

for Affiliates this month in Center research:

## Emerging Global Print Markets: Brazil

This month's eReview is based on the soon-to-be released *Emerging Global Print Markets: A Five-Country Comparative Study* (PICRM-2006-06), by RIT Professors Stan Widrick and Frank Cost. This monograph focuses on the current state and near-term growth trends of the printing industries in five countries with emerging market economies: Brazil, China, India, Mexico and Russia. For the month of September, the printing and publishing industry of Brazil will be discussed.

### Introduction

Brazil is the largest and most populous country in South America. Its natural resources have provided the fuel that has driven Brazil's economy. These resources include large and well-developed agricultural industries, which have made success possible in the manufacturing and services sectors. Agriculture and agribusinesses that produce sugar cane, coffee, fruits, cattle, forest products, and related crops, make up approximately 30% of Brazil's GDP and 40% percent of its export earnings.

Industrial activity accounts for about 40% of GDP, and includes the manufacture of automobiles, machinery and equipment, steel, textiles, cement, petrochemicals, and consumer durables. Brazil also has the largest rainforest in the world, and has the advantage of being a leader in the production of hydroelectric power.

Similar to the government of China, Brazil's current political leadership has made economic growth and poverty alleviation top priorities. The government's macroeconomic policies have laid the foundation for a sustained recovery in growth, a control of inflation, and a decline in poverty.

Brazil is strengthening its trade relationships with the countries of MERCOSUR, a customs union that includes Argentina, Brazil, Paraguay, and Uruguay. Chile and Bolivia are slated to join the union in the near future. MERCOSUR was established in 1991, with the goal of increasing regional economic cooperation among member countries. To increase exports, the government is seeking expanded trade relationships with countries such as China, Mexico, and Canada. Brazil has also become increasingly involved in international economic and trade policy discussions, as shown in its leading role in the World Trade Organization (WTO) Doha Round talks.

### Economic Overview

The Brazilian economy came under considerable stress in 2002

### Center Spotlight

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and 2003. A volatile external environment and concerns about the continuity of macroeconomic policies following the change in government led to a sharp decline in \ foreign direct investment (FDI), with inflows dropping to \$31.2 billion in 2003. In that year, real GDP growth declined sharply to 0.5%, and inflation rose to 14.8% as a result of the continued depreciation of the Brazilian real.

Inflation control became a problem during 2002 and 2003, with the inflation rate hitting nearly 15%. Even though spread of inflation has been checked by the current government, overall inflation during the last few years has been much higher than that in developed economies. The Industrial Production Index has increased only modestly, with a 4.8% cumulative growth between 2000 and 2004. The economic challenges that faced Brazil in the years following 2000 have resulted in continued low levels of FDI in Brazil. Foreign firms have gravitated toward more lucrative countries with lower investment risks.

The balance of trade for Brazil has steadily improved between 2000 and 2004. In 2004, exports reached \$108.85 billion, while imports were \$80.65 billion. A substantial proportion of exports are concentrated in transport equipment, iron ore, soybeans, footwear, coffee, and automobiles. Many (perhaps most) of these exports do not include substantial packaging and printing. Data from the International Monetary Fund reveals that Brazil accounts for slightly greater than one-third of the GDP of Latin America (including Mexico and the Caribbean).

On a favorable note, macroeconomic stability appears to have been restored in 2004 and has been maintained through strong macroeconomic policies and the pursuit of tax and pension reforms, along with bankruptcy legislation. Consumer confidence increased and the business climate improved. Real GDP grew by 4.9 percent in 2004, but had fallen back to 2.3 percent in 2005.

**Table 1: Macro-economic overview** (Euromonitor)

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Macro-economic measure	2000	2001	2002	2003	2004	2005
Total GDP (billions of U.S. dollars)	602	508	461	506	604	796
Real GDP growth (%)	4.40	1.30	1.90	0.50	4.90	2.30
GDP at PPP (billions of international \$)	1,253	1,300	1,348	1,383	1,489	1,577
Annual rates of inflation (%)	7.0	6.8	8.5	14.7	6.6	6.8
Purchasing Power Parity (R\$ per international \$)	0.87	0.91	0.99	1.11	1.17	1.2
Industrial Production Index (1995 = 100)	109.7	111.5	114.1	114.7	116	--
FDI inflows (billions of U.S. dollars)	32.8	22.5	16.6	10.1	18.1	--
Exports of goods and services (billions of U.S. dollars)	55.1	58.2	60.4	73.1	96.4	118.3
Imports of goods and services (billions of U.S. dollars)	58.6	58.4	49.7	50.9	66.4	77.6
Annual lending rates (%)	56.8	57.6	62.9	67.1	54.9	55.4
Tax rates on businesses (%)	--	--	--	--	15	--
Exchange rates (R\$ against U.S. dollar)	1.83	2.36	2.92	3.08	2.93	2.44

## Commercial Infrastructure

As an indicator of the potential of an economy to support growing business interests in the area, commercial infrastructure details the adoption of communication technologies by the population. While there has been a very small growth in telephone landlines from 21.22 to 23.04 lines per 100 habitants, there has been an explosion in cell phone subscription rates over the study period.

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The *eReview* is a monthly publication of the Printing Industry Center at RIT for registered Affiliate companies. Articles are also published in the quarterly printed publication *PrintReview*.

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## About the Center

Cell phone subscriptions have increased from 16.30 to 60.80 per 100 habitants, which represents a substantial 373% growth rate that reflects the global migration to cellular telephony. The number of television sets per 1000 people has steadily decreased over the study period, from 957.1 to 950.6. This is a slight downward trend, but should be monitored by companies that leverage television services and advertisements as part of their business model.

The use of personal computers has increased from 8.5 million in 2000 to 22.2 million in 2005, which is an average annual increase in excess of 20%. By 2005, 78.2% of Brazilian households with a PC were online. The number of Internet users continues to explode, and as of 2005 included almost 40 million people – approximately 22% of the total population. This may account for some of the decline in newspaper and magazine readership.

The IT infrastructure for Internet use has increased over this time period. The number of Internet hosts has roughly doubled, from 9,324 to 18,953 per million people. The number of Internet users in the country is growing rapidly, and the demand may outpace the bandwidth necessary for a growing user base. The number of PCs grew from 6.12% of the population in 2001 to 10.52% of the population in 2005.

### The Brazilian Printing Industry

The Brazilian printing industry has been affected by some of the forces of change common to other industrialized markets in the country. These include consolidation of the industry, increasing competition, and erosion of profit margins. As of 2005, the industry was reported to have the following characteristics:

- 15,500 printing and printing-related establishments
- 202,000 employees
- \$5.5 billion in revenues
- Graphic communications represents 1% of Brazil's gross domestic product\*

*\*Two printing experts in Brazil suggest that that printing growth is believed to be directly relational to the growth in GDP. GDP for Brazil has slowly increased over the last six years.*

Sixty percent of the industry is concentrated in the southern and southeast regions of the country, in cities such as Rio de Janeiro, São Paulo, and Manaus. The northeast and northern regions are poorer than the rest of the country. These regions are experiencing faster economic growth than the south, but are starting from a smaller economic base.

Brazil is a large country lacking a sufficient transportation infrastructure. Therefore, as regions become wealthier, the local printing industries will grow to serve local and regional markets. This may be an opportunity for digital printing systems, as content could be generated in centers like São Paulo, then transmitted to remote regions for local production.

Dedicated to the study of major business environment influences in the printing industry precipitated by new technologies and societal changes, the Printing Industry Center at RIT addresses the concerns of the printing industry through educational outreach and research initiatives.

Support for the Center comes from:

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## Market Size & Growth

The population of Brazil stands at about 181 million as of 2005, and is growing at a modestly decreasing rate, down from 1.32% growth in 2001 to 1.22% growth in 2005. Just over 80% of the population lived in urban areas in 2005. Similarly, the consumption of electricity and total primary energy growth provide insight into market size. Brazil's 6.8% growth of total primary energy consumption between 2001 and 2004 is about equal to the population growth rate.

The growth rate of market indicators is necessary to contextualize demographic trends and their ability to place increasing demands on national infrastructure. Brazil's real GDP has expanded at a gradual and fluctuating rate between 2001 and 2005. Correspondingly, the primary energy use has increased by an average of 2.3% per year between 2001 and 2004.

Table 2 shows that the 2005 gross national income per capita in Brazil was \$3,460, adjusted to purchasing power parity. While the gross national income per capita has increased over the five-year period, private consumption as a percentage of GDP has decreased over the same period. This fact is obscured by the increase in consumer expenditure from \$341.1 to \$493.8 billion between 2001 and 2005.

**Table 2. Market intensity measures (Euromonitor)**

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Market intensity measure	2001	2002	2003	2004	2005
GNI per capita estimates using PPP (U.S. dollars)	3,040	2,790	2,680	3,000	3,460
Consumer expenditure (billions of U.S. dollars)	341.1	301.8	332.3	375.9	493.8
Private consumption as a percentage of GDP	67.1	65.5	65.7	62.3	62.1

Table 3 provides data on both Brazil's GDP and an estimate of the printing industry's total sales. As can be seen, the ratio of printing to GDP has decreased between 2000 through 2004. It should be noted that in 2004 there was a modest up-tick in this ratio.

**Table 3. Printing sales compared to GDP (Brazilian Central Bank, IBGE, Abigraf/Decon)**

[click to view image full size](#)

Measure	2000	2001	2002	2003	2004
Printing sales (billions of U.S. dollars)	6.72	5.28	4.42	4.53	5.50
YOY Printing sales change (%)		-21.4	-16.3	2.5	21.4
GDP (billions of U.S. dollars)	602	510	459	507	599
YOY GDP change (%)		-15.3	-10.0	10.5	18.1
Ratio of printing sales to GDP (%)	1.11	1.04	.96	.89	.92

## Industry Segments

### Consumer Packaging

Consumer packaging production in Brazil was directly responsible for 1.3% of Brazilian GNP in 2003 at a value of \$17.8 billion. This segment has shown sustained growth in both in volume and value terms over the last five years. The continuing devaluation of the Brazilian real against the U.S. dollar (approximately a 70% decrease between 1998 and 2002),

combined with the low costs of manufacturing and materials in Brazil, have made local packaging products economically competitive in the global marketplace, stimulating exports of both packaging materials and packaging products.

The increase in single-occupant dwellings in Brazil over the survey period paired with an increasingly young consumer base have led to an increase in the consumption of single-serve packaging. Convenience has become an increasingly important factor in consumers' purchasing decisions in recent years. This trend has greatly benefited rigid plastic and flexible packaging.

#### Books

Hamilton Terni Costa provides us with the following insight: "1998 was the peak year for book production in Brazil. Brazil produced about 390 million books in 1998. We were anticipating an increase through 2000-2002 as the number of students in school reached an all-time high. If we projected the number of books that would be produced to keep up with the rate of growth of students, we would have predicted almost 1.5 to 2 times the number produced in 1998. But we never reached the 1997-98 numbers again."

The Brazilian book publishing market ended 2005 with 20% growth over 2004 figures, ending years of crisis. According to Sérgio Vaz, director with Votorantim Celulose e Papel (VCP), government purchases totaled 61 million units in 2005.

**Table 4. Printing sales by segment - billions of U.S. dollars**  
(Abigraf/Decon)

[click to view image full size](#)

Industrial Segment	2003	% Share	2004	% Share
Publishing	1.14	25.2%	1.35	24.5%
Packaging	0.92	20.3%	1.15	20.9%
Business Forms	0.75	16.6%	0.92	16.7%
Office & School Supplies	0.46	10.2%	0.60	10.9%
Advertising Printing	0.49	10.8%	0.58	10.5%
Calendars & Letterhead	0.25	5.5%	0.30	5.5%
Prepress	0.14	3.1%	0.15	2.7%
Misc. Other	0.38	8.4%	0.45	8.2%
<b>TOTAL</b>	<b>4.53</b>	<b>100.0%</b>	<b>5.50</b>	<b>100.0%</b>

### Industry Trends

#### Decreasing Newspaper and Magazine Consumption

Newspaper circulation in Brazil has followed the general trend of most of the rest of the world, dropping from 7.88 million daily newspapers in 2000 to 7.12 million in 2005. This means that the average person of any age (including children) read just 14.3 issues per year in 2005, as compared to 16.9 issues in 2000. However, since newspapers are read by multiple persons within a household, the number of papers read by an average person per year cannot be calculated in this way.

Magazine readership appears to have followed a similar pattern, with a decrease to 406 million issues printed in 2004 from 446 million issues in 2000. On a per capita basis, this is equivalent to

a decrease to 2.27 issues read per year in 2004, down from 2.62 magazine issues read per year in 2000. It was estimated that Brazilians read an average of 1.8 books per year in 2002. As books are also read by multiple persons, it is unclear how much this may have changed in the last three years. Regardless of these trends, consumers are spending more on newspapers, magazines, books, and stationery due to inflation. In 2000, expenditures were about \$2.81 billion, while in 2005 spending increased to \$4.97 billion.

**Table 5. Newspaper and magazine consumption**  
(Euromonitor)

[click to view image full size](#)

Measure	2000	2001	2002	2003	2004	2005
Population (millions)	170.1	172.4	174.6	176.9	179.1	181.3
Annual daily newspaper circulation (millions)	7.88	7.67	6.97	7.18	7.10	7.12
Annual newspapers per capita	16.9	16.2	14.6	14.8	14.5	14.3
Magazine circulation (millions)	446	454	436	413	406	--
Annual magazines per capita	2.62	2.63	2.50	2.33	2.27	--
Consumer expenditure on newspapers, magazines, books and stationery (billions of U.S. dollars)	2.811	3.136	3.512	3.968	4.421	4.968

### Fluctuating Paper Production

Paper production provides another perspective on printing industry growth rates, through increases in supply chain activity (see Table 6). The annual production of paper and paperboard in 2000 amounted to 6.47 million metric tonnes, and increased to 8.74 million tonnes in 2005. (One metric tonne is equivalent to 1,000 kilograms, which is about 2,200 pounds). A similar pattern was observed with the production of printing and writing paper: 2.10 millions tonnes were produced in 2000, while 2.44 millions tonnes were produced in 2005. Given the previously discussed decrease in newspaper readership, it's not surprising that the production of newsprint declined from 266 thousand tonnes in 2000 to 113 thousand tonnes in 2005.

**Table 6. Paper production** (Euromonitor)

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Measure	2000	2001	2002	2003	2004	2005
Production of newsprint (thousands of tonnes)	266	230	230	163	133	113
YOY change (%)	--	-13.5	0.0	-29.1	-18.4	-15.0
Production of paper and paperboard (thousands of tonnes)	6,473	7,354	7,354	7,811	8,221	8,736
YOY change (%)	--	13.6	0.0	6.2	5.2	6.3
Production of printing and writing paper (thousands of tonnes)	2,100	2,150	2,150	2,272	2,369	2,442
YOY change (%)	--	2.4	0.0	5.7	4.3	3.1

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