

# Factory Mutual Insurance Company

## And Its Subsidiaries Full Rating Report

### Ratings

Security Class	Rating
Factory Mutual Insurance Co.	
Affiliated FM Insurance Co.	
Appalachian Insurance Co.	
FM Insurance Company, Ltd.	
FM Global de Mexico, S.A.	
Insurer Financial Strength	AA

### Rating Outlook

Stable

### Financial Data

(\$ Mil.)	12/31/11
Net Income	(41)
Equity	6,882
Debt and Hybrids	—

Source: Company financials.

### Key Rating Drivers

**Strong Underwriting History:** The ratings of Factory Mutual Insurance Company (FM Global) reflect the company's solid capital position, consistent long-term underwriting profitability, and strong competitive position in the commercial property market for highly protected risks. Fitch Ratings believes the company's ability to incorporate engineering expertise into insurance products and underwriting processes is unparalleled and differentiates the company from its competitors.

**Catastrophe Losses:** FM Global's underwriting results in 2011 were severely affected by record global catastrophe losses throughout the year, stemming largely from major flooding in Thailand, unusually severe tornado events in the U.S., and massive earthquakes occurring in Japan and New Zealand. Catastrophe events added 52.3 points to the company's 2011 consolidated loss ratio and served to produce a calendar year combined ratio of 121.0%.

**Solid Capitalization:** FM Global's GAAP surplus decreased by 5.5% in 2011, despite greatly increased catastrophic loss activity throughout the year, owing to the company's strong capital position and reinsurance program. Statutory operating and net leverage ratios of 0.47x and 1.34x, respectively, are among the most conservative in the industry. Fitch expects FM Global's capital adequacy level to remain strong and an important factor in maintaining the company's current high rating level.

**Fixed-Income Portfolio:** Fitch believes FM Global's high-quality fixed-income portfolio provides ample liquidity to meet its policyholder obligations. At year-end 2011, the company had approximately \$796 million of cash and cash equivalents.

**Common Equity Allocation:** FM Global maintains an investment portfolio with an above-average allocation to equities relative to industry norms. The company's long-term total return philosophy has enabled the company to grow book value over the years, but provides greater near-term uncertainty of investment portfolio returns.

### What Could Trigger a Rating Action

**Negative Rating Triggers:** Severe deterioration in long-term results, to the point where the 10.0-point margin in combined ratio outperformance relative to peers no longer existed, could lead to a negative rating action. Consolidated U.S. operating and net leverage approaching 0.75x and 1.75x, respectively would put negative pressure on the company's ratings. Additionally, a sustained period of net losses or catastrophe losses out of proportion with market share could also lead to a negative rating action.

**Near-Term Upgrade Unlikely:** Key rating triggers that could lead to an upgrade over the long term include achieving consistent levels of strong capital associated with higher rating levels over a multiyear period, as well as a material decline in common equity investments, reducing volatility in surplus.

### Related Research

2012 Outlook: Property/Casualty Insurance, Dec. 14, 2011

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**Market Position and Size/Scale**

**Strong Presence in Market for Highly Protected Risks**

- Engineering and loss prevention services are key advantages.
- Market leader in target business lines.
- Distribution channels.

Fitch believes that FM Global has a strong and unique franchise, largely derived from its engineering capabilities and loss prevention services that are difficult for competitors to replicate. The organization employs more than 1,800 engineers, who are engaged in a wide variety of roles. Fitch considers FM Global the industry leader in incorporating engineering expertise into insurance products and underwriting processes.

**Engineering and Loss Prevention Services Are Key Advantages**

FM Global conducts onsite loss prevention and engineering reviews on the majority of its insured sites including all of its larger policyholder sites, and Fitch believes that these reviews have a significant positive effect on the company's underwriting results. Additionally, Fitch believes that FM Global's strong underwriting results are due in part to the extensive engineering and loss prevention studies the company conducts at its state-of-the-art engineering test facility. Fitch views FM Global's ability to conduct these studies and the insights they bring to the company's underwriting process as key competitive advantages.

**Market Leader in Target Business Lines**

FM Global has built a strong franchise in the commercial property market for highly protected risks. In 2011, FM Global held the No. 1 market share position in the boiler and machinery line of business among all U.S. property/casualty groups based on direct premiums written, representing roughly 24% of industrywide premiums. FM Global was also the third-largest writer of fire and allied lines business in 2011.

**Distribution Channels**

Fitch believes that FM Global's distribution methods generate comparatively little operating risk as the company uses direct distribution as well as brokers to market its products and maintains a relatively high degree of operational control over its distribution. The operations staff is composed of engineers and underwriters, and its members complement the company's distribution channels and have a significant amount of client interaction.

**Ratings Range Based on Market Position and Size/Scale**

	IFS:	AAA	AA	A	BBB	<BBB
	Debt:	AA	A	BBB	BB	<BB
<b>Major Positions and Scale</b>		←————→				
<b>Modest Position and Scale</b>			←————→			
<b>Small, Narrow Focus</b>				←————→		

**Related Criteria**

Insurance Rating Methodology, Sept. 22, 2011

**Corporate Governance and Management**

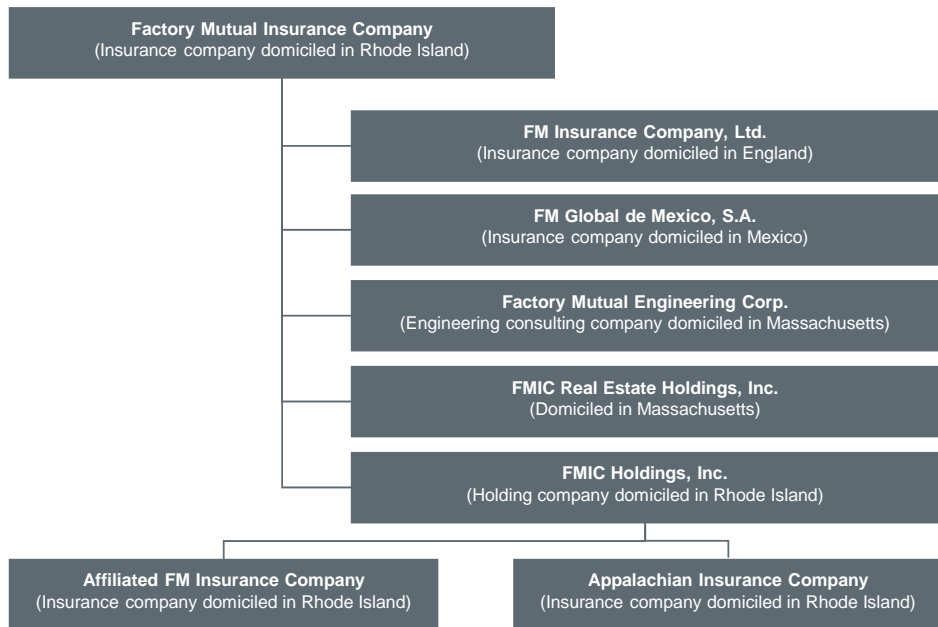
FM Global has no corporate governance issues. The company has a 14-member board of directors, who are elected by policyholders for three-year terms. Thirteen of the current directors are affiliated with FM Global policyholders.

**Ownership Is Neutral to Rating**

Factory Mutual is a mutual insurance company that specializes in providing engineered loss prevention services and high-limit commercial property coverage to its member clients. FM Global was formed in mid-1999 through the merger of Allendale Mutual Insurance Company, Protection Mutual Insurance Company, and Arkwright Mutual Insurance Company. Prior to the merger, these companies shared an engineering research facility, as well as shared ownership of FM Insurance Company, Ltd. (FMI) and participated in various reinsurance agreements with one another.

The company's primary domestic insurance subsidiaries are Affiliated FM Insurance Company (Affiliated FM) and Appalachian Insurance Company (Appalachian). The organization conducts operations internationally through its U.K.-domiciled subsidiary FMI, which has branch offices worldwide, and FM Global de Mexico S.A. de C.V. (FM Global Mexico).

**Simplified Organizational Chart**



Source: FM Global.

### Sovereign and Macroeconomic Risks

Fitch rates the local currency sovereign obligations of the United States of America at 'AAA' with a Negative Outlook, and the country ceiling is similarly 'AAA'. The local currency sovereign rating expresses the maximum limit for local currency ratings of most, but not all, issuers in a given country. At current levels, the ratings of U.S. insurance organizations and other corporate issuers are not likely to be constrained by sovereign or macroeconomic risks.

### Industry Profile and Operating Environment

A majority of U.S. life and non-life (re)insurers in Fitch's rated universe have insurer financial strength (IFS) ratings in the 'AA' and 'A' categories.

### Non-Life Industry Has Relatively Low Risk Profile

A majority of non-life (re)insurers in Fitch's rated universe have IFS ratings in the 'AA' and 'A' categories. Key non-life industry risk factors include cyclical pricing, intense market competition, pricing and reserving uncertainty, investment risk tied to fixed-income and equity holdings, catastrophe loss exposures, and regulatory issues. The industry withstood the 2008/2009 financial crisis reasonably well and industry capital levels returned to record levels due to earnings retention and investment gains.

The industry's capital strength balances with near-term expectations for below-average profitability and returns on capital driven by inadequate insurance pricing and historically low investment yields. While premium rates are showing positive trends recently in response to catastrophe experience and widening underwriting losses, strong underwriting capacity levels and competitive market conditions make a return to a true hard market less likely.

### Peer Analysis

Relative to other similarly rated 'AA' companies, FM Global is much smaller in size and narrowly focused on large commercial accounts that require extensive engineering and loss prevention services. However, Fitch views FM Global's market share and competitive positioning in its key lines of business to be better than those of its peers. FM Global is also the only company in its peer group that issues no debt, which Fitch considers a positive rating factor relative to peers.

FM Global has significantly outperformed similarly rated companies on a long-term basis and maintained its long-term performance gap over peers despite increased losses in 2011. The company's average combined ratio of 80.7% for the 10-year period through 2011 was roughly 12.7 points better than the peer median, although its volatility of 16.9% is significantly higher than the peer median of 8.9%.

Relative to peers, FM Global has a stronger NAIC RBC and lower operating leverage. However, Fitch believes the usefulness of these measures in evaluating FM Global's capital adequacy is limited since they fail to fully capture the potential earnings volatility from catastrophes, other large losses such as fires and explosions, and the company's higher exposure to equity market risk.

Additionally, given the short-tail nature of FM Global's business, the company has comparably little reserving risks relative to peers.

### Peer Comparison 2011

(\$ Mil.)	IFS	NPE	Combined Ratio (%)	10-Year Avg. Combined Ratio (%)	Total Equity	NPW/Equity (x)	Debt/Capital (%)
FM Global	AA	3,234	120.2	80.7	6,882	0.47	0.0
Chubb	AA	11,644	95.3	91.6	15,574	0.75	18.7
HCC	AA	2,127	90.8	87.3	3,292	0.66	12.7
PartnerRe	AA-	3,844	125.4	96.2	6,468	0.69	11.3
Travelers	AA	22,090	105.1	97.7	24,477	0.91	21.3

IFS – Insurer financial strength. NPE – Net premium earned. NPW – Net premium written.  
Source: SNL Financial, Fitch Ratings.

## Capitalization and Leverage

(x)	2007	2008	2009	2010	2011	Fitch's Expectation
Net Premiums Written/PHS	0.48	0.56	0.49	0.40	0.47	FM Global is expected to maintain its strong level of capitalization, measured by the company's low levels of underwriting and net leverage, as well as its strong NAIC RBC ratio. Policyholders' surplus is expected to grow in 2012, given normal catastrophe loss experience during the year.
Net Leverage	1.32	1.53	1.20	1.12	1.34	
Gross Leverage	1.71	2.00	1.56	1.43	N.A.	
NAIC Risk-Based Capital Ratio (%)	357	395	404	420	409	

PHS – Policyholders' surplus. N.A. – Not available. NAIC – National Association of Insurance Commissioners. Note: Statutory accounting.

Source: SNL Financial.

### Capitalization and Leverage Remain Strong Despite Catastrophe Losses

- Consolidated surplus declines modestly in 2011.
- Leverage is supportive of strong ratings.
- RBC ratio stronger than peers.

Due to the high-severity events the company insures and the inherently volatile operating results that correspond to writing such business, Fitch considers FM Global's strong capitalization to be a key factor supporting its rating.

### Consolidated Surplus Declines Modestly in 2011

In 2011, FM Global's GAAP policyholders' surplus decreased by \$398 million, or 5.5%, to \$6.9 billion, largely driven by a modest amount of unrealized investment losses and a pension adjustment. While global catastrophe losses in 2011 reached record levels, catastrophe losses remained largely an earnings event for FM Global and did not have a substantial impact on the company's capital position. Fitch believes that FM Global's risk-adjusted capital levels will remain strong and supportive of the company's ratings.

### Leverage Is Supportive of Strong Ratings

FM Global continues to use a reasonable amount of operating leverage. At Dec. 31, 2011, the company's annualized ratio of net premiums written to statutory surplus was 0.47x, which is slightly below the five-year average of 0.50x. Fitch believes FM Global's operating leverage remains conservative and supportive of the current rating level. FM Global issues no debt, and accordingly, uses zero financial leverage, which Fitch considers a positive rating factor.

### RBC Ratio Stronger Than Peers

FM Global's year-end 2011 NAIC risk-based capital (RBC) ratio was 409% of the company action level. Fitch views the company's RBC ratio as being higher than many comparably rated peers, but believes that the ratio generally fails to adequately capture the underwriting volatility inherent in the company's core insurance products.

## Financial Performance and Earnings

(%)	2007	2008	2009	2010	2011	Fitch's Expectation
Return on Assets	10.4	2.8	12.4	6.5	(0.3)	Assuming normal catastrophe loss experience in 2012, Fitch would expect FM Global's underwriting results to improve significantly and would likely return to a level comparable with the company's long-term results.
Return on Surplus	17.7	(10.6)	19.0	11.7	(0.5)	
Loss Ratio	44.6	77.6	41.9	50.7	95.3	
Expense Ratio	25.1	21.5	25.3	27.6	24.8	
Combined Ratio	69.7	99.1	67.2	78.3	120.2	

Note: Statutory accounting.  
Source: SNL Financial.

### Long-Term Underwriting Success with Potential for Volatility

- Substantial catastrophe losses challenge 2011 earnings.
- Strong long-term underwriting results.
- History of paying membership credits.

FM Global has developed an underwriting operation that has been very successful over the long-term as it has been built on a foundation of unparalleled engineering expertise, giving the company a distinct competitive advantage over peer companies.

### Substantial Catastrophe Losses Challenge 2011 Earnings

FM Global reported a 2011 GAAP basis net loss of \$41.5 million, marking only the second time in the past 10 years that the company posted a net loss. The company's results were affected by unusually large catastrophe events during the year that had a negative impact on property writers throughout the industry. FM Global's geographically diverse book of business was severely affected as large events, such as the Thailand flood, Japanese and New Zealand earthquakes, and U.S. tornado activity, generated massive economic and insured losses across the globe.

From 2001–2010, natural catastrophe losses and losses from the events of Sept. 11, 2001, contributed an average of 15.7 points annually to FM Global's combined ratio. In 2011, the company reported approximately \$1.7 billion of catastrophe losses, which added 52.3 points to the loss ratio. The resulting GAAP calendar year combined ratio of 121.0% was the largest the company had reported since 2001.

### Strong Long-Term Underwriting Results

FM Global's operating performance over the long term has been very strong despite exposure to periodic catastrophe losses, reflecting the company's underwriting expertise, expense efficiencies and generally favorable market conditions. Fitch believes that there is a significant amount of inherent volatility in FM Global's year-to-year operating performance because of the company's large book of property insurance and its corresponding exposure to both natural and man-made catastrophe-related losses. Given this potential volatility, Fitch believes that FM Global's underwriting results are best viewed on a cumulative basis over a relatively long horizon.

### History of Paying Membership Credits

FM Global has paid membership credits to its policyholders for five years since 2004, including \$316 million in 2004, \$341 million in 2007, \$360 million in 2008, and a total of \$391 million spread between 2010 and 2011. Future membership credits will depend on a variety of factors including underwriting results and surplus levels.

## Investment and Asset Risk

(\$ Mil.)	2007	2008	2009	2010	2011 Fitch's Expectation
Cash and Invested Assets	10,036	8,078	9,585	11,032	11,042
% Fixed Income	43.9	52.6	47.9	45.8	46.2
% Common Equities	46.9	35.0	40.1	43.8	40.0
% Other Securities	2.5	3.2	3.6	4.0	4.8
% Real Estate	2.1	3.4	3.6	3.2	3.4
% Cash and Cash Estimates	4.6	5.8	4.8	3.2	5.5

Note: U.S. GAAP basis.

Source: Factory Mutual Insurance Co. and subsidiaries.

### FM Global Remains Exposed to Above-Average Equity Market Risk

- Above-average allocation to common equity securities.
- High-quality fixed-income portfolio.

FM Global's investment portfolio is managed on a total return basis with a long-term investment horizon. The company invests in fixed-income securities to support the relatively short-duration liabilities generated by its property insurance reserves and equities to support surplus growth. As a result, FM Global is significantly overweighted in common stock investments relative to the industry.

### *Above-Average Allocation to Common Equity Securities*

At Dec. 31, 2011, Fitch estimates FM Global's surplus exposure to unaffiliated equities on a GAAP basis was approximately 40.0%. Given the high correlation of the portfolio to the Standard & Poor's 500 Index, Fitch believes the company remains exposed to potential surplus volatility in the near to intermediate term. Additionally, Fitch believes that FM Global's higher than industry average allocation to equities is reasonable in the long term, while recognizing that investment returns will tend to fluctuate year to year.

### *High-Quality Fixed-Income Portfolio*

FM Global's bond portfolio exhibits high-credit quality and liquidity. At Dec. 31, 2011, approximately 97% of the portfolio consisted of publicly traded investment-grade bonds, which translates into statutory surplus exposure to below investment-grade bonds of 3%.

## Reserve Adequacy

(\$ Mil.)	2007	2008	2009	2010	2011	Fitch's Expectation
Loss Reserves	2,051	2,342	2,024	2,117	2,727	FM Global is expected to maintain its adequate reserve position in the near term. The company is expected to report flat to moderately favorable reserve development in 2012.
Loss Adjustment Expense Reserves	205	225	263	268	251	
Asbestos Reserves Adverse Development	—	—	232	—	—	
Other Adverse (Favorable) Reserve Development	(102)	(439)	(216)	(319)	(213)	
Adverse (Favorable) Reserve Development/NPE (%)	(3.7)	(16.3)	0.5	(11.4)	(7.2)	
Adverse (Favorable) Reserve Development/PHS (%)	(2.0)	(7.6)	0.3	(4.6)	(3.3)	

NPE – Net premiums earned. PHS – Policyholders' surplus. Note: Statutory accounting.

Source: SNL Financial, Factory Mutual Insurance Co. and subsidiaries.

### Reserve Position Is Adequate

- Consolidated statutory reserve levels are adequate.
- Asbestos-related exposures still material.

Fitch believes that FM Global's loss reserves are adequate and that the company follows a disciplined approach when establishing reserves. Fitch also believes that the relatively short duration of FM Global's reserves reduces reserve uncertainty. The vast majority of the company's loss reserves tend to develop into paid losses within three years.

### Consolidated Statutory Reserve Levels Are Adequate

Fitch uses a reserve adequacy model and reported paid loss and incurred loss data from Schedule P are used to estimate ultimate accident year losses and required accident year reserves. Using FM Global's year-end 2011 data, Fitch's model estimates an adequate level of reserves using paid loss data and case-incurred data.

Starting with accident year 2002, each subsequent accident year has developed favorably since FM Global's initial reserve estimates, displaying conservatism in setting the company's reserves that compare favorably with peers and the overall industry.

### Asbestos-Related Exposures Still Material

Unfavorable development on asbestos-related reserves generated adverse reserve movement in three of the past eight years with a total of \$572 million of reserve strengthening since 2004. Despite these unfavorable developments, FM Global has still been able to produce strong calendar year underwriting results over that eight-year period.

Fitch believes that FM Global's reserves for asbestos-related claims are strong and, unlike many of its peers, FM Global has been able to bolster its asbestos reserves while still generating strong calendar year profitability. The company's gross and net survival ratios based on three-year average paid asbestos losses were 10.6x and 10.3x, respectively, at year-end 2011. Fitch also believes that FM Global is solidly reserved for environmental claims. At year-end 2011, the company's gross and net survival ratios based on three-year paid environmental losses were 9.9x and 8.9x, respectively. Net asbestos and environmental reserves totaled \$577 million at year-end 2011, representing approximately 21% of FM Global's overall net loss reserves.

## Reinsurance, Risk Management, and Catastrophe Risk

### **Strong Reinsurance Program Protects Against Property Risks**

- Extensive catastrophe reinsurance program.
- High-quality reinsurance recoverables.
- Model impact on reinsurance programs.
- Detailed analysis of catastrophe exposures.

Fitch believes that FM Global's reinsurance programs provide adequate protection against the large losses the company could face and that the credit quality of the company's reinsurers is good. FM Global has a significant exposure to natural and man-made catastrophic losses from its large book of property insurance. As a result, Fitch believes that reinsurance is a very important component of FM Global's risk management process.

### ***Extensive Catastrophe Reinsurance Program***

FM Global's excess of loss reinsurance program consists of a per-risk program and a catastrophe program. The per-risk program provides the company with coverage on individual claim losses in excess of \$250 million, and the company's catastrophe reinsurance program separately provides coverage on catastrophe losses from all perils in excess of \$250 million.

### ***High-Quality Reinsurance Recoverables***

FM Global uses a diverse mix of financially sound reinsurers, and Fitch believes the overall credit quality of the company's reinsurance recoverable is strong. The company's largest reinsurance recoverable exposures are to large companies with high credit ratings such as Swiss Re Group and Berkshire Hathaway Group, which provides Fitch with confidence in FM Global's ability to recover funds owed to the company in the wake of a large claim.

### ***Model Impact on Reinsurance Programs***

FM Global evaluates its reinsurance needs on an individual location basis. It purchases facultative reinsurance on specific lines of business and when policyholders request coverage limits that generate concentration risks it is unwilling to accept. The company uses modeling software commonly used in the insurance industry to estimate its losses from potential catastrophes and to manage its aggregate exposures.

FM Global uses vendor-produced models to simulate natural catastrophes and their effect on the company's insured exposures and to estimate potential losses. Fitch believes that the quality and resolution of exposure data used in these simulations is a key factor in the models' effectiveness. Fitch also believes that the quality of the data FM Global uses in these processes is enhanced by the engineering inspections it does at its insured properties.

### ***Detailed Analysis of Catastrophe Exposures***

FM Global manages its capital by examining catastrophe exposure using a probabilistic approach relative to capital and by evaluating growth in total insured values (TIV) relative to growth in surplus. The company uses location-based insured data to determine its exposure in catastrophe-prone areas. As such, the company performs a ground-up analysis and does not rely solely on catastrophe model simulations to determine its potential shock losses.

Appendix A: Additional Financial Exhibits

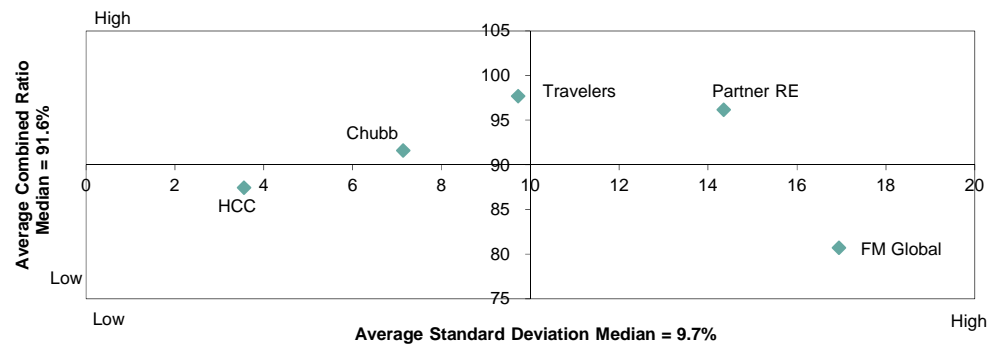
Reported and Cumulative Statutory Combined Ratios

(%)	2011 <sup>a</sup>	2010	2009	2008	2007	2006	2005	2004	2003	2002
Reported	120.2	78.3	67.1	99.0	69.7	74.4	76.9	74.5	66.5	72.1
Cumulative 2002 – 2011	80.4	75.4	75.0	76.4	72.2	72.8	72.3	70.6	68.7	72.1
Cumulative 2007 – 2011	86.9	78.2	78.2	84.3	69.7	—	—	—	—	—
Cumulative 2009 – 2011	88.5	72.5	67.1	—	—	—	—	—	—	—

<sup>a</sup>Fitch's estimate based on individual company data. Note: Statutory accounting principles. 2004, 2007, 2008, 2010, and 2011 Reported Combined Ratios as well as 2004, 2007, 2008, 2010 and 2011 Cumulative Combined Ratios include membership credits of \$316 million in 2004, \$341 million in 2007, \$360 million in 2008, \$183 million in 2010, and \$208 million in 2011.

Source: Factory Mutual Insurance Company and affiliates.

2002–2011 Combined Ratio Analysis



Source: 10-K filings with SEC for all companies, excluding FM Global and FM Global's GAAP financials.

## Appendix B: Other Ratings Considerations

Below is summary of additional ratings considerations of a “technical” nature that are also part of Fitch’s ratings criteria.

### Group IFS Rating Approach

Fitch considers all rated subsidiaries as “core,” thus Fitch applies a group rating methodology as the company has the willingness and ability to provide support to group members. All operating companies have an ‘AA’ IFS rating based on a combined group assessment.

### Notching

Per Fitch notching criteria, FM Global’s country of domicile, the U.S., is a “strong” regulatory environment with restrictions on payments from the operating companies to holding company and priority afforded policyholder obligations.

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### Notching Summary

**Holding Company**

No holding company relationship exists.

**IFS Ratings**

A baseline recovery assumption of Good was applied to the insurer financial strength (IFS) rating and standard notching was used based on the existence of policyholder priority.

**Debt**

The company issues no debt.

**Hybrids**

The company issues no hybrid securities.

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The ratings above were solicited by, or on behalf of, the issuer, and therefore, Fitch has been compensated for the provision of the ratings.

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