

Family Adjustments to Large Scale Financial Crises  
*US and Malaysian Cases*

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# CASE 1: 2000/2001 US Recession

## **Introduction:**

The 1990s were an unparalleled period of growth in American history. Many internet companies were founded during this time. The spread of information technology throughout the economy created both real growth and a speculative bubble in the economy. While the IT effect on growth was real, it was hard to see using traditional measures. Robert Solow, a prominent American economist, seemed reluctant to hop on the IT bandwagon in the 1990s when he said, "You can see the computer age everywhere but in the productivity statistics." Hence, this is sometimes referred to as the "Solow computer paradox," but more popularly as the "productivity paradox." It was widely believed at the time that information technology boosted productivity in the workplace; however, methods of growth accounting<sup>1</sup> did not show this. The 1990s were accompanied by rapidly increasing stock prices, extensive growth in the investment sector, and general market confidence in return on investments. In addition, wages rose for both skilled and unskilled workers. Alan Greenspan, the Chairman of the Federal Reserve at the time, described this period as "a time of irrational exuberance." The subsequent fall of the speculative dot-com bubble, stock market crash, collapse in business expenditure and investments, and the 9/11 attacks, brought the decade of growth to an end. The recession lasted for 11 months: from Nov 2000 – Oct 2001. Unemployment peaked at 6.3% and the GDP decline (peak to trough) was roughly -0.3% (Kliesen, 2003).

## **Procedure:**

For this project, I will use the University of Michigan's PSID (Panel Study of Income Dynamics). This is a database that collects microeconomic data on a wide array of information in the form of both individual and household surveys. I will use family data for this project, which includes figures for all members of the family unit according to the head of the household. I analyze changes in American consumption behavior between 1999 (pre-recession) and 2001 (recession). Since it's impossible to analyze all types of consumption, I will choose a category that is representative of general consumption: food consumption. In a recent paper, Jonathan Skinner shows, using the consumer expenditure surveys (CEX) for 1972-1973, that there is a strong positive correlation between food expenditure and consumption ( $R^2 = 0.262$ ). Using a log-linear regression model, the  $R^2$  value increases to 0.395. Hence, food consumption will serve as a good proxy for total consumption.

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<sup>1</sup> Growth accounting was introduced by Robert Solow in 1957 as a way to indirectly measure the effect of increased productivity (due to technological advancement) on total output growth (Solow).

I will create a balanced panel between 1999 and 2001, analyzing changes in total money spent on food. This total will be comprised of food eaten at home, as well as food eaten out. I used the PSID's family cross-sectional weight data in my analysis to allow for the fact that certain groups of individuals are over or underrepresented relative to the U.S. population. Since my goal was to characterize transitions of a national sample of families, I excluded some observations which were not a part of the national sample. I also excluded families that used food stamps, refused to answer, or had a total income of 0 in either of the given years. However, I did include families that reported a net loss in either year. I averaged the total family income between 1998 and 2002. I used the consumer price index values for all urban consumers (CPI-U) on BLS.gov in order to adjust for inflation, using 2002 as my base year. Then, I divided the income data into tertiles, and assigned values of "1" if the family's income was in the lower tertile (low-income), "2" for the middle tertile (middle-income), and "3" for the upper tertile (high-income).

To analyze changes in consumption between 1999 (pre-recession) and 2001 (recession/post-recession), I collected data on food expenditure from the PSID. The PSID has data available for cost of food eaten at home, as well as cost of food eaten out. Some families reported their costs weekly, while others reported daily, monthly, or yearly costs. Hence, for comparative purposes, it was important for me to normalize all the data. I converted each family's reported costs into annual costs (adjusted to 2002 dollars). Next, I computed the total cost of food per year for each family in 1999 and 2001 by summing the annual cost of food at home and the annual cost of food eaten out.

### **Data Analysis:**

I performed two-sample t-tests to assess the equality of the mean values in 1999 versus 2001. For each income level, I compared different categories of food spending in 1999 and 2001 to see whether the changes in spending were significant. I also performed an F-Test to assess the equality of variances for the different categories of food spending in 1999 vs. 2001 for each income level.

TABLE 1: Average Reported Annual Cost of Food eaten at home and out of the house for families of different income levels, 1999-2002

		1999	2001
<b>Low income</b>	<b>Home</b>	\$3440.12 (71.4%)	\$3409.71 (70.3%)
	<b>Out</b>	\$1380.11 (28.6%)	\$1443.82 (29.7%)
	<b>Total</b>	\$4,820.23	\$4,853.53
<b>Middle income</b>	<b>Home*</b>	\$4317.03 (70.4%)	\$4470.69 (70%)
	<b>Out*</b>	\$1818.18 (29.6%)	\$1916.36 (30%)
	<b>Total**</b>	\$6,135.21	\$6,387.05
<b>High income</b>	<b>Home</b>	\$5748.31 (67.7%)	\$5703 (66.2%)
	<b>Out*</b>	\$2737.41 (32.3%)	\$2907.34 (33.8%)
	<b>Total</b>	\$8,485.72	\$8,610.34

*\*Difference of means rejected at 10% significance level*

*\*\*Difference of means rejected at 5% significance level*

These findings are peculiar because I would have expected consumption to decrease across all income levels during 2001, as this was the year of the recession. (Note that inflation is not a factor in the explanation here, since all dollars were converted to 2002 dollars.) The results show significant increases in food expenditure for middle income families, as well as a significant increase in food eaten away from home for high income families. From Table 2, you can see that high income families showed the greatest increase of 1.5% in food expenditure away from home (as a share of total food expenditure). Middle income families demonstrated a 0.4% increase in food expenditure away from home as a percentage of total spending on food. Interestingly, high income families did not show a significant change in money spent on food at home, while middle income families showed a significant increase in food expenditure at home. This is probably because middle and high income families have different price and income elasticities of demand. Low income families did not show a significant change in food consumption. Next, I will consider the change in the spending on food eaten away from home as a percentage of total food expenditure for each year (using mean values). Eating out should have higher price elasticity than eating at home since it is more expensive to eat out. Hence, it should be a good measure of consumer behavior during times of financial stress.

TABLE 2: Average Cost of food eaten out as a percentage of Total Cost of Food for different income levels in 1999 versus 2001<sup>2</sup>

INCOME	Year	
	1999	2001
Low	28.6	29.7
Middle	29.6	30
High	32.3	33.8

TABLE 3: Annual reported cost of food eaten at home, food eaten out, and total spending on food in 1999 and 2001 for average US families of different income classes<sup>3</sup>

		Year	
		1999	2001
Avg. US family	Home	\$4433.49	\$4440.19
	Out	\$2074.77	\$2186.22
	Total	\$6508.26	\$6626.42
Avg. Low income family	Home	\$3210.16	\$3206.99
	Out	\$1400.22	\$1468.00
	Total	\$4610.38	\$4674.99
Avg. Middle income family	Home	\$4230.45	\$4338.67
	Out	\$1869.10	\$1986.75
	Total	\$6099.56	\$6325.42
Avg. High income family	Home	\$5750.43	\$5675.96
	Out	\$2884.37	\$3030.85
	Total	\$8634.80	\$8706.82

<sup>2</sup> For low income families, differences in food expenditure away from home between 1999 and 2001 were not statistically significant.

<sup>3</sup> All dollar amounts are adjusted to 2002 dollars (see CPI-U on BLS.gov). Also, I used family cross-sectional weight data from the PSID in order to create this table.

TABLE 4: Cost of food eaten out as a percentage of Total Cost of Food for average US families of different income classes, 1999-2001<sup>4</sup>

	1999	2001
<b>Avg. US family</b>	31.88%	33%
<b>Avg. Low income family</b>	30.37%	31.40%
<b>Avg. Middle income family</b>	30.64%	31.41%
<b>Avg. High income family</b>	33.40%	34.81%

Table 2 shows that, on average, all income groups spent more money eating out as a fraction of total food expenditure in 2001 versus 1999. However, it is important to keep in mind that only differences for middle and high income families were observed to be statistically significant. Table 3 was created using family cross-sectional weights in order to compute weighted averages for families across different income classes. This was important in order to form an image of the behavior of the average American family of a particular income class. In other words, this is the family which is representative of the national sample of families from a particular income class. Table 4 was created by using Table 3.

These results are contrary to what I expected on two different levels. First, the results show that the average American family increased spending on food both at home and away from home in 2001 versus 1999. There appears to be a general drift toward higher spending on food away from home as a share of the food budget. Table 4 shows that the amount spent on food away from home increased by 1.12% for the average American family in 2001 versus 1999. I will assume that food expenditure away from home and general consumption have a high  $R^2$  value, since both have comparable price and income elasticities of demand (Skinner, 1987). Under this assumption, the results show that general consumption increased in 2001, which is contrary to what one would expect during a recession.

Second, in accordance with their price and income elasticities of demand, low income families should be more sensitive to price and income changes than higher income families. Hence, they should be the most hindered by the financial stress of the recession. Using similar reasoning, if there is an increase in general consumption, low income families should display the *smallest* increase since they are least able to afford higher spending. The results do not support this. If you consider Tables 2 and 4, you will see that middle income families showed a smaller increase in

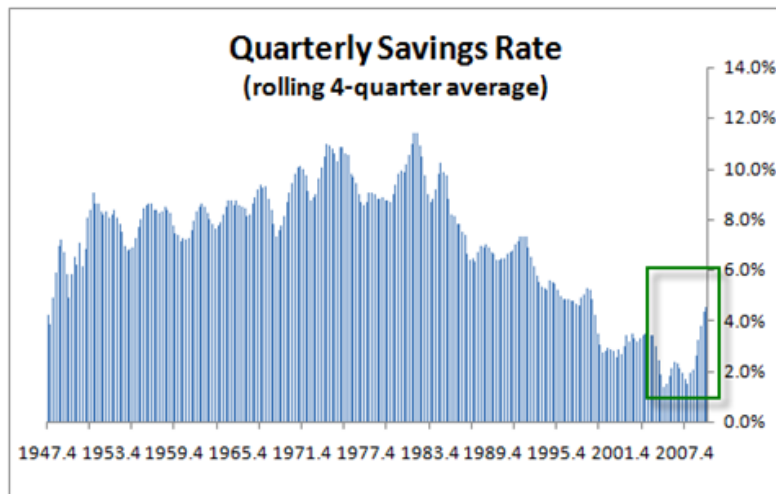
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<sup>4</sup> Used Table 7 to construct Table 8 by dividing money spent on food away from home by total food expenditure.



spending on food away from home than low income families in 2001 versus 1999. From Table 2, we see that middle income families increased their share of spending on food away from home by 0.4%, while low income families showed a 1.1% increase. However, this result is not very strong, since the 1.1% increase for low income families is not statistically significant. From Table 4, you can see the *average* middle income family increased their share of spending on food away from home by 0.77%, while the *average* low income family increased their share of spending on food away from home by 1.03%. In order to try and explain these findings, I will examine changes in the national savings rate during the same period.

Figure 1: *Savings Rates from 1947-2007*<sup>5</sup>



As you can see from Figure 1, the savings rate started decreasing around 1980, and continued to follow a downward trend through the early 2000s. One possible explanation for why the savings rate declined throughout the prosperous 1990s is the wealth effect. People were receiving high returns on their investments, particularly in the stock market, and therefore perceived themselves to be richer – leading to more spending and less saving. This is most likely why Greenspan characterized the behavior during this period as being “irrational.” Thus, even though income may have decreased during the recession, a larger decrease in savings may have actually encouraged an increase in consumption, despite the recession. However, the problem with this explanation is that it assumes that all families at all income levels own checking or savings accounts and are equally affected by changes in the savings rate. As Adam Bowman noted, 20%

<sup>5</sup> This explanation was reached by collaborating with Adam Bowman, a peer at the University of Michigan who performed a study examining the Savings Accounts from 2003 to 2007.

of US families do not own checking or savings accounts. It is likely that a considerable portion of the low income families that I analyzed fall under this 20%. However, my results show that even the low income group increased consumption during the recession. In fact, as I noted earlier, the low income group actually demonstrated a greater increase in their share of spending on food eaten away from home than the middle income group. This completely contradicts what one would expect, considering middle income families are more likely to own checking/saving accounts than low income families. One possible explanation can be seen from an investment standpoint. Middle income families were more likely to invest their money in stocks, bonds, mutual funds, and other savings vehicles than low income families. Most of these investment sectors suffered losses during the recession. Hence, perhaps losses in these other savings areas for middle income families offset the increase in consumption that one would anticipate from a drop in the savings rate. Next, I will consider changes in consumer confidence during the time period (Figures 2 and 3).

Figure 2: *US Consumer Confidence from 1978-2008 (from the University of Michigan's Consumer Sentiment Index)*

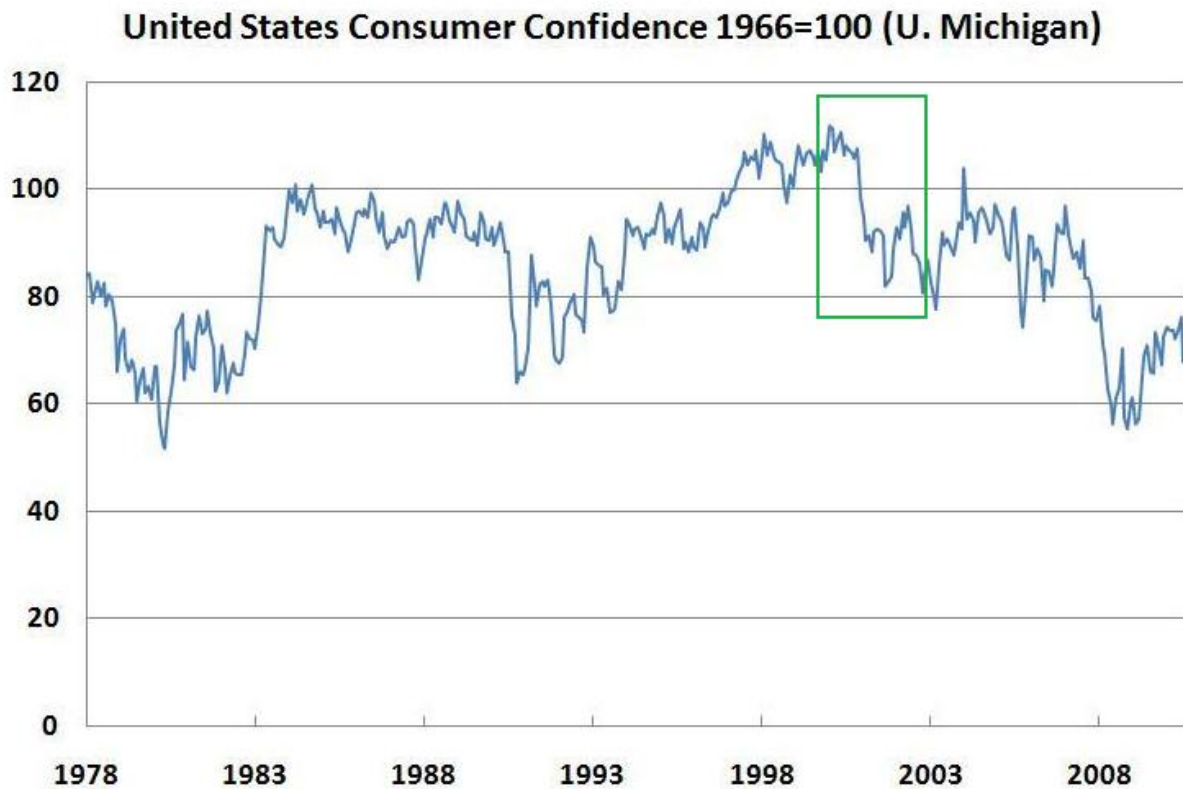
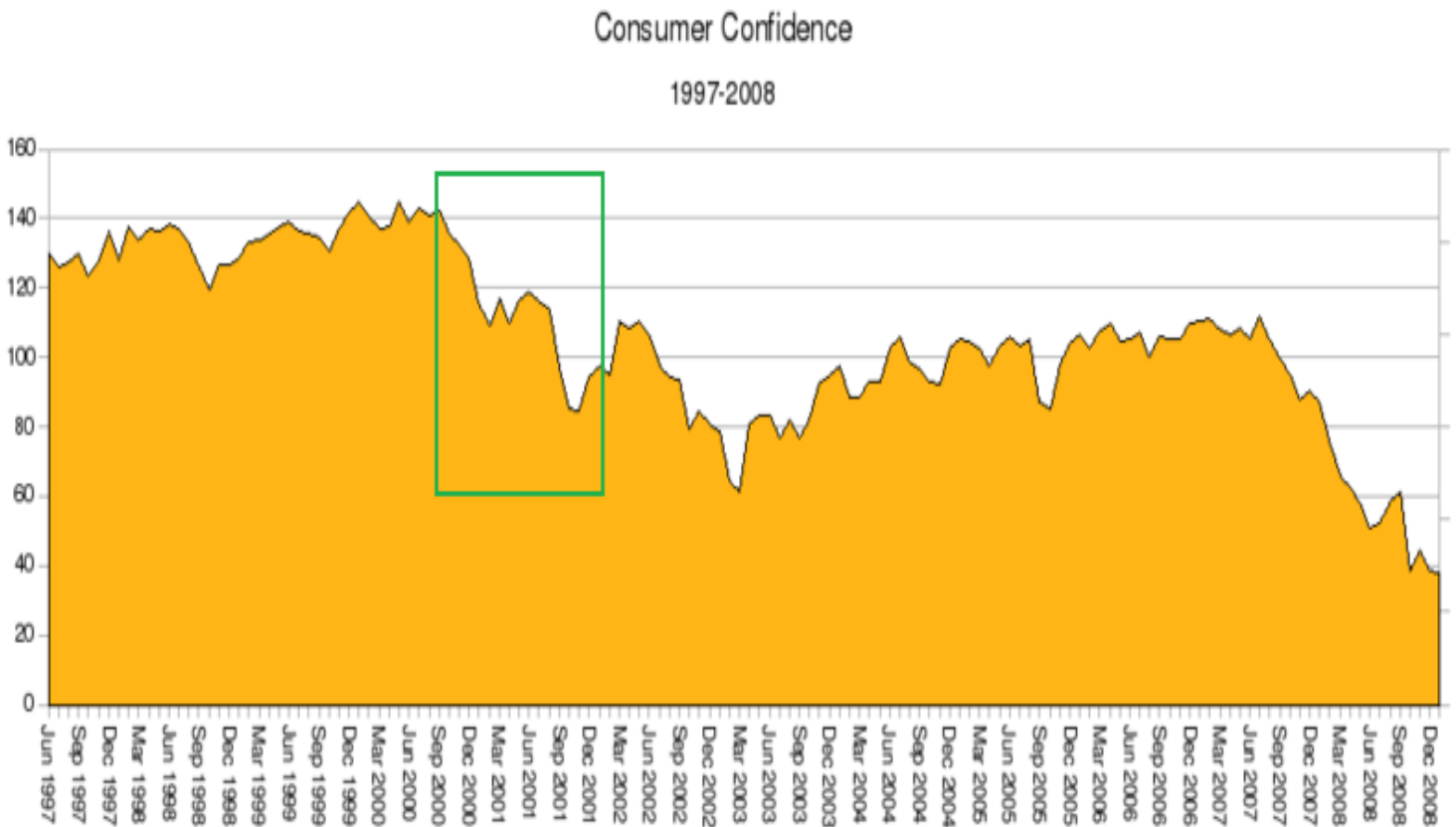


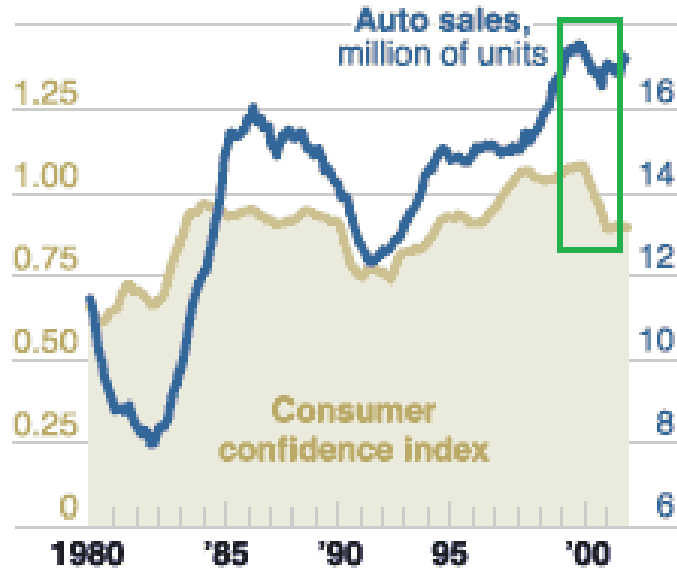
Figure 3: *The Conference Board Consumer Confidence Index from June 1997 to December 2008*



The University of Michigan’s Index of Consumer Sentiment (Figure 2) is published monthly, and is based on a nationally representative survey conducted through phone interviews (“Consumer Confidence Index,” 2010). The Conference Board (Figure 3) is an independent economic research organization that also publishes monthly reports of consumer confidence which are based on surveys of 5000 households. As you can see from Figures 2 and 3, both sources show that US consumer confidence fell drastically between 1999 and 2001. How can this be interpreted in light of the data, which shows increased food expenditure away from home (as a share of total spending on food)? One possible explanation is that the effects of decreased savings outweighed the effects of decreased consumer confidence, hence increasing consumption. From Figures 1-3, you can see that declining consumer confidence does not seem to affect the continual decline of savings. A second explanation is that food consumption is only an adequate representation of the general consumption of non-durable goods. The other side of the picture is the consumption of durable goods. The results in Figures 2 and 3 support the notion that changes in consumer confidence don’t have a significant impact on non-durable goods such as food. To analyze the effect of the recession on the willingness for US consumers to purchase

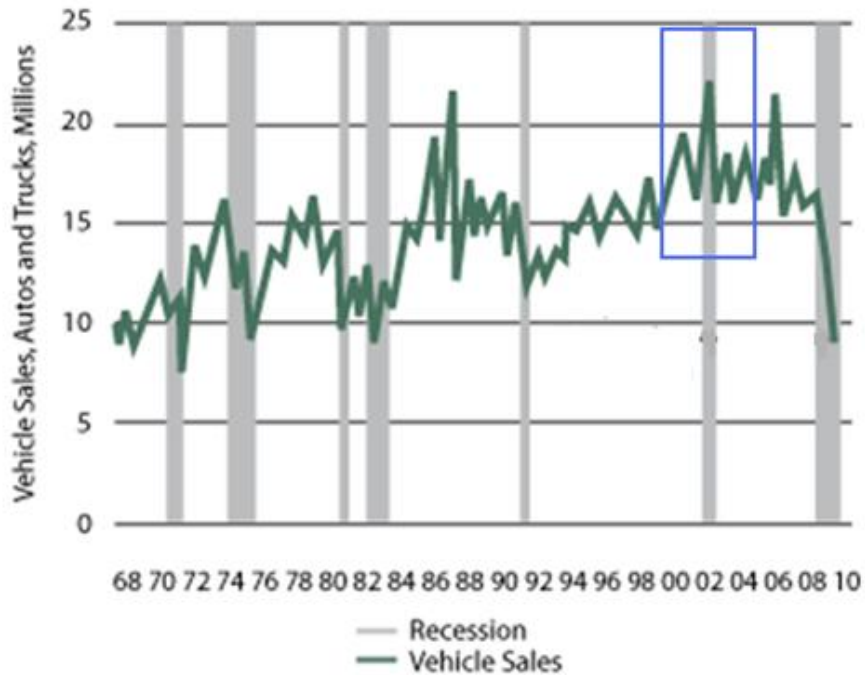
durable goods, I will consider the effect of changes in consumer confidence on automobile sales (Figures 4-5). I will also consider changes in US retail sales for comparative purposes (Figure 6).

Figure 4: *U.S. Auto Sales vs. Consumer Confidence Index: 1980-2002*



(source: Automotive Digest, 2010)

Figure 5: *U.S. Auto Sales: 1968-2010*



(source: Simpkins, 2009)

Figure 6: *Retail Sales vs. Consumer Confidence Index: 1992-2007*



(source: Panzner, 2010)

From Figure 4, you can see the positive correlation between consumer confidence and auto sales. Figure 5 further supports this observation. You can see that in every US recession between 1973 and 2010, US auto sales plummeted. The largest drop in auto sales was seen after the collapse of the United States housing bubble which led to the 2007-2009 recession. From these trends, it seems that large-ticket items such as automobiles are more susceptible to fluctuations induced by large scale financial instabilities.

In Figure 6, you can see the correlation between retail sales and consumer confidence. There is a strong connection between retail sales and consumer confidence until late 2007, where there is a striking divergence between the two variables. This divergence demonstrates why the consumer sentiment index is not a perfectly reliable measure of all consumption variables. Similarly, my results show a divergence between the consumer sentiment index and food consumption.

### **Further Analysis**

While the above analysis sheds some light on general consumption changes for US households of different income strata, analyzing the transitions between relative locations in the distribution

of food expenditure between 1999 and 2001 may provide further insight on the findings. Who were the families who showed the largest increases in consumption in 2001? Which families decreased consumption? Were they the families who spent the least or spent the most in 1999? Were they families of low, middle, or high income classes? These are questions I will attempt to answer in this section.

For this analysis, I used 2003 family cross-sectional weights from the Panel Study of Income Dynamics (PSID). The variable I will use to represent food expenditure will be “money spent on food eaten out as a percentage of total food expenditure.” I normalized the weights and used them to divide all households into quintiles based on this variable. I formed these quintiles for both 1999 and 2001. Next, I compared the 1999 quintile for each family to their 2001 quintile. Table 5 shows the transitions for the different quintiles. Table 6 was created from Table 5.

*TABLE 5: Food Consumption (Away from Home) Transitions of US households, 1999-2001<sup>6</sup>*

1999 Quintile	2001 Quintile				
	1	2	3	4	5
1	50.2	24.5	13.5	7.2	4
2	22.4	31	26	12.6	7.9
3	14.9	24.5	28.4	18.7	13.5
4	7.8	13.2	23.4	33.6	22
5	3.3	6.9	8.9	27.8	53.1

*TABLE 6: Food Consumption (Away from Home) Transitions of US households, 1999-2001*

1999 Quintile	2001 Quintile Transitions		
	Higher Quintile	Same Quintile	Lower Quintile
1	49.20	50.20	-
2	46.50	31.00	22.40
3	32.20	28.40	39.40
4	22	34	44.40
5	-	53	46.90

<sup>6</sup> Food Consumption (Away from Home) was defined as a percentage of total spending on food for all Tables 9-12.

It is important to keep in mind that the quintiles represent money spent on food away from home *as a percentage of total spending on food*. This was necessary in order to correct for income disparities. If a family moves to a lower quintile, in theory this could represent two different scenarios. The first would be that this family decreased total expenditure on food but decreased spending on food away from home by a *greater* amount, proportionately. The second would be that this family increased total expenditure on food and either decreased spending on food away from home or increased spending on food away from home by a *smaller* amount, proportionately. Table 3 clearly shows that this latter explanation must be the correct one, as all families displayed increases in both food expenditure away from home and total food expenditure. Furthermore, I will assume that spending on food away from home has a high R<sup>2</sup> value with general consumption (Skinner, 1987). Hence, for the purposes of my analysis, families that moved to lower quintiles in 2001 represent families that have decreased general consumption, and families that move to higher quintiles represent families that have increased consumption.

The results show that the families who showed the greatest increase in consumption were the ones who consumed the least in 1999. Table 6 shows that families in the 1<sup>st</sup> quintile showed the greatest increase in consumption; 49.2% of them spent more in 2001 versus 1999, while 50.2% of them remained in the 1<sup>st</sup> quintile in 2001. Hence, roughly one in every two families in the 1<sup>st</sup> quintile in 1999 moved to a higher quintile in 2001. Families in the 2<sup>nd</sup> quintile showed the second greatest increase in consumption. 46.5% of them moved to a higher quintile in 2001, while 53.4% of them either remained in the 2<sup>nd</sup> quintile or moved down to the 1<sup>st</sup> quintile in 2001. For families in the 4<sup>th</sup> quintile, 56% of them either remained in the 4<sup>th</sup> quintile or moved up to the 5<sup>th</sup> quintile. For families in the 5<sup>th</sup> quintile, 53% of them remained in the 5<sup>th</sup> quintile during the recession. Hence, the big spenders remained big spenders during the recession. Families in the 3<sup>rd</sup> quintile were the most interesting to analyze for several reasons. First, regression toward the mean is a confounding factor that may have played a role in the transitions for quintiles 1, 2, 4, and 5. Hence, the analysis of 3<sup>rd</sup> quintile families will correct for this, since these families are already at the mean consumption level. Second, these families have the most “wobble room” since they can either move to the upper quintile range or the lower quintile range. Table 6 shows that 39.4% of 3<sup>rd</sup> quintile families moved down to either the 1<sup>st</sup> or 2<sup>nd</sup> quintiles, while only 32.2% of them moved up to the 4<sup>th</sup> or 5<sup>th</sup> quintiles. In other words, the average American family was more likely to consume *less* in 2001 than 1999. Hence, the data shows that the average American family was most likely to *decrease* spending on food away from home during the recession than do anything else. This is the first time I see evidence of the recession in the data. The most likely explanation for this observation is that US consumer confidence decreased significantly between 1999 and 2001 (see Figures 2 and 3).

Next, I did some analysis based on income level, since changes in income could have been a factor behind some of the observed transitions. Tables 7-8 show the quintile transitions for the different income strata.

TABLE 7: Food Consumption (Away from Home) Transitions of US households, based on income level, 1999-2001

		2001 Quintile				
1999 Quintile		1	2	3	4	5
<b>Low Income Families</b>	1	44	24.7	17.4	7.9	5.5
	2	25.9	26.7	23.3	13.6	10.2
	3	19.5	20.8	29.7	15.4	14.4
	4	10.7	11.9	19.3	34	24.1
	5	4.7	6.6	10.8	31	46.9
<b>Middle Income Families</b>	1	58.5	26	7.8	3.5	3.2
	2	23.6	30.4	25.3	14.5	6.2
	3	12.2	27.3	28.8	20.4	11.3
	4	7.7	15.6	24.6	33.1	19
	5	2.8	8.5	7.9	28.4	52.4
<b>High Income Families</b>	1	49.7	22.6	14.4	10	2.8
	2	17.6	35.8	29.3	10	7.3
	3	12.9	25.4	26.7	20.2	14.8
	4	6.3	12.2	24.7	33.8	23
	5	2.5	6	8	24.4	59.1



TABLE 8: Food Consumption (Away from Home) Transitions of US households of different income levels from 1999 to 2001

	1999 Quintile	Higher Quintile	2001 Quintile Transitions	
			Same Quintile	Lower Quintile
<b>Low Income Families</b>	1	55.5	44	-
	2	47.1	26.7	26.2
	3	29.8	29.7	40.4
	4	24.1	34	41.9
	5	-	46.9	53.1
<b>Middle Income Families</b>	1	40.5	58.5	-
	2	46	30.4	23.6
	3	31.7	28.8	39.5
	4	19	33.1	47.9
	5	-	52.4	47.6
<b>High Income Families</b>	1	49.8	49.7	-
	2	46.6	35.8	17.6
	3	35	26.7	38.3
	4	23	33.8	43.2
	5	-	59.1	40.9

Again, I will limit my analysis to the 3<sup>rd</sup> quintile families in each income group in order to correct for any regression toward the mean. Table 8 shows that families in the 3<sup>rd</sup> quintile across all income classes were most likely to spend less on food away from home in 2001. Interestingly, the data shows that the consumption of the average low income family was affected *more* than that of the average middle or high income family. The average low income family decreased consumption by 40.4%, while the average middle and high income families showed 39.5% and 38.3% decreases, respectively. This makes sense intuitively, since low income families should be more sensitive to price and income changes than higher income families. These results conflict with the results I obtained from Tables 2 and 4, which showed that middle income families displayed a *smaller* increase in spending on food away from home (as a share of the total food budget) than low income families in 2001 versus 1999. However, it is important to remember that the figures I obtained in Tables 2-4 did not correct for regression toward the mean, such as

in Tables 7 and 8. Also, the results for low income families in Tables 2-4 were not statistically significant. Hence, it is safe to assume that the results obtained here are more indicative of the consumption behavior of average low, middle, and high income families.

## CASE 2: 1990/1991 US Recession

### Introduction:

The US recession of the early 1990s was actually more severe than the early 2000s recession. It lasted from July 1990 to March 1991, with unemployment peaking at 7.3% and GDP at -1.4% (“Unemployment Rate”; Walsh, 1993). The recession resulted from a multitude of factors, including the 1990 oil price shock (as a result of the Gulf War), debt accumulation, low consumer confidence, and new banking regulations (Walsh, 1993). The cost of the crisis was approximately \$160.1 billion, which led to massive debt accumulation (Walsh, 1993). Furthermore, between 1986 and 1989, the construction of new homes dropped by 800,000 per year, reaching the lowest rate since WWII (Gardner, 1994). In this section, I will conduct a similar analysis of the early 1990s recession as I did for the early 2000s recession.

### Data Analysis:

*TABLE 9: Average Reported Annual Cost of Food eaten at home and out of the house for families of different income levels (in 2002 dollars), 1990-1992*

		<b>1990</b>	<b>1992</b>
<b>Low income</b>	<b>Home**</b>	\$3,368.20	\$3,603.51
	<b>Out</b>	\$1,113.60	\$1,172.56
	<b>Total**</b>	\$4,481.80	\$4,776.07
<b>Middle income</b>	<b>Home</b>	\$4,853.70	\$4,884.31
	<b>Out</b>	\$1,478.06	\$1,522.25
	<b>Total</b>	\$6,331.76	\$6,406.56
<b>High income</b>	<b>Home</b>	\$6,178.53	\$6,350.85
	<b>Out</b>	\$2,190.53	\$2,142.37
	<b>Total</b>	\$8,369.06	\$8,493.22

*\*\*Difference of means rejected at 5% significance level*

TABLE 10: Average Cost of food eaten out as a percentage of Total Cost of Food for different income levels in 1990 versus 1992

	Year	
	1990	1992
<b>INCOME</b>		
<b>Low</b>	24.8	24.6
<b>Middle</b>	23.3	23.8
<b>High</b>	26.2	25.2

TABLE 11: Annual reported cost of food eaten at home, food eaten out, and total spending on food in 1990 and 1992 for average US families of different income classes<sup>7</sup>

		Year	
		1990	1992
Avg. US family	<b>Home</b>	\$4890	\$5042.53
	<b>Out</b>	\$1794.47	\$1759.07
	<b>Total</b>	\$6684.47	\$6801.60
Avg. Low income family	<b>Home</b>	\$3205.70	\$3441.43
	<b>Out</b>	\$1171.39	\$1197.42
	<b>Total</b>	\$4377.09	\$4638.85
Avg. Middle income family	<b>Home</b>	\$4701.22	\$4794.96
	<b>Out</b>	\$1564.25	\$1567.70
	<b>Total</b>	\$6265.47	\$6362.66
Avg. High income family	<b>Home</b>	\$6155.19	\$6306.77
	<b>Out</b>	\$2407.43	\$2297.01
	<b>Total</b>	\$8562.63	\$8603.79

<sup>7</sup> All dollar amounts are adjusted to 2002 dollars. Also, I used family cross-sectional weight data from 1990 (from the PSID) in order to create this table.

TABLE 12: Cost of food eaten out as a percentage of Total Cost of Food for average US families of different income classes, 1990-1992

	<b>Year</b>	
	<b>1990</b>	<b>1992</b>
<b>Avg. US family</b>	26.85%	25.86%
<b>Avg. Low income family</b>	26.76%	25.81%
<b>Avg. Middle income family</b>	24.97%	24.64%
<b>Avg. High income family</b>	28.12%	26.70%

From Table 9, you can see that low income families showed a significant increase in money spent on food eaten at home. This makes sense intuitively, as bad economic times encourage the substitution of less expensive goods (i.e. food at home) with more expensive goods (i.e. food away from home). Since low income families have the highest income and price elasticities of demand, it makes sense that they were most likely to increase spending on food at home. From Table 10, you can see that spending on food away from home as a share of total food budget decreased by 0.2% for low income families and 1% for high income families, while it increased by 0.5% for middle income families. However, only the differences for low income families are statistically significant. Table 11 incorporates 1990 family cross-sectional weights in order to construct an image of the average American family<sup>8</sup>. Table 11 shows that the average low, middle, and high income families all increased spending on food eaten at home. Again, this makes sense since food eaten at home is less expensive than food eaten out. From Table 12, you can see that all families decreased food expenditure away from home as a percentage of total food expenditure. Since food expenditure and consumption have a high R<sup>2</sup> value (Skinner, 1987), Table 12 can be generalized to assume that general consumption declined in 1992 (post-recession). Interestingly, Table 12 also shows that the average high income family decreased spending on food expenditure away from home (as a percentage of total food spending) by 1.42%. This was greater than the average middle or low income families, which showed 0.33% and 0.95% decreases, respectively. Recall that the new banking regulations following the savings and loan crisis of the 1980s and 1990s were among the causes of the 1990/91 recession. Since high income families were most able to place savings deposits in savings and loan associations, of which 747 failed during the recession, perhaps this was why they were more impacted by the recession than middle and low income families.

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<sup>8</sup> The average American family (Tables 11-12) is defined as the family which is representative of the national sample of American families. Note: In Tables 9-10, only mean values were analyzed. Family cross-sectional weight data was only incorporated in Tables 11-12.

TABLE 13: Food Consumption (Away from Home) Transitions of US households, 1990-1992

	1990 Quintile	1992 Quintile				
		1	2	3	4	5
<b>All Families</b>	<b>1</b>	47	25	15.9	7.8	4.4
	<b>2</b>	22.8	29.5	22.3	17	8.4
	<b>3</b>	16	22	26.7	22.7	12.6
	<b>4</b>	9.8	16.4	22.8	27.8	23.1
	<b>5</b>	4.3	7	12.4	24.7	51.2

TABLE 14: Food Consumption (Away from Home) Transitions of US households from 1990 to 1992

	1990 Quintile	Higher Quintile	1992 Quintile Transitions	
			Same Quintile	Lower Quintile
<b>All Families</b>	<b>1</b>	53.00%	47.00%	-
	<b>2</b>	47.70%	29.50%	22.80%
	<b>3</b>	35.30%	26.70%	38.00%
	<b>4</b>	23.10%	27.80%	49.10%
	<b>5</b>	-	51.20%	48.80%

TABLE 15: Food Consumption (Away from Home) Transitions of US households, based on income level, 1990-1992

		1992 Quintile				
1990 Quintile		1	2	3	4	5
<b>Low Income Families</b>	1	46.8	18.6	17.6	11.2	5.9
	2	20.8	22.5	24.7	18.6	13.4
	3	20.7	26.3	14.8	22	16.3
	4	12	20	19.4	28.4	20.2
	5	7.6	6.5	12.6	27.2	46
<b>Middle Income Families</b>		1	2	3	4	5
	1	50.6	24.5	16.2	5.2	3.6
	2	24.9	30.7	18.8	18.2	7.4
	3	15.5	24.3	28.6	20.6	11.1
	4	9.5	14.8	27.5	23.1	25.1
	5	2.8	8.1	13.7	22.7	52.8
<b>High Income Families</b>		1	2	3	4	5
	1	42.6	30.7	14.2	8.4	4.1
	2	22.2	33	24	14.8	6.1
	3	13.8	17.9	31.7	24.7	11.2
	4	8.7	15.5	20.9	31.6	23.3
	5	3.3	6.6	11.3	24.5	54.3

TABLE 16: Food Consumption (Away from Home) Transitions of US households of different income levels from 1990 to 1992

	1990 Quintile	Higher Quintile	1992 Quintile Transitions Same Quintile	Lower Quintile
<b>Low Income Families</b>	1	53.20%	46.80%	-
	2	56.70%	22.50%	20.80%
	3	38.30%	14.80%	47.00%
	4	20.20%	28.40%	51.40%
	5	-	46.00%	54.00%
<b>Middle Income Families</b>	1	49.40%	50.60%	-
	2	44.40%	30.70%	24.90%
	3	31.70%	28.60%	39.80%
	4	25.10%	23.10%	51.80%
	5	-	52.80%	47.20%
<b>High Income Families</b>	1	57.40%	42.60%	-
	2	44.80%	33.00%	22.20%
	3	35.90%	31.70%	31.70%
	4	23.30%	31.60%	45.10%
	5	-	54.30%	45.70%

Table 14 considers the quintile transitions for the average American family (all income classes included) from 1990 to 1992. Regression toward the mean is a confounding factor that may have played a role in the transitions for quintiles 1, 2, 4, and 5. Hence, the analysis of 3<sup>rd</sup> quintile families will correct for this, since these families are already at the mean consumption level. Table 14 shows that 38% of 3<sup>rd</sup> quintile families moved to lower quintiles in 1992, while 26.7% remained in the same quintile and 35.3% moved to higher quintiles. Hence, the average U.S. family was most likely to decrease food expenditure away from home because of the recession. Table 16 breaks down the analysis by income class. Again, analysis of the 3<sup>rd</sup> quintile sheds the most light on the impact of the recession on consumption. Table 16 shows that average low and middle class families were most likely to decrease food expenditure away from home due to the recession. Interestingly, high income families actually demonstrated the opposite trend. 35.9% of 3<sup>rd</sup> quintile high income families moved to higher quintiles, while 31.7% moved to lower quintiles and 31.7% remained in the 3<sup>rd</sup> quintile in 1992. These results seem to conflict with the observed results in Table 12, where the average high



income family was shown to have decreased food expenditure away from home as a percentage of total food spending by 1.42%. One possible explanation is that families in quintiles 4 or 5 hold more weight in the data than the other quintiles. Hence, their behavior may be clouding the behavior of the other families in the mean data (Table 12), whose changes in spending may not be as large in absolute terms.

Figure 7: *US Consumer Confidence from 1978-2008 (from the University of Michigan's Consumer Sentiment Index)*

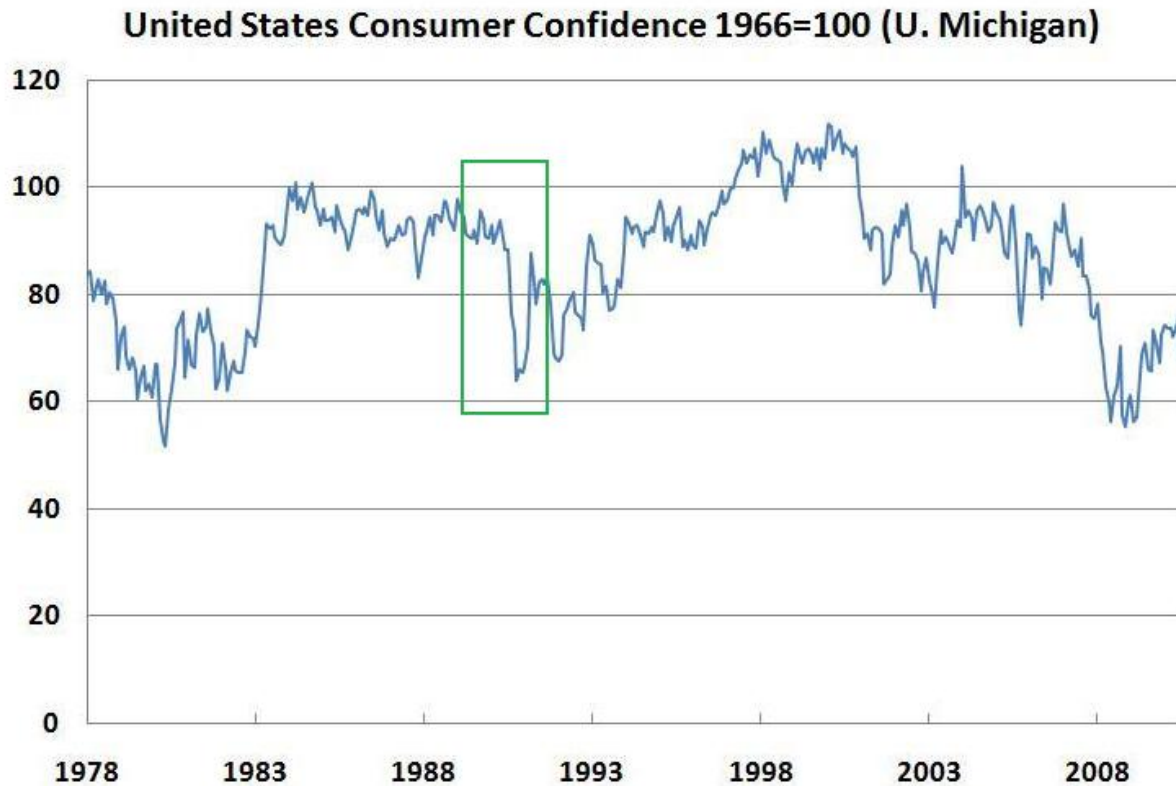


Figure 7 shows that consumer confidence sharply decreased during the 1990/91 recession. If you go back to Figure 1, you can see that the savings rate was continually declining starting in the early 1980s. However, during the 1990/91 recession, the savings rate was approximately 8%, which was approximately twice as high as the savings rate during the 2000/01 recession. Hence, perhaps the savings rate was not low enough to stimulate the increase in consumption that was observed in the 2000/01 recession. If you go back to Figure 5, you can see that auto sales also dropped considerably during the 1990/91 recession. However, auto sales did not decrease as much during the 1990/91 recession as they did during the 2000/01 recession.

TABLE 17: Cost of food eaten out as a percentage of Total Cost of Food for average US families of different income classes, 1990-2001

	Year			
	1990	1992	1999	2001
<b>Avg. US family</b>	26.85%	25.86%	31.88%	33%
<b>Avg. Low income family</b>	26.76%	25.81%	30.37%	31.40%
<b>Avg. Middle income family</b>	24.97%	24.64%	30.64%	31.41%
<b>Avg. High income family</b>	28.12%	26.70%	33.40%	34.81%

Table 17 shows the cost of food eaten out as a percentage of total food expenditure from 1990-2001. There seems to be a long-term trend for increased spending on food away from home (although the decrease in food expenditure away from home in 1992 can be attributed to the recession). If you go back to Figure 7, you will see that there was an upward trend in consumer confidence from 1990 until 2001, when consumer confidence suddenly declined (due to the 2000/01 recession), reaching its lowest point since the 1990/91 recession in 2008. Hence, the results in Table 17 make sense in light of the consumer confidence data. The increasing consumer confidence in the 1990s supports the notion that the advent of the computer age was accompanied by widespread economic growth and heightened consumerism.

**Discussion:**

The strength of my findings depends on the extent to which food expenditure can be used as a measure of general consumption. A key point of discussion here is whether consumption can be equated with expenditure. Aguiar and Hurst performed a study where they pointed out that “consumption is the output of ‘home production’ which uses as inputs both market expenditures and time” (Aguiar and Hurst, 2005). In other words, *the time* spent shopping for and preparing food at home is a variable that can be observed in consumption but not expenditure. Aguiar and Hurst analyzed changes in consumption and expenditure for retirees, where they found that food expenditures fell by 17% after retirement while time spent on food production increased by 53%. Interestingly, “if one values the time of retired households at half their pre-retirement wage, the increase in time spent in food production for retired households is roughly the same as their decline in food expenditure” (Aguiar and Hurst, 2005). They contrasted this with changes in consumption and expenditure as a result of unemployment, where they found a 19% decrease in food expenditures and a 5% decrease in consumption. The explanation of this difference can be reached through Milton Friedman’s Permanent Income Hypothesis (PIH). Since unemployment is considered an *unanticipated* shock to permanent income, its effects on consumption are greater than that of retirement, which is *anticipated* and therefore has little effect on permanent income.

Hence, one of the limitations of my study is that I equated consumption and expenditure when I used ‘food expenditure away from home’ as a measure of general consumption. One reason for this is that food is one of the few nondurable goods reported by the Panel Study of Income Dynamics (PSID) over an extended period of time. Secondly, the PSID does not take into account time spent shopping for and preparing food. For this, one can consider the Continuing Survey of Food Intake of Individuals (CSFII). Another limitation of using ‘food expenditure away from home’ as a measure of consumption is that the *quality* of spending is not taken into account. For example, Aguiar and Hurst show that while retirees are less likely to eat out, this difference is due almost entirely to a decrease in fast food visits. In fact, they find that retirees are *not* less likely to eat at restaurants that offer sit-down meals with wait service.

Nevertheless, despite the limitations of using food expenditure as a measure of general consumption, the fact remains that food is an indispensable good with low income elasticity. This makes it a reliable test for consumption smoothing (Aguiar and Hurst, 2005).

## **CASE 3: 1997/98 Asian Financial Crisis in Malaysia**

### **Introduction:**

Southeast Asia is a region of incredible economic diversity. Although Malaysia is dubbed a subsidy economy, it somehow still maintains a competitive economy. In fact, Malaysia harbors the 29<sup>th</sup> largest economy in the world, and is an important trading partner with the United States. Malaysia's economic diversity was especially demonstrated during the 1997/98 Asian Financial Crisis. The crisis halted economic development in the region and impacted economies around the globe. Although many economists discouraged the implementation of capital controls during the crisis, Malaysia did not allow its central bank to intervene in the international currency markets. Surprisingly, Malaysia experienced a much more rapid recovery than the other Southeast Asian nations. The vast majority of the literature on the East Asian financial crisis speaks of the issue from an aggregate macroeconomic standpoint. While such analysis is valuable, I am proposing that perhaps there are explanations at the household level that may enrich our understanding of Malaysia's controversial recovery. Were the capital controls the only forces at play in facilitating the rapid recovery? Did families and business owners react in a way conducive to the country's economic restoration? Such research is vital for policymakers and households today so that future financial crises can be prevented or at the least dealt with most effectively.

I spent the summer of 2010 doing economic research in Kuala Lumpur, Malaysia. The majority of my time in Malaysia was spent gathering primary data. In addition to obtaining quantitative facts and figures, I incorporated qualitative data into my analysis, since I wished to gain a deeper sense of the sentiment surrounding the crisis. Hence, I interviewed a diverse array of individuals, including Muzaffar Hisham, the deputy CEO of one of CIMB group's regional banks in Kuala Lumpur<sup>9</sup>. I also interviewed a former member of the National Economic Advisory Council<sup>10</sup> (NEAC). Through interviews with different bankers, professors, corporate employees, and other local Malaysian people, I was better able to understand the general consumer sentiment regarding the crisis. Through my field work, I got a much different sense of what it means to be a Malaysian consumer.

### **Background:**

During the 1990s, the Southeast Asian nations were known as the "Asian Tigers," since these countries displayed seemingly limitless growth and prosperity. Malaysia, for instance, boasted a real GDP growth rate of 8.5% per year between 1991 and 1997, with per capita income doubling

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<sup>9</sup> CIMB group is the 5<sup>th</sup> largest financial service provider in Southeast Asia.

<sup>10</sup> The NEAC was an ad hoc council established by the prime minister of Malaysia in 1997 to evaluate the urgent state of the economy and recommend strategic responses to improve Malaysia's economic sustainability in both the short and long run. As requested by this person, he/she will not be quoted in my study.

during this same span and the poverty rate decreasing from 16.5% to 6.1% (White Paper: Status of the Malaysian Economy,” 1999). Large capital inflows throughout the 1990s resulted in large scale appreciation of assets and widespread economic growth (White Paper: Status of the Malaysian Economy,” 1999). After a speculative attack on the Thai baht in 1997, concerns arose among investors that other Southeast Asian nations also had overvalued currencies (Khor, 1998). This decline in investor confidence led to large scale capital flight from Southeast Asia (estimated at \$102 billion) and massive currency and stock devaluations (Khor, 1998). In Malaysia, for instance, the value of the ringgit went from 2.52 RM/USD in June 1997 to 4.5 RM/USD in January 1998 (Ping and Tham, 2003). The Kuala Lumpur Composite Index (KLCI) dropped from 1271 points in February 1997 to 262 points in September 1998 (Ping and Tham, 2003). The country’s GDP growth declined from +7.3% in 1997 to -7.4% in 1998. The country’s per capita income dropped from RM 9.1 billion to RM 8.2 billion in the same period, while foreign direct investment fell from RM14.5 billion to RM8.5 billion. In addition, the trade surplus increased in 1998 as a result of the weaker ringgit. These figures can be seen in the table below (“Malaysia Economic Statistics”).

TABLE 18: Summary of Macro-Economic Statistics for Malaysia, 1995-2005

	<b>GDP</b> (RM million) 100=1987	<b>GDP</b> Growth %	<b>Population</b> (‘000)	<b>GDPpc</b> (RM)	<b>Exports</b> (RM mil)	<b>Imports</b> (RM mil)	<b>TB</b> (RM mil)	<b>FDI</b> (RM mil)
1995	166,625		20,689	8,053.80	179,491	179,394	97	10,464
1996	183,292	10.00	21,169	8,658.51	193,363	183,275	10,088	12,777
1997	196,714	7.32	21,666	9,079.39	217,713	207,439	10,274	14,450
1998	182,237	-7.36	22,180	8,216.28	281,669	212,453	69,216	8,490
1999	193,422	6.14	22,712	8,516.29	319,568	233,519	86,049	9,397
2000	210,557	8.86	23,275	9,046.49	374,033	294,889	79,144	6,694
2001	211,227	0.32	24,013	8,796.36	334,326	264,472	69,854	1,091
2002	220,422	4.35	24,527	8,986.91	358,504	286,387	72,117	4,935
2003	232,359	5.42	25,048	9,276.55	397,969	300,207	97,762	4,194
2004	248,954	7.14	25,581	9,731.99	481,240	376,766	104,474	9,739
2005	262,029	5.25	26,127	10,029.05	533,380	409,312	124,068	-

Notes: GDP: Gross Domestic Product; GDPpc: GDP per capita; TB: Trade Balance; FDI: Foreign Direct Investment

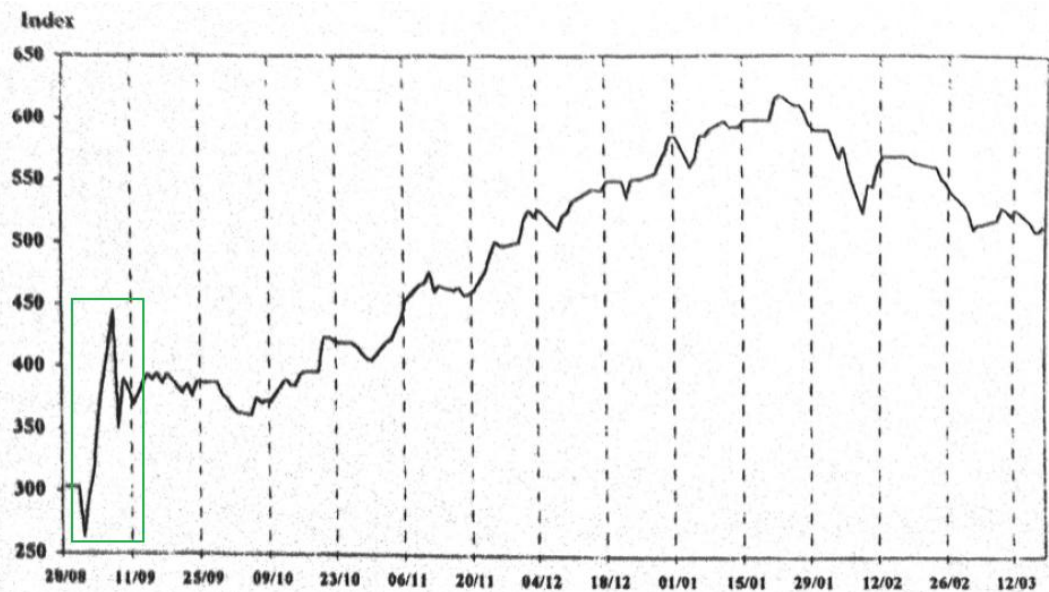
Source: Malaysia Economic Statistics-Time Series, Department of Statistics, Malaysia.

However, unlike other affected countries (i.e. Indonesia, Thailand, and South Korea), Malaysia successfully protected itself from the extreme symptoms of a financial crisis, including mass poverty, high unemployment, widespread bankruptcies, and civil unrest (“White Paper: Status of the Malaysian Economy,” 1999). As you can see in Table 18, there seemed to have been almost a complete economic recovery by 1999. Imports increased from RM69 billion to RM86 billion,

GDP growth increased from -7.4% to +6.1%, and per capita income increased from RM8.2 billion to RM8.5 billion.

The most widely criticized response of the Malaysian government by international economists during the crisis was the implementation of capital controls, of which the primary goal was to prevent further capital flight from Malaysia. Large scale capital flight was a serious concern of Malaysian policymakers, since it is estimated that a third of Malaysia's stock market is owned by foreign investors (Jomo, Ching, and Fay, 2005). One of the key features of the controls included banning companies from taking out foreign loans that exceeded RM5 million without the approval of the central bank (Khor, 1998). Companies were also prohibited from borrowing foreign funds to purchase domestic properties (Khor, 1998). Hence, the capital controls were tremendously important in that they maintained Malaysia's private sector at a lower foreign debt level (42% of GDP) relative to the other affected Southeast Asian countries, i.e. Indonesia which had a foreign debt of approximately 60% of its GDP (Abdelal and Alfaro, 2003). The capital controls also decreased interest rates in Malaysia by 4% after they were implemented (Khor, 1998). This stimulated domestic borrowing, contrary to other Southeast Asian nations who had to abide by the high interest rates that were imposed upon them by the IMF (Khor, 1998). The capital controls also placed strict rules on the offshore exchange of the ringgit, and limited the outflow of returns from Malaysian portfolio investments (Jomo, Ching, and Fay, 2005). The capital controls are generally given credit for Malaysia's economic recovery, since the economy seemed to bounce back after they were imposed. In fact, the main index of the Kuala Lumpur Stock Exchange nearly doubled in the first week after the controls were set (Abdelal and Alfaro, 2003). You can see this in Figure 8 on the next page.

Figure 8: *Kuala Lumpur Stock Exchange Composite Index*<sup>11</sup>



(source: “White Paper: Status of the Malaysian Economy,” 1999)

The Malaysian government was also criticized by the international community for pegging the ringgit at 3.8RM to the U.S. dollar (Ping and Tham, 2003). However, this prevented further devaluation of the ringgit in the international market.

The crisis was also induced via an over-extension of credit by the banking system. This was due in part to the high number of private banks in Malaysia. For example, in Kuala Lumpur alone there were over 50 banks. According to the deputy CEO of one of the region’s largest banks, “borrowers were spoiled” (Hisham, 2010). Hence, the government’s tightening of the monetary policy after the crisis came as no surprise.

From a financial perspective, the crisis induced a liquidity squeeze. With a shortage of ringgits, Malaysians were forced to borrow in dollars (Hisham, 2010). Hence, the pegging of the ringgit to the dollar was tremendously important because Malaysian businesses could take out foreign debts without worry that the ringgit would continue to depreciate. In contrast to other Southeast Asian countries whose currencies continued to depreciate, relying on foreign debt was not an ideal solution to their liquidity crises.

The capital controls were also important in that they helped Malaysian banks maintain high savings rates, at roughly four percent (“White Paper: Status of the Malaysian Economy,” 1999).

<sup>11</sup> The x-axis follows the format of DD/MM. Hence, the first date listed is August 28, 1998. The last date listed is March 12, 1999.

This lessened the severity of the liquidity squeeze in Malaysia relative to other Southeast Asian countries, since people were less inclined to pull their money out of Malaysian banks with the high savings rates in place. (Hisham, 2010)

Malaysia is also unique in that it is home to Petronas, the most profitable company in Asia. Petronas is a nationalized oil and gas company that does business with over 35 countries. The presence of such a huge international corporation helped reduce the impact of the crisis on the Malaysian economy, since Petronas' profit margins remained high even during the crisis. (Jaafar, 2010). Moreover, Malaysia is unique in that manufactured goods are a large part of the economy. They account for 36% of total GDP and 81% of total exports (Ping and Tham, 2003). In addition, roughly two-thirds of these manufactured exports are electronics and electrical goods (Ping and Tham, 2003). According to one Malaysian economist whom I interviewed, the export of electronics was further enhanced at the time of the crisis due to the "Millenium Bug" that the international community believed would affect the world in 2000 due to technical problems in computer-related products (Jaafar, 2010). As such, an upgrade of electronic and electrical products were needed, so the demand for electronic and electrical goods shot up prior to 2000 (Jaafar, 2010). Hence, Malaysia's export market provided a continuous source of revenue for the economy during the crisis, mitigating the negative effects of the crisis. In fact, Malaysia's export market actually benefitted from the devaluation of the ringgit since Malaysian products became more competitive in the international market (Ping and Tham, 2003). However, non-export companies with heavy foreign debt suffered from the depreciation of the ringgit since they could not afford to repay their loans in foreign currencies.

Furthermore, the Malaysian government took a proactive role in the banking sector during the crisis. Daim Zainuddin, the former Malaysian finance minister, came up with the idea to consolidate different banks during the crisis to help prevent the widespread collapse of weak, individual private banks. This was a type of bailout, since the Malaysian central bank lent money to banks in order to allow mergers to take place. According to one of CIMB group's deputy CEOs, these bank mergers allowed banks to "gain access to cheap funds" (Hisham, 2010). The central bank also placed rigid guidelines that all other banks had to follow, including limits on credit extension, mortgages, and other areas of micro-level financing. In my opinion, such a centralized banking system certainly made it easier for Malaysian policymakers to establish solutions to the crisis in Malaysia. However, Malaysian bankers seem to be at odds with such a centralized system, and most of the bankers I interviewed advocated for a more deregulated economic system. The deputy CEO whom I interviewed exclaimed that "We [Malaysians] need to bite the bullet and have deregulation" (Hisham, 2010). Despite such sentiments, Malaysians were not politically antagonistic at the time of the crisis. In fact, I observed quite the opposite. Another banker I interviewed, who was also advocating for deregulation, when asked about his political views at the time, said that "Malaysia needs another Mahathir" (Ghandour, 2010). Mahathir Mohamad was the prime minister of Malaysia during the time of the crisis, and is



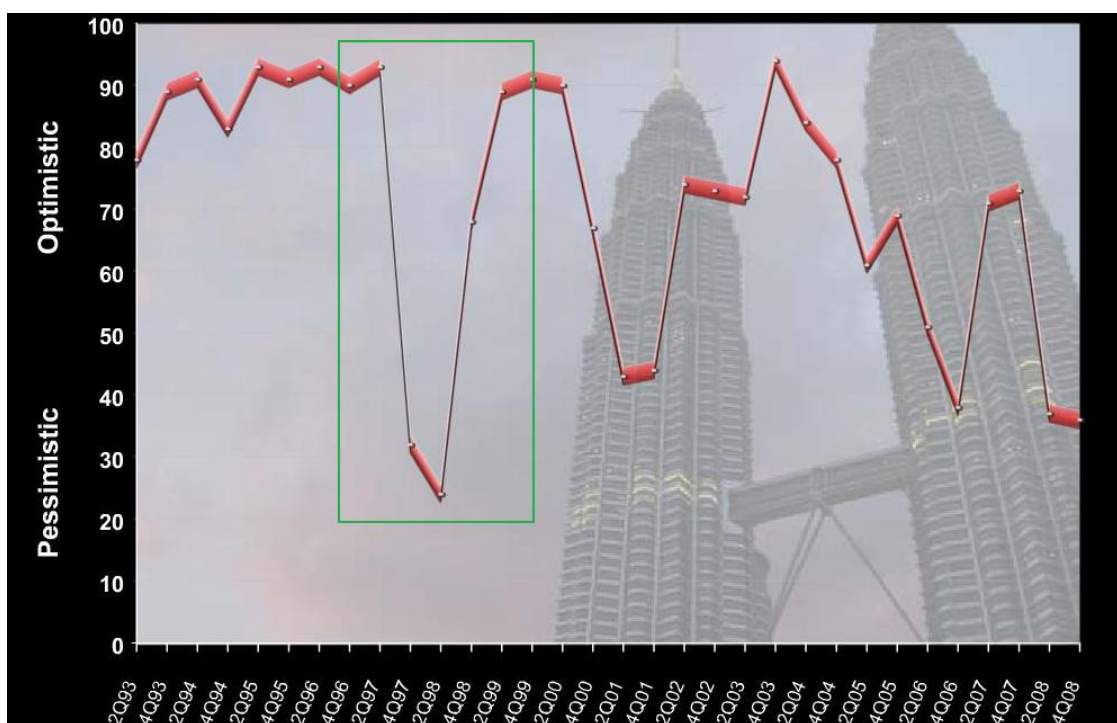
generally given credit for Malaysia's recovery from the crisis. Although Mahathir advocated for a centralized banking system, Malaysian bankers still showed heavy support for him; they felt that he genuinely cared for their situation. The same banker claimed that "Mahathir would drive to project sites and check them out in person" (Ghandour, 2010). He also added that "We [bankers] trusted that Bank Negara [the Central Bank] knew what it was doing" (Ghandour, 2010). I think such a positive relationship between the government and the banks facilitated an easier implementation of an economic recovery plan. It is worth noting that most Malaysians who work outside of the banking sector seem supportive of a centralized government. I interviewed a young Malay woman who works at Petronas, who claimed that "Big government was the right thing to do during the crisis" (Abdul Rahman, 2010). She thought that centralization made it easier for the government to execute its actions "even at the minute level" (Abdul Rahman, 2010).

Furthermore, new legislation, especially the Pengurusan Danaharta Nasional Berhad Act in 1998, helped revitalize the banking sector. Danaharta was established to purchase non-performing loans and then sell these NPLs as government guaranteed bonds (Hisham, 2010). These NPL's were mainly a result of imprudent borrowing from foreign countries, since massive currency depreciation made it impossible to pay back these loans. By relieving banks and other financial institutions of their NPLs, they were able to continue their business of lending to consumers and businesses (Hisham, 2010).

### **Analysis:**

The vast majority of the literature on the East Asian financial crisis discusses its rapid recovery from a macroeconomic standpoint. While the macroeconomic explanations provide valuable insight regarding the general situation, there may have been other factors that stimulated the rapid recovery. While the capital controls seem to have catalyzed Malaysia's recovery, it is important to note that the capital controls came one year after the start of the crisis. This means that much of the capital may have already left the country during this one year span. In addition, from the World Trade Organization's trade policy review of Malaysia in 2001 ("WTO Trade Policy Review – Malaysia 2001"), it seems that Malaysia's economy already began to stabilize by the time the capital controls were imposed. Hence, I will consider the consumer response to the financial crisis to see whether this will shed some light on Malaysia's economic recovery. As you can see from Figure 9, consumer sentiments were adversely affected by the crisis, with a sharp decline in 1998. However, with measures to address the crisis put into place, consumer sentiments rebounded quickly, reaching the pre-crisis levels within one year.

Figure 9: *Malaysian Consumer Confidence, 1993-2008*<sup>12</sup>



(source: MasterCard Worldwide Index of Consumer Confidence)

How can the rapid recovery of consumer confidence be explained? Well, after five years of enjoying budget surpluses, the Malaysian Government decided to adopt a budget deficit approach in 1999 by injecting much needed capital into the economy and launching support programs to protect the welfare of the lower income group (Jaafar, 2010). Even civil servants were given extra allowances to boost consumption (Jaafar, 2010). On the financial side, consumption was further boosted by the easing of monetary policy and reduction of the interest rates.

Moreover, unique features of Malaysia’s labor force may have contributed to the rapid recovery of its economy. The unemployment rate was very low in Malaysia during the crisis. In 1997, the unemployment rate was 2.4%. In 1998, one year after the start of the crisis, the unemployment rate rose slightly to 3.2% (“Malaysia Labour Force Survey”). Comparatively, during the 2007-2010 US financial crisis, unemployment peaked at 10.6% in January 2010 (“Unemployment Rate”). Malaysia’s unemployment numbers are low due to different government policies (known as Bumiputera policies) that favor indigenous Malaysians. Indigenous Malaysians, or

<sup>12</sup> The MasterCard Worldwide Index of Consumer Confidence measures consumer confidence twice annually. The range of the score is from 0-100, where a score of 50 represents neutral consumer sentiments. A score above 50 indicates optimism, and a score below 50 indicates pessimism. The sample set is a random selection of approximately 400 Malaysian people.

Bumiputeras, comprise about 50-55% of the population (“Malaysia Labour Force Survey”). For example, one of these Bumiputera policies gives indigenous Malaysians heightened job security. Although such policies may result in complacency and lower efficiency in the workplace, low unemployment is undoubtedly a safeguard during times of financial stress, since there is less fear of job loss (Hwee, 2010). As an interesting side note, recently the favoring of Bumiputeras by the Malaysian government has faced criticism, especially among Malaysians of foreign descent. For example, I spoke with a young Iranian immigrant who feels that she has no chance of finding a job in Malaysia since she is not ethnically Malay. I also interviewed Aw Kong Hwee, a professor at HELP University in Kuala Lumpur. He pointed out that there is heavy affirmative action in the education sector that favors Malaysians of Malay descent, especially when it comes to college admissions. In his opinion, unless the current dominant political party (UMNO) is defeated in the next round of elections, the Bumiputera policies are likely to persist.

In an interview with a young Malay woman who works at Petronas, I asked her if she recalls a change in her spending habits during the crisis. She responded by saying, “My parents were government servants so we weren’t affected” (Abdul Rahman, 2010). This supports the notion that the Bumiputera policies were a measure of security for ethnic Malays during the financial crisis. Since Malays felt a high degree of job security, they did not feel compelled to change their consumption behaviors, hence lessening the severity of the recession. She also added that “the government put in money to support the job placement of unemployed persons” (Abdul Rahman, 2010). Hence, even the small percent of Malays who lost their jobs could fall back on the government for further job placement.

In another interview with an Economics professor at the University of Malaya, he stated that “the government machinery went all out” during the crisis (Cheok, 2010). He said that they would play *My Way* by Frank Sinatra on television to give people confidence that the government knew what it was doing. Although such information may escape the macroeconomic statistics, I think it says a lot about the nature of the Malaysian people’s confidence in their government. In contrast, the situation was much different in Indonesia, the Southeast Asian nation that was hit the hardest from the Asian Financial Crisis, with GDP growth of -13.7% in 1998 (“White Paper: Status of the Malaysian Economy,” 1999). At the time of the crisis, Suharto was the president of Indonesia, having held his post for 31 years until he was forced to resign following mass demonstrations in 1998. According to the Economics professor I interviewed, “In Indonesia, people knew Suharto was corrupt. At least Mahathir [the PM of Malaysia during the crisis] kept his people happy. He was the first commoner to be prime minister, and people loved him for that” (Cheok, 2010). Next, I will consider expenditure data for Malaysian households (Table 19). Table 20 was constructed from Table 19.

TABLE 19: Average monthly expenditure per household, Malaysia, 1993/94 - 2004/05

Kumpulan Perbelanjaan Expenditure Group	1993/94 *	1998/99 *	2004/05
	(RM)		
01 Makanan dan Minuman Bukan Alkohol <i>Food and Non-Alcoholic Beverages</i>	276	368	393
02 Minuman Alkohol dan Tembakau <i>Alcoholic Beverages and Tobacco</i>	26	30	35
03 Pakaian dan Kasut <i>Clothing and Footwear</i>	41	56	59
04 Perumahan, Air, Elektrik, Gas dan Bahan Api Lain <i>Housing, Water, Electricity, Gas and Other Fuels</i>	245	363	430
05 Hiasan, Perkakasan dan Penyelenggaraan Isi Rumah <i>Furnishings, Household Equipment and Routine Household Maintenance</i>	65	84	83
06 Kesihatan <i>Health</i>	21	29	27
07 Pengangkutan <i>Transport</i>	168	227	314
08 Komunikasi <i>Communication</i>	24	59	103
09 Perkhidmatan Rekreasi dan Kebudayaan <i>Recreation Services and Culture</i>	53	70	92
10 Pendidikan <i>Education</i>	17	31	38
11 Restoran dan Hotel <i>Restaurants and Hotels</i>	145	209	213
Perbelanjaan makanan di luar rumah <i>Expenditure on food away from home</i>	119	178	169
Perbelanjaan minuman di luar rumah <i>Expenditure on beverages away from home</i>	18	27	35
Perkhidmatan Penginapan dan Lain-lain <i>Accommodation Services and Others</i>	8	4	9
12 Pelbagai Barang dan Perkhidmatan <i>Miscellaneous Goods and Services</i>	78	105	167
Perbelanjaan Bulanan Purata Setiap Isi Rumah ( 01 - 12 ) <i>Average Monthly Expenditure Per Household ( 01 - 12 )</i>	1,161	1,631	1,953

\* Data 1993/94 and 1998/99 was adjusted according to 2004/05 survey classification

(Source: Malaysian Department of Statistics, Putrajaya)

TABLE 20: Annual reported cost of food eaten at home, food eaten out, and total spending on food for average Malaysian families, 1993-2005<sup>13</sup>

	Year		
	1993/94*	1998/99*	2004/05
<b>Home</b>	3312	4416	4716
<b>Out</b>	1644	2460	2448
<b>Total</b>	4956	6876	7164

\*Adjusted to 2004/05 ringgits

TABLE 21: Cost of food eaten out as a percentage of Total Cost of Food for average Malaysian families, 1993-2005

	Year		
	1993/94	1998/99	2004/05
	33.17%	35.78%	34.17%

TABLE 22: Cost of food eaten out as a percentage of Total Cost of Food, Malaysian vs. US households, 1998/99<sup>14</sup>

	1990	1992	1993/94	1998/99	2001	2004/05
<b>Avg. Malaysian Fam.</b>	N/A	N/A	33.17%	35.78%	N/A	34.17%
<b>Avg. US Fam.</b>	26.85%	25.86%	N/A	31.88%	33%	N/A

<sup>13</sup> All values reported in 2004/05 Malaysian ringgits (RM)

<sup>14</sup> Data for average US Family taken from Table 17.

Tables 20-22 demonstrate some interesting results. First, relative to US families, Malaysian households spend a larger portion of their food budgets eating away from home (Table 22). This is surprising, considering the median annual household income in Malaysia is approximately \$13,930 (in 2010 USD), while the median annual household income for the 4326 US families that I used in my earlier analysis is \$67,049 (in 2010 USD).<sup>15</sup>

It's also important to note that the cost of living in Malaysia is approximately 2-3 times cheaper than the United States ("Cost of Living Index by Country," 2011). Hence, these figures seem to show that Malaysian households consume more than US households, assuming we use food expenditure as a proxy for general consumption. From my personal experience in Malaysia, I believe these differences can be explained culturally. Communal eating is a very large part of Malaysian culture. Hence, eating out in Malaysia is more common than in the US, where many families restrict eating out except on weekends and holidays. In Malaysia, *mamak* stalls are found everywhere. These are roadside eateries that serve cheap food and beverages 24 hours per day and 7 days per week. *Kopi Tiams* are also very popular in Malaysia; these are Malaysian Chinese coffee or breakfast shops where many people stop in the morning to get cheap breakfast, which may include eggs, noodles, or the extremely popular *Nestlo Ice* drink (a delicious malt chocolate drink). From my living experience in Malaysia, I noticed that it was actually cheaper to eat out than to buy groceries. One of the reasons for this is that most items at the grocery store are imported and therefore more expensive. Of course, there are cheaper local brands that you can buy, but not for much less than food at local *mamaks* or *Kopi Tiams*. Hence, it is no surprise that most Malaysians opt to spend their money on fresh food at local eateries, rather than similarly priced items at the store.

Table 22 also shows an interesting point of difference between US and Malaysian households. US households display a long-term trend of increased spending on food away from home during 1990-2001. If you go back to Figure 7, you will see that there was an upward trend in US consumer confidence from 1990 until 2001 (except for the decrease in consumer confidence in 1992 due to the 1990/91 recession). Hence, it seems as if the consumption behavior of US households is a function of consumer confidence. On the other hand, the consumption of Malaysian households does not seem to be a function of consumer confidence. From Table 21, you can see that Malaysian households actually consumed *the most* during the financial crisis years (1998/99), when consumer confidence was lowest (see Figure 9). In 1998/99, the average Malaysian household spent 35.78% of its total food budget on food away from home.

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<sup>15</sup> I calculated the median annual Malaysian household income by using RM 2,830 as the median monthly Malaysian household income in 2010 (Mahavera). Then I used an exchange rate of 0.3108597 ringgits per USD, which I calculated as an average exchange rate over a 12-month span in 2010 ("Exchange Rates").

I believe the comparison between US and Malaysian household food expenditure is inconclusive. While food expenditure away from home is indicative of general consumption for US consumers (Skinner, 1987), it may not be a good measure of general consumption for Malaysian consumers, due to the inherent cultural differences between the two countries. Regardless of whether the economic times are good or bad, Malaysian culture emphasizes communal eating, and Malaysian society offers inexpensive eateries that allow for this cultural expression. Hence, future studies should be conducted to establish other measures of general consumption for Malaysian people. In conclusion, my research has demonstrated many possible explanations for the resilience of the Malaysian economy that was observed after the Asian Financial Crisis of 1997/98. I believe that the true explanation is most likely a combination of all the possible explanations.

First and foremost, the capital controls were important in that they prevented further capital flight from Malaysia, maintained Malaysia's foreign debt at a low level, and prevented further depreciation of the ringgit. Malaysia's vibrant export market benefitted from the depreciation of the ringgit and therefore acted as a buffer during the crisis. Furthermore, the presence of a large centralized government mitigated the negative effects of the crisis. The government facilitated many bank mergers in order to prevent widespread bank failures. The government also relieved many financial institutions of their non-performing loans, which allowed them to continue to operate. The government also increased its spending during the crisis, which helped stimulate the economy and restore consumer confidence. The government's Bumiputera policies also served to maintain Malaysian confidence in the job market. As a result, the majority of Malaysian people were not politically antagonistic at the time of the crisis, but rather, showed overwhelming support for the government. Finally, I believe that consumerism is a large part of Malaysian culture. Hence, this heightened Malaysia's immunity to the Asian Financial Crisis.

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