The Phoenix housing market overall continued to show gradual improvement through June but with mixed results in various segments of the market. April was the first month the overall market showed a year-to-year increase (0.7%, Table 1) with the preliminary June increase at 1.8 percent. Based on index values from last year and current conditions in the housing market, it is likely that small increases in house prices will continue for only another month or two, followed by an extended period where house prices remain relatively flat. The trend of improving performance continues for lower priced houses with the 9.2 percent gain in April increasing to 11.5 percent by June. It appears that this segment of the housing market, which was hard hit during the downturn, will see price increases throughout the rest of 2010 but at gradually slower rates. Unless economic and housing market conditions change dramatically, prices are likely to be relatively stable going into 2011. For higher priced houses the April decline of 3.0 percent compared to 2009 is basically unchanged at -2.2 percent by June. The data indicate that the higher priced segment of the market is likely to show small declines on an annual basis through the rest of 2010.

<table>
<thead>
<tr>
<th></th>
<th>OVERALL</th>
<th>LOWER PRICED</th>
<th>HIGHER PRICED</th>
<th>TOWNHOUSE / CONDO</th>
<th>FORECLOSURES</th>
<th>NON-FORECLOSURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2009 –</td>
<td>0.7</td>
<td>9.2</td>
<td>-3.0</td>
<td>-19.4</td>
<td>5.2</td>
<td>-8.7</td>
</tr>
<tr>
<td>April 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 2010 -</td>
<td>0.0</td>
<td>1.2</td>
<td>-0.9</td>
<td>0.4</td>
<td>0.7</td>
<td>-1.8</td>
</tr>
<tr>
<td>April 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989–1992</td>
<td>-7.7</td>
<td>-3.9</td>
<td>-12.8</td>
<td>-3.9</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>2006–2010</td>
<td>-48.0</td>
<td>-56.0</td>
<td>-39.6</td>
<td>-54.0</td>
<td>-52.0</td>
<td>-42.8</td>
</tr>
<tr>
<td>April 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Price</td>
<td>$135,000</td>
<td>$104,900</td>
<td>$260,000</td>
<td>$81,000</td>
<td>$120,000</td>
<td>$160,800</td>
</tr>
<tr>
<td>April 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The foreclosure and non-foreclosure indexes continue to move in opposite directions with foreclosure houses showing small increases while non-foreclosure prices are declining at double digit rates. Prices for foreclosures turned positive in March (4.6 percent) with the gain 5.2 percent in April and a preliminary increase of 5.0 percent for June. The foreclosure RSI has been relatively flat this year which means that recent increases in prices are not likely to continue past this summer.
Unfortunately for homeowners who are not in foreclosure but who are interested in the value of their homes, the data is not very encouraging. The annual decline reflected in the April data increases to -10.5 percent by June. The non-foreclosure RSI continues to decline and is significantly lower than it was a year ago. This means that house prices in this segment of the market are likely to decline for the foreseeable future. Whether the rate of decline begins to slow or continue near double digit rates probably depends more on an improving Phoenix economy than on just housing market factors per se. The townhouse/condo segment of the market appears to be leveling off but at an annual rate of decline just under 20 percent. Prices declined by 19.3 percent beginning with the March data. In April the decline was 19.4 percent and this slows only slightly to -18.8 percent by June.

The overall median price for sales that were included in the April index was $135,000 and the preliminary figure for June is $133,000 so median prices have been very stable for the past four months. The median price moved back up to $130,000 last September and has fluctuated within $5,000 of that figure since then. The median price for foreclosed houses in April was $120,000 up substantially from a low of $97,000 last May but the preliminary median for June is essentially the same at $119,000. Prices since October 2009 have been in the range of $115,000 to $120,000 and may well remain in that general range for the foreseeable future unless there is a significant change in the number of houses going into foreclosure or a turnaround in the Phoenix economy. Median prices for the lower and higher priced houses in Table 1 increase to $105,000 and $295,000 respectively by June. The June preliminary median for higher priced homes represents a $20,000 increase from the preliminary May price. For non-foreclosure houses the median price increased to $165,000 by June while for foreclosures the June median was $119,000. The preliminary median price of townhouse / condo units in June declined to $73,000. This represents another step down in price from the low $80,000s where prices had been for the past several months.

**Regions**

The slight increase in overall prices noted earlier is showing up in the regional indices where three regions have increases from last year for the first time (Table 2). However, single digit rates of decline remain in the Northeast and Southeast regions and those declines are likely to continue for the rest of the year. In terms of total declines from the 2006 peak, the Southwest is down the most, 58 percent, but even in the Northeast prices have dropped 37 percent. Three regions still show total declines in excess of 50 percent.

**Cities**

The decline in house prices from April 2009 to April 2010 slowed compared to the March data for all cities with Glendale and Peoria almost achieving price stability. Based on index values for the past year, it is likely that those two cities along with Mesa will show little in the way of price gains or
losses for the balance of 2010. In contrast, the rest of the cities in Table 3 are likely to post small declines on an annual basis at least through the end of the year.

### TABLE 2
CHANGE IN HOUSE PRICES BY REGION
(Percent)

<table>
<thead>
<tr>
<th></th>
<th>CENTRAL</th>
<th>NORTHEAST</th>
<th>SOUTHEAST</th>
<th>NORTHWEST</th>
<th>SOUTHWEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2009 –</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 2010</td>
<td>3.1</td>
<td>-5.7</td>
<td>-4.5</td>
<td>2.5</td>
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<td>March 2010 -</td>
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<tr>
<td>April 2010</td>
<td>1.8</td>
<td>-1.4</td>
<td>0.2</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>2006 –</td>
<td>-53.6</td>
<td>-37.3</td>
<td>-47.2</td>
<td>-52.1</td>
<td>-58.0</td>
</tr>
<tr>
<td>April 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 3
CHANGE IN HOUSE PRICES BY CITY
(Percent)

<table>
<thead>
<tr>
<th></th>
<th>CHANDLER</th>
<th>GILBERT</th>
<th>GLENDALE</th>
<th>MESA</th>
<th>PEORIA</th>
<th>SCOTTSDALE/</th>
<th>SUN CITY/</th>
<th>TEMPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2009 –</td>
<td>-5.7</td>
<td>-6.8</td>
<td>-0.1</td>
<td>-3.8</td>
<td>-1.0</td>
<td>-5.4</td>
<td>-5.5</td>
<td>-9.3</td>
</tr>
<tr>
<td>April 2010</td>
<td>0.5</td>
<td>0.5</td>
<td>0.8</td>
<td>1.1</td>
<td>1.6</td>
<td>-1.6</td>
<td>-0.3</td>
<td>-1.5</td>
</tr>
<tr>
<td>1989 – 1992</td>
<td>-7.6</td>
<td>na</td>
<td>-19.6</td>
<td>-10.9</td>
<td>-7.3</td>
<td>-9.7</td>
<td>-10.5</td>
<td>-1.9</td>
</tr>
<tr>
<td>2006 – April</td>
<td>-44.6</td>
<td>-46.9</td>
<td>-55.8</td>
<td>-49.9</td>
<td>-52.5</td>
<td>-36.3</td>
<td>-30.0</td>
<td>-41.6</td>
</tr>
</tbody>
</table>

**Methodology**

The use of repeat sales is the most reliable way to estimate price changes in the housing market because the repeat sales approach eliminates the need to deal with the many issues associated with the heterogeneous nature of housing. Repeat sales can be used to measure the price
change of the same housing unit over time. A large number of repeat sales over many years can be analyzed to develop a repeat sales index. In contrast, indices developed using regression analysis provide estimates of price changes over time while simultaneously attempting to control for differences in house characteristics, location, demographics and market conditions, etc. within the model. Regression analysis can and does produce meaningful estimates of price changes but the results are not as reliable as those produced using repeat sales data. An even less rigorous approach would be to simply average sale prices by zip code or some other geographic area where the mix of housing sizes and ages, etc. would be different each month. The percent changes based on medians or averages would reflect not only price changes but also differences in the sizes, ages and other characteristics of the houses sold each month.

The W.P. Carey School of Business – Repeat Sales Index (RSI) tracks very closely to the S&P/Case - Shiller index for Phoenix since the same methodology is employed for calculating both indices. The S&P/ Case-Shiller index has been developed for 20 metropolitan areas and is being used as a basis for trading housing futures contracts in 10 of those markets. Any differences between the two indices are probably due to the way the data has been cleaned prior to the calculation process. The S&P/Case-Shiller index is proprietary so the cleaning procedure used in connection with that index could not be completely duplicated. However, following S&P/Case-Shiller, the cleaning process used with the ASU - RSI excludes pairs where the first sale involved new construction and pairs where sales occurred within six months of each other. Sale pairs with extremely high or low annual rates of price change are excluded since at least one of the transactions may involve a data error. The same justification is used to drop sales with extremely high or low prices or prices per square foot prior to matching the sale pairs. A more detailed explanation of the data cleaning and calculation process is contained in the ASU-RSI Methodology Report.

The house price data used in the S&P/Case-Shiller index starts in January 1989. Beginning with January 1990, the percent change from the same month in the previous year is reported. The ASU – RSI also begins with January 1989 data so the same percent change calculation also begins in January 1990 and is reported for each month since then. There is seasonality in house price data so month to month changes may not accurately reflect changes in market conditions and would cover a very short time period. Calculating a percent change from the same month last year controls for whatever seasonality may be present in the data. Annual rates of change typically are thought of applying to a calendar year but in this report the annual rates that are reported would be measuring change over the preceding twelve months. To smooth the index, the rate of return calculated from each sale pair is included in calculations for a total of three months before it is published. Results using data for the two newest months are labeled as preliminary.

The S&P/Case-Shiller index is published only for the entire Phoenix metro area. One major advantage to the ASU-RSI is that in addition to the overall index, indices have been calculated for
higher and lower priced houses, smaller geographic areas (regions and selected cities) and for the housing market segmented in various ways. Price changes for the attached portion of the housing market (townhouse / condominiums) are presented as a repeat sales index using the same methodology and indices are also estimated for higher and lower priced single-family detached houses and for foreclosure and non-foreclosure sales. The monthly data are divided into two groups based on the median price of all single-family houses sold. Sales are then paired within each of the two data sets and a repeat sales index is calculated for each. The foreclosure sale pairs are formed using two foreclosure sales or with a foreclosure sale paired with an earlier non-foreclosure sale of the house. The metro area has also been divided into five regions and an index has been calculated for each. All repeat sales used in the metro index are included in one of the five regional indices. Indices have also been calculated for eight individual cities where there are a sufficient number of repeat sales a reliable index to be estimated. A list of the cities included in each region is in Table 4.

The graphs contained in this report show the annual rate of change in house prices for the Phoenix metropolitan area on a monthly basis as well as median house prices. Figures 1 and 2 compare the change in the overall, lower and higher priced indices to the overall trend in the index, where the trend was estimated using data from January 1989 through December 2003. Figure 3 makes the same type of comparison using the median price of single-family sales that were used to form sale pairs for the current month, not the median price of all sales that occurred during the month. Since each index is a moving three month average, preliminary estimates of the index and future median prices for the entire market are included for the next two months (May and June) in Figures 1-7. Figures 4 and 5 include the townhouse / condominium RSI compared to the single-family RSI presented earlier in Figures 1 and 2. The foreclosure and non-foreclosure RSIs are in Figure 6 while Figure 7 has median prices for foreclosure and non-foreclosure houses and townhouse / condo units. Figures 8-15 contain graphs for the regions and cities for two different time periods. Four of the graphs present the price changes from January 1990 through April 2010 while the other four graphs cover the current housing cycle beginning in January 2004. Due to data limitations, a reliable index for Gilbert could not be calculated until January 1999 so the annual changes for Gilbert in Figures 10 and 11 start in January 2000.
### TABLE 4

CITIES INCLUDED IN REGIONS

<table>
<thead>
<tr>
<th>REGION</th>
<th>CITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTHEAST</td>
<td>CAREFREE, CAVE CREEK, FOUNTAIN HILLS, PARADISE VALLEY, SCOTTSDALE</td>
</tr>
<tr>
<td>NORTHWEST</td>
<td>EL MIRAGE, GLENDALE, PEORIA, SUN CITY / SUN CITY WEST, SURPRISE, YOUNGTOWN</td>
</tr>
<tr>
<td>CENTRAL</td>
<td>PHOENIX</td>
</tr>
<tr>
<td>SOUTHEAST</td>
<td>APACHE JUNCTION, CHANDLER, GILBERT, HIGLEY, MESA, QUEEN CREEK, SUN LAKES, TEMPE</td>
</tr>
<tr>
<td>SOUTHWEST</td>
<td>AVONDALE, BUCKEYE, GOODYEAR, LITCHFIELD PARK</td>
</tr>
</tbody>
</table>
Figure 1
Phoenix Single-Family Repeat Sales Index (RSI)
Annual Change
January 1990 - June 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data

April: 1, Upper -3%   2, Lower 9%
Figure 2
Phoenix Single-Family Repeat Sales Index (RSI)
Annual Change
January 2004 - June 2010

Metro Area
Upper Range¹
Lower Range²

May and June are Preliminary

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data

April: 1, Upper -3%  2, Lower 9%
Figure 3
Phoenix Median Single-Family House Prices
January 1989 - June 2010

Trend  
Metro Area  
Upper Range¹  
Lower Range²

May and June are Preliminary

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data

April: 1, Upper $260,000  2, Lower $104,900
Figure 4
Phoenix Single-Family and Townhouse/Condominium Repeat Sales Index (RSI)
Annual Change
January 1990 - June 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data

April: Single-Family 1%; TH/Condo -19%
Figure 5
Phoenix Single-Family & Townhouse/Condominium Repeat Sales Index (RSI)
Annual Change
January 2004 - June 2010

May and June are Preliminary

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data

April: Single-Family 1%; TH/Condo -19%
Figure 6
Phoenix Single-Family Foreclosure Repeat Sales Index (RSI) Annual Change
January 2001 - June 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data

April: 1, Foreclosure 5%; 2, Non-Foreclosure -9%
Figure 7
Phoenix Foreclosures, Non-Foreclosures and Townhouse/Condominium Median Prices
January 1989 - June 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data

April: 1, TH/Condo $81,000  2, Foreclosures $120,000  3, Non-Foreclosures $160,800
Figure 8
Regional Single-Family Repeat Sales Index (RSI)
Annual Change
January 1990 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data
Figure 9
Regional Single-Family Repeat Sales Index (RSI)
Annual Change
January 2004 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data
Figure 10
Chandler, Gilbert, Mesa, & Tempe Single-Family Repeat Sales Index (RSI)
Annual Change
January 1990 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data
Figure 11
Chandler, Gilbert, Mesa & Tempe Single-Family Repeat Sales Index (RSI)
Annual Change
January 2004 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data
Figure 12
Glendale, Peoria, & Sun City/Sun City West Repeat Sales Index (RSI) Annual Change
January 1990 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data
Figure 13
Glendale, Peoria, & Sun City/Sun City West Single-Family Repeat Sales Index (RSI)
Annual Change
January 2004 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data
Figure 14
Scottsdale/Paradise Valley & Phoenix Single-Family Repeat Sales Index (RSI)
Annual Change
January 1990 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data
Figure 15
Scottsdale/Paradise Valley & Phoenix Single-Family Repeat Sales Index (RSI)
Annual Change
January 2004 - April 2010

Source: ASU W.P. Carey School of Business; Center for Real Estate Theory and Practice
Data Provided by Ion Data