

### **Case Study: Ft. Myers Home Sales**

Due to a crisis in subprime lending, obtaining a mortgage has become difficult even for people with solid credit. In a report by the Associated Press (August 25, 2007), sales of existing homes fell for a 5<sup>th</sup> consecutive month, while home prices dropped for a record 12<sup>th</sup> month in July 2007. Mayan Horowitz, a research analyst for QuantExperts, wishes to study how the mortgage crunch has impacted the once booming market of Florida. He collects data on the sale price (in \$1, 000s) of 25 single-family homes in Fort Myers, Florida, in January 2007 and collects another sample in July 2007. For a valid comparison, he samples only three bedroom homes, each with 1,500 square feet or less of space on a lot size of 10, 000 square feet or less.

**Excel data are available in Titanium page.**

Use the sample information (appropriate descriptive statistics) to address the following aspects. Your report should not exceed one page.

1. Compare the mean and median in each of the two sample periods.
2. Compare the standard deviation and coefficient of variation in each of the two sample periods. Also incorporate quartiles.
3. Discuss significant changes in the housing market in Fort Myers over the 6-month period.

## **Sample Report**

The steady stream of dismal housing market statistics lately is a clear indication that the national real estate market is in a serious crisis. The uncertainty is also forcing lenders to slow down on their lending, and as a result obtaining a mortgage is becoming increasingly difficult even for people with solid credit. In light of this situation, Mayan Horowitz conducts a small study to learn if the national trend also affects the once booming market of Florida by focusing on Fort Myers, Florida. To see the trend of the housing market over a 6-month period, he obtains price of 25 single family homes in January 2007 and another comparable 25 single family homes in July 2007. Table 1 below shows the most relevant descriptive analysis.

The average home price in January of 2007 was \$231, 080 versus \$182, 720 in July of the same year. That is about a 21% drop in the average home price. Also in January, half of the homes sold for more than \$205,000, versus only \$180,000 in July (see the median). Since the mean is more effected by outliers (in this case, a few relatively high prices), the median is an appropriate measure of central location.

While measures of central location typically represent where the data clusters, these measures do not relay information about the variability in the data. Both the standard deviation and the coefficient of variation are higher in January indicating that home prices were more dispersed in January. Further, while 25% of the houses were sold at the price of \$158, 000 or less in January, the first quartile for July is only \$133, 000. The third quartile is also larger in January.

In summary, the above statistical analysis shows Fort Myers is no different from the national trend, and is well affected by the housing crisis. On a positive note, over the 6-month period, Fort Myers became a buyers' market; of course for people who can borrow.

Table 1: Summary measures for January 2007 and July 2007

|                    | 2007 Home Sale Prices in Fort Myers, FL |         |
|--------------------|---|---------|
|                    | January                                 | July    |
| Mean               | 231.08                                  | 182.72  |
| Median             | 205.00                                  | 180.00  |
| Mode               | 220.00                                  | 210.00  |
| Sample Variance    | 12926.08                                | 4813.88 |
| Standard Deviation | 113.69                                  | 69.38   |
| Coef. of Variation | 0.49                                    | 0.38    |
| Range              | 510.00                                  | 314.00  |
| Minimum            | 100.00                                  | 86.00   |
| Maximum            | 610.00                                  | 400.00  |
| 1st Quartile       | 158.00                                  | 133.00  |
| 3rd Quartile       | 256.00                                  | 215.00  |