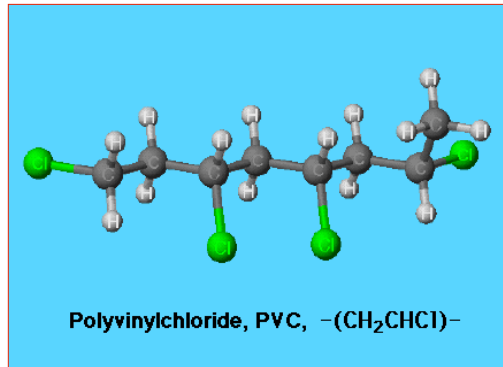


PVC: An overview of the US market in 2008 and what to expect in 2009



Presented by Kevin Allen for the 2008 Canadian Plastics Conference
October 2, 2008 - Toronto

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Challenges facing North American PVC

- **Pressure from record high raw materials**
 - NYMEX August crude futures passed \$147/b in early July.
 - Ethane began climbing in early June and reached record highs at 154 cents/gallon in early July.
 - Ethylene prices followed and in early July spot touched 70 cents/lb
- **Feedstock volatility, contracts negotiations**
- **Anemic domestic demand**
 - Residential construction markets began to slow in late 2006 and weakened significantly in 2008.
 - Driven largely by mortgage crisis, consequent credit issues.
- **Capacity expansions**
- **Restrictive lending**
 - tightened standards on residential commercial real estate loans.

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Volatile and record high feedstock costs..

- Spot ethylene numbers were as low as 46.25 cents/lb in February of 2008 and shot up to as high 70.125 cents/lb in the first few days of July. It consequently fell as low as 44.375 cents/lb and following Hurricanes Gustav and Ike, has climbed to roughly 60 cents/lb.
- Given the range between February and July, PVC producers were looking at roughly a 10.25 cents/lb increase in ethylene costs alone over the course of six months.
- During that same period, ethane costs jumped from as low as 89 cents in February to as high as 154.375 cents in July.
- Given the 154.375 price, ethylene producers were looking at a cash cost of roughly 61.75 cents/lb.



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Contract settlements process not consumer friendly

-Retroactive and dual monthly ethylene settlements have made it difficult to project production costs and implement increases. This affects downstream consumers as well.

Example: Difficult to project October sales and production costs when August and September ethylene aren't yet settled.

Example: Going back to July, ethylene producers were looking for sizeable increases. As a result PVC sellers nominated 8 cents increase for July. When feedstock prices fell off, PVC sellers ultimately realized 4 cents/lb for July. They attempted to push the remaining 4 cents until August but as feeds fell, at least one supplier pulled the August increase.



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Side by side: US ethylene, ethane spot prices



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PVC Price Increases

-Rising raw materials have increased production costs and forced PVC producers to announce price increases in an effort to avoid margin compression.

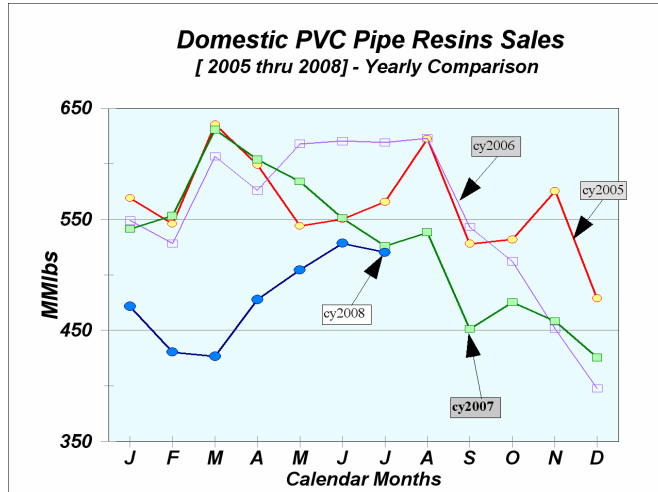
-Since Q4, 2007, producers have pushed through PVC price hikes of approximately 16 cents/lb while margins have failed to see significant improvement.

November - 4 cents
January - 2 cents
February - flat
March - 1 cent
April - 1 cent
May - 4 cents
June - flat
July - 4 cents
August - flat
September - 4 cents (on the table)

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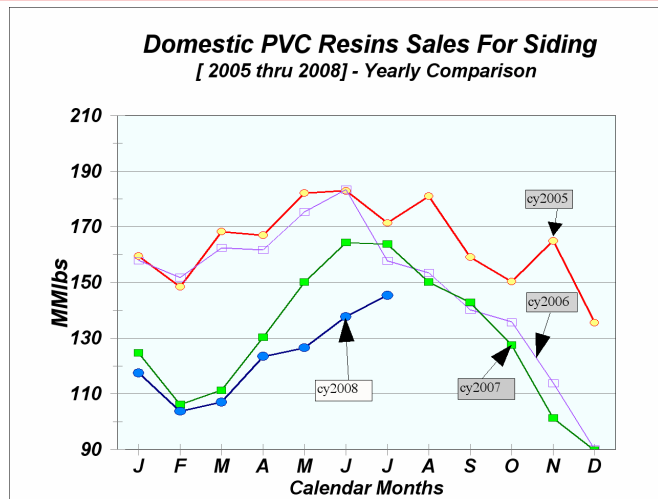
PVC Trends for H1 2008 – Domestic sales



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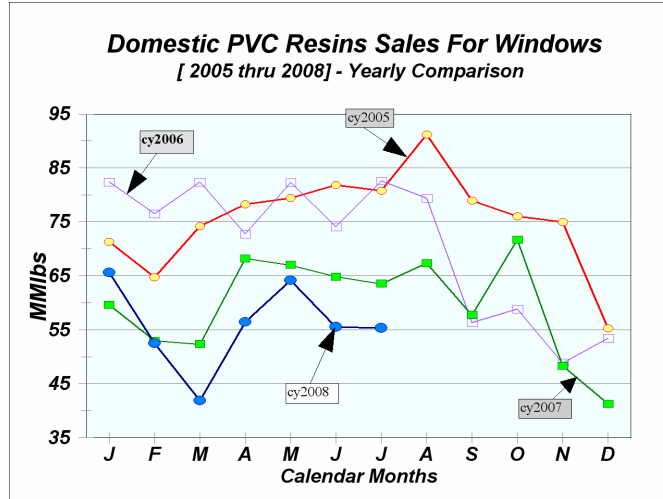
PVC Trends for H1 2008 – Siding sales



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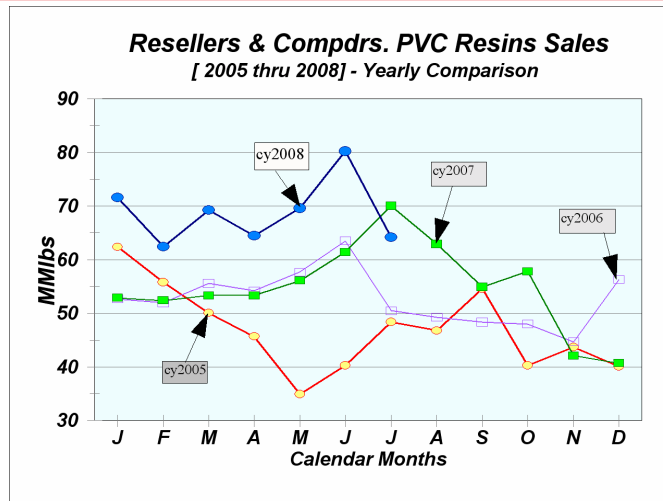
PVC Trends for H1 2008 – Sales for windows



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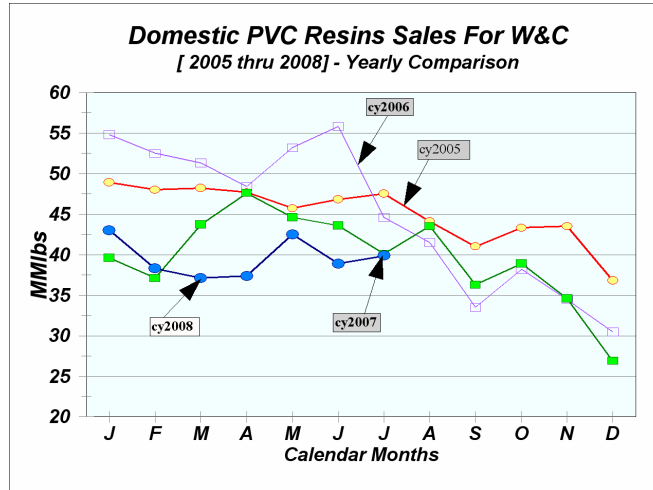
PVC Trends for H1 2008 – Sales resellers/compounders



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PVC Trends for H1 2008 – Sales wire and cable

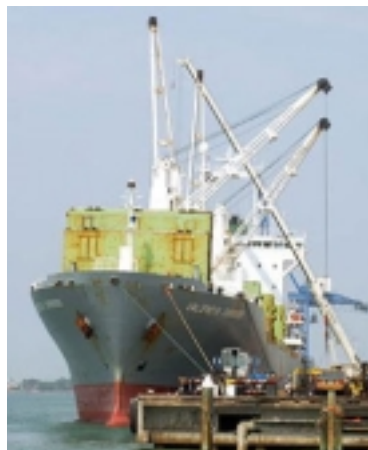


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Exports helped to mitigate weak domestic demand

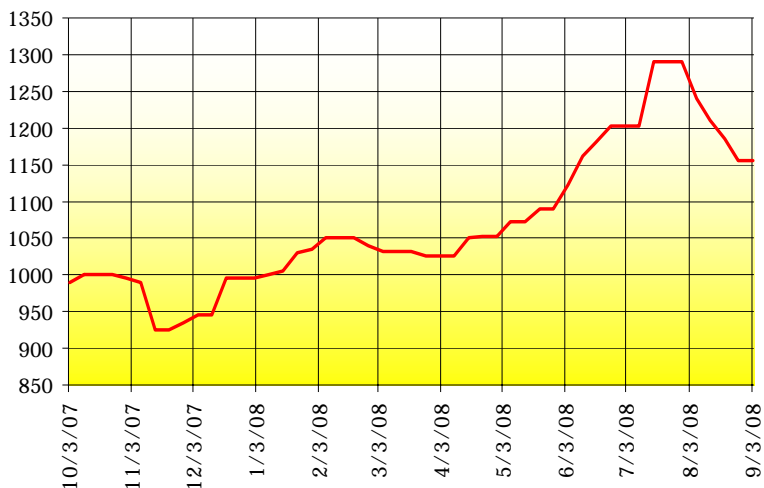
- In 2008, there was an uptick in exports from the US, which helped negate lagging domestic demand.
- Exports increased to Latin America as well as to markets such as Turkey, Ukraine, and Egypt.
- Since October 2007, FAS prices out of the US Gulf gained almost \$300/mt before falling back in the beginning of September.
- As of last week, traders suggested resin would need to be priced at \$900/mt FAS or lower to be workable.



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PVC export values - (\$/MT) FAS Houston

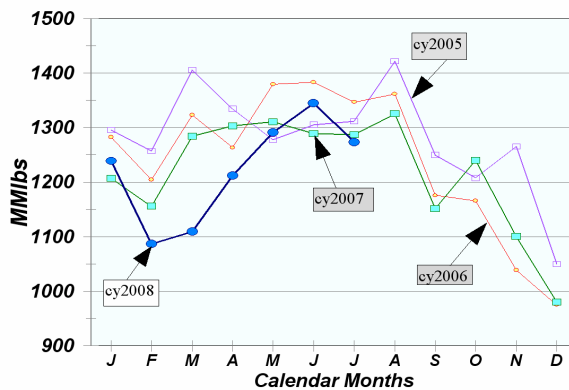


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Total Industry PVC Resins Sales

Total Industry PVC Resins Sales
[2005 thru 2008] - Yearly Comparison



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PVC production in North America and operating rates

PVC capacities are expected to grow 3% in 2008 and another 3.6% in 2009.

Losses: Georgia Gulf - closed 500 million lbs/year facility in Oklahoma City and idled its 450 million lbs/year facility at Sarnia, Ontario.

New Capacities: N. American Pipe - Westlake subsidiary is building 120 million lbs/year facility in Yucca, AZ which is expected to come online in Q1, 2009.

Westlake - Westlake will expand its Calvert City, KY production site by 300 million lbs/yr for a total of 1.7 billion lbs/year by H1, 2009.

Shintech - new capacity at Iberville Parish, Louisiana expected to ultimately total 1.3 billion lbs/year (in addition to 1.65 billion lbs/year of VCM).

Operating rates: PVC operating rates in North America were at 84% for H1, 2008 and were expected to slide further following Hurricanes Gustav and Ike, which forced the shutdown of significant capacities.

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More challenges: tighter lending standards and credit

- According to the Federal Reserve's quarterly survey of bank loan officers, lending standards on commercial real estate loans began to tighten very slightly in early 2006 before gradually worsening.

- By August, 2007 the percentage of respondents reporting more restrictive lending moved up to 30% and reached 50% by October.

- By January that number had peaked at 80%, falling to 79% in April.

- Residential mortgages were not immune as the Federal Reserve's April survey of bank loan officers showed tighter standards were reported for subprime and nontraditional mortgages at 78% and 76% respectively.

- For prime mortgages, that number was at 63%, up from just 14% in August of 2007.

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Historical Federal Reserve survey data

Survey of Bank Lending Officers Percent Reporting Tighter Lending Standards -- Commercial Real Estate Loans

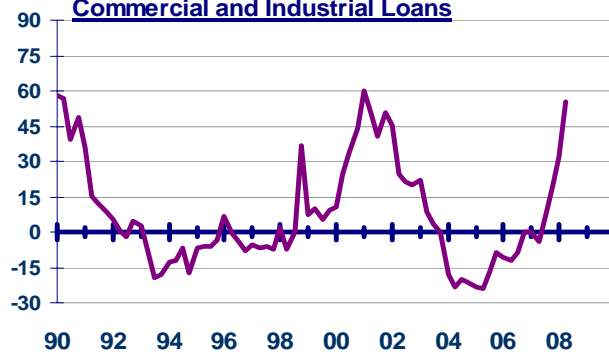


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Historical Federal Reserve survey data

Survey of Bank Lending Officers Percent Reporting Tighter Lending Standards -- Commercial and Industrial Loans



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Commercial Construction

- In dollar terms, total commercial construction grew 6% in 2007 but is expected to fall 8% in 2008
- In terms of square footage, commercial construction is set drop 16% to approximately 875 million square feet.
- Despite positive growth from non-building construction sectors such as highways, bridges, public works, and utilities, overall construction was down 11% year on year.
- In contract dollar terms, this equates to a loss of just under \$70 billion.



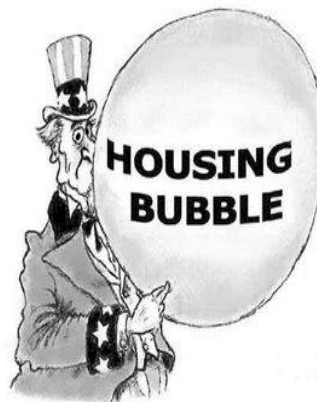
Source: McGraw Hill Construction Outlook 2008

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Construction Woes – Residential

- In 2007, total construction starts in the US fell 9% to \$628 billion, marking the first dollar decline since 1991.
- On the year, residential building in the US fell 23% in dollar terms and 25% in dwelling units.
- Single family housing is expected to be down 28% in 2008
- Multi-family housing is expected to drop 20% in 2008.
- On the plus side, housing market conditions may encourage individuals repair and renovate as opposed to selling, could lead to uptick in demand for siding, flooring, etc.



Source: 2008 McGraw Hill US Construction Outlook

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Overall construction outlook for 2008...

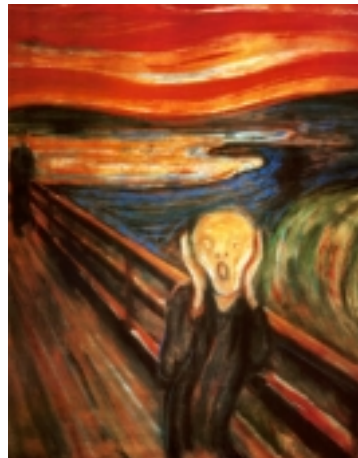
<i>Billions of Dollars</i>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
• Total Construction	593.2 +12%	670.3 +13%	687.5 +3%	628.3 -9%	558.5 -11%
• Single Family Housing	282.7 +17%	315.5 +12%	272.4 -14%	201.2 -26%	144.0 -28%
• Multifamily Housing	50.5 +23%	68.6 +36%	69.8 +2%	62.4 -11%	49.9 -20%
• Commercial Bldgs.	67.3 +14%	72.3 +7%	92.7 +28%	98.5 +6%	91.0 -8%
• Institutional Bldgs.	89.1 -1%	100.0 +12%	110.5 +11%	115.5 +4%	117.3 +2%
• Manufacturing Bldgs.	8.0 +17%	10.1 +26%	13.5 +33%	16.8 +25%	18.0 +7%
• Public Works	88.2 +6%	95.9 +9%	112.4 +17%	120.4 +7%	122.8 +2%
• Electric Utilities	7.3 -18%	7.9 +8%	16.2 +106%	13.6 -16%	15.6 +15%

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The outlook for PVC...

- Unfortunately there are no visible signs of near term improvement.
- Bank of America forecasts that PVC prices and margins will continue to weaken well into 2009.
- Capacity expansion is expected to continue and is estimated to reach 19.34 billion lbs by 2011.
- Net capacity expansion in North America is expected to be roughly 3% in 2008 with an additional 3.6% estimated expansion in 2009
- PVC will remain competitive in 2009.
- Manage operating rates in an effort to maintain balance.



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Thank you for your time

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