

Demographic Trends: Apportioning the Active and Passive Components

By Ashok Abbott, MBA, Ph.D.

What do Larry Page, Sergey Brin, and Mark Zuckerberg have in common? They started their ventures in 2004, joined the ranks of the super rich, and what else? All were single at the time the foundations of their wealth were laid. In the past five years, Page and Brin married, and Zuckerberg finally invited his long-term girlfriend, Priscilla Chan, to move in with him. Their stories are in line with current demographic trends: younger individuals are spending more time in early adulthood pursuing education and careers, thus postponing marital relationships and choosing alternative routes to happiness.

The combination—delayed marriages, considerable wealth being created pre-marriage, and an almost 50% rate of divorce—brings an urgency to the issue of apportioning the active and passive components of the growth in value of the business during the marriage. The apportionment issue has been extensively litigated, and the rulings generally state that increased value of separate property resulting from spousal efforts (active appreciation) becomes the property of the marital partnership, and increased value attributable to other sources (passive appreciation) remains separate property. In dual-classification, equitable-distribution states, courts have recognized passive appreciation but used different names or methods, such as the Pereira method or the Van Camp approach.

It is very important to recognize that businesses function in their economic environment. Economic conditions outside the control of owners have significant impact on the growth, survival, and

value of the business. Determining the proportion of the change in value of the businesses started or acquired pre-marriage that is active or passive, therefore, requires that two questions be answered:

1. Which factors outside the control of the owner manager(s) of the business, if any, significantly impact the changes in value of the business?
2. What proportion of the change in business value can be explained by these external factors outside the control of the managers?

A careful analysis of the industry in which the business operates can identify the external variables that are likely to impact the value of the business. Measuring the impact of those variables

For more information on the OLS model . . .

Oldham, J. Thomas. "Everything Is Bigger in Texas Except the Community Property Estate—Must Texas Remain a Divorce Haven for the Rich?" University of Houston Law Center. *U of Houston Law Center No. 2010-A-7*. Feb. 25, 2010. Internet: papers.ssrn.com/sol3/papers.cfm?abstract_id=1558585.

Ryznar, Margaret. "All's Fair in Love and War: But What About in Divorce? The Fairness of Property Division in American and English Big Money Divorce Cases." *North Dakota Law Review*, Vol. 86, No. 1, pp. 115-147, 2010. Internet: papers.ssrn.com/sol3/papers.cfm?abstract_id=1445632.

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that are outside the control of the managers can help to quantify the proportion of appreciation that can be claimed as passive. The key lies in identifying macro economic variables that are statistically significant and applying standard statistical techniques so that the analysis is replicable and meets *Daubert* standards.

Quantitative analysis including multivariate ordinary least squares (OLS) regression provides a valuable tool for identifying external economic factors that can explain the changes in value of the business interest. Economists and valuation practitioners have used OLS extensively for more than a century as a statistical tool for hypothesis testing. Practitioners can use OLS to easily identify the significant variables affecting the value and to measure each variable's influence on the value of the business.

The OLS regression procedure consists of specifying a model equation with the dependent variable (e.g., changes in value of a business) as the factor to be explained and the independent variables being the factors providing an explanation. These independent factors may include the level of economic activity, interest rates, customer demographics, regulatory changes, and other similar data. The sum of regression squares (R-square) statistic for the specified regression equation (model) measures the percentage of change in value of the dependent variable that can be explained by these external factors and therefore considered passive appreciation not subject to distribution.

Illustration of the impact of external economic factors. In the example below, I employ OLS regression methodology to analyze monthly data from the retail sales activity of the U.S. Census Bureau's *Monthly Retail Trade* surveys and reports and *Federal Reserve Economic Data*.^{2, 3} With the results I can identify macro economic variables significant in explaining the changes

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2 www.census.gov/mrts/www/mrts.html

3 www.research.stlouisfed.org/fred2

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in the level of retail sales and the percentage of passive changes in retail sales that can be explained by the changes in three external variables (inflation, unemployment, and the bank prime rate) over which the business management would have no control.

Practitioners should identify these business-specific factors and perform regression analysis using national, regional, and local data, as available, for the period of analysis to get case-specific results. These regression results are estimated over a 15-year time period, 1996-2010, and sub periods of five and 10 years, using aggregate national level data.

The table below shows the percentage of variation in sales for subject industries explained by external economic factors such as the level of interest rates, unemployment, and prime rate of

Sales Revenues Levels Explained by Changes in Inflation, Unemployment and Bank Prime Rate (Changes in %)			
Industry Sales	1996-2010	2001-2010	2006-2010
New Car	33%	39%	71%
Used Car	76%	50%	30%
Full Service Restaurants	94%	85%	24%
Limited Service Restaurants	95%	89%	54%
Bars	91%	77%	27%

interest during 1996-2010 at the national level. The three factors tend to differ in importance and significance for different industries. The proportion of change in sales revenue explained by these economic factors outside the control of the managers changes over time.

Conclusion. The results are statistically robust and indicate that external factors have a significant impact on industries' sales revenues. These regressions, while suggesting significant passive appreciation components, however, are only a starting point for the analysis. It is useful to identify economic or demographic factors that are pertinent to the specific business being evaluated, test the relationships between these variables and the measures of performance statistically, and then identify the passive component. The reported results indicate that significant passive appreciation occurred in such businesses during the period 1996 through 2010.

Valuation practitioners and family law practitioners need to pay special attention to apportioning active and passive components. Demographic trends indicate that as marriages are delayed, the proportion of businesses established before marriage, and the size of marital estates gets larger, this issue is gaining in importance.

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