

Editorial Column and Short paper

The Global 2000 Companies and the Economic Sectors

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Abstract: As a continuation of a study directed at identifying the similarities and differences between companies that operate in either the Goods or Services Sector of the economy, the authors employ a technique called “Data Surface Mining” (DSM). This simple technique utilizes data previously published in the business press or elsewhere that were gathered for other reasons are further analyzed for a purpose of interest here. As such, data were generated in a recent study conducted by FORBES for the purpose of identifying the world’s 2000 best companies according to the metrics of Sales, Profits, Assets and Market Value. These data were further analyzed and are presented here to ascertain the relative presence of these companies in the two economic sectors, Goods and Services. The understanding of such issues is of critical importance in light of the fact that the Services Sector represents more than 80% (GDP and/or employment) of the United States economy and is of increasing importance in the global economy in both developed and emerging nations.

Keywords: Services Sector; Goods Sector; data surface mining

1. Introduction

After an extended period of neglect because of its focus on the Goods Sector of the economy, the attention of the academic community is making a recognizable shift to analysis of the Services Sector, which has unique and definable characteristics. It is the largest segment of the United States economy, representing more than 80% of both the Gross Domestic Product (GDP) and employment. For other industrialized nations, the percentages are somewhat lower, but they are also approaching 80%. Services is also the fastest growing sector. The Goods Sector comprises Manufacturing, Construction Agriculture and Extraction. Manufacturing is the largest component of Goods at approximately thirteen percent of the total domestic employment.

In the present study, the authors use a technique called “Data Surface Mining” (DSM) [See Berg and Einspruch (2004, 2008)] to analyze data previously published in FORBES to characterize the similarities and differences between the goods and services companies that are identified as The World’s Best Companies. In the following, the DSM technique will first be described; its application to the FORBES study will then be presented.

2. Data Surface Mining

Simply stated, the approach to DSM involves the identification of data sets that have been derived and published in sources that are generally available to other researchers and to the general public for subsequent analysis and interpretation. Such analysis undertakes to convert data into information, leading to new insights. The extraction of this information and insight represents the value added that results from this research activity.

3. Analysis

The FORBES staff [Project Editor: Scott DeCarlo] (2009) compiled a global list of 2000 companies based on sales, profits, assets and market value. They generated separate lists of 2000 companies based on each of the four metrics. They then prepared a composite list based on where each company fits on the four lists; this list represents the final

compilation of the Global 2000. These data were then partitioned by the current authors into companies that operate in the Services and Goods Sectors, respectively. By way of clarification, food producers are classified as being in the Goods Sector and food distributors are classified as being in the Services Sector. Conglomerates appear in both the Goods Sector and the Services Sector depending on their major lines of business. It was necessary to apply very little arbitrariness in the partitioning. The data were summarized by industry sector and are presented in Table 1.

Table 1 The Global 2000 Companies by Industry Sector

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(Additional Classification by Authors)

INDUSTRY	N	S	G
Aerospace and Defense	22		22
Banking	307	307	
Business Services and Supplies	49	49	
Capital Goods	69		69
Chemicals	65		65
Conglomerates	42	12	30
Construction	74		74
Consumer Durables	59		59
Diversified Financials	176	176	
Drugs and Biotechnology	45		45
Food Markets	28	28	
Food, Drink & Tobacco	82		82
Health Care Equipment and Services	42	21	21
Hotels, Restaurants & Leisure	20	20	
Household & Personal Products	38		38
Insurance	92	92	
Materials	123		123
Media	52	52	
Oil & Gas Operations	126		126
Retailing	67	67	
Semiconductors	25		25
Software & Services	35	35	
Technology Hardware & Equipment	67		67
Telecommunications Services	72	72	
Trading Companies	23	23	
Transportation	85	85	
Utilities	115	115	
TOTAL	2000	1154	846

In addition, the top one hundred companies were partitioned in the same manner as the entire population of the Global 2000. The top one hundred companies in each of the four economic metrics: Sales, Profits, Assets and Market Value, all denominated in dollars, were also partitioned in the same manner. The results are presented in Table 2. For example, of the highest 100 companies in the composite ranking, 57 are in the Services Sector. When the companies are ranked by Sales, 51 of the highest 100 are in the Services Sector. When the companies are ranked by Assets, 93 of the highest are in the Services Sector.

Table 2 The Global 2000 Companies by Economic Attribute
FORBES, April 27, 2009, pp.102 – 151.
(Additional Classification by Authors)

	S	G
Global 2000	1154	846
Top 100	57	43
Sales	51	49
Profits	42	58
Assets	93	7
Market Value	41	59

4. Observations and Discussion

Examination of the tables reveals several interesting observations, some of which have a ready explanation. Normalizing the Global 2000 to a basis of 100 yields a Services to Goods ratio of 58:42: the ratio obtained for the Top 100 is 57:43. Clearly, the distribution of Services and Goods companies in the Top 100 is essentially equivalent to the distribution of the Services and Goods companies included in the Global 2000. This ratio is not reflective of the 80:20 ratio obtained for GDP and employment in developed countries and which is being approached in developing parts of the world. It should be noted that both sales/employee and profits per employee are greater in the Goods Sector, which explains the variance from the 80:20 rule. Table 2 further reveals that the top 100 companies in Sales are almost equally divided between the two economic sectors; this result is also not consistent with the 80:20 ratio and suggests that the relatively smaller number of Goods companies have substantially larger sales than the companies in the Services Sector. Profits and Market Value have essentially the same distribution, giving rise to the possible confirmation of the principle that the stock market places a high value on the profits that companies generate, not a great surprise. It should also be noted that in the top 100 companies in the Assets entry, 93 are in Services. This observation may be explainable in terms of the disproportional, large amount of assets utilized by the major companies in the banking, diversified financial services and insurance segments, more than one-fourth of the companies in the Global 2000; adding transportation and utilities to these three segments leads to the observation that almost forty percent of the companies in the Global 2000 are in these five industry segments.

One may ask why the number of companies in the Assets entry is so high and the number of companies in the Profits entry is relatively so low in the Services Sector. Goods companies borrow from financial services companies to fund their operations and are required to earn more than the cost of borrowing to remain solvent. Lenders are often limited by law and the financial marketplace itself as to how much they can earn on the assets that they lend. Insurance companies often invest in real estate, which generally are less profitable than operating companies. It is for this reason that companies in both economic sectors often prefer to lease rather than own their facilities, since owning can distort the balance sheet and consequent evaluation of a company for merger, acquisition or other financial purposes. One may also speculate that transportation and utilities are regulated and receive a return based on their assets; these returns are generally limited by the respective regulatory body.

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Norman G. Einspruch received the Ph. D. degree in Applied Mathematics from Brown University. He was employed by Texas Instruments Incorporated for eighteen years in a variety of technical/managerial positions, including Director of the Central Research Laboratories. During the last thirty-three years at the University of Miami, he has served as Dean of the College of Engineering and as Chairman of the Department of Industrial Engineering; he is Senior Fellow in Science and Technology, Professor of Electrical and Computer Engineering and Professor of Industrial Engineering. His current research area, in which he has published extensively, relates to characterizing the similarities and differences between the Goods Sector and the Services Sector of the economy, with special emphasis on the role of technology and technology management. He is a Life Fellow of the Institute of Electrical and Electronics Engineers, a Fellow of the American Physical Society, a Fellow of the Acoustical Society of America, and a Fellow of the American Association for the Advancement of Science.