

Focus Topic:

Key Indicators for users of Coated Papers through the business cycle

January 2008



Economic expansion drives end-use indicators up...or does it?



- Conventional wisdom suggests that an economic expansion should drive the key indicators of the magazine, catalog, commercial print and retail segments upwards, and a recession should represent a period of time of declining or stagnant indicator performance.
- The GDP represents the most widely accepted indicator of whether an economy is in expansion or recession.
- The GDP is made up of several sub segments (or “Industries”) of spending and a more detailed analysis of these Industries may reveal more insight as to why the correlation is not perfect for every indicator
- The time span of this study is 1990 - 2006

Recession vs. Expansion:

1990 - 2007



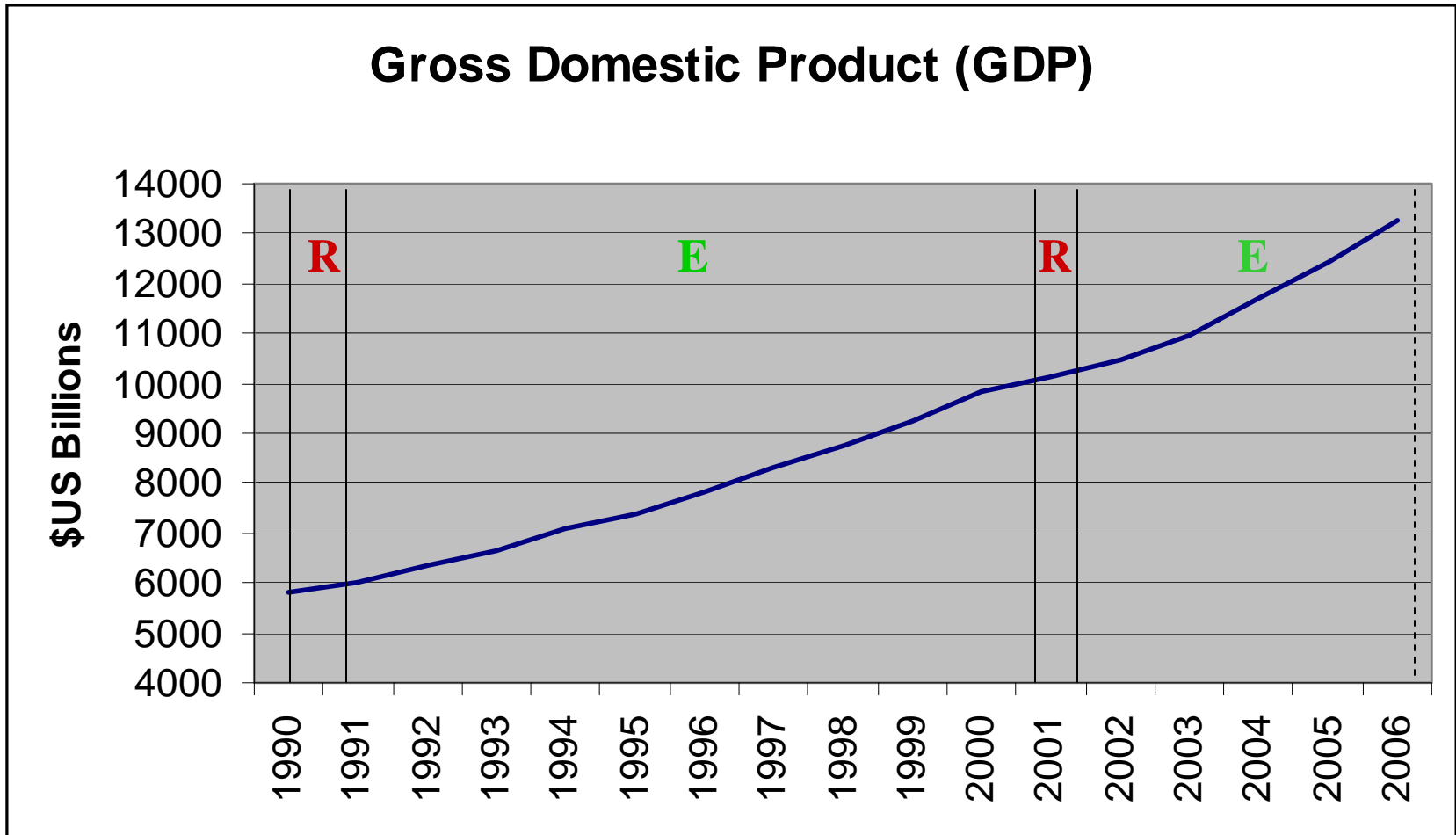
Cycles of expansion and recession are maintained by the National Bureau's Business Cycle Dating Committee. Definitions of expansion and recession are not set in stone but, loosely:

1. Expansion – A run of positive quarter over quarter GDP results
2. Recession – A period of diminishing economic activity. Negative GDP for 2 consecutive quarters / other indicators are also taken into consideration.

Most economists agree on the following groupings of economic activities over this time span:

- 1990 – 1Q 1991 : Period of recession (**R** – on next slide)
- 2Q 1991 – 1Q 2001 : Period of expansion (**E** – on next slide)
- 2Q 2001 – 4Q 2001 : Period of recession (**R** – on next slide)
- 1Q 2002 - ?Today? : Period of expansion (**E** – on next slide)

Recession vs. Expansion: 1990 - 2007

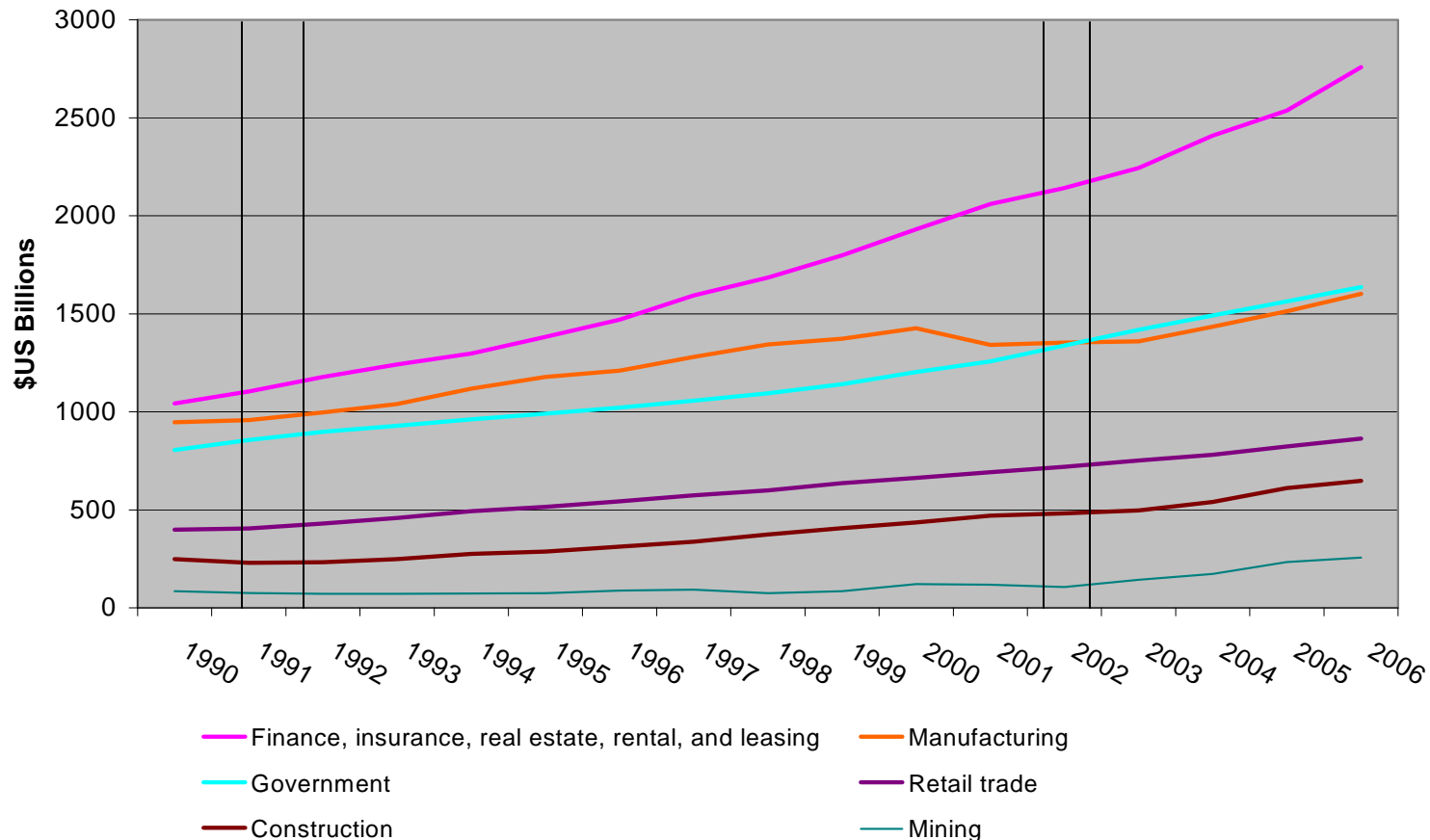


GDP broken down by some of its basic Industry Accounts



An analysis of the basic components of the GDP shows that they do not all rise and fall at the same time or with the same slope.

GDP by Industry Account



Key Indicators Chosen



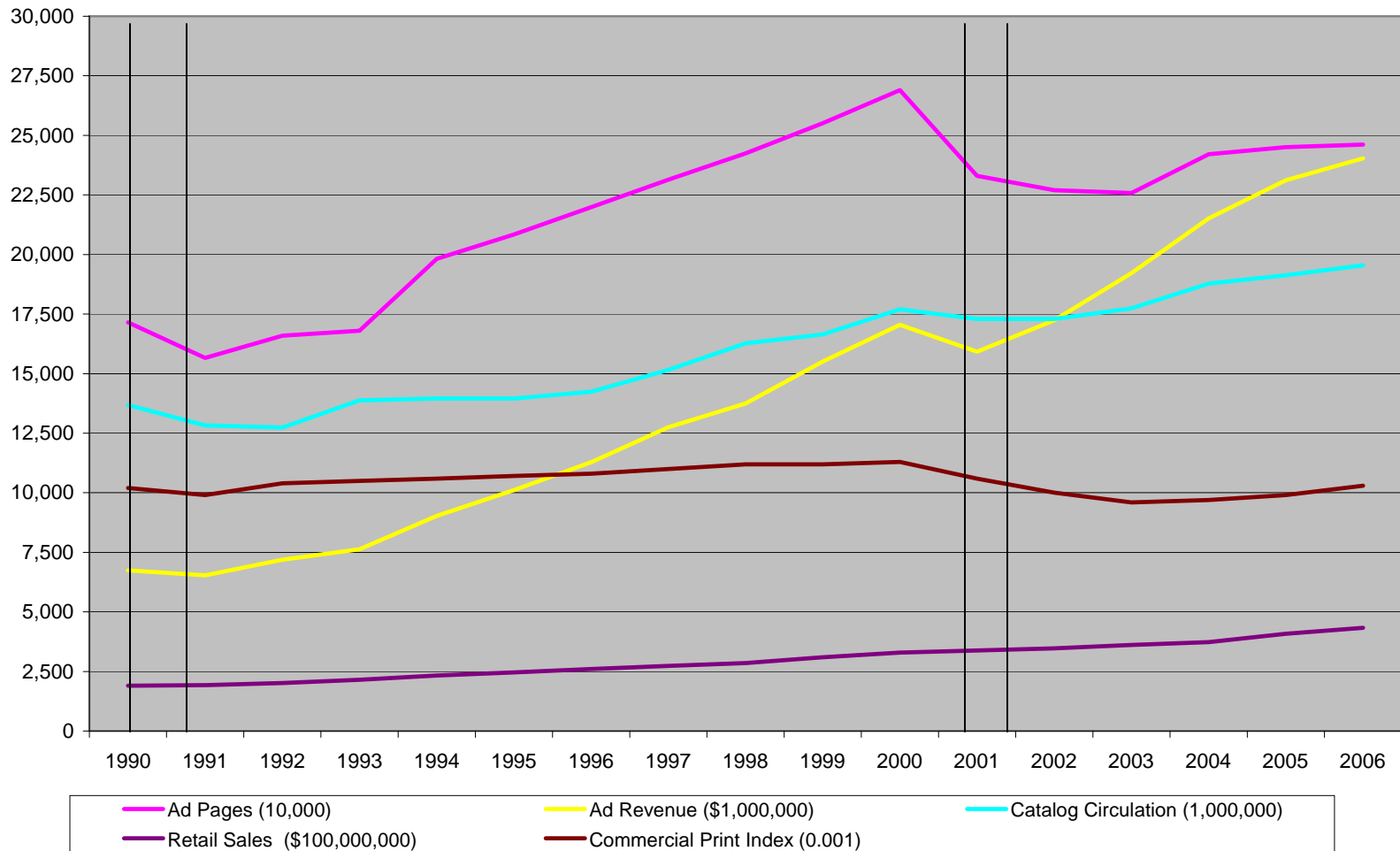
Each of the indicators were multiplied by some factor of 10 in order to make it easier to present the data on one graph

- Magazine Ad pages – Multiply by 10,000 to get total pages measured (Source: PIB)
- Magazine Ad revenue – Multiply by \$1,000,000 to get total Ad revenue for the year (Source: PIB)
- Catalog Circulation – Multiply by 1,000,000 to get total Catalogs Mailed (Source: RISI)
- Retail Sales excluding auto – Multiply by \$100,000,000 to get total sales (Source: US Census Bureau)
- Commercial Print Index– Multiply by 0.0001 to get the Commercial Print Index (Source: RISI)

End Use Indicator Trends

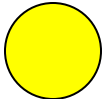
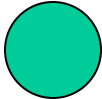
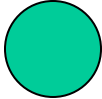
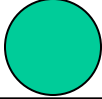
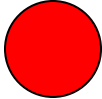


End Use Indicator Trends



End Use indicator correlation to Total GDP



End Use Indicator	Correlation Coefficient (R ²)	General Correlation	Comments
Ad Pages	0.621		Ad Pages show a "loose" correlation to the overall GDP through the last 2 economic cycles
Ad Revenue	0.991		Ad Revenue has tracked extremely well with overall GDP through the last 2 economic cycles
Catalog Circulation	0.957		Catalogs mailed have a strong correlation to the overall GDP through the last 2 economic cycles
Retail Sales	0.996		Retails sales have the strongest correlation to the GDP over the last 2 economic cycles
Commercial Print Index	0.065		Commercial Print Index has virtually no correlation to the overall GDP over the last 2 economic cycles. It is interesting to note however, that there is a very good correlation through the first cycle and then a poor correlation through the most recent cycle.

For the purposes of this study we will use the following interpretation of r²:

0-0.5 = poor or no correlation,

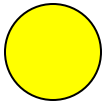

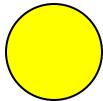
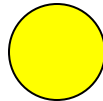
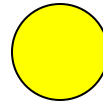
0.51 – 0.85 both variables tend to trend in the same direction,

0.86 – 1.00 = very good correlation

Ad Pages correlation vs. Industry Accounts which make up the GDP



AD PAGES

Finance, Insurance, Real Estate, etc.	Manufacturing	Government	Retail Trade	Construction
0.589	0.852	0.520	0.650	0.582
				
This category has the third best correlation to Ad Pages but not high enough to consider a strong correlation	Manufacturing has a relatively strong correlation to Ad Pages numbers	Government spending portion of the GDP has the lowest correlation to Ad Pages of the Ind Acnts	The Retail Trade Industry Account has the 2 nd highest correlation to Ad Pages	Construction activity has only a loose correlation to Ad Pages over the economic cycles studied here

Ad Revenue correlation vs. Industry Accounts which make up the GDP



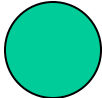
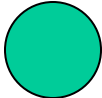
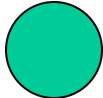
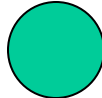
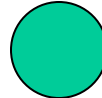
AD REVENUE

Finance, Insurance, Real Estate, etc.	Manufacturing	Government	Retail Trade	Construction
0.984	0.922	0.971	0.956	0.961
This category has the strongest correlation to Ad Revenue; very near perfect correlation	Manufacturing has the lowest correlation to Ad Revenue of the Ind Accts studied here but still quite strong	Government spending portion of the GDP has the 2 nd highest correlation to Ad Revenue	The Retail Trade Industry Account has the 4 th highest correlation to Ad Revenue	Construction activity has the 3 rd highest correlation to Ad Revenue over the economic cycles studied here

Catalog Circulation correlation vs. Industry Accounts which make up the GDP



Catalog Circulation

Finance, Insurance, Real Estate, etc.	Manufacturing	Government	Retail Trade	Construction
0.952	0.906	0.919	0.956	0.961
				
This category has the third best correlation to Catalog Circulation; an excellent correlation at over 0.95	Manufacturing has the lowest correlation to Catalogs mailed and just barely high enough to be considered a strong correlation.	Government spending portion of the GDP has the 2 nd lowest correlation to Catalog Circulation of the Ind Acnts	The Retail Trade Industry Account has the 2 nd highest correlation to Catalog Circulation	Surprisingly Construction activity has the highest correlation to Catalog Circulation over the economic cycles studied

Retail Sales correlation vs. Industry Accounts which make up the GDP



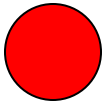
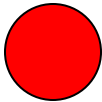
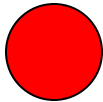
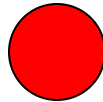
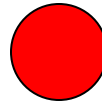
RETAIL SALES

Finance, Insurance, Real Estate, etc.	Manufacturing	Government	Retail Trade	Construction
0.992	0.923	0.975	0.996	0.985
				
This category has the 2 nd highest correlation to Retail Sales; a very strong indicator / correlator	Manufacturing has the lowest correlation to Retail Sales but is still very strong	Government spending has an excellent correlation to Retail Sales but not as high as others shown here	No surprise the Retail Trade Industry Account has the highest correlation to Retail Sales	Construction activity has an excellent correlation to Retail Sales over the economic cycles studied here

Commercial Print correlation vs. Industry Accounts which make up the GDP



Commercial Print Index

Finance, Insurance, Real Estate, etc.	Manufacturing	Government	Retail Trade	Construction
0.081	0.001	0.125	0.057	0.082
				

There is not a strong enough correlation between the Commercial Print Index to any of these Industry Accounts which make up the GDP. In fact 4 out of five of them showed a negative correlation. As pointed out on slide 8, this is the case when including the data from the second economic cycle (2000 – 2006). For the first cycle, there was a much better correlation. This analysis does cast doubt on the usefulness of this indicator when making predictions off the rise and fall of the GDP.

Conclusions



- **Ad Revenue, Catalog Circulation** and **Retail Sales** all correlate very strongly to the GDP trends (economic cycles). Economic Expansions caused by a boom in Retail Sales will most likely drive these three indicators upwards, while those driven by manufacturing will have a somewhat less predictable impact on them.
- **Ad Pages** will benefit in an expansion and are at most risk in a recession which is driven by the manufacturing portion of the GDP. This is a fairly large portion of the total GDP. Expansion or contraction of the other Industry Accounts has only a moderate correlation with Ad Pages.
- The US economy is reported to be teetering on a recession. The Industry Accounts that appear to be experiencing the greatest contraction are Construction and Finance. Assuming this is true, the data from this study suggests that **Ad Revenue, Catalog Circulation** and **Retail sales** might drop with greater certainty than **Ad pages** and **Commercial Print**.