The Structure of Consumer Confidence:
Comparisons Between the United States and Russia

Richard T. Curtin[1]
Director, Surveys of Consumers
University of Michigan

Introduction

Ordinary people strive to achieve a coherent interpretation of the economic events that directly influence their lives. Instead of the formal models used by economists, consumers utilize less formal strategies to interpret data, often rather simple rules of thumb. To be sure, consumers themselves recognize that these shortcuts are often imprecise, and it is well known that the use of such heuristics result in systematic bias. Moreover, compared with the comprehensive and systematic models of economists, people's economic beliefs are more fragmented than cohesive, and display internal inconsistencies more often than coherence. Despite these differences, the motivations of economists to form models and of ordinary people to form economic belief systems are the same: to draw inferences about the causes and implications of economic events. Ordinary people are not trying to act as economists, but they are interested in understanding how economic events will influence their own personal financial situation.

In comparison to the more than fifty years that consumer expectations has been monitored in the United States, similar efforts have only begun for the Russian economy. To some, such measures in transitional economies are both premature as well as unnecessary. Premature, since few consumers in a nationally representative sample would have the needed information and understanding to form economic expectations, and unnecessary, since few consumers would have the discretionary income to vary their spending or saving plans. Other observers have taken the opposite view, maintaining that consumer expectations have long been a vital part of the Russian economy, with consumers using economic information to their best advantage to skillfully negotiate both the formal and informal economies.

While the true lies somewhere between these two extremes, this paper will argue that the measurement of consumer sentiment among Russians is neither premature nor unnecessary. Indeed, the data will suggest that the structure of consumer sentiment measures are comparable in both the U.S. and Russia. While not identical, the factor structures share much more in common than might be expected. In part, this is because the questions are sufficiently general in scope, aimed at capturing the broad interactions between an individual's economic circumstance and conditions in the economy as a whole. The analysis is based on comparable questionnaire items asked in representative national samples of households in the U.S. and Russia from 1996 to 1999. The first part of the analysis focuses on the on similarities and differences in the latent structure of consumer confidence, defined by the inter-item correlations of the questions included in the Index of Consumer Sentiment.

Divergent structures could be expected due to differences in the economies, to differences in the availability and quality of information used to form economic expectations, and to the experience and skills required to effectively utilized the information. Convergence, on the other hand, may result from the ability of consumers to effectively utilize both informal as well as formal informational sources, and from the recognition of the interdependence of each individual's economic circumstance and conditions in the economy as a whole.

To be sure, due to the relative performances of the U.S. and Russian economies, there were substantial differences in the observed levels of consumer confidence in the two countries. Indeed, during the past several years, U.S. consumers have reported the highest levels of confidence recorded in the fifty-year history of the U.S. surveys. Rather than focusing on the differences in the overall mean levels of confidence, the analysis will investigate the cross-section variations around those means.

The second part of the analysis focuses in greater detail on the prevailing level of knowledge about ongoing economic developments among Russian consumers. In transitional and developing economies, population surveys that focus on economic issues such as expected trends in inflation, employment, or the overall rate of economic growth, often results in high proportions of "don't know" responses. The patterns of "don't know" responses was examined to determine the extent to which they reflect a generalized lack of knowledge about economic developments, reflect the relative costs and benefits of acquiring economic information, reflect the capacity of the respondent to understand and effectively utilize economic information, or reflect uncertainty about prospective economic developments. Finally, the paper examines the correspondence of measures of consumer confidence with purchase intentions to determine the usefulness of the data as an indicator of future economic trends in Russia.

Data Sources

The analysis of cross-country differences in people's economic expectations benefitted from the use of data based on similar survey methodology, including sample design, question wording, coding of replies, and analytic procedures. The U.S. surveys were conducted by the Survey Research Center at the University of Michigan. The Russian surveys were done under the direction of the CSI Russia Group, and the surveys were conducted by the All-Russia Center for the Study of Public Opinion (VCIOM). In each country, the samples were designed to provide nationally representative results, with the U.S. surveys conducted by telephone and the Russian surveys personal in-home interviews. This analysis focused on the questions used to construct the Index of Consumer Sentiment.

The Index of Consumer Sentiment (ICS) is a summary measure of consumer confidence based on the responses to five survey questions (see Table 1). Consumer confidence is typically conceptualized as an unobserved or latent variable. Common factor analysis will be utilized to determine whether the observed correlations among the five questions can be explained in terms of a single common unobserved factor, namely consumer confidence. The loadings of each of the survey variables on the common factors provide an estimate of each variable's contribution to the common dimension (more precisely, the square of the variable's loading is an estimate of its communality with the underlying dimension, and the sum of those squared loadings provide an estimate of the variance explained by that common factor).

Table 1: Questions in the Index of Consumer Sentiment

Current Personal Finances	We are interested in how people are getting along financially these days. Would you say that you (and your family) are better off or worse off financially than you were a year ago?
Expected Personal Finances	Now looking ahead--do you think that a year from now you (and your family) will be better off financially, or worse off, or just about the same as now?
One-year Economic Outlook	Now turning to business conditions in the country as a whole--do you think that during the next 12 months we'll have good times financially, or bad times or what?
Five-year Economic Outlook	Looking ahead, which would you say is more likely--that in the country as a whole we'll have continuous good times during the next five years or so, or that we will have periods of widespread unemployment or depression, or what?
Buying Conditions	About the big things people buy for their homes--such as furniture, a refrigerator, stove, television, and things like that. Generally speaking, do you think now is a good or a bad time for people to buy major household items?

The basic formula for the Index of Consumer Sentiment (ICS) is usually expressed in term of the observed sample proportions as follows:

$$ICS_t = \sum_{j=1}^{5}(P_{jt}^f - P_{jt}^u)100 + 100$$

where
P_t^f = the sample proportion giving favorable replies to the jth question at time t,
P_t^u = the sample proportion giving unfavorable replies to the jth question at time t.

Equivalently, the basic formula can be expressed in terms of the individual responses:

$$ICS_t = \sum_{j-1}^{5}\sum_{i=1}^{n}\frac{X_{ijt}}{n}(100) + 100$$

where
X_{ijt} = 1 if favorable response to j^{th} question by i^{th} respondent at time t,
X_{ijt} = -1 if unfavorable response to j^{th} question by i^{th} respondent at time t,
X_{ijt} = 0 if same or pro-con response to j^{th} question by i^{th} respondent at time t.

For the purposes of the analysis reported in this paper, each component question was scored according to the second formula. For the factor analyses, neither the components nor the overall index values were adjusted by 100, but this adjustment was made for the graphical displays. For the comparative analysis in the first part of the paper, respondents that replied they did not know how to respond were treated as missing data and eliminated from the analysis. This was done to remove differences in the frequency of such responses as a source of structural differences. The elimination of "don't know" responses is then examined in the second part of the paper.

**Structure of Consumer
Confidence Measures**

The inter-item correlations for the five index questions are shown in Table 2 for the time period from May 1996 to February 1998 (all of the correlations were significantly different from zero). Without exception, every pair of variables exhibited a higher correlation in the Russian data than in the U.S. Indeed, the inter-item correlations for the Russian data were about twice the size of the U.S. average. Remarkably, no inter-item correlation was below 0.30 for the Russian data, while just one of the correlations in the U.S. data was above that level.

TABLE 2. CORRELATIONS AMONG THE FIVE INDEX QUESTIONS, 1996-98

	Current Personal Finances		Expected Personal Finances		One-year Economic Outlook		Five-year Economic Outlook	
	US	RUS	US	RUS	US	RUS	US	RUS
Expected Personal Finances	.16	.52						
One-year Economic Outlook	.22	.36	.21	.44				
Five-year Economic Outlook	.17	.35	.14	.45	.47	.61		
Buying Conditions	.11	.34	.07	.32	.16	.30	.14	.31

Based on these correlations, a common factor analysis was performed for each country. The results indicated that one dominant common factor could best account for the observed correlations in each country. Chart 1 shows each variable's association with the single common factor (the details are given in the columns labeled cross-section analysis in Table 3). For the Russian data, the correlations of each variable with the common factor are high and remarkably similar, except for the variable measuring buying conditions. In contrast, for the U.S. data the loadings were uniformly lower, and the differences across variables much greater—the loadings for the two questions on the economic outlook were about twice the size of the other variables. The largest differences between the two countries were for the questions on personal finances, with the U.S. data indicating that these variables contributed less to defining consumer confidence than was the case for Russia. Overall, the data suggest that the five index questions are more closely and uniformly related to the common latent dimension of consumer confidence in Russia than in the U.S.

CHART 1: FACTOR ANALYSIS OF INDEX COMPONENTS FOR U.S. AND RUSSIAN DATA
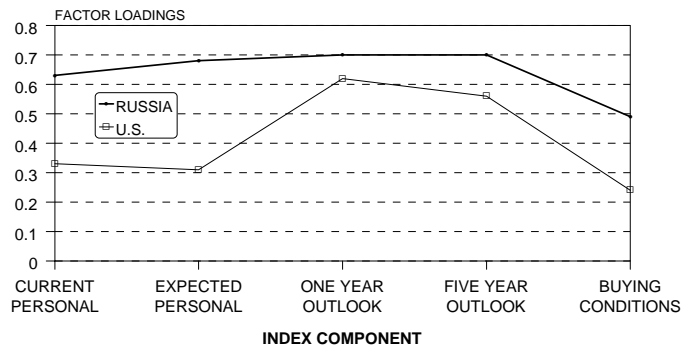
For the U.S. data, one additional analysis was possible due to the long time series of available measures, namely a time series factor analysis. A factor analysis of cross-section data, models the variance around the observed means, while a factor analysis of time-series data models the observed variance in the means over time.

Based on the last twenty years of monthly surveys, Table 3 also reports the results of a factor analysis of the time-series correlations of the means of the individual surveys. As with the cross-section analysis, one dominant dimension was able to capture the common variance. In contrast to the cross-section analysis, the correlations of each of the variables with the common factor were quite high and more uniform. Thus, while the questions on personal finances do not play as important a role in explaining the cross-section variance, they are as important as the other components in explaining the time-series.

TABLE 3: FACTOR ANALYSES OF FIVE SENTIMENT INDEX QUESTIONS

	Cross-section Analysis (1996 - 1998)		Time-series Analysis (1978 - 1999)
INDEX COMPONENTS	U. S.	Russia	U.S.
Current Personal Finances	.33	.63	.92
Expected Personal Finances	.31	.68	.86
One-year Economic Outlook	.62	.70	.96
Five-year Economic Outlook	.56	.70	.93
Buying Conditions	.24	.49	.85
Cases	8,097	10,065	---
Addenda: Correlation of factor score with ICS	.97	.99	.99

**Optimal Factor Scores and the
Index of Consumer Sentiment**

Factor analysis is not only widely used to determine the presence of a common underlying factor, it is also used to estimate how individuals score on that latent dimension.   The estimated factor index score is a linear combination of the component questions, with each question optimally weighted to reflect the extent of the question's contribution to the common underlying dimension. In contrast to this approach to optimal weighting, the Index of Consumer Sentiment is currently calculated by simply giving each question an equal weight.

While the results of the factor analyses indicate that differential weights are preferred in principle, in practice they do not make much difference. When an index based on the optimal weights derived from the factor analysis is correlated with the index as presently calculated, the correlations were 0.97 for the U.S. and 0.99 for the Russian cross-section data, and 0.99 for the U.S. time-series data. Clearly, there is little if anything to be gained by the use of differential weights. More importantly, the data confirm that the procedures currently used to calculate the entiment Index is quite robust in both countries.

**Differences in the Level
Of Economic Optimism**

The examination of differences in global measures, such as the Sentiment Index, often hide more than they reveal. More detailed and informative comparisons can be obtained from the individual Index components. Whereas little can be said of the relationship between age and the Index, much more can be said about the impact of age on personal finances, for example. Indeed, there are several reasons to expect that expectations vary systematically by age. For economists, the most important factor reflects the life-cycle pattern of income. Starting at low levels, income rises in the early stage, typically reaches a peak in late middle age, and falls in later life. The pattern of year-to-year change in income that produces such a profile reaches a peak much earlier in life, and then the rate of growth generally falls, at first slowly and then more rapidly. Given that the survey questions ask people to assess the yearly change in their finances, it can be expected that these assessments systematically differ by the age of the respondent. Younger respondents are expected to more frequently report that their finances had improved during the past year, and to more frequently expect improvements during the year ahead. As people age, the frequency of these favorable assessments of change will generally decline. Needless to say, the life-cycle hypothesis represents the expected income pattern under normal or equilibrium circumstances. To be sure, changes in economic conditions or government policies in any given period may provide relative advantages to the young or disadvantages to the old, or visa-versa.

Personal financial evaluations are also likely to be related to respondent's reported income level. In part, this reflects a sampling issue: in any given survey, those that report higher levels of income are also more likely to have experienced larger income gains during the prior year. This measurement problem is mainly limited to reports of past change, not future prospects for income change. More importantly, insofar as income serves as a proxy for education and work skills, prospective changes in finances may also be related to current income levels.

CHART 2a: CURRENT PERSONAL FINANCES BY AGE
(%BETTER - %WORSE + 100)
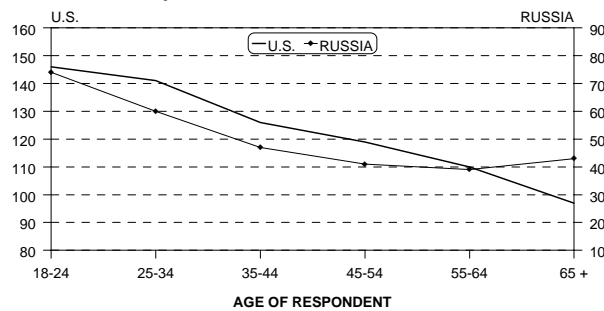
Chart 2b: CURRENT PERSONAL FINANCES BY INCOME
(%BETTER - %WORSE + 100)
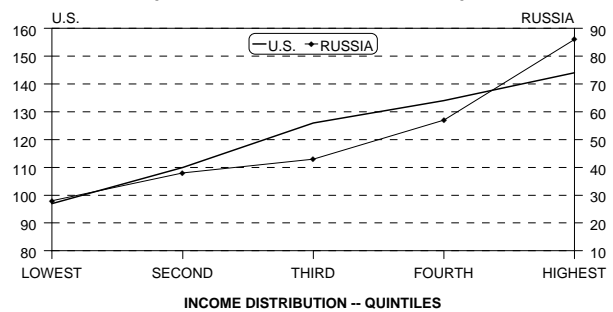
Before the results are discussed, several procedures used to construct the charts should be highlighted. Since the mean levels of responses differ substantially between the two countries, the data displayed on the charts use different axis values for the U.S. and Russia to make the overall means more comparable. The ranges displayed, however, were held constant so as to preserve the degree of variation across age and income subgroups. Thus, for example, in Chart 2 each country's data is displayed across an 80 Index-point range, with the U.S. data ranging from 80 to 160 while the Russian data range from index values of 10 to 90.

As expected, consumers' evaluations of recent changes in their personal financial situation declined along with age and increased with income (see Charts 2a and 2b). Although the slopes of the relationships for the United States and Russia were not identical, they were very close. The primary differences were in the oldest age group (with a greater falloff in favorable evaluations in the U.S. than in Russia), and in the highest income group (with a greater increase in favorable evaluations in Russia than in the U.S.). Overall, the similarities were much greater than the differences. Estimates of the correlations with consumers' evaluations, using the age and income categories shown in the charts, were very close in the U.S and Russia (see Table 4).

Table 4: Spearman Correlations of Index Questions with Age and Income

	Age		Income	
INDEX COMPONENTS	U.S.	Russia	U.S.	Russia
Current Personal Finances	-.23	-.16	.20	.31
Expected Personal Finances	-.31	-.23	.09	.20
One-year Economic Outlook	-.04	-.19	.14	.16
Five-year Economic Outlook	-.02	-.22	.15	.17
Buying Conditions	-.03	-.28	.07	.27

The same general correspondence was also true for consumers' evaluations of the change they expected in their financial situation during the year ahead—prospects fell along with age and rose with income (see charts 3a and 3b). Again the largest differences were among the oldest and top income subgroup, with the same type of divergences as in evaluations of past change—a sharper falloff in favorable prospects among those age 65 or older in the U.S. than in Russia, and a sharper increase in favorable prospects among those in the top income group in Russia than the U.S. While the negative age correlation for the U.S. (-.31) was larger than for Russia (-.23), the positive correlation with income was larger in Russia (.20) than in the U.S. (.09, see Table 4). Importantly, this difference must be treated with caution since in both cases nearly the entire difference in the correlation coefficients was due to the differences among the oldest age and highest income groups.

Chart 3a: EXPECTED PERSONAL FINANCES BY AGE
(%BETTER-%WORSE + 100)
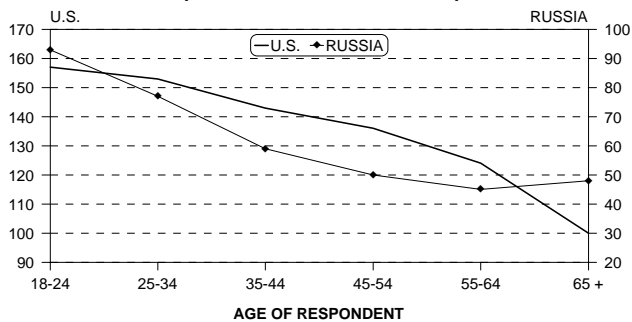
Chart 3b: EXPECTED PERSONAL FINANCES BY INCOME
(%BETTER - %WORSE + 100)
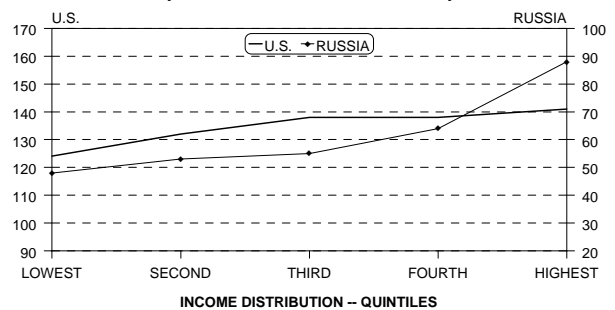
While some may look at these data and point toward the small differences between the United States and Russia, I found the similarities to be the much more noteworthy finding. The similarities in personal financial evaluations, however, were not fully replicated when the patterns
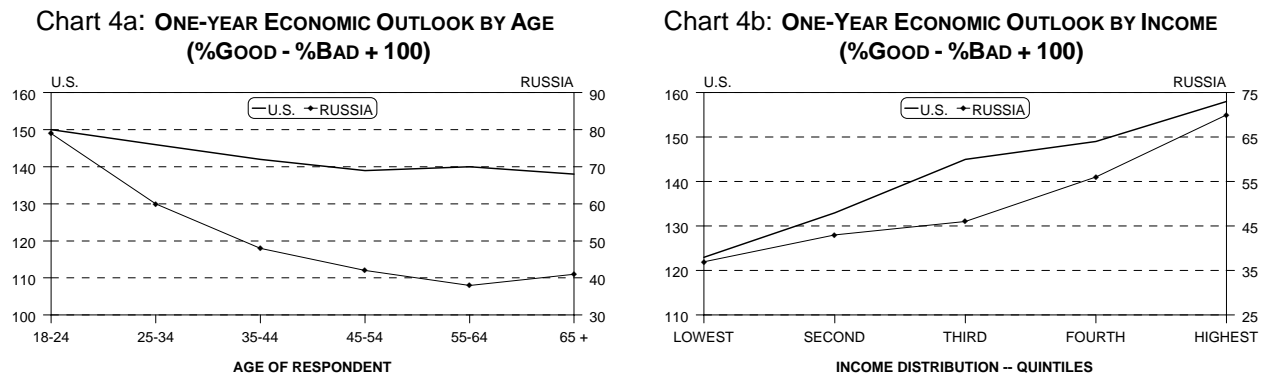
for the questions on the economic outlook and buying conditions were examined.

Expectations about prospects for the national economy and buying conditions, unlike personal finances, were not expected to systematically vary by the age of the respondent. These questions ask about conditions in the general economy, and it would seem reasonable to assume that the age of the respondent does not influence their perceptions of aggregate economic conditions. The view that these expectations would be totally unaffected by age, however, is unwarranted. Younger people generally have more formal education than their parent's generation, and may be more capable of interpreting and using information on aggregate economic conditions.

Older respondents, in contrast, have more experience, and those experiences are likely to influence how they interpret information about ongoing economic developments. The same comments hold true for variations across income groups. Insofar as income serves as a proxy for education, we might expect higher incomes to be related to greater ability to interpret economic information—and those higher incomes may also signal greater vested interest in doing so.

For the question on the economic outlook for the year ahead, there was a much larger negative relationship with age in the Russian data compared with the United States (see Charts 4a and 4b), indicating that younger Russian respondents expected a significantly more favorable economic outlook than older Russian respondents. This question showed very little variation across age groups in the U.S. data—a range from youngest to oldest of just 10 Index-points compared with the range of 40 Index-points for Russia.

In contrast to the differences in age patterns, data for both the United States and Russia showed a comparable range and pattern of variation across income subgroups, with favorable economic prospects rising along with income. Indeed, the Spearman correlation coefficients were nearly identical for the U.S. and Russia across income groups (.14 versus .16, see Table 4).

Chart 4a: **ONE-YEAR ECONOMIC OUTLOOK BY AGE**
(%GOOD - %BAD + 100)

Chart 4b: **ONE-YEAR ECONOMIC OUTLOOK BY INCOME**
**(%GOOD - %BAD + 100)**

The same general results were also found for the question on the economic outlook over the next five years (see Charts 5a and 5b). A sharp and consistent decline along with age in Russia, while the five-year outlook question showed little if any trend with age in the United States. For both countries, long term economic prospects were viewed more favorably as income increased in a similar fashion and to a similar extent.

Chart 5a: **FIVE-YEAR ECONOMIC OUTLOOK BY AGE**
(%GOOD - %BAD + 100)
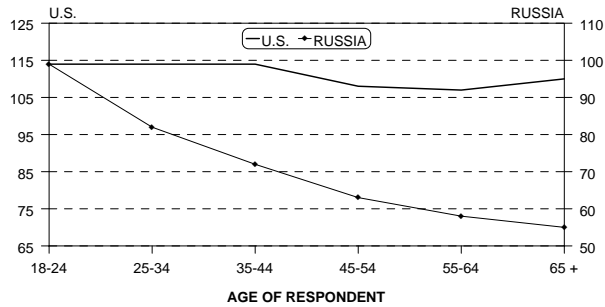
Chart 5b: **FIVE-YEAR ECONOMIC OUTLOOK BY INCOME**
**(%GOOD - %BAD + 100)**
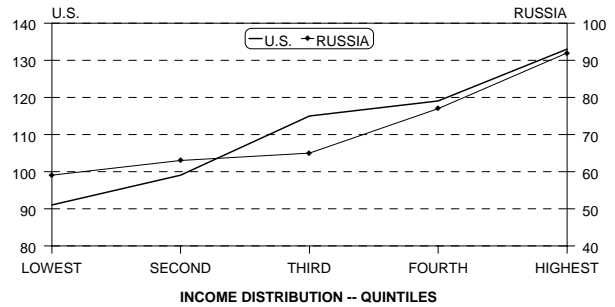
Of the five index components, the question on buying conditions was the only one that showed differences across both age and income subgroups (see Charts 6a and 6b). For the U.S. data, the buying conditions question showed very little variation across age subgroups, while for the Russian data favorable buying attitudes fell sharply as the age of the respondent increased.

The same difference was also observed across income subgroups. Very little variation was observed in the U.S. data across income groups (with the entire small difference at the lowest and highest income quintiles). In contrast, favorable attitudes toward buying conditions significantly increased with income in the data for Russia, with the gains especially sharp for the fourth and highest income quintiles.

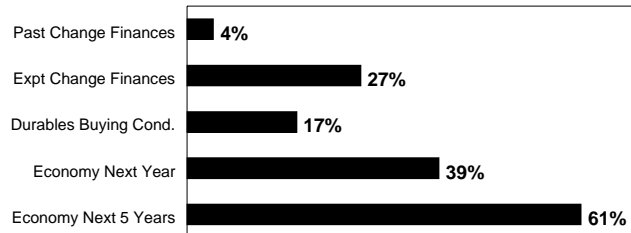Chart 6a: **BUYING CONDITIONS BY AGE**
(%GOOD - %BAD + 100)
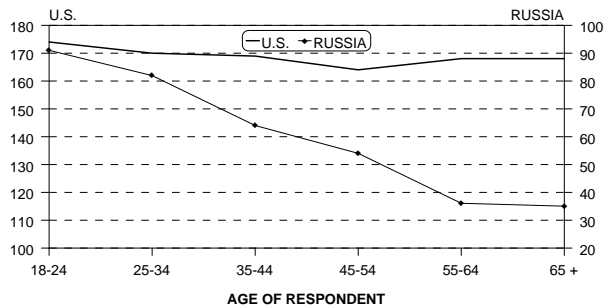
Chart 6b: **BUYING CONDITIONS BY INCOME**
(%GOOD - %BAD + 100)
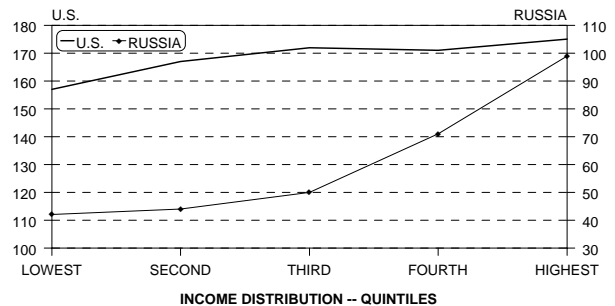
Impact of "Don't Know" Responses on Estimates

All of the preceding analysis examined the structure of consumers' economic beliefs and expectations excluding all cases with missing data. To be sure, the Russian data has a strikingly high frequency of "don't know" responses (see Chart 7). Only for the question on past change in personal finances was the level of missing data reasonably close to the American data.   For personal financial expectations, as well as business conditions, the level of missing data was quite large. The very

Chart 7: **FREQUENCY OF DON'T KNOW RESPONSES**

Past Change Finances	4%
Expt Change Finances	27%
Durables Buying Cond.	17%
Economy Next Year	39%
Economy Next 5 Years	61%

high frequency of missing data can hardly be ignored nor simply eliminated from analysis.

The question-by-question prevalence of "don't know" responses is somewhat misleading in that it gives the impression that such replies may dominate the responses for most individual respondents. In fact, respondents on average recorded just 1.48 "don't know" responses to the five questions, and for 54% of the respondents, "don't know" responses were recorded on no more than one of the five questions, and 78% of the cases the missing data was limited to just two of the five questions (see Chart 8).

Chart 8: **DISTRIBUTION OF DON'T KNOW RESPONSES**

Number of Questions with "Don't Know" Responses
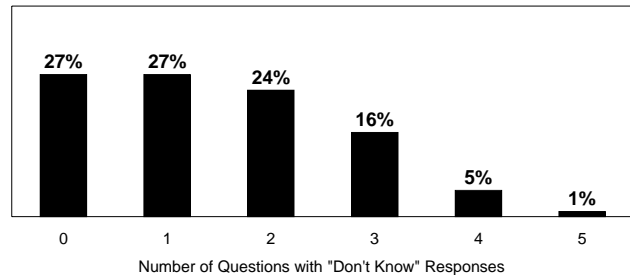
It is important to clearly define what I will refer to as "don't know" responses. I will use this term as a generic label to cover the numerous ways of expressing answers of "I don't know," "That's too difficult to answer," "I'm not sure," "It's too hard to say," and so forth. Unfortunately, separate codes were not included for other types of non-responses, most typically refusals to answer particular questions, but also incorrectly skipped questions, illegible or otherwise incorrectly marked responses. Whenever it was possible to identify such responses, they were excluded from the "don't know" category. As a result, it would seem a reasonable assumption that the estimated number of "don't know" replies are somewhat larger than they would have been if these other types of non-responses were eliminated from this category. Typically, the proportion of these other kinds of non-responses for the type of questions included in this analysis are quite small—only a few percentage points at most in the American survey. In contrast, on more sensitive questions such as the amount of household income the proportion refusing to answer may be quite a bit higher.

"Don't know" responses can arise from a number of different factors. I will emphasize two classes of factors for this analysis. The first represents the lack of understanding or insufficient knowledge about the topic of the question. The second focuses on uncertainty about future economic prospects. The lack of understanding or knowledge about the question's topic is perhaps the most widely held interpretation of "don't know" responses. In contrast, the second interpretation presumes that the respondent possesses at least some relevant knowledge and information about the question's topic, but the respondent judges the likelihood of one or the other outcomes—such as economic conditions becoming better or worse—as too uncertain to provide a definite answer. Uncertainty about future economic developments has many of the same characteristics as pessimism in that it acts to discourage spending. The crucial differences between the two types of "don't know" responses involves the amount of usable information they contain. If the "don't know" response arose purely from the lack of understanding, it would provide no useful information on which to base forecasts of consumer spending, while "don't know" responses that reflect uncertainty would provide important information about how the individual perceives their own economic prospects and would influence their future spending plans. While the available data provides no ready means to identify each respondent's rationale for replying "don't know," the data does permit an indirect test.

Under the first hypothesis, "don't know" responses would be expected to have no systematic impact on buying decisions since they contain no predictive information as to whether the respondent plans to make a major purchase. In contrast, under the hypothesis that "don't know" responses represent uncertainty about future economic developments, we would expect such

responses to be related to the curtailment of spending.

To test these hypotheses, data on purchase plans was utilized. Each respondent was asked about his/her plans to make major purchases during the following few months. This variable was scored one if a purchase was intended, and zero otherwise. Logistic regressions were then estimated to test whether the prevalence of "don't know" responses had a significant negative impact on spending plans. All regressions included control variables that would be expected to be related to the presence or absence of spending plans, as well as the presence or absence of "don't know" responses. The objective of the empirical test is to determine whether "don't know" responses had a significant impact on purchase plans after taking account of each of these other variables. A significant impact on spending plans would indicate that the "don't know" responses contain some valuable information rather than simply representing randomly distributed "missing data."

Household income and wealth proxies displayed a strong positive relationship to the likelihood of expressing plans for major purchases (see Equation 1, Table 5). As expected older respondents less frequently reported major purchase plans than younger respondents. Interestingly, residents of Moscow and St. Petersburg were less likely to plan purchases, and rural residents were more likely than residents of other cities and towns. Respondents who were working at the time of the interview were significantly more likely to have planned purchases. Having a private sector employer was associated with significantly higher probability of having purchase plans.

It is also of importance to note that the respondent's score on the Index of Consumer Sentiment also had a positive and significant impact on purchase plans. Respondents who reported greater optimism were also more likely to plan major purchases over and above the impact of the household's demographic and economic characteristics. It is important to note that the Index variable was constructed using the missing data, with the "don't know" responses to any question being scored zero.

The second equation includes a proxy variable defined as the number of "don't know" responses to the five index questions. This proxy measure points toward the conclusion that uncertainty acts to significantly lower the probability of planning major purchases even after taking account of the household's economic and demographic characteristics. Importantly, the r-square is slightly higher than for the first equation that omits the uncertainty proxy.

In order to more closely examine the relationship between consumer optimism and uncertainty, a new consumer sentiment index was constructed by taking the difference between "better" replies and the sum of "worse" and "don't know" responses to the five questions. Designated by the label "Uncertainty Consumer Sentiment Index," this variable has a highly significant impact on purchase plans, with an r-square equal to the prior equation. It should be clear that the purpose of this analysis was not to devise a new method to calculate the Consumer Sentiment Index. The intent was to examine the information content of "don't know" responses, and toward that end the analysis indicated that the information contained in "don't know" responses is nearly identical to the information content of "worse" responses.

Table 5
Logistic Regression Analysis of Proportion Planning Major Purchase

Variables	Categories	Dependent Variable: Plan Major Purchase		
		(1)	(2)	(3)
Education	No secondary certificate	-.037***	-.039***	-.039***
	Technical School or above	.057***	.050***	.052***
Income	Bottom 20%	-.048***	-.045***	-.044***
	Top 20%	.120***	.113***	.111***
Durables owned	Number owned	.186***	.175***	.174***
Own dacha/plot	Whether own	.030***	.028**	.029***
Age	Under 30	.104***	.105***	.102***
	55 or older	-.066***	-.064***	-.062***
Location	Moscow/St. Petersburg	-.020*	-.025**	-.024**
	Rural area	.054***	.058***	.057***
R work status	Working	.100***	.100***	.101***
Occupation	Manager; head of subdivision	.005	.003	.003
Industry	Private enterprise	.024**	.024**	.023**
Sex of R	Female	.071***	.081***	.080***
Family size	Total number of persons	.039***	.037***	.038***
Number of workers	Total number of workers	.020	.021	.022
Marital status of R	Not married	-.061***	-.061***	-.061***
Consumer Sentiment	Index value	.136***	.165***	
ICS "Don't Know" Sum	Sum of "Don't Know" to Index Questions		-.135***	
"Uncertainty" ICS	Index value with "Don't Know" = "Worse"			.187***
R-Squared (pseudo)		.142	.150	.150
Cases		16,501	16,501	16,501

Note: Time period was from March 1997 to July 1998. Table entries are standardized regression coefficients.
Significance levels: ***=<.01   **=<.05   *=<.10

It is important to note that this finding does not mean that all of the information contained in "don't know" responses is meaningful. What it does indicate is that there is ample reason to separate two components of "don't know" responses. First, the prevailing level of knowledge about the economy acts to set a minimum level for such responses, and that minimum may well be a substantial share of the prevailing levels of "don't know" responses. Second, it must be recognized that the lack of knowledge about the economy is not cyclical but a more stable characteristic of the population—stable at least in the sense that it does not vary over the relatively short periods of time between surveys. On the other hand, uncertainty about potential future economic prospects does vary, even over quite short time periods, depending on ongoing developments. It is in this variation about the mean levels that the cross-section analysis found the relative frequencies of "don't know" responses to contain important additional information.

It is always useful to determine whether findings derived from cross-section analysis can be replicated at the time-series level. The difference is more than simply the level of aggregation, since cross-section analysis focuses on the variance around the sample means and time-series analysis focuses on the variance of the sample means over time. While the relatively small number of surveys can not provide a robust statistical test, it can provide some indication about the relationship. Chart 9 shows the time trends in the sums of "better," "worse," and "don't know" responses to the five index questions for the surveys conducted from May of 1996 to July of 1999.

CHART 9: **TRENDS IN SAMPLE MEANS OF "BETTER," "WORSE," AND "DON'T KNOW" RESPONSES**
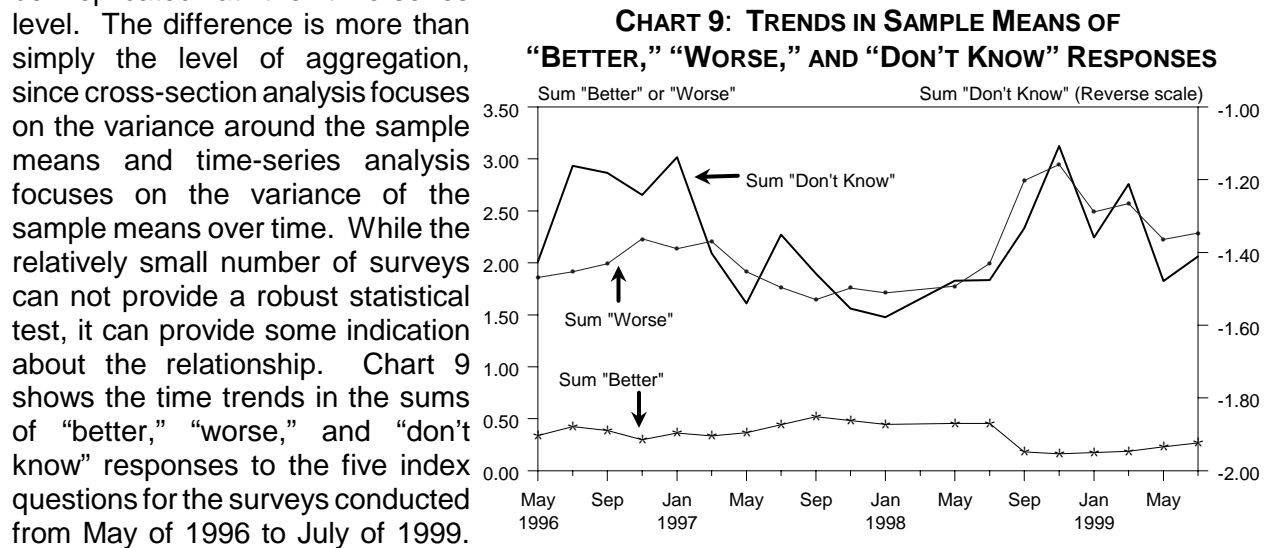
Thus, the trend data covers a much longer period of time than the cross-section analysis, extending both backward and forward by about an additional year. I should note that the three variables do not represent 100% of the response distribution, since the middle response category is omitted from the chart.

The scale for the "don't know" response variable was reversed, so that when "don't know" responses fall, the line rises. As can be clearly seen from the figure, there is a rather close correspondence between the sums of "worse" responses and "don't know" responses, indicating that as "worse" responses rise, "don't know" responses fall. The trend data thus also provide support for the hypothesis that "don't know" responses contain a significant cyclical trend, and it is this trend variation that provides the predictive ability of these responses. Overall, the data seem to suggest shifts into and out of the "worse" categories were mirrored not by corresponding shifts in "better" responses but rather mirrored by shifts in "don't knows." It appears that the main source of variation during this period was between knowing economic conditions would worsen and not being sure whether they would worsen!

Conclusions

The analysis of the structure of consumer confidence indicated that there are many more similarities than differences between the U.S. and Russia. While the hypothesis that the structures are identical clearly cannot be accepted, the data provide strong evidence against the hypothesis that the overall structures are unrelated. Given that the same approach has been used successfully in more than three dozen other countries, it should be no surprise that the underlying dimension captured by these questions is sufficiently general so as to span differences in the stage of economic development, differences in economic organizations, the availability of official information, the role of government tax and income support programs, and differences in cultures.

In some ways, the analysis indicated that the approach yielded more desirable statistical properties in Russia than the U.S. For example, the five index components had higher inter-item correlations in the Russian data than in the U.S. cross-section data. As a consequence, the factor analyses indicated that the five Index components captured the underlying dimension of consumer confidence to a greater extent in the Russian data than for the U.S.

The factor analyses indicated that the primary common factor was highly correlated with the Index of Consumer Sentiment as presently calculated. While the statistically derived optimal weights based on the factor analysis may be preferred in principle, in practice, the equal weights given to each question yielded nearly identical results. With little if anything to be gained from a revision, there is little reason to depart from the clear and straightforward approach now used. The same results have been obtained in a number of other countries, with the same conclusion to maintain an equal weighted Index.

The analysis of the levels of optimism or pessimism across age and income subgroups indicated a remarkable degree of consistency between the U.S. and Russia. Except for the question on buying conditions, the U.S. and Russian profile across income groups were all quite similar. The largest differences were across age groups. For Russia, the data indicated a significant age relationship with all five components. For the U.S., the questions on the outlook for the economy and buying conditions showed little if any relationship with age. While the age relationship was expected based on theory for the personal finance questions, there is less reason to expect it for the questions on the outlook for the economy or buying conditions. It is likely, however, that for the Russian data the age relationship also reflects other factors. In response to the economic transition, it is likely that younger respondents are the most able to change, while older Russians are more likely to resist, especially those near or in retirement. Such resistance is also likely to be reflected in negative attitudes about prospects for the national economy.

These findings were based on data that excluded any cases with "don't know" responses. These findings, however, would not have been changed even if the analysis had included these cases. In a separate analysis, when cases with "don't knows" were included, neither the factor analysis nor any of the subgroup findings were changed.

The exclusion of the "don't know" responses was not neutral, however. Indeed, "don't know" responses were likely to show the same characteristics as negative replies. Thus, it was incorrect to either eliminate the responses or to incorporating them as neutral or pro-con replies. Rather, it appeared to be more consistent to treat the "don't knows" as negative replies. This would imply that the high levels of "don't know" responses primarily reflect uncertainty about future

economic prospects, rather than a lack of understanding and knowledge about future economic events. While such a result is not unlikely, it is unfortunate that it was not possible for the analysis to more precisely estimate the portion of "don't know" responses that reflect uncertainty, and the portion that reflects a lack of knowledge or understanding. Such a decomposition would have allowed us to disentangle the influence of uncertainty versus knowledge.

Finally, while this analysis can not prove the existence of an economic belief system, the data presented give the overall impression that residents of the U.S. and Russia do strive to achieve a coherent interpretation of the economic events that directly influence their lives.