion’: [RQ5]

The ‘Euro Illusion’ can be defined as a tendency to evaluate prices as less/more expensive due to the lower/higher nominal value. The ‘Euro Illusion’ may last a long time, and it is not known which factors promote and which hinder the adoption process (Missier *et al.*, 2007). Gamble *et al.*, (2002) investigated the effect of Euro Illusion’ on salaries, some of the factors found to account for the ‘Euro Illusion’ by Gamble (2007) are: familiarity with the conversion technique, complexity of the conversion strategy and attitude towards the currency.

Citizens who are not familiar with the value of the new currency can put too much weight on the nominal value rather than on the real value of the money. For example, they may think a product is cheap if it costs 5EUR; however, they may not say it is cheap if it costs 150SKK. In fact 5EUR is approximately 150SKK. This can affect people’s purchasing decisions in the new currency.

To summarise the results, the development of intuition for prices in the Euro currency may be slightly more difficult than previously expected. The results show that at the beginning of the transition Slovak citizens did not feel the Euro illusion but as the time moved on they slowly realised the illusionary affect of the Euro currency. It is important to keep monitoring the level of the ‘Euro Illusion’ as it may lead to overspending due to the perception that prices in the Euro are cheaper. On the other hand, citizens may feel that they have lower incomes in the Euro currency.

6.9 Summary

This chapter presented the results of the three and a half year long study. The study elicited responses from a representative sample of citizens in the Slovak Republic, on their

attitudes to the Euro, their context-specific conversion strategies, and the development of 'price intuition'. Respondents were selected based on a tightly-designed quota sampling method, taking into account region, age and gender to collect the required number of responses from each group.

Each section is focused on specific research question followed by hypothesis testing and a discussion on the analysis of the findings. To put the findings into a broader context the results are compared to the large scale Eurobarometer surveys conducted in other EU countries.

Some of the key findings for each research questions are as follow:

Research question two [RQ2] investigates citizens' affective responses towards the Euro currency before and after the changeover. The results show that Slovak citizens' attitudes towards the Euro currency are rather positive. The majority of people do not think that the Euro currency has harmed their national identity and about 67% (January 2011) claimed that the Euro had positive or rather positive consequences for the Slovak Republic. In general people are happy/rather happy that the Euro became their currency, although over two years there was a slight decrease (45% January 2009 to 39% in January 2011). This study supports existing research showing that people expect the Euro to result in economic growth and a better standard of living (Ranyard *et al.*, 2005). The Slovak Republic accepted the Euro currency during the Euro crisis; the negative effects of the crisis therefore continue to be felt in the Slovak Republic, affecting people's attitudes towards the Euro currency.

Research question three [RQ3] investigates how people cope with the numerical demand to do conversion. The results show that the majority of respondents are able to convert from the Slovak crown to the Euro and vice versa. These results differ from the findings in

Austria where people's conversion abilities were low (Hofmann *et.al*, 2007) and majority of respondents were not able to convert specific Euro amounts into Austrian shilling. In general, Slovak respondents find the 'Slovak crown to Euro' conversion slightly more difficult because they have to divide by 30. Furthermore, the results show that in 2009 the most frequently used adaptation strategy was conversion strategy and two years after the changeover people became more selective and routinely apply the Intuitive and the marker value strategy.

Research question four [RQ4] investigates how people develop price intuition over a period of time. The findings show that people slowly develop price intuition in the new Euro currency and in January 2011 the majority (38%) claimed to learn the prices of regularly bought products (adding together all of them and many of them). Furthermore, the results confirm that in January 2011 two years after the changeover some people are still converting. This confirms the findings from other studies such as Lemaire (2007), Missier *et al.*, (2007) that some people keep converting up to 5 years after the changeover.

Research question five [RQ5] investigates the extent to which Slovak citizens are influenced by the nominal representation of prices, the 'Euro Illusion'. The findings are slightly inconclusive for 2009 although the results in January 2011 suggest that Slovak citizens are influenced by the lower nominal values and about 78% of respondents claimed to be spending more in the new currency, an increase by 34% (from August 2009).

The next chapter presents the results of the qualitative study which was developed to provide further evidence for the research questions, in particularly the learning conversion strategies, the conversion tasks and the 'Euro Illusion'.

CHAPTER 7

7 Qualitative Study: Learning to Cope in Situations of National Currency Change

This chapter presents an overview of an interview study carried out in the Slovak Republic three and half years after the currency changeover to complement the repeated cross-sectional survey. The focus is to investigate how different aspects of the currency changeover are interrelated; in particular, how affective responses are related to individuals' ability to cope with the currency conversion. The results from the semi-structured clinical interviews are presented in this chapter.

7.1 Introduction

In chapter 5 and 6 the results of the repeated cross-sectional surveys were presented. The results presented helped develop an alternative way of understanding the affective responses and numerical demands imposed on citizens in the context of the currency change. This study initially began with a much broader problem with currency affective responses and conversion adaptation strategies (Hofmann *et al.*, 2007). However, as the research developed it becomes more apparent that it is need to develop the concepts more fully; in particularly the learning conversion strategies, the conversion tasks and the 'Euro Illusion' to investigate fully the relationship between conversion strategies and affective responses. I revised the research questions and developed an interview schedule to further enhance the understanding of Slovak citizens' affective responses to the Euro currency and their adaptation processes through clinical interviewing developed by Piaget. This

qualitative study further address the same research questions and provides further supporting evidence.

7.2 Conducting the interviews

The personal interviews were conducted in July 2012, with Slovak citizens. For practical reasons, the interviews were conducted at respondents' homes as they had to be recorded. At first, permission was sought from respondents to record the interview and all but four (out of 24) respondents agreed.

Each interview began with an introduction and explanation of the study. Respondents were assured that their answers will be treated confidentially and analysed in a way so that individuals will not be recognised. Furthermore, respondents were informed that if there was a question which they did not wish to answer, they did not have to. The interview began by asking respondents to fill in a self-completion questionnaire and after the completion the interview schedule followed. It was the aim not to interfere during the interview and to only use prompts if a respondent had a problem establishing rapport.

7.3 Sampling method

As explained in chapter 3 (section 3.4.3), the plan was to use a non-random sampling method in particular the snowball sampling, but it was crucial that the sub-groups of the population were represented in the same proportions they were in the target population. Controlling for gender, age and region, the sample description was as in Table 7.1.

Table 7.1 Controlling variables for the qualitative study

	Urban N=14		Rural N=10		Total
	Adults 15-59 N=10	Adults 60+ N=4	Adults 15-59 N=6	Adults 60+ N=4	
Female	5	2	3	2	
Male	5	2	3	2	
Total					24

The first eight respondents (the initial seeds) were been people known to me such as family and old friends from school, college and university. The contacts were made through Facebook, Skype, email and phone. Once they agreed to be contacted a suitable day and time for the interview was arranged. At this point the respondents were asked whether they could provide contact details for someone else who may be willing to help. Since this study is concerned with fulfilling the above sampling quotas they were asked to introduce a person who is different from them; for example if the original seed was a younger female from an urban area, I asked to be introduced to an older male from a rural area. However, it was not always possible for the respondent to introduce an individual who fulfilled all of the criteria. An attempt was made to contact the introduced individual providing the quota was not reached. Although the first eight primary contacts were people known to me the rest of the sample I have not met prior to the interview. However, they are family, friends or acquaintances of the initial seeds.

7.4 Qualitative data analysis

First, the description of the sample is presented followed by further analysis of the self completion questionnaire and later the analysis of the interview data. The interview schedule was designed to address four main issues: conversion strategies (Hofmann *et al.*,

2007); conversion task (Lemaire, 2007), affective responses, and Euro illusion (Gamble *et al.*, 2002). Details of the interview schedule are in appendix 11.1.

7.4.1 Self- completion questionnaire

In the self completion questionnaire, participants provided information about themselves in terms of age, gender, education, income, area (rural or urban), type of work and form of accommodation. The following section examines the sample based on these attributes.

Table 7.2 Demographic characteristics of the sample

	Groups	Number of Respondents	%
Region	Urban	14	58%
	Rural	10	42%
Type of Work	Professional	12	50%
	Manual	6	25%
	Student	2	8%
	Looking after Family/Home	4	17
Gender	Female	12	50%
	Male	12	50%
Age	15-59	16	67%
	60 +	8	33%
Education level	Basic	2	8.3
	Vocational	6	25%
	A levels	5	21%
	University	11	46%
Income level	0 – 4 000	6	25%
	4 001 – 10 000	10	42%
	10 001 – 20 000	7	29%
	20 001+	1	4%
Accommodation	Owner Outright	10	42%
	With the help of a mortgage	9	37%
	Living with Parents	4	17%
	Renting	1	4%
Total		24	100%

As planned in the sample design (table 7.1) the total sample consisted of 24 respondents from the Slovak Republic, 50% females and 50% males. The larger part of the sample, 58%, was from urban area and 42% was from rural area⁴². Approximately 67% of the sample is between 15-59 years old and the rest is 60+. This is approximately similar to the national age distribution in Slovakia which is 77% working age population and 23% retired according to the census 2001.

Furthermore, table 7.2 shows that 46% of respondents have university education; the majority of respondents, 42%, are earning between 4 001 – 10 000 EUR per year; 50% of respondents are doing or have done in the past skilled professional work and 42% of people owned their accommodation outright.

The second part of the self-completion questionnaire asked respondents to answer three attitudinal questions towards the Euro currency and question number four asked respondents how easy/difficult it is to understand the value of the Euro.

Table 7.3 Self-reported attitude questions

Attitude Question	Response	Frequencies	%
Generally speaking, do you think that having the Euro is good or bad thing for the country?	Good	18	75
	Neither Good/Bad	3	12.5
	Bad	3	12.5
And for you personally, do you think that having the Euro is good or bad thing?	Good	20	83
	Neither Good/Bad	1	4
	Bad	3	13
How happy/unhappy are you, personally: that the Euro has become our currency?	Happy	15	63
	Neither Happy/Unhappy	7	29
	Unhappy	2	8
How easy/difficult it is for you to understand the value (the prices) in Euro.	Easy	22	92
	Difficult	2	8
Total		24	100

⁴² According to the national official statistics, about 57% of the Slovak population live in urban area.

Table 7.3, above, shows that the majority of respondents (75%) report that they think that the Euro is good for the country, 83% claim that the Euro currency is good for them personally, and 63% claim that they are happy the Euro has become their currency. These are interesting findings; many people think that the Euro currency is more beneficial for them personally than for the country. Perhaps the uncertainty about the Euro currency and Eurozone’s future contributed to the fact that people are not so sure that their country is benefiting from the single currency as much as they are as individuals.

Furthermore, respondents were asked ‘how easy or difficult it is to understand the value of the currency’ and 92% of respondents claimed that it was easy. It has been now over 3.5 years since the introduction of the Euro currency and Slovak citizens claimed to adapt rather well to the new currency.

7.4.1.1 Socio-demographic analysis

Looking at the different socio-demographic groups, it was observed that males, those aged 60+ with a higher income, were most likely to say that the Euro was a good thing for the country. For example, 10 out of 12 of males (83%) claimed that the Euro is a good thing for the country while only 8 females out of 12 that is 67% believed the same (see Table 7.4).

Table 7.4 **Generally speaking, do you think that having the Euro is a good or bad thing for the country?**

Characteristics		Very/Rather Good	Neither Good/Bad	Very/Rather Bad	Total
Gender	Female	8	2	2	12
	Male	10	1	1	12
Age	15-59	11	3	2	16
	60 +	7	0	1	8
Income level	0 – 10 000	11	3	2	16
	10 001+	7	0	1	8
Total					24

Only a few respondents claimed that the Euro was not a good thing for them personally, mainly females aged 15-59 with a low level of education (below A levels). For example, 3 out of 8 people with a low level of education (basic and vocational) believed that the Euro currency was a bad thing for them personally, while all of the respondents with a higher level of education (A levels and university) agreed that the Euro was a good thing for them personally (see Table 7.5).

Table 7.5 And for you personally, do you think that having the Euro is a good or bad thing?

Characteristics		Very/Rather Good	Neither Good/Bad	Very/Rather Bad	Total
Gender	Female	10	0	2	12
	Male	10	1	1	12
Age	15-59	14	1	1	16
	60 +	6	0	2	8
Education level	Basic	0	1	1	2
	Vocational	4	0	2	6
	A levels	5	0	0	5
	University	11	0	0	11
Income level	0 – 10 000	12	1	3	16
	10 001 +	8	0	0	8
Total					24

Participants in this survey were also asked ‘how happy or unhappy they were, personally, that the Euro has become their currency.’ Looking at the different socio-demographic groups, males, those aged 60+ and those with professional jobs with a higher income were most likely to say that they were happy that the Euro has become their currency. For example, 9 out of 12 males (75%) claimed that they were happy about the Euro introduction while only 6 females out of 12 that is 50% claimed the same (see Table 7.6).

Table 7.6 How happy/unhappy are you, personally: that the Euro has become our currency?

Characteristics		Very/Rather Happy	Neither Happy/Unhappy	Very/Rather Unhappy	Total
Type of Work	Professional	9	3	0	12
	Manual	3	2	1	6
	Other	3	2	1	6
Gender	Female	6	5	1	12
	Male	9	2	1	12
Age	15-59	10	5	1	16
	60 +	5	2	1	8
Education level	Basic	0	2	0	2
	Vocational	3	1	2	6
	A levels	3	2	0	5
	University	9	2	0	11
Income level	0 – 10 000	8	6	2	16
	10 001 +	7	1	0	8
Total					24

The last question in the self-completed questionnaire was to rate how easy or difficult it is to understand the value of the currency. Females living in rural areas were most likely to say that it was difficult for them to understand the value of the Euro (see Table 7.7).

Table 7.7 How easy/difficult it is for you to understand the value (the prices) in Euro.

Characteristics		Very/Rather Easy	Very/Rather Difficult	Total
Region	Urban	14	0	14
	Rural	8	2	10
Gender	Female	10	2	12
	Male	12	0	12
Age	15-59	15	1	16
	60 +	7	1	8
Education level	Basic	1	1	2
	Vocational	5	1	6
	A levels	5	0	5
	University	11	0	11
Income level	0 – 10 000	14	2	16
	10 001 +	8	0	8
Total			24	

7.4.2 Interview results

In this part the method of qualitative thematic analysis is applied to understand the effect of the Euro currency change among Slovak citizens. The interviews analysed in this section were conducted and transcribed by me. Each respondent was interviewed using a clinical interview technique often used in educational and psychological research to understand as to how people usually think and what they really do in a particular situation. The advantages of using the clinical interviewing technique designed by Piaget are attested to by several researchers, such as Ginsburg *et al.*, (1983) and Hunting (1997).

The transcribed interview text has been examined in an attempt to identify themes to guide the analysis of the interview material. The purpose is to understand how several themes occur in the texts. The aim is to search for themes associated with attitudes towards the old national currency and the new Euro currency. Understanding people's support for the Euro currency is important for the European Union and the Eurozone as all the EU countries are under obligation to join the Eurozone⁴³ and there is no prospect of leaving the Eurozone.

The purpose of the analysis is to analyse why citizens of the Slovak Republic hold different attitudes towards the Euro currency. The analysis looks at four different themes of the currency changeover based on which individuals can form their attitudes: (i) the economic benefits and disadvantages of Eurozone membership; (ii) the symbolic meaning of the Euro/Slovak currency where the individual perceives the currency to be a part of their identity; (iii) people's ability to make sound decisions in the Euro currency and the extent their decisions are affected by the Euro illusion; (iv) political value system. These points are discussed in the next section.

⁴³ Except UK, Denmark and Sweden; countries which rejected membership of the Eurozone.

7.4.3 Personal experiences using the Euro currency

People were asked to describe their personal experiences using the Euro currency and the following themes were identified:

Table 7.8 Summary of the themes for the qualitative phase of the study: the Euro Currency

Theme	Sub-Theme	Number of respondents
i) Economic benefits and disadvantages of the Eurozone membership	General reporting of the changeover in Slovakia as smooth and easy	14
	Easing of travelling for Slovak citizens within Eurozone countries (for example eliminating: exchange of currency and conversion fees)	9
	Slovak citizens' reluctance to use coins	5
	Price increases after the Euro changeover	4
	Fear of cheating and dishonest practices in Slovakia	4
	Benefit to the Slovak Republic of the single European currency	2
	Easing of price comparison and cross border shopping	1
	Better business and employment opportunities	1
	Threat of the Euro collapse	1
ii) Symbolic meaning of the Euro currency	European currency	10
	Attachment to the old Slovak currency	10
iii) People's ability to make sound decisions in Euro currency and the 'Euro Illusion'	Overspending	7
	Difficulty with general adaptation to Euro values	5
	Euro prices appear as cheap	4
	Lack of awareness of coins' value	3
	Feeling that you are spending more	3
	Lack of respect for Euro money	2
	Difficulty with budgeting / It is easier to budget with the Euro	5
	Experiencing a feeling that you have less money	2
	Money disappears more quickly	1
	Does not withdraw enough money	1
iv) Political value system	It is a political decision and it has to be accepted (respecting currency which is in circulation)	7

Sample size =24, multiple themes identified per respondent

7.4.3.1 Theme I: The economic benefits and disadvantages of the Eurozone membership

This section provides a discussion on the table 7.8. The impact of the introduction of the Euro currency on the Eurozone countries has been extensively examined by the European

Commission (1990). According to Ranyard *et al.*, (2003) the reasons for being in favour of the new Euro currency normally fell into two categories; economic (discussed here) and cultural (discussed in the next section). This part looks at the economic advantages and, latterly, the disadvantages.

The general reaction to the Euro currency was described in these interviews as smooth and easy (14 respondents). One of the most frequently mentioned benefits of the Euro currency was the easing of travelling for the Slovak citizens as they do not need to exchange money before travelling (nine respondents). One of the young female students from an urban area, living with her parents, described her experience with the Euro - *'I am glad that we have the Euro currency because when I am travelling I do not need to waste time to exchange money and pay the exchange fees. You just go.....no need to worry.'* A mature professional female from a small town explained her experience when travelling to UK - *'...the Euro notes are smaller (in comparison to the Slovak crown) and better...mainly when I am travelling....I went to exchange the Euro for sterling but I did not really need to do it...I could just use the Euro...'*

The Euro is a single currency currently shared by 17 Eurozone countries. Around 330 million EU citizens use it, as well as an array of other countries (Economic and Financial Affairs, 2012). At one point the Slovak currency was practically an unexchangeable currency except in Slovakia; as such, before travelling, the Slovak crown had to be exchanged in Slovakia for a commonly used currency such as the mark or dollar just to be exchanged to another local currency depending on the travel destination.

Those with a rather negative attitude towards the Euro currency talked about the impracticality with the coins (mainly 1 or 2 cents) as well as the dishonest practices and price increases. This example is from an elderly female from a rural area on a low pension

income – *‘sometimes I have a feeling that because I do not fully understand the currency....and they can see it..... that some shops take advantage and charge me more’.*

Overall, the results show that majority of people adapted rather well to the euro currency at this difficult time for the Eurozone and it seems that they did not have any serious issues except for the reluctant attitude towards the coins. Also price increases were reported only by 4 respondents and the threat of the euro collapse only by one respondent.

7.4.3.2 Theme II: Symbolic meaning of the Euro currency

In general, people were positive about the Euro currency although some have expressed attachment to the old national currency. The table 7.8 shows that the reactions were split in half between support for the European currency (10 respondents) and the attachment to the old national currency (10 respondents). Some of the examples from the interview transcripts:

A mature professional female from a small town with a high income says - *‘I am so very glad that we adopted the Euro currency ...I do not want to say it made my life easier but.....I do have this good feeling that we are in the Eurozone....I am positively tuned to Euro ...I am sort of a Euro optimist....’* and;

A young male from an urban area with a professional occupation and a university degree says - *‘Euro is a good idea for the whole of Europe, and it needs to be followed throughto the end. In the past it saved us from inflation.....devaluation of our currency... and if we did not have the Euro we would end up like Hungary and Czech in 2008-2010’.*

A variety of other reasons was given but a general quote from a number of respondents was –*‘European currency’* a way of expressing attachment and commitment to the

Eurozone. National identity and European identity can co-exist together as the Euro was carefully designed not to harm national identity.

A mature female with A-level education who looks after family and home – ‘I am used to using the Euro now. The Euro is kind of.....it is European currency.....I liked the Slovak currency.....it was our.....but I do not think the Slovak currency was a symbol of the Slovak Republic, other people do not even know where Slovakia is because we are a tiny country.

Despite the issues that are currently developing in Europe the Euro seems to be more than just a currency, it is a part of European integration. As we can see, measuring people’s attitudes towards the Euro currency is not as simple as weighting the perceived benefits and the disadvantages of the single currency but also what it represents.

7.4.3.3 Theme III: People’s ability to make sound decisions and the Euro Illusion

The most important theme investigated is people’s ability to make sound decisions and the extent their decisions are affected by the Euro illusion. The results show that people in the Slovak Republic have not fully developed a sense for the Euro currency and quite often reported that they overspend (eight respondents) which is also caused by the ‘Euro Illusion’ as some respondents report that prices in Euro appear to be illusorily lower/cheaper (four respondents).

This quote is from a mature female from an urban area looking after her family and home - *‘WellI think I have less money.....spending more.....but maybe it is only a feeling....before you had 30SKK and now you only have 1 Euro....and it is not just me everyone is saying it’.*

Another example from a young female from an urban area with a university degree looking after her family and home - *'Two Euro is 60 SKK and it is only a coin!!!!....That is a large sum!....I have a feeling that 1 Euro is like 10SKK ...but it is 30SKK.....I go to the shop and I say it cost only one Euro ...but if it was 30SKK I would never say it....I would not just pay 30SKK just like that!!!'*

A mature male with professional occupation from an urban area says - *'...Sowith adaptation to the Euro currency I do not have a problem but with the real value...that is a problem.....when one is in a restaurant and leaves a tip 1Euro....that is 30SKK.....before when we had the Slovak crown I left a tip of 10SKK [app. 0.33EUR] and it was fine.....but now when I leave 20-30 cents it is insulting.....so I leave 50cent, 1Euro or 2Euro.....and it all adds up like this.....when we had the Slovak crown I never left a 60 crown tip'*

Furthermore, two respondents reported that they do not value the Euro money. The evidence from one of the respondents is:

An elderly female from a rural area on a low pension income - *'....the Euro goes very quickly...you do not realise where you spend it and you do not understand the value.....I was leaving the change in the shop.....somehow you do not value money. When I get the Euros [pension] I spend it and when I haven't got any I am waiting till I get more.....of those Slovak crowns we did not have much but I still managed to put something away [to save].'*

Very few respondents (three) said that managing the Euro currency was actually easier: this mature male with a university degree and professional occupation from an urban area says – *'I feel the Euro is more transparent....in respect to the finances.....it is easier to compare prices and it is more practical. The Euro currency better reflects the value (of the currency).* This quote is from a mature female from an urban area looking after family and

home - *'.....people, like my aunts are [referring to older generation]....when they talk they all the time talk about the Slovak crown [they refer to prices in SKK rather than in the EUR] and I always tell them.....tell me how much it is in Euro.....I do not understand it now...[the Slovak crown]'*.

The above examples show that some Slovak people are experiencing difficulty when making financial decisions in the new currency; however, it also shows that they are aware that they are subject to the Euro illusion.

7.4.3.4 Theme IV: Political value system

Public opinions are increasingly important in the integration process (Rattinger, 1994). Some countries held a referendum on Euro membership, to take into account people's decisions to participate in the new scheme e.g. the Danish referenda (Kokkinaki, 1998).

The interview results show that people felt that it was not their choice to say if they wanted the Euro currency, seeing it instead as a political move or a decision that was made for them. Here is some evidence from the interviews:

A mature male from a rural area with a professional occupation says - *'....Euro is a currency which I personally accepted the way it is. I do not give it another thought...'*.

A female from a rural area doing manual work says - *'...we are just an ordinary people....we had to accept the Euro currency.....'*, and an elderly male from a rural area retired from paid work says - *'.....what can we do?... we have to be satisfied with the Euro.....'*.

These findings are interesting. They do not necessarily mean that respondents had a negative attitude towards the Euro currency, just that they wanted to express their feelings

of having not had a choice whether to adapt to the new Euro currency. It seems that they adapted to the new currency not through choice but out of necessity.

7.4.4 Personal experiences using the Slovak currency

We asked people to describe their personal experiences using the Slovak currency and the following themes were identified:

Table 7.9 Summary of the themes for the qualitative phase of the study: the Slovak Currency

Theme	Sub-Theme	Number of responses
i)Economic benefits and disadvantages of the Slovak Currency	Difficulty experienced with the Slovak crown while travelling or exchanging money	10
	In general the experience with Slovak crown described as good	6
	Too much money with no value	4
	Bad political and economic situation, devaluation of currency, inflation , no point saving, currency fluctuation	4
ii)Symbolic meaning of the national currency	Our Currency (Slovak currency)	5
	Currency which they used from childhood	4
	Feeling sentimental seeing SKK go, will welcome the currency back	2
	Does not want SKK back	1
iii)People's ability to make sound decisions in Slovak currency	Ability to budget and fully understand the value of money	12
	Able to buy more with 30 SKK than with 1EUR	3
	Ability to save money from little	2
	Better Price awareness	2

Sample size =24, multiple themes identified per respondent

The next section looks at the themes in more details:

7.4.4.1 Theme I: Economic benefits and disadvantages of the Slovak Currency

This section provides a discussion on Table 7.9. When respondents described their experience with the Slovak crown it was evident that the majority of them had negative experiences due to the difficulty when travelling and exchanging money (10 respondents). This follows previous findings on the experiences with the Euro currency. Some respondents mentioned the bad political situation (four respondents) which lead to high

inflation, devaluation and at the same time was probably the cause why the Slovak currency did not have value (four respondents).

An elderly male from a rural area retired from paid work says - *'.... what we had here the Slovak crown.....and it did not have any value....what was it?...all the time I had to exchange it when I wanted to go somewhere.....'*, and a mature male with a university degree and a professional occupation from an urban area says – *'mhm...to be specific I say.....too much money and low value.....it is different when one gets 500 Euro or 15 000SKK....it looks like it is a lot of money 15 000.....but if you think about it is not a lot of money.....500 looks little and 15 000 looks a lot but it is not.....I think the Euro currency is better representation of the real value of Slovak money....'* .

7.4.4.2 Theme II: Symbolic meaning of the Slovak currency

It is seen in Table 7.9 that some respondents feel sentimental about the Slovak currency coming to extinction, for example:

A young female from an urban area with a university degree looking after family and home - *'....It (the Slovak crown) was sort of ours.....Slovakian.....On bank notes we had our symbols.....[for example]100 bank notes displayed Madonna [an appellation of Mary - mother of Jesus]...it was ours.....but the Euro you have everywhere for instance if you go to Austria.....it is not mine....'*, and a mature professional female with a university degree from an urban area says - *'.....it was a currency which I grew up with and got to know the value of money.....'*.

It was not difficult to find the theme associated with the Euro currency and the Slovak currency. The main campaign logo used on all Euro material was 'Euro Our Money'. However, the Euro currency was described as an 'European Currency' while the Slovak

crown was described as ‘Our Currency’. Thus, if we asked the question; has the Euro become our currency? the answer would be maybe not just yet.

7.4.4.3 Theme III: People’s ability to make sound decisions in Slovak currency

The themes associated with the Slovak currency were that people understood the value of the Slovak currency (12 respondents) and better price awareness (two respondents). Some people mentioned that they were able to buy more with 30 SKK than with 1EUR although the face value is the same. A young professional female with a university degree from an urban area says - *....with the Slovak crown I understood the value better*’. This example is from an elderly female from a rural area on a low pension income – *‘I could budget better with the currency.....we did not earn much...we could not shop like now.....but even with the little I could put some money away [save it]...’*

To help with the analysis the responses were coded into groups depending whether the experiences with the currencies were positive, negative or ambivalent.

Table 7.10 Personal experiences using currency

	If I asked you to describe your personal experience using the Euro now, what would you say?		If I asked you to describe your personal experience using the Slovak crown, what would you say?	
	No of respondents	%	No of respondents	%
Rather Positive	16	67	12	50
Ambivalent	6	25	6	25
Rather Negative	2	8	6	25
Total	24	100	24	100

The above table shows that the majority, 67% of respondents, described their experiences as positive and 8% as negative. These 8% with negative experiences with the Euro had positive experiences with the Slovak crown. Further investigation shows that the

respondents are females living in rural areas who strongly expressed difficulty with adapting to the new value of the Euro currency.

When asked about experiences with the Slovak crown 25% of respondents expressed rather negative attitudes towards the Slovak crown mainly due to problems experienced when travelling; on the other hand, they all described their experience with the Euro as positive.

A working paper (Allam and Goerres, 2008) which aims to explain public opinion towards the Euro with individual-level survey data in 8 EU countries (Czech; Estonia; Hungary; Latvia; Lithuania; Poland; Slovakia; Slovenia⁴⁴) provides evidence that the most important predictor of people's attitudes towards the Euro is the perception of national economy and that the personal economic situation does not matter. This is explained by individual longing for credibility of their currency (as the article explains).

7.5 Ways of adapting to the new currency: the use of strategies

This section investigates the adaptation conversion strategy which people use when making everyday purchases and special purchases, 3.5 years after the Euro changeover. These two are the main factors influencing selection of strategy; therefore the question is placed into context to investigate possible differences. Some people are using more than one strategy to adapt to the new value of currency therefore we investigate the most frequently used strategy. This question did not offer options as a possible answer to these questions, therefore the interview text was coded using the explanation of each adaptation strategy as described in chapter 2 (table 2.2).

⁴⁴ Three countries Slovenia, Slovakia and Estonia have also become part of the Eurozone since the article was written.

Table 7.11 Strategies use

	In general while making everyday purchases at the moment, can you tell me whether or not you personally are using a currency conversion approach (between SKK and Euro)- and , if so, which?		In general while making special purchases at the moment, can you tell me whether or not you personally are using a currency conversion approach (between SKK and Euro) - and , if so, which?	
	Frequency	Percent	Frequency	Percent
Intuitive Strategy	11	46	7	29
Conversion Strategy	1	4	4	17
Anchor Strategy	5	21	5	21
Marker value Strategy	7	29	8	33
Total	24	100	24	100

The most frequently used strategy for everyday purchases is the Intuitive strategy (46%); however, for the special purchases it is the marker value strategy (33%). 3.5 years into the currency changeover only one person claimed to be applying the conversion strategy for everyday purchases, however, four people out of 24 for special purchases (see Table 7.11).

Investigating conversion strategy is complex because people do not just use one conversion strategy but a combination of 2 or 3 different strategies. While shopping they could be using the anchor strategy as they already know some prices of regularly bought products or the marker value strategy as the prices of regularly bought products are quite often of a small value 1 or 2 Euro and it is more convenient for people to round prices and just use the marker value strategy. Also, some people claim that the use of conversion strategy is not practical as they do not now remember the exact prices in the old currency. The findings from this study confirm that people tend to convert the cost of the total shopping rather than the individual prices. Their motivations behind converting or for some not converting vary quite a lot. Some people claim to convert unintentionally just because it is a habit, some because they feel other people may not understand or because it is easy to convert. On the other hand, some people claim not to convert because they do

not need it but some do not convert because it may bring out the feeling that prices have increased.

Discussion follows with examples as to why people convert:

1. This example shows that sometimes people unintentionally convert: An elderly retired female from a rural area says - '*very rarely I convert. Sometime it happens that the price is higher from my last shopping trip...so sometime it comes to my mind and I start to think in Slovak crown...even if I did not intend to convert the price....approximately, I calculate it in my head.....the times tables comes to my mind....*'. For the exceptional purchases she says: '*At home I calculate exactly using a calculator but in the shop I calculate it approximately quickly in my head....I go to the shop see what they havewrite the pricesfor example when we were buying a boiler so I wrote down all the exact prices and at home I calculated the prices using the exact conversion rate and I decided which one I want to buy.*'
2. This example shows that some people think they need to convert when they speak to older people: A mature female from an urban area looking after family and home says - '*...I convert when I am talking to older people...I say it in Slovak crown.... I feel that they still need it....so when I say that something cost 10 Euro so I tell them that it is 300SKK...but with young people I do not do it.*'
3. This example shows that sometime people convert just because it is easy to convert the price: an elderly female from a rural area retired from paid work says - '*...I always convert it to Slovak crown....for example I ask how much is bread and they say for example 80cent so I quickly multiply $8*3=24$and everything like thiseverythingI round everything because the Euro is 30.126 and when something is 89cent I round it to $90*3$ and quickly multiply...it is easy.*'

On the other hand, the following are the examples as to why people do not convert:

1. These two quotes are for both the regularly bought products and the exceptional purchases. Both respondents claim not to convert prices: a mature professional female from a small town with a high income says - *'...the individual things I do not convert but sometime when I pay for shopping....so I tell myself how much I spent in Slovak crown...I do not know why I do itit just comes to my mind....for example I know that I spent 60 Euro and that is 2 000SKK and I say to myself that I bought quite a lot....I do not know the prices because it does not interest me...but I do know which supermarket is cheaper and what I regularly buy...I was never converting and I am not converting now...I am not that type of person. I buy what I need ...maybe because I have the money.'* I carry on with the interview and ask about the exceptional purchases and she explains: *'Last time my washing machine and fridge broke down and I was thinking how much it will cost me..... I said to myself that it will be about 1000 Euro.....that I will need about 1 000 Euro....you know, I thought about it like thisI did not convert it.* This second quote is from a mature female from an urban area looking after family and home - *'.....at the beginning I did convert.....but now I understand the value....but sometime I still tell myself that 4Euro.....that is 120SKK.....a lot for a tooth brush.....'* I then ask her how she makes exceptional purchases and she goes on explaining *'...everything in Euro now....only sometimes I compare prices with other shops but I do not convert.'*
2. This last example shows that sometimes people prefer not to convert because of the perception that the prices have increased: a mature male with a professional occupation from an urban area says - *'....Only rarely... sometimes people convert*

just to compare the pricesbut I would rather not convertbecause I realise how the prices gone up.... I prefer not to convert.'

7.5.1 Ways of Adapting to the new currency: the use of strategies

The psychology of arithmetic aims at understanding how people solve arithmetic's problems (Imbo et al., 2007; p.1246).

7.5.1.1 Development of Price awareness: Anchor Strategy

Display of prices in the Euro currency meant for Slovak citizens a substantial change in their purchasing activities. Prior to the Euro changeover the government made it compulsory for businesses to display prices in both currencies, until December 2009 in an attempt to support citizens' development of price awareness. Although many shops continued to display the prices in both currencies well beyond the compulsory requirements; however, now more than three years after the Euro transition it is very rare to find a shop with dual display of prices.

Long before the introduction, it was acknowledged that the development of price intuition is a slow process (Hofmann *et al.*, 2007; Marques and Dehaene, 2004) and varies from country to country and may depend on the complexity of exchange rate. The development of price intuition can be explained by two models namely, the rescaling and the relearning (Marques and Dehaene, 2004).

Table 7.12 Price of Bread and Milk

	N	Min	Max	Mean	SD
Bread 1KG	24	.60	2.00	1.1042	.30678
1Litre of Milk	24	.45	1.15	.6912	.19683

To investigate people's price awareness in the new currency the following statement was read out: I am going to ask you the prices of some products. Can you please give me the answer in EUR? If you cannot give me the answer in EUR can you please give me the answer in the Slovak crown. The interview schedule consisted of three products; two regular purchased products and one special purchase.

First the results for the two regularly bought products are presented; bread and milk. The majority of respondents were able to recall the price of bread in the Euro from their memory. Some people mentioned that they do not know the price and are just estimating. However, it appears from the table 7.12 that people have a reasonable idea how much a loaf of bread and 1litre of milk cost in Euro. The price estimates of bread varied between 60 cents to 2.00 Euro with mean 1.10 Euro and standard deviation 30 cents. The price estimate of milk varied between 45 cents to 1.15 Euro with mean 70 cents and standard deviation of 20 cents. It does appear that this is the real variation in the market price for both products.

The next product price investigated was a standard colour TV. This is assumed to be an exceptional purchase.

Table 7.13 **Standard colour TV**

		Frequency	Percent
Valid	250.00	1	4.2
	300.00	4	16.7
	330.00	1	4.2
	350.00	6	25.0
	360.00	1	4.2
	400.00	2	8.3
	430.00	1	4.2
	450.00	3	12.5
	495.00	1	4.2
	500.00	2	8.3
	Total	22	91.7
Missing	.00	2	8.3
Total		24	100.0

The price of standard TV varied between 250 Euro to 500 Euro, with the most frequently occurring price of £350 Euro. The mean price 378 Euro and standard deviation 73 Euro. Two respondents were unable to give price in Euro or the Slovak crown. Dehaene and Marques (2002) suggest that price knowledge is not stored as an exact price for a product but rather as an approximate range of values.

To compare the price estimates the coefficients of variation was calculated for each product: bread 27%; milk 29%, and television 19%. It was expected the variation for the TV set to be larger in comparison to the lower priced regularly purchased products according to the Webb law (Webb, 1961) that the standard deviation of price estimates increases in direct proportion to the item's absolute price. However, in this case the television has the smallest coefficient of variation, which means that the estimates for the non- regularly purchased product were more accurate. This is interesting finding-even odd. The only explanation I can offer is that recently the Slovak Republic went through digital switch which required many households to buy a new television. Also the

continuing demand for flat panel televisions in recent years perhaps contributed to the fact that people had a better overview of price of television.

Overall, it seems that respondents developed price awareness and have some idea how much things cost, although the three products may not be sufficient to test respondents price intuition but it gives an indication that people are moving from re-scaling (re-calculating prices from Euro to SKK and vice versa) to re-learning (re-calling from memory in Euro) which is based on automatization⁴⁵. Learning prices in Euro increases price transparency and it is believed that people who acquire basic price knowledge will eventually stop referring to the old prices. Converting prices leads to calculation mistakes, rounding inaccuracies as well as people tend to forget to adjust remembered prices for inflation and as a result they may experience a higher level of price increases as well as the 'Euro Illusion'.

7.5.1.2 Adaptation to Euro values: Marker Value Strategy

Marker value strategy is another strategy which people can apply to learn the value of the new currency. The government encouraged people to develop intuition in the new currency by distributing conversion tables to every household. The conversion tables displayed specific Euro values in the national currency. For example: 5EUR...150.63SKK; 10EUR... 301.26 SKK; 20 EUR....602.52SKK.

This part investigates to what extent people are applying this strategy to make sense of the new value of money. Respondents were asked whether they know how much 5 Euro is in the Slovak crown and whether they know how much 600Skk is in the Euro.

⁴⁵ *The Re-learning method is reliance on memory-based solution (automatization) see chapter 2. Therefore respondent using this method will try to retrieve the price from memory rather than perform mental calculation (re-scaling)*

Table 7.14 5 EUR about how much should it be in SKK, if the original exchange rate is used?

5 EUR in SKK	Frequency	Percent
150.00	23	96
150.50	1	4
Total	24	100

The first task was to tell me how much 5 Euro is in the Slovak crown and all respondents were able to answer correctly and very quickly without any hesitation. When asked how they got the results they said that they already knew the value and that they did not need to convert, but some of them said that although they knew straight away how much 5 Euro was in the Slovak crown they wanted to make sure that it is correct and quickly in their head checked by performing multiplication $5 \times 3 = 15$ and moved the decimal place.

Table 7.15 600 SKK about how much should it be in EUR, if the original exchange rate is used?

600SKK in EUR	Frequency	Percent
20.00	24	100.0

The second task was to solve how much 600SKK is in the Euro and again all respondents answered correctly. When the respondents were asked how they got the result 18 respondent said that they remembered the value; one respondent knew the value of five Euro and used that information to find out how much 600SKK was (5Euro is =150SKK; 10 is 300 and 20 EUR=600SKK). This is related to a well-known strategy/tactic used by adults, and described e.g. by Nunes *et al.*, (1993) – namely, doing multiplication by ‘repeated addition’. About five respondents said that they divided (600/30). Therefore 19 respondents applied the marker value strategy and five respondents used the conversion strategy. According to Lemaire (2007) elderly people are more prone to use conversion tactics which are rather more complicated. Here is an example of an elderly respondent trying to figure out how much 600SKK is in the Euro:

'...600SKK?...I need to think about this one...it slipped my mind....I need a piece of paper....now it will not come to my mind.....I need to keep adding.....5Euro is =150SKK; 10 is 300 and 20 EUR=600SKK...'

7.6 Ability to make sound decisions

This section investigates Slovak citizens' ability to convert from the euro currency to the Slovak crown and vice versa. This section expands on the adaptation strategies described earlier to add a broader picture to the challenges people had to face in everyday lives. The experiences of the Slovak people are compared to the experiences of the Austrian citizens.

In 2004 when Fessel GfK (2004) investigated Austrians citizens' conversion abilities the results showed that less than 38% of respondents were able to perform the conversion, thus this section looks how the Slovak citizens coped with the conversion in comparison to Austrian respondents.

The Euro to the Slovak crown conversion:

Table 7.16 **1.80 EUR about how much should it be in SKK, if the original exchange rate is used?**

1.80 EUR to Slovak crown	Frequency	Percent
48.00	1	4
50.00	4	17
53.00-55.00	17	71
60.00	2	8
Total	24	100

The correct answer is 54.22 Slovak crowns. From the above table we can see that the majority 71% of respondents converted reasonably accurately between 52-56SKK.

However, in Austria only 38% of respondents converted reasonably accurately between 24-25 Austrian shillings.

For the Slovak crown to the Euro conversion:

Table 7.17 1 300SKK about how much should it be in EUR, if the original exchange rate is used?

300SKK to EUR	Frequency	Percent
35.00	1	4
40.00	5	21
43.00	10	42
43.30	1	4
43.33	4	17
43.34	1	4
45.00	1	4
Total	23	96
Missing	.00	1
Total	24	100

The correct answer is 43.15EUR. From the table above we can see that the majority 67% of respondents answered reasonably accurately (43.00 – 43.34EUR), one respondent was not able to give me an answer because they did not know how to convert it.

Some of the example when respondents were not able to convert the amount - JF7:...'I 300/30=????....you know, I am not good at mathematics....I do not convert.....[laughs]...I do not convert. I just tell myself how much money I have and how much I can spend.', and - AM6:...'I 200SKK is 40EUR ...that I know.....and I still need 100 and that is 3.3....the situation is that I keep forgetting things and I now cannot add it in my head....(respondent used paper and pen)...43.3.'

7.7 Discussion on the analysis of the interview results

The interviews confirm that respondents are able to convert from the Slovak crown to the Euro and vice versa. However, the interviews have uncovered the deeper problems respondents were facing with the new Euro currency. These results show significant differences in the results from the quantitative study (the structured questionnaires) and this qualitative study, the self completion questionnaires and the interviews. The evidence

for euro illusion from the structured questionnaire was inconclusive as described in chapter 6 section 6.8. The evidence from the self-completion questionnaire shows that people rather well adapted to the new value of the euro currency for example, when respondents were asked to rate how easy/difficult it was to understand the value for the new currency' as many as 92% of respondents claimed that it was easy. However, during the interviews it was clear that respondents were having a real difficulty developing sense for the higher value currency. Although they are aware that the Euro currency is a much stronger currency and that even small change (coins) have value, they have not fully developed a sense for the new currency which most often leads to purchases which they would not normally make. This qualitative study suggests that evidence exists to support the claim that the smaller nominal values of the euro currency have affect on people's perceptions of euro values.

Furthermore, the aim was also to examine which themes were associated with the Euro currency and which were associated with the Slovak currency. It is clear that the Euro currency was mostly associated with Europe as an European currency that can be used in other Eurozone countries and on the other hand the Slovak crown was described as a currency people could understand. This is what the finding confirms that some people are still developing intuition as it has not reached the pre-Euro level.

The next chapter will summarise the main findings and draw conclusions.

CHAPTER 8

8 Major Findings and Conclusions

The purpose of this chapter is to present the review of the main contributions of each chapter and the key results of this study as well as the contribution of this study to the existing body of knowledge and the limitations.

8.1 Introduction

This thesis is organised into eight chapters. Chapter 1 is the introduction and describes the important background for this thesis. Chapter 2 provides the literature review on the Euro currency changeover, the gaps in the literature review and the need for this research. It also presents the theoretical underpinning of this research and the research questions. Chapter 3 presents the scientific approach underlining this study, the rationale for selecting a broad positivist approach to study the currency changeover. It expansively deals with the questionnaire design, sampling method and data collection. Chapter 4 describes the context of the Euro changeover. Chapter 5 describes the repeated cross-sectional survey data and addresses the first research question. Chapter 6 is the main empirical part of this thesis and addresses the research questions 2 to 5. Chapter 7 presents the results of the interview study to complement the repeated cross-sectional survey. Chapter 8 is the summary and conclusion.

8.2 The summary of this study and the key findings

This thesis has sought to examine the Euro transition in the Slovak Republic. It was the aim of this thesis to gain important insight into the role of cognition and affect in the context of currency conversion. This research draws on ideas within the economic psychology such as the 'Psycho-Social' (Hofmann *et al.*, 2007) approach and Adult Numeracy (Evans, 2000; Lave, 1988).

Concerns over the Euro currency generated lot of debate in research in the past ten years; therefore, chapter two provides an overview of the relevant studies and highlights the lack of research into how people develop intuition in the new currency (Ranyard, 2007; Hofmann *et al.*, 2007; Marques and Dehaene, 2004; Strazzari *et al.*, 2005). This research was developed to close this gap by explaining how adults learn to cope with the numerical demands after major currency change and makes numeracy ever more important.

In order to investigate the cognitive and attitudinal factors affecting currency adaptation the following research questions were developed. RQ1: What is the general experience of the Slovak public with the conversion to the Euro currency? RQ2: Citizens' affective responses towards the Euro changeover before and after the changeover? RQ3: How do citizens cope with the numerical demand required to do conversion? RQ4: How do people develop their price intuition over the period following conversion? RQ5: To what extent are the Slovak citizens influenced by the nominal representation of prices rather than the 'real' value? The approach towards numerate thinking emphasises people's attitudes and emotions as part of the 'charge' of an activity (Evans, 2000). In this situation, national currencies have symbolic and emotional meaning and may influence people's attitudes towards the Euro.

It is essential for the successful transition to fully understand the Euro currency and to support people so they can restore the temporary loss of price intuition. Probably the most reliable indicator of the learning process is the use of conversion adaptation strategies (Hofmann *et al.*, 2007). According to Hofmann *et al.*,(2007) there are four strategies people use to learn the value of a currency so they are able to accomplish everyday tasks and financial transactions. The conversion strategy is a form of conversion/calculation to make sense of the new currency. The anchor strategy requires some basic knowledge of prices in the Euro currency, similar to the marker value strategy but instead of remembering some specific product prices the specific values are remembered like 5EUR is approximately 150SKK, the values between are then estimated. The Intuitive strategy relies on intuition and does not make comparison to the old national currency.

Chapter three describes the design of the structured questionnaire and emphasises the need to develop the concepts more fully; in particular the learning conversion strategies (Hofmann *et al.*, 2007); the conversion tasks (Lemaire, 2007) and the ‘Euro Illusion’ (Gamble *et al.*, 2002) to fully understand the relationship between cognitive and affective variables by collecting additional data through clinical interviewing.

Furthermore, the conceptual map for this thesis is described in this chapter. It is based on an adapted version of Evans (2000) designed to study the relationship between cognitive and affective variables. It includes basic variables of region, age, gender, education and income. The outcome variables are conversion strategies, calculation tactics and attitude measures. We called them the intervening affective variable and cognitive variables. The importance of the context was emphasised by attempting to design conversion tasks in a context of everyday life (especially shopping decision-making) – and by describing the currency conversion process as a case study.

Chapter four is concerned with the level of support given by state, organisations and communities to guide the currency conversion. This section partially provides the answer to the research question one, more specifically it describes how people coped with problems they did not know they were going to have and what support was available to them on national and local level. It describes the tools developed to guide the needs of the general public, such as calculators, dual display of prices and support designed to address local needs with high levels of cultural contextualisation. This account of the currency changeover emphasises the importance of the context of numerical thinking, and aims to study the adult learner in contexts of everyday life. Presenting this constructive representation of experiences of the demands made on adults' numeracy during this process in the context of the Euro changeover helps to make the transition more sensitive to the national and the local needs.

Furthermore, the 'Euro Conversion Process Description' provides the basis for the qualitative empirical work. It describes the context and the qualitative interviews assess the ability to solve the conversion task. The adult numeracy research position 'mathematics in context' and assess problem solving related to everyday practices.

Chapter five describes the data for the repeated cross-sectional survey. It presents the responses from a substantial number of adults in the Slovak Republic. The samples (total size almost 400) were selected based on a tightly-designed quota sampling method, namely region, age and gender to collect the required number of responses from each quota. The data has been collected in five different points in time: before, during and twice times after the currency changeover. The set of completed face-to-face interviews was judged to be an acceptable representative of the working age population.

Furthermore, this chapter presents the results for the first research question. RQ1: What is the general experience of the Slovak public with the conversion to the Euro currency? This study concludes that the Slovak citizens adapted rather well to the new currency and took advantage to familiarise with the Euro currency before it was introduced. Also respondents described their experiences with the Euro rather positively and feel closer associated with developed Europe. However, in comparison to the Eurobarometer survey, the results from the 2007-2010 Euro entrants show that the Slovaks citizens were more likely to experience difficulty in distinguishing and manipulating Euro currency and as a result developed rather negative attitudes towards the coins.

Chapter six present the key finding on: RQ2: affective responses; RQ3: conversion strategies and tactics; RQ4: development of price intuition and RQ5: Euro Illusion.

RQ2: The results show that the Euro has been accepted rather well by a large majority of Slovak respondents although recent developments within the Eurozone and the uncertainty about the future of the Euro influenced people's attitudes. Some may argue that the Euro has not exactly delivered on its promise. Expectations were high in Slovakia before and during the changeover. However, we recorded a decline in acceptance of the Euro just two years after its introduction in January 2011. Slovakia undeniably benefited from joining the European Union as well as the monetary union; however, right after the changeover Slovakia faced challenges no any other country experienced during their changeover: the economic and financial crises. Although the economic and financial crises affected all the countries Slovak citizens were still getting grips with the new currency.

Despite everything, Slovak citizens seemed to quickly distance themselves from the national currency and developed a positive attitude towards the Euro. Questionnaire results show that people's attitudes were gradually changing after the changeover and the 35% of

respondents who claimed that by replacing the national currency with the Euro Slovakia lost its identity is still rather small (January 2011). Nevertheless, some individuals perceive that they will be viewed as part of the 'developed' Europe, a direction they would like to move towards.

Furthermore, the questionnaire results show that there is a general tendency for Slovak citizens to perceive positive consequences for Slovakia. Slovaks are proud of the switch and see it as a positive change and hope it will bring a better future for all. On the other hand 33% of respondents became rather increasingly critical of the Euro and claimed that the Euro had negative consequences for the Slovak Republic.

Also, the results show that before the changeover Slovak citizens were rather enthusiastic about the Euro currency and a part of the population accepted the Euro rather well. According to Müller-Peters, *et al.*, (1998, p. 670) people with more optimistic life attitudes are more open concerning social, political or economic change. The 12% of respondents who claimed to be unhappy about the changeover later (in January 2011) slightly increased to 23%. Ranyard *et al.*, (2005) found out that after the changeover people are expecting to benefit, but in Slovakia the Euro failed to boost jobs and provide stability for citizens, because of the economic crisis.

RQ3: A key idea is that of an adaptation conversion strategy (Hofmann *et al.*, 2007), the conversion strategy, the anchor strategy the marker value strategy, and the Intuitive strategy. The results show that Slovak citizens used all four adaptation strategies; the frequency of usage of each strategy varied significantly. At the beginning of the Euro changeover conversion strategy was the most frequently used strategy by all socio economic groups and none of the other strategies were used very often. However, two years after the changeover citizens became more selective in the use of different

conversion strategies with the Intuitive strategy being the most frequently applied. For example in August 2009 the majority of respondents used the conversion strategy (44%), however, two years after the changeover the Intuitive strategy was the most frequently used (40%). People who persist in converting (calculating) Euro prices into the Slovak currency increase the cognitive demands of everyday financial transactions and this may well lead to misperception of price increases.

In January 2009, 50% of respondents reported still counting in the old national currency. This follows findings from other Eurozone countries such as Italy, France and Portugal. At the same time the Eurobarometer survey reported about 40% of the population counting in the old national currency (European Commission, 2009). Furthermore, the Eurobarometer survey did not find any differences between exceptional and regular purchases. However, my study suggests that there are differences in exceptional and regular purchases. For exceptional shopping (January 2009) 82% of people convert/calculate (collapsing together 'always' and 'often') in comparison to regular shopping 75%. The difference is even more noticeable in August 2009 where 69% of respondents convert/calculate 'always' or 'often' when doing exceptional purchase in comparison to 53% for regular shopping.

RQ4: These results on the development of price intuition are in line with the first Euro entrants. The Slovak case is not different from the other countries when it comes to the development of price intuition and it does require a level of effort and time. Also the results confirm that the frequency of purchase plays a part in adaptation to the new currency although this is not consistent with the findings from the Eurobarometer survey carried out in Slovakia but are in line with the finding in the first Euro entrants. Age was found to contribute to the development of price intuition and younger respondents were more likely to use multiple strategies as well as to progress from the use of non-learning strategy to the use of learning strategy. In other words respondents used strategies such as

the marker value strategy, the anchor strategy as well as the Intuitive strategy. In conclusion, we can say that people who did not develop intuition for the new currency and keep converting prices tend to experience perception that prices in the Euro currency increased. It is known from previous research that people rely on old prices and forget to adjust the remembered prices for inflation, thus the Euro prices may appear to be more expensive. This further complicates the learning process as people may develop negative attitudes towards the Euro currency.

RQ5: Previous research has suggested a 'Euro Illusion', (Burgoyne *et al.*, 1999; Gamble *et al.*, 2002; Gamble, 2007) a cognitive disorientation affecting people's ability to precisely evaluate product prices and salaries. With the aim to see the extent of the 'Euro Illusion' on the Slovak citizens after the transition from high nominal value currency (the Slovak crown) to low nominal value currency (the Euro) a weak affect was observed in the repeated cross-sectional survey. The results clearly indicated that respondents' perceptions were that they were spending much more in the Euro currency than they would have been if they had been using the Slovak crown, an increase from 44% in January 2009 to 78% in August 2009. However, this result might be interpreted otherwise: it was clear that the study needed more data to fully understand the reasons why respondents perceived an increase in spending. Therefore, the results were interpreted as inconclusive and a decision was made to collect additional qualitative data.

Perhaps the reason for the weak evidence for the 'Euro Illusion' is the extensive use of conversion strategy by respondents at the beginning of the Euro transition. According to Missier *et al.*, (2007) the effect of Euro illusion is less likely to be observed when respondents largely rely on conversion/ exact calculation and on the other hand easier to succumb to the Euro illusion when they rely on intuition.

Chapter seven complements the repeated cross-sectional survey by presenting the findings of a qualitative study carried out in July 2012. It explains how different aspects of the currency changeover are interrelated; in particular, how affective responses are related to individuals' ability to cope with the currency conversion. It addresses the research question two: citizens' affective responses; three: citizens' ability to cope with numerical demands; four development of price intuition; and five: the extent of influence by the nominal representation of prices rather than the 'real' value.

People's attitudes and thinking in the context of currency conversion are observed through in-depth clinical interviews. The aim was to illuminate important themes about the role of currency conversion and the specific demands made on adults' numeracy during the process, from the perspective of an individual.

To assess the conversion adaptation strategies used, the findings suggest that three and half years after the Euro transition respondents were gradually developing intuition in the new currency and that the intuitive strategy was the most commonly used strategy for the frequently bought products and the second most frequently used strategy (after market value strategy) for the exceptional purchases. Furthermore, the interviews confirm that respondents are able to convert from the Slovak crown to the Euro and vice versa. However, the interviews have uncovered the deeper problems respondents were facing with the new Euro currency. The interviews showed that respondents were having a real difficulty developing sense for the higher value currency. This time the evidence for the 'Euro Illusion' was quite obvious especially for the frequently bought products. The results from the interviews show that people were overspending and some claimed to have difficulty with adaptation to the higher value currency and they also claimed that euro prices appear cheaper. As soon as respondents moved from the conversion strategy and applied the intuitive strategy the 'Euro Illusion' became very evident.

This was further confirmed by looking at the different themes associated with the Euro and the Slovak currency. While the Euro currency was mostly associated with Europe and the European identity the Slovak crown was associated with 'the ability to understand the value'.

To minimise the problems caused by the introduction of the euro in other post-communist countries which are planning to introduce the euro currency it is worth looking at what had happened in the Slovak Republic. The Slovak Republic is the second post communist country to adapt the euro currency after Slovenia. Since this study was done the euro currency was introduced in Estonia and could be soon introduced in Latvia. The reports show it could be as early as January 2014. The Slovak case is especially interesting as the remaining eight countries which are planning to adopt the euro currency once shared the same political system and went through similar transition. Also it is important to mention that these countries are relatively new European Union entrants.

One of the interesting findings from the case study is that the Slovak government invested a lot of time and effort into the information campaign and dealt with citizens concerns such as fear of unjustified price increases due to the currency changeover. The empirical study confirms that Slovak citizens are unlike the other citizens, for example, from Germany or Ireland and rarely blame the euro for unjustified price increases. Furthermore, the Slovak citizens routinely relied on the use of the conversion strategy to understand prices and hardly ever applied the other adaptation strategy, unlike the Austrian citizens. However, two years after the changeover the data from the survey show that the intuitive strategy was the most frequently applied strategy and people were not afraid to use variety of adaptation strategies to solve conversion tasks. Substantial differences have been noted in choice of adaptation strategy between exceptional and regular purchases and when further information was collected through clinical interviews it was identified that conversion strategy was still in use three and half years mainly for the exceptional purchases. In the

case of the regular purchases people claimed to be using the intuitive strategy, however, it was noted that the smaller nominal values of the euro currency had affect on respondent's perceptions of real euro values. This long lasting difficulty caused by monetary changeover also called the 'Euro Illusion' has been identified in other Eurozone countries like Germany and Italy.

The numerical demands on adaptation are expected to be different in other countries as it depends on the simplicity/complexity of the exchange rate, however, it would be useful for the country to develop easy to use conversion tactic/s for national needs as done in France.

8.3 Contributions to methodology and knowledge

This thesis uses both the qualitative and quantitative approaches. The quantitative approach uses structured street questionnaires and the qualitative uses clinical interviewing method. Furthermore, the case study approached put the study into a real life context.

One innovative feature of my questionnaires was to design real conversion task with real commodities posing for sale. These questions have been used in both the street face to face interviews as well as with the voice recorded clinical interviews. The two approaches have supported each other. The structured interviews produced general findings with reasonably representative samples cross subgroups and the interview allowed the study of areas that the questionnaire could not because it required some dialogue to understand how the respondent was thinking.

This research makes a significant contribution to the existing body of knowledge on this topic through exploring in more depth the adaptation process and affective responses to something as fundamental as currency. The thesis captures unique information about the

price learning process in the Slovak Republic. To my knowledge there is not a study like this of development of price intuition in the Euro entrants 2007-2009 countries and only a limited number of studies is currently available for the first Euro entrants.

Given the relative similarities of economic structures and history background of the remaining countries expected to join the Eurozone this study should provide an important insight into the role of cognition and affect during currency change. The Slovak Republic is the second post-communist country after Slovenia to adopt the Euro currency and the first V4⁴⁶ country to switch to the Euro. Furthermore, Slovakia adopted the currency during the global financial crisis and the Euro crises, making this study even more important.

Finally, and most importantly this study brings attention to the important subject of numeracy. There are many situations in everyday life when people need numeracy in attempt to understand the nominal value of a currency through price intuition, adaptation strategies and tactics.

8.4 Limitations of the Study

A limitation of this repeated cross-sectional survey is that the same respondents have not been approached over time. Although this study has done its best to assure that the samples are comparable and reflect the changes over time, panel data would have provided a better picture of long-term changes and would make it easier to detect even the smallest changes. Furthermore, more could have been done in a terms of geographical representation especially, the urban and rural areas.

⁴⁶ V4 or Visegrád Four, is an alliance of four Central European states – the Czech Republic, Hungary, Poland and Slovakia – the purposes of cooperation are to obtain easier access to other European markets and to further European integration.

As far as the qualitative study is concerned the quality of the data could be improved by directly observing people during shopping when they actually make purchasing decisions in the shops especially of exceptional purchases. Furthermore, the sample for the qualitative study could be selected randomly from the original sample of people who took part in the repeated cross-sectional survey and then making a direct comparison to the previous waves. Furthermore, keeping the original questions would provide more information about the process of development of price intuition as well as the direct affect on attitudes.

8.5 Future Research Directions and Policy implications

This study has investigated what happens when a post-communist country enters the monetary union during Euro crises. It would be helpful to see how the currency is accepted by post-communist countries that enter the monetary union after the Euro crisis. Comparing these results could help us understand the effect the Euro crisis had on people's attitudes and their willingness to adapt to the new currency.

During a major currency change people have to adapt in various ways. For example, they have to learn how to convert the Euro values, adapt to the new values and develop a sense of what is expensive and what is inexpensive and adapt their spending behaviour therefore, the importance of the co-operation between policy makers and adult educators is important. The development of policies on numeric demands made on citizens and skills needed to adequately respond to the economic and social change is needed.

The Euro Conversion Process Description results suggest the need to develop easy to convert tactics which can be clearly communicated to the public through the media, such as information about appropriate way to convert the national currency to the Euro and vice versa. The results from the quantitative study show that Slovak citizens frequently used the

conversion strategy to understand the value of the euro, especially at the beginning of the currency changeover. Also the results from the qualitative study show that three and half years after the currency changeover some people (4 out of 24) are still calculating when making exceptional purchases.

Furthermore, the ECPD as well as the quantitative and qualitative results points out the need for suitable support after the changeover especially about the affect of nominal values on decision making. The evidence for the 'Euro Illusion' becomes even more evident over time.

Furthermore, to extend the idea of the 'starting Euro packs' it would be helpful to open up special shops (training centres) cross countries which are preparing to enter the Eurozone so people can come and purchase some regularly bought products with the Euro coins.

The findings show that the 'Euro Illusion' is strongest for the small regularly bought products; therefore, this may help people with the adaptation to the stronger value currency.

References

- Aalto-Setälä, V., Halonen, M., Nikkilä, M., Peura-Kapanen, L., Raijas, A., & Saarinen, P. (2003). *Consumers, markets and the EURO* National Consumer Research Centre.
- Ajzen, I. (2005). *Attitudes, personality, and behaviour*. McGraw-Hill International.
- Akerlof, G. A., & Shiller, R. J. (2009). *Animal spirit: How human psychology drives the economy, and why it matters for global capitalism*. University Press: Princeton.
- Allam, M. S. & Goerres, A. (2008). Adopting the Euro in Post-Communist Countries: an Analysis of the Attitudes Towards the Single Currency. Max Planck Institute for the Study of Societies Discussion Paper 08 (1).
- Allport, G. W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.
- Almunia, J. (2005) Slovakia's Preparation for the Euro BIATEC, volume XIII, Accessed: http://www.nbs.sk/img/Documents/BIATEC/BIA04_05/2_5.pdf
- Amado, S., Teközel, M., Topsever, Y., Ranyard, R., Del Missier, F., & Bonini, N. (2007). Does “000,000” matter? Psychological effects of Turkish monetary reform. *Journal of Economic Psychology*, 28(2), 154-169.
- Balogova, B. (2009). Slovakia switches to €. Retrieved 5/1, 2009, from http://spectator.sme.sk/articles/view/34010/3/slovakia_switches_to.html
- Banque De France. (2002). The Euro cash changeover in France: Assessment and main conclusions. *Banque De France Bulletin Digest*, 107, 33-53.
- Bariak, L. (2009). Podnikatelia zaťažujú banky. Euro nosia vo vreciach. Retrieved 2/09, 2013, from <http://aktualne.atlas.sk/podnikatelia-zatazuju-banky-Euro-nosia-vo-vreciach/ekonomika/slovensko-a-ekonomika/>
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42.
- Bryman, A., & Bell, E. (2007). *Business research methods*. London, Oxford University Press.

- BTI. (2010). Slovakia Country Report. Gütersloh: Bertelsmann Stiftung, 2009, Available: <http://www.bertelsmann-transformation-index.de/bti/laendergutachten/laendergutachten/ostmittel-und-suedostEuropa/slovakia/> [Accessed 03/12, 2010].
- Burgoyne, C., Routh, D., & Anne-Marie, E. (1999). The transition to the Euro: Some perspectives from economic psychology. *Journal of Consumer Policy*, 22(1/2), 91-116.
- Canova, L., & Manganelli, A. M. (2003). *Psycho-social effects of transition to the Euro, a longitudinal study*. Vienna, Austria, <http://homepage.univie.ac.at/stephan.muehlbacher/Euro/papers/canova&manganelli-proc.pdf>: Euro-Workshop (IAREP).
- Cestari, V., Del Giovane, P., & Rossi-Arnaud, C. (2007). Memory for prices and the Euro cash changeover: An analysis for cinema prices in Italy. *Bank of Italy Economic Research Paper*, (619).
- Chaiken, S., & Stangor, C. (1987). Attitudes and attitude change. *Annual Review of Psychology*, 38(1), 575-630.
- Chalupa, A. (2003). Romathan: Roma theatre in action. Retrieved 2/17, 2008, from <http://travel.spectator.sme.sk/articles/372/>
- Coben, D. (2003). *Adult numeracy: Review of research and related literature*. London: National Research and Development Centre for Adult Literacy and Numeracy.
- Coben, D., O'Donoghue, J., & Fitzsimons, G. E. (2000). *Perspectives on adults learning mathematics, Research and practice* Springer.
- Cockcroft, W., Dr. (1982). *Mathematics counts*. London: Her Majesty's Stationery Office.
- De Vaus, D. A. (2002). *Surveys in social research*. London, Routledge
- Deflem, M. & Pampel, F.C. (1996). The Myth of Postnational Identity: Popular Support for European Unification. *Social Forces*, 75,119-143.
- Dehaene, S., & Marques, J. F. (2002). Cognitive Euroscience: Scalar variability in price estimation and the cognitive consequences of switching to the Euro. *Quarterly Journal of Experimental Psychology*, 55(3), 705-731.
- Dejemeppe, P. (1999). Report by the Euro working group of the consumer committee. *Journal of Consumer Policy*, 22(1), 201-256.

Del Missier, F., Bonini, N., & Ranyard, R. (2007). The Euro illusion in consumers' price estimation: An Italian–Irish comparison in the third year of the Euro. *Journal of Consumer Policy*, 30(4), 337-354.

Denzin, N. K., & Lincoln, Y. S. (1998). *The landscape of qualitative research: Issues and theories*. Thousand Oaks, CA: Sage.

Dovciaková, J. (2009). Radiozurnal: Ak sa poplatky za manipuláciu s Euromincami v bankách neznížia, vláda pristúpi k ich regulácii. <http://www.slovakradio.sk/inetportal/2007/index.php?lang=1&stationID=0&page=showNews&id=63080&searchText=Euro+mena> accessed 17/02/2008.

Duverne, S., & Lemaire, P. (2005). Arithmetic split effects reflect strategy selection: An adult age comparative study in addition comparison and verification tasks. *Canadian Journal of Experimental Psychology*, 59(4), 262-278.

Dziuda, W., & Mastrobuoni, G. (2009). The Euro changeover and its effects on price transparency and inflation. *Journal of Money, Credit and Banking*, 41(1), 101-129.

Economic and Financial Affairs. (2012). The Euro. Retrieved 02/19, 2013, from http://ec.europa.eu/economy_finance/Euro/index_en.htm

Eichenberg, R. C., & Dalton, R. J. (1993). Europeans and the European community: The dynamics of public support for European integration. *International Organization*, 47, 507-534.

El Sehity, T. (2001). Realising the Euro-price perception in the new context of the Euro. Available at <http://dx.doi.org/10.2139/ssrn.2177599>

El Sehity, T., Kirchler, E., & Muehlbacher, S. (2003). Rise and decline of social objects: Ten case studies on the social development of meaning structures. *Proceedings of the IAREP-Workshop, Euro: Currency and Symbol*, 25.

Euro Working Group of the Consumer Committee (1999) *Journal of Consumer Policy*, 22, (1-2), 201-256.

European Commission. (2009). Economic and financial affairs. Retrieved 03/15, 2010, from http://ec.europa.eu/economy_finance/Euro/index_en.htm

European Commission. (2009a). *Slovak Euro introduction, ex-post citizen survey*. Flash Eurobarometer 259: The Gallup Organization, January.

European Commission. (2008). *Introduction of the Euro in the new member states*. Flash Eurobarometer 237: The Gallup Organization, May.

European Commission. (2008a). *Introduction of the Euro in Slovakia*. Flash Eurobarometer 249: The Gallup Organization, September.

European Commission. (2008 b). Public attitudes and perceptions in the Euro area. analytical report. Flash Eurobarometer 251, September. Retrieved, 2007, from http://ec.europa.eu/public_opinion/flash/fl_251_en.pdf

European Commission. (2007). *Public attitudes and perceptions in the Euro area*. Flash Eurobarometer 216: The Gallup Organization, September.

European Commission. (2006). *Introduction of the Euro in the new member states*. Flash Eurobarometer 191: The Gallup Organization, September.

European Commission. (2004). Eurobarometer 62. *Public Opinion in the European Union. First Results*. December, Retrieved, 2007, from http://ec.europa.eu/public_opinion/archives/eb/eb62/eb62first_en.pdf

European Commission. (1990). One Market, One Money: an Evaluation of Potential Benefits and Costs of Forming an Economic and Monetary Union, *European Economy*, No.44, October.

European Union. (2010). Educational Study on the teaching of the Euro and EMU at school. Retrieved 09/18, 2011, from http://ec.europa.eu/economy_finance/general/pdf/Euro_emu_curricula_en.pdf

European Union. (2008a). Communique, (May), Retrieved 09/17, 2008, from http://ec.europa.eu/economy_finance/publications/publication12651_en.pdf

European Union. (2008b). Practical preparations for the Euro: Final countdown for Slovakia. Retrieved 09/18, 2008, from <http://ec.europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1183&format=HTML>

European Union. (2007). Communique, (March), Retrieved 02/17, 2008, from http://ec.europa.eu/economy_finance/publications/publication6059_en.pdf

European Union. (2005). Communique, (November) Retrieved 02/15, 2010, from http://ec.europa.eu/economy_finance/publications/publication6148_en.pdf

Eurostat. Retrieved, 24/02/09, from
http://epp.eurostat.ec.europa.eu/portal/page_pageid=1996,45323734&dad=portal&schemata=PORTAL&screen=welcomeref&open=/t_labour/t_earn&language=en&product=REF_TB_labour_market&root=REF_TB_labour_market&scrollto=31

Evans, J. (2000). *Adults' mathematical thinking and emotions: A study of numerate practices* Routledge, London.

Evans, J., Wedege, T. and Yasukawa, K. (2013). Critical Perspectives on Adults' Mathematics Education; in M. A. Clements, A. Bishop, C. Keitel, J. Kilpatrick and F. Leung (Eds.), *Third International Handbook of Mathematics Education*, Springer, New York.

Fennema, E. (1989). The study of affect and mathematics: A proposed generic model for research. *Affect and Mathematical Problem Solving: A New Perspective*, 205-219.

Fessel, GfK. (2004). Euro. Täglicher Einkauf und gefühlte Inflation. Fessel GfK, and OeNB.

Fluch, M. & Stix H. (2005). Perceived Inflation in Austria – Extent, Explanations, Effects. *Quarterly Review of Economic Policy*, Q3/05, Austrian National Bank.

Folkertsma, C. K., Van Renselaar, C., & Stokman, A. (2002). Smooth Euro changeover, higher prices? Results of a survey among Dutch retailers. De Nederlandsche Bank Research Memorandum No. 682.E.

Gamble, A. (2007). The “Euro illusion”: Illusion or fact? *Journal of Consumer Policy*, 30(4), 323-336.

Gamble, A. (2006). Euro illusion or the reverse? Effects of currency and income on evaluations of consumer prices. *Journal of Economic Psychology*, 27, 531-542.

Gamble, A., Gärling, T., Charlton, J., & Ranyard, R. (2002). Euro Illusion: Psychological insights into price evaluations with a unitary currency. *European Psychologist*, 7(4), 302-311.

Gamble, A., Gärling, T., Västfjäll, D., & Marell, A. (2005). Interaction effects of mood induction and nominal representation of price on consumer choice. *Journal of Retailing and Consumer Services*, 12, 397– 406.

Gärling, T., & Gamble, A. (2008). Perceived inflation and expected future prices in different currencies. *Journal of Economic Psychology*, 29(4), 401-416.

- Gärbling, T., & Thøgersen, J. (2007). Effects of the Euro changeover on consumer behaviour: Introduction to the special issue. *Journal of Consumer Policy*, 30, 303-311.
- Gärbling, T., Kirchler, E., Lewis, A., & Van Raaij, F. (2009). Psychology, financial decision making, and financial crises. *Psychological Science in the Public Interest*, 10(1), 1-47.
- Gay, L. R. (1996). *Educational research: Competencies for analysis and application*. New Jersey: Prentice Hall.
- Ginsburg, H. P. (1997). *Entering the child's mind: The clinical interview in psychological research and practice* Cambridge University Press.
- Ginsberg, H., Kossan, N., Schwartz, R. and Swanson, D. (1983). Protocol methods in research on mathematical thinking. In Ginsberg, H. (Ed.), *The Development of Mathematical Thinking* (pp. 7-47). Orlando: Academic Press.
- Griffiths, G. & Kaye, D. (2011). Making a drama out of a crisis. Using dialogue scenes in the teaching of adult numeracy, *Proceedings of the 17th International Conference on Adults Learning Mathematics (ALM-17)* Oslo, ALM,
- Hofmann, E., Kirchler, E., & Kamleitner, B. (2007). Consumer adaptation strategies: From Austrian shilling to the Euro. *Journal of Consumer Policy*, 30(4), 367-381.
- Hüfner, F., & Koske, I. (2008). *The Euro changeover in the Slovak Republic: Implications for inflation and interest rates* OECD.
- Hunting, R. P. (1997). Clinical interview methods in mathematics education research and practice. *The Journal of Mathematical Behavior*, 16(2), 145-165.
- Imbo, I., Duverne, S., & Lemaire, P. (2007). Working memory, strategy execution, and strategy selection in mental arithmetic. *The Quarterly Journal of Experimental Psychology*, 60(9), 1246-1264.
- Isengard, B. and Schneider, T. (2004). The Attitudes towards the Euro: An Empirical Study based on the German Socio-Economic Panel (SOEP), DIW-Diskussions papiere, No.403, Available: <http://www.econstor.eu/bitstream/10419/18099/1/dp403.pdf>
- Jonas, E., Greitemeyer, T., Frey, D., & Schulz-Hardt, S. (2002). Psychological effects of the Euro - experimental research on the perception of salaries and price estimations. *European Journal of Social Psychology*, 32(2), 147-169.

- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *The Econometric Society*, 47(2), 263-292.
- Katz, D., & Stotland, E. (1959). A preliminary statement to a theory of attitude structure and change. *Psychology: A Study of a Science*, 3, 423-475.
- Kirchler, E., & Meier, K. (2001). 1. Teil des Projektes Eurowertverständnis. Bericht über die Focusgruppen. Vienna: University of Vienna and OeNB.
- Kirchler, E., & Fessel GfK. (2001a). Eurowertverständnis Teil II. Vienna: University of Vienna, Fessel GfK and OeNB.
- Kirchler, E., & Fessel GfK. (2001b). Eurowertverständnis. Vienna: University of Vienna, Fessel GfK and OeNB.
- Kirchler, E., & Fessel GfK. (2002a). Eurowertverständnis Teil III. Gesamtbericht. Vienna: University of Vienna, Fessel GfK and OeNB.
- Kirchler, E., & Fessel GfK. (2002b). Euroverständnis. Einstellungen, Wissen und Erwartungen. Vienna: University of Vienna, Fessel GfK and OeNB.
- Kirchler, E., & Hölzl, E. (2006). Twenty-five years of the Journal of Economic Psychology (1981–2005): A report on the development of an interdisciplinary field of research. *Journal of Economic Psychology*, 27(6), 793-804.
- Klucka, J., Lelakova, E., and Strelcova, S. (2009). The Slovak Republic's path to Euro adoption. Retrieved 03, 2010, from https://www.ebaportal.eu/Download/Research%20and%20Analysis/The_Slovak_Republics.cfm.pdf
- Knights, D. & McCabe, D. (1999). Are there no limits to authority? TQM and Organizational Power. *Organization Studies* 20(2): 197-224.
- Kokkinaki, F. (1998). Attitudes towards European monetary union in Greece: Antecedents, strength and consequences. *Journal of Economic Psychology*, 19(6), 775-796.
- Kovac, D. (2008). K psychologickým aspektom Eurokonverzie na Slovensku. *Ekonomický Časopis*, (08), 832-837.
- Kühberger, A., & Keul, A. (2003). Quick and slow transition to the Euro in Austria: Point of sale observations, and a longitudinal panel survey. *Presentation at the IAREP (International Association for Research in Economic Psychology) Euro-Workshop, Vienna, Austria, July*.

- Lalinsky, T. (2010). Business competitiveness after Euro adoption in Slovakia, national bank of Slovakia. *National Bank of Slovakia Occasional Paper 3*.
- Lamla, M. J., & Lein, S. M. (2010). The Euro cash changeover, inflation perceptions and the media. KOF working paper no. 254. Available online: <http://e-collection.library.ethz.ch/eserv/eth:776/eth-776-01.pdf>
- Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday life*. Cambridge University Press.
- Lemaire, P., & Lecacheur, M. (2001). Older and younger adults' strategy use and execution in currency conversion tasks: Insights from French Franc to Euro and Euro to French Franc conversions. *Journal of Experimental Psychology: Applied*, 7(3), 195-206.
- Lemaire, P., Lecacheur, M., & Ferreól Barbey, M. (2001). Strategy use in currency conversion tasks: The example of Euro into French Franc and French Franc into Euro conversions. *Current Psychology Letters: Behaviour, Brain & Cognition*, 4, 39-50.
- Lemaire, P. (2007). The impact of the Euro changeover on between-currency conversions. *Journal of Consumer Policy*, 30(4), 383-391.
- Lindenskov, Land Wedege, T. (2001). Numeracy as an analytical tool in adult education and research. *Centre for Research in Learning Mathematics, Publication no. 31*, Roskilde University. http://www.statvoks.no/emma/materials_numeracy.htm.
- Logan, G. D. (1988). Automaticity, resources and memory: Theoretical controversies and practical implications. *Human Factors*, (30), 583-598.
- Luna-Arocas, R., Guzmán, G., Quintanilla, I., & Farhangmehr, M. (2001). The Euro and European identity: The Spanish and Portuguese case. *Journal of Economic Psychology*, 22(4), 441-460.
- Matovcikova, D. (2010), How adults cope with the conversion to the Euro in the Slovak Republic; in G. Griffiths, D. Kaye, R. Moulton et al. (eds.), *Numeracy Works for Life, Proceedings of the 16th International Conference on Adults Learning Mathematics (ALM16)*, Adults Learning Mathematics - a Research Forum and LLU+, London South Bank University, 6-9 July 2009.
- Marques, J. F. (2007). The Euro changeover and numerical intuition for prices in the old and new currencies. *Journal of Consumer Policy*, 30(4), 393-403.

- Marques, J. F. (1999). Changing "EUROpe": The Euro as a new subject for psychological research in numerical cognition. *European Psychologist*, 4(3), 152-156.
- Marques, J. F., & Dehaene, S. (2004). Developing intuition for prices in Euros: Rescaling or relearning prices? *Journal of Experimental Psychology: Applied*, 10(3), 148-155.
- Marushiakova, E. and Vesselin, P. (2004). Slovakia. In: *Roma and the Economy: Overview Reports*. Berlin: Berlin Institute for Comparative Social Research, 62-67.
- Matejkova, E., Qineti, A., & Serences, R. (2008). Macroeconomic aspects of the development of Slovak regions in the post-accession period. *Agric. Econ. – Czech*, 54(8), 367-375.
- McLeod, D. B. (1992). Research on affect in mathematics education: A reconceptualization. In D. A. Grows (Eds.), *Handbook of Research on Mathematics Teaching and Learning* (pp. 575-596). New York: Macmillan and National Council of Teachers of Mathematics.
- McWilliams, L. (2007). *The influence of the Spanish media on public opinion towards European integration* [Accessed online]
https://cdr.lib.unc.edu/indexablecontent?id=uuid:80491fa0-7ed2-43ca-b52e-e5e5cfb19115&ds=DATA_FILE .
- Meier-Pesti, K., & Kirchler, E. (2003). Attitudes towards the Euro by national identity and relative national status. *Journal of Economic Psychology*, 24(3), 293-299.
- Meier, K., & Kirchler, E. (1998). Social representations of the Euro in Austria. *Journal of Economic Psychology*, 19, 755-774.
- Merriam, S. B., & Cunningham, P. M. (1989). *Handbook of adult and continuing education*. The Jossey-Bass Publisher, ERIC.
- Missier, F., Bonini, N., & Ranyard, R. (2007). The Euro illusion in consumers' price estimation: An Italian–Irish comparison in the third year of the Euro. *Journal of Consumer Policy*, 30(4), 337-354.
- Mladek, J. Pukacova, J. (2010). Social exclusion of the Roma population in Slovakia (selected characteristics of habitation). *Acta Universitatis Carolinae, Geographica*, 2, 41-52.

- Müller-Peters, A. (1998). The significance of national pride and national identity to the attitude toward the single European currency: A Europe-wide comparison. *Journal of Economic Psychology*, 19(6), 701-719.
- Müller-Peters, A., Pepermans, R., Kiell, G., & Farhangmehr, M. (2001). The psychology of European monetary union: A cross-national study of public opinion toward the Euro. *Santiago De Compostela*.
- Müller-Peters, A., Pepermans, R., Kiell, G., Battaglia, N., Beckmann, S., Burgoyne, C., Wahlund, R. (1998). Explaining attitudes towards the Euro: Design of a cross-national study. *Journal of Economic Psychology*, 19(6), 663-680.
- Musswiler, T., & English, B. (2003). Adapting to the Euro: Evidence from bias reduction. *Journal of Economic Psychology*, 24, 285-292.
- National Research and Development Centre for Adult Literacy and Numeracy (ALL). (2002). Adult literacy and lifeskills survey (all). Retrieved 04/20, 2011, from <http://nces.ed.gov/surveys/all>
- Olexa, M. (1999). Selected macro-economic indicators relating to structural changes in agricultural employment in the Slovak Republic. Statistical Office of the Slovak Republic [Available online] <http://www.unece.org/fileadmin/DAM/stats/documents/ces/sem.44/wp.16.e.pdf>
- Onufer, A. (2009). Obchodníci chcú zrušiť drobné centy, neoplatia sa. Retrieved 02/17, 2010, from <http://aktualne.atlas.sk/obchodnici-chcu-zrusit-drobne-centy-neoplatia-sa/ekonomika/financie/>
- Pepermans, R., & Verleye, G. (1998). A unified Europe? How Euro-attitudes relate to psychological differences between countries. *Journal of Economic Psychology*, 19(6), 681-699.
- PIAAC Numeracy Expert Group. (2009). *PIAAC numeracy: A conceptual framework* Organisation for Economic Co-operation and Development, No.35, [Available Online] <http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=edu/wkp%282009%2914>.
- Raghubir, P. (2006). An information processing review of the subjective value of money and prices. *Journal of Business Research*, 59(10–11), 1053-1062.
- Raghubir, P. & Srivastava, J. (2002). Effect of face value on product valuation in foreign currencies. *Journal of Consumer Research*, 29, 335-47.

Ranyard, R. (2008). Foreword to the special section: Perceptions and expectations of price changes and inflation. *Journal of Economic Psychology*, 29(4), 375-377.

Ranyard, R., Missier, F.D., Bonini, N., Duxbury, D. and Summers, B. (2008a). Perceptions and expectations of price changes and inflation: A review and conceptual framework. *Journal of Economic Psychology*, 29(4), 378-400.

Ranyard, R. (2007). Euro stories: The Irish experience of currency change. *Journal of Consumer Policy*, 30(4), 313-322.

Ranyard, R., Burgoyne, C., Saldanha, G., and Routh, D. (2005). A qualitative study of adaptation to the Euro in the Republic of Ireland: I. attitudes, the 'Euro Illusion' and the perception of prices. *Journal of Community & Applied Social Psychology*, 15(2), 95-107.

Ranyard, R., Burgoyne, C., Saldanha, G., and Routh, D. (2003). *Living with the Euro but thinking in punts? A preliminary report of experiences in the Republic of Ireland*. Vienna, Austria: Euro-Workshop (IAREP).

Ranyard, R., Charlton, J. P., & Williamson, J. (2001). The role of internal reference prices in consumers' willingness to pay judgments: Thaler's beer pricing task revisited. *Acta Psychologica*, 106(3), 265-283.

Ranyard, R., Missier, F. D., Bonini, N., Duxbury, D., & Summers, B. (2008). Perceptions and expectations of price changes and inflation: A review and conceptual framework. *Journal of Economic Psychology*, 29(4), 378-400.

Rattinger, H. (1994). Public attitudes to European integration in Germany after Maastricht: Inventory and typology. *JCMS: Journal of Common Market Studies*, 32(4), 525-540.

Reichardt, C. S., & Rallis, S. F. (1994). Qualitative and quantitative inquiries are not incompatible: A call for a new partnership. *New Directions for Program Evaluation*, 1994(61), 85-91.

Romina, L. (2007). Perceived inflation and the introduction of the Euro currency in Malta, No: 36. Retrieved 08, 2008, from https://www.bov.com/filebank/documents/13-32_Romina%20lauri2.pdf

Romsky nový list (2008a) Euro je tu, nedajte sa oklamat! [online]
<http://www.rnl.sk/modules.php?name=News&file=article&sid=14319>

- Romsky novy list (2008b). Divadlo o eure. [online]
<http://www.rnl.sk/modules.php?name=News&file=article&sid=13817> accessed
17/02/2008
- Romsky novy list (2008c). Roma Rap. [online]
<http://www.rnl.sk/modules.php?name=News&file=article&sid=14570> accessed
17/02/2008
- Rosenberg, M. J. (1968) Hedonism, inauthenticity, and other goals toward expansion of a consistency theory R.P. Ableson, E. Aronson, W.J. McGuire, T.M. Newcomb, M.J. Rosenberg, P.H. Tannenbaum (Eds.), *Theories of consistency: A sourcebook*, Rand McNally, Chicago, pp. 73–111.
- Roth, F., Jonung, L., and Nowak-Lehmann, D. (2012) Public support for the single European currency, the euro, 1990 to 2011. Does the financial crisis matter? Working Papers Series, Department of Economics, Lund University, WP1220, 2012.
- Routh, D. A., & Burgoyne, C. B. (1998). Being in two minds about a single currency: A UK perspective on the Euro. *Journal of Economic Psychology*, 19(6), 741-754.
- Routh, D., & Burgoyne, C. (1990). Further development of the absent-mindedness with money questionnaire (AWMQ): Aspects of construct validity. *Applied Economic Psychology in the*, 1, 487-500.
- Rudez, H. N., & Bojnec, S. (2010). Impacts of the Euro on the Slovenian tourism industry. *Managing Global Transitions*, 6(4), 445-460.
- Santos, D., Evagelista, R., Nascimento, T., & Coimbra, C. (2002). Analysis on the impact of the conversion of escudos into Euros. *Economic Bulletin*, 14.
- Shafir, E. and Tversky, A. (1995). Chapter 3: Decision making. Retrieved, 2012, from <http://mind.cog.jhu.edu/faculty/smolensky/050.313-613/Readings/Shafir%20&%20Tversky%2095%20Invit%20CogSci%203,%20chap3.pdf>
- Shafir, E., Diamond, P., & Tversky, A. (1997). Money illusion. *Quarterly Journal of Economics*, 112(20), 342-374.
- Sheared, V., & Sissel, P. A. (2001). *Making Space: Merging Theory and Practice in Adult Education*. London: Bergin & Garvey.

Sikulova, I., & Olali, I. (2009) Economic Developments of Slovakia as an EU and Euro Area Member. *Institute of Economic Research*, Slovak Academy of Sciences.

SITA, Agentura (2008) News: Občania prejavili o štartovacie Eurobalíčky značný záujem. [online]
<http://www.slovakradio.sk/inetportal/2007/index.php?lang=1&stationID=0&page=showNews&id=60555&searchText=Euro+mena> [accessed 17/02/2008].

Soman, D., Wertenbroch, K., & Chattopadhyay, A. (2002). Currency numerosity effects on the perceived value of transaction. INSEAD Working Paper Series, 2002, 124/MKT.

Spectator. (2008). The long goodbye to the crown. Available:
http://www.spectator.sk/articles/view/33918/3/the_long_goodbye_to_the_crown.html
[Accessed 24/02/09].

Strakova, M (2009) Radiozurnal
<http://www.rozhlas.sk/inetportal/2007/index.php?lang=1&stationID=0&page=showNews&id=63558&lang=1> [Accessed 17/02/2008]

Strazzari, E., Nori, R., Bensi, L., & Giusberti, F. (2005). Adapting to the Euro: Strategies of conversion between-currency. *Current Psychology Letters [Online]*, 1(15), 15/10/2010-14.

Tarde, G., (1902). *Economic Psychology*. Alcan, Paris.

Tesser, A., Whitaker, D., Martin, L., & Ward, D. (1998). Attitude heritability, attitude change and physiological responsivity. *Personality and Individual Differences*, 24(1), 89-96.

The Slovak Statistic Office. (2009). General characteristics. Retrieved 11/24, 2009, from <http://portal.statistics.sk/showdoc.do?docid=2213>

The Slovak Statistic Office. (2010). Average gross monthly wage by regions in 2010. Retrieved 11/24, 2009, <http://portal.statistics.sk/showdoc.do?docid=37311>

TASR - Tlacova Agentura Slovenskej Republiky. (2009). Zaokruhlenie v prospech občanov stalo 23 milion EUR. Retrieved 02/17, 2009, from <http://aktualne.atlas.sk/zaokruhlenie-v-prospech-obcana-stalo-23-milionov-eur/ekonomika/financie/>.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157), 1124-1131.

- Van Everdingen, Y. M., & Van Raaij, W. F. (1998). The Dutch people and the Euro: A structural equations analysis relating national identity and economic expectations to attitude towards the Euro. *Journal of Economic Psychology*, 19(6), 721-740.
- Webb, E. J. (1961). Weber's law and consumer prices. *American Psychologist*, 16, 450.
- Webley, P., Burgoyne, C. B., Lea, S. E. G., & Young, B. M. (2001). *The economic psychology of everyday life*. Hove, U.K: Psychology Press.
- Wedge, T. (2010). The problem field of adults learning mathematics. Works for Life. *Proceedings of the 16th International Conference of Adults Learning Mathematics*, ALM & LLU+.
- Wedge, T., & Evans, J. (2006). Adults' resistance to learning in school versus adults' competences in work: The case of mathematics. *Adults Learning Mathematics, an International Journal* 1(2), 28-43.
- Wedge, T. (1999). To know or not to know—mathematics, that is a question of context. *Educational Studies in Mathematics*, 39, 205–227.
- Welch, S. (1975). Sampling by Referral in a Dispersed Population. *The Public Opinion Quarterly*, 39, (2), n237-245, Available: <http://www.jstor.org/stable/2748151>
- Williams, C. (2007). Research Methods. *Journal of Business & Economic Research* (5), 3, p.65-72.

9 Appendix

Table 9.1 Conversion rates of Eurozone countries

Euro Adoption Date	Cash Changeover Date	Country	Exchange rate 1€ =	
1 January 1999	1 January 2002	Belgium,	40.3399	
		Germany,	1.95583	
		Ireland,	0.787564	
		Spain,	166.386	
		France,	6.55957	
		Italy,	1936.27	
		Luxembourg,	40.3399	
		The Netherlands,	2.20371	
		Austria,	13.7603	
		Portugal, Finland	200.482 5.94573	
1 January 2001	1 January 2002	Greece	340.750	
1 January 2007	1 January 2007	Slovenia	239.640	
1 January 2008	1 January 2008	Cyprus,	0.585274	
		Malta	0.4293	
1 January 2009	1 January 2009	Slovak Republic	30.126	
1 January 2010	1 January 2010	Estonia	15.65	
		Bulgaria		
		Czech Republic		
		Hungary		
		Latvia		
		Lithuania		
		Poland		
		Romania		
		Opt out	Sweden	
		Opt out	Great Britain	
		Opt out	Denmark	

Table 9.2 Cross-tabulation conversion task * Age

Conversion task			Age of a respondent %			Total
			Young adults 15-29	Adults 30-59	Elderly 60+	
Bread 31.50SKK	Strategy	Intuitive strategy	21.4	31.0	50.0	29.5
		Conversion Strategy	32.1	47.6	37.5	41.0
		Marker value Strategy	46.4	21.4	12.5	29.5
DVD 499SKK	Strategy	Intuitive strategy	19.2	17.5	37.5	20.3
		Conversion Strategy	50.0	60.0	50.0	55.4
		Marker value Strategy	30.8	22.5	12.5	24.3
Milk 0.83 EUR	Strategy	Intuitive strategy	46.2	35.7	44.4	40.3
		Conversion Strategy	42.3	61.9	44.4	53.2
		Anchor Strategy	7.7			2.6
		Marker value Strategy	3.8	2.4	11.1	3.9
Mobil 183 EUR	Strategy	Intuitive strategy	19.2	19.0	28.6	20.0
		Conversion Strategy	53.8	57.1	57.1	56.0
		Anchor Strategy	3.8			1.3
		Marker value Strategy	23.1	23.8	14.3	22.7
Total			100.0	100.0	100.0	100.0

Table 9.3 Strategies for the assessment of Euro values (the original table)

Strategies for the assessment of Euro values; application across type of purchase and time in percent. Fessel GfK(2004). Multiple answers were possible.	Habitual Purchases %		Exceptional Purchases %	
	Sep02	Aug 05	Sep02	Aug 05
Intuitive strategy	64	65	16	17
Conversion strategy	9	6	42	33
Anchor strategy	59	55	21	20
Marker value strategy	55	56	41	50

Source: Hofmann et al., 2007 p.374

9.1 Cross-tabulation of socio demographic characteristics with national identity: August 2009

In response to the question “*How strongly do you agree/disagree, that Slovak Republic lost a great deal of its identity by adopting Euro currency*”, the majority, 60% disagreed and 28% agreed in August 2009.

Table 9.4 Did Slovak Republic lose a great deal of its identity by adopting Euro currency?

	Frequency	%
Strongly Agree/ Rather Agree	25	28.1
Neither Agree/Disagree	11	12.4
Rather Disagree/Strongly Disagree	53	59.6
Total	89	100.0

A cross-tabulation was carried out to test if there is association between the above statement and: (i) Region, (ii) Gender, (iii) Age, (iv) Education (vi) Income.

Chi-Square Tests

Variables	χ^2	DF	Asymp. Sig. (2-sided)
Region	2.522(a)	2	.283
Gender	0.937 ^a	2	.625
Age	13.229 ^a	4	.010
Education	13.170 ^a	6	.040
Income	1.245 ^a	4	.871

Region

$$\chi^2 = 2.522 \quad \text{P-Value} = 0.283$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that Slovak Republic lost its identity by adopting the Euro currency and the region.

Gender

$$\chi^2 = 0.937 \quad \text{P-Value} = 0.625$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that Slovak Republic lost its identity by adopting the Euro currency and the gender of the respondent.

Age

Table 9.5 Did Slovak Republic lose a great deal of its identity by adopting Euro currency *Age

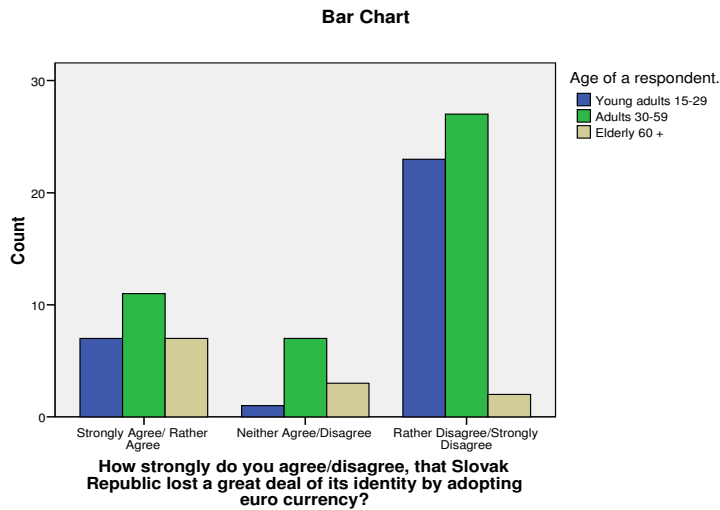
How strongly do you agree/disagree, that SK lost a great deal of its identity by adopting Euro currency?		Age of a respondent.			Total
		Young adults 15-29	Adults 30-59	Elderly 60 +	
Strongly Agree/ Rather Agree	Count	7	11	7	25
	% within Age	22.6	24.4	58.3	28.4
Neither Agree/Disagree	Count	1	7	3	11
	% within Age	3.2	15.6	25.0	12.5
Rather Disagree/Strongly Disagree	Count	23	27	2	52
	% within Age	74.2	60.0	16.7	59.1
Total	Count	31	45	12	88
	% within Age	100.0	100.0	100.0	100.0

The column percentages do suggest age group differences.

$$\chi^2 = 13.229 \quad \text{P-Value} = 0.010$$

Here we reject H_0 and conclude that there is an association between people who agree/disagree that Slovak Republic lost its identity by adopting the Euro currency and the age of a respondent.

The column percentages suggest that the elderly people aged 60+ are more likely to agree with the statement that Slovak Republic lost its identity by adopting the new currency.



Education

Table 9.6 Did Slovak Republic lose a great deal of its identity by adopting Euro currency *Education

How strongly do you agree/disagree, that SK lost a great deal of its identity by adopting Euro currency?		Highest completed education?				Total
		Basic	Secondary without final examination	Secondary with final examination (equivalent to A levels)	University	
Strongly Agree/ Rather Agree	Count	4	7	11	3	25
	% within education	26.7 ⁴⁷	46.7	24.4	23.1	28.4
Neither Agree/Disagree	Count	1	5	4	1	11
	% within education	6.7	33.3	8.9%	7.7	12.5
Rather Disagree/Strongly Disagree	Count	10	3	30	9	52
	% within education	66.7	20.0	66.7	69.2	59.1
Total	Count	15	15	45	13	88
	% within education	100.0	100.0	100.0	100.0	100.0

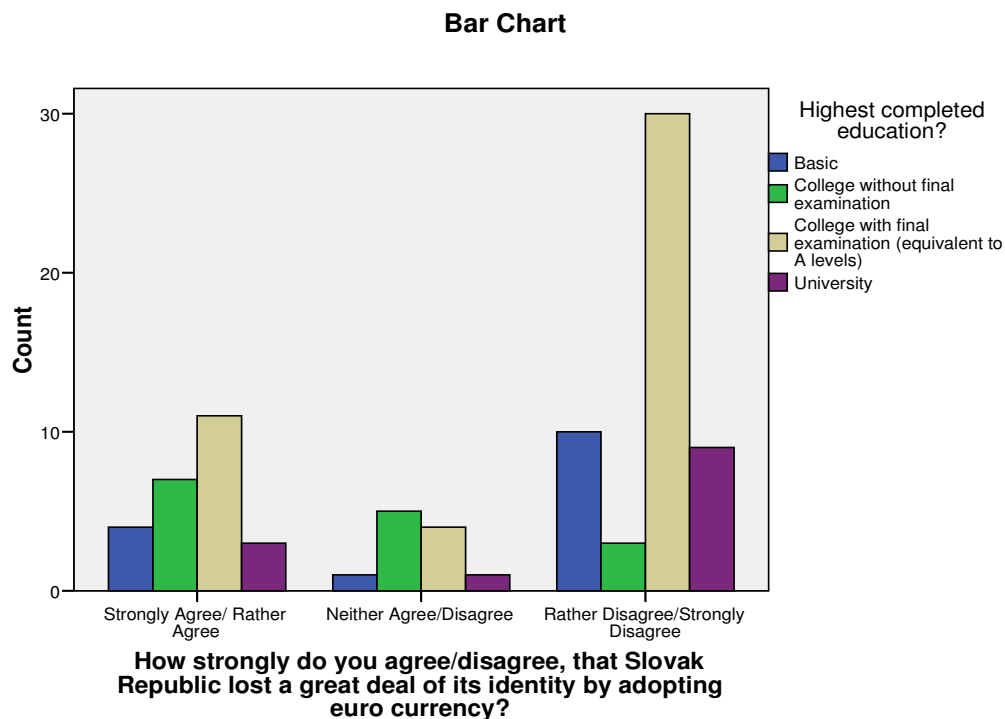
⁴⁷ Looking at the column percentages (26.7%) we would expect the 'basic level of education' to have a higher percentage of respondents who agreed with the statement to support our claim, but this is not the case because the majority of respondents with basic education are students who have not completed their education.

The column percentages suggest that there is difference in people's opinion and the level of education.

$$\chi^2 = 13.170 \quad \text{P-Value} = 0.040$$

Here we reject H_0 and conclude that there is an association between people who agree/disagree that Slovak Republic lost its identity by adopting the Euro currency and the level of education.

The column percentages suggest that people with lower level of education (secondary without final education) are more likely to agree with the statement that Slovak Republic lost its identity by adopting the new currency.



Income

$$\chi^2 = 1.245 \quad \text{P-Value} = 0.871$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that Slovak Republic lost its identity by adopting the Euro currency and the Annual income of the respondent.

9.2 Cross-tabulation of socio demographic characteristics with happiness: August 2009

To investigate people's attitudes towards the Euro currency we asked respondents (Aug 09) how happy/unhappy they are; personally that the Euro has become our currency and only 9% answered "unhappy" and 50% answered 'happy'.

Table 9.7 How happy/unhappy are you, personally: that the Euro has become our currency?

		Frequency	%	Valid %	Cumulative %
Valid	Very Happy/ Rather Happy	44	49.4	49.4	49.4
	Neither Happy/Unhappy	37	41.6	41.6	91.0
	Rather Unhappy/Very Unhappy	8	9.0	9.0	100.0
Total		89	100.0	100.0	

A cross-tabulation to test if there is association between the above question and: Region, Gender, Age, Education and Income.

Chi-Square Tests

Variables	χ^2	DF	Asymp. Sig. (2-sided)
Region	0.631(a)	2	.730
Gender	3.873 ^a	2	.144
Age	11.366 ^a	4	.023
Education	0.919 ^a	6	.988
Income	6.182 ^a	4	.186

Region.

The column percentages do not suggest any differences.

$$\chi^2 = 0.631 \quad \text{P-Value} = 0.730$$

Here we accept H_0 and conclude that there is no association between how happy or unhappy people are about the new currency and the region.

Gender of the respondents

The column percentages do not suggest any differences.

$$\chi^2 = 3.873 \quad \text{P-Value} = 0.144$$

Here we accept H_0 and conclude that there is no association between how happy or unhappy people are about the new currency and the gender.

The highest completed level of education.

The column percentages do not suggest any differences.

$$\chi^2 = 0.919 \quad \text{P-Value} = 0.988$$

Here we accept H_0 and conclude that there is no association between how happy or unhappy people are about the new currency and the level of education.

The annual gross income

The column percentages do not suggest any differences.

$$\chi^2 = 6.182 \quad \text{P-Value} = 0.186$$

Here we accept H_0 and conclude that there is no association between how happy or unhappy people are about the new currency and the level of income.

The Age of the respondent

Table 9.8 Cross-tabulation: Happiness *Age

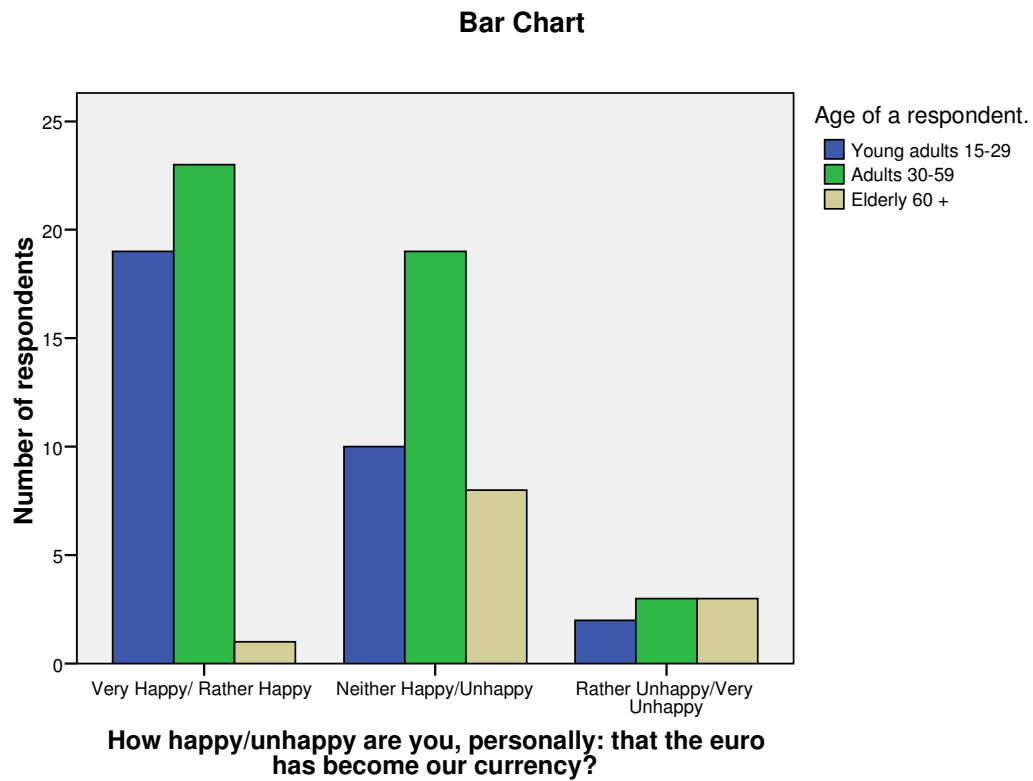
How happy/unhappy are you, personally: that the Euro has become our currency?		Age of a respondent			Total
		Young adults 15-29	Adults 30-59	Elderly 60 +	
Very Happy/ Rather Happy	Count	19	23	1	43
	% within Age	61.3	51.1	8.3	48.9
Neither Happy/Unhappy	Count	10	19	8	37
	% within Age	32.3	42.2	66.7	42.0
Rather Unhappy/Very Unhappy	Count	2	3	3	8
	% within Age	6.5	6.7	25.0	9.1
Total	Count	31	45	12	88
	% within Age	100.0	100.0	100.0	100.0

The column percentages do suggest differences.

$$\chi^2 = 11.366 \quad P\text{-Value} = 0.023$$

Here we reject H_0 and conclude that there is an association between how happy or unhappy people are about the new currency and the age of the respondent.

From the column percentages we can see that elderly people aged 60+ are more likely to be unhappy about the new currency in comparison to young adults (aged 15-29) and adults (aged 30-59).



9.3 Cross-tabulation of socio demographic characteristics with regular shopping: August 2009

To further evaluate the learning process we asked respondents *how often if at all they convert 'Slovak crown to Euro' and 'Euro to Slovak crown' when making regular shopping?* The percentage of respondents who claim to convert regular shopping is 53% in August 2009.

Table 9.9 How often do you convert when making regular shopping?

	Frequency	Valid %	Cumulative %
Always/Often	47	53.4	53.4
Sometimes	14	15.9	69.3
Rarely/Never	27	30.7	100.0
Total	88	100.0	

A cross-tabulation to test is carried out to see whether there is an association between the above question and: Region, Age and Income.

A cross-tabulation to test if there is an association between the above question and: Region, Gender, Age, Education and Income.

Chi-Square Tests

Variables	χ^2	DF	Asymp. Sig. (2-sided)
Region	6.455 (a)	2	.040
Age	10.865 ^a	4	.028
Income	7.200 ^a	4	.126

Region

The column percentages suggest differences.

$$\chi^2 = 6.455 \quad \text{P-Value} = 0.040$$

Here we reject H_0 and conclude that there is an association between how often people convert when doing regular shopping and the region.

From the column percentages we can see that larger percentage of people from Bratislava region claimed that they do not convert or rarely convert when doing regular shopping.

Age

The column percentages suggest differences.

$$\chi^2 = 10.865 \quad \text{P-Value} = 0.028$$

Here we reject H_0 and conclude that there is an association between how often people convert when doing regular shopping and the age of the respondent.

From the column percentages we can see that younger adults aged 15-29 are least likely to convert while doing regular shopping.

Annual gross income

The column percentages do suggest differences; for example people on higher income (10 001€ are less likely to convert. However, the test is not significant.

$$\chi^2 = 7.200 \quad \text{P-Value} = 0.126$$

Here we accept H_0 and conclude that there is no association between how often people convert when doing regular shopping and the annual income. This needs to be further investigated by collecting more data.

Table 9.10 **Do you convert SKK to Euro and Euro to SKK when doing your regular shopping? Region**

		Trenčín	Bratislava	Total
Always/Often	Count	27	20	47
	% within Region	52.9	54.1	53.4
Sometimes	Count	12	2	14
	% within Region	23.5	5.4	15.9
Rarely/Never	Count	12	15	27
	% within Region	23.5	40.5	30.7
Total	Count	51	37	88
	% within Region	100.0	100.0	100.0

Age

Table 9.11 Do you convert SKK to Euro and Euro to SKK when doing your regular shopping? Age

		Age of a respondent			Total
		Young adults 15-29	Adults 30-59	Elderly 60 +	
Always/Often	Count	12	27	8	47
	% within Age	38.7	60.0	66.7	53.4
Sometimes	Count	4	10	0	14
	% within Age	12.9	22.2	.0	15.9
Rarely/Never	Count	15	8	4	27
	% within Age	48.4	17.8	33.3	30.7
Total	Count	31	45	12	88
	% within Age	100.0	100.0	100.0	100.0

Annual Income

Table 9.12 Do you convert SKK to Euro and Euro to SKK when doing your regular shopping? Income

		Annual gross income in Euro			Total
		low 0-4 000	medium 4 001-10 000	High 10 001+	
Always/Often	Count	26	16	1	43
	% within Income €	60.5	50.0	14.3	52.4
Sometimes	Count	7	6	1	14
	% within Income €	16.3	18.8	14.3	17.1
Rarely/Never	Count	10	10	5	25
	% within Income €	23.3	31.3	71.4	30.5
Total	Count	43	32	7	82
	% within Income €	100.0	100.0	100.0	100.0

9.4 Cross-tabulation of socio demographic characteristics with exceptional purchases: August 2009

To further investigate how Slovak citizens cope with the conversion process we asked 'how often, if at all, do they convert the Slovak crown to Euro and the Euro to Slovak crown when making exceptional purchases'. The results show that 49% of respondents claimed they 'always' convert when making exceptional purchase.

To further investigate or identify which groups of citizens are experiencing difficulty with the new currency we carried out further analysis; cross tabulation. A cross-tabulation to test if there is an association between how often people convert while making exceptional purchases and the age.

Chi-Square Tests

Variable	χ^2	DF	Asymp. Sig. (2-sided)
Region	2.750(a)	2	.253
Gender	0.168 ^a	2	.919
Age	3.248 ^a	4	.517
Education	3.125 ^a	6	.793
Income	4.080 ^a	4	.395

Region

$$\chi^2 = 2.750 \quad \text{P-Value} = 0.253$$

Here we accept H_0 and conclude that there is no association between how often people convert when making exceptional purchase and the region.

Age

The column percentages suggest differences.

$$\chi^2 = 3.248 \quad \text{P-Value} = 0.517$$

Here we accept H_0 and conclude that there is no association between how often people convert when making exceptional purchase and the age of the respondent.

Annual gross income

$$\chi^2 = 4.080 \quad \text{P-Value} = 0.395$$

Here we accept H_0 and conclude that there is no association between how often people convert when making exceptional purchase and the annual income.

Table 9.13 Cross-tabulation special purchase? * Age of a respondent.

How often, if at all, do you convert SKK to Euro and Euro to SKK when making a special purchase?		Age of a respondent			Total
		Young adults 15-29	Adults 30-59	Elderly 60 +	
Always/Often	Count	25	29	6	60
	% within Age	80.6	74.4	100.0	78.9
Sometimes	Count	4	4	0	8
	% within Age	12.9	10.3	.0	10.5
Rarely/Never	Count	2	6	0	8
	% within Age	6.5	15.4	.0	10.5
Total	Count	31	39	6	76
	% within Age	100.0	100.0	100.0	100.0

10 Appendix

10.1 Cross-tabulation of socio demographic characteristics with national identity: January 2011

In response to the statement “*How strongly do you agree/disagree, that the Slovak Republic lost a great deal of its identity by adopting the Euro currency*” respondent were asked to indicate how strongly they agree or disagree with the statement, the majority 44% disagreed and 35% agreed in January 2011.

Table 10.1 Do you agree/disagree, that SR lost a great deal of its identity by adopting the Euro?

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree/ Rather Agree	31	35.2	35.2	35.2
Neither Agree/Disagree	18	20.5	20.5	55.7
Rather Disagree/Strongly Disagree	39	44.3	44.3	100.0
Total	88	100.0	100.0	

A cross-tabulation was carried out to test if there is association between the above statement and: (i) Region, (ii) Gender, (iii) Age, (iv) Education (vi) Income.

Chi-Square Tests

Variable	χ^2	DF	Asymp. Sig. (2-sided)
Region	3.219 ^a	2	.200
Gender	1.141 ^a	2	.565
Age	3.375 ^a	4	.497
Education	6.517 ^a	3	.089
Income	4.133 ^a	2	.127

Region

$$\chi^2 = 3.219 \quad \text{P-Value} = 0.200$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that Slovak Republic lost its identity by adopting the Euro currency and the region.

Gender

$$\chi^2 = 1.14 \quad \text{P-Value} = 0.565$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that Slovak Republic lost its identity by adopting the Euro currency and the gender of the respondent.

Age

$$\chi^2 = 3.375 \quad \text{P-Value} = 0.497$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that the Slovak Republic lost its identity by adopting the Euro currency and the Age of the respondent.

Education

$$\chi^2 = 6.517 \quad \text{P-Value} = 0.089$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that the Slovak Republic lost its identity by adopting the Euro currency and the Highest completed education of the respondent. These results have to be treated with caution as there are 2 cells with low count which makes the result slightly unreliable.

Income

$$\chi^2 = 4.133 \quad \text{P-Value} = 0.127$$

Here we accept H_0 and conclude that there is no association between whether people agree/disagree that the Slovak Republic lost its identity by adopting the Euro currency and the Annual income of the respondent.

10.2 Cross-tabulation of socio demographic characteristics with consequences for SK : January 2011

In response to the statement ‘Overall, the introduction of the Euro had positive/negative consequences for the Slovak Republic’. The majority of respondents 59% claimed the Euro had positive consequences for the Slovak Republic in January 2011.

Table 10.2 Euro consequences for the SR

Overall, the introduction of the Euro will have/had positive/negative consequences for SR?	Frequency	%
Positive/Rather Positive	51	58.6
Neither Positive/Negative	11	12.6
Rather Negative/negative	25	28.7
Total	87	100.0

A cross-tabulation was carried out to test if there is association between the above statement and: (i) Region, (ii) Gender, (iii) Age, (iv) Education (vi) Income.

Variable	Pearson Chi-Square	DF	Asymp. Sig. (2-sided)
Region	7.370 ^a	2	.025
Gender	11.280 ^a	2	.004
Age	6.302 ^a	2	.043
Education	2.319 ^a	3	.509
Income	3.352 ^a	2	.187

Region

The column percentages suggest that people interviewed in Bratislava are more likely to say the Euro had negative consequences for Slovakia.

$$\chi^2 = 7.370 \quad \text{P-Value} = 0.025$$

Here we reject H_0 and conclude that there is an association between people who think that the Euro had positive/negative consequences for Slovakia and the region. What is interesting in these findings is that people interviewed in Trenčín region are more likely to think that the Euro had positive consequences for Slovakia.

Gender

The column percentages suggest that males are more likely to think that the Euro had negative consequences for Slovak Republic.

$$\chi^2 = 11.280 \quad \text{P-Value} = 0.004$$

Here we reject H_0 and conclude that there is an association between people who think that the Euro had positive/negative consequences for Slovakia and the gender of the respondents. However, we need to be careful with the interpretation because one cell has a low expected count.

Age

The column percentages suggest that adults are most likely to think that the Euro had positive consequences for Slovakia.

$$\chi^2 = 6.302 \quad \text{P-Value} = 0.043$$

Here we reject H_0 and conclude that there is an association between people who think that the Euro had positive/negative consequences for Slovakia and the age of the respondents. However, we need to be careful with the interpretation because it is border line rejection.

Education

$$\chi^2 = 2.319 \quad \text{P-Value} = 0.509$$

Here we accept H_0 and conclude that there is no association between people who think that the Euro had positive/negative consequences for Slovakia and the education of the respondents. However, we need to be careful with the interpretation because 2 cells have a low expected count.

Income level

$$\chi^2 = 3.352 \quad \text{P-Value} = 0.187$$

Here we accept H_0 and conclude that there is no association between people who think that the Euro had positive/negative consequences for Slovakia and the income of the respondents.

Region

Overall do you think the Euro had positive/negative consequences for SK		Region		Total
		Trenčín	Bratislava	
Positive/Rather Positive	Count	31	20	51
	% within Region	66.0	50.0	58.6
Neither Positive/Negative	Count	8	3	11
	% within Region	17.0	7.5	12.6
Rather Negative/negative	Count	8	17	25
	% within Region	17.0	42.5	28.7
Total	Count	47	40	87
	% within Region	100.0	100.0	100.0

Gender

Overall do you think the Euro had positive/negative consequences for SK		Gender of the Respondent		Total
		Female	Male	
Positive/Rather Positive	Count	28	23	51
	% within Gender	57.1	60.5	58.6
Neither Positive/Negative	Count	11	0	11
	% within Gender	22.4	.0	12.6
Rather Negative/negative	Count	10	15	25
	% within Gender	20.4	39.5	28.7
Total	Count	49	38	87
	% within Gender	100.0	100.0	100.0

Age

Overall do you think the Euro had positive/negative consequences for SK		Age of the respondent			Total
		Young adults (15-29)	Adults (30-59)	Elderly (60+)	
Positive/Rather Positive	Count	21	23	7	51
	% within Age	47.7	76.7	53.8	58.6
Neither Positive/Negative/Rather Negative/negative	Count	23	7	6	36
	% within Age	52.3	23.3	46.2	41.4
Total	Count	44	30	13	87
	% within Age	100.0	100.0	100.0	100.0

Education

Overall do you think the Euro had positive/negative consequences for SK		Highest completed education				Total
		Basic	College without final examination	College with final examination (equiv. to A levels)	University	
Positive/Rather Positive	Count	6	6	28	11	51
	% within education	60.0	66.7	52.8	73.3	58.6
Neither Positive/Negative/Rather Negative/negative	Count	4	3	25	4	36
	% within education	40.0	33.3	47.2	26.7	41.4
Total	Count	10	9	53	15	87
	% within education	100.0	100.0	100.0	100.0	100.0

The column percentages suggest that respondents who have university qualifications are more likely to think that the Euro had positive consequences.

Income level

Overall do you think the Euro had positive/negative consequences for SK?		Annual gross income in Euro			Total
		0-4 000	4 001-10 000	10 001+	
Positive/Rather Positive	Count	24	16	11	51
	% within income	52.2	64.0	78.6	60.0
Neither Positive/Negative/Rather Negative/negative	Count	22	9	3	34
	% within income	47.8	36.0	21.4	40.0
Total	Count	46	25	14	85
	% within income	100.0	100.0	100.0	100.0

The column percentages suggest that people on higher incomes are more likely to think that the Euro had positive consequences for Slovakia.

10.3 Cross-tabulation of socio demographic characteristics with happiness: January 2011

To investigate people's attitudes towards the Euro currency we asked respondents (January 2011) how happy/unhappy they are; personally, that the Euro has become our currency. Only 23% answered "unhappy" and 39% answered 'happy'.

Table 10.3 How happy/unhappy are you, personally: that the Euro has become our currency?

		Frequency	%	Valid %	Cumulative %
Valid	Very Happy/ Rather Happy	34	38.6	38.6	38.6
	Neither Happy/Unhappy	34	38.6	38.6	77.3
	Rather Unhappy/Very Unhappy	20	22.7	22.7	100.0
	Total	88	100.0	100.0	

A cross-tabulation to test if there is an association between the above question and: Region, Gender, Age, Education and Income.

Chi-Square Tests

Variable	χ^2	DF	Asymp. Sig. (2-sided)
Region	7.177 ^a	2	.028
Gender	3.259 ^a	2	.196
Age	6.152 ^a	4	.188
Education	2.585 ^a	2	.275
Income	7.230	2	.027

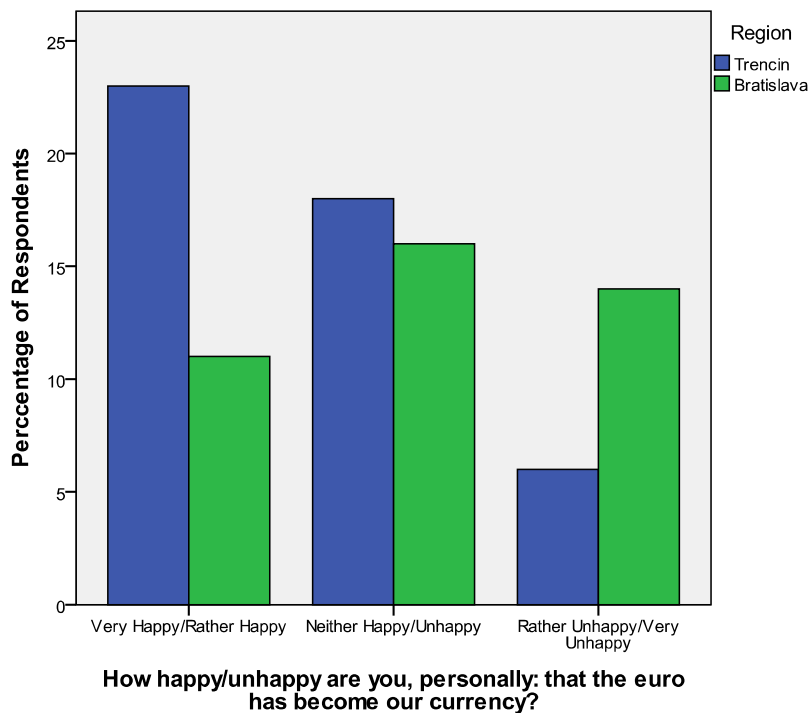
Region

The column percentages show the differences between the Trenčín and Bratislava regions. It is unexpected to see that people from Bratislava region are more likely to be unhappy about the Euro currency (34%) in comparison to people from Trenčín region (13%).

Region		Region		
How happy/unhappy are you, personally: that the Euro has become our currency?		Trenčín	Bratislava	Total
Very Happy/Rather Happy	Count	23	11	34
	% within Region	48.9	26.8	38.6
Neither Happy/Unhappy	Count	18	16	34
	% within Region	38.3	39.0	38.6
Rather Unhappy/Very Unhappy	Count	6	14	20
	% within Region	12.8	34.1	22.7
Total	Count	47	41	88
	% within Region	100.0	100.0	100.0

$$\chi^2 = 7.177 \quad \text{P-Value} = 0.028$$

Here we reject H_0 and conclude that there is an association between how happy or unhappy people are about the new currency and the region.



Gender

$$\chi^2 = 3.259 \quad \text{P-Value} = 0.196$$

Here we accept H_0 and conclude that there is no association between how happy or unhappy people are about the new currency and the gender of the respondent.

Age

$$\chi^2 = 6.152 \quad \text{P-Value} = 0.188$$

Here we accept H_0 and conclude that there is no association between how happy or unhappy people are about the new currency and the age of the respondent.

Education

$$\chi^2 = 2.585 \quad \text{P-Value} = 0.275$$

Here we accept H_0 and conclude that there is no association between how happy or unhappy people are about the new currency and the highest completed Education of the respondent.

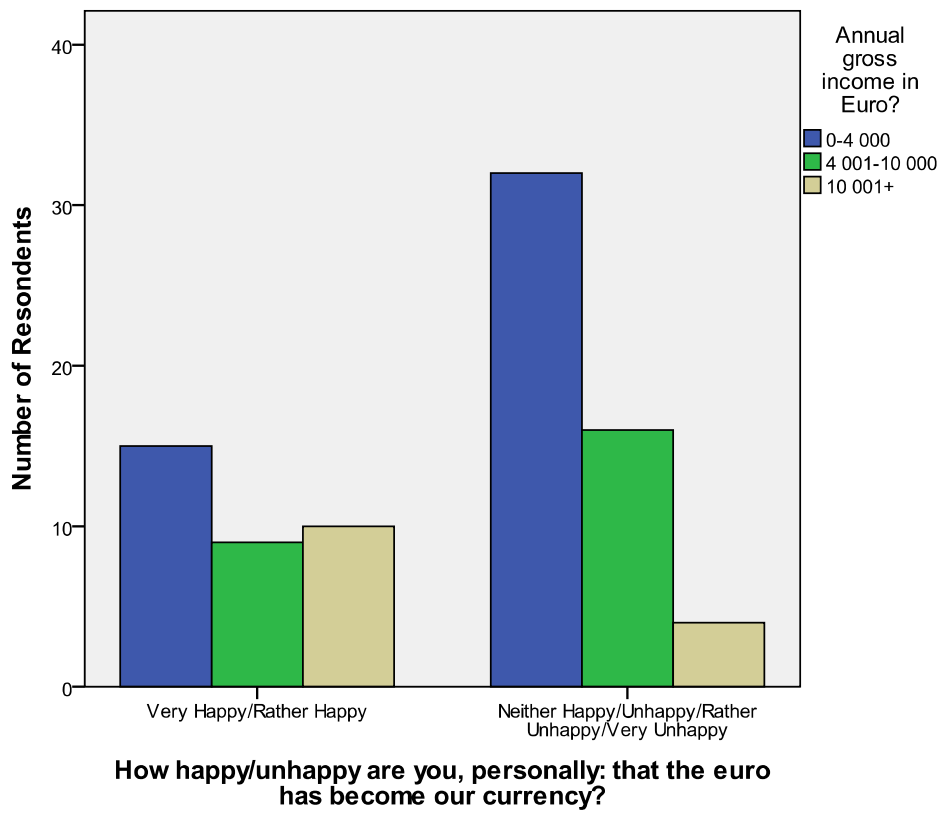
Income

The column percentages suggest that people on higher incomes tend to be rather happy about the Euro, 71% in comparison to 32% (people on low income).

		Annual gross income in Euro			
		0-4 000	4 001-10 000	10 001+	Total
Very Happy/Rather Happy	Count	15	9	10	34
	% within Income?	31.9	36.0	71.4	39.5
Neither Happy/Unhappy/Rather Unhappy/Very Unhappy	Count	32	16	4	52
	% within Income?	68.1	64.0	28.6	60.5
Total	Count	47	25	14	86
	% within Income?	100.0	100.0	100.0%	100.0

$$\chi^2 = 7.230 \quad \text{P-Value} = 0.027$$

Here we reject H_0 and conclude that there is an association between how happy or unhappy people are about the new currency and their level of income.



10.4 Correlations Matrix and Mean

August 2009			How strongly do you agree/disagree, that SK lost a great deal of its identity by adopting Euro currency?	How happy/unhappy are you, personally: that the Euro has become our currency?	Region	Gender	Age	Education	Income
Spearman's rho	How strongly do you agree/disagree, that SK lost a great deal of its identity by adopting Euro currency?	Correlation Coefficient Sig. (2-tailed) N	1.000 . 89						
	How happy/unhappy are you, personally: that the Euro has become our currency?	Correlation Coefficient Sig. (2-tailed) N	-.316** .003 89	1.000 . 89					
	Region	Correlation Coefficient Sig. (2-tailed) N	-.091 .396 89	.084 .433 89	1.000 . 89				
	Gender of the Respondent	Correlation Coefficient Sig. (2-tailed) N	.092 .389 89	-.145 .174 89	.133 .213 89	1.000 . 89			
	Age of a respondent	Correlation Coefficient Sig. (2-tailed) N	-.294** .005 88	.288** .006 88	.114 .290 88	-.047 .663 88	1.000 . 88		
	Highest completed education	Correlation Coefficient Sig. (2-tailed) N	.147 .172 88	.009 .931 88	-.137 .204 88	-.156 .148 88	.326** .002 88	1.000 . 88	
	Annual gross income in Euro	Correlation Coefficient Sig. (2-tailed) N	.099 .377 82	-.172 .123 82	.147 .187 82	.231 .037 82	.340** .002 82	.247 .025 82	1.000 . 82

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

January 2011			Overall do you think the Euro had positive/negative consequences for SK	How strongly do you agree/disagree, that SK lost a great deal of its identity by adopting Euro currency?	How happy/unhappy are you, personally: that the Euro has become our currency?	Region	Gender	Age	Education	Income
Spearman's rho	Overall do you think the Euro had positive/negative consequences for SK	Correlation Coefficient Sig. (2-tailed) N	1.000 . 87							
	How strongly do you agree/disagree, that SK lost a great deal of its identity by adopting Euro currency?	Correlation Coefficient Sig. (2-tailed) N	-.247* .021 87	1.000 . 88						
	How happy/unhappy are you, personally: that the Euro has become our currency?	Correlation Coefficient Sig. (2-tailed) N	.645** .000 87	-.312** .003 88	1.000 . 88					
	Region	Correlation Coefficient Sig. (2-tailed) N	.215* .045 87	.014 .900 88		1.000 . 88				
	Gender	Correlation Coefficient Sig. (2-tailed) N	.054 .622 87	-.010 .925 88			1.000 . 88			
	Age	Correlation Coefficient Sig. (2-tailed) N	-.204 .058 87	.048 .659 88				1.000 . 88		
	Education	Correlation Coefficient Sig. (2-tailed) N	-.058 .591 87	-.020 .853 88					1.000 . 88	
	Income	Correlation Coefficient Sig. (2-tailed) N	-.202 .064 85	-.266* .013 86						1.000 . 86

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

10.4.1 Partial correlation results

Correlations

Control Variables			How happy/unhappy are you, personally: that € has become our currency?	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting € ?	Overall do you think the € had positive/negative consequences for SK
Gender of the Respondent	How happy/unhappy are you, personally: that the € has become our currency?	Correlation Sig (2-tailed) df	1.000 .0 0		
	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting €?	Correlation Sig(2-tailed) df	-.336 .002 84	1.000 .0	
	Overall do you think the euro had positive/negative consequences for SR	Correlation Sig (2-tailed) df	.679 .000 84	-.261 .015 84	1.000 .0

Correlations

Control Variables			How happy/unhappy are you, personally: that € has become our currency?	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting € ?	Overall do you think the € had positive/negative consequences for SK
Age of a respondent.	How happy/unhappy are you, personally: that € has become our currency?	Correlation Sig (2-tailed) df	1.000 .0 0		
	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting €?	Correlation Sig (2-tailed) df	-.331 .002 84	1.000 .0	
	Overall do you think € had positive/negative consequences for SK	Correlation Sig(2-tailed) df	.664 .000 84	-.259 .016 84	1.000 .0

Correlations

Control Variables			How happy/unhappy are you, personally: that € has become our currency?	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting € ?	Overall do you think the € had positive/negative consequences for SK
Highest completed education?	How happy/unhappy are you, personally: that € has become our currency?	Correlation Sig(2-tailed) df	1.000 .0 0		
	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting €?	Correlation Sig(2-tailed) df	-.342 .001 84	1.000 .0	
	Overall do you think the euro had positive/negative consequences for SK	Correlation Sig (2-tailed) df	.671 .000 84	-.264 .014 84	1.000 .0

Correlations

Control Variables			How happy/unhappy are you, personally: that € has become our currency?	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting € ?	Overall do you think the € had positive/negative consequences for SK
Annual gross income in Euro?	How happy/unhappy are you, personally: that € has become our currency?	Correlation Sig (2-tailed) df	1.000 .0 0		
	How strongly do you agree/disagree, that SR lost a great deal of its identity by adopting €?	Correlation Sig (2-tailed) df	-.420 .000 82	1.000 .0 0	
	Overall do you think the euro had positive/negative consequences for SK	Correlation Sig(2-tailed) df	.659 .000 82	-.311 .004 82	1.000 .0 0

10.5 Cross-tabulation of socio demographic characteristics with regular shopping: January 2011

To further evaluate the learning process we asked respondents *how often if at all they convert 'Slovak crown to Euro' and 'Euro to Slovak crown' when making regular shopping?* The percentage of respondents who claim to convert regular shopping is 31% (adding together always and often).

Table 10.4 How often do you convert when making regular shopping?

	Frequency	%	Valid %	Cumulative %
Always/Often	27	30.7	30.7	30.7
Sometimes	26	29.5	29.5	60.2
Rarely/Never	35	39.8	39.8	100.0
Total	88	100.0	100.0	

A cross-tabulation to test if there is an association between the above question and: Region, Gender, Age, Education and Income.

Variables	Pearson Chi-Square	DF	Asymp. Sig. (2-sided)
Region	1.396 ^a	2	.498
Gender	.439 ^a	2	.803
Age	12.928 ^a	4	.012
Education	4.321 ^a	4	.364
Income	10.109 ^a	4	.039

Region

$$\chi^2 = 1.396 \quad \text{P-Value} = 0.498$$

Here we accept H_0 and conclude that there is no association between: whether people convert and the region.

Gender

$$\chi^2 = 0.439 \quad \text{P-Value} = 0.803$$

Here we accept H_0 and conclude that there is no association between: whether people convert and the gender.

Age

The column percentages suggest that elderly people are most likely to convert (adding always and often) and adults are least likely to convert.

$$\chi^2 = 12.928 \quad \text{P-Value} = 0.012$$

Here we reject H_0 and conclude that there is an association between: whether people convert and their age.

Education level

$$\chi^2 = 4.321 \quad \text{P-Value} = 0.364$$

Here we accept H_0 and conclude that there is no association between: whether people convert and their education level.

Income level

The column percentages suggest that people on high incomes are less likely to convert.

$$\chi^2 = 10.109 \quad \text{P-Value} = 0.039$$

Here we reject H_0 and conclude that there is an association between: whether people convert and their income level.

Age

Do you convert SKK to Euro and Euro to SKK when doing your regular shopping?		Age of a respondent			Total
		Young adults (15-29)	Adults (30-59)	Elderly (60+)	
Always/Often	Count	16	3	8	27
	% within Age	36.4	9.7	61.5	30.7
Sometimes	Count	12	12	2	26
	% within Age	27.3	38.7	15.4	29.5
Rarely/Never	Count	16	16	3	35
	% within Age	36.4	51.6	23.1	39.8
Total	Count	44	31	13	88
	% within Age	100.0	100.0	100.0	100.0

Income level

Do you convert SKK to Euro and Euro to SKK when doing your regular shopping?		Annual gross income in Euro			Total
		0-4 000	4 001-10 000	10 001+	
Always/Often	Count	18	9	0	27
	% within Income	38.3	36.0	.0	31.4
Sometimes	Count	13	5	8	26
	% within Income	27.7	20.0	57.1	30.2
Rarely/Never	Count	16	11	6	33
	% within Income	34.0	44.0	42.9	38.4
Total	Count	47	25	14	86
	% within Income	100.0	100.0	100.0	100.0

10.6 Cross-tabulation of socio demographic characteristics with learning prices: January 2011

To investigate the usage of anchor strategy in Slovakia I asked respondents whether they *have learnt the prices of regularly bought products in Euro*. The results for January 2011 show that 38% of respondents said they have already re-learnt all/many of the Euro prices of the regularly bought product and the majority 58% of respondent have learnt ‘Some’ product prices and 4% ‘Hardly any’.

Table 10.5 Have you learnt the prices of regularly bought products?

	Frequency	Percentages
All of them	5	5.7
Many of them	28	31.8
Some of them	51	58.0
Hardly any	4	4.5
Total	88	100.0

A cross-tabulation to test if there is an association between the above question and: Region, Gender, Age, Education and Income.

Variable	Chi-Square	DF	Asymp. Sig. (2-sided)
Region (Continuity Correction ^b)	.000	1	1.000
Gender (Continuity Correction ^b)	1.624	1	.203
Age	1.954 ^a	2	.376
Education	.159 ^a	2	.924
Income	2.582 ^a	2	.275

Region

Continuity Correction Value = 0.000 P-Value = 1.000

Here we accept H_0 and conclude that there is no association between: acquisition of price knowledge and region.

Gender

Continuity Correction Value = 1.624 P-Value = 0.203

Here we accept H_0 and conclude that there is no association between: acquisition of price knowledge and gender.

Age

$$\chi^2 = 1.954 \quad \text{P-Value} = 0.376$$

Here we accept H_0 and conclude that there is no association between: acquisition of price knowledge and age.

Education

$$\chi^2 = 0.159 \quad \text{P-Value} = 0.924$$

Here we accept H_0 and conclude that there is no association between: acquisition of price knowledge and education.

Income

$$\chi^2 = 2.582 \quad \text{P-Value} = 0.275$$

Here we accept H_0 and conclude that there is no association between: acquisition of price knowledge and income.

10.7 Cross-tabulation of conversion task with age

Conversion task			Age of a respondent						Total	Total
			Young adults 15-29		Adults 30-59		Elderly 60 +		Phase3	Phase 2
			Phase 3	Phase 2	Phase 3	Phase 2	Phase 3	Phase 2		
Bread 31.50SKK	Strategy	Intuition	77.3	21.4	51.7	31.0	38.5	50.0	62.8	29.5
		Conversion	9.1	32.1	3.4	47.6	15.4	37.5	8.1	41.0
		Anchor	2.3	0	3.4	0	15.4	0	4.7	0
		Marker Value	11.4	46.4	41.4	21.4	30.8	12.5	24.4	29.5
DVD 499SKK	Strategy	Intuition	47.7	19.2	37.9	17.5	25.0	37.5	41.2	20.3
		Conversion	11.4	50.0	13.8	60.0	25.0	50.0	14.1	55.4
		Anchor	6.8	0	6.9	0	8.3	0	7.1	0
		Marker Value	34.1	30.8	41.4	22.5	41.7	12.5	37.6	24.3
Milk 0.83 EUR	Strategy	Intuition	47.7	46.2	16.7	35.7	23.1	44.4	33.3	40.3
		Conversion	13.6	42.3	40.0	61.9	46.2	44.4	27.6	53.2
		Anchor	20.5	7.7	13.3		7.7		16.1	2.6
		Marker Value	18.2	3.8%	30.0	2.4	23.1	11.1	23.0	3.9
Mobil 183 EUR	Strategy	Intuition	45.5	19.2	20.0	19.0	16.7	28.6	32.6	20.0
		Conversion	13.6	53.8	33.3	57.1	66.7	57.1	27.9	56.0
		Anchor	6.8	3.8%	3.3		8.3		5.8	1.3
		Marker Value	34.1	23.1	43.3	23.8	8.3	14.3	33.7	22.7
Total			100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

11 Appendix: Questionnaires

11.1 Pilot Study

Record

1. Gender : Male Female

CAN I ASK YOU TO TAKE FEW MINUTES TO ANSWER FEW QUESTIONS

2. Region :

Trenčín Trnava Nitra Bratislava Žilina Košice Prešov Banská Bystrica

3. Occupation: _____

NOW I WOULD LIKE TO ASK YOU FEW QUESTIONS ABOUT YOUR EXPERIENCE WITH THE EURO.

4. Have you already seen Euro coins? Yes No DK
5. Have you already seen Euro bank notes? Yes No DK

If the answer is NO go to QU. 10.

6. Have you already used Euro coins? Yes No DK
7. Have you already used Euro bank notes? Yes No DK

If the answer is NO go to QU. 10.

8. You said you already used Euro bank notes. Was it?
In (SR) Abroad Both in (SR) and abroad DK
9. You said you already used Euro coins. Was it?
In (SR) Abroad Both in (SR) and abroad DK

COULD YOU TELL ME FOR EACH OF THE FOLLOWING STATEMENTS WHETHER YOU AGREE OR DISAGREE AND HOW STRONGLY.

10. The replacement of the Slovak crown by the Euro will cause you personally lot of inconvenience.

DO YOU STRONGLY AGREE/AGREE/NEITHER AGREE OR DISAGREE/DISAGREE/STRONGLY DISAGREE

11. I am afraid of abuses and cheating on prices during the changeover.

DO YOU STRONGLY AGREE/AGREE/NEITHER AGREE OR DISAGREE/DISAGREE/STRONGLY DISAGREE

12. Adopting the Euro will mean that Slovak Republic will lose a great deal of its identity?

DO YOU STRONGLY AGREE/AGREE/NEITHER AGREE OR DISAGREE/DISAGREE/STRONGLY DISAGREE

13. The use of the Euro instead of the Slovak crown will probably make us feel more European than now?

**DO YOU STRONGLY AGREE/AGREE/NEITHER AGREE OR DISAGREE/
DISAGREE/STRONGLY DISAGREE**

14. Overall, the introduction of the Euro will have positive/negative consequences for Slovak Republic?

**VERY POSITIVE/ RATHER POSITIVE/ RATHER NEGATIVE / VERY NEGATIVE OR
YOU DO NOT KNOW**

15. And overall, for you personally, do you think that the consequences would be positive or negative if the Euro would be introduced?

Very positive Rather positive Rather negative Very negative DK/NA

**NOW I WOULD LIKE TO ASK HOW YOU WILL DEAL WITH THE CONVERSION
BETWEEN SLOVAK CROWN AND ANOTHER CURRENCY.**

16. Have you ever been in another country which used a different currency, and where you had bought your supply of that currency using Slovak crown? Yes No

If no go to Q.19.

17. Which currency was that? / *If respondent mentions several, ask him/her to think of the one which they are most familiar, for the purpose of changing from and to the crown and record which one*) _____

18. How did you get to know the value of that currency?

I learnt the exchange rate and converted all the Euro prices into Slovak Crown.

I learnt the prices of some regularly bought products such as milk and bread in Euro, and then use them as an “anchor” when evaluating prices.

I learnt the value of specific (name of currency) amounts such as 5,10,20 (currency) in Slovak Crown and, the values of 50,100,500 Crown in (currency).

I tried to learn to appreciate in an intuitive way all the prices in Euro.

Go to question 20

19. If you have never been in such situation, can I ask you to imagine how you will get to know the value of the Euro?

I will learn the exchange rate and convert all the Euro prices into Slovak crown.

I will learn the prices of some regularly bought products, such as milk and bread in Euro, and then use them as an ‘anchor’ when evaluating prices

I will learn the value of specific Euro amounts such as 5,10,20 Euro in Slovak Crown, and the values of 50, 100, 500 Crown in Euro.

I will try to learn to appreciate in an intuitive way all the prices in Euro.

**NOW I WOULD LIKE TO ASK YOU WHICH OF THESE SUPPORTING MATERIAL
WILL HELP YOU MOST.**

20. Which of those will be most useful to help with the conversion?

Calculator /Conversion chart /Dual pricing/Clearly displayed conversion rate with an “easy to use” conversion strategy.

COULD YOU TELL ME FOR EACH OF THE FOLLOWING HOW OFTEN YOU DO THEM.

21. Check whether you have been given the right change?

DO YOU DO THEM ALWAYS/OFTEN/SOMETIMES/RARELY/NEVER

Always Often Sometimes Rarely Never

22. Confuse two coins/bank notes of different value?

DO YOU DO THEM ALWAYS/OFTEN/SOMETIMES/RARELY/NEVER

Always Often Sometimes Rarely Never

23. Add your shopping before making a payment?

Always Often Sometimes Rarely Never

At the end I would like to ask you some personal questions.

24. Age 16-17 18- 24 25-29 30-39 40-49 50-59 60-64 65+

25. Education GCSE A-Levels Diploma First Degree Postgraduate Doctorate

26. Income (annually) 0 – 120 000Sk 120 001 – 300 000Sk 300 001 – 600 000Sk 600 001Sk+

Thank you for your time and help.

11.2 Questionnaire 1

Record

Gender: Female Male

Region: Trenčín Bratislava

Thinking about the transition to the Euro, that we are currently going through can you please tell me.

1. How happy/unhappy are you, personally: that the Euro has become our currency?
Very Happy Happy Neither Happy/Unhappy Unhappy Very Unhappy
2. How strongly do you agree/disagree, that Slovak Republic lost a great deal of its identity by adopting Euro currency?
Strongly Agree Agree Neither Agree/Disagree Disagree Strongly Disagree
3. Now thinking about the past six months: How did the prices develop prior to the Euro changeover? Very Much Increased Increased Slightly Increased Neither Increased/Decreased Slightly Decreased Decreased Very much Decreased

Thinking now about the current situation, when you make cash payment and receive your change.

4. In general, do you check whether you receive the correct change?
Always Often Sometimes Rarely Never DK
5. Would you say: It was easy/difficult to check whether you received correct change?
Very Easy Easy All Right Difficult Very Difficult DK
6. How often, if at all, do you confuse two bank notes of different value?
Always Often Sometimes Rarely Never DK
7. How often, if at all, do you confuse two coins of different value?
Always Often Sometimes Rarely Never DK

Thinking now about the current situation, when you make a payment in Slovak crown and received your change in Euro.

8. How does it make you feel? _____
9. Can you say why you feel like that? _____

Could you please think about the range of transactions in shops, etc that you have made since 1st January 2009?

10. In general, what type of problems have you experienced with the Euro, besides those already mentioned, during this time? _____
11. Withdraw less/more money out of the bank in Euros than you would have if you had been using Slovak crown.
Always less Most often less The same Most often more Always more DK
12. Spend less/more Euro money than you would have if you had been using Slovak crown?
Always less Most often less The same Most often more Always more DK

The next set of questions is about how you are familiarising yourself with the Euro currency.

13. When purchasing, do you count mentally: Always in Euro Most often in Euro As often in Euro as in SK Always in SK Most often in SK
14. How often, if at all, do you convert Slovak crown to Euro and Euro to Slovak crown when doing your regular shopping? By regular shopping I mean when you buy bread, milk, tissues, toothpaste, soap and other products that you buy frequently.
Always Often Sometimes Rarely Never
15. How often, if at all, do you convert Slovak crown to Euro and Euro to Slovak crown when making a special purchase? By special purchase I mean when you buy a TV, DVD and other products-even car or house-that you do not buy frequently.
Always Often Sometimes Rarely Never Have not done so yet
16. Have you already learnt the prices of any regularly bought products in Euro? By regularly bought products I mean bread, milk, tissues, toothpaste, soap and other products that you buy frequently. All of them Many of them Some of them Hardly any Non
17. How often, if at all, do you use the Euro prices of regularly bought products as a reference point to evaluate prices of other products? Always Often Sometimes Rarely Never
18. Do you know the exchange value of specific Euro amounts? For example do you know approximately how much 5 Euro is in Slovak crown?
 Yes [ANSWER] _____ No
19. And how much 100SKK is in Euro?
 Yes [ANSWER] _____ No (IF NO TO BOTH, GO TO QUESTION 21)
20. You mentioned that you know the value of specific Euro amounts, how often, if at all, would you use it to make purchasing decision?
Always Often Sometimes Rarely Never
21. How often, if at all, do you rely on your intuition to evaluate the appropriateness of the price of a particular good, and buy what you need without referring to prices in Slovak crown? Always Often Sometimes Rarely Never
22. Overall, how easy/difficult would you say it is for you to understand the Euro currency when making a decision? Very Easy Easy All Right Difficult Very Difficult DK

Now I would like to ask you, how often, if at all, you use:

23. Calculator (for conversion from one currency to the other)
Always Often Sometimes Rarely Never
24. Conversion chart: Always Often Sometimes Rarely Never
25. Dual pricing display: Always Often Sometimes Rarely Never
26. If I asked you to describe the experience using the Euro nowadays, using one or more adjectives (descriptive words), what would you say?
1. _____ 2. _____ 3. _____ 4. _____ 5. _____
27. When you think about your experience of using Euro, are any of the following words appropriate? (RECORD ALL THAT APPLY) Arithmetical Common sense Mathematical

28. Here is an item which was priced in SKK, about how much should it be in Euros now, if the proper exchange rate is used?

1. Traditional white bread (1000g) 31.50SKK _____ €

2. Toothpaste priced at 37.50SKK _____ €

3. DVD priced at 499SKK _____ €

29. Here is an item priced in Euro, about how much should it be in Slovak crown at the prevailing exchange rate?

1. Semi Skimmed Milk 1L €0.83 _____ SKK

2. Mobile phone €183 _____ SKK

3. Deodorant €3.40 _____ SKK

Finally, I would like to ask you few personal questions.

30. How old are you? 15-17 18-24 25-29 30-39 40-49 50-59 60-64 65+

31. What is your highest completed education?

Basic College without final examination College with final examination (equivalent to A levels) University Doctorate

32. How much is your annual gross income in Slovak Crown?

0-120 000 120 001- 300 000 300 001- 600 000 600 001 +

Thank you, that is the end of this interview. Thank you very much for your help and time.

11.3 Questionnaire 2

Record

Gender: Female Male

Region: Trenčín Bratislava

Thinking about the transition to the Euro, that we are currently going through can you please tell me.

1. How happy/unhappy are you, personally: that the Euro has become our currency?
Very happy Rather happy Neither happy/Unhappy Rather unhappy Very unhappy
2. Here is a statement: Slovak Republic lost a great deal of its identity by adopting Euro currency. How strongly do you agree/disagree with this statement?
Strongly agree Agree Neither agree/Disagree Disagree Strongly disagree
3. Since January 2009, how did the prices develop?
Very much increased Slightly increased Neither increased/Decreased Slightly decreased Very much decreased

Could you please think about the range of transactions in shops, etc that you have made since 1st January 2009?

4. How do you feel prices in Euros compare with those in Slovak crown?
More expensive in EUR Slightly more expensive in EUR About the same Slightly cheaper in EUR Much cheaper in EUR DK
5. Are you spending less/more money in Euros than you would have if you had been using Slovak crown?
Always less Most often less About the same Most often more Always more DK

Can you please think about a time when you received your salary /other income.

6. How did the money you received seem to compare in value in what you received in Slovak crown.
Much less Slightly less About the same Slightly more Much more DK

Can you please think about a time when you withdrew Euros from the bank.

7. How did the amount you withdrew compare with the amount you would have withdrawn in Slovak crown.
Always less Most often less About the same Most often more Always more DK

The next set of questions is about how you are familiarising yourself with the Euro currency.

8. When purchasing, do you count mentally: Always in Euro Most often in Euro As often in Euro as in SKK Always in SKK Most often in SKK
9. How often, if at all, do you convert Slovak crown to Euro and Euro to Slovak crown when doing your regular shopping? By regular shopping I mean when you buy bread, milk, tissues, toothpaste, soap and other products that you buy frequently.
Always Often Sometimes Rarely Never

10. How often, if at all, do you convert Slovak crown to Euro and Euro to Slovak crown when making a special purchase? By special purchase I mean when you buy a TV, DVD and other products-even car or house-that you do not buy frequently.

Always Often Sometimes Rarely Never Have not done so yet

11. Have you already learnt the prices of any regularly bought products in Euro? By regularly bought products I mean bread, milk, tissues, toothpaste, soap and other products that you buy frequently.

All of them Many of them Some of them Hardly any Non

12. How often, if at all, do you use the Euro prices of regularly bought products as a reference point to evaluate prices of other products?

Always Often Sometimes Rarely Never

13. Do you know the exchange value of specific Euro amounts? For example do you know approximately how much 5 Euro is in Slovak crown?

Yes [ANSWER] _____ No {go to Q13}

14. How did you get the result? (Do not give options)

Multiplied by 30 Multiplied by 30 +ADDED a little Recalled from memory
 Other [Record] _____

15. And how much is 100SKK in Euro?

Yes [ANSWER] _____ No {go to Q15}

16. How did you get the result? (do not give options)

Divided by 30 Divided by 30 and subtract a little Recalled from memory
 Other [Record] _____

17. If I asked you to describe your personal experience using the Euro nowadays, using one or more adjectives (descriptive words), what would you say? (Prompt: Are there any other?)

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

18. Here is an item which was priced in SKK, about how much should it be in Euros now, if the proper exchange rate is used?

4. White Bread 1kg 31.50SKK _____ €

How did you get the result? [Record] _____

5. DVD 499SKK _____ €

How did you get the result? [Record] _____

19. Here is an item priced in Euro, about how much should it be in Slovak crown at the fixed exchange rate?

4. Semi Skimmed Milk 1L €0.83 _____ SKK

How did you get the result? [Record] _____

5. Mobile phone €183 _____ SKK

How did you get the result? [Record] _____

Finally, I would like to ask you few personal questions.

20. How old are you?

15-17 18-24 25-29 30-39 40-49 50-59 60-64 65+

21. What is your highest completed education?

Basic College without final examination College with final examination (equivalent to
A levels) University Doctorate

22. How much is your annual gross income?

0-120 000SKK 120 001- 300 000SKK 300 001- 600 000SKK 600 001 SKK+

0-4 000€ 4 001- 10 000€ 10 001- 20 000€ 20 001 €+

Thank you, that is the end of this interview. Thank you very much for your help and time.

11.4 Questionnaire 3

Record

Gender Female Male

Region Trencin Bratislava

Thinking about the transition to the Euro, that we are currently going through can you please tell me.

1. How happy/unhappy are you, personally: that the Euro has become our currency?
Very happy Rather happy Neither happy/Unhappy Rather unhappy Very unhappy
2. Here is a statement: Slovak Republic lost a great deal of its identity by adopting Euro currency. How strongly do you agree/disagree with this statement?
Strongly agree Agree Neither agree/Disagree Disagree Strongly disagree
3. The use of the Euro instead of the Slovak Crown will probably make us feel more European than now?
Strongly agree Agree Neither agree/Disagree Disagree Strongly disagree
4. When the Euro coins and banknotes were introduced, do you personally think that prices increased during this changeover period?
Yes, prices in some categories increased Yes, all prices increased No, prices more or less stayed the same DN

Could you please think about the range of transactions in shops, etc that you have made since 1st January 2009?

5. How do you feel prices in Euros compare with those in Slovak crown?
More expensive in EUR Slightly more expensive in EUR About the same Slightly cheaper in EUR Much cheaper in EUR DK
6. Are you spending less/more money in Euros than you would have if you had been using Slovak crown?
Always less Most often less About the same Most often more Always more DK

The next set of questions is about how you are familiarising yourself with the Euro currency.

7. Today, when purchasing, do you count mentally:
Always in Euro Most often in Euro As often in Euro as in SKK Always in SKK
Most often in SKK
8. How often, if at all, do you convert Slovak crown to Euro and Euro to Slovak crown when doing your regular shopping? By regular shopping I mean when you buy bread, milk, tissues, toothpaste, soap and other products that you buy frequently.
Always Often Sometimes Rarely Never
9. How often, if at all, do you convert Slovak crown to Euro and Euro to Slovak crown when making a special purchase? By special purchase I mean when you buy a TV, DVD and other products-even car or house-that you do not buy frequently.
Always Often Sometimes Rarely Never Have not done so yet

10. Have you already learnt the prices of any regularly bought products in Euro? By regularly bought products I mean bread, milk, tissues, toothpaste, soap and other products that you buy frequently.

All of them Many of them Some of them Hardly any Non

11. Do you know the exchange value of specific Euro amounts? For example do you know approximately how much 5 Euro is in Slovak crown?

Yes No

Could you please tell me to what extent or if at all the following statements describe how you are today coping with the new value of the Euro currency:

12. I know the conversion rate and I use the exact or approximate conversion to evaluate prices.

Always Often Sometimes Rarely Never

13. I know some specific values for example how much 5,10,20 Euro is worth in Slovak crown and I use these values to evaluate prices.

Always Often Sometimes Rarely Never

14. I know some prices of regularly bought products and I use the remembered prices to evaluate prices.

Always Often Sometimes Rarely Never

15. I know the value of the Euro currency and I do not refer back to Slovak crown to evaluate prices.

Always Often Sometimes Rarely Never

16. If I asked you to describe your personal experience using the Euro nowadays, using one or more adjectives (descriptive words), what would you say?

(Prompt: Are there any other?)

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

17. Here is an item which was priced in SKK, about how much should it be in Euros now, if the proper exchange rate is used?

6. White Bread 1kg 31.50SKK _____ €
How did you get the result? [Record] _____

7. DVD 499SKK _____ €
How did you get the result? [Record] _____

18. Here is an item priced in Euro, about how much should it be in Slovak crown at the fixed exchange rate?

6. Semi Skimmed Milk 1L €0.83 _____ SKK
How did you get the result? [Record] _____

7. Mobile phone €183 _____ SKK
How did you get the result? [Record] _____

Finally, I would like to ask you few personal questions.

19. How old are you?

15-17 18-24 25-29 30-39 40-49 50-59 60-64 65+

20. What is your highest completed education?

Basic College without final examination College with final examination (equivalent to A levels) University Doctorate

21. How much is your annual gross income?

0-4 000€ 4 001- 10 000€ 10 001- 20 000€ 20 001 €+

0-120 000SKK 120 001- 300 000SKK 300 001- 600 000SKK 600 001 SKK+

Thank you, that is the end of this interview. Thank you very much for your help and time.

12 Appendix : Qualitative Study

12.1 Appendix C: Interview Schedule

Interview Schedule

Introduction

Hi. I am Jana from Middlesex University in London, studying the experiences of people when they change over to the Euro currency. By answering a few questions you can help us to understand better these experiences.

The aim of this research is to contribute to making the Euro changeover process as smooth as possible for everyone involved. Your opinions will help us to identify ways people can be supported with the changeover process in other countries.

Information provided will be treated confidentially and will be used only for the purposes of the research. The data will be analysed anonymously. The interview should last approximately 30 minutes and I would like to ask your permission to record the interview. Your answers will be anonymous in all documentations.

Please complete Part 1.

I am going to ask you to complete this short questionnaire.

Q1:

a) If I asked you to describe your personal experience using the Euro now, what would you say?

b) If I asked you to describe your personal experience using the Slovak crown, what would you say?

Q2:

a1) In general while making everyday purchases at the moment, can you tell me whether or not you personally are using a currency conversion approach (between SKK and Euro)- and , if so, which? By everyday purchases I mean bread, milk, toothpaste and other products that you buy frequently.

How much, if at all has the currency conversion approach which you are using now changed since the Euro introduction?

Not at all /Slightly/Moderately/Quite a bit/ Almost totally

a2) In general while making special purchases at the moment, can you tell me whether or not you personally are using a currency conversion approach (between SKK and Euro) - and , if so, which? By special purchases I mean when you buy a TV, DVD and other products-even car or house-that you do not buy frequently.

How much, if at all has the currency conversion approach which you are using now changed since the Euro introduction?

Not at all / Slightly / Moderately / Quite a bit / Almost totally

a3) I am going to ask you prices of some products. Can you please give me the answer in EUR. If you can give me the answer in EUR can you please give me the answer in Slovak crown.

A loaf of Bread _____€_____Skk One litre of Milk _____€_____Skk A Standard colour TV _____€_____Skk



Q3)

a1) 5 EUR about how much should it be in SKK, if the original exchange rate is used?

How did you get the result? _____

a2) 20 EUR about how much should it be in SKK, if the original exchange rate is used?

How did you get the result? _____

a3) 1.80 EUR about how much should it be in SKK, if the original exchange rate is used?

How did you get the result? _____

a4) 600 SKK about how much should it be in EUR, if the original exchange rate is used?

How did you get the result? _____

a5) 1 300SKK about how much should it be in EUR, if the original exchange rate is used?

How did you get the result? _____

Q4)

- a) In the last 2 years has there been any news or external event which may have affected your attitude towards the Euro currency?
Could you please tell me what are you thinking of?

Thank you for your time.

Part 1: Self completion Questionnaire:

Please indicate your response by tick-mark √.

Home Owner_____

Type of work_____

1. Gender

Female Male

2. Age

15-17 18-24 25-29 30-39 40-49 50-59 60-64 65+

3. Highest completed level of education

Basic College without final examination College with final examination (A levels)
University

4. Annual gross income

0-4 000€ 4 001- 10 000€ 10 001- 20 000€ 20 001 €+

5. Generally speaking, do you think that having the Euro is a good or bad thing for the country?

A good thing Neither good nor bad A bad thing DK

6. And for you personally, do you think that having the Euro is a good or bad thing?

A good thing Neither good nor bad A bad thing DK

7. How happy/unhappy are you, personally: that the Euro has become our currency?

Very happy Rather happy Undecided Rather unhappy Very unhappy

8. How easy/difficult it is for you to understand the value (the prices) in Euro.

Very easy Rather easy Neither easy nor difficult Rather difficult Very difficult
 DK

Thank you